



**MHHS
PROGRAMME**
Industry-led, Elexon facilitated

Market-wide Half-Hourly Settlement Programme Open Day

21 April 2022
Elexon, London

1

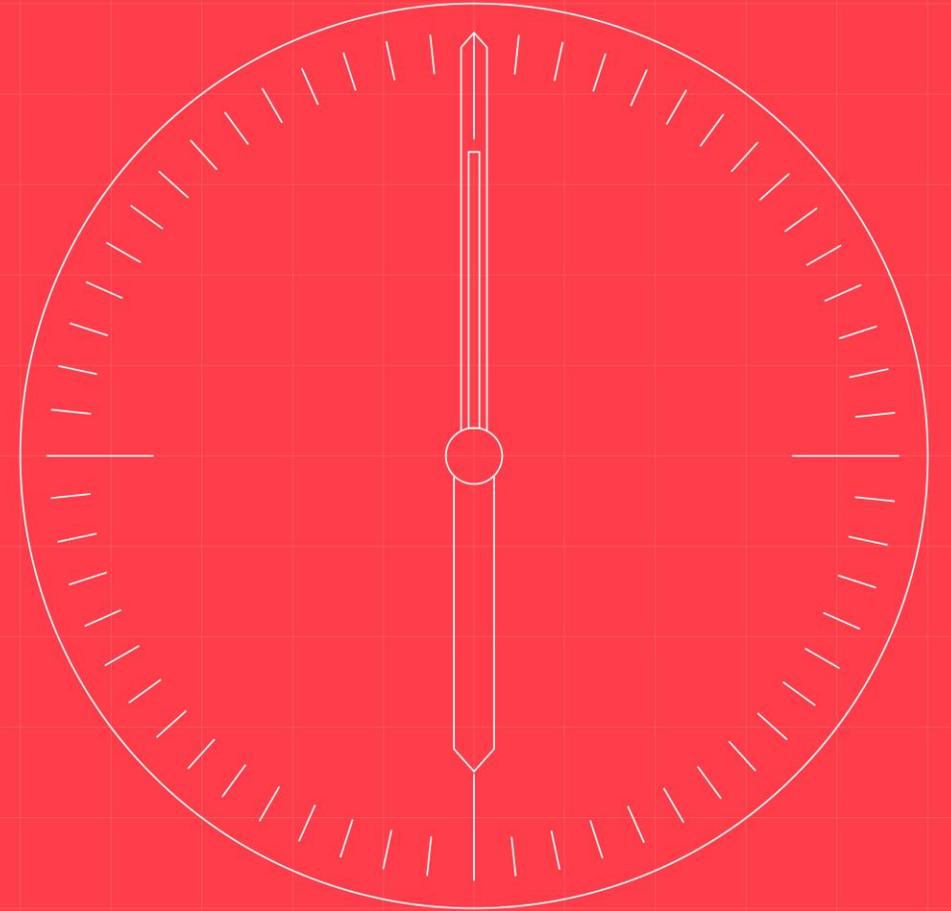
Introduction & housekeeping

Chris Welby, SRO

Rachel Eyres, Client Partner

MHHS Programme

10:30-10:45



In case of an emergency

An alarm will sound to alert you.
The alarm is tested for fifteen seconds every
Wednesday at 9.20am.

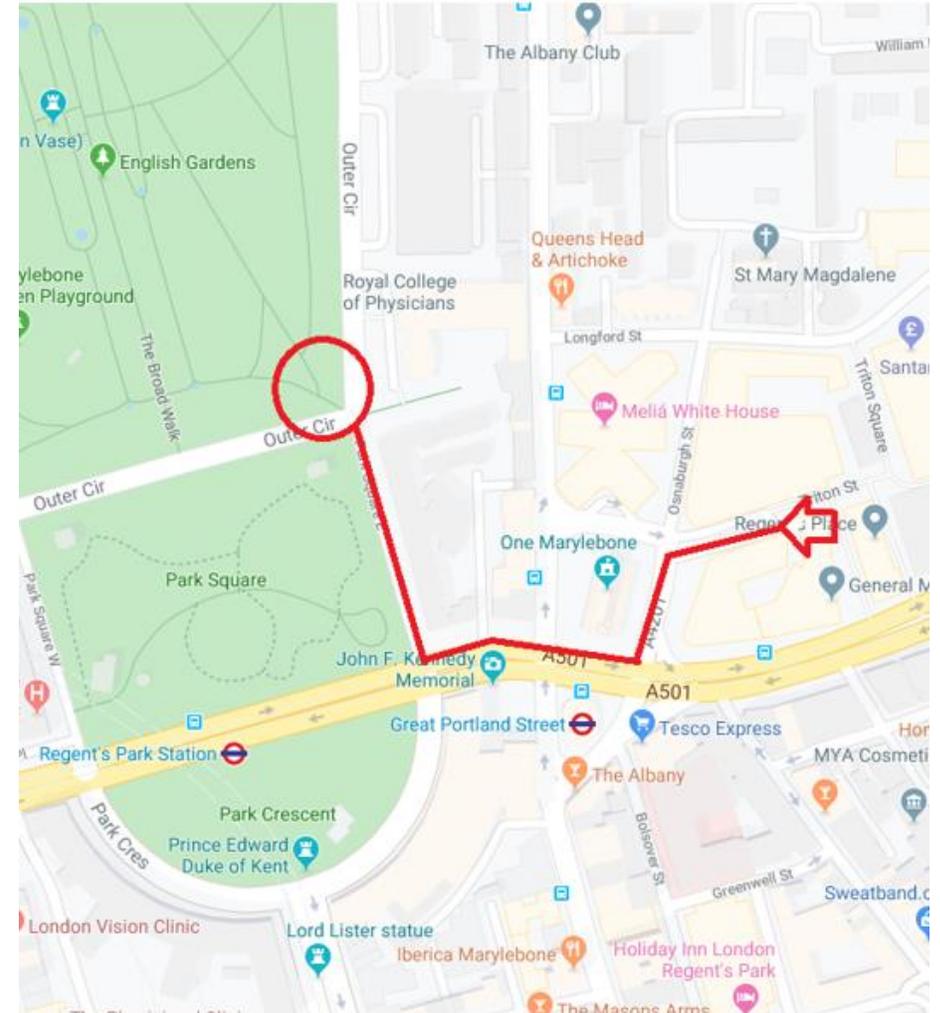
Evacuating 350 Euston Road

- If you discover a fire, operate one of the fire alarms next to the four emergency exits.
- Please do not tackle a fire yourself.
- If you heard the alarm, please leave the building immediately.
- Evacuate by the nearest signposted fire exit and walk to assembly point.
- Please remain with a member of Elexon or MHHSP team and await further instruction from a fire warden.
- For visitors unable to use stairs, a fire warden will guide you to a refuge point and let the fire brigade know where you are.

When evacuating please remember

- Do not use the lifts.
- Do not re-enter the building until the all clear has been given by the fire warden or ground floor security.

Our team on reception is here to help you, if you have any questions, please do ask them.



Agenda

	Agenda item	Time	Presenter	Stalls <i>Orange Room</i>
	Registration and coffee	10:00		
1	Introduction & housekeeping	10:30	Chris Welby & Rachel Eyres, MHHS	
2	Welcome	10:45	Angela Love, Elexon	
3	What MHHS delivers and how it facilitates new opportunities	11:00	Chris Welby, MHHS	
4	Introduction to Settlement Reform	11:30	Rachel Clark, Ofgem	
5	What MHHS means to the consumer	12:00	Andy Manning, Citizens Advice	
	Lunch & Stalls	12:30		Stalls
6	Programme Delivery: The Way Forward	13:30	Chris Harden & Jason Brogden, MHHS	
7	Introduction to the IPA	14:00	Richard Shilton & Dave Gandee, IPA	
	Break & Stalls (coffee)	14:30		Stalls
8	Stalls	15:00	Delivery, Design, DIP, dPMO, IPA, PMO, PPC & Testing	Stalls
	Close & optional drinks	17:00		Stalls

All Participants are invited to drinks at The Refinery, Regent's Place, from 17:00

Stalls – Open from 12:30, Orange Room



Delivery Approach

The Delivery Approach aims to address the objectives of baselining the MHHS design, and at the same time managing the impact of the design, including the re-baselining of the plan. This is an illustrative approach that is subject to potential change to the M5 date.



MHHS Design

The MHHS Design workstream is working with industry participants to create an **agreed and assured design baseline** for the process and system changes needed to make the MHHS Target Operating Model (TOM) a reality.



Data Integration Platform

The Data Integration Platform (DIP) is an **Event Driven Architecture data exchange solution** being procured and implemented by the MHHS Programme.



Independent Programme Assurance provider

The Independent Programme Assurance (IPA) provider (PwC) **monitors and provides assurance** that Elexon is complying with its obligations and is responsible for **identifying and reporting on issues** relating to business separation and Elexon's conflict of interest.



Programme Management Office

The Programme Management Office (PMO) acts as the **information hub for the Programme** and provides a framework for **managing the Programme's day-to-day activities**.



Programme Party Coordinator

The Programme Party Coordinator (PPC) is responsible for full and effective **co-ordination of MHHS Participants** in relation to MHHS Implementation.



MHHS Testing

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The Digital Programme Management Office (dPMO) is a key internal reporting tool, used to capture and provide insights on core programme information including RAID items, status reports, planning and benefits.



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Please ask questions throughout the day. You can join at:

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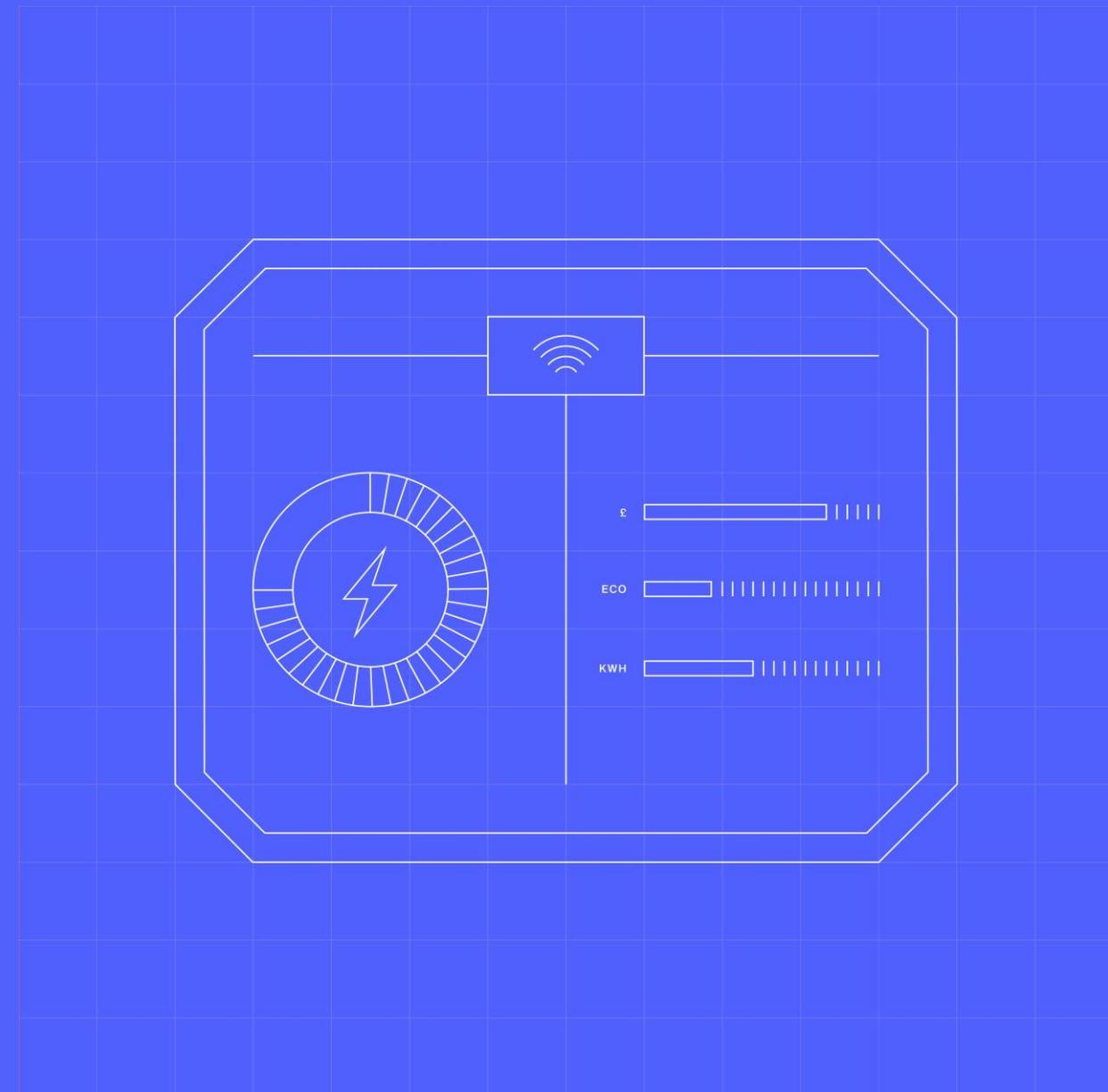
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Welcome

Angela Love

Director of Future Markets and Engagement,
Elexon

10:45 – 11:00



Ofgem's approval of MHHS implementation



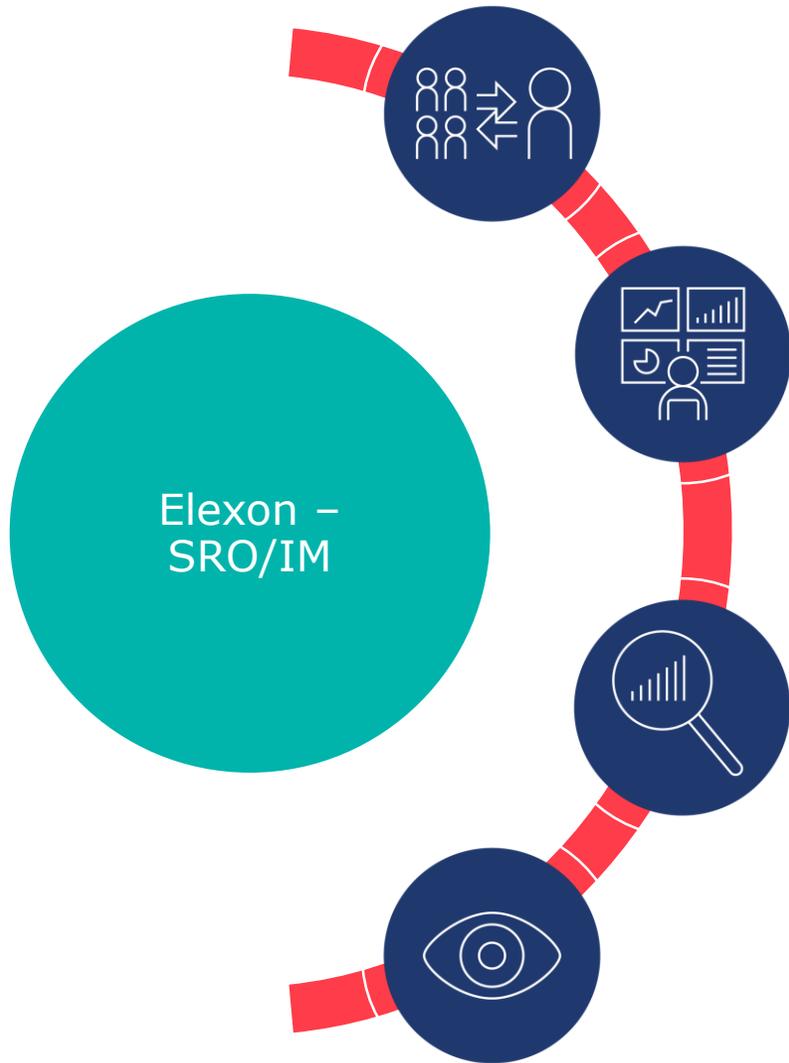
Ofgem has determined that:

- Industry will be responsible for implementing MHHS
- Elexon (code manager for the BSC) will be responsible for the overall programme management of MHHS implementation & we will be Senior Responsible Owner SRO
- BSC Suppliers will fund the MHHS programme via an increase in Elexon's BSC costs, as set out in approved Mod P413 (alternative)



As Implementation Manager Elexon will be responsible for Programme Management Office (PMO), Programme Party Co-ordinator (PPC) and System Integrator (SI) and to that end we have procured a Lead Delivery Partner (LDP)

The MHHS Programme is also responsible for procuring and implementing the DIP



- Operate as the SRO and manage the Lead Delivery Partner
- Ensure the Programme has the appropriate service providers, facilities, resources and infrastructure
- Manage the conflict of interest risk of Elexon acting as the IM and Participant
- Manage the performance of service providers and operate Programme governance
- Managing certain IPA work packages
- Manage the budget and ensure appropriate accounting and financial controls

How will we know we have been successful

- ✓ Delivered the Programme to quality, time and cost parameters
- ✓ Migrated all Suppliers, DSOs and Supplier Agents onto the new MHHS and DES by October 2025
- ✓ Reduced costs of Settlement service delivery
- ✓ Improved service to Programme Parties
- ✓ A more cost effective and efficient service
- ✓ Stakeholder engagement and satisfaction
- ✓ Established a Blueprint for large change programmes in the energy industry

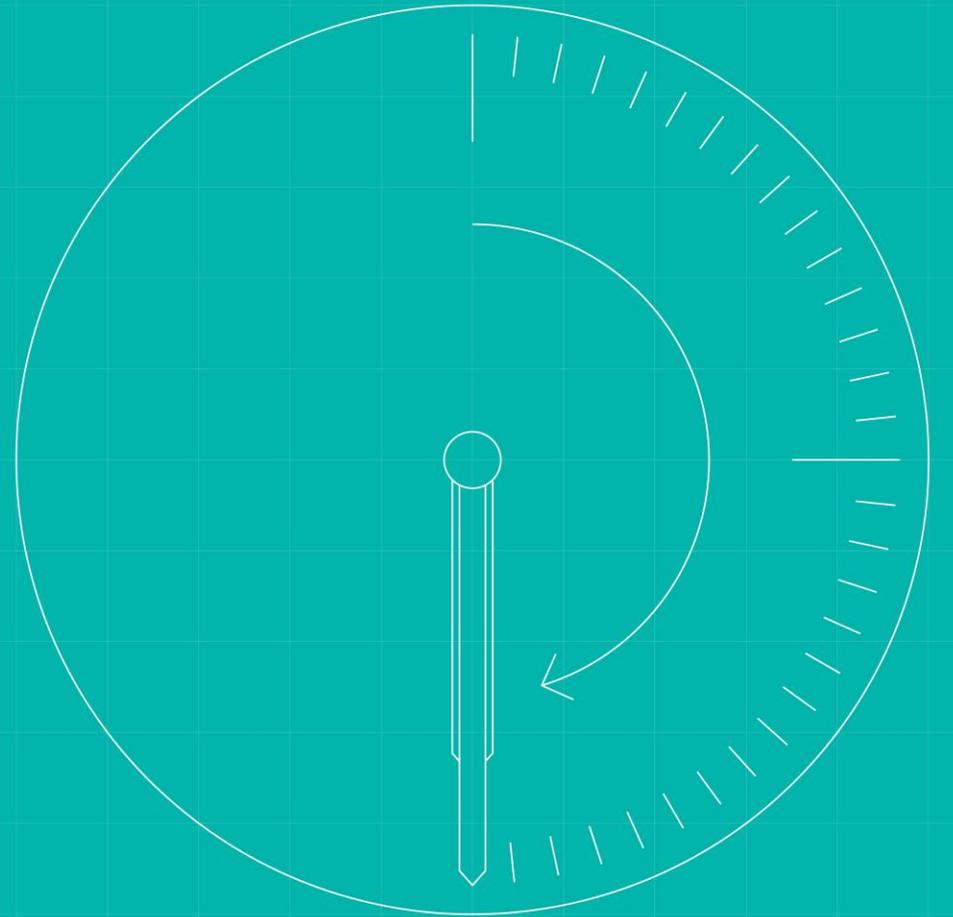


What MHHS delivers & how it facilitates new opportunities

Chris Welby

SRO, MHHS Programme

11:00-11:30



The electricity market is changing



All electricity needs to be from zero carbon sources by 2035 to meet 2050 target.



Higher levels of intermittent generation requiring demand side flexibility.



Higher levels of electricity demand as more people switch to electricity for transport and heating.



In the current energy crisis customers can either use less or spend more. If MHHS was available now a third option would be available, using electricity at different times.



MHHS is an essential component to engaging customers with when they use their electricity.

At a basic level, what are we changing?



MHHS will allow the Industry to collect on a daily basis (with the customer's consent) a customer usage on a HH by HH basis.



This means suppliers and network operators will see actual usage of customers each HH instead of the current process of profiling customers usage between meter readings.



Suppliers will need to buy power in anticipation of what their customers will use, not what “average usage” is, or face imbalance charges.



Network companies will see actual usage at a granular level.

What opportunities does this create for suppliers?



Better understanding of customer usage and allow the development of different tariffs to suit different customers.



Creates the ability to encourage dynamic load shifting for the most engaged customers, including intelligent software to remove the need for customers to physically interact.



By using bespoke tariffs increase retention and move the market away from “It’s all about price” mentality.



Offer those in fuel poverty a way to reduce bills by behavioural change.

What opportunities does this create for networks?



Better understanding of network usage at a metering point level.



Identifying properties with export or high peak usage.



Better network investment decisions and early warning of network stress, and the causes.

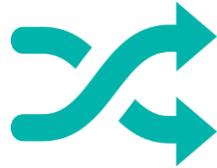


Option for localised network tariffs to encourage behavioural change.

What opportunities does this create for customers?



Allowing customers to get better value on their electricity spend by choosing when to use electricity.



Potential for AI to optimise customer usage for non time sensitive demand.



Reduced cost of meeting peak demand both in terms of generation and networks, so lower bills for everyone, not just the active engagers.



Better value for domestic export (generation or battery).

What opportunities does this create for the environment?



Greater levels of weather dependent generation on the system.



Easier to decarbonise the electricity system.



In turn, decarbonise heat and transport by switching to decarbonised electrification.



Thus making it easier for the UK to meet its net zero targets.



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Introduction to Settlement Reform

Rachel Clark (Deputy Director, Switching /MHHS
/Smart Metering Programmes, Ofgem)



Rachel Clark
21/04/22

Ofgem's strategic framework has two enduring priorities and five strategic change programmes (SCP) to help deliver the transition to net zero in the interests of consumers.

Enduring priorities

1. Our core regulatory functions are to **regulate the sector and protect the interests of consumers.**
2. The delivery of current and new government schemes to **support vulnerable consumers and advance decarbonisation.**

Strategic change programmes

1. To enable investment in low carbon infrastructure at a fair price.
 2. To deliver full chain flexibility in how we generate, use and store energy.
 3. To deliver a future retail market that works for all consumers and the planet.
 4. To unlock the benefits of data and digitalisation.
 5. To ensure energy system governance, including Ofgem, are fit for the future.
- MHHS sits within the full chain flexibility SCP and will contribute to effective outcomes in all of them.**



Objectives and benefits

To promote an electricity system that cost-effectively delivers Government's and Ofgem's objectives, minimising the overall cost to current and future consumers of moving to net zero



- Placing the right incentives on retailers to offer new tariffs and products such as time of use tariffs, automation, vehicle to grid solutions and battery storage
- More efficient use of generation and network assets will reduce the need for future investment
- We estimate net GB consumer benefits ranging from £1.5bn to £4.5bn by 2045

Main developments over the last year

- Ofgem published its decision to pursue **industry-led implementation** of MHHS in April 2021. MHHS programme costs will be recharged to suppliers in line with BSC Modification P413.
- Ofgem approved BSC Modification P423 (and others) setting out the obligations on MHHS Participants, including requirements on Elexon to
 - **separate MHHS programme management from its other activities**
 - **procure a Lead Delivery Partner for programme management**
- Ofgem designated the MHHS Governance Framework, approved Elexon's separation arrangements and appointed PwC to provide independent programme assurance services.
- Ofgem is Programme Sponsor (Rachel Clark), the MHHS SRO is Elexon (Chris Welby) and the LDP is Expleo Moorhouse (Keith Clark)
 - the Sponsor role is a new one for Ofgem
 - Ogem is keen to ensure that **Programme decisions support MHHS in the interests of consumers**, while not interfering at an operational level.



[MHHS Decision, Full Business Case and Final Impact Assessment](#), April 2021 (with implementation period to October 2025)

[Decision on MHHS implementation arrangements](#), August 2021

[BSC modification decision P423](#) and other code modifications, September/October 2021

[MHHS Governance Framework](#), November 2021

[Elexon MHHS Business Separation Plan](#), November 2021

[Decision on the reference architecture of the MHHS Target Operating Model](#), December 2021

[Consultation on the governance, funding and operation of an Event Driven Architecture for MHHS](#), January 2022 (see next slide)

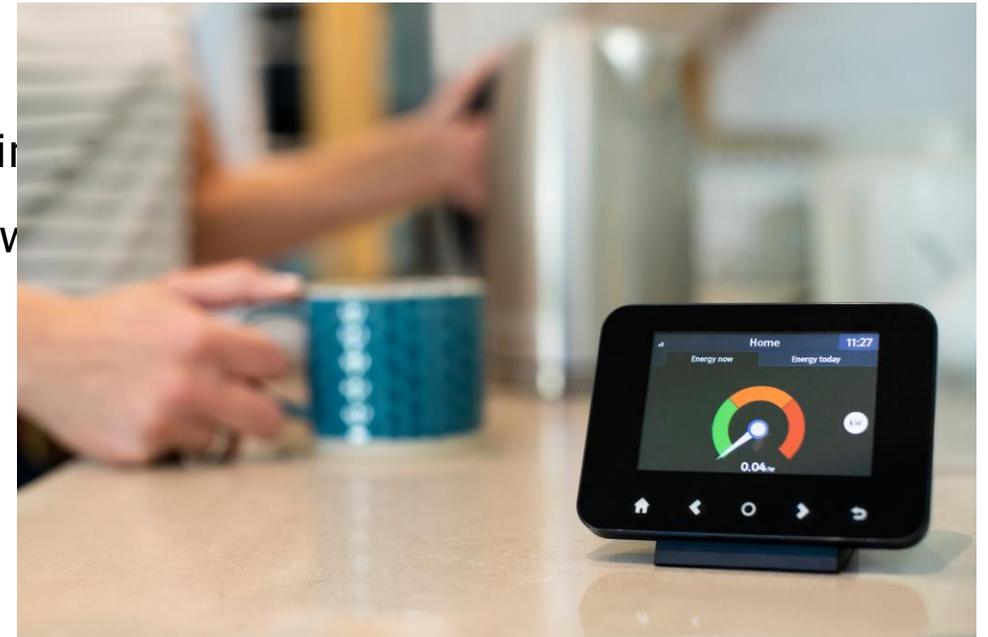
[Contract Award for the MHHS Independent Assurance Provider](#), February 2022

MHHS Decision

- Ofgem decision and FBC published a year ago
- Positive progress despite difficult market context
- Governance groups up and running, design work progressing
- BSC Modification P439 raised to enable EDA development work

Upcoming Decisions

- Ofgem is making some significant decisions this week
 - EDA Governance, Funding and Operation
 - Change Requests on design completion milestone date



Industry Engagement

- Important to make a success of this industry-led model
- All Participants must recognise they have essential roles and must make sure they can and do meet programme deadlines
- Participants must engage with a view to achieving the best outcome for consumers and the market overall
- Different parties will have different capabilities to engage. We hope this delivery model can appropriately flex to accommodate that
- Vital now for all parties to focus on putting robust new systems and processes in place as quickly as practicable

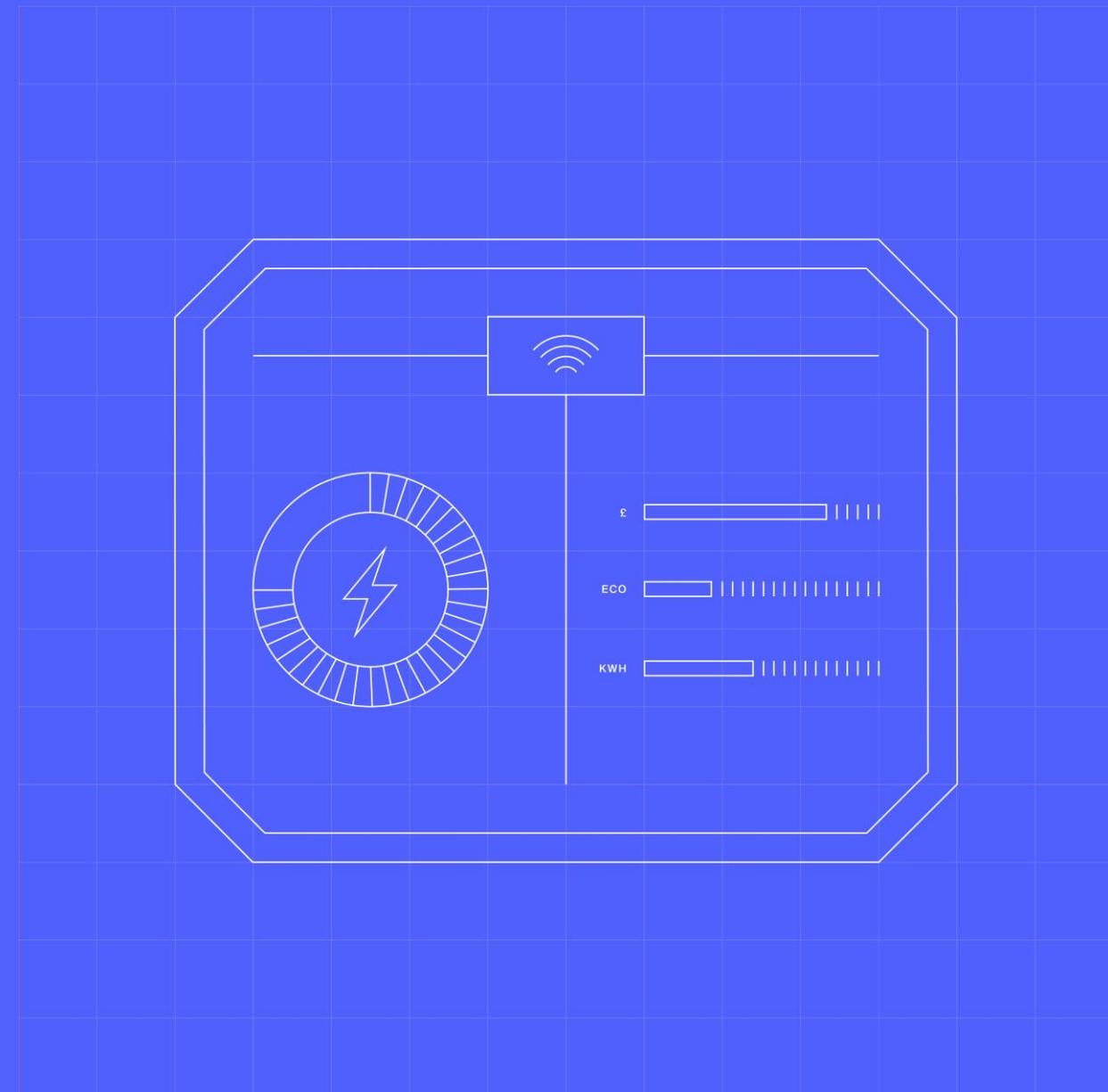


What MHHS means to the consumer

Andy Manning

Principal Economic Regulation Specialist, Citizens Advice

12:00-12:30



What MHHS means to the consumer



Andy Manning

Principal Economic Regulation
Specialist,
Citizens Advice



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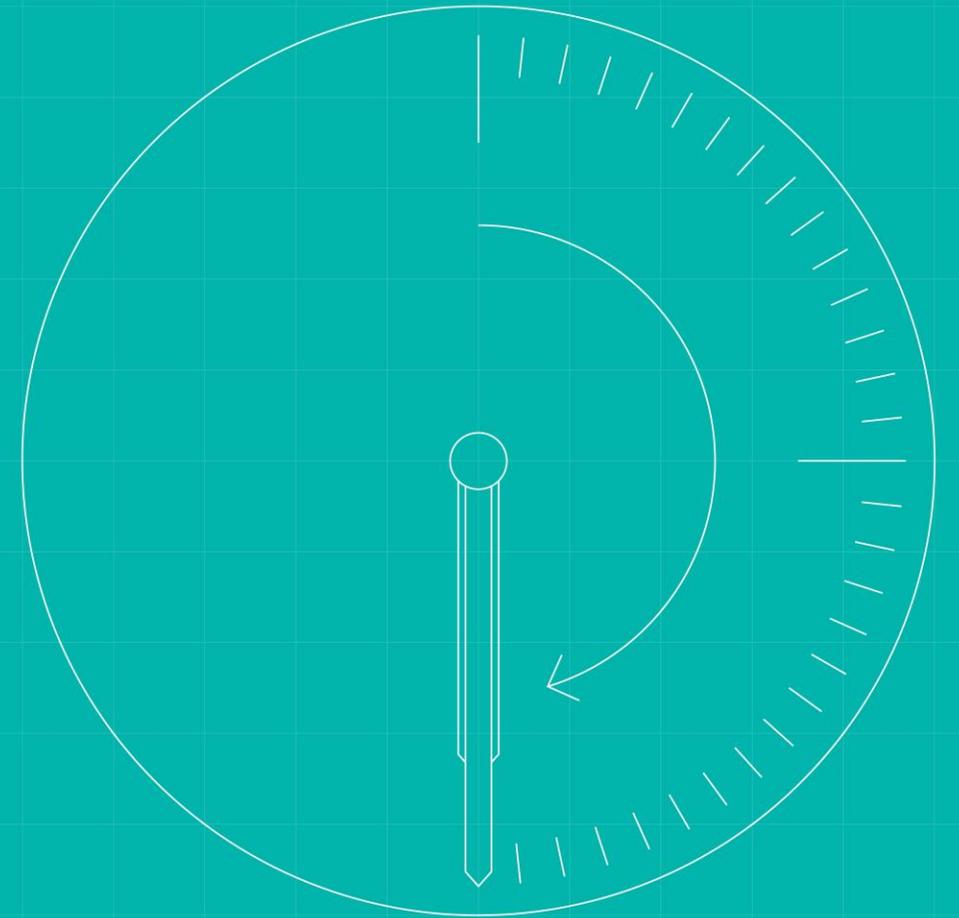


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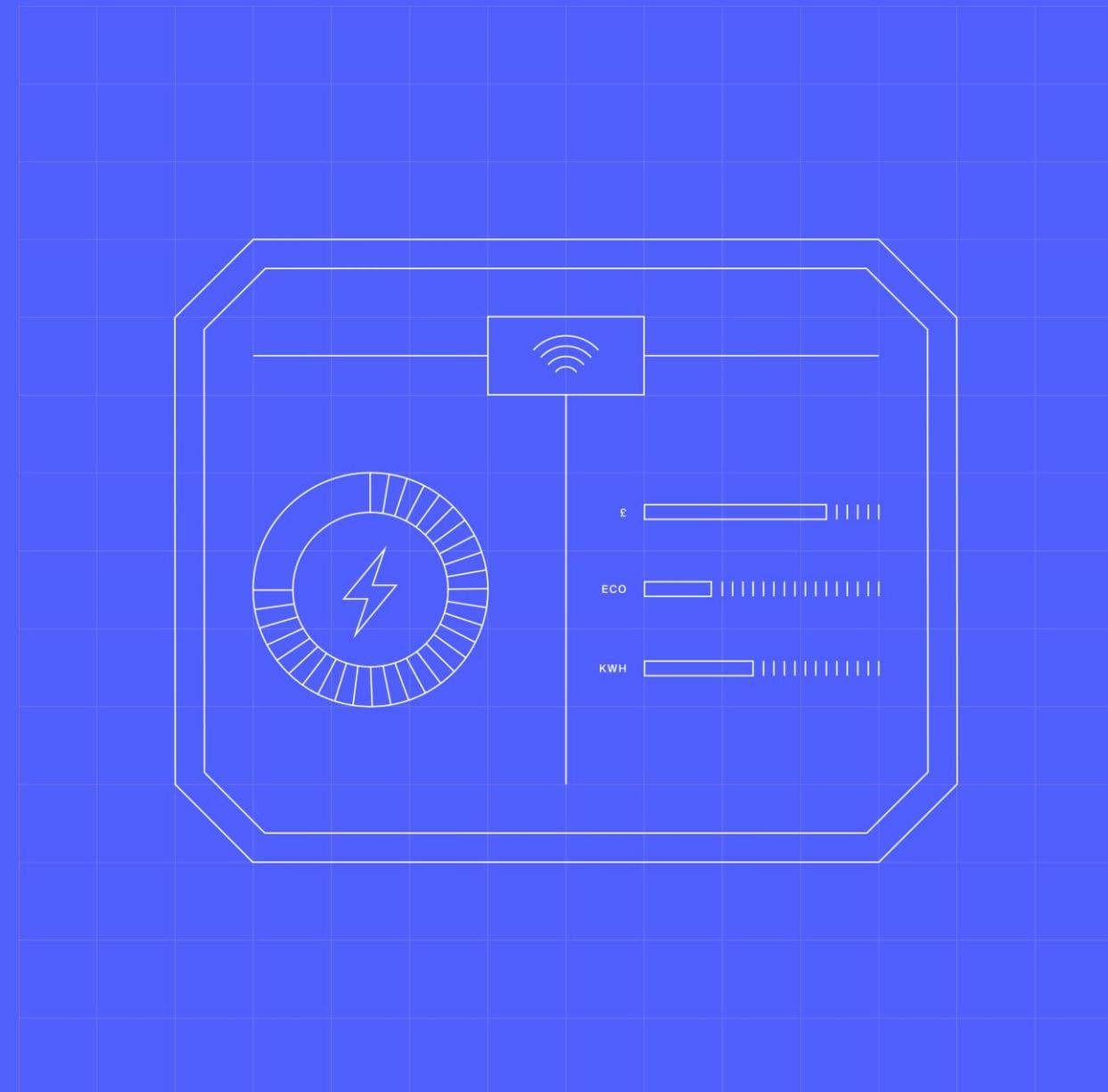
Lunch & Stalls *12:30-13:30*

MHHS in partnership with



Programme Delivery: The Way Forward

Chris Harden, MHHS Programme Director
Jason Brogden, LDP Central Programme Team
MHHS Programme
13:30-14:00



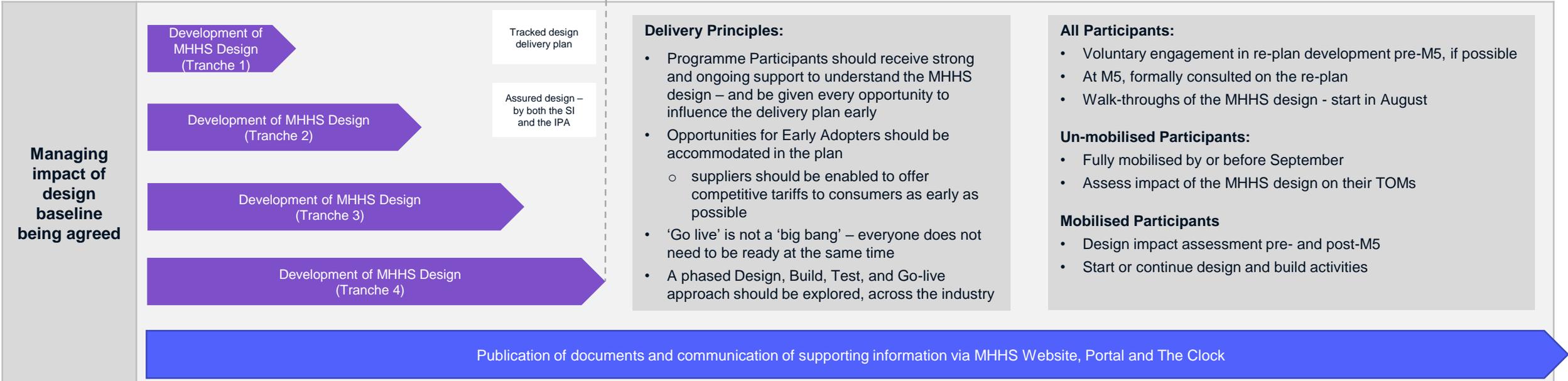
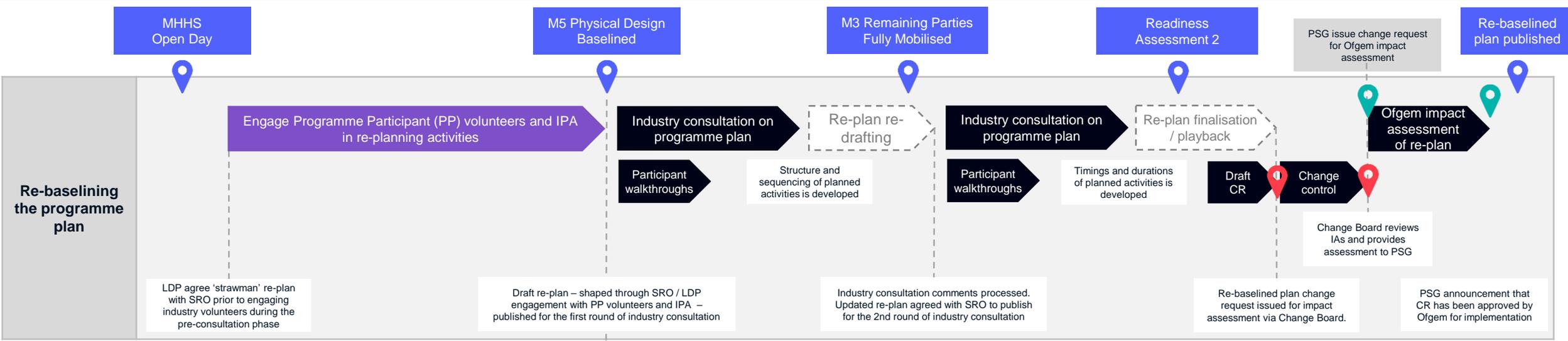
Current Baseline MHHS Plan (published April 2021) – Key Milestones



Milestone	Milestone	Date	Description
M5	Physical baseline delivered	Originally Apr-22; proposed move to Jul-22	In order for the other parties to commence the DBT phase, a complete Physical Baseline aligning both technical and regulatory designs will be delivered.
M3	DB Start	Originally May-22; moving to end Q3 2022 for other parties	The DB (Design and Build) phase will commence in August 2021 with Elexon's Central System, followed by DCC in Feb 2022 and other parties in May 2022.
M9	System Integration Testing Start	Aug-23	System Integration Testing (SIT) will commence in August 2023. This test phase involves the central parties (Elexon, DCC, comms network providers and the registration system providers) along with a small number of agents and suppliers.
M10	Central Systems Ready for migrating MPAN's	Sep-24	Following completion of the testing phase (excluding TE18 Security Testing), the Central Systems (BSC central systems, registration, DCC and communication systems) will be ready to initiate migration of Meter Point Administration Numbers (MPANs) from the current market roles into the new market roles.
M15	Full Transition Complete	Oct-25	Completion of implementation activities including 1 year migration
PM2	Programme Rebaseline	Originally Oct-21; moving to start in Q3 2022 post-M5	PMO-led process to review the programme plan and rebaseline it (and take ownership of new plan)

Possible approach to planning for MHHS delivery going forward

Key outcomes  Key points  Change Board  PSG





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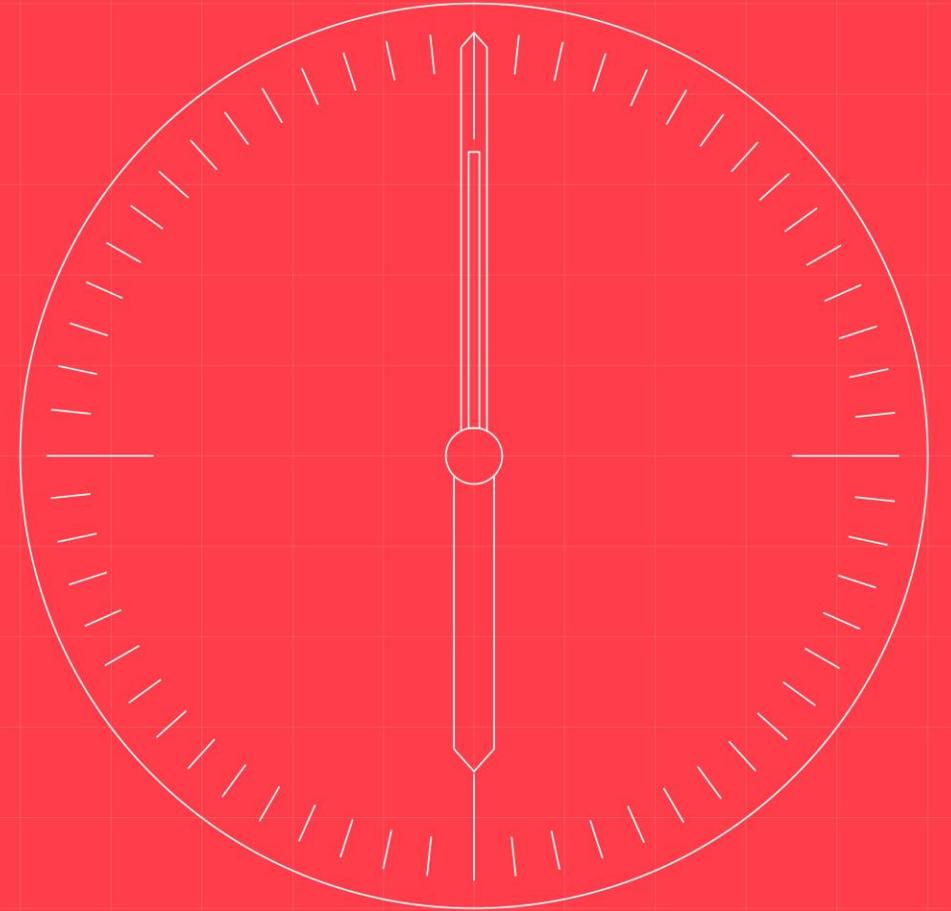
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Introduction to the IPA

Richard Shilton & Rhiannon Harrison

IPA

14:00-14:30



Introduction to the IPA

21 April 2022



Agenda

1. Background and objectives of the IPA role
2. IPA Scope and Approach
3. Assurance Plan
4. IPA Team and how we will engage with you
5. Q&A

IPA team with you today



Engagement Partner

Dave Gandee



IPA Function Lead

Richard Shilton



Core Team Lead

Rhiannon Harrison



Core Team

Keelyn O'Brien



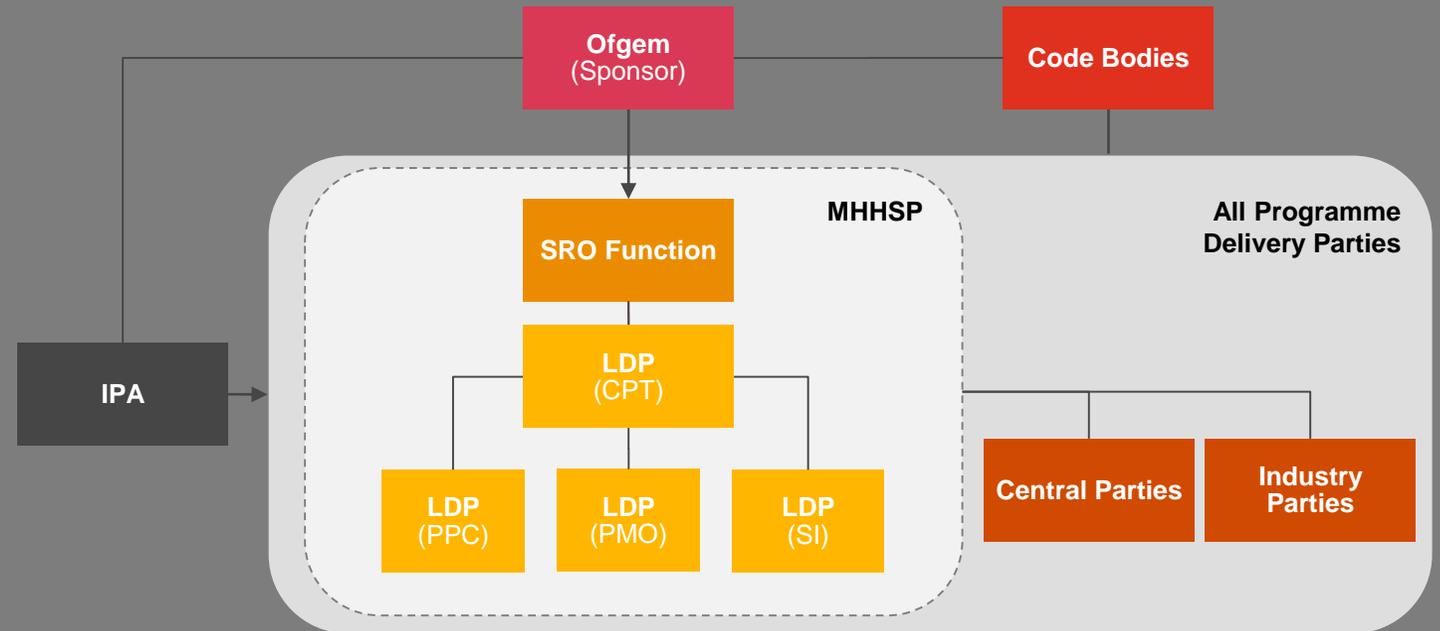
Background and
objectives of the IPA role

Background to MHHS IPA Role

Ofgem has appointed the IPA to act as an independent party to assure the end-to-end delivery of the programme.

The key objectives of the IPA, as set out in Ofgem's MHHS Governance Framework, include:

- Providing confidence that the MHHS Programme is set up for success
- Deliver evidence-based, independent assurance reporting to support programme decision making
- Report to the SRO Function, the Programme Steering Group and to Ofgem, on key milestones, and as required to the Elexon Board.
- Provide advice to the SRO Function and the Programme Steering Group (PSG)
- Ensure that potential conflicts of interest between the Elexon roles are managed appropriately



Assurance Objective and Principles

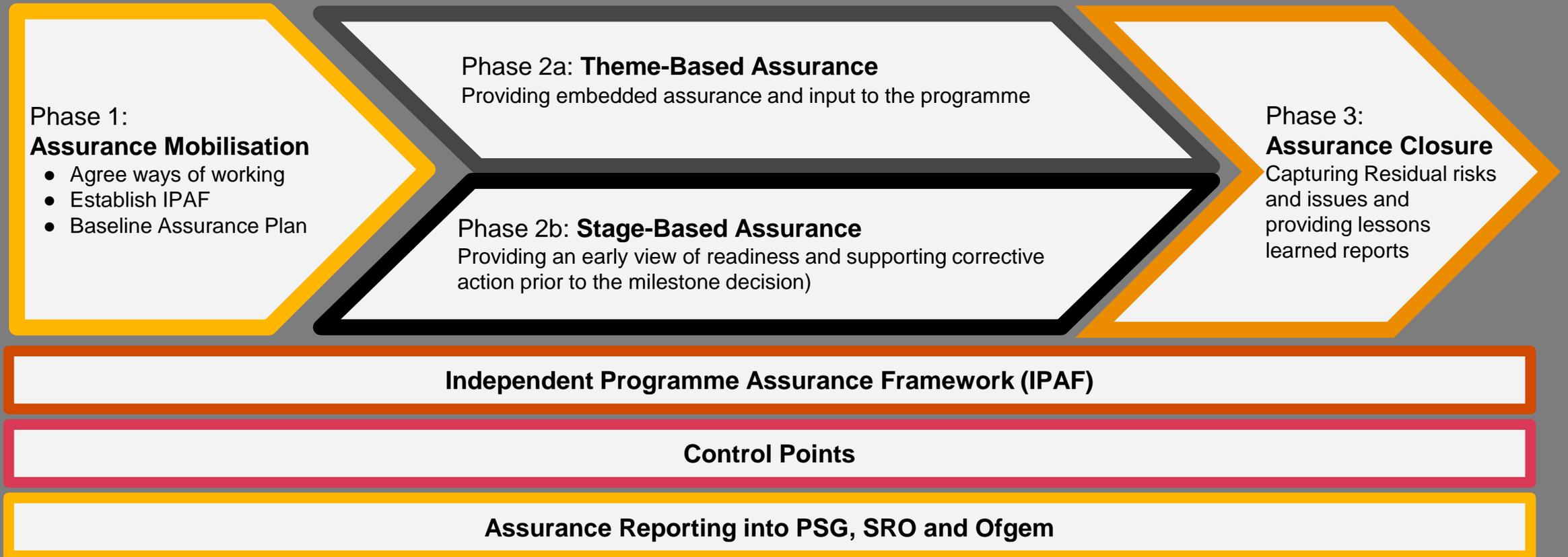
The purpose of independent programme assurance is to **build trust, transparency and confidence** in the end-to-end delivery of MHSSP and that quality decision-making and actions are being taken by all participants to **successfully achieve the overall programme outcomes for the benefit of consumers.**

- **Risk-based and flexible**
Assurance activity will be risk-based and aligned to the MHHSP plan and Success Factors to ensure appropriate assurance coverage and be flexible to address risks/issues as they emerge
- **Forward looking**
Assurance will be forward looking to identify potential issues and risks before they become critical to allow mitigating actions to be established in good time
- **Independent and credible**
Presents findings that can be respected and trusted by all parties by providing fair, constructive challenge and leverages subject matter experts
- **Outcome/delivery focused and action orientated**
Assurance is focused on enabling action to support successful delivery of the overall programme outcomes
- **Collaborative and 'no surprises'**
Delivery of assurance will be underpinned by collaborative working across all parties and sharing assurance findings/views as they are identified
- **Avoids duplication**
Assurance activities will be scoped to supplement other programme delivery or assurance activities and avoid unnecessary overlap wherever possible

2

IPA Scope and Approach

Overall Assurance Approach



Independent Programme Assurance Framework

- The IPAF sets out the **framework and approach** that the Independent Programme Assurance (IPA) will operate to deliver end-to-end assurance over the MHHS Programme.
- This includes the **objective, principles, scope, roles and responsibilities, governance and approach** for IPA activities across the duration of the programme
- The IPAF will be shared with industry via PSG

MHHSP Independent Programme Assurance (IPA)

DRAFT Independent Programme Assurance Framework VO.1

April 2022

This document has been prepared by PwC for purpose and on the terms agreed with Ofgem (2021-098), as part of PwCs call-offs under the Consultancy Framework. PwC accepts no liability in connection with our work or this document.

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Figure 10 - MHHS Programme Control Points

Control Point	Objective	Timing*	Associated Plan Milestone(s)
Control Point 1	Start System Design & Build	May-22	M5 - Physical Baseline Delivered
Control Point 2	Start Cross-Industry Integration Testing	Jul-23	M9 - SIT Start TE2 - System Integration Testing
Control Point 3	Start Qualification	Mar-24	M9 - SIT Start TE*
Control Point 4	Start Migration	Sep-24	M1 MF
Control Point 5	Start Accepting all MPANs Under New TOM	Jan-25	M1 MF
Control Point 6	Cut Over to New Settlement Timetable	Oct-25	M1 an

* Subject to change pending approval of DR001 or CR002 to be Delivered.

Figure 11: Example Operation of a Milestone Assurance Plan

8.2 Escalations to Ofgem

In the event that an escalation is required to Ofgem, the parties involved prior to the escalation. Escalations will be:

11. IPA Plan On A Page (POAP)

the Theme Based Assurance activity. The key principle when reporting assurance findings / recommendations will be to first validate them with the party the finding relates to and offer a 'right to reply'.

Independent Programme Assurance | PwC 26

IPA Scope

The scope of assurance activities has been agreed as a set of IPA 'Work Packages' (WP), which are either:

- **Theme-based** - cross-cutting themes delivered on ongoing basis or at key points
- **Stage-based** - assurance activities delivered in the lead up to key milestones

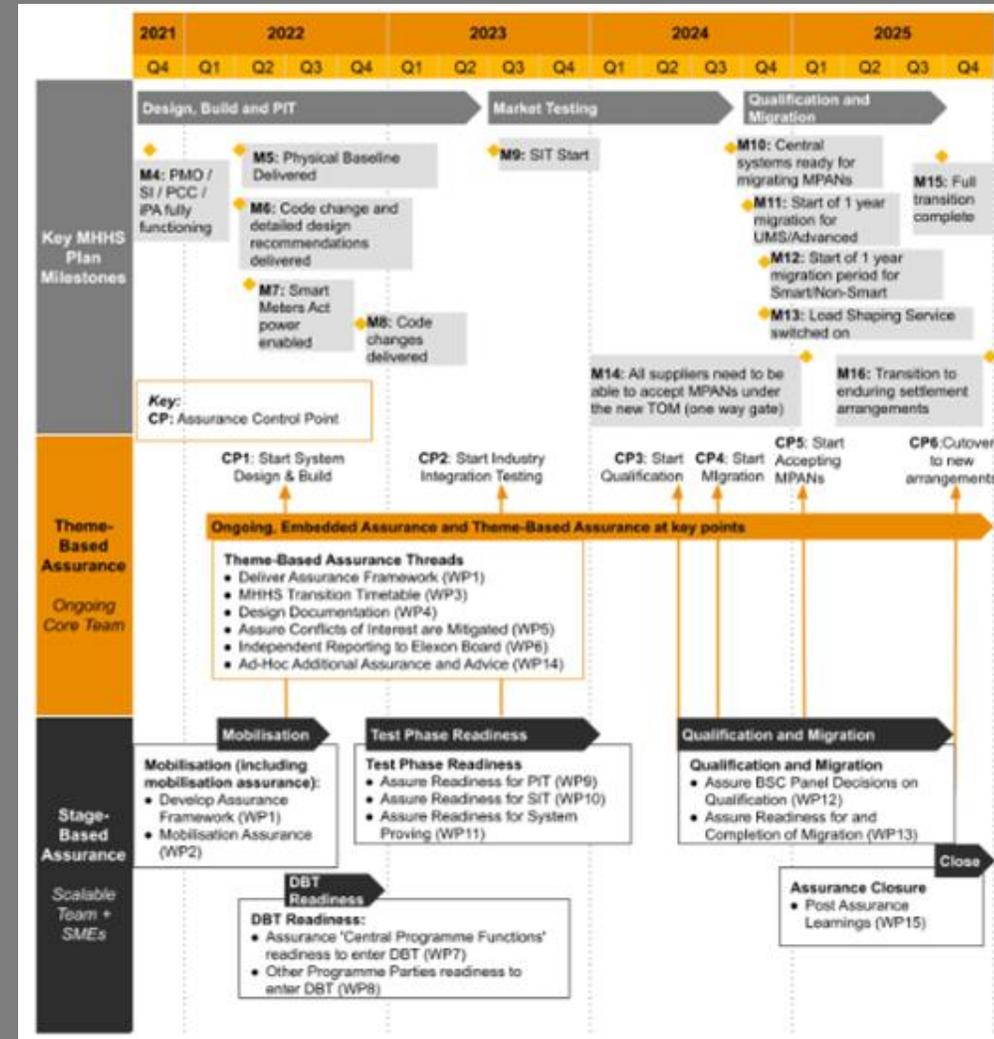


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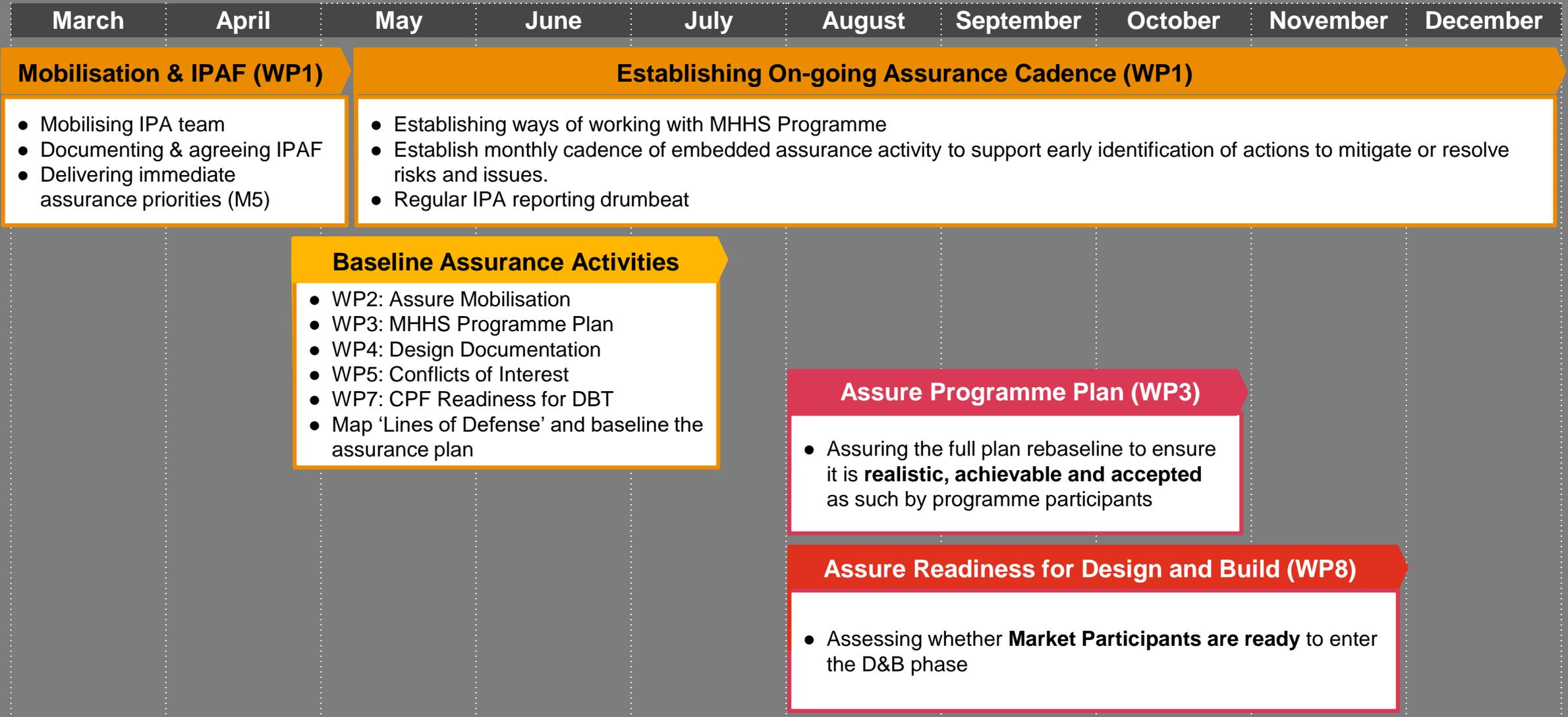
Assurance Plan

IPA Plan On A Page

- IPA activities are aligned to the overall MHHS Plan
- IPA plan will be integrated into the overall MHHS Plan
- Concept of 'Control Points'



IPA Plan for 2022



4

IPA Team and how we
will engage with you

IPA Team

IPA Leadership & Quality

Engagement Partner



Dave Gandee
Partner

Engagement Director & IPA Lead



Richard Shilton
Director

Quality Partner (QP)



Sandie Grimshaw
Partner

Core IPA Team

Core Team Lead



Rhiannon Harrison
Senior Manager

Core Team Support



Keelyn O'Brien
Senior Associate

Core Team Support



Leon Yemoh
Associate

Key Stage-based IPA Team

Stage-based Lead



Martin Crozier
Director

Stage-based Support



Sajwal Dash
Manager

Stage-based Support



Remi Adeshina
Senior Associate

Stage-based Support



Daniel Morgan
Senior Associate

SMEs

Design IPA Lead



Colin Bezant
Director

Consumer IPA Lead



Rob Salter-Church
Director

Transition IPA Lead



Steve Mullins
Director

Engaging with Programme Participants

- Primary engagement between the IPA and Programme Participants will be during the performance of assurance activities
- Where Programme Participants are required to participate in assurance activities this will typically be on a sample basis.
- Assurance activities will be aligned to readiness assessments performed by the PPC



5

Questions and Answers

Thank you

[pwc.com](https://www.pwc.com)

This document has been prepared by PwC for Ofgem only, and solely for the purpose and on the terms agreed with Ofgem in PwC's Order Form (Con/Spec 2021-086), as part of PwC's call-offs under the Economic, Financial and Other Consultancy framework. PwC accept no liability (including for negligence) to anyone else in connection with our work or this document.

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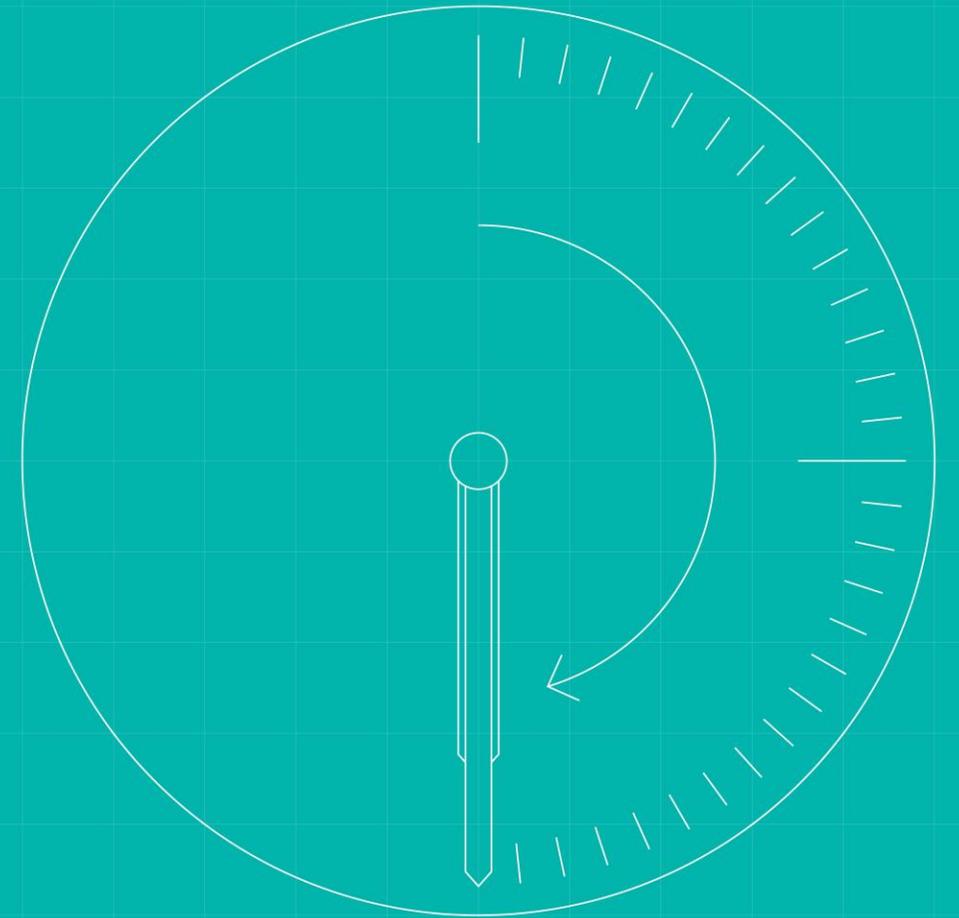


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Contact

PPC@MHHSProgramme.co.uk

PMO@MHHSProgramme.co.uk

Thank you