Building the business case for retrofit programmes

March 2026

Delivered for Innovate UK's Net Zero Living Programme by City Science

In brief

The Problem: Retrofit is not receiving the neccessary amount of investment in the UK to meet net zero. Although local authorities can't always invest in this directly, they can support the uptake of retrofit.

The Insight: This insight supports local authorities and climate officers in enabling retrofit uptake by identifying target markets and appropriate finance options.

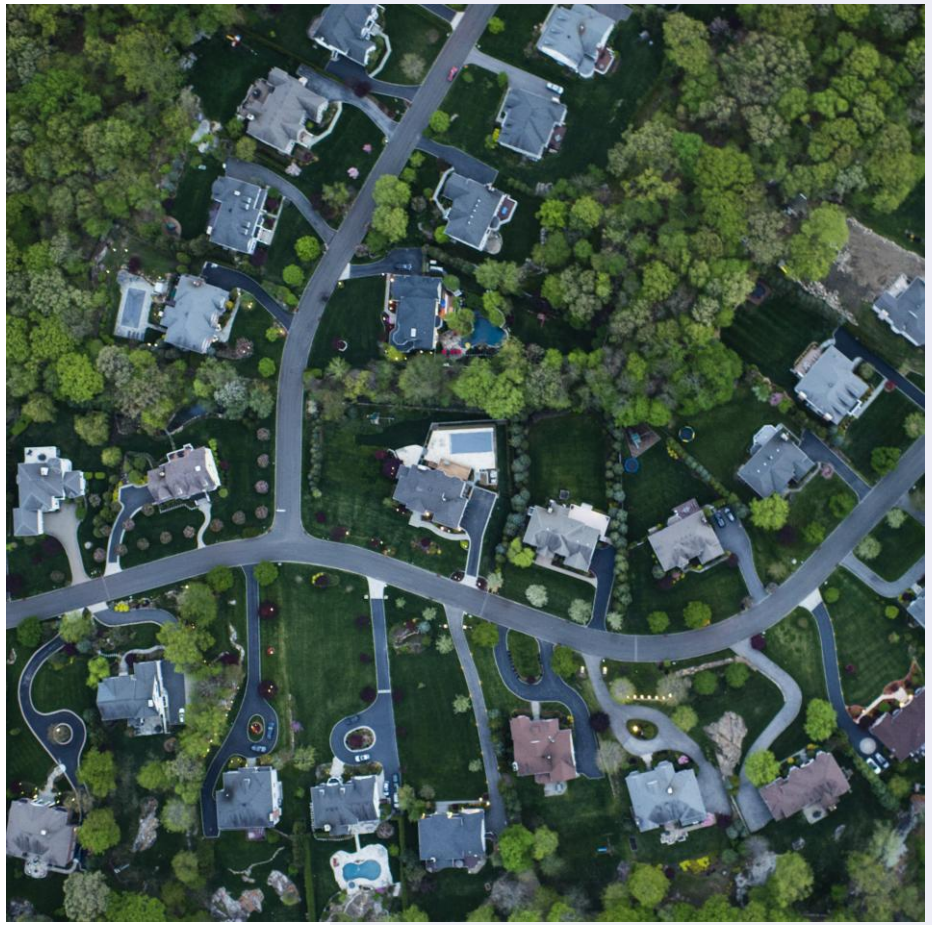
Produced by City Science for Innovate UK's Net Zero Living Programme, March 2026.

Why invest in retrofit?

80% of homes that will exist in 2050 are already built, and most of them **need retrofitting** for the UK to achieve net zero goals.

The UK's housing stock is among the least efficient in Europe, contributing to **high emissions, costs and fuel poverty**[1].

An estimated investment of **£360 billion** is needed to upgrade the UK's inefficient buildings by 2050[2].



Why invest in retrofit: statistics of an average UK dwelling

Carbon Emissions: In 2022, UK homes collectively emitted about 100 million tonnes[3] of CO_2 (~20% of the nation's emissions[4]), averaging roughly 4 tonnes CO_2 per home per year.

Energy Consumption: The typical UK household uses around 11,500kWh of gas and 2,700kWh of electricity annually for heating, hot water and power[5]. The average home's energy bill is about £1,434 per year[3].

Heat Loss: In an uninsulated home, roughly 35% of heat is lost through the walls, 25% through the roof, 15% through the floor, 10% via the windows, and about 15% through draughts[6]. Up to one third of the heat produced is lost in a typical British home[7].

Health Risks: ~11% of households were in fuel poverty in 2023 in England, unable to afford adequate heating[8]. 5% of the housing stock had damp problems as of 2023[9], which is estimated to cost the NHS ~£1.4 billion a year due to related illnesses[10].

Key annual statistics

4 tonnes CO_2 emitted

11,500 kWh gas used

2,700 kWh electricity used

£1,434 in energy bills

33% of produced heat lost

1 in 25 has damp problems

Why invest in retrofit: the statistics

Across the UK nearly 19 million homes need upgrading as they are below an EPC rating of C[11].

The scale of retrofitting activity needed presents a huge opportunity to create thousands of skilled jobs across the country, as well as opportunities for local businesses and suppliers.

A 2014 study from Cambridge Econometrics estimated that raising every home in the UK to EPC level C would sustain at least 108,000 new jobs annually between 2020 and 2030[12].

A 2022 PwC analysis found that up to 580,000 jobs would be supported annually from building retrofits; with higher levels of energy efficiency requiring more workers[13].

Targeted retrofit can reduce costs for households over the long term, while reducing reliance on purchased energy which can be volatile. Cost savings can be especially relevant in off-gas grid properties.

Retrofit can reduce healthcare costs due to increased warmth and improved ventilation (decrease in mould).

Why invest in retrofit: addressing poor housing & fuel poverty

Non-decent housing

The quality or condition of a home is one of the more direct ways housing can affect health: a home could be cold or hard to heat, contain hazards such as fall risks or faulty wiring, or be damp and mouldy[14].

"Non-decent" housing refers to homes that:

- contain a hazard or an immediate threat to someone's health
- are not in a reasonable state of repair
- lack modern facilities, or
- are not effectively insulated or heated, causing cold and damp conditions.

15%

of homes in England were classed as non-decent in 2022[15]

1 in 5

private rented homes are non-decent, compared with 1 in 10 social rented homes[15]

1 in 5

single adults aged below 60 live in non-decent housing[16]

Fuel poverty

National Energy Action defines household fuel poverty as when a household needs to spend 10% or more of its income on energy in order to maintain a satisfactory heating regime[15].

Under the current measure of fuel poverty, a household is fuel poor if:

- occupants are living in a property with a fuel poverty energy efficiency rating of band D or below
- when they spend the required amount to heat their home, they are left with a residual income below the official poverty line.

Although energy prices have fallen since their peak in 2023, the April to June 2025 price cap is 43% higher than it was in winter 2021/22, affecting families across the country struggling with high energy bills[16].

The average fuel poverty gap (meaning the additional income required to bring a household to the point of not being fuel poor) for England in 2023 was estimated at £417[17].

Why is there insufficient investment in retrofit?

A House of Commons committee report on ‘Retrofitting Homes for Net Zero’ found that around **29 million homes will need to be retrofitted by 2050**, yet the current rate of progress puts the **UK far off track**[1].

Barriers to investment in retrofit

There are several barriers to investment in domestic retrofit. To understand how to overcome them it is important to assess them, particularly understanding if some challenges bear greater prevalence in your place than others. Through having a thorough understanding of the barriers, local authorities can create programmes that support homeowners overcome them.

Finance: There are key sensitives that affect the viability of financing retrofit. These include:

- **Interest rates:** If borrowing is utilised to pay for the capital costs of retrofit, the interest rate can have a significant impact on the financial viability and payback period of retrofit.

For the last 2+ years the Bank of England's interest rate has been between 5.25% and 3.75% - this will have significant impact on both the cost of borrowing for retrofit and homeowners' disposable incomes (that could be utilised for retrofit)[2].

- **The spark spread:** Spark Spread refers to the price difference between electricity and gas - a critical factor in retrofit economics, as a wide gap makes electric heating solutions such as heat pumps less cost-effective. In the UK, this gap remains high, limiting the potential bill savings from fuel switching. Even small adjustments to relative tariffs can have a significant impact on payback periods and overall investment viability.

The CCC's 7th carbon budget report to Parliament highlights 'the ratio of electricity to gas prices remains significantly off track'. This is crucial for heat, as well as cross-economy, electrification[3].

- **Availability of grant funding:** Grant funding can significantly reduce the upfront capital cost of retrofit. Therefore, grant funding can alter the financial viability and payback period of retrofit significantly.

- **Length of payback:** The payback period for some retrofit measures can exceed 20 years, which can act as a disincentive; particularly for older property owners who may not expect to realise the long-term financial benefits.

Barriers to investment in retrofit

Ownership structures: Ownership structures within the UK housing market differ significantly, requiring support programmes to be tailored to distinct market segments. Retrofit costs, financial returns, and payback periods can vary widely between ownership structures. In addition, decision-making and control over retrofit measures is uneven: tenants may be highly motivated to improve energy efficiency to reduce energy bills but often lack the authority or resources to proceed. Property owners typically hold decision-making power but may have weaker incentives to invest.

With the retrofit market being highly diverse, it is challenging to identify consistent drivers of demand, which often differ across household and ownership groups. **Chapter 3** explores these market segments in more detail.

- **Building types:** The UK housing stock is highly varied; from listed heritage properties to modern multi-storey apartment blocks, each requiring different technical solutions, levels of intervention, and planning or conservation permissions. This diversity makes it difficult to develop standardised retrofit approaches or investment models that can be applied at scale.

In England alone there are 401,246 listed heritage properties. This highlights the number of 'hard to retrofit' properties within the UK[4].

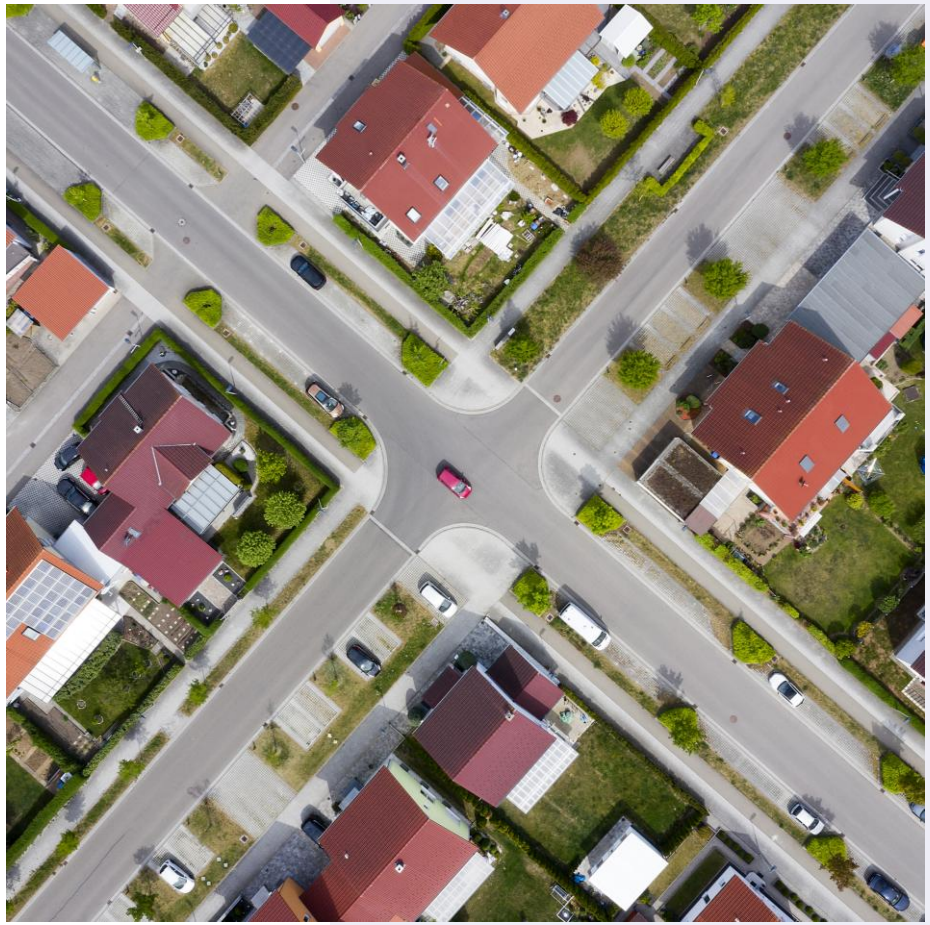
- **Disturbance**: Retrofit can involve a large amount of disturbance to the homeowner due to the significant building works that it might incur. Homeowners are often hesitant to undertake this disturbance as it might interfere with their day-to-day lives. They often need clear incentives to act which outweigh this disincentive.

- **Lack of understanding or trust:** A report by Citizens Advice investigated consumer attitudes to retrofit and they found 60% are concerned about the contractor's reliability and trustworthiness, while over one-third (34%) were worried about accountability and redress if something went wrong[21].

The Citizens Advice stated that the most often cited trusted sources of information were independent websites like MoneySavingExpert and Which? (47%), along with Government websites (46%), friends, family and colleagues (45%) and trusted tradespeople (43%)[5].

How can local authorities accelerate retrofit uptake?

This section explores **the main drivers for retrofit**. This includes identifying the **market segments** and considering how incentive structures might alter.

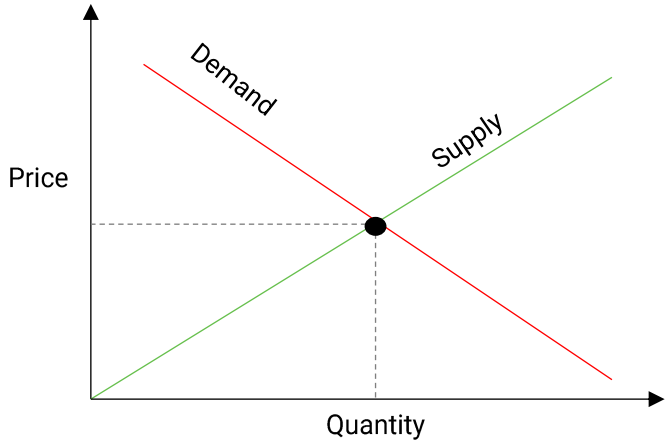


Accelerating retrofit: understanding the market

Understanding market supply & demand

Supply and demand are fundamental economic principles that determine the level of market activity. To accelerate the uptake of retrofit, it is essential to understand the factors that drive both demand and supply, and to identify the policy and market levers that can be used to strengthen each side of the market.

Retrofit market segments are often defined by both ownership structure and the financial capacity of property owners. Each segment faces distinct supply-side conditions, such as access to finance, and demand-side motivations, such as comfort, cost savings, or environmental concern. By understanding these segment-specific drivers and constraints, authorities can design and target interventions more effectively to increase retrofit uptake.



The housing market encompasses a wide range of ownership structures, levels of interest in the asset, household incomes, and financing methods. When discussing retrofit options, the market is often simplified into three primary segments:

- **Able to Pay (ATP)**
- **Low Income Households (LIH)**
- **Social Housing (SH)**

This categorisation largely drives the funding and grant mechanisms made available to each group. However, the reality is far more complex. The housing market includes multiple layers of ownership, such as landlords, leaseholders, and freeholders, as well as diverse demographic characteristics within each segment. These variations have important implications for how retrofit policies and programmes are designed and targeted.

Accelerating retrofit: understanding the market

There are many variables that **affect the demand for retrofit**, with access to finance/funding being one of the most common factors.

The MCS Foundation surveyed 2,585 homeowners in the ATP market regarding their willingness invest in retrofit measures. The study found that using finance products to fund upgrades was relatively unpopular, with **only 16% of respondents intending to use loans**, while the vast majority **(81%) planned to use savings**[1]. This suggests that only a limited proportion of Able to Pay households – typically those with substantial savings – are likely to proceed with retrofit investments.

To investigate this further, another survey conducted by MCS (covering 12,102 respondents) showed fewer than **1 in 5 homeowners were willing to borrow to fund home improvements.**

Market Segment	Category	Subcategory	Factors That Might Influence Retrofit
Able to Pay Market (ATP) This segment predominantly covers owner-occupied private homes, but also some landlords who are able to invest in their properties	➢ Homeowners	➢ Leasehold ➢ Freehold	➢ Age (pensioners, first time buyers, etc.) ➢ Savings ➢ Property type ➢ Level of control (leaseholders) ➢ Lack of confidence in retrofit ➢ Interest rates
	➢ Landlords	➢ Leasehold ➢ Freehold	➢ Professional or accidental landlord ➢ Interest rates ➢ Savings ➢ Property type ➢ Tenants (students versus family homes) ➢ Policy and regulation
Low Income Market This segment is usually categorised as households on low incomes or in fuel poverty who cannot afford retrofit measures without external support	➢ Homeowners	➢ Leasehold ➢ Freehold	➢ Access and Awareness of Grant Funding ➢ Property type ➢ Savings ➢ Lack of Confidence in Retrofit ➢ Interest Rates
	➢ Landlords	➢ Leasehold ➢ Freehold	➢ Professional or accidental landlord ➢ Property type ➢ Policy and regulation ➢ Interest rates ➢ Savings
Social Housing Occupants are tenants, typically low income households, but unlike private rentals, the landlord is a public or social body	➢ Social Housing Provider	➢ Council ➢ Social Housing Provider (Charity)	➢ Grant funding available ➢ Property type ➢ Interest rates ➢ Savings ➢ Policy

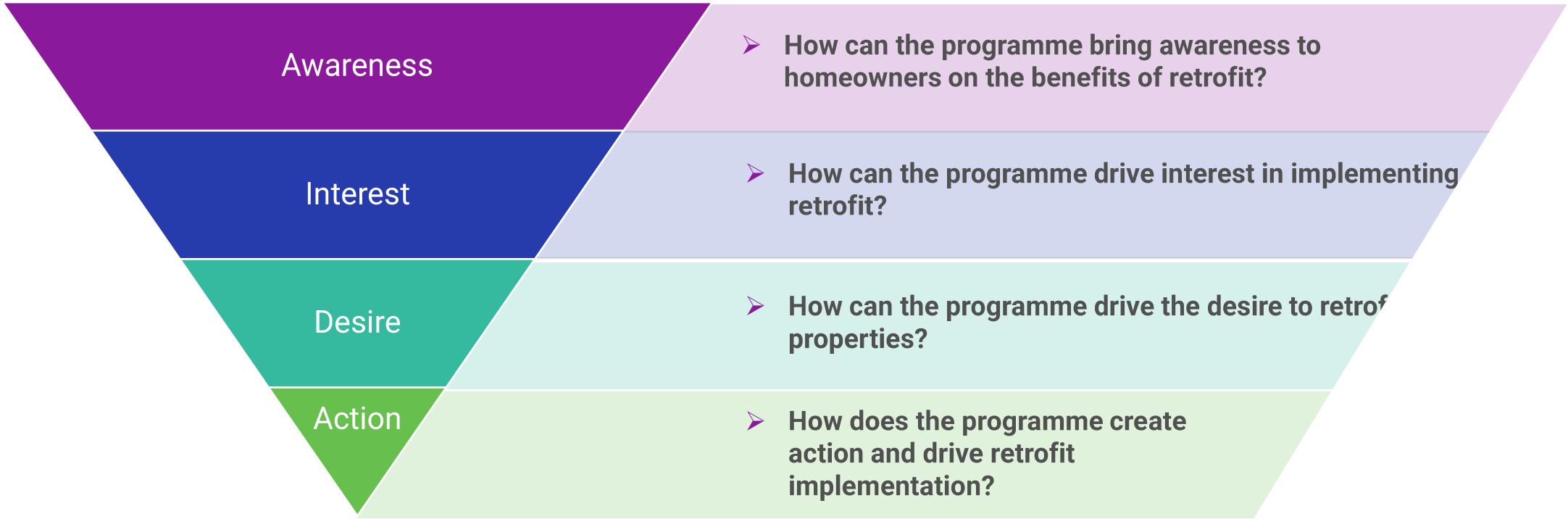
Accelerating retrofit: understanding the market

What funding and finance options are available for each segment?

Market Segment	Grant Funding	Finance
Able to pay	• ATP owners are not eligible for most fully funded retrofit grant schemes. Instead, government support comes via incentives or partial subsidies. For example, the Boiler Upgrade Schemes offers a grant up to £7,500 independent of household income[2], though the homeowner must cover the remaining costs.	• ATP households generally rely on personal financing (cash savings, mortgages, loans) to fund a retrofit. • There are several green mortgages and loans available (more detail has been provided in the Appendices), but the rates are not always significantly advantageous.
Low income	• The UK Government has dedicated grant programmes and policies serving this segment. • Current grants (as of December 2025) available for low-income homes in the UK include the Warm Homes: Local Grant and Great British Insulation Scheme. • Eligibility is based on key criteria such as household income, EPC rating, and specific types of interventions.	• Low-income homes or those that struggle to obtain credit can apply for specific loans, however these might only be available in specific areas or under certain conditions. • Examples of loan options for individuals with poor credit include local authority schemes, such as those offered through Lendology. For instance, the Warm Homes Suffolk Loan Scheme[3] provided financing to retirees and those with low credit ratings to support retrofit projects.
Social housing	• The UK government has established dedicated funds to subsidise upgrades in the social housing sector. Currently we are in the Wave 3 round of the Social Housing Decarbonisation Fund, which covers up to 50% of the cost to retrofit social housing[4].	• Social landlords can leverage private finance. For example, the National Wealth Fund is providing government-backed loan guarantees to encourage banks to lend to social landlords. • If the social housing is owned by a local authority, finance can be sourced from the Public Loan Works Board.

Accelerating retrofit: retrofit programmes

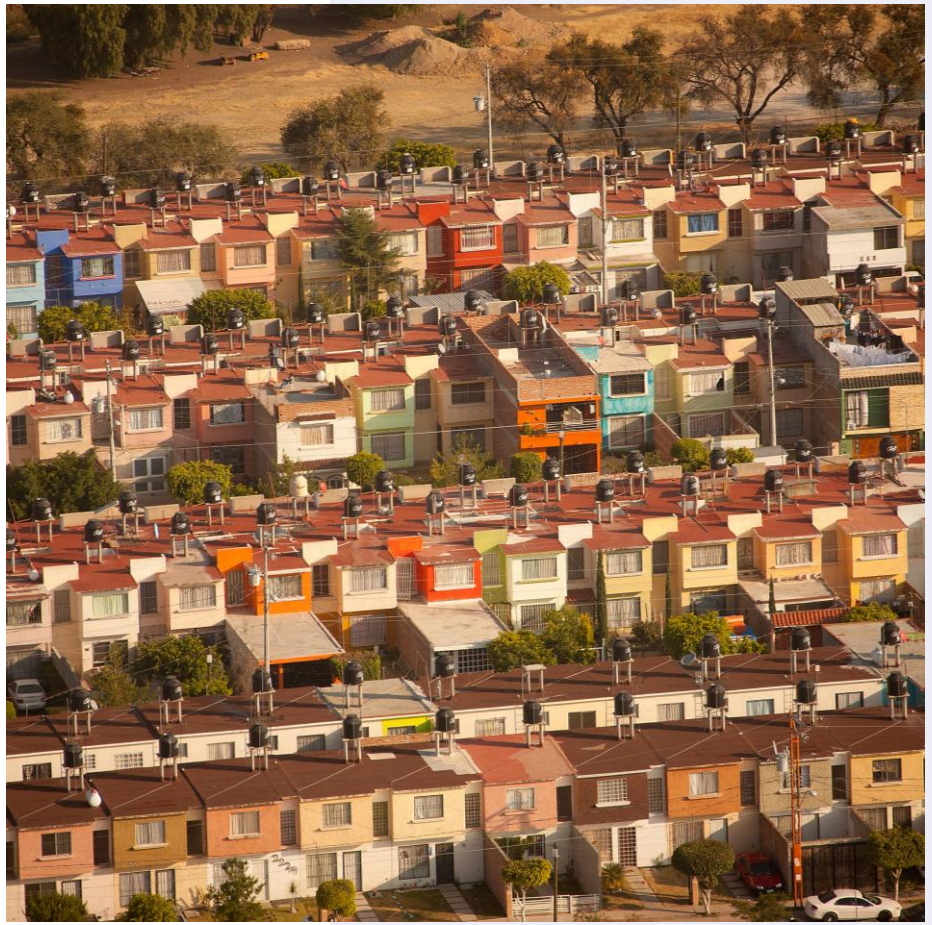
To accelerate retrofit in their region, local authorities can develop retrofit programmes. These programmes aim to simplify the retrofit process for households by offering support at one or multiple stages of the customer journey. By reducing barriers to retrofit, they help boost market demand and encourage greater consumer uptake.



A retrofit programme should consider a customer's journey, from how they gain awareness to the point of making a commitment to retrofit. Marketing tools such as the funnel shown above are often used to think about how to turn awareness to action. Each stage should be considered within the customer's journey, particularly when considering a programme that will support regional delivery.

Retrofit programme delivery

This section explores **key factors** that local authorities should consider when **deciding whether to implement a programme** and determining the most suitable approach.



Retrofit programme delivery: considerations

Should your local authority deliver a retrofit programme?

There is no one size fits all solution - there are lots of considerations that need to be understood prior to delivering a retrofit service. Utilising an options appraisal approach as detailed in the Unlocking Climate Capital: Business Case Framework is a great way of understanding the best approach for your local authority. Within this process we would suggest considering key factors such as:

Regional analysis

What does the region need from a retrofit programme? Through analysing the region, you can understand the socio-economic needs of the area (including fuel poverty, retirees, home ownership types).

Additionally, understanding the mix of housing and building archetypes in the area can inform the development of a retrofit programme. For example, understanding the property mix in the area, including; apartment blocks, terraces, listed buildings, or the use of oil versus gas for heating. These can all have a significant influence on the design and implementation of the programme.

Revenue/self sustaining business model

How will the retrofit programme sustain itself? What is the revenue model and will it be sufficient to fund the on-going operations of the service?

Possible revenue streams include:

- Customers paying for the support provided
- Installer commission
- Charges on retrofit surveys/plans
- Advertising revenue or sponsorship
- Savings from energy efficiency measures

Commercial models

How should the retrofit programme be delivered? Should the programme be delivered in-house by the local authority or would it be best to create a special purpose vehicle to deliver the programme?

Other considerations are:

- Joint venture or partnership
- Type of company such as; community interest company, charity, limited company, etc.
- Outsourcing to an external provider

Retrofit programme delivery: regional analysis

Why is regional analysis so important when delivering a retrofit programme?

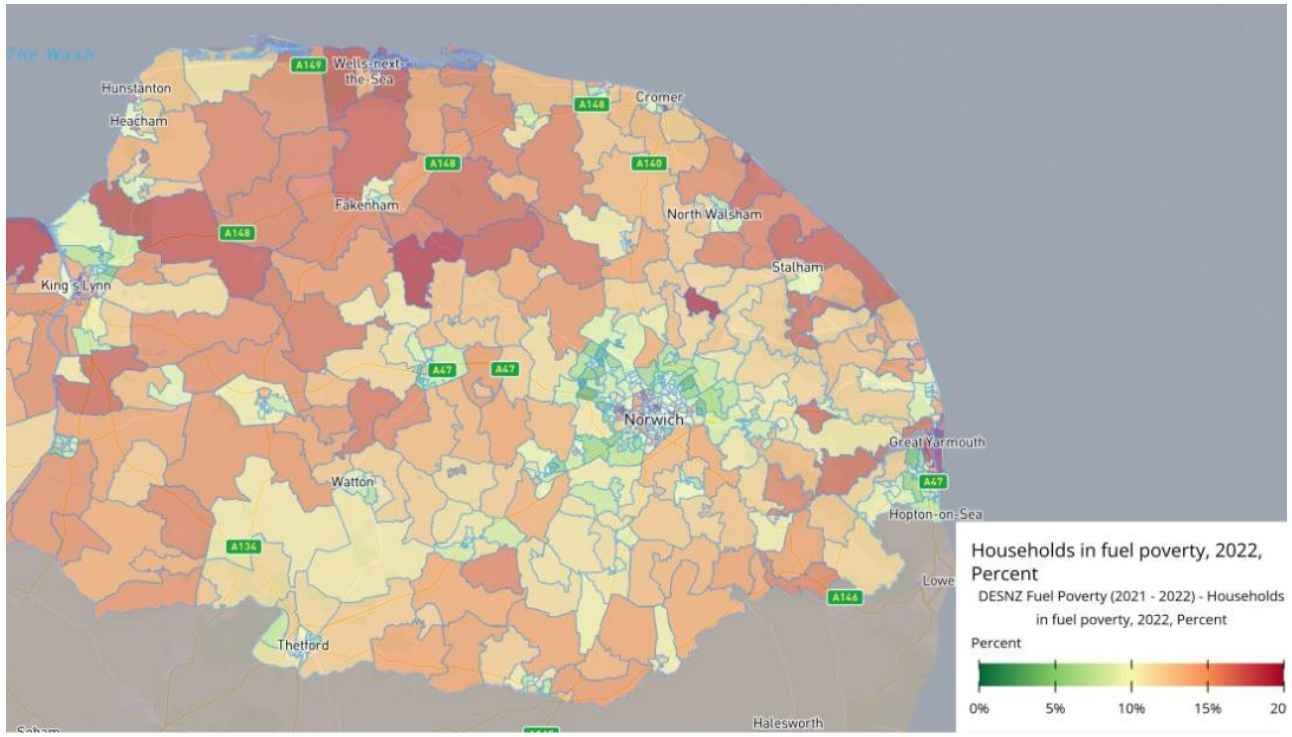
By understanding the characteristics of your region, the programme can be tailored to support those most in need, properties with low energy efficiency, or specific target groups. This ensures the programme is more effective in driving demand by aligning its approach with the needs of the intended audience and housing stock in the area.

Key points that should be considered;

- **Economic factors:** As discussed in chapter 3 there are different socio-economic groups when considering finance and funding options; therefore, tailoring your retrofit programme to a specific audience can alter demand incentives and support provided.

- **Housing archetypes:** Understanding the building types in the region will significantly affect the retrofit provision and support. For instance, in areas such as Bath, additional consideration would need to be taken given the large amount of listed assets. Cambridge City Council has developed a document that highlights the different measures required for different housing types here. This highlights how varied retrofit can be dependent on the building it is being applied to.

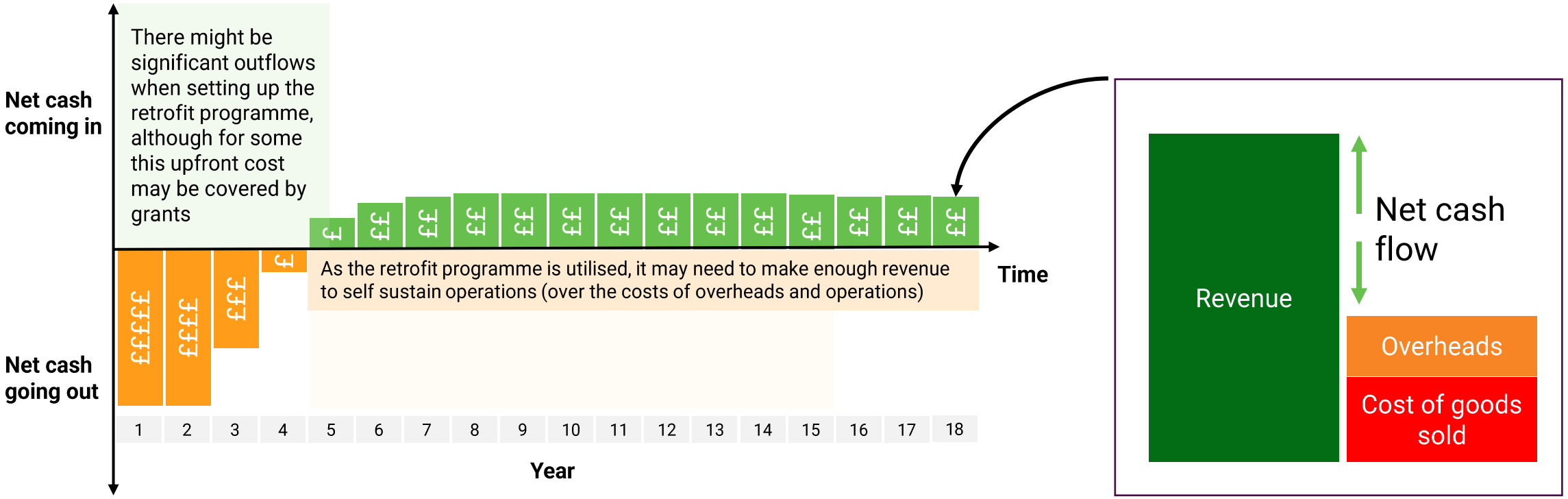
- **Fuel source:** Assessing the different fuel sources that are available in the area is critical as there will be different considerations, including financials and physical interventions. This should also include potential future fuel sources, such as the potential for district heat networks.



Retrofit programme delivery: sustainable business model

When considering your retrofit programme, you should consider how financially feasible it is to maintain. Initially there are likely to be large outgoings as the programme is developed and established. However, once the programme is up and running, you want to make sure that your revenue is more than or equal to your operating costs (marketing, legal requirements, staffing, etc.).

For some programmes, the upfront cost might be covered by grant funding, however, if this is not the case, you might need to consider how the upfront finance will be repaid and whether the revenue from the programme will be substantial enough to cover the cost of finance.



Retrofit programme delivery: commercial models

Additionally, when deciding what retrofit model to deliver, it will be important to consider how to deliver it and what the most appropriate commercial model might be.

There are different commercial models that could be used to deliver a retrofit programme. The choice of commercial model will be influenced by the scope of the programme and the local authority's role within it. For example, if a local authority intends to operate a one-stop shop, it may wish to isolate operational risks from the authority while ensuring any profits are reinvested into the service. In this case, establishing a special purpose vehicle could be the most appropriate approach.

For more information on commercial models and the role of the local authority, our insight on Unlocking Climate Capital: A Business Case Framework for Local Authority Net Zero Projects provides more detail on this.

Some of the more common commercial models include:

- In-house delivery
- Creating new organisation
- Concession model/strategic delivery partner
- Joint Venture (JV)
- Outsourced model/consortium
- Framework agreement

Retrofit programme delivery: considerations

How does the warm homes plan affect retrofit programme delivery?

The UK government recently (January 2026) released the 'Warm Homes Plan' (WHP), the WHP is a strategic document setting out the planned activity to support the decarbonisation of homes in the UK.

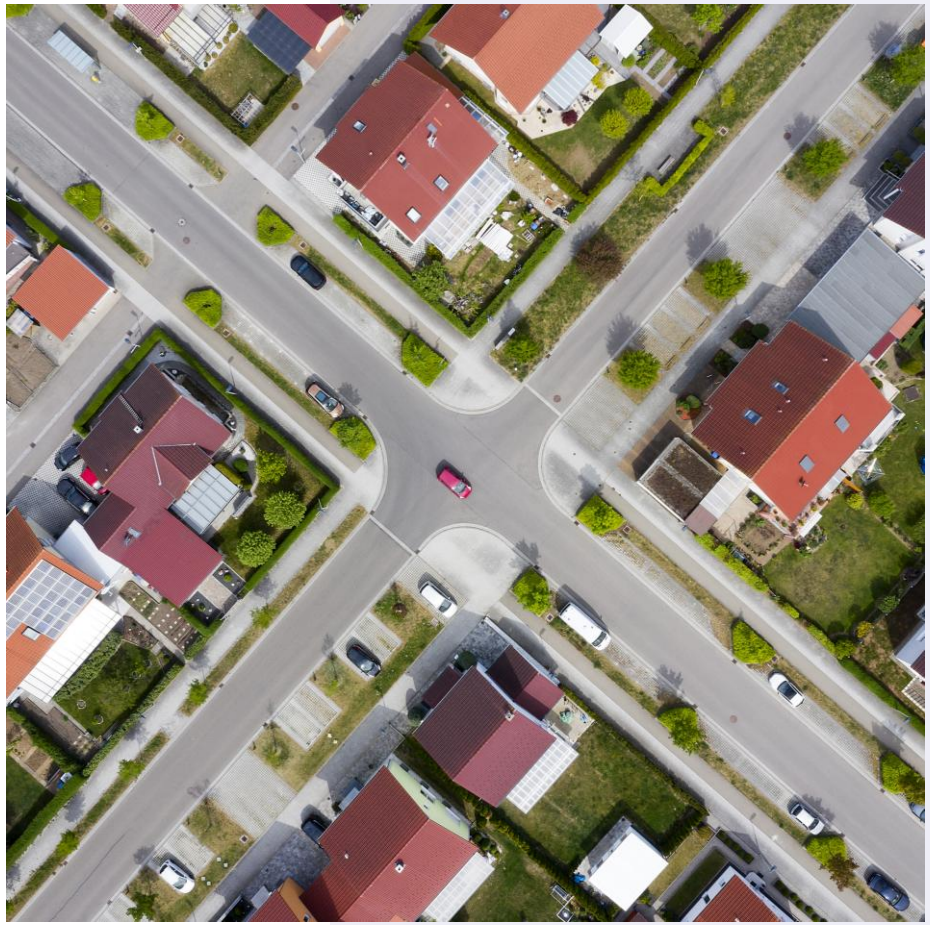
Warm Homes Agency: Within this plan the government have announced that a Warm Homes Agency (WHA) will be established to coordinate delivery and guide consumers through upgrades, providing an information platform intended to act as a central point for consumer support nationally. The WHA is explicitly positioned to build local capacity, convene partnerships, and streamline a fragmented delivery landscape. If your authority chooses to implement a retrofit programme, it would be suitable to align with the WHA. WHA plan to shape national standards, consumer pathways, data sharing and provide opportunities to connect local services into a national offering whilst providing consistency and assurance.

Ensuring credibility of installers: The WHP sets out to revise the standards for retrofit installers to ensure credibility and provide assurance to homeowners purchasing retrofit. If you are delivering a retrofit programme it is important to ensure that you align with these standards and any suppliers that you engage with meet the required standards.

Importance on grid connection and energy security: The plan pushes strategic, area-based coordination and a stronger role for Distribution Network Operators (DNOs) working with local authorities and mayoral strategic authorities to align electrification with network investment. Through aligning retrofit programmes with network investment plans the barriers to electrification should be reduced. Within the plan there is a focus on proactive "unlooping" (where several houses are connected to the same main electricity supply) which highlights the opportunity to remove a common barrier to heat pump deployment through targeted, place-based interventions, strengthening the case for integrating retrofit delivery with local energy planning and wider infrastructure coordination.

Overall if you plan to deliver a retrofit programme the WHA advice could guide your platforms outputs and provide a national central point to align with increasing trust and therefore demand (consistent messaging, signposting, consumer protection). Your programme should integrate with WHA's guidance, national data standards, approved installer pathways, consistent consumer protections, and alignment with WHA guidance. The local programme can provide place-based delivery, supplier intelligence, targeting and coordination, providing a localised layer between residents and national funding, aiming to optimise conversion, and smoothing delivery at street/neighbourhood scale.

Retrofit programmes deep dive



This section provides a detailed look at retrofit programmes and the **key considerations** local authorities should take into account **when deciding whether to implement a programme** and determining the most appropriate type to deliver.

Retrofit programmes: one-stop-shop

What is a retrofit one-stop shop? One-stop-shops can come in lots of different varieties; however, they all aim to make the customer's journey easier and overcome barriers to retrofit delivery. The key features of an all-encompassing one-stop-shop often include;

- **Outreach and engagement:** This can be done in several ways, such as engaging with local community groups to increase outreach, paid advertising, or using local authority communication channels to encourage uptake of retrofit.
- **Initial surveys and assessments:** The one-stop shop can provide surveys either free of charge or for a fee as part of its service. Offering surveys for free can lower barriers to engagement with customers, but it also substantially raises programme costs which would need to be offset through other funding sources.
- **Advice and planning:** Advice and planning can be delivered in a variety of ways, ranging from signposting to local installers, to partnering with a delivery organisation to carry out the work. When working with a retrofit delivery partner, it is essential to ensure they are accredited to recognised standards such as PAS 2030 and PAS 2035. This helps ensure retrofits are delivered to an appropriate quality and reduces reputational risk for the one-stop-shop.
- **Finance:** Finance options can be included within a one-stop-shop, this can be anything from making customers aware of grants available, to working with a regulated body to provide finance to customers.
- **Quality assurance and follow up:** To maintain a strong reputation and ensure successful delivery, one-stop-shops can offer follow up and quality assurance checks. This will allow customers to feel more assured when obtaining the service but could be costly for the one-stop-shop provider.

There are a number of different ways to deliver a one-stop-shop; however, it is important to consider the cost model. How can your one-stop-shop sustain itself financially for the foreseeable future? Often one-stop-shops are developed via funding such as grants; however, they will reach a point when the grant funding is fully utilised, and the one-stop-shop will need to create enough revenue to self sustain.

A few methods of revenue creation from the one-stop-shop could be: paid services such as advice and planning, paid surveys and assessments, commission from the installers upon retrofit instalment, or installer on-boarding fees.

Case study: city of york council's one-stop-shop

Led by City of York Council with £3.37 million funding from Innovate UK's Net Zero Living programme[1], this initiative developed YorEnergy, an all-in-one platform that guides residents through low-carbon home retrofits, offering advice, demonstrator examples, and links to trusted suppliers. The service is seeing good demand from customers, with 100 assessments completed, 45 customers connected to suppliers for installations and 194 advice calls provided so far[2].

Retrofit programmes: targeted programmes

A one-stop-shop isn't the answer for every local authority; resource constraints, specific regional barriers and resident engagement are all reasons why an authority might feel a one-stop-shop isn't the correct answer for them.

Therefore, the one-stop-shop model can be broken down into different components, and a local authority can adopt aspects that are most suited to their region, budget and ability to deliver.

Areas that the one-stop-shop can be broken down into include:

Partnering with a retrofit provider: Partnering with retrofit installers to provide quality assurance by the local authority

- A quality assurance process on the installer.
- Act as a trusted partner to boost customer demand and help overcome uncertainties around retrofit.
- Costs of installation could potentially be reduced through economies of scale if an installer is assured a minimum volume of homes across the area.

Signposting: Utilising the authority's resources (website) to signpost to retrofit material or advice

- This is an easy cost affective method of sharing resources.
- Conversion rate or the increase in uptake from signposting is likely to be low due to the lack of incentive/support of service.
- Might help those already interested in retrofit to find funding or resources needed.

Provision of low-cost finance: Local authorities can work with financially regulated lender to provide low-cost finance to low-income homes

- This can help both decarbonise and support those struggling with fuel poverty.
- Authorities can access borrowing at lower rates, which in turn allows them to offer loans to others at reduced interest rates.
- Can work with lenders and regulated finance provides to direct homeowners to low-cost finance and grants available.

One-stop-shops and their components aren't the only method of delivering retrofit support and incentives; however, other solutions tend to be earlier on the innovation curve. We have discussed a couple of examples of the innovations on the following page.

Retrofit programmes: innovative programmes

In addition to more established methods, there are several innovative approaches being investigated. Here are a couple of examples:

Group procurement strategies: Establishing a procurement club that enables retrofit to be delivered or purchased at scale, targeting entire streets or areas of housing

- This allows for economies of scale with the aim of reducing the cost of retrofit per household.
- Quality assurance can be increase through the procurement club, such as ensuring that the installers are PAS 2030/2035 compliant and reputable.

Heat as a service: Paying for comfort within a home rather than the fuel itself to heat a home

- The cost of retrofitting the housing asset will be paid back through the 'cost of comfort' (energy bills).
- The model aims to reduce fuel use whilst providing a comfortable home for users.
- This is still in the innovation stages; it requires complex contracts and digital monitoring in homes.

Case study: westminster's retrofit procurement club

Westminster City Council is aiming to leverage cost efficiencies by establishing a Retrofit Procurement Club. The idea is that the club connects building owners with supply chains and explores options to meet the needs of different stakeholders (asset types and tenures)[3]. This can support the aggregation of local demand to enable bulk procurement of retrofit measures.

Retrofit programmes: case study

Area based business models can also support retrofit uptake – the case study below highlights an example delivered within Innovate UK's Net Zero Living Programme. Rossendale's Net Zero Terrace Streets supports households to deliver retrofit and have energy efficient homes without the upfront cost of retrofit.

Case study: Rossendale's Net Zero Terrace Streets (NZTS)

Rossendale Valley Energy Company is a a community-owned renewable energy group empowering local people to help make fuel more affordable and create warmer homes. Rossendale Valley Energy Company are working with Rossendale Borough Council on a project called Net Zero Terrace Streets[4].

The project delivers a system of ambient loop ground source heat pumps, energy storage, solar PV and other energy systems to terrace streets. This is then controlled by optimisation software aiming to reduce bills, utilise off peak network capacity, and draw on the renewable energy available within the energy system.

This business model enables homeowners to undertake retrofits with no upfront costs; instead the expense is covered through their energy bills. Importantly, total energy costs for the household are designed to remain the same or lower than current levels.

This model not only has beneficial environmental impacts through the reduction of carbon emissions, but it also has large social impacts aiming to take homeowners out of fuel poverty and provide them a comfortable warm home.

More information on Net Zero Terrance Streets and Rossendale Valley Energy Group can be found here Terraced Streets - Rossendale Valley Energy

Key takeaways

This section seeks to **summarise the learnings from this document**, highlight **how the learnings can be utilised** and to support your local authority on its retrofit journey.

Key takeaways: overview

- The need for retrofit is significant in order to meet net zero by 2050.
- Not only does retrofit support the delivery of net zero, but there are also several wider benefits, such as reducing fuel poverty, increased health and well-being and other environmental/social benefits.
- There are significant barriers to retrofit. Finance doesn't offer a silver bullet to solve the retrofit gap. There are several other barriers such as complex ownership structures, lack of demand and trust, and disruption.
- Understanding the variation within the retrofit market is crucial to identify what finance is available, key drivers of demand, and how support can be implemented. This is important to support the uptake of retrofit across different socioeconomic groups, housing types and ownership structures.
- The finances of retrofit are sensitive to key components such as the spark spread, interest rates, and fuel types. These financial sensitivities can determine the financial viability of retrofit in terms of monetary returns.
- Retrofit programmes can support and incentivise the demand for retrofit by removing customer barriers to retrofit such as uncertainty and access to finance.

Key takeaways: actions

What can a local authority do to support the delivery of retrofit in their region?

1. **Analyse socio-economic data**: Analyse the socio-economic data in the region and assessing the key market audiences that needs retrofit support or advice the most.

2. **Analyse the housing types**: Understand housing archetypes in the area, such as grid connections and housing type (flats, terrace, bungalow etc).

3. **Assess your internal resources and funding available:** What resources are available to support the delivery of a retrofit programme? Is there any funding to assist with the initial setup?

4. **Engaging with stakeholders and gain buy-in:** Collaborate with internal teams, including finance, data, and digital departments, to assess delivery feasibility and secure buy-in. Additionally, engage with local community groups and retrofit delivery providers to implement comprehensive, end-to-end solutions.

5. **Understand and forecast the programmes cash flow:** Establishing a clear understanding of the programme's financial requirements and ongoing costs is essential to ensure sustainable delivery and achieve long-term impact.

These **key steps** will help you make an informed decision on how your local authority can provide **support for retrofit uptake** in the area and support constituents in their retrofit journey.

Thank you

For further information please see the links on the following pages to access further insights.

Appendices

Retrofit financing options: market review

Private finance products: mortgage

Overview

- Mortgages are legal agreements by which a lender provides money at interest while using the property of the debtor as the security. If the debtor cannot repay the lender the ownership of the property transfers to the lender. Mortgages are a very common finance mechanism used in the housing market.
- Some homeowners include costs of retrofit in their traditional mortgage or re-mortgage to conduct retrofit interventions.

Examples

- According to Rightmove, the average rates for 2-year and 5-year fixed-rate mortgages are as follows in December 2025:
  - 95% Loan to Value (LTV) 2-year fixed: 5.04%, circa £999 product fee[1].
  - 95% LTV 5-year fixed: 4.97%, circa £999 product fee[1].
  - 75% LTV 2-year fixed: 4.50%, circa £999 product fee[1].
  - 75% LTV 5-year fixed: 4.51%, circa £999 product fee[1].

Selected providers

NatWest, nationwide, The co-operative bank, BARCLAYS, Santander, CHASE

Retrofit financing options: market review

Private finance products: green mortgage

Overview

- Green mortgages offer a reduced mortgage rate for those purchasing or remortgaging an energy efficient home (typically with an EPC rating of A or B).
- Some lenders allow existing mortgage customers to take an extra advance specifically for retrofit interventions.

Examples (as of December 2025)

- NatWest offers discounted 2 year and 5 year fixed rate mortgages to customers who are remortgaging their home to NatWest with a valid Energy Performance Certificate (EPC) rating of A or B[2].
- Barclays: 5 year fixed rate – 60% LTV, 3.69% initial rate, £899 product fee[3].
- Nationwide customers can borrow up to £20,000 interest free for energy efficiency improvements for the first 2-5 years[4].
- Halifax offers a Green Living Reward, where qualifying mortgage customers could claim a cashback such as £2,000 for a heat pump and a free optional EPC[5].

Selected providers

NatWest BARCLAYS nationwide HALIFAX

Retrofit financing options: market review

Finance products: unsecured loans

Overview

- Personal/business loans or financing agreements which don't require collateral such as a property and are usually faster to arrange than mortgages and flexible in amount.
- Unsecured loans could be used for retrofitting.
- Borrowing rates are significantly higher than mortgage rates.
- These loans are sometimes packaged up and offered by the retrofit provider as a point-of-sale loan via trade finance.

Examples (as of September 2025)

- Unsecured business loans typically carry interest rates between 7%-20% Annual Percentage Rate (APR)[6].
- HSBC UK: Up to £30,000, pay back period of up to 96 months, ~ 6.4% APR[7].
- Nationwide: Up to £50,000, pay back period of up to 5 years, 7.9%-5.8% APR[8].
- Novuna Personal Finance: Up to £35,000, pay back period of up to 60 months, 6.3%-36.4 APR[9].
- Santander: Up to £25,000, pay back period of up to 5 years, 5.9%-29.9% APR[10].
- Barclays: Up to £7,500-£15,000,over 2-5 years, 6.2% APR on loans between £7,500-£15,000[11].

Selected providers

HSBC · Virgin MONEY · Novuna Personal Finance · Santander · nationwide

Retrofit financing options: market review

Finance products: social lending

Overview	Social lending is characterised by its dual purpose to generate a financial return while also creating a positive social or environmental impact. Social lending within retrofit aims to help homeowners fund essential repairs and energy efficiency upgrades, particularly those who may be excluded from traditional, mainstream lending. The lending is often available to those with low credit scores or income streams that might exclude them from traditional finance options.
Example	Lendology is a Community Interest Company (CIC) that offers unsecured loans to homeowners for home improvements such as retrofits[12]. As a CIC, it is considered a private lender with a social purpose. The loans have below market interest rates because Lendology works in partnerships with local councils which fund parts of the lending pot (e.g., initial capital) while Lendology manages the loan administration, credit checks, repayments, and support services.
Example Provider	lendology
Case Study	Somerset Council has partnered with Lendology to provide residents with low-cost loans for energy efficient improvements. Moreover, Lendology also offers support impartial energy advice, grant eligibility assessment and home retrofit support through partnerships with local organisations to Somerset's residents[13].

Retrofit financing options: market review

Energy Performance Contracts (EPCs)

Overview

- An Energy Performance Contract (EPC) is a contractual agreement between a building or facility owner and a specialised service provider, known as an Energy Service Company (ESCO). The core of an EPC is a guarantee that the improvements made by the ESCO will result in a specific level of energy and cost savings.
- The service provider implements energy upgrades, and the resulting savings are used to fund the project over time, with the provider guaranteeing a certain level of energy savings.

Examples

- EPCs have been successfully used to fund more than 700 projects supported by the Retrofit Accelerator for Workplaces of the Greater London Authority[14].
- The Re:fit Framework (owned by Local Partnerships and the Greater London Authority) has leveraged EPC to achieve £30.48 million in annual energy cost savings and to deliver £497.04 million in capital investment. This is possible because EPC provides a guaranteed 100% of energy savings for the payment period of the projects[15].
- Many energy providers, e.g. SSE Energy Solutions[16], Veolia[17] and Vital Energi[18], offer EPCs as of August 2025.

Selected Providers

sse Energy Solutions

VEOLIA

VITAL ENERGI

Retrofit financing options: market review

Equity release finance

Overview

Equity release is where homeowners (usually aged 55 and over) can access the money tied up in their home without having to sell or move out. It's typically used in retirement to boost income, fund home improvements, or cover other expenses. When the homeowner sells the property, the finance is repaid.

Examples

Regulated by the Equity Release Council several finance providers offer this service some examples of this are;

- Aviva: Be age 55 or over, own a home worth £75,000 or more and need to borrow at least £15,000[19].
- Legal and General: Provide three types of equity release; Lifetime Mortgages (55yrs+), Home reversion plans (60yrs+) and Payment Term Lifetime Mortgages (50yrs+)[20].

Selected Providers

L&G AVIVA

Retrofit financing options: market review

Social and community investments: local climate bonds

Overview

- Local Climate Bonds (LCBs), also known as Community Municipal Bonds or Community Municipal Investments, are an innovative green finance mechanism that enable local authorities to raise citizen and institutional borrowing to fund environmental and social impact projects[21].
- LCBs are issued by a local authority through a crowdfunding platform[22]. They aim to involve the local community in projects that provide a positive outcome.
- Those that invest in the bonds can also donate back their interest payments to support the financed cause.

Examples

Abundance Investment is a commonly used financial provider for local authorities issuing LCB; for example, Hackney Council has engaged with Abundance and is currently raising money (target is £500,000, term 5 years, interest rate 4.2%) to fund energy efficiency improvements at a local school in May 2025[23].

Selected Providers

abundance

Retrofit financing options: innovative models

Pay as you save models: heat-as-a-service

Overview

Heat-as-a-service is a business model where a provider manages and delivers heating solutions to customers for a recurring fee, rather than selling heating equipment directly. The provider retains ownership of the heating infrastructure and is responsible for its operation and maintenance. Customers pay for the warmth supplied[23].

Examples

Energy Systems Catapult delivered trials funded by the Department for Business, Energy and Industrial Strategy from 2017-2019 to explore HaaS. Energy Systems Catapult delivered a pilot study and found on average, occupiers paid more for heat-as-a-service than they were paying for their energy. Two-thirds said they would be more likely to recommend their supplier if they offered heat plans [24].

Retrofit financing options: innovative models

Finance products: Property Linked Finance (PLF)

Overview

PLF enables access to affordable and long-term funding for environmental improvements for buildings by linking the finance to the property, rather than the owner. This means the payment obligation can transfer to the new owner when the house is sold[26]. The new homeowner who is benefitting from the home upgrades then also pays for the home improvements.

Case Study

The Green Deal was introduced by the UK Government in January 2013 as a flagship policy to improve the energy efficiency of buildings[27]. The scheme allowed for energy efficiency measured to be linked to the household energy bill, therefore, when the property was sold the loan transferred to the new homeowner (bill payer). It aimed to remove the barrier of high upfront costs for energy efficiency improvements by allowing property owners and occupiers to finance measures such as insulation, efficient boilers and renewable technologies through loans repaid via their energy bills. The idea of the Green Deal was that the average savings on energy bills should be equal to or greater than the loan repayments, ensuring no net increase in household costs.

Several factors contributed to its lack of success:

- First, the interest rates on Green Deal loans were relatively high compared to other forms of finance available to consumers, which made the scheme unattractive for many households. For example, Nationwide offered energy efficiency loans with approximately 2% interest while the rate offered by the Green Deal was more around 8%.
- Second, the complexity of the application process and the requirement for an accredited assessment may have created additional administrative burdens that deterred participation.
- In some cases, a household's energy savings may not be enough to cover the cost of the Green Deal loan. Moreover, consumer trust was undermined by limited public awareness and negative press coverage.

Research Programmes

Green Finance Institute

The Green Finance Institute is looking into PLF further to support retrofit uptake and learn from the findings of the Green Deal[28].

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About Net Zero Living

Innovate UK's £60 million Net Zero Living Programme is helping local authorities and businesses work together to deliver new solutions that improve local services and open markets for economic growth.

Places across the UK are seizing the opportunities that come with decarbonisation to create warmer homes, cheaper local energy, new skills, and more secure work for their communities. But often, while the technology is available, places face barriers in areas such as resources, investment, planning and buy-in.

The 52 local authorities taking part in the Programme have generated a wealth of experience on overcoming systemic barriers to net zero solutions.

This insights report is delivered for Innovate UK's Net Zero Living Programme by Regen.