



SIF Alpha Flex Direct

End Point Review 07/05/2025

Centre for Sustainable Energy, LCP Delta, Sia Partners, UK Power Networks & Utilita Energy



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Project Overview

What is Flex Direct?

Flex Direct aims to make energy flexibility markets more accessible by developing and trialling a novel commercial model that will incentivise social landlords to provide electricity peak reduction services

Enabling **'social landlords'**, e.g. local authorities (LAs) or social housing providers (SHPs), to work with Distribution System Operators (DSOs) on flexibility markets, allowing vulnerable customers to benefit from energy flexibility without the risks or complexities of direct involvement.

Focussing on **energy efficiency measures**, which are well-funded by the government for social housing upgrades, enables peak energy demand reduction to be provided for DSOs when focused on areas with network constraints.

By combining energy efficiency with flexibility, we can improve our UK housing stock, align with a strategic **"energy efficiency first" approach**, and create an extra revenue stream for social landlords.

In the future, we will explore the potential to extend the Flex Direct model to other low-carbon technologies, ensuring that as we move toward Net Zero, **all consumers can benefit** from a smarter, greener, and more flexible energy system.

The Flex Direct model will be developed with engagement from key stakeholders, then trialled to evidence that it is an effective model. If successful it will be considered for implementation into business-as-usual (BAU)



Flex Direct Alpha Planned Outcomes

Deliverables

- Work Package 1 (WP1): Project Management
- Work Package 2 (WP2): Centre for Sustainable Energy (CSE) will lead stakeholder engagement with Social Landlords to understand requirements & eligibility for participation in the commercial arrangement. Understand potential impact on vulnerable consumers.
- Work Package 3 (WP3): Sia Partners will develop and refine commercial frameworks and Cost Benefit Analysis developed in Discovery.
- Work Package 4 (WP4): Sia Partners will identify requirements to standardise the framework into BAU and engage with UK Power Network's DSO team to understand data and user requirements including data sharing.
- Work Package 5 (WP5): LCP Delta will develop modelling and/or monitoring approach for alternative baselining solution, considering the accuracy and reliability with respect to market confidence.

Benefits

- New commercial framework for organisations to engage with the flexibility market through the DSO.
- Future reductions in the cost of operating the network, and therefore cost savings per annum on energy bills for consumers.
- Improved access to revenues for LAs and SHPs, therefore contributing to greater social good for vulnerable consumers.

Project Progress

WP1: Project Management

- Contract signed
- Weekly team meetings to monitor progress
- Deliverables completed on time and to requirements
- Show & Tell scheduled
- End point review delivered

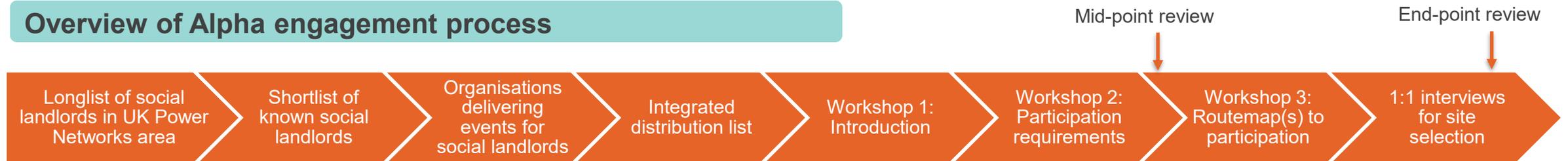
Project Element	Outcome
Finances	Completed
Project Plan	Updated
Risk management	Updated
Project specific conditions	Completed

WP2: Stakeholder engagement / Process

Objectives of the stakeholder engagement in Flex Direct Alpha

- Establish requirements for social landlords and define eligibility criteria to participate in trials
- Understand user journeys and impact on vulnerable customers
- Identify potential site(s) for future trial(s) based on eligibility criteria developed

Overview of Alpha engagement process



From mid-point to end-point: outputs

- Refined participation requirements
- Routemap(s) to participation
- Shortlist of social landlords with sites for Beta trial

WP2: Stakeholder engagement / Findings

Opportunities, enablers and challenges

- There is a strong appetite for participation in Flex Direct among social landlords due to opportunities including a consolidated relationship with the Distribution Network Operator (DNO) and progress towards net zero targets.
- Many social landlords are well-prepared to participate due to planned retrofit projects and access to tenants' energy data.
- Key concerns reported were regarding the balance of effort and resources required versus revenue opportunity provided.

Participation requirements and routemap

- The requirements landlords must meet to participate were collaboratively refined and categorised under four lenses (technical, organisational, financial/commercial and social). These complement the requirements developed in Work Package 4.
- Participation requirements were charted onto a routemap to contextualise them against the timelines in BAU.

Social landlords' preferences

- No measurement baselining approach ([Work Package 5](#))
- Direct contracting with optional third-party support ([Work Package 3](#))

Site selection

- Interviews were held with 4 local authorities and 2 social housing providers that had expressed an interest in supporting a trial.
- There is variation in their readiness and required support, which is informing site selection and Beta proposals.

WP2: Stakeholder engagement / Recommendations

Preparing for Beta

- Ensure **sample representativity** when selecting sites.
- Develop a **clear and strategic plan** for Beta trial engagement.
- Explore **benefits to consumers** to evidence the value of Flex Direct in a just energy transition.
- Co-develop a **plan with each participant** that best reflects what they need and can offer.
- Include **incentives for tenants** (e.g. vouchers) involved in the trial to encourage engagement and acknowledge any disruption.
- Emphasise the **co-benefits of flexibility** to encourage social landlords' participation.

During Beta delivery

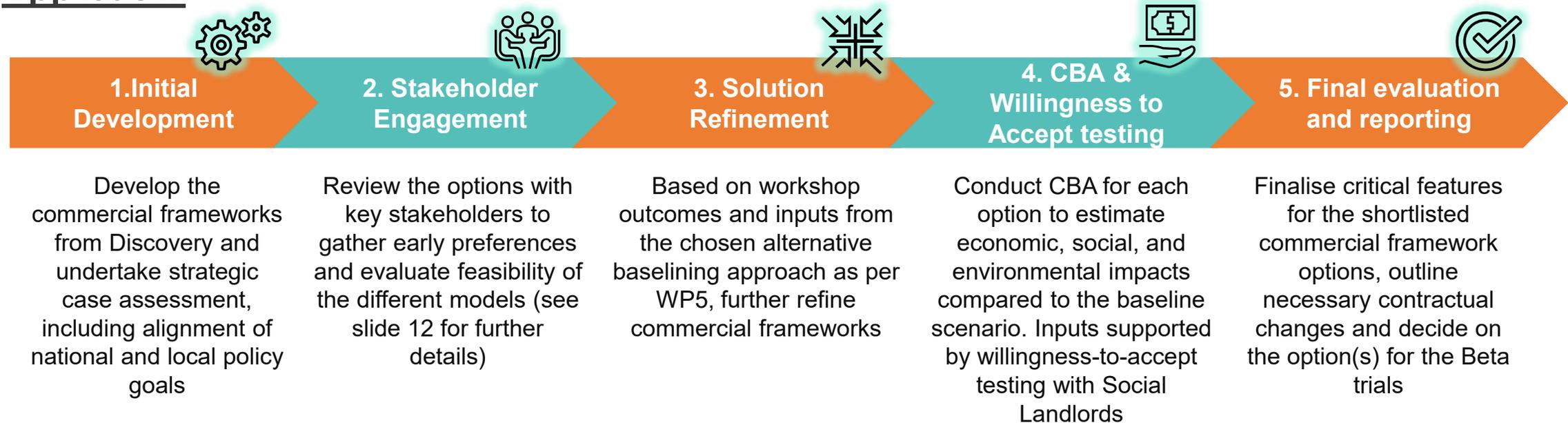
- **Co-develop a toolkit** to support social landlords and minimise the effort required of them.
- Research the possibility of **including different measures** in a Flex Direct tender, e.g. solar PV.
- Support social landlords with **knowledge and upskilling** for their participation in flexibility markets.
- Develop a **dissemination plan** to spread awareness and maintain engagement.
- Develop the **commercial model with fairness** to social landlords and tenants at its core.
- Review **lessons learnt from other Strategic Innovation Fund (SIF) and innovation projects**.

WP3: Commercial Arrangements and Route to Market / Approach

Key Objectives of work package

- Develop and refine commercial frameworks developed in Discovery, with expert input from Utilita, and validate frameworks by directly testing willingness-to-accept with Social Landlords, as coordinated by CSE;
- Refine and expand Cost Benefit Analysis (CBA), incorporating baselining methodology as developed in WP5

Approach:



WP3: Commercial Arrangements and Route to Market / Engagement

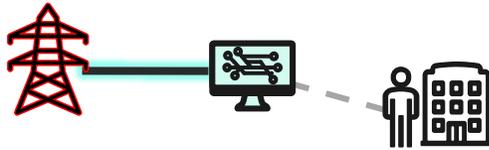
Engagement was conducted through dedicated workshops during which the three commercial models were presented, with a focus on addressing current challenges and market needs. Facilitated discussions and voting mechanisms captured stakeholder preferences, concerns, and recommendations to inform the refinement of the options.

Stakeholder	Engagement Objective	Key Findings:
UK Power Networks: DSO teams	To determine the Flex Direct product parameters including the procurement strategy, utilisation fees, payment mechanisms; and data requirements	Gave clear feedback on the most relevant parameters to consider for a bespoke energy efficiency flexibility product and what could be tested with Social Landlords to drive uptake. The DSO acknowledged the rationale behind all three models and their distinct roles, risks, and responsibilities, adding that Option 2 aligns best with Flex Direct’s core objectives.
Social Landlords	To gauge current level of awareness and understanding of energy efficiency flexibility amongst Social Landlords, discuss participation requirements and validate commercial appetite for the Flex Direct solution	Initially, many Social Landlords lacked awareness or capacity to engage in flexibility markets. As requirements – especially around baselining – became clearer, interest grew across all three options, particularly Option 2 (for revenue potential) and Option 3 (due to existing third-party relationships). By the final workshop, revenue from Flex Direct was seen as lower than expected, with Option 1 the least popular. Despite concerns about effort and cost, there was enthusiasm for Flex Direct, provided adequate support and funding during Beta. Suggestions included back-calculating resource needs for BAU and combining measures to boost ‘kWh impact per property’ and maximise revenue.
Flexibility Service Providers	To validate the commercial appetite for the Flex Direct solution from flexibility aggregators and refine commercial frameworks as appropriate	Found Option 3 most relevant but appreciated the value in the other options in facilitating new market entrants, relative to their capability. Viewed the marketplace as innovative but emphasised that accurate baselining will be crucial for estimating flexibility potential and determining final payments. Added that we should consider protective measures and validation methods for the Beta trial.



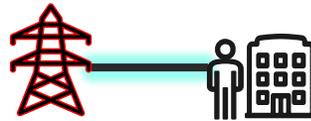
WP3: Commercial Arrangements and Route to Market / Options

Option 1: Enhanced Engagement



Aims to boost energy efficiency flexibility uptake by **leveraging existing market players**; flexibility aggregators remain primary providers of flexibility to the DSO, with Social Landlords participating through sub-contractual agreements external to the DSO's contracts.

Option 2: Direct Contracting with Social Landlords



Introduces a new commercial arrangement allowing **Social Landlords to act independently** as flexibility service providers, delivering energy efficiency flexibility directly to the DSO without relying on intermediaries such as flexibility aggregators.

Option 3: Direct Contracting with Social Landlords with Third-Party support



Creates a **new marketplace for energy efficiency flexibility**, enabling Social Landlords to act as independent service providers delivering directly to the DSO, with access to third-party technical support if needed.

Key Components:



- *Introducing an energy efficiency flex product as an offshoot of the existing Long Term Sustained Utilisation product*
- *Increased marketing and engagement*
- *Alternative baselining approach*



- *Mechanism for direct contracting*
- *Upskilling from DSO*
- *Increased Utilisation Fee*
- *Protective Mechanism embedded into contract*
- *Developing a new flexibility product*
- *Increased marketing and engagement*
- *Alternative baselining approach*



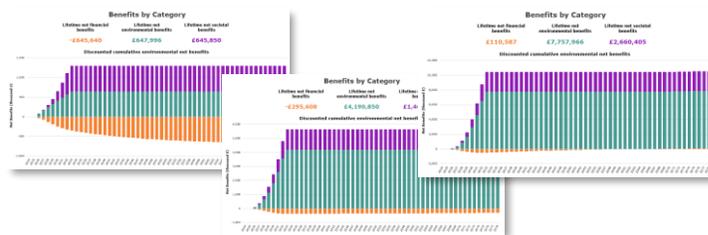
- *Matching service for Social Landlords & supply chain partners*
- *Mechanism for direct contracting*
- *Upskilling from DSO*
- *Protective Mechanism embedded into contract*
- *Increased Utilisation fee*
- *Developing a new flexibility product*
- *Increased Marketing and engagement*
- *Alternative baselining approach*

WP3: Commercial Arrangements and Route to Market / Benefits Analysis

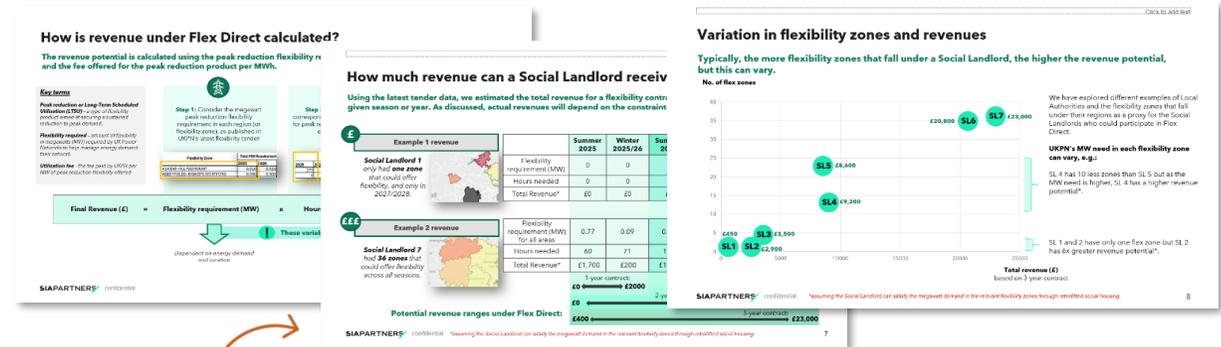
Cost Benefit Analysis Results

Key benefits across all commercial model options			
Financial	Avoided network reinforcement		
	Creation of new market processes/revenues		
Environmental	Indirect avoided CO ₂ associated with energy efficient homes		
Social	Household energy bill savings associated with energy efficient homes		
	Health benefits associated with fewer cold and damp homes		
	Avoided loss in productivity due to fewer cold and damp homes		
Cost & Benefit results			
Option	Option 1:	Option 2:	Option 3:
Total Costs	£1.74m	£2.73m	£4.38m
Net Present Value	£648K	£5.33m	£10.5m

Net benefits of each commercial model option explored in Flex Direct



Willingness to Accept testing



Sample materials to demonstrate indicative revenues to Social Landlords in Workshop 3

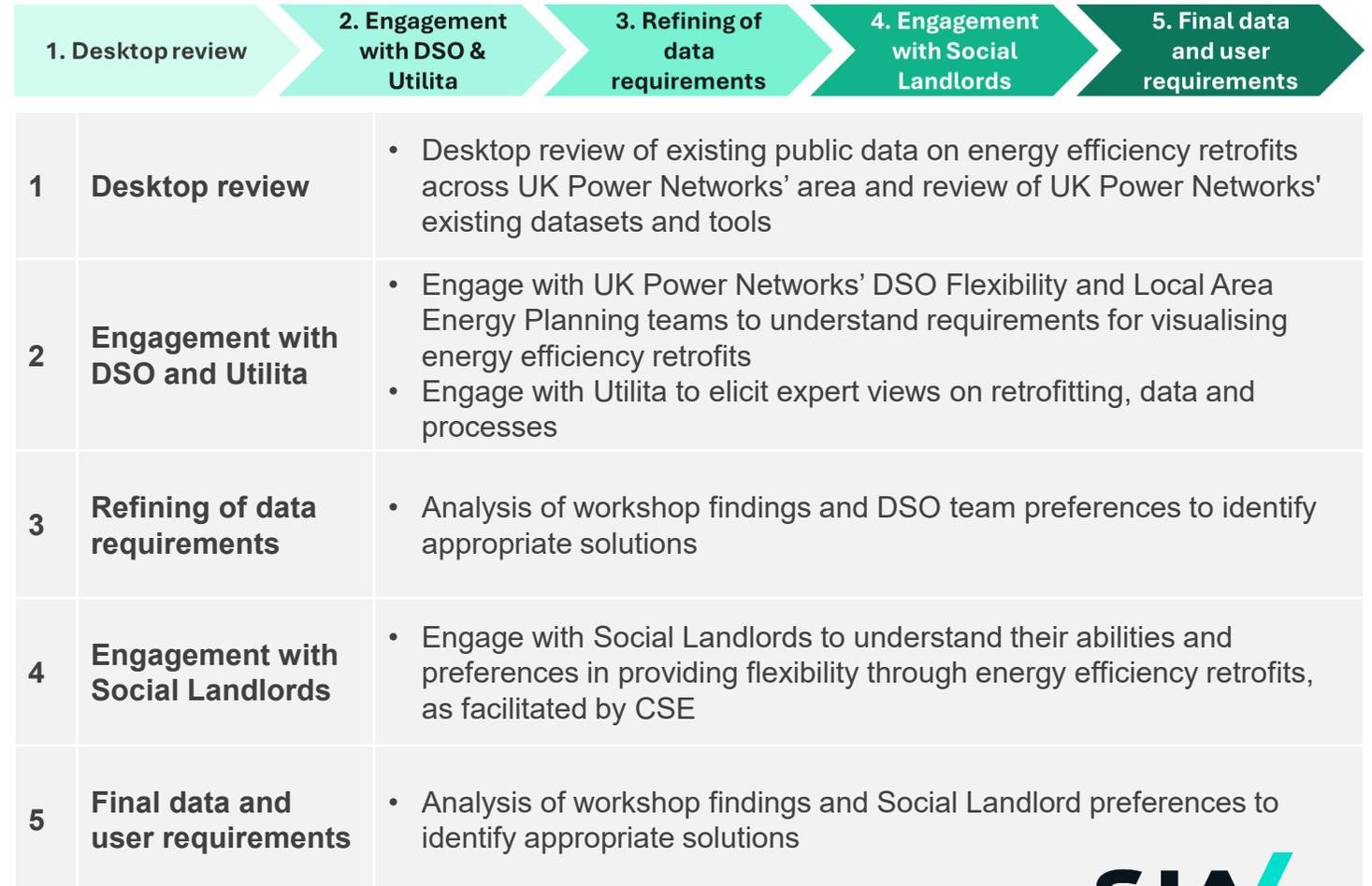
- In response to feedback from Social Landlords during acceptability testing, who felt expected revenues were too low relative to retrofit costs, we increased the Flex Direct utilisation payment, as reflected in the CBA.
- The CBA shows strong benefits across all three options, with each delivering a net positive impact and payback periods under three years. However, enhancing financial returns remains key to driving market uptake and ensuring commercial viability.
- Recognizing that higher DSO flexibility payments are more likely to boost participation and make Flex Direct commercially competitive. This should be explored further in the next phase.

WP4: BAU Transition and Data Discovery / Approach

Objectives

- To identify the requirements to standardise energy efficiency flexibility into BAU and enable the DSO to visualise energy efficiency retrofits (and their potential impact on capacity) across the network through a review of existing data sets
- Engagement with key DSO teams to understand data and user requirements, and engagement with Social Landlords, as facilitated by CSE, to understand data sharing with the DSO

Approach



WP4: BAU Transition and Data Discovery / Data Requirements & Process Maps

Following extensive engagement with Flex Direct 'users' and comprehensive desktop review, we have defined the new process maps under each commercial framework (as aligned to WP3), the subsequent proposed changes to BAU required and the associated data requirements.



Existing processes

- UK Power Networks' DSO Flexibility Procurement
- Flexibility Service Providers
- Social Landlords Retrofit Funding application / delivery
- Retrofit Installers & Coordinators
- UK Power Networks' LAEP+

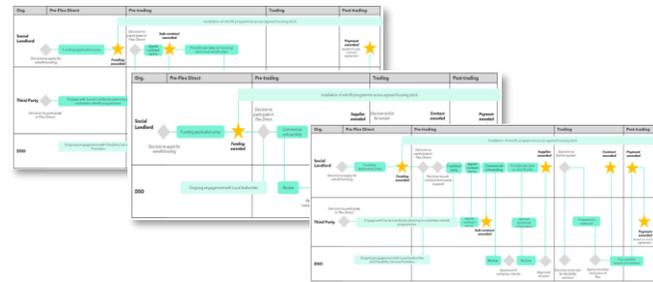


Existing Data

- UK Power Networks' DSO
- Social Landlords
- Flexibility Service Providers
- Retrofit Installers & Coordinators
- UK Power Networks' LAEP+
- Publicly available datasets



Flex Direct Process Maps



Flex Direct Data Requirements

Type	Commercial				Technical			
	Customer Information	Financial Conditions	Data Datasets	Insurance	Locations	Technology	Energy Resources	Modelling Input
Category	Name	DNO Standard Property Services Agreement	As-built JCRD Registered No.	Insurance Policy Number	DNM Name	Accessible	Threat Detection Capacity (MVA)	Number of walls
Criteria	Registered address	Financial accounts/Statements	Financial accounts/Statements	Public Liability Insurance	Region / County/TOWN / VSD	DCI Type		Property type
	Contact details	Business name/Address	Business name/Address	Business name/Address	Postcode	Deemed technology type		Date installed
	JCRD relationship to households		Person for contact/Installation					EPC pre and post install
	VAT Registration No.		Offices / Contract Termination / Region					Flooring technology before and after
Owner under:	Option 1		Third Party	Third Party	Third Party	Third Party	Third Party	Social Services
	Option 2		Social Landlord	Social Landlord	Social Landlord	Social Landlord	Social Landlord	Social Services
	Option 3		Social Landlord	Social Landlord	Social Landlord	Social Landlord	Social Landlord	Social Services

As a result, we have identified all data requirements and potential process maps for the Flex Direct solution under each commercial framework

WP5: Our process for selecting a baselining approach

Step 1: We outlined four approaches describing how metering, public data and modelling can be differently used.

Four baselining approaches

1. Before and after **aggregate** measurement

2. Before and after **heating asset** measurement

3. Model baseline and measure after

4. No demand measurement

Step 2: Through our own analysis and validation with the DSO and social landlords, we selected a preferred approach.

Preferred/
selected

Point-of-use options

1. Peak demand savings

2. Peak demand

3. Peak saving per kW installed

Step 3: We have developed options for how the preferred approach can be implemented. These will be tested with the DSO and social landlords.

Development and data options Methodologies we could use

1. NEED: National Energy Efficiency Data framework

2. Standard Assessment Procedure / Home Energy Model methodology to estimate energy performance of homes

3. DEFENDER SIF Project outputs

4. Monitor & Revise

Project Plan Update

Key Risks

Please see Project Management Book for full list of Alpha Phase risks – only a small number of key risks have been highlighted below.

Ref	Risk Description	Likelihood (Low/Med/High)	Impact (Low/Med/High)	Mitigation	Status
R15	Energy efficiency roll out leads to an increase in peak load in disadvantaged homes (causing "rebound effects")	Low	Medium	<ul style="list-style-type: none"> Whilst unlikely, the Alpha considered the impact of energy efficiency on peak load to mitigate this risk as the project moves forward. The DSO Flexibility team acknowledge the business risk introduced by the rebound effects and that there is a risk that peak demand increases. Due to limited data, the scale of impact (both the prevalence and severity) of the rebound effect is unknown and so must be considered and monitored further. 	Open
R2	Outputs from stakeholder engagement unable or unsuitable to inform subsequent work packages	Low	Medium	<ul style="list-style-type: none"> Engagement with Social Landlords is led by CSE, an independent research organisation as recognised by UKRI, to ensure best practice is followed and high quality outputs. Engagement materials were designed and refined amongst project partners and respond to the feedback from stakeholders. There was a mix of methods utilised, both quantitative and qualitative. 	Closed
R9	LAs are not willing to participate in flex markets due to low interest and so the project is unable to engage them	Low	High	<ul style="list-style-type: none"> LAs will play a crucial role in delivering Energy Efficiency flexibility. Engagement with LAs during Discovery and Alpha have showed a clear interest in participation in Flexibility markets and the Flex Direct proposal. This engagement is continuing to provide insight and validate the project aims. Barriers identified by LAs are being addressed to maximise participation in the project and across the workshops. This project and market mechanism should primarily focus on those that are able and willing to engage Our engagement has identified SHPs and LAs that are suitable to act as early adopters as they have the right expertise and capacity to participate. 6 SHPs and LAs expressed interest in participating in Beta trials, which demonstrates a sufficiently material level of commitment to pursue further development 	Closed

Project Specific Conditions

Condition	Description	Update
1	The Funding Party must not spend any SIF Funding until contracts are signed with the Project Partners for the purpose of completing the Project.	Complete
2	The Funding Party must report on the financial contributions made to the Project as set out in its Application. Any financial contributions made over and above that stated in its Application should also be reported and included within the Project costs template.	Complete
3	The Funding Party must make reasonable endeavours to participate in all meetings related to the Project that they are invited to by Ofgem, UKRI and DESNZ during the Alpha Phase.	Complete
4	Alpha phase will last for a period of 8 months from the date the Project Direction is issued (2 nd October 2024), the Project will be allowed a flexible start date within the 8 month period. The Project must provide the monitoring officer with the start date and must complete within 6 months of the start date and cannot be completed after the 8 month period has ended.	Complete

Alpha Lessons Learnt

- Providing pre-read materials prior to workshops can help stakeholders more effectively engage
- During stakeholder engagement ensure we emphasise the non-financial benefits of the project/proposal

Next Steps

Next Steps

The project partners are currently developing a proposal for Beta. If the Beta trials are successful then the proposed model will be considered for implementation as BAU.

1

Secure Social Landlord trial partner(s) and identify trial site(s)

2

Consider opportunities to expand or develop the Flex Direct proposed framework

3

Target a joined-up delivery trial, that will be used to test and evidence that the proposal is feasible

Questions