

December 2024

SHDF Wave 1 Case Study



Liverpool City Region Combined Authority



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1 Project Summary¹

Project Consortium
Lead LA: Liverpool City Region
Combined Authority

SHDF Wave 1

Project completion date:
31st Dec 2023

1225 Homes
Improved to EPC C+

503 External and 158 Cavity Wall Insulations	34 Ground Source Heat Pumps	
680 Loft Insulations	192 Double Glazed Windows	
6 Underfloor Insulation	132 Draught Proofing	
597 Solar PV	1 Storage Heater	

687.46 tCO₂e
emissions savings
(estimated per yr)

£203 fuel bill
savings
(estimated average £/yr/household)

Total Spend:
£21,811,814

£ 17,806
per home

49%
Match
Funding:
£10,699,242

51%
Grant
Funding:
£11,112,573

¹ Carbon emission and fuel bill figures are taken from the SHDF Wave 1 change control log and are based on the National Household Model. Figures are accurate as of 30th July 2024.

Rationale for case study selection

The Liverpool City Region Combined Authority (from here on referred to as the 'Authority') project was selected as a case study because:

- The project showed good progress against its objectives during delivery.
- The project was one of the largest in Wave 1, installing measures in 1,225 homes.
- It led a large consortium of eight housing associations (HA).
- The project installed a broad mix of measures including external wall insulation (EWI), cavity wall insulation (CWI), underfloor insulation, loft insulation, draughtproofing, ground source heat pumps (GSHP), double glazed windows and solar PV.

This case study is based predominantly on interviews with the project team, as well as analysis of secondary scheme monitoring and management data.

2 Working as a Consortium

The project involved eight organisations and was one of the largest consortia in Wave 1. There were nine Wave 1 consortia projects that involved five or more organisations, with the largest consisting of 10 partners.

2.1 Effective consortium working and leadership

While bidding for the scheme, the Authority was already delivering on a wide range of retrofit programmes including the Sustainable Warmth (SW), Home Upgrade Grant (HUG), and Local Authority Delivery (LAD) schemes, through which they developed retrofit project management experience.

In previous retrofit schemes, the Authority delivered and oversaw projects on the ground. However, in Wave 1, their role was to manage a consortium of registered providers (RPs) to deliver retrofits. In interviews, representatives from the Authority reported they felt motivated to take a consortium lead role to support and empower RPs to deliver retrofit projects and gain experience. The two interviewed RPs suggested this approach was successful, as they both felt more confident and upskilled to undertake future retrofit projects, and participating in the scheme pushed housing decarbonisation to the top of their agenda.

In an interview, a representative from the Authority reported some other factors that enabled effective consortium working:

- The Authority provided retrofit bootcamps to RP project team members, funded through existing funding from the Department of Education and the Administration and Ancillary cost budget of their Wave 1 project. These bootcamps aimed at creating awareness around retrofit and energy efficiency.
- The Authority commissioned a cost benchmarking exercise with Turner & Townsend (through the Social Housing Retrofit Accelerator, or SHRA). The results were then shared
- with the RPs, which helped them with procurement.
- The Authority had knowledge of the data upload process to support the RPs in entering and submitting their monthly monitoring and reporting data accurately.

Bypassing more difficult planning challenges

The Authority mentioned smart ways of managing retrofit delivery to avoid having to pursue burdensome planning permissions. For example, one RP planned a combination of external wall insulation at the back and internal wall insulation at the front for multiple houses on the same street, so they did not need to alter the aesthetics of a whole street of terraced houses. Maintaining the street appearance was a requirement to secure planning permission more quickly.

“RPs have been really flexible about what measure mix they deliver based on the kind of issues that crop up and how they pivot and then deliver something else which has been really good”. – SHL interviewee

2.2 Challenges of working within a large consortium

Interviewees from the project team also noted a number of challenges of working as part of a large consortium. As project lead, the Authority was reliant on the RPs to provide accurate and timely monitoring data to submit to DESNZ as part of monthly data monitoring returns. The Authority found it challenging to collate monitoring data from all eight consortium partners and submit it to DESNZ before each monthly deadline. One RP also felt that timescales were tight to send back monitoring data to the Authority every month.

The Authority noted that there was a lack of awareness among RPs about the need to keep them updated about changes to measures they planned to install. Submitting change control requests was also challenging, given that the Authority had to import eight different datasets. Given RPs were at different stages of delivery and had different delivery plans, it was difficult to consolidate changes into fewer change requests. As a result, the consortium was one of only two Wave 1 projects to submit the maximum number of 10 change requests by December 2023. As part of internal processes, every change request also required a variation deed prepared by the Authority's legal team, which took time.

The Authority also mentioned in interviews that the upload process for monitoring data was not straightforward for a consortium of their size. For example, the definition of 'completed property' was interpreted differently across RPs, and some RPs signed off properties as complete before they were lodged with Trustmark as required. The long chain of communication involving the Authority, partner RPs, contractors and their project managers made it difficult to keep track and monitor what was completed on the milestone plan.

3 Challenges in Delivery

The project experienced and dealt with several challenges during delivery, including cost inflation and limited supply chain capacity.

3.1 Managing high costs

Costs were a challenge for the project. Both interviewed RPs stated that inflation significantly drove up supply chain costs. This was also considered to be one of the reasons why the ninth

RP dropped out. Cost increases also had significant effects on property selection: a tower block was taken out of scope of the project due to a 50% increase in costs and issues with asbestos. Other reasons for cost increases included:

- One interviewed RP considered that PAS 2035 works added unnecessary costs, without necessarily providing benefits. For example, they had to insulate below the damp-proof course as per PAS 2035 requirements, which added another £0.5 million to the overall cost. They also reported underestimating the level of pre-installation works for some properties. This had a knock-on effect on timescales and costs.
- The other interviewed RP reported struggling to get some of the properties in scope to an EPC rating of C or above with fabric measures only. They resorted to adding measures like solar PV or window glazing, resulting in increased overall cost. Additionally, works on windows made the blinds and curtains unsuitable for some residents. The RP mobilised window and blind contractors to address this but had to pay for this from their own funds.

Some enabling factors in managing high costs were noted in interviews:

- More expensive measures like External Wall Insulation (EWI) were descope from 803 to 710 properties. Other measures like Loft Insulation, which is comparatively cheaper, were installed for 802 properties compared to the original 549 planned.
- The consortium made use of a procurement model, the Dynamic Purchasing System (DPS), which helped them manage inflationary increases in the costs of contractors, labour, and materials. Having the DPS in place provided the RPs with the flexibility to procure from alternative sources at reasonable rates. The Authority noted that this was particularly helpful for RPs when the quantity of materials needed mid-delivery escalated quickly and there was limited time to scout for new certified suppliers.

In contrast, two less successful approaches were reported in interviews:

- One RP took a procurement route offered by Fusion 21, a social enterprise specialising in public procurement, who offer access to procurement frameworks, dynamic purchasing systems and support services. However, the RP felt the service did not provide enough cost certainty. The final cost of works was higher than originally estimated as it did not include the cost of pre-installation works and other overheads. The RP took a different approach using a competitive tender for their Wave 2.1 project.
- Another RP identified an opportunity for tax relief by maximising use of zero-rated VAT energy saving materials. However, they were not able to take full advantage of this as their supply chain stakeholders were unaware of materials that accounted for zero-rated VAT, so the RP subsequently brought in VAT consultants for their Wave 2.1 project.

Challenges in Clean Heat

The Authority's initial bid consisted of 42 Ground Source Heat Pumps/Shared Ground Loops (GSHP/SGL). However, only 34 GSHP/SGL were installed. The Authority reported that GSHPs were installed over winter in wet and muddy conditions and caused significant disruption for residents, including mould growth.

Two RPs also submitted plans for 32 Air Source Heat Pump (ASHP) installations as part of the initial consortium bid. However, one of these RPs, who planned 25 of the ASHP installations, pulled out of the project altogether due to cost inflation (as mentioned in earlier sections). The other RP, who had originally planned to install 7 ASHPs, changed their properties to others where ASHPs were no longer viable, meaning none were installed.



Figure 1: Before and after photos of housing stock where external wall insulation, internal wall insulation, loft insulation, double glazed windows, doors and ventilation measures were installed.

4 Resident Engagement

In interviews, the project team reported mixed experience with residents, noting specific difficulties due to:

- The need to make multiple appointments with residents for pre-installation property surveys and assessments, as noted by the Delivery Partner.
- Lack of dedicated resource at some RPs to undertake resident engagement.
- Works being disruptive and intrusive, as noted by one interviewed RP.

However, a number of resident engagement methods were used to support delivery:

- The Authority recognised the benefits of having resident liaison officers to explain the retrofit process to residents and get their buy-ins quicker.
- Incentives such as refurbishing bathrooms and kitchen were leveraged to encourage people to sign-up for the retrofit works.

- One RP created respite facilities which residents could use while intrusive works were undertaken at their homes.

Early indications of benefits for residents

The Authority has received positive feedback from residents, including that external wall insulation has finally fixed recurring damp and mould issues, which previous attempts had failed to address. Both the RPs interviewed also reported that residents find their home quieter and warmer.²

5 Data sources

Data sources used to produce this case study	
<i>Social housing landlord Interviews</i>	Three interviews (Q 3, 2023) with: <ul style="list-style-type: none"> • One Wave 1 representative from the project lead, Liverpool City Region Combined Authority. • One Wave 1 representative from a partner Registered Provider • One Wave 1 representative from a partner Registered Provider.
<i>Scheme monitoring data</i>	Scheme monitoring data (including risk register), as reported by the project team and assessed by the Wave 1 Delivery Partner.

² No residents from this project were surveyed or interviewed to confirm the findings directly.

