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RetroMeter WP4

Milestone presentation
March 2024

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Agenda - RetroMeter WP4 - Pilot planning and contractor engagement

- What ‘business as usual’ looks like in Retrofit Evaluation practice in the UK
- Learning from Alpha: potential pilots (opportunities and challenges)
- Reflections on engagement with technical contractors
- Key stakeholders
- Need for multiple pilots

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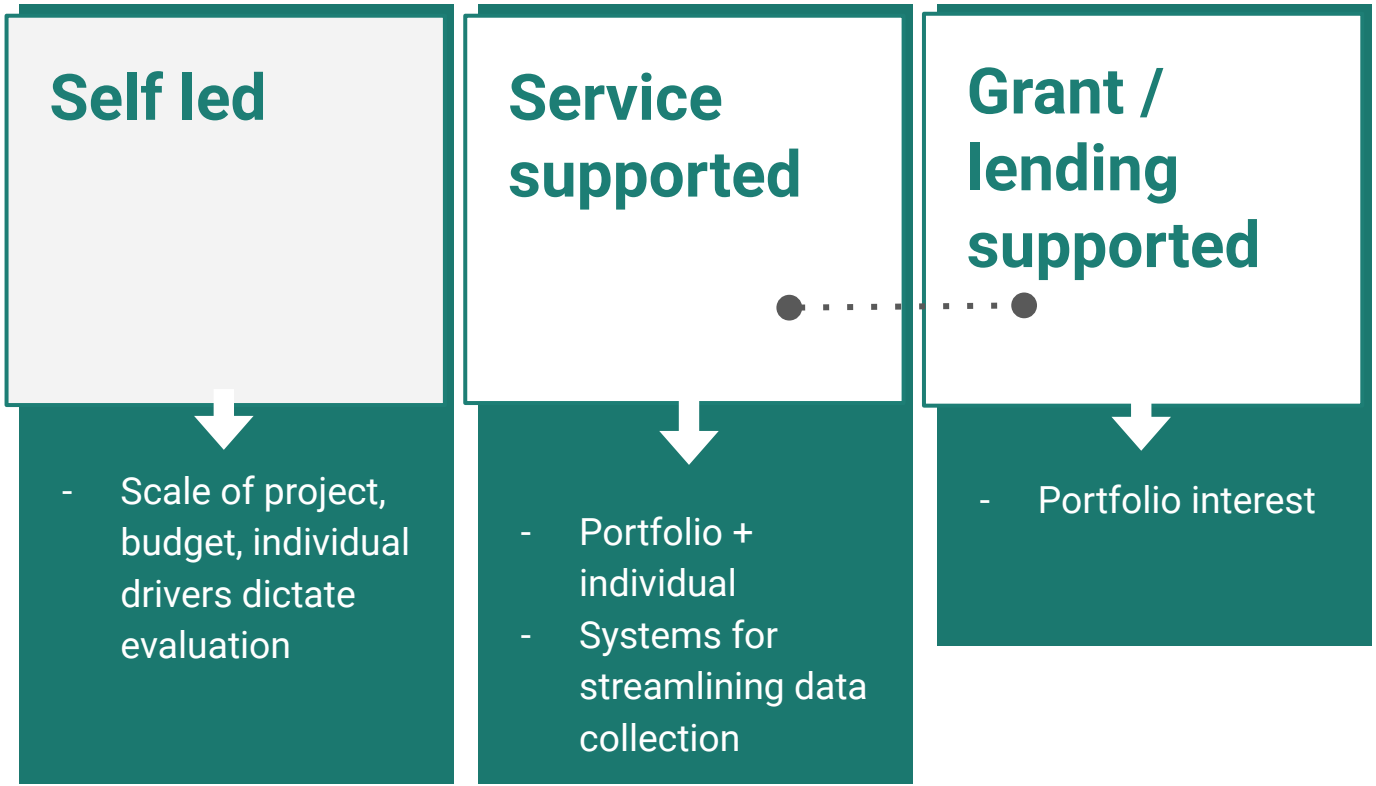
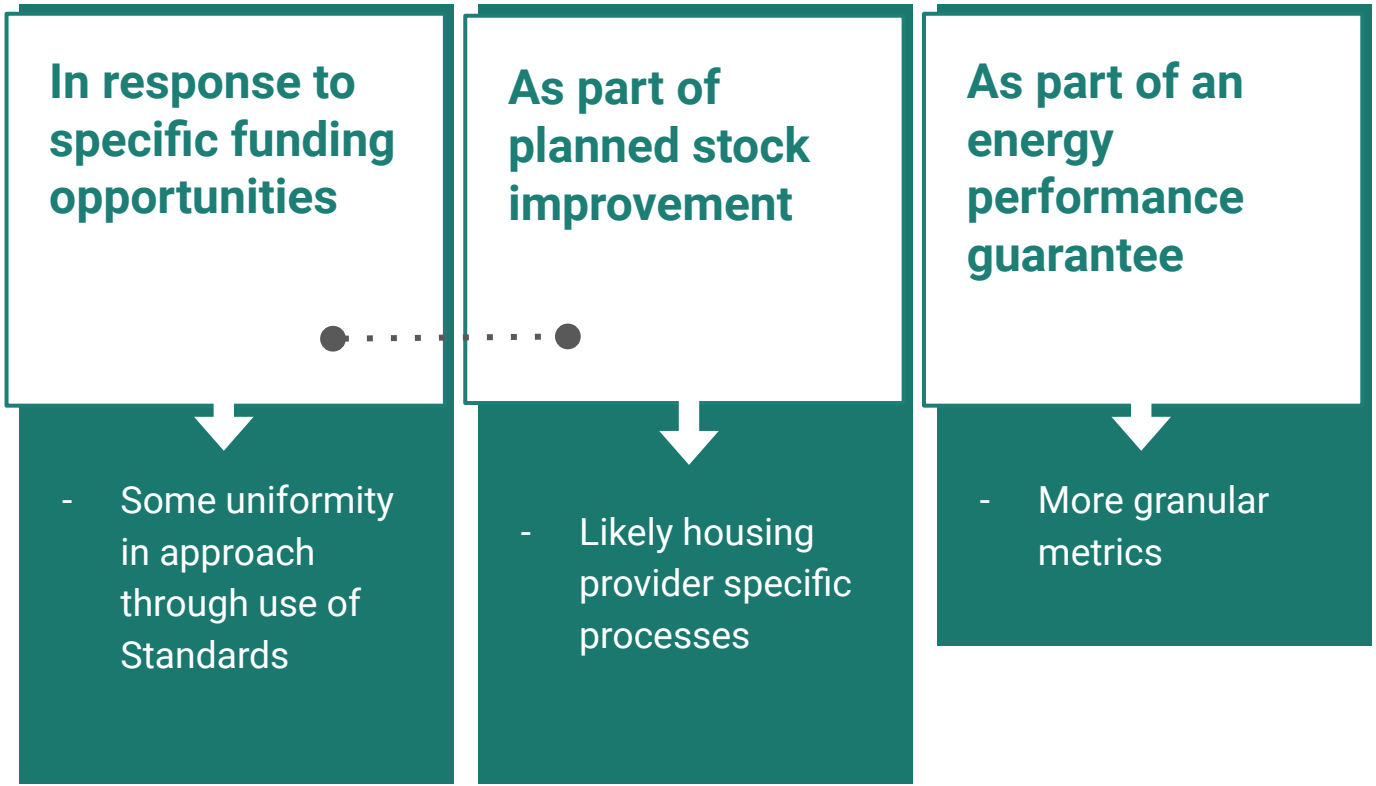
‘Business as usual’ retrofit evaluation in the UK

Private tenure retrofit



Publicly led retrofit



Retrofit standards and processes

	Opportunities and challenges
PAS2035: 2023 Retrofitting dwellings for improved energy efficiency - Specification and guidance.	+ Could support reporting on intended outcomes + MES outputs could play a role in identifying need for escalated monitoring and evaluation + As PAS2035 evaluation is approached at a project level, the methodology leaning to portfolio level could be advantageous. - 3 month basic evaluation window is problematic for optimal MES reporting (at 1 year post-works)
BS40101 - Building performance evaluation of occupied and operational buildings	- Standard BPE level is the most relevant to MES - for the physics based methodology, the lack of internal condition monitoring (including temperature) as standard may be problematic. - Typical occupancy surveys may need tweaks to incorporate capturing non-routine events

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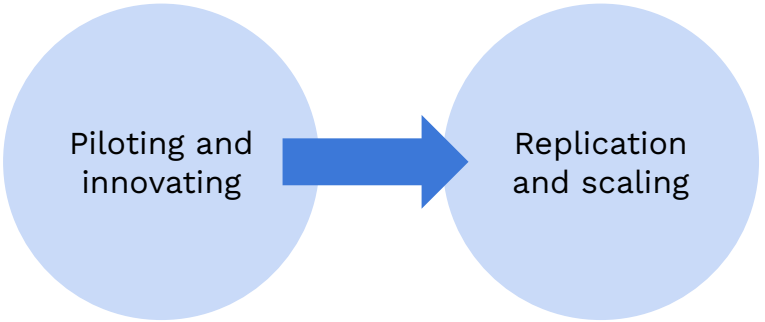
Learning from Alpha: Potential pilots

Community intermediary led Area Based Scheme (ABS)

Some general characterisation as:

- Enabling progress **towards a whole house retrofit plan**
- **Centering of residents** in design and delivery
- **Area and neighbourhood based** approaches
- Bringing together **innovative forms of finance**
- **High degree of control** around design, specification and installation
- Focus on **high quality works.**



Community led: Area Based Retrofit

- Access to householder engagement materials and surveys
- Feedback from project teams on a range of aspects, from delivery to the detail of engagement approaches
- Access to anonymised energy modelling data
- Testing smart meter service sign-up, sensor installs, data quality
- Insight from the project team on learning that could inform future phases in Levenshulme or elsewhere.

Community led: Area Based Retrofit - the next phase

- Envisaged next steps aligns well with scale needed for useful MES results
- Other community engagement activity could play a role in overcoming data access issues over time
- Engagement materials are well suited
- An easier ‘sell’ with delivery teams
- Lots of pros to continuing work in Levenshulme

Exploring other retrofit delivery options

- GHFA pilot phase project:
  - Green home Improvement loans via Credit Unions (likely single/limited measures)
  - Credit Union lending offer to existing One Stop Shop clients (likely more/complex measures)
- MES as a potential verification method
- Influencing and keeping options open by engaging on data frameworks and service design.

Social Housing Decarbonisation Funding (SHDF): Manchester City Council

A wider programme, shaped by the requirements of SHDF funding.

- boiler replacement strand.

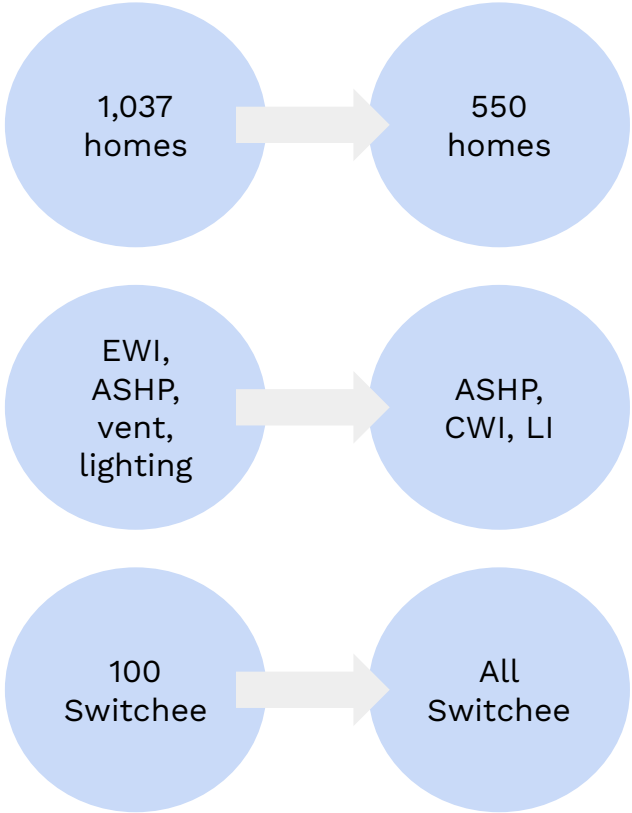
Started at 1,037 homes across two postcode districts.

Key funding requirements:

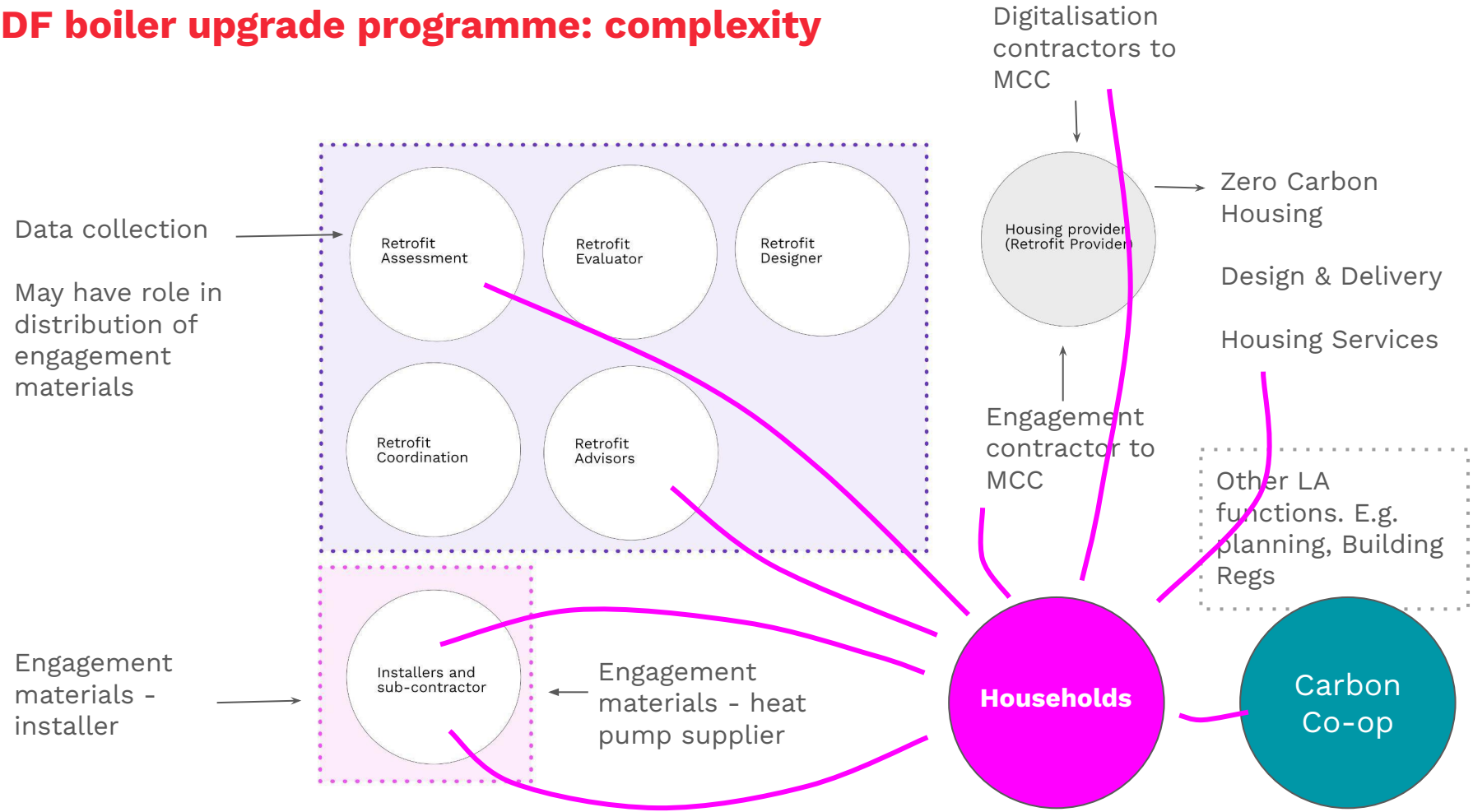
- Compliance with PAS2035 (retrofit process standard) and PAS2030 (installation standard)
- Renewable technologies eligible, **provided overall strategy means it will not increase bills**
- Only up to **EPC C**
- Consideration to space heating demand of 90 kWh/m2/year.

SHDF boiler upgrade programme

- Lots of moving parts: programmes, scope, budgets, procurement, engagement, funding requirements including deadlines
- Lots of stakeholders and engagement points (householder facing and ‘behind the scenes’)
- But, interesting options via technology/equipment providers…



SHDF boiler upgrade programme: complexity



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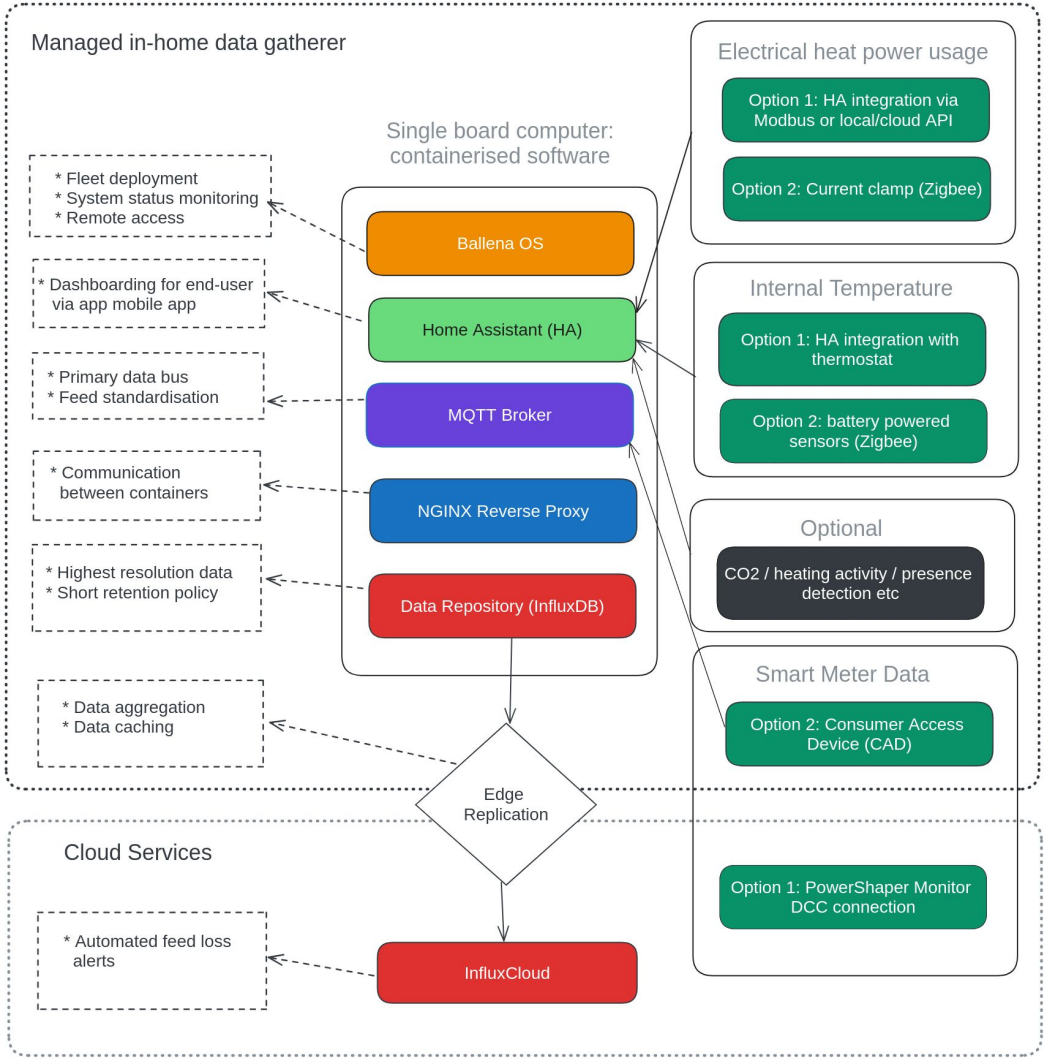
Technical contractor engagement: reflections

In-house (Carbon Co-op)

Our approach to data gathering was via:

- An in-home device, connected to a range of sensors. This was deployed in ABS (gas->gas) but developed as a solution for other potential pilot sites (gas->electric).
- Adaptation of our PowerShaper smart metering service.



In-house (Carbon Co-op) - results

Property	Electricity meter data	Gas meter data	Internal temp
H1	Successfully consented - **no data available** via DCC	**No meter record**	5/5 reporting
H2	First record: 09/01/2023 Quality: 99%+ (4 missing)	Data start: 09/01/2023 Quality: 96% (778 missing)	5/5 reporting
H3	**First record: 29/01/2024** Quality: 98% (35 missing)	**First record: 01/11/2023** Quality: 99%+ (4 missing)	5/5 reporting
H4	Non-smart meter	**Non-smart meter**	5/5 reporting
H5	**Dropped out**	-	-
H6	First record: 18/02/2023 Quality: 99%+ (40 missing)	First record: 18/02/2023 Quality: 99%+ (41 missing)	5/5 reporting
H7	Not consented	**Not consented**	**Not installed**
Test	**No data via DCC** (CAD installed) First CAD record: 25/11/2023 Quality: 100% (0 missing)	First CAD record: 25/11/2023 Quality: 100% (0 missing)	5/5 reporting

SHDF: Switchee

Data point	Smart meter data	Internal temp	Electric heat (kWh)	Extras
Service	HTC service (additional)	Default installation	Enhanced monitoring pack (additional)	Focus: mold risk, Fuel poverty, under-heating. Data collection: Floor area, EPC, Building type End user alerts **Comms: GSM**
Numbers (SHDF)	100 units	100-550 units	15 units	
User agreement	Separate consent	App sign-up	App sign-up	
3rd party	Single B2B DA	Single B2B DA	Single B2B DA	
Notes	Use of n3rgy data connection	Pre & post in some cases	+£200 if part of initial installation	

SHDF: Daikin

Daikin offer 3 monitoring solutions, Daikin Cloud Service, Daikin Home Hub & their API.

Data point	Meter data	Internal temp	Electric heat (kWh)	Extras
Service		Heat pump API (if used with default Madoka thermostat)	Heat pump API (over WLAN)	Via the API additional data is available on heat pump usage, performance and error logging. The Daikin Cloud Service is new and under active development. This has not been taken up by MCC for the SHDF properties, it potentially offers a similar single data agreement, but currently lacks meter data integration.
Numbers (SHDF)		? units	Up to 1000 units	
User agreement		App sign-up	App sign-up	
3rd party		End user agreement (provision of API key)	End user agreement (provision of API key)	
Notes	Home Hub option allows ‘3rd party SG control’.	Integration to allow		

Reflections

- Increasing interest from technology providers in **portfolio monitoring services**, from which we could benefit (if engaged early enough).
- Questions around how tenants understand consent and whether they are party to data collected and how we **incentivise continued engagement**.
- '*Have a smart meter for 1 year+*' is an insufficient criteria, **potential for pre-screening** via incentivised smart meter sign-up.
- New **digital divide** if support is offered based on working smart meter.

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Key stakeholders

Key roles to engage with on an ABS MES pilot

Community intermediary (e.g. Carbon Co-op)	
Programme Manager	★ Planning and buy-in
Project Manager	★ Planning and buy-in
Engagement Officer/Resident Liaison	★ Key role in securing data
Research and GIS officer	
Research/technical team (if applicable)	★ Key role in securing data
Households	★ Key role in securing data
Assessment organisation	May see value in baseline data
Contractor	Buy-in required
Evaluator (if contracted out)	Reporting role

Key roles to engage with on a SHDF pilot

Local authority/housing provider	
Zero Carbon Housing Team - Engagement Lead, Project Manager	★ Planning and buy-in, engagement planning
Design & Delivery Team	?
Housing Services Team	Buy-in, trust
Climate Change Officer	?
Engagement contractor	★ Planning and buy-in, engagement planning
Households	★ Key role in securing data

Key roles to engage with on a SHDF pilot

PAS contractor (assessment, coordination etc)	Evaluation in PAS context
PAS Installer	Buy-in required, co-operation, engagement role
Sub-contractors to installers	★ May have role in securing data
Digitalisation contractors	★ Key role in securing data
Evaluator (if contracted out)	Reporting role
Research partners	★ Interface with MES parties

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The need for multiple pilot routes

Multiple pilot possibilities

- Practicalities

- Early stage planning of projects
- Relationship building
- Stakeholder engagement

- Scaling potential