Towards a Greener Tees Valley

A Community Renewal Fund learning project, delivered by Thirteen Housing Group and Teesside University, supported by UK Government and Tees Valley Combined Authority.

Contents

1. The Community Renewal Fund

The Community Renewal Fund was launched in 2021 as a pre-cursor to the Shared Prosperity Fund and was part of the Government's plan to unite and level up the whole country. The fund was set up to support local areas to pilot imaginative new approaches and programmes that unleash their potential and build communities where people want to live, work and visit.

At Thirteen, a northern housing association with 35,000 homes, we were successful in receiving funding after submitting a bid in partnership with Teesside University that was supported by Tees Valley Combined Authority.

Our aim was to try to tackle a key national and local objective – reducing carbon emissions – specifically the decarbonisation of existing homes.

We wanted to understand how our customers and the public feel about the decarbonisation of their homes and the barriers we might face in taking our customers on a net zero journey. Alongside an academic research-based approach carried out by the university, involving Thirteen customers, residents in the Tees Valley and across the country, we also wanted to gather customer experiences from our retrofit pilot programme in Hartlepool. Finally, we wanted to focus on a key community, Gresham in Middlesbrough, and create a decarbonisation plan which could help support other housing investment in the area.

2. Towards a Greener Tees Valley – an introduction to the project

Teesside University embarked on a programme of academic research for Thirteen around customer engagement, behaviours and attitudes between January and December 2022 – Towards a Greener Tees Valley – to look at pathways to decarbonising housing within the Tees Valley.

The aim of the engagement and research programme was to help sub-regional stakeholders take action in support of the global commitment to reach net zero greenhouse gas (GHG) emissions by 2050 and therefore limit the impacts of climate change.

The UK Government has set the world's most ambitious climate change targets into law; aiming to reduce GHG emissions by 78% by 2035 compared to 1990 levels. In line with the recommendation from the independent Climate Change Committee, the recent carbon budget limits the volume of GHGs emitted over a five-year period from 2033 to 2037, taking the UK more than three-quarters of the way to reaching net zero by 2050.

The 30 million homes in the UK account for more than 20% of the country's total carbon emissions, with three-quarters coming from heating systems. To reach net zero by 2050 there needs to be a large reduction in demand for heat by making all homes more energy efficient. This will be achieved by removing or reducing their carbon emissions by switching to renewable heating systems such as air source heat pumps and creating energy where possible through solar thermal panels.

Like all housing associations, at Thirteen we're trying to find ways to decarbonise our existing homes to meet these challenging targets, but we also need to put our customers at the centre of that change and understand how we can take them with us on this journey. This project has helped us better understand how our customers feel and how they've experienced the decarbonisation process in their own homes, which will help us shape our future plans.

There's a clear gap between the need for decarbonisation and the availability of the skills required to meet challenging zero carbon targets and this project has given us a greater understanding of the local and national picture, as well as some of the actions needed to start to bridge that skills gap.

This proposal started out in spring 2021, when the world was in a very different place. As energy prices bite, the cost of living escalates and the impacts of climate change are becoming even clearer, how the public feels about the decarbonisation of their homes could well have changed. However, the information gathered as part of this project can still provide useful insights into the journey we need to go on with our customers to achieve challenging carbon reduction targets.

3. Workstreams

Stage One

- Community engagement strategy with Tees Valley residents
- Interviews within a range of different domestic settings across the Tees Valley region

Stage Two

- Tees Valley-wide survey of residents on the future of low carbon housing

Stage Three

- Evaluation of skills gap
- Development of action plan for regional housing sector low carbon transition

Retrofit Study

- Real-world understanding of current pilot scheme
- New study in Gresham with older properties surveyed

The project consisted of three key stages:

Stage one looked at identifying knowledge, attitudes, drivers and barriers towards low carbon technology within the home. Teesside University used the psychological framework of the theory of planned behaviour to assess residents' use of a range of domestic low carbon electricity and heating technologies. This was carried out through a combination of questionnaires and in-depth interviews, combined with survey work and knowledge gained from Thirteen's existing retrofit pilot in Hartlepool. Its report, *Qualitative evaluation of Thirteen resident perspectives on low carbon technologies in the home,* outlines its full findings and can be found here.

3. Workstreams

In **stage two**, other Tees Valley residents were surveyed to provide a broader understanding of wider community knowledge of and attitudes to the domestic decarbonisation agenda. This survey identified both enablers and barriers to broader regional decarbonisation in homes. This stage of the project covered different tenures and housing types and as part of this phase, the university created a model 'digital home' so residents could interact with the low carbon home of the future and its different technology options. The university's stage two findings, *Comparative survey of Tees Valley resident and national responses to low carbon technologies in the home, expanding upon the findings of the qualitative study,* can be accessed here.

The knowledge gained from stages one and two provided clarity for **stage three**, around which technologies and implementation strategies have strong social support in the Tees Valley. This intelligence was used to inform an assessment of the skills gap in the Tees Valley, ensuring the Tees Valley region can more effectively 'build back greener' by capitalising upon the opportunities presented through the delivery of low carbon housing. A skills needs/gap assessment report has been produced by Teesside University for current and future demand in the sector and this can be found here.

The **final element** of the project was a retrofit study, which was carried out to help improve and inform our future plans by understanding our customers' experiences of having their homes decarbonised in our pilot project in Hartlepool. More detail about this part of the project is available here.

We also surveyed a range of Thirteen and North Star (a neighbouring housing association) properties to understand costs and options for decarbonising more than 600 properties in Gresham, Middlesbrough. The full report, carried out by Savills, can be found here.

4. Our recommendations

A number of key findings came from the project and although some of these were already anticipated, they have reinforced the key engagement actions already being undertaken with customers and have highlighted some additional practical steps.

Some of the findings from the linked reports are outlined below:

1. Prioritise and invest in customer engagement and education

The project reaffirmed our belief that customer engagement related to the retrofit of homes is a specialist skill and shouldn't be underestimated. The appointment of a dedicated coordinator means engagement can be tailored to suit the needs of the customer, relationships can be developed, and trust can be built. Additional time needs to be considered, to allow for engagement with specific groups that may not be as easy to access, such as people living in flats.

Investing in coordination with the customer results in a more efficient process, removing confusion and duplication and reducing appointment times

The use of clear language to help residents understand what net zero means has been evidenced to be vitally important; both in a wider context and when explaining what it may mean for how they use their homes in the future. Taking time to inform people about the use of new technology, specifically air source heat pumps, helps them get the most out of it.

The primary issue of concern to residents is cost and affordability, so action on retrofit and new technology needs to be framed around how residents can reduce energy use and save money. Accurate predictions around cost savings and time frames are helpful and the project found the use of 3D modelling software was useful in engaging with residents on how the changes to their home would impact them.

Setting out clear strategies for training and spreading knowledge over the long-term and wider scale will help all residents understand the benefits of changing their behaviour. Teesside University's research found that this should include engaging key groups it identified as least likely to want to change their behaviour, such as older residents, the unemployed and less affluent communities.

Sharing information on the lived experience of customers before and after the installation of new technology is likely to increase willingness to uptake the new technologies. Communication should emphasise the positive outcomes of reduced energy bills, improved health and wellbeing, environmental benefits, reliability of energy supply and the importance of us all tackling climate change.

4. Our recommendations

2. Begin to work with the supply chain

It's been widely publicised that there's a shortage of materials, as well as a shortage of people with the relevant skills and experience, to deliver this type of work. There's also a lack of appetite from contractors to deliver these kinds of projects due to their complexity. To overcome this, stakeholders should work together to engage the supply chain about upcoming demands on their services to help them gear up for delivery.

Housing providers, supply chain partners and education and skills providers in the sub-region should work together to address both short and long-term skills need.

We found a clear requirement for further training around the delivery of the heat network alongside other low carbon transition training. Courses for low carbon heating solutions, including retrofit technologies and energy efficiency, need to be implemented as an urgent action and these should include clear progression opportunities.

3. Remember one size doesn't fit all

Low carbon retrofit is extremely complex and requires almost a house-by-house, project-by-project approach. Non-asset related factors should be considered, for example, working with customers in mixed-use developments and people on pre-payment meters.

Where it's possible, any renewable technology solution, notably air source heat pumps, needs to be designed based on the space available in each home. These items can have a big impact on already very limited storage space in some homes.

4. Our recommendations

4. Build extra flex into your project plan

There's a pre-phase to retrofitting homes to improve the performance of the fabric of the building, which is time consuming and needs to be planned into any delivery timescales. Actions including engaging with gas and electricity suppliers, asbestos checks and carrying out more complex procurement, add additional time to projects.

Though there's significant support for retrofit in general, the work itself is extremely disruptive to customers and this impacts on their perception of the overall value of the work. Taking time to prepare customers and ensuring contractors focus on customer service and communication will help minimise any negative impact on customers.

Issues with disruption and the additional costs associated with managing this, make the need to align this work with other investment work to the property paramount.

5. Set sensible targets

While more learning is needed to help refine strategies, providers can begin to make progress using some broad principles and taking a sensible approach.

Set targets that focus on carbon reduction, but that balance running cost and affordable warmth for customers.

Compare the cost of the proposed investment against the benefit in terms of reducing carbon and energy costs.

Pilot different options in the early part of the plan, to understand performance, satisfaction, deliverability and cost. At Thirteen we plan to trial the use of real-time sensors within the retrofit properties to help us understand the impact of the work on the environment within the customers' homes.

Target worst first (initially properties below EPC C) where possible and maximise the use of available grant funding, but avoiding the premature replacement of existing components.

Focus on improving the performance of the fabric of the building initially where possible and then consider carbon-reducing alternatives (such as solar photovoltaic panels).

5. Next steps

There's still a lot of learning to do and questions to answer around the best way forward in improving the energy efficiency and reducing the environmental impact of our homes.

The Community Renewal Funding has allowed Thirteen and Teesside University to build on existing research from other regions and work together to better understand how Thirteen customers, and residents of the wider Tees Valley, feel about decarbonisation, how well informed they are about the changes this may mean in their homes in future, how they understand the technologies that could be used, and to gain early insights into how this might impact our customers in their homes.

The learning has included some very practical points that have helped us plan our future customer engagement so that, while we're achieving our decarbonisation objectives, we're also making sure our customers get the best service possible and feel comfortable in their homes. This will inform how we should be designing new properties and retrofitting current homes, and will help us ensure we have the right skills in place to build, repair and manage these homes now and in the future.

The qualitative and quantitative findings collected by researchers at Teesside University provide valuable insight into the practical challenges of implementing net zero in homes across the region and the UK overall.

By sharing this learning we want housing associations and other partners to gain some valuable insight that will help them on their journey towards net zero. We're currently setting up a net zero 'learning hub' that will help us pilot new technologies and building standards on retrofit and new build, and will continue to ensure we share learning from the work we do throughout our own journey.

6. Contacts

For more information about the reports please contact:

Thirteen:

Angela Brockbank
Head of New Business and Growth
Angela.Brockbank@thirteengroup.co.uk

Teesside University:

Professor Natasha Vall
Dean, School of Social Sciences,
Humanities and Law
N.Vall@tees.ac.uk

Matthew Cotton
Professor of Public Policy, School of Social Sciences,
Humanities and Law
M.Cotton@tees.ac.uk

Paul van Schaik
Professor of Psychology, School of Social Sciences,
Humanities and Law
P.Van-Schaik@tees.ac.uk

Dr Mike Knowles
Principal Lecturer Research and Innovation, School
of Computing, Engineering and Digital Technologies
M.Knowles@tees.ac.uk

In partnership with:

TEES VALLEY MAYOR

This project is funded by the UK Government through the UK Community Renewal Fund.