Innovate UK: Calderdale Retrofit Challenge

Final Report

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Executive summary

This report details the Innovate UK: Calderdale Retrofit Challenge project, an initiative undertaken by Calderdale Council, Carbon Coop, and Todmorden Learning Centre and Community Hub (TLCCH) funded by Innovate UK.

The project was commissioned as part of a range of work being delivered through the borough's Climate Action Plan. This included the Local Area Energy Plan research which identified that 75,000 homes in Calderdale need to be improved to Energy Performance Certificate (EPC) energy rating C or above by 2038 as part of the target for the area to have net zero carbon emissions.

The project aligns with Calderdale's Vision 2034: an "enterprising place" where all can "live a larger life." This community-developed vision prioritizes reducing inequality, fostering sustainable communities, tackling the climate emergency, and enhancing local pride. It aims to improve well-being through addressing poverty, health, education, environmental protection, and economic growth, leveraging technology for better services and decisions.

The Calderdale Retrofit Challenge project aimed to better understand the significant challenge of decarbonising Calderdale's housing stock, particularly the pre-1919 stone terraces that can be complex and expensive to decarbonise. Beyond technical hurdles, the project specifically focused on understanding approaches to overcoming non-technical barriers, through community-led engagement.

The non technical barriers included:

- Limited access to finance
- Difficulty in finding trusted, reputable contractors
- Fragmented communication
- Expensive, costly piecemeal delivery; and
- A general lack of awareness by householders about retrofit, and the different options and types of energy efficiency works suitable for their homes

The project delivered a series of integrated outputs forming a strong foundation for area-based retrofit delivery in Calderdale:

- **Feasibility Studies:** Conducted by Carbon Co-op, these included a horizon scan of Area-Based Schemes (ABS) across the UK and two area-based scenario studies (Halifax and Todmorden) to identify place-based retrofit opportunities and barriers.
- **Net Zero engagement activities:** A varied program, including focus groups, community festivals, drop-in sessions, and digital engagement, engaged diverse communities, raising awareness, and gathering insights on affordability, trust in contractors, and interest in local advice.
- **Citizens' Jury:** Calderdale's first Citizens' Jury on home retrofit focused on homeowners, especially those in stone-walled properties. The Jury's

insights and recommendations were critical in shaping the project's strategic thinking and influencing Calderdale's Retrofit Strategy.

- **Development of A Retrofit Guide for Example Homes in Calderdale:** In partnership with People Powered Retrofit, this clear, visual tool provides information tailored to main housing types in Calderdale, outlining retrofit measures, challenges, and practical pathways.

The project adopted the Design Council's **Double Diamond framework** (Discover, Define, Develop, Deliver) to guide its approach. This led to the development of participatory and citizen-led processes, utilizing trusted community infrastructures and focusing on household journeys, perceptions, and support needs.

The project significantly advanced a locally tailored approach to scaling retrofit in Calderdale by highlighting acute non-technical barriers such as a lack of trusted advice, limited finance access, and planning uncertainty. Through extensive public engagement, the project developed a detailed understanding of public perception and sentiment towards retrofit, moving beyond generalizations to nuanced household challenges. This led to a deeper understanding that people's ability to act is influenced by personal circumstances like time, income, health, life-stage, and confidence.

The project yielded 12 key lessons:

1. **Relational approach:** Close contacts significantly influence retrofit decisions and confidence.
2. **Motivations to retrofit:** Primary drivers are home comfort and lower energy bills, outweighing environmental impact concerns.
3. **Assurance and risk:** Stories of poor quality installations and challenges with solid stone wall construction create significant apprehension.
4. **Finance:** Cost and financing are common barriers; a range of affordable financial solutions are essential.
5. **Communications, engagement, and trust:** People are more likely to engage when activities are led by trusted, neutral, community-rooted organizations.
6. **Retrofit at scale:** The overwhelming scale requires focusing efforts on the promotion of the benefits of energy-efficiency works in clear, simple terms, and bringing households and homeowners closer to being ready for projects.
7. **Trigger points:** Opportunities exist to focus on people during life stages where retrofit is more likely (e.g., at property purchase and during home renovation projects).
8. **Technical and non-technical barriers:** These are closely linked; technical factors can greatly influence a homeowner's decision to proceed.
9. **Depth of retrofit:** Deep retrofits can be off-putting; offering a suit of different retrofit works, and helping owers / residents to prioritize them, and getting homes (fuel poor households) 'heat pump ready' without increasing energy bills, allowing for future works, may be more attractive to the market, and accessible.
10. **Retrofit assessments and surveys:** Important as a first step and for

education, they should be independent, visual, and use plain language, with cost being a potential barrier.

11. **Customer journeys:** The Citizens' Jury recommended a One Stop Shop model for Calderdale to offer clear, impartial, and trusted advice, given the lack of clarity in current customer journeys.
12. **Tensions in policy framing and delivery context:** The two drivers for retrofit—fuel poverty alleviation and carbon emission reductions—often sit uneasily alongside each other and need careful consideration and management.

Images from Cizitens' Jury sessions

1. Project overview

1.1. Outline the problem being addressed

Calderdale, like many parts of the UK, faces the difficult challenge in decarbonising its housing stock. Much of the local housing is ageing, draughty and poorly insulated - particularly the estimated 40,000 pre-1919 stone terraced homes that are characteristic of the borough. These properties are often described as 'complex to decarbonise' due to their solid walls, attractive appearance and character, and other architectural features and design that pose additional retrofit challenges.

Beyond the technical constraints, significant non-technical barriers persist. Many residents face limited access to affordable finance, low confidence in the reliability of contractors and scepticism rooted in past negative experiences or stories from others where poor quality retrofit works have caused problems such as damp and mould all deter people from taking action.

Communication about retrofit is often fragmented or overly generic, failing to resonate with locally rooted concerns. These barriers combine to make retrofit inaccessible, unappealing or unfeasible for many people. Fuel poverty is also widespread in the borough - especially in those same pre-1919 stone terraces - compounding the need for action. Old, draughty housing is a major driver of local carbon emissions and it significantly impacts health and wellbeing if homes are not energy efficient and are expensive to heat during colder months. Traditional retrofit approaches have been piecemeal, expensive and inaccessible. Without strategic co-ordination, a supportive, long term national and regionalpolicy framework, and delivery models that build trust at the local level, retrofitting at the scale needed to meet Calderdale's net-zero targets will continue to be a difficult challenge.

1.2. Vision, approach and resourcing

In response to these challenges, this project researched and explored innovative place-based approaches to retrofit, looking at best-practice of local engagement and communication, community co-design, and co-ordination and strategic engagement of stakeholders. By focusing on the non-technical barriers, this project laid foundations and fed into a strategy for a more inclusive and replicable approach to retrofit in Calderdale.

The vision and approach for the project was to explore whether relational and placed-based approaches to retrofit could effectively help overcome the non-technical barriers preventing retrofit uptake in Calderdale. The methodology combined research into local and national best practices with targeted, locally rooted engagement of both Calderdale communities and strategic stakeholders.

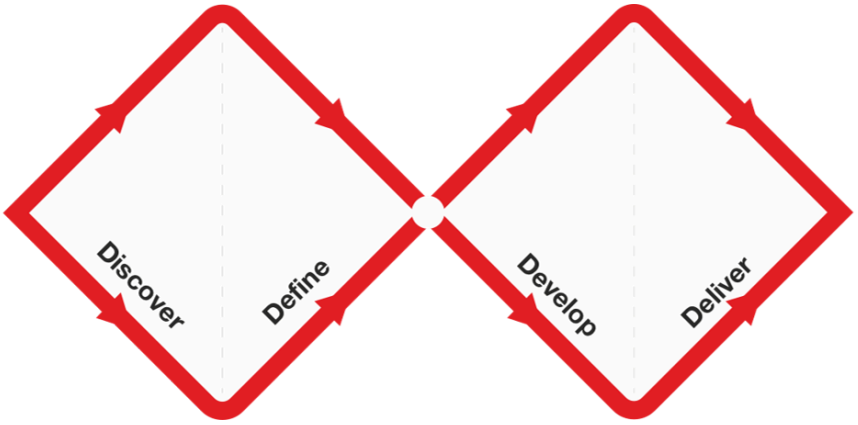
The project proposal was born at funding bid stage, where Calderdale Council, Carbon Coop and Todmorden Learning Centre and Community Hub (TLCCH) saw an

opportunity to deliver an innovative, research based, project to explore the vision and approach.

Calderdale Council set out the research question that needed to be addressed and answered with the community-led retrofit expertise of Carbon Coop and the engagement approach by TLCCH being a local hub loved and trusted by the Calder Valley residents.

The project was organised into work packages, with clearly defined leads:

- **WP1** - **Project Management** of the whole project was led by Calderdale Council for the majority of the project duration with support offered by Carbon Coop towards the end of the project
- **WP2 - Partnership development/local convening** was led by Todmorden Learning Centre and Community Hub.
- **WP3 - Engagement** also led by Todmorden Learning Centre and Community Hub, with support by Carbon Coop
- **WP4 - Feasibility studies** led by Carbon Coop
- **WP5 - Strategic engagement** led by Calderdale Council supported by Todmorden Learning Centre and Community Hub



We implemented a well recognised design framework: The Double Diamond, first devised by the Design Council. It includes 4 stages:

- **Discover**: The exploratory phase that helped us to understand the context of our project and our ambition for the work we wanted to research and explore
- **Define**: With the knowledge collated by the project team during the discovery phase, we defined the challenge in a different way to respond to our project specific context.
- **Develop**: Develop our approach to the project, we sought learning and reflections from elsewhere (through case studies and horizon scanning) and also through co-designing with a range of different stakeholders.
- **Deliver**: We delivered the identified tasks from the development phase. It helped us test our proposed approaches at different scales too. We evaluated regularly and optimised along the life of the project.

Our approach led to developing participatory and citizen-led processes, through trusted community infrastructures at TLCCH and focused on household journeys, perceptions and support needs, developing person-centred tools like the Retrofit Guide (for example Homes in Calderdale) and using the college as a testing ground for engagement approaches and events integrating the learnings from the relational approach research.

Through work package 2, relationships were built with local supply chain, community groups and stakeholders working on retrofit in Calderdale, also thanks to a number of events during the life of the project.

Work package 3 also led by Todmorden Learning Centre and Community Hub trialled a range of community engagement and communication strategies. These activities created foundational awareness, built local momentum around retrofit ambition and surfaced local attitudes toward retrofit.

A key participatory innovation was Calderdale's first Citizens' Jury on Retrofit, the centre piece of work package 3. Co-designed through multiple planning sessions and delivered over six sessions (totalling 23 hours), the Jury involved 26 residents and 11 expert witnesses, and resulted in 14 actionable recommendations, which are now being embedded into Calderdale Council's Retrofit Strategy. Juror attendance averaged over 90%, indicating strong engagement. Supporting activities for the Citizens' Jury included:

- Recruitment and co-design meetings held in September 2024.
- A Citizens' Jury Celebration Event towards the end of the project.
- Dissemination of recommendations to senior council leaders, service leads and at strategy development sessions.

Work package 4 was led by Carbon Co-op who contributed by producing a horizon scanning report and supported thematic learning sessions focused on sharing learnings from successful retrofit schemes across the UK.

Further insights were explored through strategic stakeholder interviews on finance and delivery approaches applicable to Calderdale's context which helped to inform a set of feasibility studies. These studies identified place-based solutions to key non-technical barriers and drew lessons from other national case studies. Feasibility studies were developed to identify area-based retrofit pathway scenarios (short, medium and long-term). The activities run by Carbon Coop also informed the development of A Retrofit Guide for Example Homes in Calderdale - a clear, visual tool which can help residents understand retrofit options and scenarios tailored to prevalent housing archetypes identified from Carbon Co-op's archetype mapping feasibility paper. This was a key recommendation from the Citizen's Jury.

In **work package 5**, Calderdale Council played a key role in project management and in convening strategic partners. The work was guided by and contributed to the Warm and Resilient Buildings Climate Action Plan theme group, supporting strategic alignment between community engagement and policy development. This

included feeding into the Local Area Energy Plan and informing the Council's internal capacity building around retrofit communication and delivery models, including the development of a Retrofit Strategy.

1.3. Project innovation

The project piloted a genuinely place-based citizen-led approach to unblocking non-technical barriers to retrofit. It integrated technical insight with relational community-based engagement. This dual focus on Calderdale's local social context and strategic whole-systems thinking sets the project apart from conventional feasibility projects.

While retrofit schemes across the UK prioritise cost-effectiveness of delivery, this can often lead to examples of poor-quality delivery and a bad customer experience of retrofit. This project sought to address these issues by embedding trust-based engagement methods such as community-based engagement methods, participatory focus groups and a Citizens' Jury at the heart of its methodology. This was the first time such an approach has been applied in Calderdale, and, notably, the first time a Citizens' Jury has been run in the borough. The process provided a democratic legitimacy to the recommendations and informed the development of the Retrofit Strategy, grounded in lived experiences of residents.

The project advances the use of local housing archetypes to identify retrofit opportunities. By mapping non-technical barriers in two contrasting neighbourhoods, and developing tailored retrofit scenarios, the team has moved beyond generic retrofit recommendations to bespoke, spatially anchored recommendations for these areas with archetypes specific to Calderdale. This represents a shift from the national retrofit programme models to a focus on exploring locally tailored, bottom-up data-informed and relational approaches to retrofit.

Through the Warm and Resilient Buildings Group, the project helped align retrofit with broader policy agendas spanning public health, planning, and climate resilience. Strategic learning from the Citizens' Jury and feasibility studies directly informed the Retrofit Strategy, while also feeding into the Local Area Energy Plan and other council-led initiatives.

The role of a community-based organisation within retrofit was explored at Todmorden Learning Centre and Community Hub. Trust-building, broad retrofit advice and local partnerships were developed in a non-commercial environment through engagement activities and events, creating a model that could bridge the gap between policy ambition and household action, particularly in hard-to-reach areas or mixed-tenure communities.

The project also brought together complementary skills across partners where Carbon Co-op contributed research and technical knowledge through feasibility studies and horizon scanning; Todmorden Learning Centre led community engagement and outreach; and Calderdale Council coordinated strategic alignment

and policy integration. This collaborative delivery model enabled a rich blend of on-the-ground experimentation and institutional learning.

Finally, the project contributed to national learning on climate engagement through partnerships with Nesta (via the Strategy Room), UK100, and the National Retrofit Hub. It was profiled at major events such as Retrofit25 and the MJ Awards, where it was recognised for leadership in responding to the climate emergency.

1.4. Non-technical barriers the project sought to overcome

At the beginning of the project the key non-technical barriers that we were seeking to overcome were:

- Unclear retrofit customer journey and lack of available information
- Negative past experiences and perceptions that 'nothing can be done'
- Lack of effective communication and engagement approaches
- Challenges associated with Calderdale's pre-1919 stone wall terrace housing stock
- Limited confidence in the reliability of the retrofit supply chain
- Limited finance options for retrofitting
- Unclear retrofit delivery models

Through the research process we found the following additional barriers:

- Lack of comprehensive plan for scaling retrofit initiatives
- Lack of clear planning policies and planning? standards for retrofit
- Limited size and capacity of the retrofit supply chain

The project addressed these challenges through development of a Retrofit Guide for Example Homes in Calderdale, laid the foundations for a community-led retrofit One Stop Shop in Todmorden, piloting a community retrofit engagement strategy, embedding lessons learnt into the Warm and Resilient Building Group's Retrofit Strategy for the borough, and using feedback loops from focus groups and surveys to reflect and verify recommendations for action.

1.5. Local and national context

Calderdale Council declared a climate emergency in 2019 and committed to achieving the scientific target of Net Zero by 2038 with significant progress by 2030. The Borough's 2023, Calderdale's Climate Action Partnership produced a three-year Climate Action Plan[1]. focusing on the immediate actions that Council needs to take. One of the key themes of the Plan is 'Warm and Resilient Buildings' which looks to tackle how homes are heated and the condition they are in.

[1] The Calderdale Climate Action Plan (2023). Available from: https://new.calderdale.gov.uk/sites/default/files/2024-04/Calderdale%20Climate%20Action%20Plan%202023.pdf

Approximately 31%[2] of carbon emissions in Calderdale come from all of the domestic housing stock in the borough.

As Calderdale has a rich history of industry and architecture this means that many of the homes in the borough are historic but leaky, damp and cold. This is because they often have low levels of insulation making them cold and expensive to heat. Solid stone walls are a particular feature of Calderdale homes which means upgrading these properties to modern standards can be challenging and expensive. Not impossible, but challenging. These homes are 'complex to decarbonise'. This means they require some additional funds and thinking to ensure they can be warm, more affordable to heat and comfortable to live in.

Calderdale Council's Local Area Energy Plan revealed that 75,000 homes in the borough require upgrades to an Energy Performance Certificate (EPC) rating of C or above. This is crucial for Calderdale to achieve net-zero emissions by 2038, outlining the necessary steps, locations, timelines, and costs for building energy efficiency improvements.

The Local Area Energy Plan uses geospatial data and energy modelling to propose where, when and how homes should be upgraded. However, while the LAEP provides high-level technical direction, it does not resolve how to engage residents, build public trust or deliver retrofit at scale – gaps this project directly addresses.

Many households face deep financial challenges and feel distrust towards contractors or government-backed schemes, particularly due to poor past experiences or the experiences of others. Residents frequently encounter inconsistent messages, a confusing and complex market for retrofit, low awareness of options and overwhelming technical complexity and a wide variety of measures. There has been an historic lack of assurance from delivery providers of good quality retrofit and some examples of poor quality installations and works through earlier national carbon instruments such as the Carbon Emissions Reduction Target (CERT) and Community Energy Savings Programme (CESP), and more recently through the Energy Company Obligation (ECO) and Great British Insulation Scheme. Even well-intentioned retrofit programmes can also fail to reach those most in need of retrofit works.

At a national and local government level (including regional), while short-term policy thinking and associated funding streams present challenges, Councils are actively working to plan for the longer term. Many local authorities are proactively seeking central government funding to invest in retrofit activities. While the historical stop-start nature of public funding has created some uncertainty, local governments are committed to fostering an environment that encourages supply chain investment in innovation, training, and skills.

Calderdale Council demonstrates strong leadership on the climate agenda, notably

[2] Figure 5 taken from the Calderdale Local Area Energy Plan (2024). Available here: https://new.calderdale.gov.uk/sites/default/files/2024-10/laep-report.pdf

through its successful establishment of the independent Climate Action Partnership, which benefits from cross-party, business, and community sector membership, as well as its sub-group, Warm and Resilient Buildings. The Council also has a dedicated Director of Public Health and Climate Action in post, providing senior management oversight and direction for the Council's important work in this area.

Recognizing opportunities for further progress, the Council is focused on enhancing cross-departmental working. The new Retrofit Strategy and Local Area Energy Action Plan are set to provide clear direction and focus to the Council's efforts.

Longer-term supply chain challenges are being addressed jointly by both the Council and the West Yorkshire Combined Authority. By integrating different retrofit and place-making funding streams more effectively, better outcomes are being achieved. This approach also acknowledges the significant private investment that will be needed from homeowners and private landlords through affordable finance products to finance retrofit works.

It is also recognized that while large-scale publicly subsidized retrofit schemes have traditionally been dominated by larger contracting companies, local authorities are continually improving their procurement procedures. These improvements aim to increase local social value and maximize benefits for the local economy. While challenges for local micro-businesses in accessing work through such contracts persist, there is a concerted effort to make these opportunities more accessible.

It is important to note that at national level, retrofit delivery is made difficult by changing policy agendas, fragmented funding initiatives, and a lack of integration between energy efficiency and planning frameworks. The Energy Performance Certificate (EPC) system is widely criticised for being a poor proxy for a retrofit assessment and offers limited use for planning deep retrofit.

2. Impact

2.1. Impact delivered by the project

The project delivered a series of integrated outputs that form a strong foundation for area-based retrofit delivery in Calderdale, aligning with the borough's Local Area Energy Plan and targeting the specific challenges of the local housing stock and barriers to the take up of retrofit.

Feasibility Studies
The project delivered a set of feasibility studies as part of WP4, led by Carbon Co-op. This includes a horizon scan of area-based approaches and schemes across the UK, and two area-based scenario studies focused on Halifax and Todmorden, designed to identify place-based retrofit opportunities and barriers.

These studies are aligned with Calderdale's Local Area Energy Plan and provide a structured analysis of local housing types, local barriers and retrofit opportunities. They form a strategic evidence base to support future retrofit planning, investment and implementation.

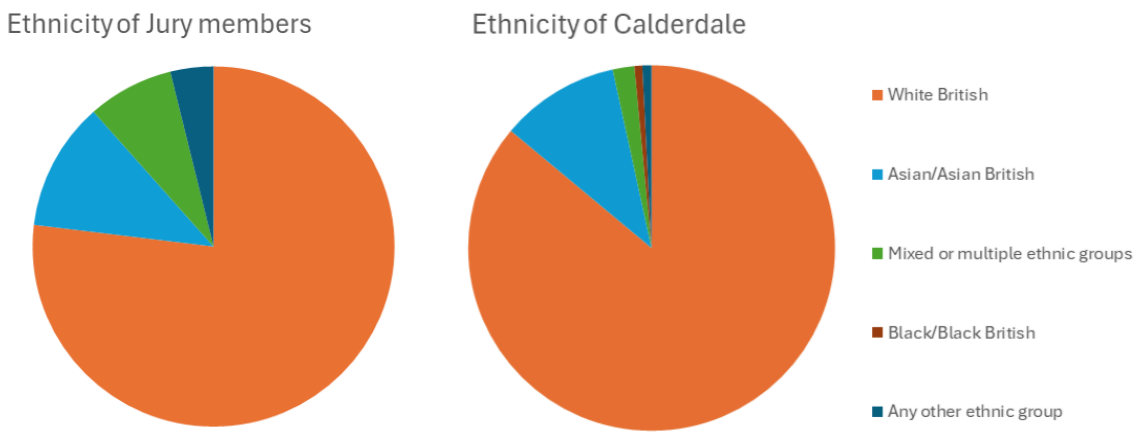
Net Zero engagement activities

A varied programme of net zero engagement activities was delivered to raise awareness of retrofit and to gather insight from residents across Calderdale. This included focus groups, community net-zero festivals, drop-in sessions, attending community events, conducting interviews as well as digital engagement through social media, web and online surveying. Through these activities we engaged with a diverse range of communities in Calderdale, raising awareness of retrofit and the benefits of home energy efficiency as well as hearing a wide range of views and perspectives on retrofit. These sessions surfaced valuable qualitative insights, including concerns around affordability, mistrust in contractors, and interest in locally delivered advice. These findings informed the scenario development process and helped shape future delivery models to better reflect the needs and expectations of Calderdale residents.

Citizens' Jury

The project delivered Calderdale's first Citizens' Jury focused on home retrofit, which was a central piece of the community engagement of this project. Given that 67% of homes in Calderdale are owner-occupied, the project team decided to focus the Jury on the homeowner perspective. Homeowners are also able to unilaterally make retrofit decisions on their properties and directly see the benefit from these improvements. However, they still face many barriers to retrofitting which has resulted in the low take up of measures from residents living in older, stone solid walled properties to date. As the project is particularly interested in the complex to decarbonise stone terraced properties typical common throughout Calderdale we prioritised jury members who had experience of living in stone built homes and could bring their experience and perspective to the process.

The final Jury comprised 26 Calderdale homeowners, 12 men and 14 women from a varied age range and diversity of ethnicity. A number of jurors either have or live with someone with a life-limiting disability which is reflective of the number in Calderdale. 23 of the jurors live in homes with stone walls. 17 of the jurors are employed or actively seeking employment. Annual household incomes amongst the jury ranged from those who are below the income levels often used for grant funding to those on middle or higher incomes. All the jurors live throughout different parts of Calderdale including rural, semi-rural, and urban areas.



Participants brought a wide range of experiences and level of retrofit knowledge. Some had no prior awareness of retrofit, while a small number had a comprehensive grasp of the subject. This created a dynamic forum for discussing the barriers to retrofit and co-developing ideas for what might make it more accessible and appealing. The insights and recommendations from the Jury were critical in shaping the project's strategic thinking and are now influencing the development of Calderdale's Retrofit Strategy.

Development of A Retrofit Guide for Example Homes in Calderdale
In collaboration with People Powered Retrofit, the project team developed an archetype retrofit guide for Calderdale's main construction types. This guide will be shared with residents to promote fabric-led retrofit works, inform decision-making, and assist with local delivery planning. It offers clear, visual information tailored to Calderdale's housing types, including back-to-back and through terraced homes, outlining appropriate measures, challenges, and practical pathways. Tested in focus groups, it received strong community endorsement as a trusted awareness tool. Beyond raising awareness, it functions as a practical planning resource, enabling future delivery strategies to better match interventions to specific housing archetypes in the borough.

2.2. What are the key achievements of your project? **and** 2.3. What impact has your project had on environmental, social and economic benefits?

The project significantly advanced a locally tailored approach to scaling retrofit in Calderdale, recognizing that successful implementation requires more than just technical fixes. It demands a deep understanding of residents' experiences, the barriers they face, and the support they need. A key outcome was the identification of acute non-technical barriers in the borough, including a lack of trusted advice, limited access to appropriate and affordable finance, uncertainty regarding planning rules, and a general lack of awareness about where to begin, particularly for owner-occupiers of older stone-built homes.

Through close collaboration with residents via the Citizen's Jury, public engagement events, surveys, and focus groups, a detailed picture of public perception and sentiment towards retrofit was developed. This allowed the project to move beyond broad generalizations and understand the nuanced challenges faced by different households, ranging from affordability and disruption to mistrust of contractors and a lack of personalized guidance.

This work led to a deeper understanding of the social and behavioural aspects of retrofit. **The project highlighted that people's ability to act is influenced not only by property type but also by personal circumstances such as available time, income, health, confidence, and access to support**. It was also recognised that the increases in the costs of energy bills have limited effect in the demand for retrofit, with all but the most informed residents unable to form the link between retrofit works, reduced heat loss, improved thermal comfort and cheaper energy costs (and resilience against future price rises). Consequently, the project began developing approaches that reflect this complexity, including clear, relevant and targeted messaging and communications according to different market segments, phased works to minimize disruption and cost, and a strong emphasis on local, trusted advice through the proposed One Stop Shop area model.

Socially, the project enhanced the visibility and relevance of retrofit within local communities. Public engagement activities allowed residents to explore retrofit in the context of their own homes and priorities, increasing awareness and fostering a sense of ownership over future plans. The Citizens' Jury, in particular, provided a structured platform for residents to reflect, question, and co-produce recommendations, building trust and momentum at the community level and ensuring residents' voices are integrated into strategic planning.

Economically, the project laid important groundwork for future investment and local job creation. By identifying demand-suppressing barriers—such as poor access to information and finance—the project helped shape a delivery model better aligned with residents' needs. The proposed One Stop Shop and area-based delivery approach are expected to stimulate local supply chains, reduce delivery risk, and increase confidence among both homeowners and contractors, making Calderdale a more attractive area for retrofit-related investment.

Environmentally, the project supports long-term carbon reduction by equipping Calderdale with the knowledge, tools, and frameworks necessary to deliver strategic and equitable retrofit at scale. The focus on archetype development and area-based feasibility studies ensures that future retrofit programs can be efficiently targeted to the borough's most common and challenging housing types. By enabling more informed decision-making—for both residents and local authorities—the project directly contributes to Calderdale's wider climate goals and net-zero strategy.

These achievements and impacts are now embedded in the borough's Retrofit Strategy, providing a clear direction for future delivery and ensuring that retrofit in

Calderdale is not only technically viable but also socially acceptable, economically beneficial, and environmentally impactful.

2.4. What is the expected future impact of your project in terms of targets and timescales?

The insights from this project and particularly the recommendations of the Citizens' Jury have been embedded in the **Retrofit Strategy** that the Warm and Resilient Buildings theme group of Calderdale's Climate Action Partnership is developing. This important document will lay out the priorities for retrofitting in Calderdale over the next 5 years.

The **Retrofit Guide for Example Homes in Calderdale** developed in partnership with People Powered Retrofit will provide a key document for householders, designers and organisations seeking to develop area-based retrofit schemes in these areas. It will help inform householder decision making but also the development of any scheme including design decisions and procurement approaches. Once complete the guide will be available on the project partners' websites (Council, Todmorden Learning Centre and Community Hub, and Carbon Co-op) as well as the National Retrofit Hub's Archetypes library.

Todmorden Learning Centre and Community Hub are searching for further funding to develop a Retrofit Advice Hub or One Stop Shop in their building in Todmorden. This would build on the expertise already within the organisation and include practical training courses as well as access to impartial and trusted advice.

2.5. How has this project helped you engage better e.g. with innovative business, and local communities, local and national government?

The project significantly strengthened engagement across Calderdale by mapping and connecting existing environmental and community networks, including grassroots groups, climate action hubs, repair cafés, and trusted local organisations. **These networks proved essential in reaching diverse communities and building a foundation for place-based, community-led retrofit delivery**. Building on this, we began exploring a network of local "Retrofit Champions" — individuals embedded in their communities who can share personal experiences, demystify the retrofit process, and help others begin their journey. This approach has strong potential to increase trust, uptake, and local momentum.

At a strategic level, the project highlighted the need for better coordination among the many actors involved in retrofit — from housing associations and contractors to advice services and training providers. We recommend developing an enduring partnership structure to align local delivery with the Calderdale Local Area Energy Plan (LAEP) and regional and national programmes, helping to reduce duplication and maximise the impact of available funding.

Development of enduring engagement strategies

One of the most valuable legacies of the project has been the development of a replicable, community-trusted approach to engagement and learning. **By investing in deliberative methods such as the Citizens' Jury and broader engagement activities — including events, surveys, and focus groups — the project has demonstrated that with the right structure and support, it's possible to engage communities meaningfully on complex issues like retrofit.** The process was designed to build trust from the outset, including working with independent facilitators, ensuring representation from diverse communities. This model is now informing wider council work within future climate, housing and public health initiatives, and has already contributed to Calderdale Council's engagement toolkit.

The project also fostered new dynamics between partners. It created space for meaningful dialogue between council teams, community organisations, and retrofit professionals, helping to break down silos and encourage collaborative working. Internally, the council saw improved cross-departmental engagement and a more inclusive, community empowering approach to joint problem-solving.

Structural challenges in the Calderdale context

Calderdale Council's previous stock transfer of its stock to a registered housing provider now presents some structural challenges for retrofit leadership. This has created a degree of separation between the Council and the learning generated within housing associations and the private housing sector. To address this, the main **social housing partner with 11,000 homes in the borough was brought into the Warm and Resilient Buildings group to ensure shared learning on resident engagement across tenures**.

New ways of procurement, delivery, and equitable financing of the work for all residents in mixed tenure estates will also need to be explored and tested to ensure area based retrofit schemes can be rolled out to whole communities, to ensure all residents can benefit, regardless of whether they own, privately rent, or socially rent their home.

As **flooding is also a significant contextual factor in Calderdale**, this provided a locally relevant context for discussing environmental change and resilience — helping to ground retrofit conversations in issues that matter to residents.

3. Challenges faced by your project

3.1. Summarise the key challenges you faced during the delivery of your project – which were expected and which were unforeseen?

As the project and our work within it unfolded we realised that we faced two types of challenges: the ones we expected and the ones that were unforeseen.

During early project risk assessment we were able to identify a number of challenges which we expected to encounter given the nature of this work and area of research.

But as our work and activities developed we encountered and realised a number of unexpected challenges. We explain more here.

Expected challenges:

- Engaging residents on the subject of home retrofit presented a significant challenge from the outset. Awareness of retrofit as a concept is still relatively low, and for many, it is seen as technical, costly, and not immediately relevant with many residents unaware of the relationship between their home's energy efficiency, energy usage for health and comfort, and their energy costs.Adding to this was the fact that the Citizen's Jury model — while highly effective — was unfamiliar to most residents, requiring a level of commitment and trust not typically asked of residents in engagement processes.
- The complexity of the retrofit challenge also became clear. Different homes require different types of work and solutions, and each household often has its own aspirations/motivations, circumstances and limitations, whether financial, practical or emotional. Developing an approach that could acknowledge this variation while still delivering meaningful recommendations proved to be a delicate balance, particularly with the challenging building archetypes within Calderdale.
- Engaging private landlords proved challenging beyond initial focus groups. Their interest was primarily incentive-driven, and sustained involvement was hindered by skepticism about retrofit costs and benefits. Without a live, area-based scheme demonstrating tangible returns or low-risk participation, continued engagement was difficult. Future interest may increase with demonstrable property value improvements or visible, low-risk models.
- Limited internal staff capacity and competing priorities within the Council and project partners constrained the involvement of some teams during project delivery. Although strategic support was robust, operational contributions were hindered by broader service pressures.
- Calderdale Council does not own any social housing stock in the borough. Funding conditions imposed by central government policy limits the delivery of retrofit demonstrators to privately owned tenures only, with only limited opportunity for small levels of social housing infill to be delivered through its funded schemes such as the Home Upgrade Grant (Phase 2). This disconnect was partly mitigated by including the lead social housing provider in the Warm and Resilient Buildings group, but it underlines the challenge of capturing and transferring learning across tenures in a joined-up way, as well as making the funding, procurement and delivery of multi-tenure retrofit schemes more challenging.

Unforeseen challenges:

- Despite strong engagement in the Upper Calder Valley area of the borough around Todmorden, it proved more difficult to reach residents in other parts of the borough where community organisations are fewer or less active. This was mitigated through partnership with the Council's communications team, whose borough-wide channels helped extend our reach. However, it reinforced the importance of having trusted community anchor organisations across multiple localities, particularly when delivery is rooted in place.
- Project continuity was challenging due to the short-term nature of the project and higher-than-expected staff turnover, especially in project management. This impacted consistent delivery and knowledge retention. While learning has been documented and integrated into the borough's Retrofit Strategy, the lack of long-term roles or follow-up structures may limit sustainability. However, including Citizens' Jury recommendations in the Warm and Resilient Buildings' Retrofit Strategy will help maintain accountability in the short to medium term.
- The scope of the project was also broader than initially anticipated, encompassing a wide range of interlinked topics — from housing and planning to public health, supply chain, finance, and energy systems. National policy uncertainty made it difficult at times to identify a clear driver for local action, particularly where delivery responsibilities are diffused.
- Delivering a deliberative process like the Citizens' Jury within a compressed timeframe and with limited resourcing added further pressure. While the quality of the outcome was strong, this came as a result of intensive coordination and the goodwill of delivery partners.
- Finally, a key communications challenge was how to frame retrofit in a way that motivated all homeowners, regardless of their circumstances and aspirations / motivations. Messages about carbon reduction do not always align or matter to residents compared with concerns about affordability or home comfort — and striking the right balance between these narratives remains a work in progress. This highlights a wider public policy dilemma where objectives concerning emissions, lower energy costs, better thermal comfort, and improved health, , though theoretically aligned, can pose practical conflicts when discussed in practice with homeowners.
- Limited resources impacted our ability to fully engage with the Innovate program. This constraint meant we couldn't leverage specialist advice and support as much as we had aimed for, therefore slightly limiting the potential reach and depth of our project's impact and learning opportunities.

3.2. How did you overcome these challenges?

Challenges were addressed through a combination of flexibility, partnership working, and a willingness to adapt our approach as the project progressed. We were also able to bring in partners from Innovate UK's Net Zero Living programme to provide national expertise and also additional capacity.

Raising awareness and building trust

Retrofit is a relatively unfamiliar and technical topic for many people. To encourage participation and build confidence, we focused on creating a warm and welcoming environment from the outset. For example, the Citizen Jury participants were supported through clear, friendly communication, and one-to-one calls before the Jury began with a key personal contact that they valued and praised highly. Independent facilitation and the use of a trusted community venue (Todmorden Learning Centre and Community Hub college building) and a local, accessible town centre hotel helped create a safe space where people felt comfortable to ask questions and share their views. Wider engagement was supported by the Council's communications team, who helped extend our reach across the borough in an accessible and diverse approach.

Responding to the diversity of homes and households

One of the most consistent messages from residents was that there is no single route to retrofit. Every home is different, and so are people's needs, budgets, and motivations. To reflect this, we worked with partners with significant expertise in retrofit engagement and communications to create the archetypes guide for example-homes, developed indicative household personas and explored through a variety of engagement approaches (focus groups, one-to-ones and surveys for example) to better understand how people could approach retrofit in phases and with a greater level of confidence. This helped us better understand how to support residents with different starting points, and how to shape communication and support in a more practical way.

Working within limited capacity

Limited resources and staff turnover challenged delivery. We mitigated this by sharing responsibilities, maintaining realism, and leveraging strong partner relationships and external support. Embedding learning into the Retrofit Strategy ensures the project's longevity beyond its timeframe.

Reaching communities beyond the upper valley

We broadened our outreach beyond the upper valley to engage communities across Calderdale. Utilizing borough-wide communication channels like newsletters, social media, and community networks helped us achieve this. This approach will inform future engagement, focusing on collaboration with anchor organisations in other areas of Calderdale.

Engaging private landlords

We found it more difficult to sustain engagement with private landlords. While we were able to involve some in focus groups, there was limited appetite to continue engaging unless clear financial benefits were available. This suggests that future landlord engagement may be more effective if it is linked to live projects or offers that demonstrate tangible benefits. Albeit, a small number of private landlords recognised the importance and need for retrofit to support their more vulnerable

tenants, and improve their rental homes ahead of increasing levels of regulation through the Minimum Energy Efficiency Standards policy.

Improving how we talk about retrofit

We learned that messages about comfort, health, and managing bills/cheaper energy costs? resonated more than carbon reduction alone. It was also important to be transparent about disruption and acknowledge practical concerns when discussing home retrofit measures.

Working within short project timescales

Despite staffing challenges and turnover, the strong planning, documentation, and relationships ensured project continuity. Recommendations are now embedded in the Retrofit Strategy and link to the Local Area Energy Plan. Dissemination, including the Retrofit25 exhibition, will carry learning forward. The project successfully laid a foundation for future retrofit work in Calderdale, building valuable relationships and gathering crucial insights.

4. Next steps

4.1. How are you going to sustain/embed the learning from your project?

The project's Exploitation Plan guides the consortium partners' next steps. As all partners are non-profits, "competitive offers" are seen as learning opportunities rather than threats. The intellectual property generated will have the greatest impact if shared without restrictions. Therefore, the project's primary goal is to advance home retrofitting in Calderdale, not to achieve commercial gain for the partners.

The Exploitation Plan has three areas of “Post-Project” activity to sustain and embed the learnings, and impact, from the project:

1. Publish project outputs in the public domain, keep them maintained and signpost and promote them to others,
2. Embed learning into future projects and programmes, and
3. Work with stakeholders, particularly the Warm and Resilient Buildings group.

Dissemination and Knowledge Sharing

A wide-reaching dissemination programme is in place to share learning locally, regionally and nationally. This includes:

- A dedicated Citizens’ Jury website, hosting videos, resources and participant testimonials
- The Council’s Engagement Toolkit will also be updated with a case study from the project, ensuring the Citizens’ Jury model becomes a reference point for future engagement exercises across the organisation

- Recommendations booklet and leaflet, designed and distributed via the Council communications team,
- A short 3 min case study video is now complete and there are two versions of a video of the Jury's launch event, which will be available on the Council's YouTube channel
- The Jury's recommendations have been captured in a 35 minutes video on the Council's YouTube channel here[3]
- A poster and abstract submitted to relevant health and sustainability networks to share the Jury's process and learning

Embedding in Local Strategy and Planning

The Retrofit Strategy, shaped by the Warm and Resilient Buildings group and Citizens' Jury recommendations, will now coordinate retrofit delivery across the borough. The strategy and five-year plan integrates insights from the Jury, Area-Based Schemes (ABSs), Local Area Energy Plan (LAEP), and supporting research, thus creating a unified approach for borough-wide retrofit efforts.

Work is already underway to act on specific Jury recommendations. For example, commissioned by Carbon Co-op for this project, People Powered Retrofit have created a locally tailored Retrofit Guide for Example Homes in Calderdale, ensuring that typical Calderdale housing types are represented in future delivery plans, and their owners can refer to the guide for suggestions of the different types of retrofit works that could be carried out to their homes. These archetypes are also prominent in the LAEP and can be added to as the evidence base grows.

Archetypes, videos, and other assets can be used as engagement tools for future use by One Stop Shops and or Area Based Scheme advice hubs.

Todmorden Learning Centre and Community Hub is seeking five-year funding for a Todmorden retrofit hub. This long-term investment is crucial to build momentum and drive lasting change, countering the previous intermittent support caused due to a lack of a long term central domestic energy policy and short term, stop-start funding schemes. Sustainable long term energy policy and associated funding will help ensure consistent progress in the community's retrofit efforts.

Informing regional and national influence

The project is contributing to wider policy and delivery conversations through our ongoing engagement with West Yorkshire Combined Authority (WYCA) and key stakeholders across Calderdale Council. The learning from the Jury, including its emphasis on equity, phasing, and trust, is helping shape thinking about how retrofit is funded, coordinated and communicated regionally.

Internally, key lessons have been shared with senior stakeholders, influencing future investment, partnership development, and delivery strategy. The project has also helped establish new working relationships between Council teams and community partners, which will support long-term collaboration.

[3] Full hyperlink: https://youtu.be/IeyLhy6cMBQ?si=LEX_YMDoUo-KZRaN

Partnership and communications legacy

The project established a strong foundation and shared language for future joint working among partners. The relationships built during the Citizens' Jury will support ongoing collaboration and delivery as the program develops.

Effective communication requires a clear action plan. Calderdale Council's Communications team can amplify work, but needs focused, timely content. Coordinating a forward plan with them is essential for sustaining public visibility and engagement.

5. Key Learnings

5.1. Summary of the key learnings from your project – what surprised you? What delighted you and worked really well? What didn't work well and why? Are there any different approaches that you would take? **and** 5.2. Context these learnings for others to be able to pick up and use or build on

Below we outline the 12 lessons that illustrate the key learnings from our project. More in depth explanations are provided in an appendix.

Lesson 1: Relational approach

A person's close contacts can have the biggest influence on their decisions around retrofit, as well as their confidence in managing the risk of retrofit.

Lesson 2: Motivations to retrofit

Individual motivations for home retrofits are diverse, influenced by personal circumstances and barriers. However, the primary drivers are enhanced home comfort and lower energy use and costs, outweighing concerns about the environmental impact of carbon emissions.

Lesson 3: Assurance and risk

Stories of poor quality retrofit projects, some even reaching national news, have made many people naturally apprehensive. This apprehension, coupled with concerns about quality assurance, customer protections (regardless of funding source), and risk, presents a significant hurdle. The challenge is amplified in Calderdale due to the high prevalence of solid stone wall construction in deprived lower income areas at high risk of severe fuel poverty, which introduces its own unique difficulties and obstacles.

Lesson 4: Finance

Financial circumstances vary greatly, but cost of retrofit and how to finance it are a common barrier for most people. Therefore it is essential that a range of equitable financial solutions are developed to reflect the need for variety in this area, this can be seen in the range of Citizens' Jury recommendations on this specific topic.

Lesson 5: Communications, engagement and trust

The project tested a variety of different engagement and communication methods and found people are more likely to engage when activities are led by trusted, neutral organisations, particularly with strong roots in their communities.

Lesson 6: Retrofit at scale

The overwhelming scale of the retrofit challenge can be paralysing. Given the vast array of factors and barriers households face, a "one size fits all" approach is impossible. Therefore, it is crucial to deploy existing strategies that focus efforts on households who are closer to being ready to undertake retrofit projects.

Lesson 7: Trigger points

There are opportunities to focus on people when they are at certain times of life where retrofit may be more likely or achievable. In particular, making sure people who are renovating their homes are aware of the benefits of building retrofit works into the improvements (i.e. internal wall insulation) should be a priority.

Lesson 8: Technical and non-technical barriers

Technical and non-technical barriers are closely linked. Technical factors can cause significant differences in the disruption levels of individual house retrofits. These unique variations can greatly influence a homeowner's decision to proceed with a retrofit.

Lesson 9: Depth and choice of retrofit

There is a wide variety of views and approaches in terms of the depth of retrofit required for properties, it can be off putting to even highly motivated homeowners to look purely at deep retrofits, because these can be highly costly and disruptive. Prioritising measures that prepare a property for heat pump heating without increasing energy bills, and allowing for future works, could be a more accessible and persuasive approach and solution for reducing fuel poverty, for example. In contrast, solar photovoltaic panels, batteries and heat pumps may be more appropriate solutions for more affluent households. Different solutions will be needed depending on the needs and circumstances of different households.

Lesson 10. Retrofit assessments and area-based retrofit guides

Retrofit assessments carried out by independent assessors are important both as a first step in any retrofit process, and for educating homeowners and residents but individual assessments are of limited impact in helping to inform retrofit at scale and the cost of retrofit assessments can be a barrier. Area-based retrofit

guides, procured centrally and using individual assessments to inform retrofit solutions based on local housing archetypes can be a powerful tool in engaging and supporting decision making by householders and other stakeholders and can be used as the basis for the development of area-based retrofit schemes.

Lesson 11: Customer journeys

The retrofit journey differs greatly for each house due to various technical and non-technical factors. Given the importance of establishing trust, and instead the current lack of clarity in customer journeys, the Citizens' Jury's primary recommendation is to create a One Stop Shop model for Calderdale. This would offer residents a clear, impartial, and trusted source of advice.

Lesson 12: Tensions in policy framing and delivery context

The two drivers for retrofit - fuel poverty alleviation and carbon emission reductions are complimentary, but also sit uneasily alongside each other.

"Fabric first" retrofits reduce heat loss and improve thermal comfort, aiding low-income households. While energy costs become more affordable, those in fuel debt or who underheat may not save money initially, as lower costs could lead to increased usage, especially for households previously self-disconnecting or underheating below recommended comfort levels (18-21°C).

This tension needs to be carefully managed, and the reasons for action need to be clearly defined and understood by policy makers, recognising the main driver for retrofit schemes, and any subsequent additional benefits.

6. What Could Others Use or Replicate?

6.1. Describe the project outputs that can be used by others **and** 6.2. Identify and share any tools that have been particularly useful

The project partners' team wished to create useful outputs that could be shared and used by the Council's teams and also other stakeholders. The project therefore managed to capture four key outputs. These are listed below and where available with URL links provided (some of these resources will be made publicly available after the completion of this report, hence why URL may not be linked here just yet), or a reference to an Appendix submitted with this report.

- A Retrofit Guide for Example Homes in Calderdale - this will be shared publicly, for now UKRI can read it as an Appendix to this report
- Citizens' Jury toolkit and case study (Appendix to this report)
- Citizens' Jury recommendations booklet[4]
- Retrofit Journeys and Personas (Appendix to this report)

[4] https://tlchub.org.uk/wp-content/uploads/2025/06/Citizen-Jury-Retrofit-report-2025.pdf

6.3. Flag any organisations or stakeholders that you would recommend to others

As project partners, we already had a number of connections with organisations and other stakeholders doing excellent work in the retrofit sector, especially in community-led retrofit. During this project, we were able to combine our networks and identify those we would recommend to others. We have listed them below.

- **People Powered Retrofit**: Carbon Coop sister organisation, commissioned to create A Retrofit Guide for Example Homes in Calderdale, excelled in their person-centred survey approach for the study.
- **Involve**: Experts in Citizens' Jury and democratic engagement, they provided strategic guidance and facilitation, applying best practices to develop and deliver the Jury and its recommendation process, thanks to Innovate UK programme support.

CJ expert witnesses who we would also recommend:

- Quantum Strategy and Technology Ltd[5] - an experienced business consultancy helping you towards a more sustainable future
- Lendology CIC[6] - A Community Interest Company organisation that helps bringing together home improvement loans for homeowners, funded by local councils
- National Retrofit Hub[7] - Nonprofit driving and accelerating local retrofit delivery at scale.
- Groundwork[8] - Takes practical action to create a fair and green future in which people, places, and nature thrive.
- Together Housing[9] - One of the leading social landlords in the north of England, managing and letting over 36,000 homes
- WYCA[10] - West Yorkshire Combined Authority
- Helen Todd[11] – External facilitator with over 20 years' experience
- Strategy Room[12] - A novel digital engagement tool developed and tested by Nesta
- Regen[13] - Independent experts transforming UK energy system for a net zero future.

The project yielded extensive material, highlighting the potential for a dedicated project focused on engaging with organisations and stakeholders.

[5] https://quantumst.co.uk/
[6] https://www.lendology.org.uk/
[7] https://nationalretrofithub.org.uk/
[8] https://www.groundwork.org.uk/
[9] https://www.togetherhousing.co.uk/
[10] https://www.westyorks-ca.gov.uk/
[11] https://activepartnerships.org/facilitators/helen-todd/
[12] https://www.nesta.org.uk/project/strategyroom/
[13] https://www.regen.co.uk/

6.4. Highlight any key sources of information that you used and would be useful to others

Through the course of the project a 'research log' was maintained to track sources of information and references used to inform the project development. Key sources are provided below in the hope they may be useful to others:

- Leeds research on relational approach: https://www.sciencedirect.com/science/article/pii/S2214629622004194
- Dr Yekatherina Bobrova[14] - the place of emotions in motivating domestic energy retrofit
- Historic England approach to market segmentation - Historic England Segments | Historic England[15]
- Learnings from social housing providers approach to engagement around retrofit: there is a rich body of work published around this topic
- Lessons from retrofit programmes to cut residential emissions: eight international case studies[16]. Research and paper by Josh Coles-Riley, Greg Notman and Dr Helen Tilley
- Lessons from Levenshulme Area-Based Retrofit Scheme[17]
- Financing home improvements- Local authority case studies[18]

6.5. Provide a link to the information/findings from your project

Citizen's Jury recommendations:

- The Retrofit Strategy[19] content has been shaped by this project
- Citizens' Jury process toolkit - *Appendix 3 of this report*
- Citizens' Jury videos -short video here: https://tlchub.org.uk/citizens-jury/
- Retrofit Journeys and Personas - shared as an appendix to this report
- A Retrofit Guide for Example Homes in Calderdale - shared as an appendix to this report and they will be shared publicly also on the Council website, by the Council's Communications team

6.6. What would your advice be to anyone looking to use or replicate the outputs of your projects?

While this report offers an extensive insight into the work the project partners carried out that led to the production of these outputs, which we hope will inspire

[14] https://www.creds.ac.uk/people/yekatherina-bobrova/
[15] https://historicengland.org.uk/advice/inclusion/audiences/segments/
[16] https://www.wcpp.org.uk/wp-content/uploads/2024/04/WCPP-Lessons-from-international-retrofit-programmes-to-cut-residential-emissions.pdf
[17] https://carbon.coop/portfolio/levenshulme-abs/
[18] https://ageing-better.org.uk/sites/default/files/2024-04/local-authority-home-improvements.pdf
[19] https://new.calderdale.gov.uk/environment/sustainability/climate-action-plan/annual-review-year-one/warm-resilient-buildings

replication, we wish to emphasise the importance of undertaking localised research to understand the unique characteristics of the local context: its households, communities' hopes and fears around retrofit, the archetypes of local houses and building stock and other factors that will mean the outputs shared here will be useful and application to your local context.

7. Conclusion

7.1. Key concluding remarks about the overall impact of the funding and project on your net zero aspirations and journey.

We wished to keep our report short so as to be easy to read and share widely. Therefore we have summarised our conclusions into the six bullet points below:

1. **This project has had a significant and lasting impact on Calderdale's journey towards net zero.** By focusing not just on technical solutions, but on the people, places and processes that enable change, it has laid strong foundations for a locally grounded and fair retrofit transition.
2. Through the Citizens' Jury and wider engagement activities, **the Council and the project partners have a far richer understanding of the non-technical barriers to retrofit and how these can be addressed through more effective community engagement, building trusted relationships, offering tailored support, and place-based delivery.** The project has helped shift retrofit from being seen as a distant or overwhelming policy challenge into something tangible, community-shaped and achievable.
3. **The project has created a shared platform for scaling** by significantly boosting the Council's confidence and capacity, strengthening cross-sector relationships and introducing new engagement models. Citizens' Jury recommendations now influence strategy, investment, and policy, embedded in the Retrofit Strategy, LAEP focus areas, and retrofit hub proposals.
4. **UKRI funding allowed partners to test and learn**, trialing new engagement and delivery models. This provided insights for Calderdale's retrofit journey, ensuring future efforts are effective, inclusive, and aligned with residents' experiences.
5. While challenges remain - including resourcing, national policy uncertainty, and the scale of the retrofit task - **the project has helped create a stronger, more coherent local response to how to address retrofit**. It has also contributed valuable learning that can be shared across the region and beyond.
6. In short, **the project has moved the retrofit challenge from idea to action** - providing Calderdale with a clearer path forward and stronger foundations to deliver its net zero commitments in a way that is equitable, trusted and rooted in place.