



# Mid-point Meeting

## SIF Round 2 Alpha - SHIELD

29 Jan 2024



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# Agenda for today

1 Project Overview & introductions

2 Project progress update

3 Updated plan, costs and risks

4 Project specific conditions

5 Comms & engagement activities

6 Plans for Beta and AOB

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# SHIELD project overview

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## Overall Aims

- SHIELD is a bold new initiative that will revolutionise the way we heat our homes. By using innovative low-cost low-carbon heating solutions, such as distributed data centres, SHIELD will help to decarbonise heat and energy for vulnerable consumers and social housing tenants.
  - SHIELD will use smart energy generation and storage technologies to intelligently balance demand and supply, helping reduce the upfront cost and running costs of consumers' heating and energy. This innovative approach to decarbonisation has the potential to transform the energy landscape and make a real difference to the lives of vulnerable people.
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## Alpha Phase Aims











- By the end of Alpha Phase, SHIELD aims to have validated, qualified, and tested the SHIELD proposition. The purpose is to have completed enough readiness activities to give confidence in the progression to Beta Phase and the scaling and implementing of the solution.
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## Beta Phase Aims (current thinking)

- The proposed scale for Beta Phase (c.300 homes) is appropriate as it will qualify the SHIELD solution for both DSO and ESO grid services requiring 1MW+ of flexible assets.
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# Stakeholders & Introductions

## Scope & Responsibilities

	UK Power Networks is the Project Lead. UK Power Networks owns and maintains the electricity network, including substations, cables and overhead lines required for the installation of LCTs. They also procure flexibility services to reduce network reinforcement.
	Essex County Council will be leading the project management work package. The proposed trials are located within their region and they can bring together a wide range of parties.
	Power Circle Projects will be leading the site, technology, and modelling work package. They are a social enterprise dedicated to supporting social housing providers, private homeowners, communities and have delivered many community-led low carbon projects.
	Citizens Advice Essex will be leading the tenant engagement. Citizens Advice Essex have the expertise and engagement experience with vulnerable customers on their needs relating to energy and heat.
	Eastlight will be leading the commercial agreements and funding structure work package. They are the housing association whose tenants will be participating in the trials
	UK Community Works will draft the tenant engagement plan and materials. UK Community Works have extensive experience supporting engagement activities.
	UrbanChain will be delivering the Energy Supply and Peer to Peer Trading work package. UrbanChain are the leading provider of Peer-to-Peer energy exchange services in the UK and pioneer of innovative supply arrangements. For SHIELD to develop its route to market, business model and customer proposition in more detail, it needs to interact and operate between consumers, prosumers and generators. UrbanChain will help SHIELD design this.
	Thermify will be leading the pilot deployment work package. Thermify are the key technology provider for the SHIELD proposition with their innovative distributed data centre heating product.
	Electricity North West will be delivering the Learnings and Scalability work package. They lead projects which are complementary to SHIELD and will be able to provide perspective for how SHIELD can be scaled to their licence area. This ensures SHIELD is designed for wider rollout across GB.
	Monitoring Officer and Innovation Lead

# Work Package Updates

# WP1 – Project Management

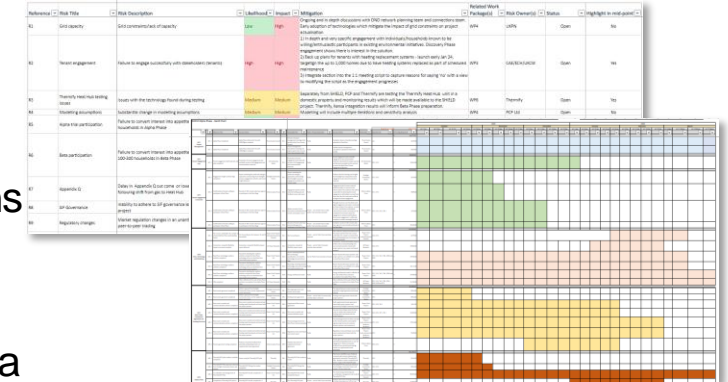
Progress on key deliverables (both spanning entire project period)

- Maintain minutes of project management meetings held weekly led by Essex County Council
- Maintain Project Management Spreadsheet including risk register, Gantt chart, lessons learnt log and project plan

The successful delivery of this work package is reliant on the support and active participation of all SHIELD partners. Throughout the delivery of both Discovery and Alpha Phases the project has benefited from;

- Exceptional attendance across the partnership at all regular meetings
- Open, positive and professional participation in all discussions from all partners
- Timely and robust responses to all requests to partners in relation to maintaining and updating core documents such as the risk register, work plan etc.

This work package has encountered no issues or barriers to its successful delivery.



# WP2 – Tenant Engagement Plan



## Progress on key deliverables

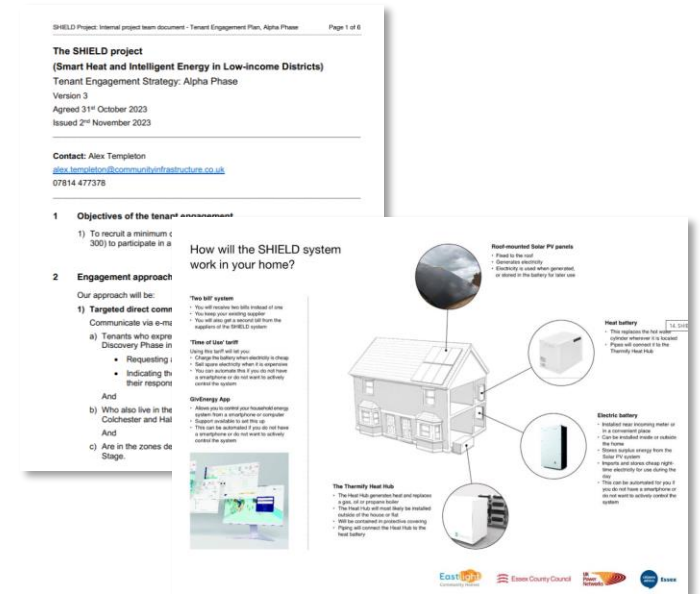
- Revised Tenant Engagement Plan agreed with Eastlight
- All tenant engagement materials complete
- 1:1 Engagement process tested and ready to begin

## Challenges

- GDPR/tenant engagement protocols
- Delays signing the Collaboration Agreement

## Mitigations regarding tenant engagement:

- Eastlight have produced a database of all tenants with heating systems due to be replaced during 2025/26 (Beta Phase timing)
- We have developed the capacity to do the 1:1 engagement online to speed up the process





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# WP4 – Sites, Technology and Modelling

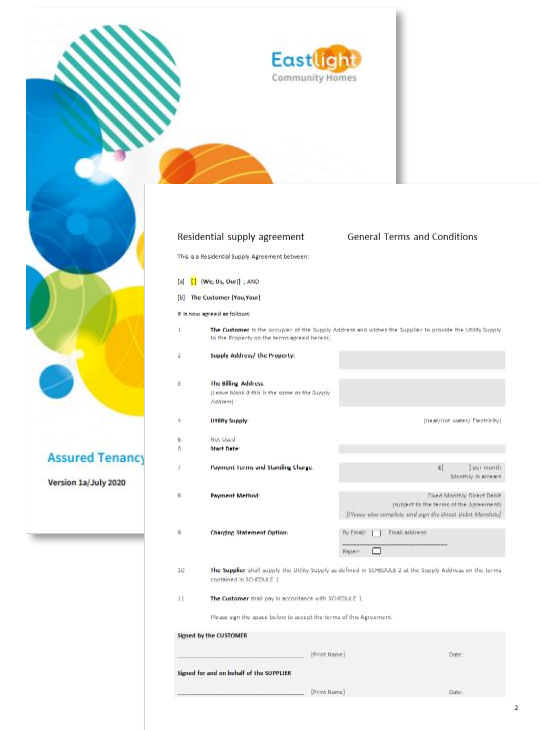


Progress on key deliverables

- Two pilot stage pilot homes surveyed and confirmed and tenants engaged
- Alpha Phase technology specification confirmed
- Energy and Financial model developed and populated. Assumptions prepared on the basis of commercial rollout in order to specify realistic and scalable charging approach for Alpha Phase pilot tenants

# WP5 – Beta Phase Commercial Agreements & Funding Structure

- Supplementary Tenancy Agreement and Energy Supply Agreement prepared, subject to internal Eastlight consultation which is in progress. Alpha Phase and Beta Phase variants discussed. Other commercial agreements required in progress.
- Beta Phase route to market and commercial funding model in progress



# WP6 – Deploy Pilots



Progress on key deliverables:

- Three stages defined for technology deployment for the two pilot homes
  - a) Switchee monitoring and heating control equipment: January 2024. This will enable heat monitoring both before and after new heating system is deployed
  - b) Solar PV and battery deployment: February 2024
  - c) Thermify Heat Hub with integrated Sunamp heat storage deployment: March 2024
- Originally it had been intended that b) and c) would be installed at the same time. The two systems are independent and each provides tenant benefit. Due to delay in Heat Hub supply timeline, the two installations have been separated.

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# WP7 – Energy Supply and Peer to Peer Trading



Progress on key deliverables:

- Peer to peer consumer and generator agreements prepared.
- Pricing for peer to peer consumer offers for the two pilot homes prepared. Energy supply tariff options including peer to peer analysed to enable tenants to consider options once PV and battery are installed

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## WP8 – Learnings and scalability



Progress on key deliverables:

- Identified projects for shared learning
- Will assess scalability between networks once initial trials are complete

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# WP9 – Alpha Phase Governance



Progress on key deliverables:

- Collaboration agreements in place

Challenges/changes to plan:

- Delays on collaboration agreements presented challenges for SHIELD specifically, as some partners could not work at risk. This necessitated revision of timelines.

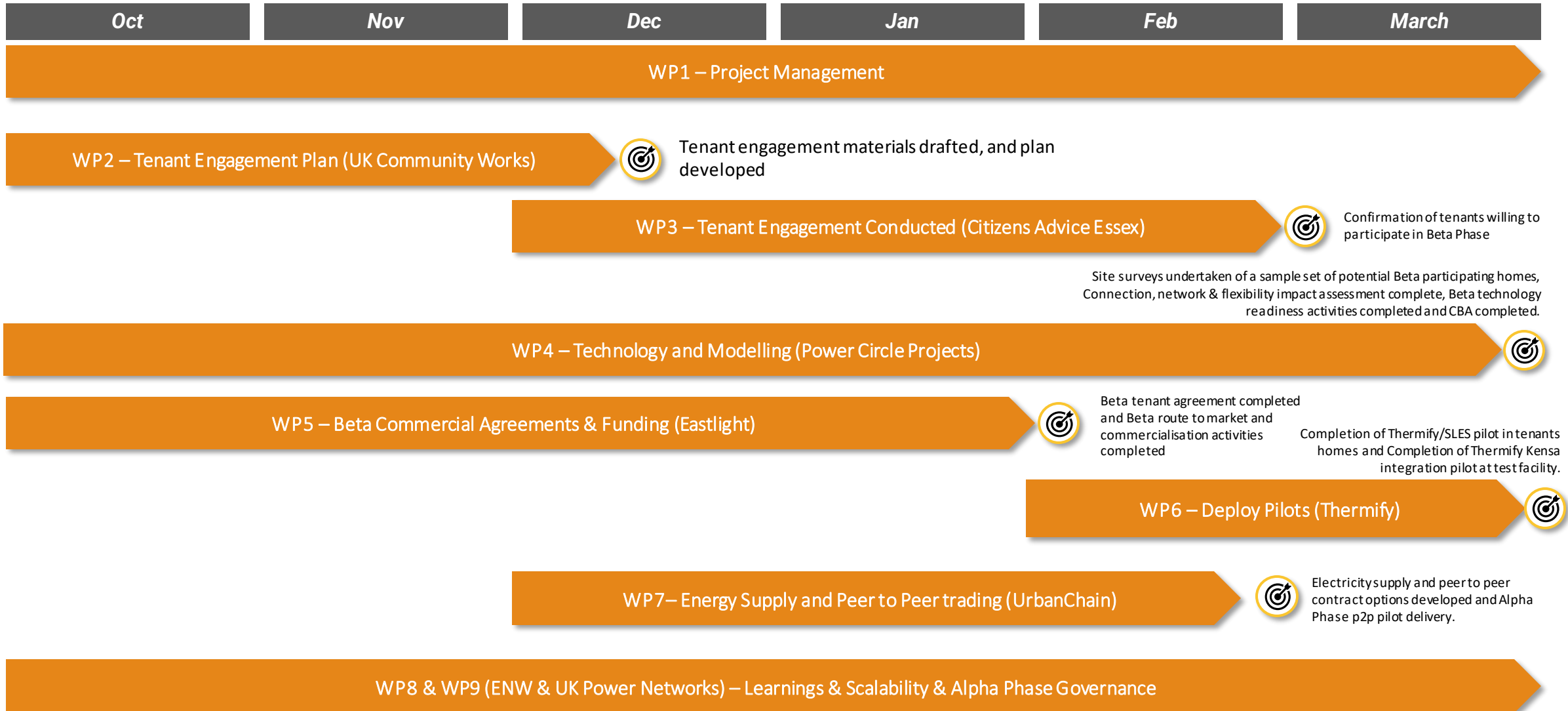


# Project Plan, Finances and Key Risks

# Finances

Partner Name	Partner Reference	Total project cost (£)	Project contribution (£)	Total SIF offer (£)	Project contribution (%)	Total forecast project spend (£)
UK Power Networks	Licensee	£95,725	£9,572	£86,153	10.0%	£95,725
Essex County Council	Partner 1	£11,635	£1,164	£10,471	10.0%	£11,635
UK Community Works	Partner 2	£32,633	£3,425	£29,208	10.5%	£32,633
Eastlight Community Homes	Partner 3	£22,176	£2,218	£19,958	10.0%	£22,176
Thermify	Partner 4	£88,234	£8,823	£79,411	10.0%	£88,234
Power Circle Projects	Partner 5	£195,394	£19,680	£175,714	10.1%	£195,394
UrbanChain	Partner 6	£30,639	£4,616	£26,023	15.1%	£30,639
Electricity North West	Partner 7	£1,656	£1,655	£1	99.9%	£1,656
Citizens Advice Essex	Partner 8	£78,184	£30,000	£48,184	38.4%	£78,184
<b>TOTAL</b>		<b>£556,276</b>	<b>£81,153</b>	<b>£475,123</b>	<b>14.6%</b>	<b>£556,276</b>

# Updated Project Plan



# Key Risks

Ref	Risk Title	Risk Description	Like-likelihood	Impact	Mitigation	WP	Owner(s)	Status
R2	Tenant engagement	Failure to engage successfully with stakeholders (tenants)	High	High	<p>1) In depth and very specific engagement with individuals/households known to be willing/enthusiastic participants in existing environmental initiatives. Discovery Phase engagement shows there is interest in the solution.</p> <p>2) Back up plans for tenants with heating replacement systems - launch early January 2024, targeting the up to 1,000 homes due to have heating systems replaced as part of scheduled maintenance</p> <p>3) Integrate section into the 1:1 meeting script to capture reasons for saying 'no' with a view to modifying the script as the engagement progresses</p>	WP3	Citizens Advice Essex/ Eastlight Community Homes/ UK Community Works	Open
R3	Thermify Heat Hub testing issues	Issues with the technology found during testing	Medium	Medium	Separately from SHIELD, Power Circle Projects and Thermify are testing the Thermify Heat Hub unit in a domestic property and monitoring results which will be made available to the SHIELD project. Thermify, Kensa integration results will inform Beta Phase preparation.	WP6	Thermify	Open
R6	Beta participation	Failure to convert interest into appetite for trial participation 100-300 households in Beta Phase	High	High	<p>1) Resident engagement during Alpha Phase to highlight the benefits of participating and a comprehensive overview of their involvement in the future stages of the project.</p> <p>2) Creation of a back-up plan if conversion rates are not promising after first 20 calls/contacts - open ongoing comms with funder.</p> <p>3) Integrate more registered social landlords into the Beta bid to spread risk between registered social landlords and acquire a larger pool of potential tenants</p>	WP3	CAE/ECH/ UKCW	Open
R7	Appendix Q	Delay in Appendix Q outcome or lower SAP score for properties following shift from gas to Heat Hub	High	High	Early and sustained dialogue with Building Research Establishment to seek positive and timely outcome. Uncertainty or negative outcome may lead to stage gates in terms of volume of deployment at Beta Phase whilst issues are resolved possible link to other RSL and off gas grid households (oil) to mitigate negative impact on energy performance certificate of no appendix Q certification.	WP6	Thermify	Open
R9	Regulatory changes	Market regulation changes in an unanticipated way. An example is peer-to-peer trading	Low	Medium	Previous and continued liaison by Project Partners outside of the SHIELD scope about regulatory developments with industry experts such as from Dr Jeff Hardy of Imperial College.	WP7	All	Open
R10	Thermify Heathub issues	Delay in Pilot start date due to equipment (Thermify Heathub) manufacturing re-design/delay.	High	High	Project Plan updated. Pilot will start no later than mid February 2024 and run until the end of March 2024 to maximise the data available for reporting. Reporting will be done at the same time as the pilot running and some wrap up will be done in 2024. Additional risk has been added by poor quality control at a manufacturer. Mitigation has been to add additional vendors with better turnaround times and improved Quality Control procedures.	WP6	Thermify	Open

# Project-specific Conditions, Comms & Engagement

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# Project-specific Conditions

## Condition 4

The Funding Party must provide to its monitoring officer by the end of the Alpha Phase a summary and explanation as to whether the overall costs of the proposed solution, including the investment costs, will be lower than the counterfactual.

*The energy and financial modelling will be updated in Alpha Phase as well as a full CBA. This will show the benefits and costs against the counterfactual. SHIELD energy and financial modelling indicates costs and benefits in relation to tenants and the energy service provider (social ESCo). The CBA considers costs and benefits in relation to UK Power Networks as the DNO.*

## Condition 5

The Funding Party must provide to its monitoring officer by the end of the Alpha Phase a written deliverable which demonstrates consideration for protection aspects of the future business model of the proposed solution, including:

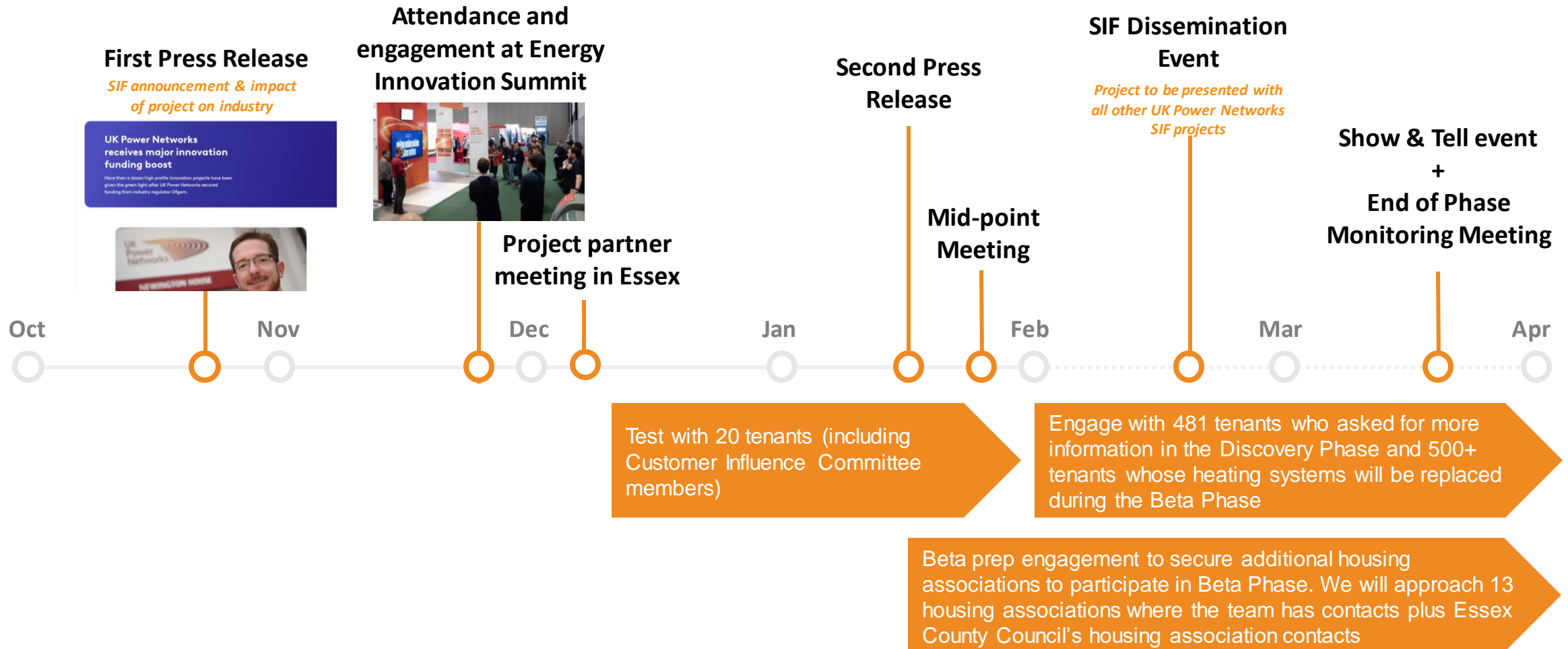
What happens if something goes wrong with the system:

- Whether consumers will be locked into this model on a long-term basis
- What happens in the event of consumers who want to change the heating system. For example, where a new tenant/occupant takes over the property and wants to change the heating system
- What protection do consumers have should the data centre provider ceases to operate? For instance, is any insurance provided for these consumers?

We encourage the Funding Party to work closely with consumer bodies to answer the above questions

*The commercial agreements and tenant agreements will address these above considerations. We will work with Citizens Advice Essex, Essex County Council, Eastlight Community Homes and legal sub-contractors, in particular to ensure consumers are protected and the project remains scalable. The written deliverable is in preparation dealing with each of the above points, referencing the relevant agreements.*

# Comms and Engagement



# Beta Phase & AOB

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# Plans for Beta Phase

All Alpha Phase project partners support a Beta Phase application

## Proposed scope

- Beta phase is a multi-year programme which will provide demonstration of SHIELD innovations both in business model (social ESCo) and technology (smart energy system incorporating Thermify Heat Hub).
- We intend to engage multiple social landlords for deployment during Beta Phase which will provide the best launching point for full scale commercialisation. We may also engage community organisations, homeowners and private landlords since fuel poverty does not lie solely within the social housing sector.

## Notes on Beta Phase

- We are aware that social landlords have key objectives to meet during this decade in relation to improving Energy Performance Certificate ratings for their homes. Government is consulting on changes to the EPS/SAP system since current methodologies do not deal adequately with new smart technology options including battery systems and new heating options such as Thermify. In the meantime, as a temporary measure, Thermify is seeking SAP Appendix Q inclusion as a means of enabling Heat Hub installations to enhance SAP and EPC ratings. We envisage a phased scaling of deployment of Thermify Heat Hub assets in social landlord homes in Beta Phase as the above issues are clarified.
- A discussion with UKTI/Ofgem is needed on how funding can be allocated/structured for the proposed scaled roll-out of the SHIELD technology components.

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# AOB

- Open discussion with UKRI