Assessment Procedure Consultation

P432 'Half Hourly Settlement for CT Advanced Metering Systems'

This Modification will amend the BSC requirements for Advanced Meters to align with the Electricity Supply Standard Licence Conditions and to require Half Hourly (HH) Settlement for all CT Meters by October 2023. It will also require all new connections for CT Advanced Meters to settle HH from October 2022. It will deliver Recommendation 3 by the CCDG as set out in its Consultation on the Transition Approach For Market Wide Half Hourly Settlement (MHHS).

This Assessment Procedure Consultation for P432 closes:

5pm on **Friday 22 April 2022**

The Workgroup may not be able to consider late responses.

The P432 Workgroup initially recommends **approval** of P432

The P432 Workgroup **does not** believe P432 impacts the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC

This Modification is expected to impact:

- Suppliers
- SVA Meter Operator Agents (MOAs)
- Half Hourly Data Collectors (HHDCs)
- Non-Half Hourly Data Collectors (NHHDCs)
- Licensed Distribution System Operators (LDSOs)
- Generators

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Phase

- Initial Written Assessment
- Definition Procedure
- Assessment Procedure
- Report Phase
- Implementation

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About This Document

Not sure where to start? We suggest reading the following sections:

- Have 5 mins? Read the summary section
- Have 15 mins? Read sections 1 and 7
- Have 30 mins? Read all except section 6
- Have longer? Read all sections and the annexes and attachments
- *You can find the definitions of the terms and acronyms used in this document in the BSC Glossary*[1]

The purpose of this P432 Assessment Procedure Consultation is to invite BSC Parties and other interested parties to provide their views on the merits of P432. The P432 Workgroup will then discuss the consultation responses, before making a recommendation to the BSC Panel at its meeting on 12 May 2022 on whether or not to approve P432.

There are four parts to this document:

- This is the main document. It provides details of the solution, impacts, costs, benefits/drawbacks and proposed implementation approach. It also summarises the Workgroup's key views on the areas set by the Panel in its Terms of Reference, and contains details of the Workgroup's membership and full Terms of Reference.
- Attachment A contains the draft redlined changes to the BSC and its subsidiary documents for P432.
- Attachment B contains the cost analysis exercises conducted by a Workgroup member and the Proposer's views on the costs.
- Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage[2] contains the specific questions on which the Workgroup seeks your views. Please follow instructions to use the digital form to provide your response to these questions, and to record any further views or comments you wish the

[1] https://www.elexon.co.uk/glossary/?show=all
[2] https://www.elexon.co.uk/consultation/p432-assessment-procedure-consultation/

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Workgroup to consider. Please contact BSC.Change@elexon.co.uk if you have any questions or issues using this digital form.

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1 Summary

Why Change?

Market-wide Half-Hourly Settlement (MHHS) requires that all Metering System Identifiers (MSIDs) are settled on a Half Hourly (HH) basis and moved to the MHHS Target Operating Model. The Code Change and Development Group (CCDG)[3] has recommended moving Current Transformer (CT) Advanced Meters to settle HH by October 2023 in its consultation on the Transition Approach for MHHS.[4] This recommendation was endorsed by Ofgem.[5] If this recommendation is not implemented the risk is that there will be insufficient time for Customers, Suppliers and their Agents to address issues that may arise will be increased, especially against the backdrop of the larger MHHS migration activities that will be needed for smart Meters.

This Modification seeks to address the following issues related to CT Meters:

- Inconsistent definitions of Advanced meter in the BSC versus Electricity Supply Standard Licence Conditions (SLC)[6]; and
- The risk of not meeting MHHS Transition Timetable leading to Settlement errors.

Solution

This Modification seeks to align the BSC definition of an Advanced Meter with that in the SLC and to set explicit HH Settlement obligations for CT Advanced Meters ahead of the migration to MHHS. Existing CT Advanced Meters settling NHH are expected to migrate using the Change of Measurement Class (CoMC) process to settle HH by October 2023 and all new connections for CT Advanced Meters will be expected to settle HH from October 2022. Any opt-out/in rights for customers under the SLC are reflected in the P432 solution.

Impacts & Costs

This Modification is expected to impact **Suppliers**, **SVA MOAs**, **NHHDCs**, **HHDCs**, **Generators** and **Distributors**. They may be required to amend systems and processes. Costs are expected to be low and subject to further assessment and consultation. This Modification will require changes to four BSC Sections and one BSC Procedure (BSCP). No BSC System changes are expected. The central implementation costs are therefore expected to be low (<£1k). On-going costs are expected to be low as no new requirements are proposed for Elexon and the Performance Assurance Board (PAB) for the migration activities, however Elexon will monitor the migration.

There are mixed Workgroup views on the impact P432 will have on customers. More detail can be found in Sections 4, 6 and 7. The Workgroup are particularly keen to understand and validate the impact on consumers as part of this consultation.

[3] https://www.elexon.co.uk/group/code-change-and-development-group-ccdg/
[4] CCDG Consultation on Transition Approach For MHHS - Elexon BSC
[5] https://www.ofgem.gov.uk/sites/default/files/2021-10/Ofgem%20response%20to%20CCDG%20recommendations%20on%20the%20MHHS%20Transition%20Approach.pdf
[6] https://www.ofgem.gov.uk/industry-licensing/licences-and-licence-conditions

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Costs Estimates			
Organisation	Implementation (£k)	On-going (£k)	Impacts
Elexon	<1	0.25 to 0.5 FTE until CoMC activity is complete	Costs associated with drafting and implementing Sections X-1, L, S, Z and BSCP516. There may be on-going costs on the role of Elexon and the PAB on the monitoring of the migrations as part of its existing operations.
NGESO	0	0	No impacts identified.
Industry	TBC during the Assessment Procedure Consultation.	TBC	Costs for industry are expected to be low. The bulk of the costs will be for the CoMC activities. Cost impacts and assumptions to be validated via the Assessment Consultation.
Total	TBC	0 or variable	

Benefits

The main benefits to P432 is to de-risk the migration to the MHHS TOM and improve Settlement accuracy.

Implementation

The Workgroup has recommended this Modification is implemented as soon as possible to give Suppliers the maximum possible time to ensure that all CT Advanced Meters are settled HH by October 2023. To ensure this deadline is met, the Workgroup proposes P432 is **implemented via a special release, five Working Days (WD) after the final Authority decision is made**.

Recommendation

The Workgroup initially agrees by **majority** that the P432 Proposed Modification would better facilitate the achievement of Applicable BSC Objectives (c) 'Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity and (d) 'Promoting efficiency in the implementation and administration of the balancing and settlement arrangements' and should therefore **be approved**. The Workgroup do not believe P432 will impact the EBGL provisions in the BSC. They believe P432 should be submitted to Ofgem for decision (not a Self-Governance Modification).

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2 Why Change?

What is the issue?

As a result of P272 'Mandatory Half Hourly Settlement for Profile Classes 5-8'[7], P300 'Introduction of new Measurement Classes to support Half Hourly DCUSA Tariff Changes (DCP179)'[8] and P322 'Revised Implementation Arrangements for Mandatory Half Hourly Settlement for Profile Classes 5-8'[9] the BSC introduced the definition of an Advanced Meter and required former PC 5-8 Metering Systems to be settled on a HH basis. At the time, this definition was deliberately constrained to only condition 12.18 of the SLC. The SLC later required Advanced Meters to be fitted to all CT Meters by the end of 2021. This constraint is no longer necessary or appropriate, rather it is inconsistent.

This Modification seeks to align the BSC and SLC requirements for consistency across the two documents. Currently, there are sites where a Meter capable of recording HH data has been fitted under an SLC other than SLC 12.18 but there is no automatic obligation under the BSC to use that data in Settlement.

There is therefore an opportunity to maximise the benefits of these HH capable Meters by requiring them to be settled HH. Moreover, the primary benefit of this Modification is to mitigate the risk of not meeting the MHHS Transition Timetable[10] by bringing forward the migration of CT Advanced Meters to HH Settlement, which are expected to have a disproportionate number of issues to address.

CCDG recommendation to obligate early HH settlement in the Advanced segment

The CCDG believes that a key enabler of an effective transition for the Advanced segment to the MHHS Target Operating Model (TOM) will be to align the BSC definition of an Advanced Meter with that in the Electricity Supply Licence and to set explicit HH Settlement obligations for CT Advanced Meters ahead of the migration to MHHS.

This will result in an estimated 50,000 CT Meters accounting for approximately 800 – 1,500 GWh[11] per year [1-2% of the total SVA import volume] moving to HH Settlement via the existing CoMC process, such that CT Advanced Meters will be settled HH before migration for the Advanced segment to MHHS starts in **October 2024**. In addition, any new CT connections beyond **October 2022** should be HH settled to ensure that subsequent CoMC activity is not required.

The benefit of this approach will be to spread work, which would otherwise have to be carried out alongside MHHS migration over a longer period, making it more manageable and reducing the risk of missed MHHS migration deadlines. This will maximise the time to resolve 'problem' sites where issues would otherwise delay migration, and allow for extra time to correctly identify CT sites. It will be significantly less risky to migrate (to MHHS) Advanced Meters that are already settling HH where the Meter has working communications, rather than try to switch from NHH to HH at the point of MHHS migration. Further, CT Advanced sites are also the larger consuming sites, so early HH Settlement additionally will provide benefits to Settlement accuracy.

What is a Profile Class?

A Profile Class is a classification of profiles which represents an exclusive category of customers whose Consumption can be reasonably approximated to a common profile for Settlement purposes. There are eight generic Profile Classes, chosen as they represent large populations of similar customers. Profile Classes 1 and 2 are for domestic premises and Profile Classes 3 to 8 are for non-domestic premises.

SLC 12.18

If paragraph 12.17 applies, the Electricity Meter installed at the relevant premises must be an Advanced Meter.

Paragraph 12.17: This paragraph has effect on and after 6 April 2009 and applies where the licensee installs or arranges for the installation of an Electricity Meter at Non-Domestic Premises where the metering point falls within profile class 5, 6, 7 or 8 as defined in the Balancing and Settlement Code (for this condition only, "relevant premises").

[7] https://www.elexon.co.uk/mod-proposal/p272-mandatory-half-hourly-settlement-for-profile-classes-5-8/
[8] https://www.elexon.co.uk/mod-proposal/p300/
[9] https://www.elexon.co.uk/mod-proposal/p322/
[10] https://www.ofgem.gov.uk/publications/electricity-retail-market-wide-half-hourly-settlement-decision-and-full-business-case
[11] Based on Gross Supplier Market Share Data reports.

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Background

CCDG Recommendations

The Ofgem Significant Code Review (SCR) considering Settlement Reform[12], also known as MHHS was launched in July 2017. Under the SCR, the CCDG was convened to develop the MHHS TOM recommended by the Design Working Group (DWG).

The CCDG has recommended that a number of enabling changes are progressed before the full MHHS Design is baselined in 2022. The CCDG believed these changes would need to be raised before the end of 2021 to allow the required lead time to implement and comply.

They are to give effect to the CCDG's recommendations 1, 3 and 8.

- **Recommendation 1** will require changes to the BSC and Retail Energy Code (REC) to introduce new SMRS registration data items and supporting processes to be implemented between November 2022 and February 2023.

  BSC Change Proposal CP1558[13] and REC Change Proposal R0032[14] were raised in February 2022 to progress Recommendation 1.

- **Recommendation 3** will require the introduction as soon as possible of an obligation on Suppliers to ensure that all MSIDS with NHH settled CT Advanced Meters are moved to settle HH via the CoMC process by October 2023.

  The CCDG recommended that where possible, WC Advanced Meters settling NHH are moved to settle HH via CoMC by 2024. However, they noted that this should not be mandated.

  The CCDG initially considered whether there may need to be a consequential change under the REC and Connection and Use of System Code (CUSC), however this is no longer the case because the Modification does not have a direct impact on the REC, but a complimentary REC Change has been raised (R0015 ''Remote communication obligations for Advanced Meters'')[15]. Also due to the timing of the CoMC activity a CUSC Change is no longer required.

  This Modification is in support of Recommendation 3.

- **Recommendation 8** will require the introduction as soon as possible of an obligation on Suppliers to ensure that all Unmetered MSIDs are settled HH by October 2024. This will require changes to the BSC. The CCDG initially considered whether there may need to be a consequential change under the CUSC to prevent NHH UMS MSIDs being double charged during the year in which they are migrated, however this is no longer the case due to the timing of the CoMC activity.

  P434[16] was raised on 3 February 2022 to progress Recommendation 8.

MHHS Transition Timetable

Ofgem's decision is that the transition to MHHS should take place over 4 years and 6 months, with the transition beginning on the publication of its Full Business Case in April 2021 and ending in October 2025.

[12] https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/electricity-settlement-reform
[13] https://www.elexon.co.uk/change-proposal/cp1558/
[14] https://recportal.co.uk/group/guest/-/new-registration-data-items-and-processes-to-support-the-transition-to-market-wide-half-hourly-settlement-mhhs-
[15] https://recmanagerb2c.b2clogin.com/recmanagerb2c.onmicrosoft.com/B2C_1A_signup_signin_saml/samlp/sso/login
[16] https://www.elexon.co.uk/mod-proposal/p434/

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The CCDG sought direction from Ofgem on how to progress their recommendations. In response[5], Ofgem requested that these enabling changes are progressed through the existing code governance framework, with oversight by the MHHS Programme. The Programme and Ofgem fully endorse the progression of this Modification and the early migration of CT Advanced Meters to HH settlement.

NHH CT Meters

The SLC allows exceptions under condition 12.29 where a Supplier has taken "all reasonable steps". These conditions were introduced in 2009, allowing stakeholders over ten years notice to comply. Information from Distributors provided through the Distribution Charging Methodologies Development Group (DCMDG)[17] indicates that about 50,000 CT Metering Systems are being settled NHH yet at the time of this Modification being raised should have an HH capable Advanced Meter already installed. It is likely that the pandemic has delayed the installation of Advanced Meters for some CT Metering.

The Association of Meter Operators (AMO) has produced guidance, Advanced Metering for CT Metering Systems[18], on the issues surrounding the application of CT Metering.

P272 'Mandatory Half Hourly Settlement for Profile Classes 5-8'

P272 mandated Half Hourly Settlement for all SVA Metering Systems within PC 5-8, in order to enable a Supplier's volume allocation to accurately reflect their customers' consumption and avoid the smearing effects of profiling NHH meter data. P272 was implemented on 1 April 2017.

P300 'Introduction of new Measurement Classes to support Half Hourly DCUSA Tariff Changes (DCP179)'

P300 introduced new Measurement Classes for aggregated Half Hourly-settled customers (for current transformer and Whole Current (WC) metered domestic; and WC non-domestic markets). P300 was implemented on 5 November 2015.

P322 'Revised Implementation Arrangements for Mandatory Half Hourly Settlement for Profile Classes 5-8'

P322 proposed new arrangements to migrate sites, classed as PC 5-8 with Advanced Meters installed, to HH Settlement under the P272 obligations. P322 had the following features:

- Required start and end dates to facilitate a phased approach to implementation;
- Performance Monitoring, most likely through the existing Performance Assurance Framework; and
- An implementation approach, which considers approved Modification P272 and possible amendment to the P272 Implementation Date by the Authority.

P322 was implemented on 3 August 2015.

[17] https://www.dcusa.co.uk/group/dcmdg/
[18] https://meteroperators.org.uk/stakeholder-information/technical-information/

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MHHS Target Operating Model (TOM)

The ELEXON-led Design Working Group (DWG)[19] has designed the TOM for MHHS as well as the approach for transitioning from the current Settlement arrangements to the TOM. The TOM is a key output of Ofgem's SCR on Electricity Settlement Reform.

The MHHS TOM is a set of Services required to deliver Settlement Period (SP) level data (currently a Half Hour period) from a Meter to a central Settlement body, to enable the calculation of the amount of energy a Supplier's customers have consumed (or exported) in each SP for each Settlement Day. This calculation is then used in the Imbalance Settlement process which compares the Supplier's contracted purchases of energy to the amounts deemed to have been consumed (sales) by each of the Supplier's customers (and recognises any amounts of energy contracted by National Grid under the Balancing Mechanism).

The DWG's TOM was presented in full detail in its preferred TOM report for Stage 2 of the SCR.[20]

CCDG

The CCDG is a working group that developed detailed design areas of the DWG's TOM, following the initial work done by the DWG. The group also further developed the transition approach, also accounting for run-off of the existing NHH arrangements. CCDG was initially responsible for the code changes (including subsidiary documents), however this is now the responsibility of the MHHS Programme's Cross Code Advisory Group.[21]

Advanced Meters, Current Transformer Meters and Whole Current Meters

An Advanced Meter is defined in the SLC as an electricity Meter, either on its own or with an ancillary device, and in compliance with the requirements of any relevant Industry Code:

- provides measured electricity consumption data for multiple time periods, and is able to provide such data for at least half-hourly time periods; and
- is able to provide the licensee with remote access to such data.

A CT Meter is an electricity Meter which uses a current transformer as part of the mechanism for measuring the electric current. A WC Meter is an electricity Meter where the electricity supply passes through the Meter itself.

Desired outcomes

The CCDG has made the following recommendations in respect of Advanced Meters, which this Modification seeks to implement:

[19] https://www.elexon.co.uk/group/design-working-group/
[20] https://www.ofgem.gov.uk/publications/design-working-group-preferred-tom-report
[21] https://www.mhhsprogramme.co.uk/governance/

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- For CT Advanced Meters settling NHH, CoMC process carried out from April 2023 to October 2023; and
- New CT Advanced Meters from October 2022 should be HH settled to ensure that subsequent CoMC activity is not required.

The Modification will place an obligation on Suppliers to settle all CT Metering Systems on a HH basis by October 2023.

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3 Solution

Proposed solution

The existing definition of the Advanced Meter in the BSC differs from that in the SLC. This Modification seeks to align the definitions to expand the existing requirements to settle PC 5-8 sites HH to include all CT Advanced Metering Systems.

The current definition of Advanced Meter in Annex X-1 of the BSC was constrained by the scope of P272 to refer only to SLC 12.18 as follows:

> "Advanced Meter": means Metering Equipment installed in accordance with the obligation set out in condition 12.18 of the Standard Conditions of each Supply Licence;

This made sense at the time of P272 because that Modification was focused on MSIDs in PC 5-8, but this prevented the future expansion of the HH Settlement obligation to include Advanced Meters installed under other SLCs where these Meters are capable of providing HH data into Settlement.

It is proposed to remove this limitation so that the BSC definition of an Advanced Meter is in accordance of SLC 12.19. In practice, changing the definition will include within scope an estimated additional 50,000 CT Metering Systems[22].

As the existing SLC requirements require all CT Metering Systems to have Advanced Meters fitted, it follows that there is a similar rationale for these to be settled on a HH basis. Extending the BSC obligation to all CT Metering Systems would include all 'over 100kW' sites and any CT MSIDs in PC 5-8 remaining from P272 that are not yet settling HH, as well as any CT Meters in PC 1-4 currently Settling NHH.

In addition, any new CT connections beyond October 2022 should be HH settled to ensure that subsequent CoMC activity is not required and HH customers will be prevented to CoMC back to NHH (unless they have opt-out rights). This Modification will also facilitate the removal of redundant references to the 'P272 go live date' as well as P272 monitoring, reporting and Supplier Migration Plan requirements as these references are obsolete.

All CT Metering Systems to be settled HH by October 2023

The current BSC obligation requires HH Settlement of:

- all over 100kW Metering Systems; and
- formerly NHH PC 5-8 Metering Systems.

Ofgem has decided to move all SVA Metering Systems to the MHHS TOM by 2025. This requires two high level steps:

1. CoMC activity to get the Advanced Metering Systems to settle HH; and
2. MHHS migration activity to move the Metering Systems to the MHHS TOM.

P432 will bring forward part of the first step only, requiring all CT Metering Systems to be settled HH by October 2023. CCDG transitional consultation encouraged Suppliers to migrate existing WC Advanced meters to HH between Oct 23 & Oct 24.

[22] Based on LDSO provided data in 2018.

SLC 12.19

For the purposes of this condition, an advanced meter is an Electricity Meter that, either on its own or with an ancillary device, and in compliance with the requirements of any relevant Industry Code:

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

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

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Supplier Charges

It was considered whether Supplier Charges will discourage Suppliers from moving their NHH Meters to HH. However, Supplier Charges were switched off on March 2020 to alleviate the pressures faced by Suppliers during the Pandemic. The potential impact of P432 on NHH performance will be considered as part of the switch on considerations later.

Assurance – monitoring, reporting and enforcement

No new BSC obligations are proposed for assurance. Elexon will monitor the CoMC activity using new data, which will be made available by CP1558 (subject to its approval). Once the migration deadline passes, Elexon and the PAB may take any necessary steps under the existing Performance Assurance Framework (PAF) processes, such as Error and Failure Resolution.

50,000 NHH CT Advanced Meters

There is a challenge of accurately identifying the number of NHH CT Advanced Meters in the market as it is difficult to determine CT Meters from data flows. The 50,000 figure was obtained by the MHHS Programme from Distributors in 2018, the same request was also made back in 2016 and the number of Meters had not changed significantly, so it is unlikely that the figure has changed considerably since 2018.

The outcome the MHHS Programme is looking for with P432 is to minimise the number of CT Advanced Meters not already Settling HH by the time of migration to MHHS. If the number of NHH CT Advanced Meters are less than the reported 50,000 by Distributors, this would not change the expected outcome. CT Advanced Meters present a disproportionate risk in migration and that is why they are being drawn out earlier, other Meters do not present the same complexities.

Non-domestic and microbusiness customers

At the time of writing, domestic consumers' HH consumption data can only be accessed for Settlement if they have given opt-in consent, and Suppliers can only access HH data from microbusinesses for Settlement if they have not opted-out. However, Ofgem are intending to amend SLC 47, which currently gives these customers their opt-in/out rights. Ofgem have proposed[23]:

- Microbusiness customers will be mandated to give access to HH data; and
- Domestic customers will be able to opt-out of giving access to their HH data, but they will be opted—in to give access by default; and
- There will be no opt-out for export energy.

The P432 solution will respect the obligations in the SLC.

[23] https://www.ofgem.gov.uk/publications/electricity-retail-market-wide-half-hourly-settlement-decision-and-full-business-case

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Benefits

This change is an enabling step that forms part of the move to MHHS. The Ofgem full business case[24] set out the benefits of implementing MHHS. Ofgem estimates MHHS will save consumers about £300m per year, with anticipated £4bn-£5bn consumer savings in total over the period to 2040.

P272, P300 and P322 were implemented to ensure that where an Advanced Meter was fitted as a result of the SLC for a PC 5-8 site it was then used to provide HH data for Settlement. It was recognised by stakeholders that the use of HH data results in more accurate and consequently more equitable Settlement than the NHH profiling arrangements.

The Ofgem SCR considering Settlement Reform identifies that use of accurate HH Settlement data ensures the correct cost allocation, which in turn encourages energy use to be optimised.

P432 will de-risk the transition to MHHS. CT Advanced Meters present a disproportionate risk in migration, so the early migration of these Meters will provide more time for Customers, Suppliers and their Agents to address any issues that may arise during the migration period. This Modification will therefore result in more accurate and equitable Settlement, whilst reducing the MHHS delivery risks for relevant MHHS Participants.

Assessment Consultation Question
Do you agree that P432 will decrease the risks associated with transition to the MHHS TOM and to what extent will it decrease the risks?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

Alternative solution

No Alternative Modification was formally raised by the Workgroup, however one Workgroup member did suggest making changes to the Measurement Class (MC) definitions so that they are based on the capacity and the capability of customer supply rather than based on CT Metering. Generally WC Meters are installed on Supplies up to 69kVA, so the suggestion was that CT Meters that have demand above 70kVA would be more appropriate, effectively realigning the HH threshold from 100kW to circa 70kW.

The Proposer stated that they understood the logic of this suggestion but it goes against all the Targeted Charging Review (TCR) reforms. It would mean undoing all the work undertaken for the TCR reforms.

Furthermore, one element of the MHHS Market Segmentation was to more away from arbitrary boundaries and differentiate based on physical characteristics of the Meter and connection – hence CT vs WC differentiation. Making changes to MC definitions would cause issues with Distribution Charging, also MCs are due to disappear once the market transitions to the MHHS TOM.

Other solution options are discussed in section 6.

[24] https://www.ofgem.gov.uk/publications/electricity-retail-market-wide-half-hourly-settlement-decision-and-full-business-case

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Assessment Consultation Question
Do you agree with the Workgroup that there are no potential Alternative Modifications within the scope of P432 which would better facilitate the Applicable BSC Objectives?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

Legal text and Code Subsidiary Documents

The P432 proposed draft redlined text is available in Attachment A. Further discussions had by the Workgroup on the proposed redlining can be found in section 6.

Assessment Consultation Question
Do you agree with the Workgroup that the draft legal text in Attachment A delivers the intention of P432?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

Assessment Consultation Question
Do you agree with the Workgroup that the amendments to the Code Subsidiary Documents in Attachment A deliver the intention of P432?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

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4 Impacts & Costs

The Workgroup are keen to understand what the difference in costs are for participants between migrating CT Advanced Meters to HH Settlement in October 2023 compared to October 2024. Further, they are keen to understand whether:

- the costs associated with the P432 activities have already been factored into participants MHHS costs;
- P432 will lead to cost savings by moving CT Advanced Meters before the MHHS migration,
- P432 will lead to additional costs beyond what would have been incurred in the absence of P432 i.e. CT Advanced Meters being migrated to HH Settlement under the MHHS Programme.

The Workgroup believe that there will not be any additional costs as a result of P432, but that some costs will be brought forward.

The Workgroup identified the following key cost areas:

- Costs associated with identifying CT Advanced Meters
- Costs for the CoMC activity
- On-going costs to serve

There are currently mixed Workgroup views on the likely costs, see section 6 for details.

Industry

Costs for industry will be assessed during this consultation. However, for those roles the Workgroup believe will be impacted, the Workgroup have indicated whether it believes the costs are likely to be high, medium or low based on the following categories. We invite you to validate and refine these estimates via this consultation:

- High: >£1 million
- Medium: £100-1000k
- Low: <£100k

Elexon

P432 is a document only change. No changes to Elexon systems are required. We therefore anticipate the central implementation costs to be less than £1K for the proposed solution. For the ongoing costs, it is anticipated that 0.25 FTE of effort will be spent on the monitoring and reporting activities over the 6 month period, and a further (up to 0.25 FTE) effort will be required if follow up actions are needed if CoMC activities are not complete.

Customers

The impact on customers will be assessed as part of this consultation. In particular:

- The impact on customer billing; and

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- The impact on the customer journey.

Assessment Consultation Questions
Will your organisation incur additional costs as a result of P432 that you would not have incurred under MHHS? Alternatively, would there be any cost savings from moving CT Advanced Meters before MHHS migration?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

Estimated implementation costs of P432

Implementation cost estimates			
Organisation	Item	Implementation (£k)	Comment
Elexon	Systems	0	No impact identified. P432 is a Document only change.
	Documents	<1	Costs associated with drafting and implementing Sections X-1, L, S, Z and BSCP516.
	Other	0	No impact identified
NGESO	Systems	0	No impact identified
	Other	0	No impact identified
Industry	Systems & processes	TBC	The bulk of the costs are expected to be from the CoMC activity. Additional costs for industry will be confirmed via the consultation.
	Total	TBC	

Estimated on-going costs of P432

On-going cost estimates		
Organisation	On-going (£k)	Comment
Elexon	0.25 to 0.5 FTE until CoMC activity is complete	There may be on-going costs on the role of Elexon and the PAB on the monitoring of the migrations.
NGESO	0	No impact identified.
Industry	TBC	Expected to be low. To be confirmed via the consultation.
Consumers	TBC	Overall consumers are expected to benefit from MHHS. There may be higher costs for consumers as a result of their Metering System settling HH, driven by commercial factors such as Supplier Agent costs. See below for more detail.

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On-going cost estimates		
Organisation	On-going (£k)	Comment
Total	TBC	

Assessment Consultation Questions
How much will it cost your organisation to implement P432?
What will the ongoing cost of P432 be to your organisation?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

P432 impacts

Impact on BSC Parties and Party Agents		
Party/Party Agent	Potential Impact	Potential cost
Suppliers	The SLC already required the installation and maintenance of Advanced Meters by the end of 2021 so any additional costs for HH Settlement are expected to be limited to the cost of carrying out the CoMC process. Suppliers may need to modify their billing arrangements for CT metered customers currently settled NHH.	L
LDSOs	LDSOs may need to review the distribution of their charges as their customer base will change. For that reason, the impact on LDSOs has been highlighted but are expected to be minimal.	L
Generators	SVA connected Generators may be exposed to higher MOA costs at mixed use sites.	L
SVA Meter Operators	In line with P272, existing NHH-only Agents will need to requalify for HH should they wish to work with Meters supplying HH data. The increase in the number of HH Metering Systems is expected to impact MOAs, who may need to support the migration plans of Suppliers. MOAs will need to engage in Change of Measurement Class activities.	L

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Impact on BSC Parties and Party Agents		
Party/Party Agent	Potential Impact	Potential cost
HHDCs	The increase in the number of HH Metering Systems is expected to impact HHDCs, who may need to support the migration plans of Suppliers. HHDCs will need to engage in Change of Measurement Class activities.	L
NHHDCs	NHHDCs will need to engage in Change of Measurement Class activities.	L

Impact on the NETSO	
Impact	Estimated cost
None identified	None

Impact on BSCCo		
Area of Elexon	Impact	Estimated cost
Assurance	Assurance will need to monitor the migrations in the first instance and work with the PAB in response to any increase in Settlement Risk.	L

Impact on BSC Settlement Risks

P432 impacts a wide range of SVA risks. For the CoMC process the Meter Technical Details (MTDs) will need to be transferred from NHH Agents to the HH Agents, and the largest impact is based on the transfer of MTDs taking place. They may not always happen on time or they may potentially be transferred with the incorrect information. This could then potentially lead to Agents not being able to read the Meters or not being able to interpret the readings correctly, then ultimately the wrong volumes could end up in Settlement.

This Modification is expected to impact the following BSC Settlement Risks (H – high impact, M – medium impact, L – low impact):

- 003 SVA Risk: Metering Equipment Installations are incorrect - M
- 004 SVA Risk: Metering Equipment changes are not notified - H
- 005 SVA Risk: Metering Equipment Faults are not resolved - M
- 006 SVA Risk: Incorrect Meter detail transfer on change of agent - M
- 007 SVA Risk: Metered Data is not retrieved - H
- 008 SVA Risk: Metered Data is not processed or transferred - H
- 009 SVA Risk: Data Aggregator Processing incorrect - L
- 010 SVA Risk: Transfer of Meter Read History incorrect - L
- 012 SVA Risk: Meter System Technical Details inaccurate - M
- 015 SVA Risk: Reference Data incorrect - L

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Impact on BSC Systems and process	
BSC System/Process	Impact
None	All existing systems expected to be able to accommodate this small change in activity.

Impact on BSC Agent/service provider contractual arrangements	
BSC Agent/service provider contract	Impact
None	All existing systems expected to be able to accommodate this small change in activity.

Impact on Code	
Code Section	Impact
Section L 'Metering'	Section L will be updated to add the requirements for CT Advanced Meters to settle HH from 1 October 2023 and new CT connections to be settled HH from 1 October 2022.
Section S 'Supplier Volume Allocation'	The data provision requirements will be updated to include the submission period for HH Advanced Meters.
Section X, Annex X-1 'Glossary'	The definition of Advanced Meters in BSC Section X, Annex X-1 was constrained by the scope of P272 to refer only to SLC 12.18, the definition will be expanded by referring back to the definition of Advanced Meter in the SLC, condition 12, so that it captures all HH Metering Systems with remote communications that are not Smart Meters. Deletion of text that referred to the P272 monitoring and reporting requirements and references to Supplier Migration Plans as they are no longer relevant.
BSC Section Z 'Performance Assurance'	Section Z will be amended to delete the P272 monitoring and reporting requirements and references to P272 Supplier Migration Plans as they are no longer relevant.

Impact on EBGL Article 18 terms and conditions
No impact identified

Impact on Code Subsidiary Documents	
CSD	Impact
BSCP516 'Allocation of Profile Classes and SSC's for Non Half Hourly SVA Metering Systems Registered in SMRS'	BSCP516 will need to be amended to add the requirements for CT Advanced Meters to Settle HH from 1 October 2023 and new CT connections to be Settled HH from 1 October 2022.

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Impact on other Configurable Items	
Configurable Item	Impact
None	None identified.

Impact on Core Industry Documents and other documents	
Document	Impact
Ancillary Services Agreements	None anticipated at this stage.
Connection and Use of System Code	None anticipated. The CCDG initially considered whether there may need to be a consequential change under the CUSC to avoid unwanted double charging of TNUoS for Metering Systems that move from NHH to HH during a charging year. It concluded that because the CoMC activity will only start in early 2023, by this point the critical elements of the Targeted Charging Review will have been implemented and so there will not be any adverse impacts on TNUoS and a CUSC Modification is therefore not needed.
Data Transfer Services Agreement	None anticipated at this stage.
Distribution Code	None anticipated. Impacts on DUoS charging and cost recovery have been considered as the c.50,000 CT metering systems will move into site specific DUoS charging upon a CoMC into Measurement Class "E". As the excess capacity charging regime will be in effect in the DCUSA, customers need to set an agreed supply capacity via a site-specific connection agreement with their LDSO in advance of moving to HH Settlement, otherwise they will become liable for the penal excess capacity charge. This Modification aims to mitigate this by presenting Suppliers with the opportunity to use the winter 2022-23 season to obtain the customer maximum demand data so that customers are informed of the capacity levels they need to agree with their host LDSO, as such a DCUSA Modification is not necessary.
Grid Code	None anticipated at this stage.
Retail Energy Code	None anticipated. The CCDG initially considered whether there may need to be a consequential change under the REC, however this is no longer the case because this Modification doesn't have a direct impact on the REC. A complimentary REC Change R0015 has been raised in support of this Modification to require remote communications to be fitted and working for all CT Metering Systems prior to CoMC activities starting.
Supplemental Agreements	None anticipated at this stage.

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Impact on Core Industry Documents and other documents	
Document	Impact
System Operator-Transmission Owner Code	
Transmission Licence	
Use of Interconnector Agreement	

Impact on a Significant Code Review (SCR) or other significant industry change projects
Ofgem directed that this Modification be worked up by the MHHS Programme and be progressed by the BSC in their response to the CCDG Recommendations. It has been raised to facilitate the MHHS migration to give effect to Ofgem's Settlement Reform SCR. Consequently, we requested that Ofgem treat this Modification as a SCR Exempt Modification Proposal on 2 December 2021. Ofgem confirmed that this Modification Proposal was SCR exempt on 9 December 2021.

Assessment Consultation Question
Do you agree with the Workgroup's assessment of the impact on the BSC Settlement Risks?
Do you agree with the Workgroup's assessment that P432 does not impact the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC?
Will P432 impact your organisation?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

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Consumer impacts

Impact of the Modification on the environment and consumer benefit areas:	
Consumer benefit area	Identified impact
1) Improved safety and reliability The Workgroup did not identify any impact on this consumer benefit from P432.	Neutral
2) Lower bills than would otherwise be the case A Workgroup member held the view that this Modification will have a negative impact on this benefit area as they thought P432 would lead to higher bills for consumers, driven by increased costs to serve (higher Supplier Agent costs) and network charging costs. The Proposer's view is that the impact is neutral because charges will change but the costs may not necessarily increase. Some bills may be higher but some may decrease as a result of DUoS changes, so overall the costs will be neutral.	Neutral
3) Reduced environmental damage The overall consensus was that the impact is neutral, however the Modification does have indirect links to supporting Net Zero. One Workgroup member suggested that a negative consequence could be that consumers could change their Meters so they are out of scope of P432 to avoid increased costs. He had the view that many sites with CT Meters did not need to be CT Metered as the capacity had been overestimated. The Workgroup noted the current Meter shortage issues in the market. However, the majority were of the view that exchanging Meters would be impractical because the Meters would have to change from CT to WC to become out of scope of P432. In doing so, this would require a downgrade of LDSO equipment.	Neutral
4) Improved quality of service The use of HH data results in more accurate Settlement than the NHH profiling arrangements. This allows for better cost reflectivity and reduces cross-subsidiaries in Settlement.	Positive
5) Benefits for society as a whole The overall consensus from the Workgroup was that the impact is neutral as there were some positive and some detrimental impacts. One Workgroup member mentioned there may be a knock on effect on businesses who may be subject to higher costs to serve HH settled Meters, which may result in costs being passed on to their customers. Another Workgroup member had the view that the benefit is positive as MHHS is positive for society as a whole (see Ofgem's MHHS Full Business Case) and P432 is a part of MHHS, supporting a path to net-zero.	Neutral

What are the consumer benefit areas?

1) Will this change mean that the energy system can operate more safely and reliably now and in the future in a way that benefits end consumers?

2) Will this change lower consumers' bills by controlling, reducing, and optimising spend, for example on balancing and operating the system?

3) Will this proposal support:
i)new providers and technologies?
ii) a move to hydrogen or lower greenhouse gases?
iii) the journey toward statutory net-zero targets?
iv) decarbonisation?

4) Will this change improve the quality of service for some or all end consumers. Improved service quality ultimately benefits the end consumer due to interactions in the value chains across the industry being more seamless, efficient and effective.

5) Are there any other identified changes to society, such as jobs or the economy.

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Assessment Consultation Question
Do you agree with the Workgroup's assessment of the impact on the consumer benefit areas?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

P432 end to end consumer journey impacts

The Workgroup is keen to understand what impact P432 would have on the customer journey. They noted that the journey would differ for customers depending on whether they use a Third Party Intermediary (TPI) or not, as customers working through direct channels may face more challenges.

A member was concerned that if P432 is implemented customers will struggle to get competitive Supplier contracts and effectively be charged more for the new contracts. This would mean that customers with CT Advanced Meters would be exposed to an uncompetitive market 18 months before the MHHS transition deadline. The member conducted two exercises to investigate the possible impacts on the end consumers, see section 6 for details.

The opt-in/out rights for microbusinesses and domestic customers will be reflected in P432. The customer will have a choice whether to move to a time of use tariff or not. Engagement with customers, by Suppliers and their Agents (particularly where the customer contracts directly with the Agents) will be critical. For more detail see section 6.

A Workgroup member argued that additional site visits may be required if Meters at the impacted sites do not record maximum demand data, and that this will result in a detrimental environmental impact and an additional cost that would be passed through to customers.

However, other Workgroup members have argued that this will only have an impact if the site visits are over and above the routine site visits that will be required during the six month preparatory period. Where Meters are not communicating remotely, there should be a need for NHHDCs to visit those sites to collect readings and maximum demand data can be collected alongside the billing reads. Where Meters are faulty, there is a requirement for SVA MOAs to respond to fault resolution requests.

The Workgroup would like to understand where respondents feel there may be additional material costs and/or environmental impacts as a consequence of any additional site visits that may be required.

Assessment Consultation Question
What is the impact of P432 on the customer's end to end journey?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

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5 Implementation

Recommended Implementation Date

The Workgroup recommends an Implementation Date for P432 of:

- **5 WDs** after the Authority's decision is received.

The CCDG has recommended this change to be implemented as soon as possible to ensure that all MSIDs with NHH settled CT Advanced Meters are moved to settle HH via the CoMC process by October 2023 and new connections from October 2022. The Proposer and Workgroup agrees and therefore recommend this Modification is implemented via a special release, five WDs after Authority approval. This will provide the maximum lead time to meet the migration timescales that will be set by this Modification.

Assessment Consultation Question
Do you agree with the Workgroup's recommended Implementation Date?
How long (from the point of approval) would you need to implement P432?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

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6 Workgroup's Discussions

Key dates for P432

The Proposer presented his key dates for P432, which the Workgroup accepted.

Key milestones:

- October 2022: New CT connections beyond this date should be HH settled to ensure that subsequent Change of Measurement Class (CoMC) activity is not required;
- February 2023: CP1558 (subject to its approval) implemented providing improved visibility of CT metering systems;
- October 2022 to March 2023: Planning and preparatory CoMC activities to be undertaken during this period to allow new TCR arrangements to come into effect and therefore avoid network charging impacts on customers;
- April 2023 to October 2023: CoMC process to begin for CT Advanced Meters settling Non-Half Hourly (NHH); and
- By October 2023: All CT Advanced Meters to be Settled HH.

The Proposer explained that the proposed timeline for P432 is driven by the MHHS timeline. The reason this proposal calls for implementation for all CT Advanced Meters to be Settled HH by October 2023 is because it de-risks to transition to MHHS, which is due to start in October 2024. If any issues were to arise during the migration of CT Advanced Meters, it would be better that they surfaced during the April 2023 to October 2023 period, as it would be more difficult to resolve any issues under duress during the MHHS migration. Six months to migrate ~50,000 CT Advanced Meters should allow Parties to proceed more cautiously.

The dates are there to facilitate the movement to MHHS, therefore the Workgroup agreed that the October 2023 date should be hardcoded in the legal text drafting, however it was pointed out that we should keep in mind that things may change within the MHHS Programme.

Clarification of BSCP516 and CP1549 requirements

A Workgroup member asked for clarification on the process for moving a Meter from HH back to NHH Settlement (which is detailed in BSCP516) and was recently amended by CP1549[25] 'Amendment of BSCP516 to clarify the criteria for Non-Domestic SVA Metering Systems to be allocated to Profile Classes 3 or 4' permitted. Elexon confirmed that CP1549 allows Non-Domestic customers with an Advanced Meter migrated from Profile Class (PC) 5-8 to HH Settlement (as part of the P272 process) back to NHH Settlement if validly reclassified as PC3-4.

Where a Metering System is still classified by the Supplier as falling under the definition of what would have been PC5-8 pre P272 then it is not in scope to be reversed to NHH Settlement. Furthermore, PC5-8 apply where Maximum Demand is required to be

[25] https://www.elexon.co.uk/change-proposal/cp1549/

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recorded, not just where it happens to be recorded, this was clarified by CP1433 'Clarification of which Metering Systems are captured by the P272 requirements'.[26]

Elexon highlighted that these requirements should not have any implications on P432. P272 is already largely complete, the interest here is that some HH Meters are reverting back to NHH and to what extend, if any, this should be permitted for CT Advanced Meters under P432.

Exceptions to the rules

Domestic and microbusiness customers

Currently under the SLC47 requirements domestic consumers' HH consumption data can only be accessed for Settlement if they have given opt-in consent, and Suppliers can only access HH data from microbusinesses for Settlement if they have not opted-out.

However, as part of their work on market-wide Settlement reform, Ofgem has been considering amending the SLC47 in order to make access to HH data mandatory for microbusinesses, and Suppliers will have access to HH data from Domestic sites unless the consumer opts out, Ofgem's decision was set out in its access to half-hourly electricity data for settlement purposes paper[27] in 2019.

Assuming SLC47 changes are progressed in line with Ofgem's previous decision (which is expected by Workgroup members), the new data access framework would only apply from the point the customer changes supply contract. Ofgem do not expect this to include situations where new terms and conditions apply by default, for example where a customer moves on to a default tariff following expiration of a fixed term contract. Whilst retail market issues have held up Ofgem's work, it's very likely that the SLC change will be implemented before the proposed April 2023 start date for CoMC activities.

As the decision for the data access requirements is likely to be made after P432 is submitted for Ofgem decision, Elexon asked the Workgroup whether domestic and microbusiness customers should be excluded from the P432 solution. The consensus amongst the Workgroup was that these customers shouldn't be excluded from the solution, instead the legal drafting should be drafted in a way that it is flexible and respects the SLC requirements. This was on the basis that it would avoid the need to re-draft the BSC, allow domestic and microbusiness customers to migrate now, subject to SLC rights.

The Workgroup also discussed whether the ability of moving CT Advanced Meters from HH back to NHH should be removed as the market needs to move to HH Settlement eventually. The consensus was that the downgrade process should remain to maintain the opt-out/in rights for domestic and microbusiness customers. The BSC requirement should be drafted in a way to facilitate this.

Remote communications

The Workgroup questioned how Suppliers should tackle CT Advanced Meters that can record HH data but do not have working communications. Another member also pointed out that if the Metering Systems that are migrating do not have communications fitted

[26] https://www.elexon.co.uk/change-proposal/cp1433/
[27] https://www.ofgem.gov.uk/publications/decision-access-half-hourly-electricity-data-settlement-purposes

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then these Meters will need to be exchanged. The Proposer clarified that for a Meter to meet the Advanced Meter criteria as defined in the SLC, they would need to have working communications and be HH capable. Situations where premises have an Advanced Meter with no working communications would not fit the criteria to move to HH Settlement, so they would not be in scope of P432. It was noted the MHHS Programme would need to consider how to handle these instances.

A question was raised about what to do with CT Advanced Meters where the communications stopped working. It was clarified that only CT Advanced Meters where the communication is working will go through the CoMC process, if communications stop after the Meter has been migrated to HH Settlement, then it will be considered in scope of P432 requirements. Hand held readings may then need be taken until such time the communications issue is resolved through the Meter Faults process. A Workgroup member pointed out that hand held reads are typically £15 a reading, in the HH market customers could essentially be looking at up to £180 a year on data collection costs (if readings are taken every month). The Proposer pointed out that this issue is a wider market issue and not specifically a P432 issue.

A Workgroup member raised the issue of phone masts being switched off under 2G and as a result the communication links being dropped off. It was highlighted that this is a wider market risk, rather than a specific P432 risk. Another member pointed out that MOAs can fix communications, plus many 2G networks have been swapped out for 4G.

The Workgroup consensus was that P432 should not require significant, if any Meter Exchanges, as the SLC12.27 requirement to fit Advanced Meters to CT connection was December 2021. It should only be edge cases, where Meters may not have been able to be installed due to the Pandemic that may be lacking, but should still be fitted in time for the P432 migration.

Assessment Consultation Question
Do you envisage P432 requiring Meters to be exchanged? If so please provide rationale, noting the SLC requirements and provide an indication of the number of likely meter exchanges required.
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

Monitoring, reporting and managing the migrations

PAB's role

Elexon presented the Workgroup with three different options for monitoring the compliance of the obligations, and noted that P432 will be a smaller migration activity, with less risk to Settlement, than P272 and so the assurance approach should reflect this and be proportionate. Indicative estimates suggest ~50k CT Advanced Meters with 1-2% of the total SVA import volume may be in scope for P432.

The three options were:

- **Option 1– Only checking compliance in October 2023.** The PAB and Elexon do not manage or monitor the migration period at all, and only perform checks at the end of the migration window (October 2023). If a Supplier has any CT

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Metering Systems which remain NHH Settled at that time, escalation/enforcement options would be applied as deemed necessary.

- **Option 2 – P272 style Supplier Migration Plans.** The PAB and Elexon would request a migration plan from all Suppliers, detailing approaches and timescales for migration of the portfolio of CT Metering Systems. These plans would be monitored monthly, with deviations from the plans triggering escalation/enforcement routes as necessary.

- **Option 3 – Lighter Touch.**
Elexon, supported by the PAB, would engage with Suppliers ahead of the migration window, emphasising the obligation. Approaches to the migration would be discussed with Suppliers, although no formal 'plan' would be required to be submitted. As the migration window progresses, monitoring would be done at industry-level as well as Supplier level, with any Supplier(s) appearing to be 'behind' approached for further information. Any escalation/enforcement would only be sought after the migration deadline (October 2023), as necessary.

The majority of the Workgroup members preferred option three, but one Workgroup member had a preference for option two. They had the view that if the migrations aren't managed properly throughout, at the end of the process P432 may not be a success.

The Workgroup noted that a new CP has been raised; CP1558 'New Registration data items and processes to support the MHHS transition'. This CP will introduce new Registration Service data items and supporting BSC processes into existing Supplier Meter Registration Service (SMRS) systems, making it easier to identify CT Advanced Meters. The target implementation date for CP1558 is 23 February 2023. The Workgroup had a strong preference to use this data for the reporting of P432. However, if the CP1558 is delayed or rejected then there needs to be an alternative option, for example, Supplier reporting (noting that they would have to agree reporting with their Agents to meet the P432 obligations anyway), which could be done under existing arrangements. The PAB also noted that the implementation of CP1558 is important in order to determine the number of Metering Systems in scope for P432, so that the assurance could be applied against this number and the transition can be adequately assessed.

PAB's initial views were that P432 was unlikely to have a material adverse impact on Settlement accuracy and queried whether assurance of the transition better sat with the MHHS Programme. However, the PAB did indicate a preference for option three but highlighted that it may be difficult to monitor because of the tight timescales between CP1558 being implemented and the short migration window.

MHHS Programme's views were that they would expect the CoMC process for this Modification to be run by Elexon as part of the implementation of P432 (with input from the MHHS Programme).

The Workgroup also discussed whether Elexon could do the reporting for P432 instead of the PAB. Once CP1558 is implemented, it will allow Elexon to track the number of CT Advanced Meters that still need to be transitioned. The Workgroup consensus was that some monitoring should be done with option three and the starting point is for Elexon to do that. If there is a significant risk identified during the reporting then the PAB and Elexon can then take remedial action accordingly using existing arrangements. Ultimately, the MHHS Programme will then make sure the CT Advanced meters are moved over to the MHHS TOM which will be picked up as their wider MHHS activities. In conclusion, no new BSC obligations were required to support the assurance of P432. Any assurance required could be done using existing PAF processes and techniques. For example, Elexon could

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place a Supplier into Error and Failure Resolution[28] for failure to comply with the P432 migration, it could do checks via the BSC Audit[29] or request data from Suppliers (and their Agents), as outlined in BSC Section Z 'Performance Assurance' 5.1.4.

Change of Supplier events

When P272 was implemented, Suppliers were obligated to migrate their Advanced Meters within 45 working days of Change of Supplier (CoS). The Workgroup discussed whether this should also be a requirement for P432. They concluded that there should be no requirements linked to Change of Supplier events for this Modification, as there is a hard deadline under P432.

Supplier Charges and Performance Levels

The Workgroup reached the consensus that Supplier Charges and Performance Levels should not be impacted by this Modification. The Workgroup did note that they were concerned the general movement of the Meters will result in Suppliers moving their 'good Meters', with higher metered volumes to HH, therefore the 97% Performance Level requirement for NHH Metering Systems may become harder to reach, consequently impacting the associated Supplier Charges for the 97% target. However, this is not a specific issue for P432 but rather an important consideration for the MHHS Programme.

P432 Costs

The baseline view is that a large impact on costs for BSC Parties are not expected as the processes already exist, and have already been conducted for P272. The bulk of the costs are expected to be from the CoMC activity.

Cost Exercises conducted

A Workgroup member was concerned about the costs increasing for end customers as a result of P432 and conducted two exercises to investigate the possible impacts.

Attachment B provides the full details and analysis, together with the Proposer's response.

Cost exercise one

For this exercise, he used the portfolio of a major client of theirs, comparing the cost differences between sites that have NHH Meters and HH Meters, across 1045 stores.

The sites were made up of:

Sites	Projected costs (all based on 62,000kwh)

[28] https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-techniques/error-and-failure-resolution/

[29] https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-techniques/bsc-audit-performance-assurance-framework/

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40 CT metered supplies currently settled Half Hourly	£9,945.89
52 WC metered supplies currently settled Half Hourly	£9,858.22
953 Non Half Hourly settled supplied in profile classes 03/04	£8,725.73

The average cost across both CT and WC sites settling HH is £9,902.05, meaning that typical SME customers may pay around £1,200 more per year if the supply is settled HH. The Member's view was that Supplier profits were driving these higher costs and they have been overcharging the HH customers.

The Workgroup believed this was important information for Ofgem to consider, but were related to broader market issues, not P432 specific issues.

Cost exercise two

For the second exercise the Workgroup member wanted to demonstrate how difficult it is for a customer to engage with the Suppliers in this sector of the market and also the effort needed to obtain offers directly from Suppliers.

They created 10 email addresses, using 10 different limited companies. Acting as a customer approaching a Supplier, they emailed the first, most suitable email address found on each Supplier's websites. Each 'company' requested a quote from 10 Suppliers. All Suppliers were asked to send a quote within 8 working days, with the start date of a new 12 month fixed price contract to commence from 1st April 2022 and the quote was to include their own MOA/DC/Data Aggregator charges.

Four quotes were returned in total, two quotes were received before the deadline, and two were received after the deadline. The Member had the view that Suppliers don't want to supply these low volume customers with CT Advanced Meters in the HH market because they are too labour intensive.

The exercise showed that there was an average difference per quote of £2,592 between HH and NHH customers with the range of difference being £988 to £6,425. Whilst the quotes have been carried out on a like for like basis, customers in the NHH market are mostly being charged on a single rate tariff, with typical costs being lower on such a tariff. Customers retain the option to choose single rate when contracting in the NHH market, however suppliers quoting HH customers mostly quote for the more expensive day/night tariff.

The Workgroup believed this was important information for Ofgem to consider, but were related to broader market issues, not P432 specific issues.

Customer Journey

The Ofgem representative welcomed Workgroup and industry views on the impacts P432 would have on consumers and the customer journey.

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Following the second exercise conducted by the Workgroup Member the question raised was if P432 is approved will end users find it necessary to increase their engagement with Suppliers, particularly in relation to supply contract arrangements, or will impacted customers share the same experience that they presently do with Supplies being settled on a NHH basis?

Elexon's view was that whilst being NHH Settled the Suppliers know how your consumption will be allocated throughout the day, this is regardless of when you actually use the electricity. If customers are being HH settled then there would be a driver for more engagement between Suppliers and customers regarding Time of Use (ToU) contracts, which would be of benefit to the customer's energy efficiency.

A Workgroup Member was sceptical as to whether this would materialise, as he did not believe it had for the P272 segment.

Targeted Charging Review (TCR)

Elexon highlighted that these costs are mostly commercial rather than a cost to serve the customer. The quotes gathered from the cost exercises are based on the current Network charging regime which are in the process of changing under the TCR.[30] The Proposer held the same view and challenged the relevance of comparing total contract values for supply contracts now, as it does not consider the incoming changes to costs via the network charging reforms which will take effect in April 2023 (and why the Proposer is recommending the migration not to start until April 2023).

The TCR modifications (due to take effect in in April 2022 & 2023) as directed by Ofgem, have been progressed to reduce harmful distortions and were based on informed consumer research findings that determined non-domestic consumers (particularly those who can load manage to avoid charges) are not paying their fair share of the residual network total cost. The TCR is expected to lead to an increase in wholesale market prices during peak periods over the years by fixing the residual part of the network bill that has incrementally increased the domestic share of these costs. This will be remedied by making those costs fixed in both the domestic & non-domestic market and so require DNO's (DUoS) & NGESO (TNUoS) to recover costs based on 4 non-domestic connection types (LV WC, LV CT, HV CT & EHV CT) and consumption (aggregated tariffs) or capacity (site specific charges).

The move to connection type derived network cost recovery partly enables the industry's arrangements link between network costs (Both DUoS & TNUoS) and Settlement method (NHH or HH) derived to be moved away from the current MC assigned to an MSID. As P432 has been raised as an enabler to facilitate the transition into MHHS TOM which does not facilitate NHH methods of Settlement in the advanced segment, NHH CT must move to HH Settlement.

DUoS impact

The overall DUoS cost could be lower for HH CT customer dependent on how much electricity a site consumes under P432 as HH Settlement means energy consumed can be accurately apportioned to the DUoS Red, Amber, Green (RAG) time periods, which in itself

[30] https://www.ofgem.gov.uk/publications/targeted-charging-review-decision-and-impact-assessment

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provides an incentive for suppliers to offer time of use tariffs as is incentivised in Ofgem's Full Business Case for MHHS.

TNUoS impact

The existing NHH TNUoS charge is derived from kWh consumption between 16:00-19:00 and charged daily, the existing HH CT+ yearly charge is derived from 3 highest HH peaks in national demand over the winter season on a £ per kWh basis (AKA TRIAD charges). In NHH Meters the charge is currently a volume based charge. Subject to the final decision on CMP343[31], TNUoS residual costs will move from being volumetric derived costs to fixed costs under the same charging band structure so it mirrors that of DUoS effective from April 2023. If P432 migration were to commence any earlier than April 2023, consumers would be caught up in double charges in the annual TNUoS bill overall, due to the differences in NHH & HH TNUoS charges in play today. It's for this reason that under P432 CoMC activity is suggested not to start until April 2023 in order to mitigate unjustifiable costs on consumer bills given the TCR change.

Metering costs

The Proposer noted that P432 will have a potential cost impact on consumer's bills. However, these costs are justifiable because:

- CT meters (regardless of NHH or HH) carry additional cost burdens due to requirements to record & maintain metering accuracy testing over both the transformers and physical meters, as defined in the CoP 4[32].
- The SLC changes introduced by Ofgem in 2009 required the installation of HH capable metering and remote communications equipment, this equipment is a higher cost than a non-smart NHH meter.
- Meter technicians are required to obtain additional qualification to be able to work on CT metered connections, so carries with it different safety training and maintenance requirements to WC connections, which ultimately comes at additional cost to metering businesses.
- Simply being HH settled incurs a greater cost to serve, because Settlement performance targets in the current HH market requires suppliers to meet 99% of actual reads by R1 (approx.35 days) as opposed to the NHH measure of 97% by RF (approx. 14 months), as well as consumer billing accuracy commitments. This means the expectation of Suppliers to correct faults with Meters (e.g. comms failures) and obtain the HH consumption data has a requirement to be in Settlement and consumer bills (assuming Supplier bills to HH data) a lot quicker than they otherwise would for NHH Settlement, which comes at a cost.

NHH CT Meters are perceived to be a cheaper cost primarily because a gaining Supplier does not know a NHH meter is CT when agreeing a new supply contract (this comes after as part of the registration process) or it may assume that all NHH is WC metered within

[31] https://www.ofgem.gov.uk/publications/cmp343-consultation-minded-decision-and-impact-assessment#:~:text=We%20are%20minded-to%20approve,a%20year%2C%20to%20April%202023
[32] https://elexon-bsc-production-cdn.s3.eu-west-2.amazonaws.com/wp-content/uploads/2012/01/28153820/BSC-CoP4-Issue6.pdf

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pricing structures because the vast majority of today's NHH market are WC metered. This is information which is not available to industry in registration data currently.

However, supporting REC CP R0032 and BSC CP1558 propose to introduce a connection type indicator aligned to the TCR charging bands, which (if approved) also addresses other market issues (e.g. where an appointed Suppliers Agents staff are not qualified to work on CT Metering Systems) and that may enable Suppliers to price in costs associated for CT Metering services, so that the cost to serve the physical meter is better reflected in consumer bills.

It is not in the scope of P432 to enforce any commercial decisions as to what and how Suppliers or Supplier Agents provide offers to the market, or to impose cost restrictions on Supplier Agent services as these are not factors under BSC governance. However, the Proposer did agree this is a consumer cost that is very likely to impact consumers impacted by P432 as the metering service provisions can also better reflect the connection equipment in use. This should be considered on balance with all other CT Metered consumers as the ~50K consumers in scope of P432 are not paying a comparative costs for its metering service versus the 250K who are already HH settled today. All CT Metered customers currently settling HH are subject to these costs and consequently Suppliers generally make allowances for customers to choose their own Agents, thus enabling competition for Agent services to drive those costs.

Assessment Consultation Question
Will customers (of electricity supply) be exposed to higher charges if P432 is approved?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

Significance of P432 implementation

A Workgroup Member pointed out that assuming the figure is correct, ~50,000 CT Advanced Meters out of 2.4 million NHH commercial supply points that are due to be migrated under MHHS is only 2% of the total Meters that will be migrated. They questioned whether this is a significant enough figure for P432 to be implemented.

The Proposer did not agree with this comparison. He suggested a better comparison would be to compare the number with the existing HH market which stands at approximately 250,000 Meters, and this would increase by 20% as a result of P432.

Retrospective Supplier Agent appointments for CoMC activities

Lessons learned from P272 suggested that the requirement to process Agent appointments prior to carrying out any Meter reconfiguration or Meter exchange needed for a CoMC led to challenges for Parties. Specifically, if the reconfiguration/replacement did not happen on the intended date, then HH appointments had to be "backed out" before the CoMC could be attempted again.

Working Practice 66 (which was governed under the Master Registration Agreement (MRA)) mitigated against this risk by allowing the appointments to take place

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retrospectively following a successful reconfiguration/replacement. However, the Working Practice 66 no longer exists, following the transition of the MRA to the REC.

Assessment Consultation Question
Do you believe that a related change should be raised under the REC to allow retrospective CoMCs?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

100kW Metering Systems

It is understood that the 100kW requirement is an arbitrary number included in the Electricity Act in 1989 to support the gradual opening of the electricity market to competition. As the whole market is now open to competition, the 100kW threshold is becoming irrelevant. The 100kW requirement is not being amended as part of P432 as the industry is moving away from the arbitrary 100kW requirements already and moving towards connection type as a differentiator instead.

Assessment Consultation Question
Do you have any further comments on P432?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

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7 Workgroup's Initial Conclusions

The **majority** of the Workgroup members believe that P432 would better facilitate Applicable BSC Objectives (c) and (d) and so should be **approved**. The minority believed P432 would be detrimental against Objective (c) and positive against Objective (d). They believed the detrimental impacts outweighed any positive impacts under objective (d) and therefore believed P432 should be rejected. The Workgroup unanimously believes that P432 will be neutral against all other Objectives, (a), (b), (e), (f) and (g).

Does P432 better facilitate the Applicable BSC Objectives?		
Obj	Proposer's Views	Other Workgroup Members' Views[33]
(a)	• Neutral	• Neutral
(b)	• Neutral	• Neutral
(c)	• **Positive**	• **Majority positive** (one detrimental)
(d)	• **Positive**	• **Positive**
(e)	• Neutral	• Neutral
(f)	• Neutral	• Neutral
(g)	• Neutral	• Neutral

Objective (c)

Larger consuming electricity sites have the largest impact on Settlement accuracy. CT Metering Systems have the capability to consume more energy than WC Metering Systems, using the actual data available in the already installed Advanced Meter is a minimal additional cost. It enables a smooth transition to the MHHS TOM for Advanced Meters (subject to SCR progression). This Modification will promote effective competition in the generation and supply of electricity because the data will be more accurate and granular which will enable innovation and competition, in line with arguments in P272 (and the MHHS business case).

One Workgroup member did not believe P432 would better facilitate Objective (c), rather he believed it would be detrimental. They had the view that if P432 progresses it will stifle competition rather than promote it because he believes Suppliers are not prepared to offer perceived low consuming customer's contracts for supply (see attachment B for further details). He believes there is a lack of competition in this segment of the market. He provided some case studies, prepared especially for P432, from which he concluded, aside from having to pay more, it's quite feasible that a customer could have options to choose around 20 Suppliers in the NHH market, however only 3 or 4 are prepared to offer contracts once moved to HH.

Objective (d)

This Modification will simplify and clarify the BSC arrangements and consequently better facilitates efficiency in the implementation and operation of the BSC. The Modification will

[33] Shows the different views expressed by the other Workgroup members – not all members necessarily agree with all of these views.

What are the Applicable BSC Objectives?

(a) The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence

(b) The efficient, economic and co-ordinated operation of the National Electricity Transmission System

(c) Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity

(d) Promoting efficiency in the implementation of the balancing and settlement arrangements

(e) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency [for the Co-operation of Energy Regulators]

(f) Implementing and administrating the arrangements for the operation of contracts for difference and arrangements that facilitate the operation of a capacity market pursuant to EMR legislation

(g) Compliance with the Transmission Losses Principle

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align the definitions between the SLC and the BSC. It will also remove references to the 'P272 go live date' as well as P272 monitoring, reporting and Supplier Migration Plan requirements as these references are obsolete, and furthermore it will provide greater Settlement accuracy.

Assessment Consultation Question
Do you agree with the Workgroup's initial majority view that P432 does better facilitate the Applicable BSC Objectives than the current baseline?
Digital Consultation - Elexon are trialling the use of an online consultation for P432, exploring the effectiveness of use of modern digital forms for BSC Modifications. This digital form on the P432 Assessment Procedure Consultation webpage contains the specific questions on which the Workgroup seeks your views.

Self-governance

The Workgroup recommend that this Modification should not be considered suitable for Self-Governance and should be sent to the Authority for approval, as it will likely have a material impact on (Self-governance criteria (b)(i) and (b)(ii)):

- Existing or future electricity consumers because it will require CT Advanced Meters to be settled HH earlier than would otherwise be the case, which may result in different Supplier billing and charging to the customer;
- Competition in the generation, distribution, or supply of electricity or any commercial activities connected with the generation, distribution, or supply of electricity because the data will be more accurate and granular which will enable innovation and competition.

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Appendix 1: Workgroup Details

Workgroup's Terms of Reference

Specific areas set by the BSC Panel in the P432 Terms of Reference	Conclusion
Should the references to the P272 implementation date in Section S 2.6.1A and 2.6.1B be removed, as the implementation date has now passed?	Workgroup consensus was that references to P272 that are no longer relevant should be removed.
Should the BSC definition of Advanced Meters be extended from SLC 12.18 to other SLCs?	The Workgroup agreed that the definition should be extended. The consensus was that the new definition for Advanced Meters in 'BSC Section X, Annex X-1' should be extended so that it captures all HH Metering Systems with remote communications that are not Smart Meters.
What interactions does the proposal have with existing P272 obligations and CP1549?	Workgroup consensus was that there are no interactions. PC5-8 Meters that are not Advanced won't settle HH, if they are Advanced then they should be settled HH by now.
Consider removing the ability to CoMC back to NHH?	The Workgroup decided to maintain the ability to move back to NHH to maintain domestic and micro-business opt out rights.
Consideration of exemptions	The Workgroup agreed that domestic and microbusiness premises can opt out of the P432 requirements. The Workgroup also agreed that CT Advanced Meters with no working communications will be exempt from the P432 solution (unless the communications stopped working after migration to HH Settlement).
Assessment of the costs and benefits, where possible and needed.	The baseline view is that we don't perceive a large impact on costs as the processes are already there, and have already been conducted for P272. The main benefit is that P432 is de-risking the transition to MHH
Consider impacts on Supplier Charges.	Workgroup reached the consensus that P432 is not likely to materially impact Supplier Charges (in relation to SP04 and SP08), noting that some Suppliers will be more impacted by P432 than others, depending on their Supplier portfolio.

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Specific areas set by the BSC Panel in the P432 Terms of Reference	Conclusion
Consideration of the role of Elexon and the PAB in monitoring, reporting and managing the migration and new obligations.	The Workgroup consensus was that no new requirements were needed. Some monitoring should be done and the starting point is for Elexon to do that using the data made available by CP1558. If there is a significant risk identified during the monitoring then the PAB and Elexon can then take remedial action accordingly, using existing mechanisms. Ultimately, the MHHS Programme will then make sure the CT meters are moved over to the MHHS TOM which will be picked under their wider MHHS activities.
What data cleanse obligations are required?	No data cleanse obligations are obligated under P432, but Suppliers will have to undertake data cleanse activities in order to complete the CoMC activities.
What barriers currently exist that prevent Suppliers from moving Whole Current Meters to settle HH?	As WC Meters are out of scope of P432 no change is needed to address these. A Workgroup member stated there aren't any barriers, as WC could be moved to HH Settlement now using the existing CoMC process. However, the same issues with moving CT Meters to HH will persist for WC, such as higher costs for consumers.
How will P432 impact the BSC Settlement Risks?	Workgroup agreed with the Identified BSC Settlement Risks.
What changes are needed to BSC documents, systems and processes to support P432 and what are the related costs and lead times? When will any required changes to subsidiary documents be developed and consulted on?	The Proposed Modification makes amendments to BSC Sections L, S, X-1, Z and BSCP516. P432 is a document only change that will not require any changes to BSC Central Systems.
Are there any Alternative Modifications?	None formally raised.

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Specific areas set by the BSC Panel in the P432 Terms of Reference	Conclusion
Should P432 be progressed as a Self-Governance Modification?	The Workgroup does not believe that this Modification meets the Self-Governance criteria on the basis that P432 will likely have a material effect on the existing or future electricity consumers because it will require CT Advanced Meters are settled HH earlier than would otherwise be the case, which may result in different Supplier billing and charging arrangements for the end customer. It will also impact competition in the generation, distribution, or supply of electricity or any commercial activities connected with the generation, distribution, or supply of electricity because the data will be more accurate and granular which will enable innovation and competition.
Does P416 better facilitate the Applicable BSC Objectives than the current baseline?	The Workgroup agreed by majority that the Proposed Modification does better facilitate Applicable BSC Objectives c) 'Promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity' and d) 'Promoting efficiency in the implementation and administration of the balancing and settlement arrangements'
Does P432 impact the EBGL provisions held within the BSC, and if so, what is the impact on the EBGL Objectives?	The Workgroup believe that the redlining **does not impact** the EBGL Article 18 Terms and Conditions

Assessment Procedure timetable

P432 Assessment Timetable	
Event	Date
Panel submits P432 to Assessment Procedure	9 December 2021
Workgroup Meeting 1	24 January 2022
Workgroup Meeting 2	23 February 2022
Assessment Procedure Consultation	30 March 2022 – 22 April 2022
Workgroup Meeting 3	W/C 18 April 2022
Panel considers Workgroup's Assessment Report	12 May 2022

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P432 Assessment Timetable	
Event	Date
Report Phase Consultation (10WDs)	16 May 2022 – 27 May 2022
Present Draft Modification Report to Panel	9 June 2022
Issue Final Modification Report to Authority	15 June 2022

Workgroup membership and attendance

P432 Workgroup Attendance			
Name	Organisation	24 Jan 2022	23 Feb 2022
Members			
Lawrence Jones	Elexon *(Chair)*	☎	☎
Aylin Ocak	Elexon *(Lead Analyst)*	☎	☎
Lee Stone	Npower Commercial and Gas Limited *(Proposer)*	☎	☎
John Greene	SSE	☎	☎
Phill Russell	Consultant	☎	✖
Tom Chevalier	Power Data Associates	☎	☎
Nik Wills	Stark	☎	☎
Pete Butcher	SSE	☎	☎
Simon Askew	Business Energy Direct	☎	☎
Ben Trasler	Drax	☎	✖
Andy Kelsall	Scottish Power	☎	✖
Tony Mason	Siemens	☎	✖
George Barnes	Utilita	✖	☎
Ian Hall	ImServ	✖	☎
Claire Roberts	Scottish Power	✖	☎
Attendees			
Mark DeSouzaWilson	Elexon *(Design Authority)*	☎	☎
Eden Ridgeway	Elexon *(Lead Lawyer)*	☎	☎
Vlada Petuchaite	Ofgem	✖	☎
Helen Clarke	Siemens	✖	☎
William McKay	Scottish and Southern Electricity Networks	☎	☎
Louis Corsi	SSE	☎	☎
Chris Day	Elexon *(SME)*	☎	☎

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P432 Workgroup Attendance			
Name	Organisation	24 Jan 2022	23 Feb 2022
Oliver Meggitt	Elexon *(SME)*	☎	✖
Matthew McKeon	MHHS Programme	✖	☎
Kevin Spencer	MHHS Programme	✖	☎

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