

# Transforming social housing through decarbonisation: The challenges and opportunities in decarbonising at scale

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# Introduction

The English social housing sector is at the forefront of a wider process of decarbonising the nation's housing stock. Residential housing is estimated to account for 20% of the UK's greenhouse gas emissions, with the majority of emissions being from household heating (Rowe and Rankl, 2024). Consequently, the decarbonisation of the housing stock is a critical step in the journey towards net zero carbon emissions by 2050. In England, social landlords are expending significant investment on decarbonisation and retrofit, drawing upon a mix of central government funding and private finance. The primary source of central government funding is the Warm Homes: Social Housing Fund (WH:SHF), which has committed £1.29bn until 2027/28, and which supersedes the Social Housing Decarbonisation Fund (SHDF) that awarded £1.03bn over two waves by 2024. Measures installed by social landlords are intended to improve the energy efficiency of their homes and transition their stock towards low-carbon heating and energy consumption. Measures include loft and wall insulation, solar photovoltaic (PV) systems, and the installation of low-carbon heating systems (e.g. air-source heat pumps) (DEZNZ, 2024).

However, decarbonisation and retrofit is occurring at a time where the operating environment for social landlords is challenging. Macroeconomic shocks and political events have disrupted the business plans of social landlords in recent years, with periods of inflationary pressure and interest rate rises affecting the sector's financial resilience and borrowing capacity (LUHCC, 2024). Within the sector, many social landlords are attempting to rebuild trust with their customers and ensure service standards are upheld following the emergence of issues relating to building safety, damp and mould, and the passage into law of the 2023 Social Housing Regulation Act that strengthens consumer standards. As such, social landlords vary in terms of the extensiveness and ambition of their current decarbonisation programmes, and there is a need to expedite existing progress to meet overarching net zero objectives.

Moreover, the decarbonisation of social housing cannot be separated from a wider debate regarding the distribution of costs and benefits from the transition to net zero. Academic research has started to explore the experience of retrofit from the perspective of customers, introducing the concept of 'retrofit justice' to promote an 'equitable and fair' path to decarbonisation by incorporating the voices of customers in decision-making and ensuring installations deliver their purported benefits (Charles et al., 2025). Nonetheless, more work is required to understand how social landlords can decarbonise their housing stock at scale, while also delivering high levels of customer satisfaction and engagement.

The aims of this policy and practice brief are to interrogate the financial and strategic context in which decarbonisation of social housing is occurring, and how social landlords could respond to deliver decarbonisation at scale whilst maintaining fairness and high levels of customer satisfaction. It addresses two research questions:

- a) What challenges and opportunities are social landlords facing in relation to decarbonisation of their asset base?
- b) What strategies and practices are social landlords adopting in response?

A key theme emerging from the empirical work was the prominence of customer refusals of decarbonisation works. As such, we structure the policy and practice brief in three sections: 1) contextual factors, 2) the theme of refusals, and 3) the strategic responses of landlords.

The brief draws upon the combined evidence of three research projects:

- a CDice funded project on the rollout of heat pumps;
- an ESRC funded PhD on trends in asset management in social housing (Marshall, 2023); and
- a Knowledge Transfer Partnership (KTP) between Together Housing and University of Huddersfield.

Both the CDice project and ESRC PhD involved a desktop review of existing evidence and qualitative interviews with over thirty social landlord staff, contractors, regulators, funders and professional bodies. The interviews explored retrofit, decarbonisation and broader trends in asset management in English social housing in the post-pandemic context. The KTP adopted an action research model that is detailed in the case study section below.

# 1. Contextual factors

The contextual factors discussed in this section emerged as sources of constraint and opportunity that create path dependency for retrofit by making certain technological and procedural options more feasible than others. The strategies adopted by social landlords towards retrofit, therefore, were often adopted with reference to these contextual factors.

## 1.1. Finance and public funding

There was widespread agreement among interviewees that decarbonisation presents a significant financing challenge for social landlords and that this is occurring at a time when there were several competing demands upon landlord resources. Social landlord expenditure on maintenance and major repairs has increased in recent years, in large part due to investments in building safety, while landlords have also been affected by inflationary pressure. This has increased the cost of borrowing and placed several social landlords at risk of a loan covenant breach, most notably landlords whose earnings are insufficient to cover their interest payments once accounting for maintenance and major repairs expenditure (Marshall, 2023). Crucially, this has implications for the capacity of landlords to raise finance for decarbonisation, as illustrated by the quote below in which the interviewee explains the constraining effect loan covenant compliance:

"It's a big problem. Boards see their interest cover covenant and they see their building safety spend going up and up and up, and they suddenly breach this covenant in 10 years time. Then they're going to reign back that spending, and then they're going to decarbonise less. And that's a big problem."

*(Stakeholder -social housing membership body)*

Some social landlords within our sample have successfully renegotiated their loan covenants to give them the headroom to release capital expenditure for decarbonisation. But this option is not universally utilised or available. In addition, there is a growing market in private finance for retrofit, including retrofit loans guaranteed by the National Wealth Fund. However, these instruments are embryonic at present and so it is unknown as to whether they can be scaled up with sufficient speed to meet the financing challenge of decarbonisation.

The interviewees welcomed the increase in public funding via WH:SHF, while noting the implementation of the policy produced several challenges for social landlords. For instance, the release of funding in periodic waves, some of which had relatively short time scales for completion, could exacerbate inflationary pressure in the supply chain as landlords were "fishing in the same pool" for suppliers. Wave 3 of WH:SHF allowed landlords to apply for Strategic Partnership status with Department for Energy Security and Net Zero (DESNZ), which grants landlords greater autonomy over project delivery

and fewer reporting requirements.

The funding landscape for energy efficiency works was also described by some interviewees as fragmented, with different schemes having contrasting criteria and specifications. Landlords, especially those with relatively lower borrowing capacity, were willing to utilise a diversity of funding streams to finance energy efficiency improvements. But this could result in sub-optimal outcomes such as the usage of Energy Company Obligation (ECO) funding to install gas boilers for off-grid properties, which landlords knew would later need removing:

"The advantage of the ECO 4 funding is that we don't have to contribute anything to that. And we can also fit gas into properties that we've never had gas before. Which obviously goes against the government focus of decarbonisation. But the best way of changing an EPC dramatically, to improve it, would be by fitting gas heating because of the way it's worked out. It's all based on energy use. And until that changes, that's where we are."

*(Staff – small social landlord)*

## 1.2. Energy systems, capacity and pricing

Energy systems created challenges in scaling up retrofit in two respects – the price of electricity and grid capacity.

The ratio of electricity to gas prices is high in UK relative to other European countries. Prior reviews of the evidence suggest this has acted as a barrier to the rollout of low-carbon heating (Harrington, 2024). Our interviewees suggested this influenced their decarbonisation strategy, with an initial focus on fabric improvements being common to ensure heat pumps would be cost-effective to run. And some interviewees also intending to install solar PV to reduce the running costs of heat pumps. Nonetheless, the assumed running costs of heat pumps contributed to reluctance among some customers (see section 2).

Prior research has suggested that the electrical grid will need upgrading to accommodate the rollout of heat pumps and to avoid the risk of overloading the grid during periods of peak heat demand (Preece and Ehsan, 2021). While our interviewees had not yet experienced issues with the grid capacity in their rollout of heat pumps, they acknowledged this was largely due to the relatively low numbers being installed. Regardless of the realities of grid capacity, the perception that it could pose an issue has contributed to risk-aversion among some social landlords and mitigated against scaling up their heat pump installations:

"We're continually having to check with the grid in terms of whether the grid will take it. Especially as

we're doing full streets and it's not dotted about. So far, we haven't had any issues. But it's always on our minds when we are planning schemes."

*(Staff – mid-sized social landlord)*

### 1.3. Built environment

Properties vary in terms of their existing energy efficiency and therefore the extent of work required to bring them to an Energy Performance Certificate (EPC) band C. Plus, variation in property design and location – for example property type, floorspace, wall construction, rurality – will make certain retrofit options more feasible than others. As such, data shows that the majority of properties treated under the WH:SHF are within EPC band D, although it's worth noting that social landlords have proportionately fewer F and G properties than the private rented and owner-occupation sectors (Scott, 2023).

As mentioned above, a common strategy among social landlords was to use most of their funding to improve the fabric of properties, for example through insulation, while pursuing deep retrofit and addressing 'hard-to-treat' homes through smaller scale pilots.

"So, we applied for a thousand properties. But we decided because we had quite a lot of properties at band D – and obviously the funding was for Band C – that air source heat pumps wasn't the way to go on that scheme. So, we did the lower-level measures at scale."

*(Staff – mid-sized social landlord)*

"Deep retrofit is all about trying to push the boundaries. And being innovative, doing things differently. It's not going to be taken up by a lot of people unless we can come with a suitable finance mechanism for it. But it's pushing the boundaries and the lessons will trickle down to the other schemes."

*(Retrofit supplier)*

The built environment also imposes trade-offs between decarbonisation and other objectives. Social landlords have highlighted that prior planning is necessary to avoid compromising accessibility through fabric improvements, for example making passageways to back gardens inaccessible for wheelchair users when installing external wall insulation (CIH and Orbit, 2021). And installations such as hot water cylinders or solid wall insulation can result in a reduction in storage space, floor space, or the need for households to adjust behaviours to maintain their efficacy (e.g. one interviewee explained they reminded customers not to hang

a washing line on solid wall insulation). Such trade-offs can contribute to customers refusing retrofit (see section two).

### 1.4. Supply chain

Building the supply chain for widespread retrofit and decarbonisation is a known challenge acknowledged by government, industry stakeholders and our interviewees (Cretu et al., 2022). Our interviewees highlighted that this varies by industry and technology, with the supply chain well established in certain industries (e.g. insulation), but more nascent in others (e.g. battery storage). And the supply chain pressures vary geographically, with certain rural northern areas highlighted as facing difficulties in delivering at scale.

"[In our region] we sometimes struggle for contractors who've got all of the necessary credentials, whether it's air-source heat pumps or solar PV. Sometimes we struggle to attract more than one choice of contractor."

*(Staff – mid-sized social landlord)*

Some of the larger social landlords interviewed were responding to this challenge by using the social investment arm of their organisation to deliver apprenticeships and training opportunities in decarbonisation. And were conducting outreach with local colleges and schools to promote retrofit as a career pathway.

Many interviewees expressed that they had not experienced significant difficulties in securing a supply chain for retrofit and decarbonisation. But they also acknowledged that this would become a more severe constraint if the industry was to deliver at greater scale. Previous work has highlighted the potential risk of a 'catch-22' where heat pump rollout is limited by the supply chain, but the supply chain is reliant upon sufficient long-term demand to achieve scale (Harrington, 2023: 9).

Social landlords that were delivering relatively large numbers of heat pumps in the years following the pandemic (e.g. 2022 and 2023) reported facing supply chain pressures with respect to both installation and ongoing maintenance, as indicated by the quotes below. However more recent interviews suggested these pressures have been alleviated to some extent:

"So it's a challenge now in getting product [i.e. heat pumps]. We've struggled even at a low level of demand this year to get air-source heat pumps. We've had to switch manufacturers just to basically get product. And if we had to hit the volume the government says they want to hit, there's a problem both from a product perspective and an installation perspective."

*(Staff – large social landlord)*

"I can remember in the middle of COVID there was one particular type of heat pump, and we had hundreds of them installed in our stock. One of them failed and there was only one in stock in the UK. And we took that one. But we if had another one go the next day, we couldn't have done anything for weeks."

*(Staff – large social landlord)*

Interviewees also suggested that interaction between supply chain nascency and the prescriptive nature of WH:SHF funding and administration resulted in a risk aversion with respect to heat pump rollout. Landlords reported being reticent to commit to ambitious numbers of heat pump installations in relatively tight timescales under WH:SHF when the supply chain made success uncertain, and failure to deliver on their past commitments could potentially affect their bids for future waves of funding.

"I think that puts people off because you've got a commitment, 'we're going to do 3,000 homes in the next two years.' But what happens if we can't deliver that?"

*(Staff – large social landlord)*

## 1.5. Legacy strategies and procedures within social landlords

The contextual factors explored above were seen by interviewees to contribute to challenges in retrofit, including supply chain bottlenecks, difficulties scaling up delivery, and difficulties addressing the worst performing properties. But alongside these factors, landlords also acknowledged that decarbonisation was incentivising a transformation of their own strategies, systems and procedures. Partly this was because their past approaches to asset management need to adapt to the challenge of decarbonisation. One interviewee explained that the asset strategies that focus on discrete components within a home (e.g. kitchens, bathrooms) were becoming anachronistic:

"So, historically we've done component-led programmes. What we've learned from SHDF is that it's a multi measure approach that requires you to look at the whole house, and every home is different."

*(Staff – large social landlord)*

The empirical work highlighted that retrofit for decarbonisation presents distinct challenges compared to previous housing investment programmes, such as kitchen

and bathroom upgrades (see section 2). Yet, interviewees explained that past issues with service standards, both within and beyond retrofit, have affected the reputation of the social housing sector, and there was a need to rebuild trust with customers by changing processes, systems and communications. One interviewee reported having to remove solid wall insulation that had produced issues such as damp ingress. And similarly, another had removed heat pumps where they were installed into poorly insulated homes. As the following sections elaborate, these issues were contributing to customer refusals and a transformation of landlord processes in response.

## 2. Refusals

A recurring theme across the projects was the experience of customers refusing retrofit and decarbonisation works. Public and comprehensive data is unavailable on the rate of refusals across the social housing sector. A survey of social landlords found that just under half have received customer refusals, although this survey question was focused on planned maintenance generally rather than decarbonisation exclusively (BEIS, 2021).

Consequently, further work is required to quantify the rate of refusals across the social sector. But all the landlords interviewed for the CDice project and ESRC PhD had some experience with customer refusals, although to varying degrees across organisations and types of installation. One organisation estimated that one-third of their approaches and appointments resulted in 'no access' to the home. Furthermore, reducing the rate of customer refusals has been central to the KTP.

While refusals were relatively common among interviewed landlords, it also worth highlighting that landlords reported many customers were keen to have receive the works, especially as the interviews occurred during a period of high energy price inflation. Moreover, prior research suggests that most customers are highly committed to reducing the carbon emissions of the social housing sector (NHC, 2021).

We group the reasons for refusals encountered across the projects into three groups: the disruption of the retrofit process, doubts regarding the expected benefits, and organisational factors within social landlords. These groupings are both non-exhaustive and non-mutually exclusive. For instance, poorly designed landlord processes and communication can exacerbate the disruption involved with retrofit.

### 2.1. Disruption of retrofit

Depending on the extent of the work involved, retrofit and decarbonisation can be seen as disruptive of daily life by customers. Works can involve packing away belongings and vacating rooms for multiple days. Plus, the finished installation can require customers to adapt to new technologies. This disruption can contribute to reluctance and refusals from



some customers.

Interviewees suggested that some of their elderly customers saw the process as disruptive, especially elderly customers without family or friends who could help with packing belongings or moving furniture and carpets.

"For some people it can be seen as hassle. They might say, 'I haven't got any support.' Bear in mind things have to be moved, like carpets. And as much as we do a lot of that stuff for them, they might still say 'I'm too old for this.'"

*(Staff – mid-sized social landlord)*

However, these concerns are not exclusive to elderly customers. The potential for disruption is also highly pertinent to customers experiencing long-term illness or working night shifts. And anxieties regarding the process may be exacerbated by a lack of trust in the landlord or contractor (see above). One interviewee explained, a customer had refused the installation of solar PV and heat pump because: "They thought it would be noisy and expensive. They didn't have any trust in the system."

Furthermore, existing evidence suggests customers can be concerned with the disruption associated with procedural failure. Members of a Social Housing Tenant's Climate Jury – established by the Northern Housing Consortium (NHC) to understand tenant perspectives on decarbonisation – reported that customers were concerned that their home and belongings may be damaged during the retrofit process and that this would result in lengthy and exhausting complaints procedures. Rather they recommended expectations for compensation be established prior to works commencing (NHC, 2021).

## 2.2. Doubts regarding the benefits

Many of the reasons for refusal discussed in interviews related to doubts regarding the benefits of retrofit. Interviewees reported that some customers perceived low-carbon heating technologies such as heat pumps as being a more expensive and inferior technology to gas central heating:

"With electric being more expensive than gas, especially in the past, taking people from gas to heat pumps has been met by some resistance. People thought 'I can have instant heat cheaply whenever I want it, why would I then go to something that is perceived as slower and that you need to leave on for longer periods?'"

*(Staff – large social landlord)*

The perceived inferiority of heat pumps is therefore partly due to the instant heat provided by gas heating – rules of thumb such as a very hot radiator are commonly used as a sign of effective heating, which do not readily translate to a heat pump. But it is also partly driven by the familiarity and cost of existing heating sources – one interviewee explained that off-grid households reliant upon solid fuel heating (e.g. coal) could be reluctant to accept heat pumps as they continued to receive solid fuel or cash allowances under the National Concessionary Fuel Scheme (NCFS). Similarly, many landlords we interviewed had experienced customers expressing a preference for the familiarity of gas heating.

In areas where the capacity of the energy grid has produced recent power cuts landlords reported that some customers had refused heat pumps. Customers raised concerns that they would be without central heating and hot water if power cuts occurred again. The quote below illustrates the challenge and how the associated landlord responded:

"We have a lot of power cuts in the area. So for people to lose solid fuel and have to swap in an air source heat pump, especially over winter time, how are you going to heat your house? That was a massive, massive difficult sell to people. And the way we got around that was because we were installing solar panels. And we're installing a battery backup system. So if there is a power cut, the residents can use a plug socket and a light switch from the battery source. And so shouldn't be without electricity or heating."

*(Staff – mid-sized social landlord)*

Interviewees reported that customers tended to raise fewer doubts regarding the benefits of fabric improvements. And it is worth noting gas boilers also rely upon electricity to function. Nonetheless, some customers have refused fabric improvements where they consider the aforementioned disruption of the process to not be sufficiently compensated for by the expected benefits, and when some of the expected benefits are associated with outcomes such as a loss of floorspace.

## 2.3. Organisational factors within social landlords

As with concerns regarding the disruptiveness of retrofit, doubts as to the expected benefits were exacerbated where customers had a lack of trust in their landlord or contractors. Distrust could be general, but it could also be specific to retrofit due to reports of poor installations in the past and concerns regarding 'cowboy builders.' As one interviewee explained:

"People do talk about cases where heat pumps

have gone in homes that weren't fabric ready and the home isn't warming up or costs are increasing. And that's given some people a negative view of heat pumps because it wasn't done right in the first instance."

*(Staff – large social landlord)*

Customer refusals cannot be reduced, therefore, to a technical-rational choice based on positive practice by landlords. The work of the KTP has highlighted that refusal rates are not only driven by tenant perceptions of disruption or technology scepticism. They are also influenced by internal organisational factors such as siloed communication, inconsistent messaging, and variable knowledge across housing teams. Addressing refusal rates therefore requires a whole-organisation approach within social landlords to embed retrofit awareness, support consistency across staff, and foster stronger tenant trust over time.

### 3. Landlord responses

The preceding section illustrates that refusals to an extent emerge out of the contextual factors discussed in section one. For instance, the legacy of an emergent supply chain and heat pump installations in energy inefficient properties can interact with the overarching challenges of the cost of electricity and grid capacity, contributing to reluctance among some customers who anticipate a poor installation, higher bills, or a loss of heat during power cuts.

However, the preceding section also suggests that social landlord processes can moderate these factors and can exert influence on the rate of refusals. The projects highlighted several responses from social landlords intending to expedite decarbonisation, reduce the rate of refusals and ensure decarbonisation does not produce unfair outcomes. Furthermore, social landlords relatively advanced in their decarbonisation journey tended to view it as a business transformation opportunity and were keen to expedite decarbonisation across the social housing sector by sharing the lessons learned (see case study). In this section we discuss how decarbonisation is transforming the relationship between social landlords and a) their assets and b) their customers.

#### 3.1. Transforming the relationship to their assets

As discussed above, decarbonisation has caused social landlords to reconsider their approach to asset management and to consider moving away from a component-led approach. Interviewees explained how they were using their data to consider the home as a system of complementary parts, for example how the heating system needed to be complemented by the building fabric, solar PV and ventilation system:

"From a data perspective, and a customer perspective, we're now gearing everything up towards seeing the home as a system. So we might do fabric first, but if we also need to do other technologies because without doing it it's a regret spend, we will do that. [...] So, it's a whole house approach, but the whole house approach is designed on day one, with a view that over the next 27 years those measures will get delivered in the right sequence, accepting that every home is different."

*(Staff – large social landlord)*

The prospect of decarbonising hard-to-treat properties is also challenging landlords to move beyond a component-led asset management approach, as these properties require landlords to consider bespoke approaches to decarbonisation. For instance, one interviewee explained that to provide hot water in properties where heat pumps are infeasible, they are considering installing solar PV, a hot water cylinder and a diversion device that can divert surplus electricity from the solar PV to the cylinder.

To ensure value for money in achieving decarbonisation, some of the interviewees were engaging in procurement consortia to derive economies of scale and avoid duplication of effort where their asset portfolios overlap geographically. Procurement consortia are not new to social housing, having been a common strategy under the Decent Homes programme in the 2000s (Marshall et al., 2022). But interviewees reported that procurement consortia had been given new impetus due to the scale of the decarbonisation challenge and the constraints on borrowing capacity resulting from recent cost pressures e.g. building safety.

Beyond changing their approach to asset maintenance, investment and procurement, some social landlords were viewing decarbonisation as an opportunity to transform their relationship to heating and energy systems. Although at the time of the interviews their thinking on this topic was only its early stages, interviewees were exploring ways in which they could generate revenue through the electricity generated by solar PV:

"If we put solar on the home, we could monetize that. We need to think about renewable heating assets as exactly that, an asset not just a cost. We need to find ways of utilizing that over time."

*(Staff – large social landlord)*

The interviewee above was also considering the merits of providing heating as a service to customers. Again, this was something under very early stages of consideration, and its efficacy would be contingent upon improving the fabric of properties to provide price certainty to customers. But it could



provide a means to reframe decarbonisation as a business transformation opportunity that generates new assets and, potentially, new revenue streams:

"So in order for us to monetize the heat pumps and their relationship to the grid, we would need to have a direct relationship with the incoming supply. [...] For example, by making sure the house is up to temperature before peak demand periods and the water's up to temperature before peak demand periods, we could take 5,000 properties off grid over the peak demand period and that demand shift could generate a revenue for us."

*(Staff – large social landlord)*

## 3.2. Transforming the relationship to their customers

In response to the issue raised in section two, social landlord interviewees were unanimous that a more sustained, extensive and targeted resident engagement process was needed to support decarbonisation. Landlords explained that their resident engagement was beginning up to one year, or sometimes eighteen months, prior to works commencing.

"Traditionally, we turn up a month beforehand and say, 'Right, we're coming to do this. This is what it means, this is the day.' And then we give them the literature and walk out the door. So the whole mindset change has been around drip feeding information. And then being much more intensive with engagement during the works. And then going back a year later to say, 'is it still working?' Or during that first winter, saying 'can you remember some of the things that you need to do?' It's sort of like closing the loop."

*(Staff – mid-sized social landlord)*

As illustrated by the preceding quote, decarbonisation has forced social landlords to consider how they communicate the benefits of retrofit, support customers during the installation, and engage with customers after the installation is complete. Furthermore, the KTP has explored how social landlords may benefit from segmenting customers into different engagement profiles. Different groups — such as older tenants, tenants living off-grid, or households with previous negative retrofit experiences — may perceive retrofit differently and require distinct support. One of the KTP aims is to understand whether a segmented and tailored engagement strategy could improve acceptance rates by addressing specific vulnerabilities and concerns rather than relying on one-size-fits-all communication approaches (see case study for further details).

In terms of communicating the benefits of retrofit, multiple interviews suggested that they were using positive customer testimony to build trust in the process through peer-to-peer communication. But social landlords were also leveraging technology to tackle concerns that decarbonisation and heat pumps will result in higher energy bills. Multiple interviewees have installed internet connected smart thermostats that provide insights into energy usage and are using the data from the devices to evidence customer savings:

"Air source heat pumps, we're not having major pushbacks with that because we've been better each time. But the smart thermostat monitoring has helped, because what we've been able to do is use empirical data from 12 months to go, 'This is what we've done. And this is a customer's bill.'"

*(Staff – large social landlord)*

In addition to starting resident engagement earlier and being more sustained throughout, social landlords are trialling new forms of engagement to manage expectations regarding the process and timescales of retrofit. Examples included time-lapse videos of a completed installation, and an augmented 3D reality app to communicate "the retrofit journey" and how to use a new heating system. Another landlord had worked with experts in design to produce accessible communication materials to share with customers throughout the retrofit process.

Finally, to ensure the benefits of retrofit are realised after the installation, and customers remain satisfied, landlords were maintaining long-term contact with residents. Post-installation information packs were typically accompanied by periodic follow up calls and visits. And landlords tended to employ retrofit liaison officers to act as a designated contact throughout and following retrofit. However, landlords were concerned as to how they could scale up this activity, and some viewed technology as critical in this regard. Firstly, user-friendly design of technologies could minimise the issues arising following an installation, with user-friendly heating controls for heat pumps singled out as particularly important. Secondly, technology could support landlords to target and scale their communications with customers. For example, some landlords were using the smart thermostats discussed above to contact customers if their heating bill had increased dramatically, and to contact customers remotely so as to direct staff resource where it was most needed:

"The more you can do remotely and nudge people, the more cost-effective it is. You can't go into everyone's properties once a week. We do that in certain cases but that's not scalable."

*(Staff – large social landlord)*

### Case Study: Business Transformation for Retrofit Uptake – Together Housing and University of Huddersfield KTP

The Knowledge Transfer Partnership (KTP) between Together Housing Group and the University of Huddersfield was established to address a significant barrier to housing decarbonisation: high rates of tenant refusal of retrofit works. Rather than focusing solely on tenant behaviour, the partnership recognised that reducing refusals required internal organisational change — building consistency, trust, and a stronger relational culture across the housing provider.

The two-year KTP used an immersive action research model, with academic researchers and Together Housing staff working together weekly. The research process combined tenant and staff surveys, interviews, collaborative knowledge-generation workshops, tenant journey mapping, and estate fieldwork. A key innovation was the focus on understanding internal organisational scripts, roles, and communication gaps that shaped tenant experiences and acceptance.

The partnership produced several findings. First, it demonstrated that refusals were often symptoms of organisational inconsistency, fragmented communication, and weak cross-team understanding of retrofit goals. Second, it showed the value of tenant segmentation: tailoring engagement strategies to different groups based on trust levels, vulnerabilities, and past experiences. Third, it confirmed that decarbonisation efforts must focus not just on technical delivery, but on organisational culture change and relational trust-building.

The KTP led to significant practical changes within Together Housing, including the creation of a Net Zero Resident Group, the rollout of an internal carbon reduction training programme, and major revisions to communication strategies for retrofit projects. Crucially, the project positioned business transformation as the foundation for successful decarbonisation. As one Together Housing staff member observed:

“Retrofit isn’t just a project we deliver — it’s a shift in how we operate. We realised we had to change internally first to earn tenants’ trust.”

## Conclusion

Based on the findings of the three projects referred to in this brief, we have identified numerous challenges faced by social landlords in delivering decarbonisation at scale. Some of these challenges relate to funding retrofit, including accessing private finance as investment vehicles for retrofit continue to emerge, as well as the sufficiency of long-term government funding and the associated tight timescales for delivery. Further challenges emanate from the UK’s energy

systems, most notably the price of electricity relative to gas and the perception that the electrical grid may be tested by a mass rollout of heat pumps (although as we note none of our interviewees had yet experienced significant issues with grid capacity). Finally, while progress has occurred, there remain challenges in scaling up the supply chain for retrofit and in transforming social landlord procedures and systems to deliver retrofit effectively.

These wider system challenges can contribute to the phenomenon of customer refusals of retrofit and may in turn be compounded by the legacy of organisational systems not designed to deliver decarbonisation. Yet, our research has also shown that social landlords relatively advanced in their decarbonisation journey are approaching these challenges by viewing decarbonisation as an opportunity to transform their relationship to both their housing assets and their customers. Strategies adopted by social landlords to expedite decarbonisation while building trust with customers include:

- using new opportunities afforded by low-carbon technologies to recoup their initial costs
- procurement consortiums to deliver economies of scale
- smart technologies to demonstrate the benefit of retrofits to tenants
- innovations in communication with tenants and the use of peer-to-peer networks
- adopting a long-term engagement strategy to ensure that low carbon technologies are used optimally
- segmentation of their customer base to tailor their communications
- harmonising and standardising their communications across teams
- upskilling staff

Based upon the combined evidence from the projects we outline the following recommendations intended to send a strong signal of demand to the decarbonisation supply chain, scale up the supply chain, and build trust with customers by improving communication and organisational processes.

**Recommendation 1:** Central government should expand the funding available through WH:SHF and extend the timelines for delivery, to provide long-term certainty for social landlords to scale up their programmes

**Recommendation 2:** Central government should expand the Strategic Partnerships programme for WH:SHF to provide greater autonomy to social landlords over the planning of their programmes

**Recommendation 3:** Targeted support is needed to scale the supply chain for decarbonisation, especially in rural and sparsely populated areas. Central and local governments should provide support to replicate the apprenticeship and training schemes delivered by social landlords in areas where they are absent

**Recommendation 4:** Social landlords should review their

communications and resident engagement strategies for decarbonisation, ensuring they engage customers early, provide consistent communication across teams, and understand the specific issues affecting different customer groups

**Recommendation 5:** Social landlords should explore opportunities for customers to meaningfully contribute to decision-making and oversight of decarbonisation, for example the establishment of Net Zero Resident Groups

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