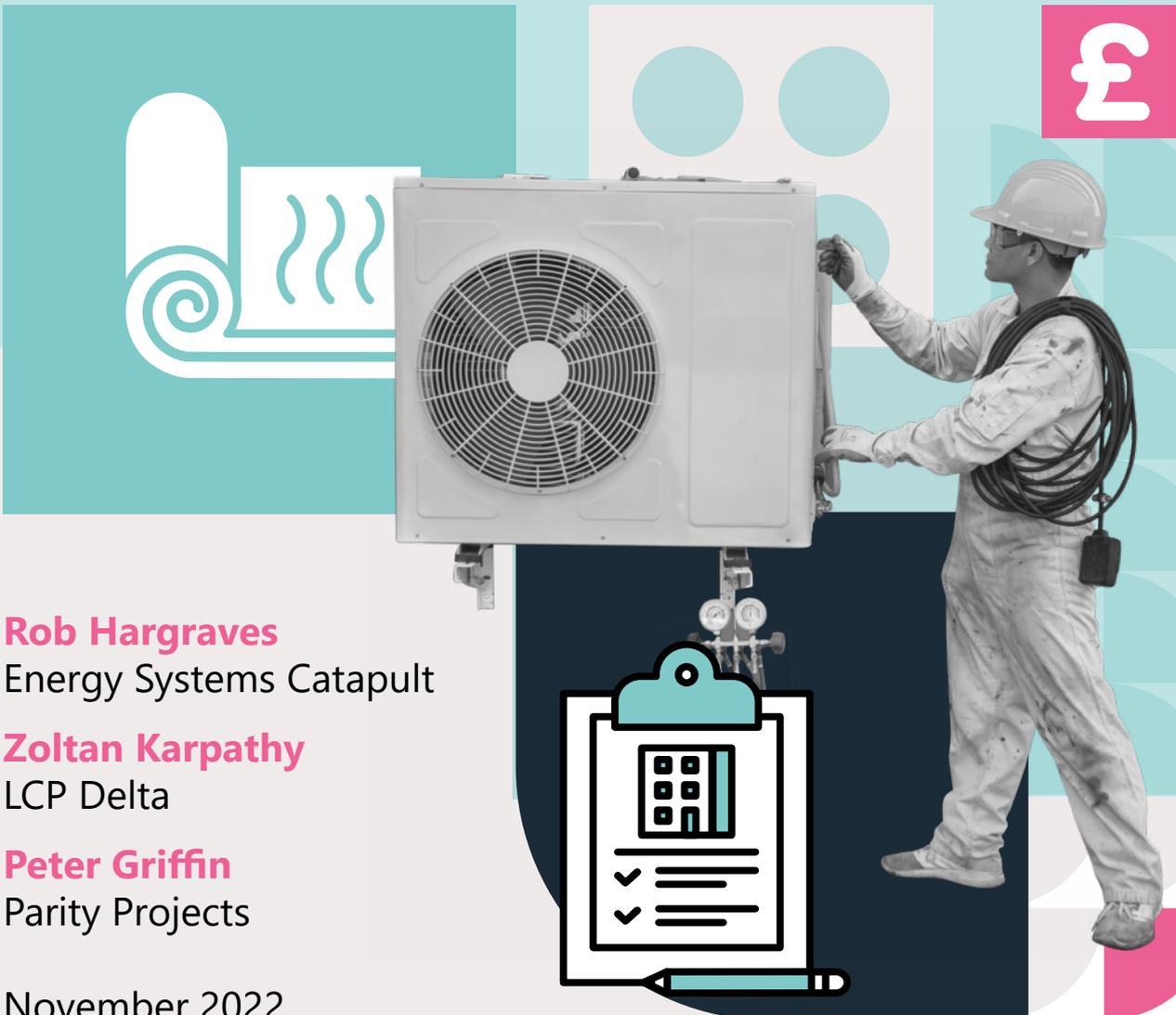


# Domestic Retrofit Market Intelligence & Skills Assessment

GSENZH

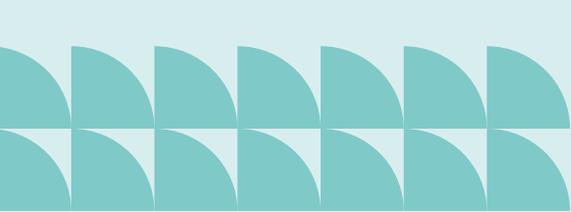


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# Introduction

To meet the Government's 2050 Net Zero target, the UK's housing stock must be decarbonised, and spiralling energy prices have sharpened the focus on the need to reduce energy demand in our homes as hundreds of thousands<sup>1</sup> more households will be plunged into fuel poverty this winter.

On the 9th of November 2022 the Climate Change Committee (CCC) wrote a letter<sup>2</sup> to the Chancellor of the Exchequer titled: Reducing energy demand in buildings in response to the energy price crisis. The letter outlines the Committee's advice on how to address what it says is now "the biggest gap in current Government energy policy".

Retrofitting the UK's housing stock will help to tackle three of the biggest issues we currently face as a nation, namely the climate crisis, the cost of living, and our energy security.

It is a challenging task that lies ahead, and the Greater South-East Net Zero Hub (GSENZH) commissioned Energy Systems Catapult (ESC), in partnership with Parity Projects and LCP Delta, to undertake a domestic energy efficiency skills sector assessment to help understand the current state of the sector and identify where support is needed to decarbonise domestic properties in line with the Government's 2050 Net Zero target across the Greater South-East region.



This report acts as a summary of the key findings from the assessment and lists the headline recommendations for action over the next 5 to 10 years.



<sup>1</sup> <https://www.nea.org.uk/news/8-2-million-uk-households-could-be-in-fuel-poverty-from-october/>

<sup>2</sup> <https://www.theccc.org.uk/publication/letter-reducing-energy-demand-in-buildings-in-response-to-the-energy-price-crisis/>

# Skills Landscape

Previous attempts to stimulate the uptake of measures in the retrofit sector, such as the Green Homes Grant most recently, have demonstrated the necessity of taking a whole systems approach. If funding is available but a skilled workforce is not in place for example, then uptake will be low because the consumers' retrofit 'journey' will be negatively affected.

It is imperative to keep the consumer perspective at the forefront of our thinking when creating a strategy for delivering retrofit skills, as the workforce needs to have the training and skills available to answer all of the questions and issues that are naturally raised during what can be a very complex process (see Figure 1 below) and deliver a quality retrofit installation and experience that will deliver the intended results for the consumer.

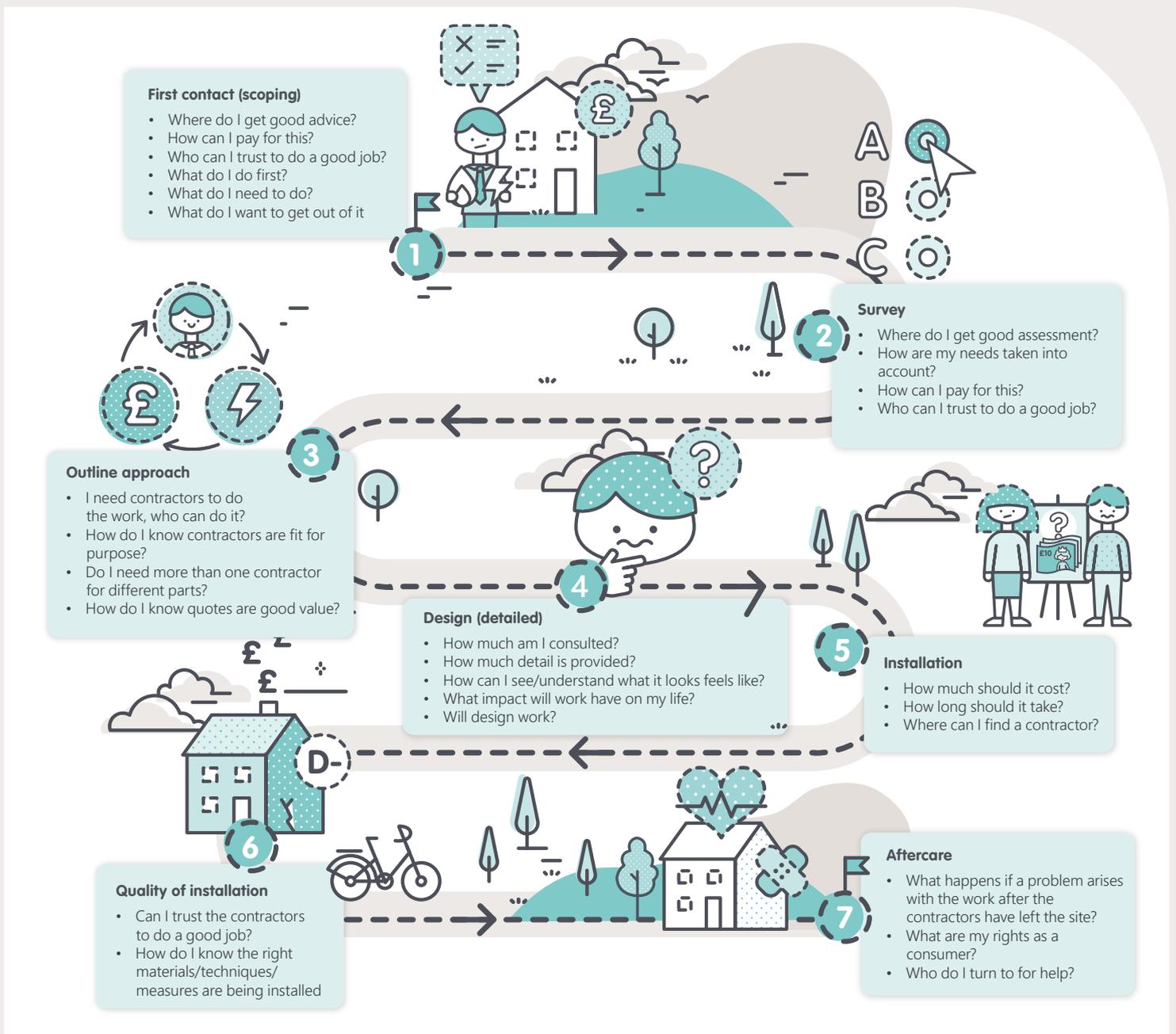


Figure 1: The complexity of the retrofit customer journey

Figure 2 outlines all the elements of the retrofit sector that must be addressed to successfully decarbonise the homes in the Greater South-East region. If gaps remain then the customer outcomes will suffer, and as a result the scale of high-quality retrofit required to meet our Net Zero targets will not be possible.



Figure 2: Retrofit skills 'eco-system'

In addition to the elements shown above, market enablers (see Figure 3) will be crucial to developing the consumer offer and ensuring the quality of the work is high. These market enablers have been considered throughout our analysis and as part of the recommendations.

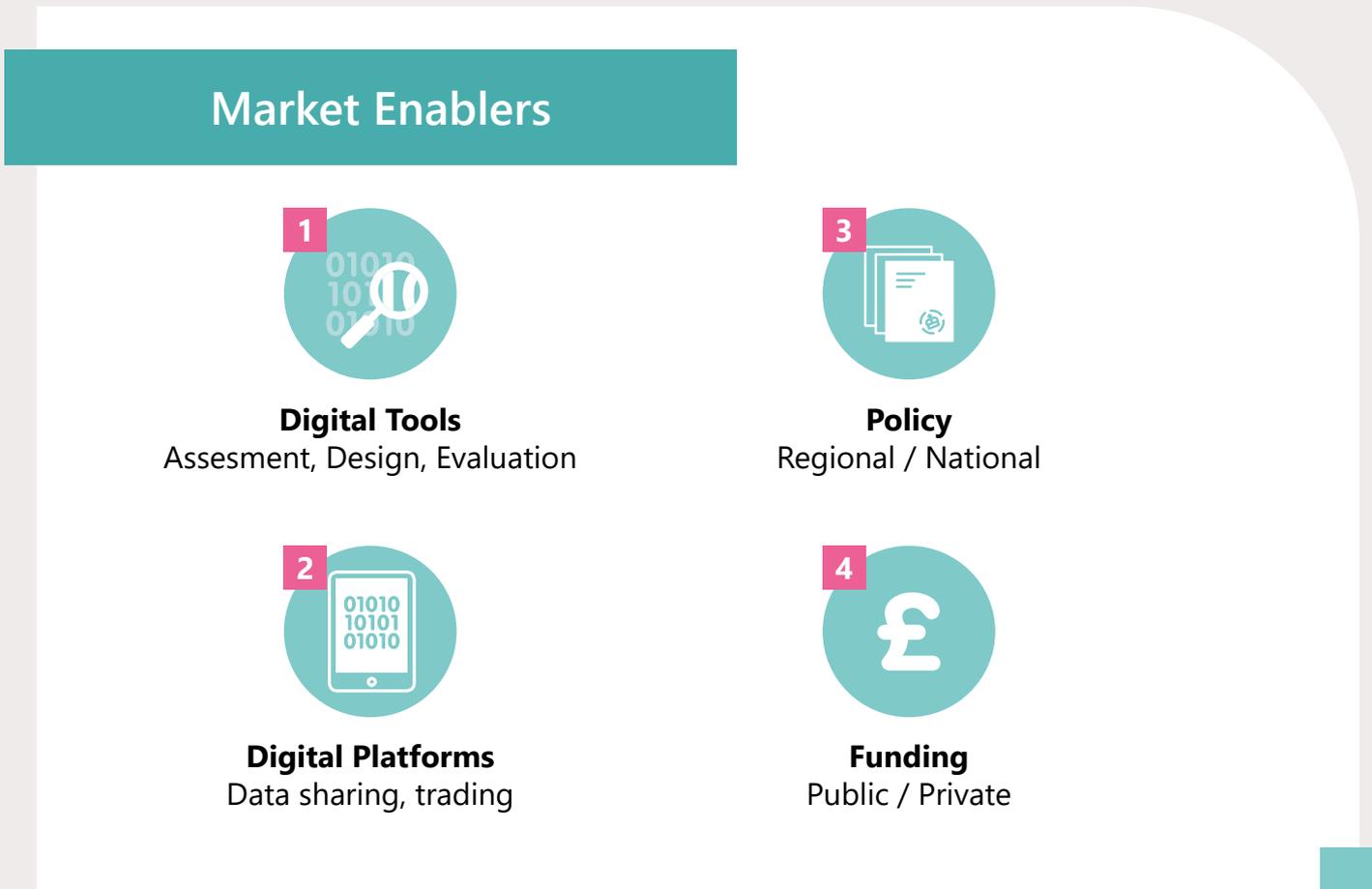


Figure 3: Market Enablers

## Policy landscape

Long term obligations, incentives and grants will be essential to provide confidence to the market, leading to a much wider take up of upskilling training courses.

Currently, there is a big policy gap in building up markets for installers and supply chains to drive the home decarbonisation agenda. Skills and capacity requirements to fulfil expected future demand is not sufficient, and the framing of current policy arrangements encourage supply chains to deliver specific technology targets, rather than whole systems solutions. This then has a knock-on effect for the qualifications and training schemes required to install and deliver low carbon technologies at scale, limiting the pipeline for holistic courses which convey the complexity of energy systems, and how specific interventions fit within the whole heat decarbonisation picture. Without concerted efforts to change this approach, the supply chain for the domestic retrofit sector will remain fragmented, delivering insufficient and poor-quality installations.

Stronger government action is needed to support the market in scaling up training capacity and reskilling workers. A potential skills shortage could risk becoming a major barrier to implementing some of the policies in the Heat and Buildings Strategy if not addressed appropriately. Policy uncertainty stalls investment, which in combination with low consumer awareness and a lack of skills capacity inhibits low carbon technologies from being delivered. Without a sufficient pipeline of investable, large scale and long term projects, the skills requirements will continue to fall behind what is needed to meet the heat decarbonisation challenge.

Energy Systems Catapult's research into Building a Governance Framework for Coordinated Local Area Energy Planning suggests that local heating installers tend to operate on 2–3 year planning horizons and are often responding to short term, competitive Government grants or loans.

Historic short term grant funding has led to an over reliance on subsidies to drive markets which ultimately restricts innovation. The stop-start nature of this funding approach will not be enough to develop long-term markets that offer consistent demand required to develop and upskill the assessors, coordinators and installers required for net zero. Addressing this issue will require a much more nuanced approach to coordination, using robust evidence-based plans to inform the supply chain, matching workforce developments to local market needs.



# Industry Needs and Current Training Provision – Key findings

We cannot reach Net Zero if we continue to use gas for heat<sup>3</sup>. This means that nearly all gas boilers, and other fossil fuel heating must be replaced with low carbon alternatives.

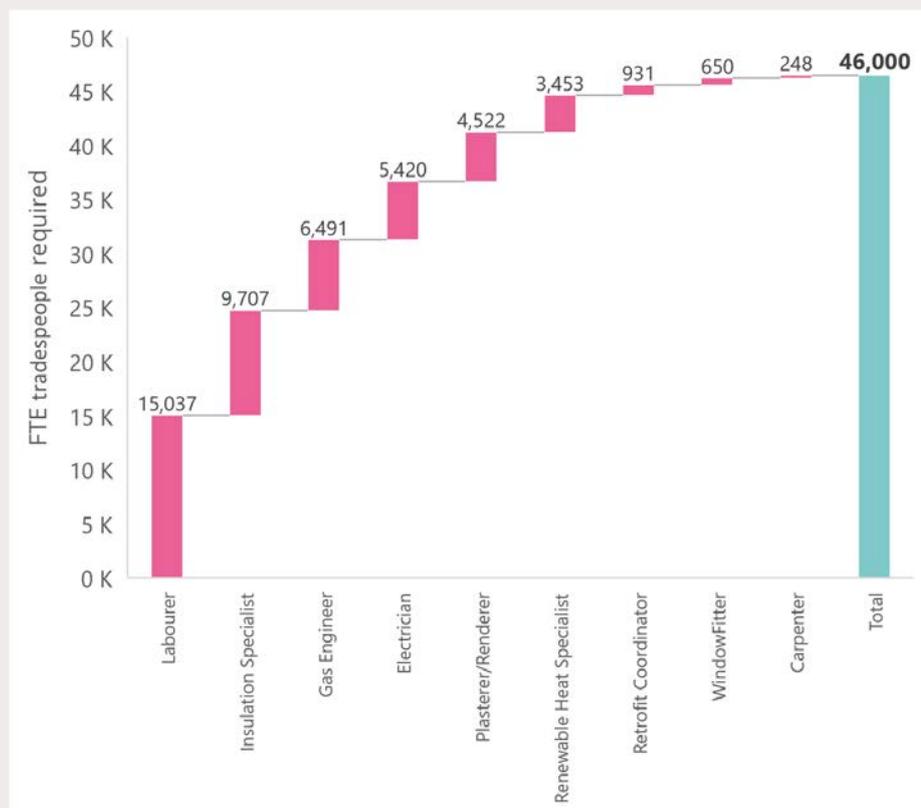
Alongside decarbonising heating, there is a need to improve the fabric efficiency of homes. This is required both to reduce bills, improve comfort and health and reduce the burden on the energy system.

To assess the shortfall in the skills required to deliver Net Zero we estimated the work required to transform housing in the region and the skills required to do it. We did this by modelling the performance of all homes (c.10 million) in the GSENGH area today and assessing what work is required to bring them up to Net Zero standard. Our analysis indicates that meeting Net Zero requirements across all housing in the GSENGH area requires around 46,500 full time equivalent workers each year to 2050.



For this model we find the most cost-effective path to Net Zero housing and assume a constant installation rate across the time period.

Using these baseline figures for the number of overall FTE roles required, we must then apply several important considerations when determining the number of training places this will translate to. Studies<sup>4</sup> estimate that the skills needs will follow a bell curve with a peak in 2035 requiring about twice the estimated 46,500 workforce.



Additionally, the vast majority of contractors do not work full time on the installation of new measures as there will also be servicing, repairs etc required. Applying further practical employment considerations from reports<sup>5</sup> published recently, ESC estimate that the total required retrofit workforce in the Greater South-East region could rise to be circa **100,000 workers on average and 200,000 workers at the peak requirement periods.**

Figure 4: Full-time equivalent tradespeople required to fulfil the Net Zero scenario

<sup>3</sup> Taking stock of the UK Government's Heat and Buildings Strategy, Climate Change Committee, 9th March 2022

<sup>4</sup> Construction Industry Training Board, Building Skills for Net Zero, 2021

<sup>5</sup> Construction Leadership Council, Greening Our Existing Homes - National retrofit strategy, 2021

Changing work practices and the introduction of new technologies and digital tools make it difficult to translate these figures into an estimate of required training places. Also, a very large proportion of the workforce who will be upskilled will retire or change career before 2050, so it is likely that the **number of required training courses exceeds 500,000**.

With regards to the current qualifications and training routes for the installation roles of selected low carbon technologies and key roles in energy efficiency, it was found that Further/Higher Education (FE/HE) colleges mainly offer training only on the core skills, such as heating and plumbing. Only 2 colleges in the entire Greater South-East region provide retrofit specific courses. In contrast, the independent training providers offer specialised courses, mostly shorter, and were therefore represented well in the training provision landscape.

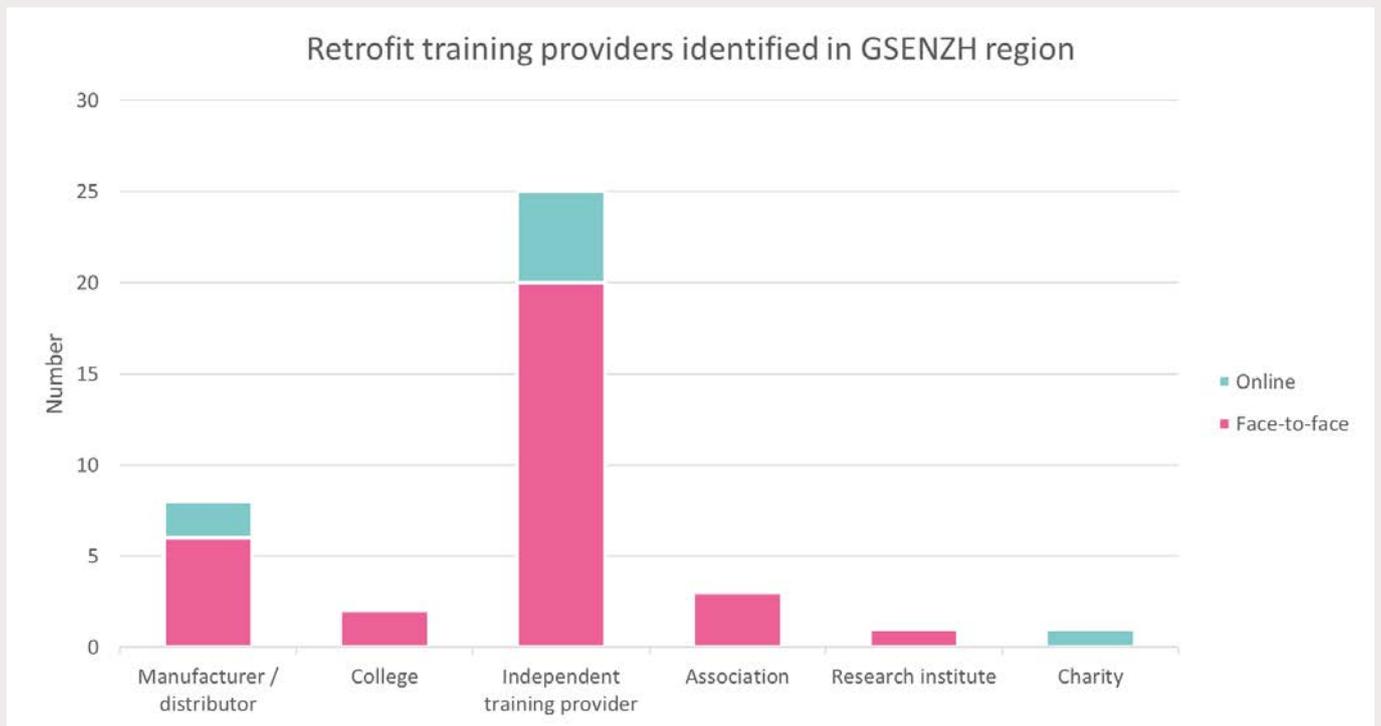


Figure 5: Training provider by type (Delta-EE research)

<sup>5</sup> Construction Leadership Council, Greening Our Existing Homes - National retrofit strategy, 2021

Through our analysis of the research set out above and through interviews and workshops with representatives from the retrofit and educational sectors, we have identified barriers across three key areas that consider all the elements set out in Figure 2.

## Curricula

- Qualifications and training courses exist for most of the main low-carbon technologies and roles, but as domestic retrofit is still in its infancy in terms of development and demand, many need updating and improving.
- Foresighting work has identified many knowledge and skills gaps in the customer engagement/care field that are not covered by existing IfATE standards.
- No training exists for retrofit evaluation, which is key to ensuring positive customer outcomes.
- There have been significant gaps in the curriculum that have only recently been filled. Energy advice being one for example, which up until the last 12 months, had been focused on fuel poverty (City & Guilds Level 3 Award in Energy Awareness), however The Retrofit Academy has recently introduced a Level 3 Certificate in Domestic Retrofit Advice.
- Reports and industry experts we spoke to referred to the fact that it is very difficult to benchmark the quality of training provision that is on offer, with customer feedback being inconsistent and outcomes in terms of learning proving challenging to measure.
- Many members of the public will turn to their local general builder to deliver their fabric retrofit measures. There are a very limited number of 'bolt-on' retrofit training courses for general builders to access, but these are not mandatory.

## Demand

- Demand for training courses from the industry depend on whether there is clear consumer demand for low carbon technologies. The current lack of clarity regarding policies and regulations related to low carbon technologies have a knock-on effect on demand for courses.
- Based on Net Zero targets there is a clear need for skills; however, the reality in the sector (when one looks at initiatives such as the Green Homes Grant Skills Competition), is that training providers still report difficulties in filling training places that were offered either heavily subsidised or at no cost to participants.
- There is a lack of diversity in the current workforce. It is widely agreed that to enable retrofit at the scale and speed required to support Net Zero targets, the workforce will need to change substantially in terms of size, average age and skill. While both these factors need addressing directly, both would also widely benefit from building a more diverse workforce.
- There is a broader shortage of people applying for low carbon roles, as the UK job market is currently oversaturated with jobs. Potential candidates can find employment in the other sectors of the UK economy and often for a higher income.
- School leavers do not see 'trades' or retrofit roles as 'green' jobs.
- The career pathways are often unclear for low carbon roles: the various qualifications and different types of training courses can be very confusing for employers, as well as people who intend to pursue a career in the energy efficiency / low carbon technologies sector.

## Tutors & Training facilities

- To meet the vast challenge of achieving the government's 2050 net zero target, there is clearly a need to increase the training provision in all roles throughout the retrofit process.
- A key challenge to meet the objectives is the shortage of skilled tutors and an urgent need to 'train the trainers'. Most trainers are professionals arriving from the industry and one of the challenges is the gap between the salaries in the education sector and the industry.
- FE colleges we spoke to as part of the project listed issues in recruitment and upskilling existing tutors as their most pressing challenge. Despite offering fully subsidised courses as part of the continuing professional development the uptake was minimal.
- FE colleges also reported that capital expenditure funding was available to them to create the facilities yet, the feedback during a workshop was that labs and other "simulated environments" were most often too far from real conditions to be able to effectively consider a whole building approach.
- Another issue that was highlighted through the workshop was that FE and HE colleges do not employ a coordinated approach with other local colleges for what courses or facilities should be provided.



# Recommended Next Steps

It is critical that all elements in the retrofit eco-system, including the market enablers we set out above are addressed. It is on this basis we provide the following recommendations.

## Curricula

- Build consensus to create a coordinated national approach to training, focused on better integration and customer outcomes (to include regional net-zero hubs, combined authorities, LEPs, BEIS, DfE, IfATE, Accreditation Bodies).
- The many stakeholders will need to be coordinated & facilitated at both local (colleges, small businesses, LAs, CAs, LEPs...) and national (Gov, other Net Zero Hubs, energy providers, etc.) level.
- Work with industry experts, employers and IfATE to:
  - Update and improve standards for “new occupations” such as retrofit assessors, advisors, or designers, based on Foresighting activities and learning from innovation projects on energy efficiency measures and heat pump installations.
  - Build ‘retrofit specific’ modules into existing general construction qualifications and courses.
- Investigate opportunities for funding to develop a “Skills Accelerator” for:
  - development of learning material, using insights and data available from innovation projects.
  - creation of a free-to-access learning portal with clear resources to suit trainees’ needs and that can be accessed flexibly.
  - pilot courses (online, face to face or hybrid).
- Collaborate with DfE to evolve the Skills Bootcamps to include more time and budget for the development of the learning resource.
- Raise quality of training schemes through joined-up approach linking customer outcomes with training courses undertaken by workforce. Rigorous and accurate evaluation of retrofit measures will be required to enable this.

## Demand

- Deliver awareness campaigns through social media, advertising, secondary schools etc to:
  - Emphasise retrofit’s ‘green’ credentials and highlight the environmental impact of retrofit.
  - Highlight a clear career pathway and potential for professional development.
  - Increase general public awareness.
  - Build diversity:
    - Communicate benefits of a more diverse workforce.
    - Incentivise organisations to build/recruit diverse workforces.
- Carry out more detailed modelling of local areas so that Local Area Energy Plans can be drawn up with clear routes to decarbonising homes.
- Roadmaps and plans help here, but long-term commitment to funding of decarbonisation measures by Government will be essential for a step-change.
- Incentivise high levels of ‘retrofit-specific’ qualifications through procurement process for decarbonisation schemes.

## Tutors & Training facilities

- Develop relationships between industry experts, independent training providers and existing college educators to encourage knowledge transfer of best practice.
- Promote alternative ways of teaching and learning (see best practice by organisations such as Heat Geek) that could be rolled out:
  - Online.
  - Peer-to-peer support.
- Coordinate advice to FE/HE colleges on training facility and retrofit course needs.
- Instigate a more joined-up approach between colleges to share best practice and avoid duplication.
- Modernising of learning facilities should be considered (also part of a Skills Accelerator), starting with a benchmark study identifying the best-in-class facilities in the UK, study of the Learning Factory concept and adaptation to the retrofit sector, development (or upgrade) of a pilot facility used initially for training the trainers. Here too a collaboration with other Net-Zero hubs would be beneficial.



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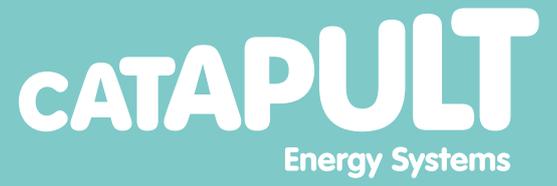
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