north east & yorkshire
NET ZERO HUB

NORTH EAST AND YORKSHIRE HOME DECARBONISATION SKILLS PLAN AND PILOTS

North East and Yorkshire Net Zero Hub

2024

Contents

Appendices:

INTRODUCTION

The North East and Yorkshire Net Zero Hub (NEY NZH) commissioned AMION Consulting and Focus Consultants to develop a Retrofitting Skills Plan and an associated set of evidenced based Skills Pilot proposals to address skills' barriers holding back retrofitting ambitions.

Document Structure

In accordance with the Department for Energy Security and Net Zero requirements, this document is structured in two parts:

Part 1: The North East and Yorkshire Retrofitting Skills Plan:

- Section 1 introduces the Skills Plan and the methodology.
- Section 2 assesses the necessity of retrofitting for the decarbonisation journey.
- Section 3 details the current workforce, supply chain challenges and future demand.
- Section 4 outlines the supply of skills, training provision and current skills pathways.
- Section 5 considers the alignment of current and future skills supply and demand.
- Section 6 identifies how previous initiatives have sought to address skills issues.
- Section 7 sets out a logic chain for the Skills Plan.
- Section 8 presents the conclusions and recommendations.

Part 2: The North East and Yorkshire Skills' Pilots:

Section 9 details six potential Skills Pilots designed to strengthen key stakeholder partnerships and address skills needs. The business case for each Pilot sets out the rationale for intervention, considers options, assesses deliverability, likely impact and sustainability.

The Skills Plan and the Skills Pilots are supported by a series of detailed appendices.

SECTION 1 SKILLS PLAN

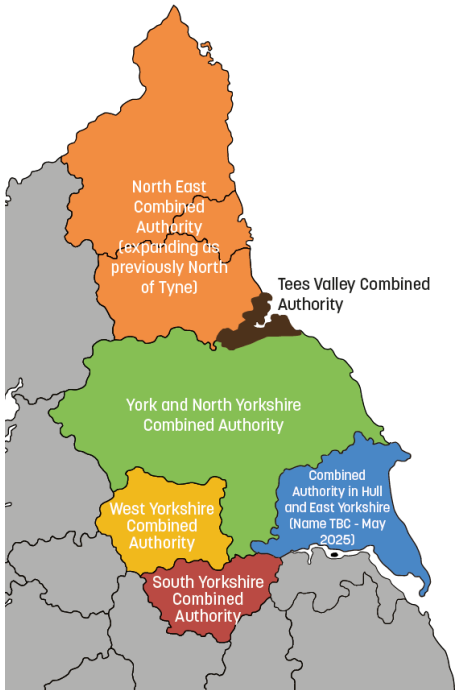
1.0 Skills Plan Introduction

This report assesses the current and future skill requirements of the local retrofit supply chain in the North East and Yorkshire. It also analyses challenges in enhancing retrofit supply chain capabilities, evaluates past initiatives and proposes strategies to address the need. Recommendations for lengthening and strengthening the local supply chain capacity have been developed through intensive and extensive engagement with stakeholders across the region including; training providers, local authorities, educational institutions, employers and national construction and retrofitting bodies.

Six Skills Pilot proposals have been designed and developed to tackle distinct skills challenges identified within the local supply chain. Whilst the Skills Pilots cannot address the full range of barriers, they can make significant inroads to tackling key issues. As pilots, they can provide valuable lessons as to what works and what does not.

The North East and Yorkshire Net Zero Hub (NEY NZH) is funded by the Department for Energy Security and Net Zero (DESNZ) as part of the UK Government's Clean Growth Strategy. NEY NZH covers the North East and Yorkshire (see Figure 1) which comprises four Combined Authorities and, from May 2024, one Combined Authority expanding its geography, and one Local Enterprise Partnership (LEP)[1]

Figure 1: The North East and Yorkshire boundary and existing and proposed Combined Authorities areas



Source: AMION & Focus 2024

1.1 Plan and Pilot Aims

The Retrofitting Skills Plan and Skills Pilot proposals aim to:

I. increase the supply of retrofit skills; and
II. raise and meet the demand for retrofitting skills in the North East and Yorkshire.

1.2 Need for a Skills Plan

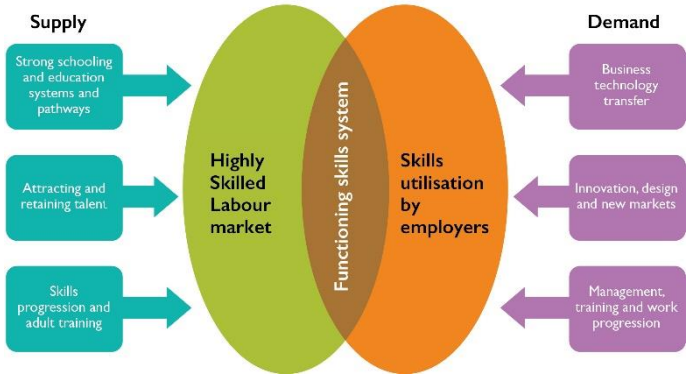
In any labour market, the alignment of supply and demand (Figure 2 below) is crucial to optimising growth and delivering benefits. It is challenging in developing sectors such as retrofit to achieve alignment in skills supply and demand without support. Demand, driven by technological development and/or government regulation, can often increase quickly, matching this with a supply of skills usually takes longer, given the time required to design, develop, test and deliver the scope and scale of training needed. Often strategic and sustained intervention is needed to address challenges and realise ambitions.

- As the demand for energy-efficient housing in the North East and Yorkshire grows, it is vital to have an adequate supply of skilled professionals to meet demand. This ensures projects can be completed on time, within cost, and to the required standards so carbon reductions are achieved and benefits realised for households, communities and the planet.

[1] This demonstrates an emerging context which has strengths and challenges for the six pilots as identified in Appendix 6.

- Addressing the skills gaps and shortages in retrofitting helps drive innovation, fostering the adoption of new technologies and practices and ultimately enables the industry to meet existing and future sustainability goals effectively.
- Balancing supply and demand across the region supports growth, competitiveness and long-term viability of the sector in the North East and Yorkshire, fostering a less carbon intensive built environment for all.

Figure 2: Labour Market Supply and Demand Framework



Source: Adapted from OECD 2021

1.3 Methodology Summary

Developing the Skills Plan involved a comprehensive approach that encompassed wide-ranging engagement and a blend of research techniques. Initially, extensive engagement with stakeholders was conducted to gather diverse perspectives and insights[2]. This included workshops where stakeholders actively participated and contributed ideas. Concurrently, surveys were administered to gather broader input from social housing providers, education and training providers, and businesses. These qualitative inputs were supplemented by desk research and a thorough review of relevant literature to ensure a robust understanding of the retrofit context and best practices. Importantly, the development process was iterative, allowing for continuous refinement based on feedback from stakeholders and insights gained from the research. This approach ensured that the Skills Plan was dynamic, responsive to emerging needs and reflective of the diverse viewpoints gathered throughout the process.

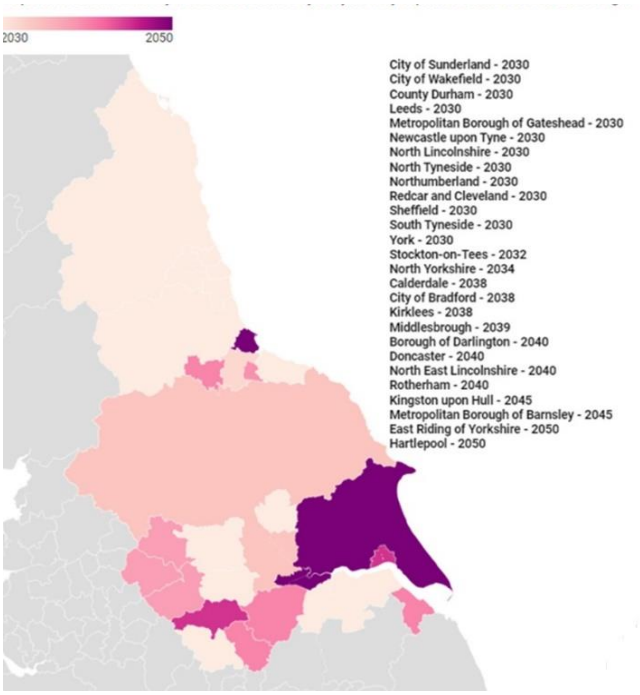
As achieving net zero is rooted in the actions of individuals' and communities', a **Community Panel** was established to challenge and contribute to the Plan's development. Critically, the Panel comprised a wide-ranging group of community members to ensure that a variety of perspectives were considered. Moving forward, the Community Panel will be used to disseminate the learning from the Skills Plan and the Skills Pilots. See Appendix 1 for more detail on the methodology.

[2] This builds upon previous NEY NZH co-funded research for the North East; Domestic Retrofit Skills Needs Assessment 2022 (also funded with North East Energy Catalyst and North East Local Enterprise Partnership).

2.0 Carbon Reduction and Net Zero

In the North East and Yorkshire, achieving net zero targets by 2030 or 2050 requires significant retrofitting. Up to 2.25 million properties require retrofitting to meet Government Energy Performance Certificate (EPC) C targets by 2035. Challenges include a shortage of skilled workers, supply chain gaps, technical knowledge deficits and financial barriers.

Figure 3: Net Zero Target by Local Authority



Source: AMION & Focus)

Figure 4: Challenges facing Retrofitting in the UK

Source: AMION & Focus (More detail is provided in

Net zero target dates for local authorities across the North East and Yorkshire vary between 2030 to 2050 (see Figure 3). This demonstrates variance in ambition but also the capacity of localities to lead and deliver on the net zero agenda and its constituent elements, including retrofitting.

2.1 Meeting Net Zero Target: Necessity of Retrofitting

There is an urgent national challenge of retrofitting the UK's existing building stock to achieve the Government's 2050 net zero carbon emissions' target. Achieving this requires a significant change of pace, particularly in the heating and building environment, which constitutes 17% of direct greenhouse gas emissions, increasing to 23% when including indirect emissions. Of this, 77% comes from homes, 14% from commercial buildings, and 9% from public buildings.[3] Retrofitting is therefore not a choice but a necessity and the aging housing stock urgently needs energy upgrades.

The national goal is clear: retrofit 27 million homes by 2050.

Several challenges have been identified[4] in responding to the scale of the retrofit opportunity including a shortage of appropriate skilled and experienced workers, concerns with supply chains, a lack of technical knowledge and capacity within procuring organisations, resident resistance, and investment finance (Figure 4). These challenges are

[3] https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Buildings.pdf
[4] For example, DESNZ: https://www.gov.uk/government/publications/social-housing-decarbonisation-study-views-from-social-housing-providers and National Housing Federation: https://www.housing.org.uk/resources/barriers-retrofitting-homes/

inextricably interlinked, demonstrating the substantial challenge that the UK has in reducing its carbon emissions and achieving net zero.

2.2 Scale of The Challenge in The North East and Yorkshire

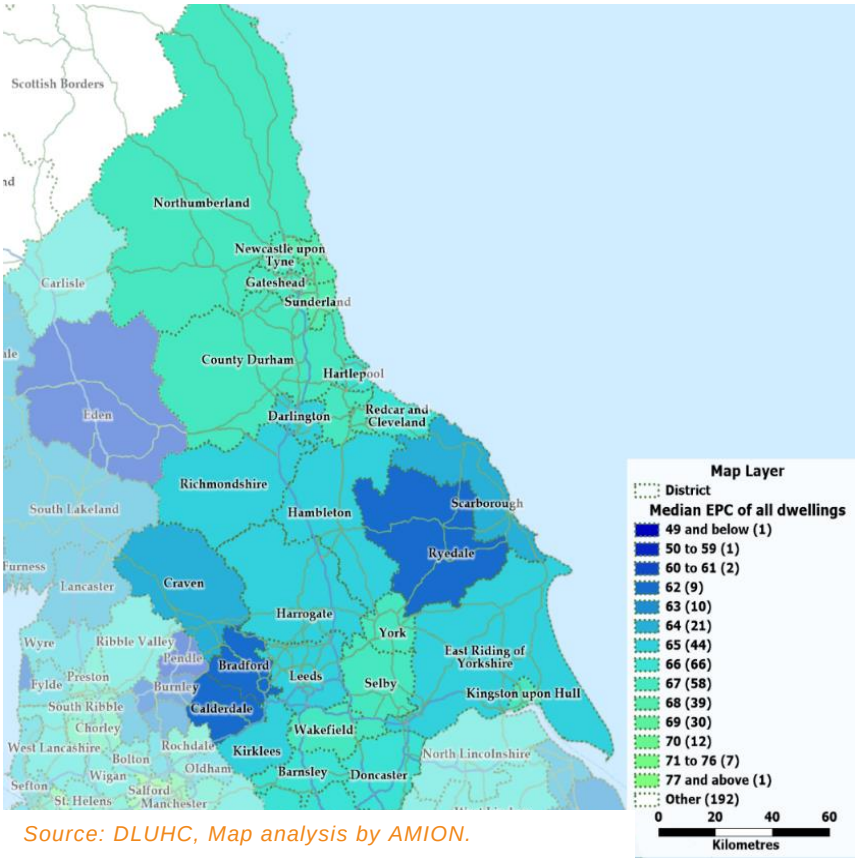
In the NEY NZH area, there are approximately 3.5 million homes which represents 15.0% of all homes in England[5]. There is a significant data gap regarding the exact number of homes needing retrofitting and the specific work required[6]. Some geographies hold this data, many do not. EPC ratings, despite known limitations, play a crucial role in guiding energy efficiency efforts, for example, the UK Government has set a target for all social housing properties to achieve an EPC rating of C by 2035.

Analysing data from the Department for Levelling Up, Housing and Communities (DLUHC) and the 2021 Census, it is estimated that over 2.2 million homes in the North East and Yorkshire require retrofitting to meet the Government's EPC Level C target by 2035 as above (approximate 700,000 in the North East and 1.54 million in Yorkshire and The Humber). The challenge is particularly pronounced in Yorkshire, where 66.1% of homes need retrofitting, compared to 60.2% in the North East. More detailed analysis is included in Appendix 3.

DLUHC has also produced data on Median Energy Efficiency Scores by local authority which shows a substantial variance in scores across and within the North East and Yorkshire (see Figure 5).

The data shows a range from 62 to 68 (median of Band D) with the lowest efficiency scores for Bradford (62), Calderdale (62), Ryedale (62), Craven (64), and Scarborough (64) in Yorkshire. In the North East, the lowest scoring local authority was Darlington (65) but notably, with an efficiency score of 68, the top three local authorities were in the North East; North Tyneside, South Tyneside, and Sunderland.

Figure 5: Map of median EPC ratings for all dwellings



Source: DLUHC, Map analysis by AMION.

[5] ONS and DHLUC 2024
[6] Available here: https://www.gov.uk/government/statistical-data-sets/live-tables-on-energy-performance-of-buildings-certificates

3.0 Current Retrofit Workforce and Challenges

The current retrofit workforce cuts across several existing sector definitions. Whilst there are strong linkages with the construction sector, there are also links with the public sector, social housing, and professional services such as engineering and architecture.

Pathways into the sector are diverse but not always clear; many roles require technical competencies and specific training or certifications, others have low barriers to entry without the need for formal education or extensive prior experience.

Individuals interested in pursuing green careers struggle to identify relevant job opportunities and access resources for training and development.

Demand for green skills is growing and several key sub-sectors driven by policy, for example social housing, are likely to continue to face increased skills pressures

This section sets out a definition of the retrofit sector, the pathways to entering the sector, the composition of the current retrofit workforce and forecast demand projections.

3.1 Sector Overview

3.1.1 Definition of the Retrofitting Sector

The retrofitting workforce encompasses a diverse range of roles, contributing to different elements of established sectors. There is no national definition of the retrofit sector and this means that devising and monitoring the success of policies is challenging given the absence of a reliable baseline. To address this gap and support strategic planning, a definition of the retrofit sector has been devised by AMION and Focus and is set out below.

Table 1: Definition of Retrofitting sector

Retrofit Installers	Retrofit Product Manufacturers	Retrofit Professional Services	Retrofit Ancillary & Support Services
Insultation, Heat Pump Installers, Solar PV and also Construction trades, materials, insulation, heating, micro generation and other renewables	Retrofit Product Manufacturers (e.g. Pumps, insulation, natural materials or technology).	Retrofit coordinators, evaluators, assessors, and designers	Retrofit Advisor, Retrofit Ancillary service occupations, Retrofit Public Procurement Officer, Retrofit Public Procurement Support Roles

Source: AMION & Focus drawing upon Retrofitting Academy and Domestic Retrofit Skills Need Assessment

This definition draws upon best practice and aligns with previous work commissioned by the NEY NZH[7]. As noted above, better definitions can help with policy development, they can also support industry engagement and further analysis. The approach separates out sub-sectors of the construction sector and wider economy in the North East and Yorkshire that are important in terms of employment and economic contribution such as construction and manufacturing sector. The analysis highlights a number of points:

- **Broad range of roles in the sector:** Table 1 above shows the diversity of roles in the sector e.g. on-site and technical trades to desk based advisory roles. These roles accommodate multiple pathways into retrofitting, accommodating individuals with varying levels of expertise, qualifications and experience. While some positions may require extensive experience, others offer 'easier' entry points for those transitioning into the field from related roles such as insultation and building.
- **Construction skills plus:** Consultation and industry literature shows that many roles within the retrofitting industry require particular prerequisite skills to effectively carry out tasks and responsibilities. The skills needed range from technical construction-based competencies to

[7] Domestic Retrofit Skills Need Assessment (2022) North East Energy Catalyst, North East LEP and NEY NZH.

soft skills that are essential for success in various roles. The acquisition of these skills is important and shapes delivery. Evidence shows that there are numerous technical skills needed for many roles e.g. solar electrics, construction standards – Passivhaus and knowledge of health and safety which means that retrofitting workers must have a level or proficiency and qualifications above 'related' construction workers to meet regulations.

- **Perceptions of the sector:** Nesta[8] research shows that while many people recognise the importance of green jobs, there is a lack of awareness regarding the specific opportunities available or where to find them. Green jobs encompass a wide range of roles across various sectors, including renewable energy, sustainable construction, environmental conservation, and green technology. However, individuals interested in pursuing green careers may struggle to identify relevant job opportunities. Research shows that accessing resources for training and development is also a challenge.

3.2 Demand for Retrofitting Skills

3.2.1 Rising Demand

Analysis of existing data and publications on demand for retrofitting skills in the North East and Yorkshire over recent years indicates increasing demand as set out in Figure 6.

3.2.2 Skills in Demand

Figure 6: Demand for retrofitting skills is rising.

Source: Data from Lightcast, Contract Finder – value of contracts, MCS Installation 2024

Analysis of documentation/ data produced by partners in the North East and Yorkshire region has identified the retrofit skills issues, associated barriers and related areas of skills demand:

Table 2: Skills in demand from existing research

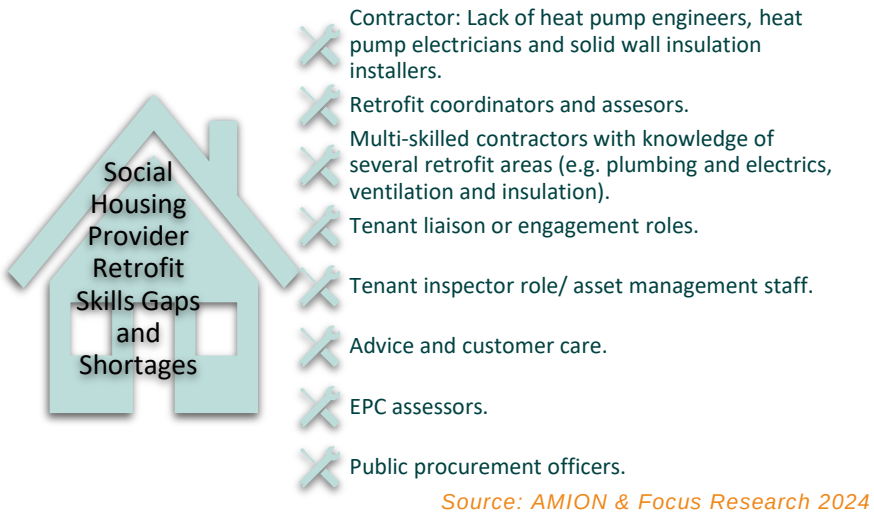
[8] https://media.nesta.org.uk/documents/Green_jobs__rapid_evidence_review_report.pdf

GEOGRAPHY	SKILLS IN DEMAND	EVIDENCE	SOURCE
York And North Yorkshire	• Heat pump installation specialists • Insulation specialists • Draught-proofing technicians • Ventilation technicians • Heritage building specialists	• Limited number of accredited heat pump installers. • Lack of awareness and knowledge about retrofitting among homeowners.	North Yorkshire Council Climate Change Strategy York & North Yorkshires Routemap to Carbon Negative City of York Council's Climate Change Strategy
Hull & East Yorkshire	• External wall insulation specialists • Solid wall insulation specialists • Window / door replacement specialists • Renewable energy technicians	• High demand for solid wall insulation skills due to pre-1930s housing stock. • Shortage of skilled workers for renewable energy installations.	HEYLEP Green Jobs & Skills Analysis Ifate.org
North Of Tyne	• Building retrofit project management specialists • Digital modelling and design specialists • Off-site construction specialists • Heat network engineers	• Lack of project management expertise for large-scale retrofitting projects. • Limited skillset in digital construction technologies.	https://www.ncl-coll.ac.uk/subject-areas/construction/college-16-to-18/ North East Evidence Hub North of Tyne LSIP 2023 North Tyneside Carbon Net Zero 2030
South Yorkshire	• Heating controls and smart systems specialists • Ventilation and air quality specialists • Asbestos removal specialists • Green roof installation specialists	• Shortage of skilled workers in new technologies like smart heating systems. • Limited availability of asbestos removal training.	https://www.barnsley.ac.uk/study-a-green-skills-sustainability-course-for-free/ South Yorkshire LSIP Sheffield City Region Net Zero Work Programme SYMCA Energy Strategy
Tees Valley	• Industrial energy efficiency upgrades specialists • Heat pump and hydrogen utilisation specialists • Carbon capture and storage technicians • Green process engineers	• Need for upskilling existing workforce in fossil fuel industries for low-carbon technologies. • Limited availability of training in emerging technologies like hydrogen and carbon capture.	https://teesvalley-ca.gov.uk/business/net-zero/ Tees Valley LSIP NELSIP
West Yorkshire	• Green finance and investment specialists • Community engagement and retrofit education specialists • Damp and moisture control specialists • Electrical vehicle charging infrastructure installation specialists	• Lack of financial expertise for green home improvement projects. • Need to raise awareness and build trust in retrofitting among homeowners. • Shortage of skilled workers for damp and moisture control issues.	https://news.leeds.gov.uk/news/leeds-clean-air-zone-has-achieved-its-aims-early-and-is-no-longer-required-joint-review-finds

Source: AMION and Focus analysis of existing literature 2024

Given the developments in policy regarding social housing, a range of skills shortages were cited in the research for this Skills Plan with social housing providers and strategic bodies linked to social housing. These are presented in Figure 7.

Figure 7: Identified social housing retrofit skills gaps and shortages.



Source: AMION & Focus Research 2024

3.2.3 Skills demand driven by multiple factors

It is clear demand for skills is driven by different factors, but policy and funding are key players. For example, demand for retrofitting skills within social housing is primarily driven by policy initiatives supported by growing funding[9] aimed at enhancing energy efficiency and reducing carbon emissions. Government bodies and non-departmental public bodies (NDPBs) play a pivotal role in investing in retrofitting projects, creating a demand for specific retrofit skills. This view is supported by an industry survey conducted for this Plan which also highlighted that over 30% of social housing providers did not have a decarbonisation plan or strategy due to a lack of skills, knowledge, and funding options, as well as insufficient staff resources[10].

3.3 Current Retrofit Sector Workforce – The North East and Yorkshire

3.3.1 Workforce occupation

As noted above there is no agreed definition of the retrofit sector and associated workforce regionally or nationally. AMION/Focus have devised a model for this Plan to estimate the current retrofit workforce in the North East and Yorkshire. Using data from the ONS's Low Carbon and Renewable Energy Economy (LCREE) estimates, ONS Business Register and Employment Survey Data and the MCS Installation database, a workforce of **10,970 FTE people** (in 2022) across the region has been estimated. Based on this definition, Yorkshire and The Humber has a slightly higher retrofit workforce per capita at an estimated 145 per 100,000 population compared to the North East's 114. Retrofit installers make up the largest proportion of workers in the sector at 54.5% across all types of retrofitting.

Table 3: Estimated Retrofitting Workforce by Trade for the North East and Yorkshire,2022

Total retrofit Workforce (2022 Estimation)	Retrofit Installers			Retrofit Product Manufacturers	Retrofit Professional Services	Retrofit Ancillary Services	Totals
	Fabric Measures, Heat pumps, and Solar PV installers						
North East	1,281	279	49	1,063	206	148	3,025
Yorkshire (and Humber)	3,621	372	374	2,584	594	401	7,945
NEY	4,902	651	423	3,646	800	548	10,970
% of Retrofitting	44.7%	5.9%	3.9%	33.2%	7.3%	5.0%	100%

Source: AMION & Focus 2024: Using existing data including ONS, DESNZ, Trustmark and MCS.

[9] SHDF Wave 3 is worth £1.25 Billion and is expected to be launched in 2025.
[10] This is based on a limited sample of social housing providers.

The estimated 10,970 FTE workers represent just 0.02% of the overall workforce (4 million), however it is also dwarfed by the scale of the retrofitting challenge in terms of the 2.2 million homes that need retrofitting in the region (see Section 2.2). The complete workforce estimation methodology is detailed in Appendix 1.

3.3.2 Distribution of Retrofit Businesses

The construction sector's business base both nationally and regionally is made up of over 99% SMEs[11]. Whilst the construction sector is often seen as a mirror of the retrofit sector, the two are not synonymous. For this Skills Plan, AMION & Focus wanted to better estimate the number of retrofit businesses operating in the North East and Yorkshire to gain a more granular understanding of their geographic distribution and specialist areas of activity. Using the number of Trustmark accredited businesses in the North East and Yorkshire by service within the retrofit sector provides an indication as to the of the spread of employment and the business base with over 950 business registered in the North East and Yorkshire across Heat Pumps, Insultation, Double Glazing, and Retrofit coordinator and assessors. As not all businesses are registered, these figures are not comprehensive but do provide useful insights. The details are set out in Appendix 3.

3.4 Future Demand

There is no definitive source for the number of retrofitting roles required in the UK by 2035. As the IPPR North states, "Forecasts for the number of jobs required to realise Britain's low-carbon ambitions vary"[12]. The Construction Industry Training Board (CITB) have been undertaking workforce/ labour market forecasting for several years and have highlighted the long-standing skills supply issues that have been facing the construction sector. The CITB research shows that the average annual recruitment requirement in the North East is 1.9% per year (of the existing regional construction workforce) and for the Yorkshire and The Humber is 2.1% per year, based on 2021 workforce levels. The UK-wide forecast is 2.0%. To meet these requirements, the construction industry in the North East and Yorkshire would have to attract a further 6,040 new workers to meet demand between the start of 2022 and end of 2026 (1,850 in the North East and 4,190 in Yorkshire). Several roles are identified as having higher annual recruitment requirements across the North East and Yorkshire including electrical trades and installation, roofers and civil engineering operatives not elsewhere classified.

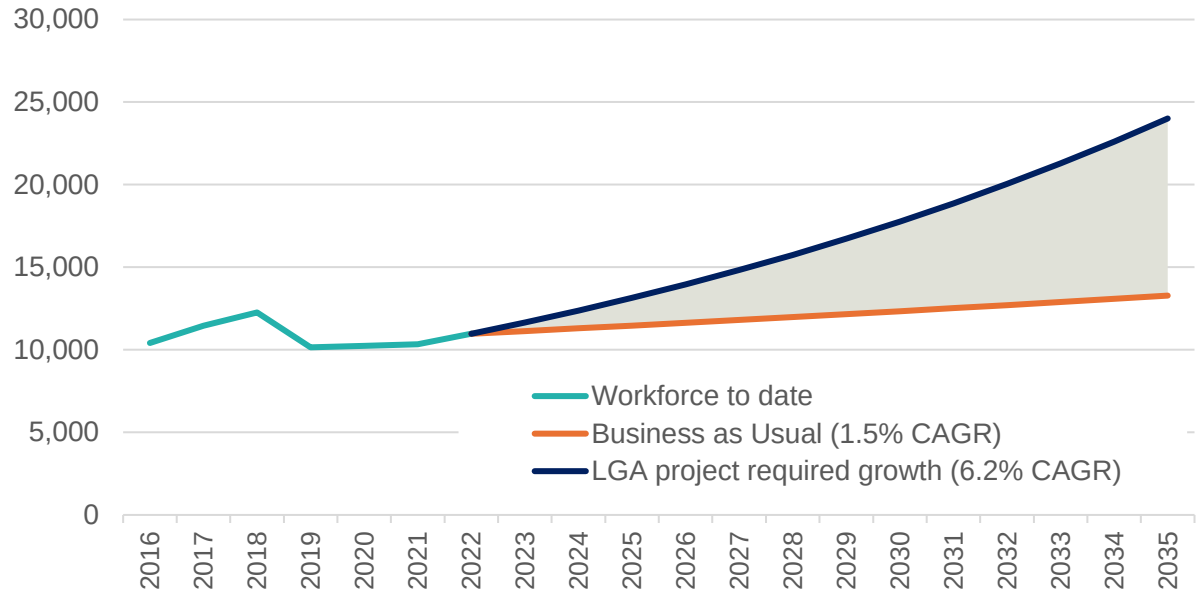
To estimate demand for the retrofit workforce in the North East and Yorkshire to 2035, two scenario models have been developed:

- ***Business as usual***: demand for labour continues to increase at 1.5% per year, reflecting the CITB sector estimates to 2030 and which aligns with the analysis of past retrofitting sector growth linked to the definition in section 3.1 above.
- ***To meet net zero targets***: demand increases by 6.2% per year in line with recent Local Government Association (LGA) research on jobs needed to meet net zero economy targets.

Using data from the workforce estimates in Section 3.3, analysis shows that if the retrofitting sector continues to grow at its (pre-pandemic) average rate of 1.5%, by 2035 the sector workforce will be circa 13,300 in the North East and Yorkshire. Alternatively, using the LGA 6.2% growth requirement to meet 2050 net zero targets, by 2035 the sector workforce will be circa 24,000. This compares to 10,700 estimated to be in place today (see Figure 9).

[11] ONS Business Counts 2024
[12] IPPR North 2023 as cited here:

Figure 9: Retrofitting Sector Labour Market Growth Projections 2022-2035



Source: AMION & Focus 2024. Projections using existing data from LGA, ONS and previous sector growth.

Growth in the size of the construction sector

Working Futures Research published by the Institute of Employment Research provides forecasts on industry characteristics[13]. The 2017 analysis estimated that at a North East and Yorkshire (and Humber) level, employment in the construction sector was expected to grow by 0.1% in the North East and 0.3% in Yorkshire and The Humber every year to 2027. This compared with a 0.2% growth nationally. Similarly, overall employment growth in the region was expected to be lower than the national figure (Table 4).

Table 4: Change in Annual Employment in Construction and Overall, 2017-2027

GEOGRAPHY	% Change in Construction	Overall % change
North East	0.1	0.2
Yorkshire (and Humber)	0.3	0.2
England	0.2	0.3

Source: Cambridge Econometrics, MDM revision 12015 and 12956 and IER estimates

Declines in key retrofitting aligned trades

Data produced for the Working Futures in 2022 presents a concerning picture for many retrofit construction related trades, forecasting declines of 9.6% between 2021-2035 for several key occupations such as 'Plumbers, heating and ventilating installers and repairers', 'Roofers', 'Glaziers, window fabricators and fitters' and 'Construction and building trades supervisors'. If unaddressed, this trend is a challenge considering the intertwined nature of future demand for retrofitting and the Repair, Maintenance, and Improvement (RMI) aspect of the construction industry.

The Working Futures labour market model considers the extent to which demand is being driven by new economic activity, by people leaving the workforce or other factors such as low levels of migration. Working Futures shows how many construction sector occupations face issues with an ageing demographic and associated retirements. The evidence suggests that this is marginally more of an issue for the North of England (including the North East and Yorkshire) than other regions. This is supported by CITB Labour Market Information research in the North

[13] Recent research at a national level 2022, whilst 2017's release is at a regional level: https://warwick.ac.uk/fac/soc/ier/researchthemesoverview/researchprojects/wf/

East and Yorkshire and consultation with industry and strategic bodies for this Skills Plan. Some consultees also noted there is an opportunity for workers approaching retirement to support learning delivery and knowledge exchange to retain learning and smooth the transition into retirement.

Combined with an increasing demand for retrofitting skills, high levels of leavers and relatively low levels of migration workers will place additional pressure on the sector. Given the ageing demographic, the baseline replacement demand of 2.6% of the workforce[14] annually (roughly 280 people in 2023-2024) and taking into account forecast growth rates for the sector, replacement demand alone could rise to around 500 people per year, representing a major challenge for the construction and retrofit sectors.

Increasingly well qualified workforce

While the general workforce is projected to become increasingly well-qualified based on existing trends, the decline in skilled trades poses a challenge for sectors like retrofitting, which rely on specific technical expertise.

3.5 Common retrofitting and construction skills challenges

As noted above, the construction sector and retrofitting are closely intertwined, with retrofitting playing a crucial role in improving the energy efficiency of existing buildings. Skilled workers with expertise in energy efficiency, sustainable construction practices and innovative technologies are essential to meet the growing demand for retrofitting services and drive positive change in the built environment.

The construction sector's workforce composition offers insights into the potential makeup of the retrofitting workforce. Notable trends in the North East and Yorkshire include; fluctuating levels of construction workers due to economic conditions, higher levels of self-employment and an industry that has historically been male dominated but has seen significant growth in female representation, albeit from a low base. Another characteristic is that ethnic diversity remains limited in the North East and Yorkshire, potentially constraining the labour pool and hindering innovation.

The geographic distribution of the construction workforce is heavily concentrated in the UK, particularly in the South East and London. This raises concerns about potential talent drain from regions like the North East and Yorkshire.

Addressing wider construction labour supply issues such as diversity, ageing demographics and recruitment and retention is needed to address and enable the growth of the retrofitting sector.

[14] As calculated through estimate from Working Futures 2022

4.0 Supply of Skills

Apprenticeship achievements in Construction, Built Environment and Planning have fallen significantly and are yet to return to pre-pandemic levels. Existing research and Local Skills Investment Plans note there is limited provision in retrofitting across the North East and Yorkshire and that provision needs to be more closely aligned to employer demand. In addition, the CITB reports that many construction FE learners leave the sector after finishing their course.

In terms of scale there is good provision of Bootcamps, Adult Education Budget and bespoke courses in the North East and Yorkshire. Challenges exist in growing capacity for new and existing provision with a lack of available tutors and teaching staff. Furthermore, the extent to which provision is meeting employer demand is queried with providers reporting challenges in generating demand for courses.

Pathways into retrofitting roles are not well understood and it is not identified as a career path by many. Other challenges include a lack of employer engagement, industry reporting insufficient demand to justify investment in training, inconsistencies in the skills offer and delivery across the region, difficulty in recruiting suitable tutors, funding constraints and under-utilisation of available resources and assets. The combination of these challenges represents considerable barriers in developing new or expanding existing provision to support emerging retrofit skills needs.

This section considers the existing supply of retrofitting skills courses, education, and training providers, as well as pathways and recruitment into education and training.

4.1 Current Provision

Industry publications and LSIPs note that there is limited available provision in retrofitting across the region and that provision needs to be closer aligned to employer requirements[15]. Research for this Skills Plan has identified that Apprenticeship achievements[16] in Construction, Built Environment and Planning have fallen significantly and are yet to return to pre-pandemic levels, remaining 20% lower in 2022/23 at 1,920 achievements than 2019/20. There is however no single data source for education and training courses in construction, retrofitting or many other course areas in the North East and Yorkshire.

To build a better understanding, AMION & Focus mapped available provision identifiable from known provider and industry websites, using a survey of providers and ongoing research by the TUC to map available provision. The analysis[17] has identified:

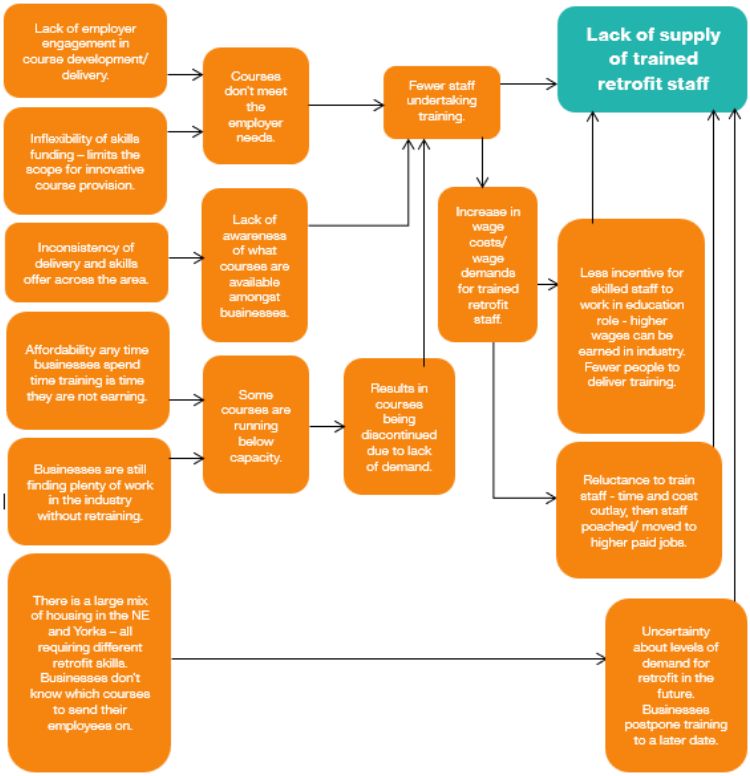
- There are 85 different providers offering 70 retrofit related courses across the region. Mapping of courses by the National Retrofit Hub (January 2024) has identified a further 134 retrofit courses national.
- The providers offering the most retrofit related courses are: The Supply Chain Sustainability School, Middlesbrough College and Leeds College of Building.
- 34% of the courses specifically have retrofit in their titles whilst 13% are more general construction courses that include an element of retrofit. In terms of retrofit measures, solar, heat pump and insulation courses were the most populous with around four to five courses in each of these areas.
- 36% of courses are at either Level 1 or Level 2. Nearly 50% are assumed to be non-accredited courses as their 'level' is not promoted.

[15] For example, see here https://www.constructionnews.co.uk/skills/does-the-uk-have-the-capacity-to-retrofit-the-nations-homes-07-08-2023/ and also Local Skills Improvement Plans reviewed for this work.
[16] Achievements are individual qualification aims that were completed in the relevant year – Source DfE 2023
[17] TUC work is ongoing and not yet publicly released.

- 60% of courses are made available across the entire region. 23% are offered in Yorkshire only and 14% are offered in the North East only.
- Approximately 50% of all courses are in person, 43% are online[18] and 4% are a 'mixed' offer and the remainder are work based learning.

There is good provision of Bootcamps in the region (25 programmes with up to 300 learners per bootcamp). 20 of these are in the North East and 5 in Yorkshire. At least 10 more programmes are expected as many are currently in commissioning. In common with the national evaluation of the Bootcamps by DfE, feedback from the consultation process identified that more time was needed by learners on courses to truly gain the skills and experience in often complex technical areas. There was also feedback that certain bootcamp provision was not successful because of a lack of demand from businesses and learners as well as the available provision of tutors and teaching staff to deliver courses.

Figure 10: Barriers to meeting current and future skills need in retrofitting.



Source: AMION & Focus

In our survey of training providers, when asked what barriers exist to expanding current provision or increasing the range of retrofitting courses, comments included low demand from industry, lack of incentives for builders to get involved, very little legislation concerning retrofit, more education needed around retrofit for homeowners, not enough grants, or greater incentives to install retrofit and lack of information around retrofit.

Consultations for this Skills Plan with both providers and industry experts suggest that there is not enough provision in certain areas (e.g. electrical, insulation) and there are several barriers to achieving sufficient numbers of trained individuals to meet existing and future supply requirements. These are summarised in Figure 10.

It is worth noting that the CITB reports find that many construction FE learners do not stay in the sector after finishing their course.

4.2 Pathways into Retrofit

This section sets out the learning pathways into the sector, and how each is performing.

4.2.1 Young People

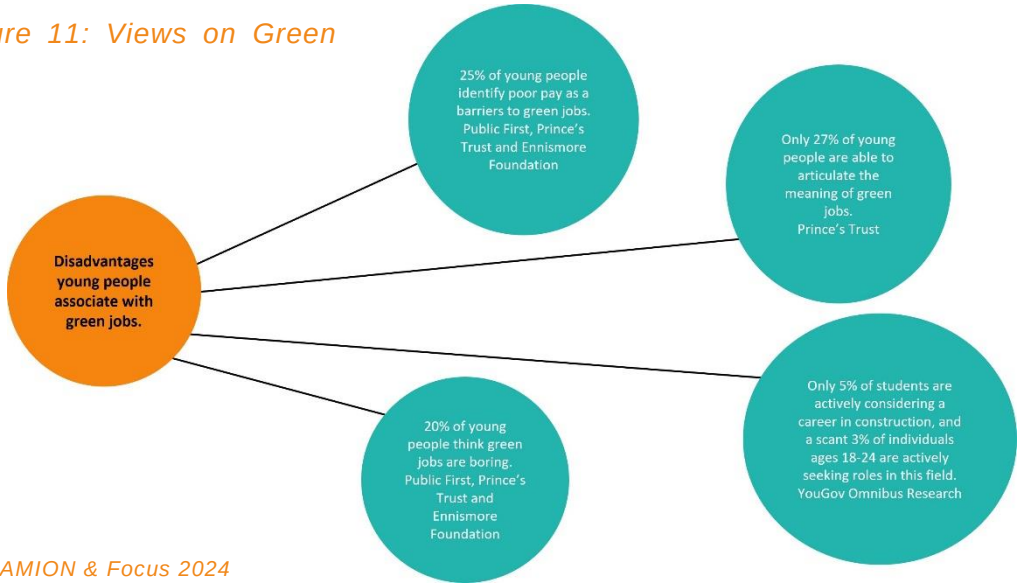
The consultations undertaken for this Skills Plan supports the concern within the construction sector regarding the lack of young entrants. National research[19] demonstrates a prevailing sentiment that young people (16-25yrs) associate green jobs with having a positive impact (50%), being rewarding to work in (40%) and generating pride (37%). However, these sentiments are not seen as drivers for career choices compared with factors such as pay and progression. In general, there is also low awareness of careers in the retrofitting sector, a

[18] The majority of online courses are not region specific but available nationally.
[19] https://www.publicfirst.co.uk/generation-green-jobs.html

finding which is supported by a survey undertaken especially for this Plan which highlights that 25% of young people surveyed were interested in a career in retrofitting.

Figure 11 identifies, collating a variety of research, the disadvantages young people associate with green jobs, reflecting to some extent a lack of understanding of what a 'green job' is. The findings indicate a clear need to increase understanding so that young people can make informed choices and more of them undertake training and pursue retrofit careers.

Figure 11: Views on Green



Source: AMION & Focus 2024

In our survey of 516 young people across the North East and Yorkshire, most showed very high interest in green, climate and environmental issues, and over half placed high or very high emphasis in considering these issues when thinking about a future career path, however there was mild consideration of the retrofitting sector careers overall and low awareness of specific roles within the retrofitting sector. Data from this survey is detailed in Appendix 3.

2.2 Training and Entrants to the Sector

In the review of training and education, entrants to the sector via apprenticeships and FE enrolments shows the context in which retrofitting courses sit within.

- Apprenticeship achievements in construction, built environment, and planning have seen a drop since pre-pandemic. All areas across the North East and Yorkshire are yet to return to pre-pandemic levels, although data for 2022/23 shows an upturn in provision.
- In consultations with colleges and representatives of further education bodies, the study team received anecdotal feedback that the number of 16-19 year old college enrolments in construction was on the rise which is supported by the data below. Data from the DfE for FE enrolments shows that the North East is significantly above the national average in terms of the percentage of all FE enrolments that are in construction, planning and the built environment.

5.0 Previous and Current Retrofit Initiatives

A range of initiatives have been trialled in the North East and Yorkshire to help align the supply and demand of retrofitting skills. Many of these continue to be refined and developed, demonstrating the increasing policy and operational focus.

- **Bootcamps:** As noted in section 4.0, the bootcamp provision has been making progress in addressing skills issues within retrofitting. This is a positive development, although there is concern regarding the demand from learners and businesses for this type of provision.
- **Procurement:** There is evidence of bodies procuring retrofit projects requiring contractors to demonstrate or expand their workforce's retrofit skills as part of the award selection criteria. This incentivises companies to invest in employee training but is challenging to enforce and monitor. There is some evidence of this working well by selected organisations, but it is believed that better monitoring and consistency between public funded organisations could make interventions more impactful.
- **New course provision:** Currently, there exists a variety of individual retrofit courses (section 4.1 identifies 70 different courses that cater to different individual and commercial needs) and many more are becoming available. New (and existing) courses often respond to different learning styles and requirements for knowledge acquisition. These courses can provide targeted upskilling for existing professionals or a foundation for those new to the field.
- **Online provision:** The retrofitting industry has embraced online training platforms, webinars, and e-learning resources to enhance skills development, providing flexible learning opportunities for upskilling or reskilling. The extent of these is captured in our review of available provision, see section 4.0 above. Businesses identify challenges around the quality and application of this training, whilst learners and businesses have responded positively to the flexibility that online provision brings.
- **Adult Education Budget (AEB):** The AEB is used to fund training for adults over the age of 19 for a wide range of qualifications. The AEB is "arguably the main economic and social lever[20] that Combined Authorities (CA) have". The North East and Yorkshire CAs have been exercising this power in relation to AEB by aligning provision with Net Zero aspirations, priorities identified in research or wider discussion with employers or groups of employers.
- **Enhancing providers' capital assets:** Investment by public and private training providers in retrofitting equipment such as Solar Panels, Air Source Heat Pumps, or materials such as advanced glazing solutions has led to enhanced knowledge for learners and greater utilisation of technologies within provision.
- **Private investment in skills:** Companies have invested in sponsorship programmes, partnerships with training providers and apprenticeship opportunities to develop a skilled retrofitting workforce. This highlights an opportunity for education and training organisations, but the level of investment shows the lack of engagement between many commercial entities and the skills system.
- **Network Building:** Industry associations, forums, and business networks have been established to facilitate knowledge sharing and collaboration among retrofitting professionals, fostering a sense of community within the industry. The evidence to date is that these emerging platforms are useful but are only beginning to support greater communication and linkages. There have been several local level strategic responses with LAs and CAs establishing partnerships and using data-driven reporting to help focus efforts to address skills gaps and shortages in retrofitting.
- **Interventions linked to funding:** Grants, subsidies, and public-private partnerships linked to the main retrofitting funding streams such as Social Housing Decarbonisation Fund and

[20] As stated by Cambridge & Peterborough Combined Authority: https://cambridgeshireinsight.org.uk/wp-content/uploads/2022/10/AEB-Report-to-Business-Board-Jan-2022.pdfs

LA Flex have seen activities aimed at skills development and innovation in retrofitting. These often seek to plug short-term knowledge and skills gaps for example a lack of retrofit coordinators or assessors. There is evidence of organisations trying to take longer term views to skills planning but this is frustrated by the short-term funding constraints.

- **Careers:** Initiatives exist to promote retrofit careers at the micro level, for example companies have undertaken careers talks and at the macro level, for example national level online resources. These initiatives raise awareness of the opportunities that exist in the sector. There was overwhelming feeling from all stakeholders interviewed that all skills issues could be addressed fully or in part through greater knowledge about careers in retrofitting. The almost universal lack of understanding of core terms such as "retrofitting," underscores the importance of education and awareness campaigns. A survey of young people undertaken for this Plan identified that 25% of respondents had considered a career in retrofitting. Lessons from existing and ongoing careers work in the construction sector indicate a need for targeted educational programmes aimed at both industry professionals and the general public to demystify industry-specific terminology and concepts.
- **One-Stop Shops:** Several one-stop shops exist across the North East and Yorkshire, and more are likely to emerge in the future. They provide a range of information and resources on retrofit including training and careers with information collated in a singular location to ensure ease of access. The focus to date has not explicitly been upon education and training but there is an opportunity for this to be part of a suite of support and signposting which could add value.

Analysis of the success of previous initiatives reveals a nuanced landscape of benefits from and impact of interventions with systemic challenges remaining.

6.0 Aligning Supply and Demand

The achievement of retrofitting goals in domestic buildings relies on a proficient workforce. There is conflicting evidence regarding the scale and quality of the workforce to meet the growing demand for retrofit expertise. This inconsistency highlights varying needs within the sector, necessitating strategic considerations. There is evidence to suggest that the retrofit supply chain could move to an "imperfect equilibrium" in the North East and Yorkshire, where demand for skills is met in part but is not optimised for the benefit of businesses, residents, or the wider economy.

This section explores the alignment of the supply of skills with demand.

Meeting retrofitting targets in domestic buildings is contingent upon having a skilled workforce capable of delivering projects to cost, time and quality. However, the evidence has shown 'mixed messages' around the available pool of qualified professionals and the increasing demand for retrofit expertise; with some businesses, training providers and other stakeholders identifying few skills challenges whilst others identified acute and progress limiting skills shortages and gaps. This indicates differential need for business recruitment and retention strategies across the sector and requires policy responses to consider the issues presented in Figure 12.

Figure 12: Summary of supply and demand issues

Supply	Demand
• There is a range of provision available to meet current demand but is a small part of the current delivery landscape. • Provision has numerous challenges to expansion and meeting rising demand. • Existing provision shows promise in addressing skills needs but there are gaps (e.g. multi-skill qualifications) and areas of further development (e.g. alignment with PAS 2035 specifications).	• Current demand for retrofitting is linked to policy and funding but the demand for skills is growing and predicted to grow further. • The industry's current composition and future growth is linked heavily to the construction workforce. • There are issues around a lack of diversity and age profile in construction which are likely reflected in retrofitting.

Source: AMION and Focus 2024

The research and insight from industry, education and training providers and social housing providers regarding the current North East and Yorkshire retrofitting supply chain suggests the sector is moving towards an "imperfect equilibrium" i.e. demand is in part being met by supply but in sub-optimal ways for businesses, publicly funded bodies, residents, and the wider economy. It takes time for the supply of appropriately skilled labour to increase in response to increased demand. To win these new contracts there is evidence of businesses taking a short-term approach rather than developing long term expansion plans such as recruiting individuals new to the sector and upskilling through on the job and formal planned training programmes. These long term sub-optimal strategies include 'buying in' key staff, often at higher pay than the going rate and providing on-the-job training. Whilst these meet a short-term gap, they are not sustainable long term strategies and can negatively impact the cost of doing business as well as the quality delivered. It has been noted that housing associations prefer in-house retrofitting workers but often resort to external contractors in the face of a shortage of supply. These short-term strategies used indefinitely will only exacerbate future skills challenges and limit sector expansion particularly when combined with wider issues including strategic leadership and workforce planning barriers.

7.0 Retrofitting Skills Plan Logic Chain

Figure 13 below presents a logic chain for the Retrofitting Skills Plan, this can be utilised to communicate benefits, enables a structured approach to identifying training needs, reference for designing interventions, implementing strategies, and evaluating outcomes.

Figure 13 Retrofitting Skills Plan Logic Chain

8.0 Conclusion

The built environment accounts for just under 20% of carbon emissions. Given the age and condition of the housing stock it is widely recognised that we must increase the scale, scope, and pace of retrofitting to realise the government's net zero carbon ambitions. Policy, regulation, and grant funding have all increased in recent years to support this imperative. To achieve EPC rating C for all homes in the North East and Yorkshire means retrofitting 2.2 million homes by 2035. This is not achievable with the current workforce of under 11,000, increasing at its 2% annual average. Multiple systemic challenges exist in growing the sector and aligning demand and supply across the region including the fundamental issue of a lack of data.

Nationally, there is strong evidence that young people are not considering careers in retrofitting because they do not understand the sector including fundamental information such as what constitutes a 'green job', what roles are available or what qualifications or experience is needed. there is also evidence that employers are not investing in workforce training across the region because they have concerns about the quality of some training provision and are uncertain of the scale and timing of retrofitting contracts. Clearly connected to employer uncertainty is the finding that those tasked with procuring retrofitting work do not feel they have the whole skill set needed to design, tender, and manage contracts. The combination of these issues reduces the demand for skills training and leads to undersubscribed and therefore unsustainable course delivery and, critically, a lack of skilled staff.

Research for this Skills Plan has shown there is a varied landscape of retrofitting skills training on offer in the North East and Yorkshire. Providers have reported difficulties with recruiting suitably qualified tutors, in part due to higher pay opportunities in industry. The pace of technological change means that keeping existing tutors up to date is difficult. Alongside this, they point to a lack of funding to develop courses and a lack of engagement with employers to ensure a close fit between course content and employer needs.

The estimated demand for retrofit workers varies but it is only forecast to increase. Using the LGA forecast of a 6.2% growth to meet net zero ambitions means the retrofit workforce in the North East and Yorkshire by 2035 would be 24,000. This represents a significant shift for the region and given existing skill shortages most notably of heat pump installation, insulation, draught-proofing, ventilation, and heritage building specialists the necessary growth is not achievable without strategic intervention. To meet their growing demand for retrofit workers some employers are using short term strategies which are suboptimal and unsustainable, such as, relying solely on on-the-job training which could affect the quality of work or buying in staff at higher-than-average rates which will impact on the profitability and viability of the business.

A key challenge to growing the retrofit workforce and meeting employer demand for skilled staff is the demographic make-up of the existing workforce; many retrofit staff come via the construction sector and analysis shows one in five are over the age of 50[21]. This is predicted to be a greater issue in the North East and Yorkshire than for the country as a whole. More importantly the number of leavers is not being matched by the number of new entrants.

Recognising these multiple and inextricably intertwined challenges, several initiatives including bootcamps, procurement requirements, and online courses, have been introduced to address the skills gap. However, challenges such as insufficient collaboration between trainers, employers and the public sector persist, emphasising the need for sustained efforts to address skills shortages and strengthen the resilience of the retrofitting sector.

While existing initiatives have shown promise, systemic and specific challenges persist. To mitigate these issues a series of recommendations are made. Six pilot projects are also proposed to address specific challenges which will foster greater partnership working and generate valuable insights into what supports growth of the retrofit sector in the region.

[21] https://www.hbf.co.uk/documents/12623/HBF_Workforce_Census_2023.pdf

8.1 Recommendations

A range of recommendations have been identified through the research for the NEY NZH in partnership with other organisations within the retrofitting sector and across Government. The recommendations have been separated into macro and regional level recommendations.

Macro level recommendations

- Long-term Government Funding: There is a need for a sustained commitment to funding decarbonisation measures by the Government, ensuring consistency and longevity for impactful change. Certainty and stability through consistent funding and policy focus, will enable industry stakeholders to plan and invest with confidence.
- National level retrofitting skills taskforce: There are several structural issues which have been identified in this research, which pilots cannot address (e.g. lack of investment in education and training).
- Collaboration with Construction Bodies: There is a need for the retrofitting industry to develop strategic partnerships with construction bodies such as CITB and the Construction Leadership Council, focusing on thematic areas like careers, diversity, and specific aspects of retrofitting (e.g. ground source heat pumps). This collaboration can help align efforts and resources towards common goals.
- Awareness Campaigns: Working with strategic stakeholders, there is a need to launch awareness campaigns highlighting the benefits of retrofitting and the career opportunities available in the sector. All channels including social media, advertising, and engagement with secondary schools is needed to reach a diverse audience.
- Procurement: There are several workstreams regarding procurement which could be explored by partners:
  - Linking together procurement to support the aggregation of demand, facilitating economies of scale and streamlining workforce planning.
  - Encouraging greater innovation and supporting skills development through procurement
- Standards and Certification: There is a need for a national level convening role to promote the development and adoption of standards and certification for qualifications in retrofitting roles to ensure quality and consistency across the industry.
- Pathways Development: There is a need to collaborate with the industry partners and skills bodies like the Institute for Apprenticeships and Technical Education (IFATE) to develop clear pathways for retrofitting roles, supporting curriculum development and professional progression.

For the North East and Yorkshire:

- Improve data collection to pinpoint crucial Key Performance Indicators (KPIs) vital for the retrofitting sector, facilitating targeted strategic planning and measurement.
- Provide evidence of skill demand to guide Combined Authorities and Employer Representative Bodies in shaping investments in retrofitting courses and sector support.
- Pilot projects aimed at integrating education and training providers into the retrofit ecosystem, fostering collaboration among educational institutions, industry, and government agencies.
- Advocate for a more diverse workforce, highlighting its benefits and incentivising organisations to recruit teams reflecting the communities they serve.
- Collaborate with Employer Representative Bodies to integrate retrofit modules into construction qualifications, ensuring training meets industry demands.
- Identify and share best practice case studies to support future retrofitting initiatives.

SECTION 2: SKILLS PILOTS

9.0 Retrofit Skills Pilots

This section sets out a programme of 6 Skills Pilots. Each pilot is tailored to address a number of the identified challenges facing the North East and Yorkshire retrofit sector as set out in Part 1 of this Skills Plan. A high-level business case has been produced for each pilot using HM Treasury Green Book guidance. The business case considers the rationale for intervention, identifies the best value for money option to meet the objectives considering option costs and benefits and likely outputs. The recommended option for each pilot reflects the likely success of delivery. As with all projects there are risks. Should the pilots not be implemented due to funding or other constraints we recommend keeping them under review until issues are resolved. We also note other pilots are likely to emerge as the sector matures. The business case for each pilot is presented in Appendix 6. This section sets out a high-level summary of the recommended option for each pilot. As set out in Table 5 below, the 6 pilots have a range of geographies, differing types of activities and a wide range of benefits for residents in the North East and Yorkshire.

Table 5: Pilot Summary

	Pilot Name	Geography	Focus	Implication for communities and benefit type
A	Delivery Innovation Pilot	Pan-North East and Yorkshire (to identify areas within)	Address barriers face by FE in stimulating demand for retrofit courses.	Wage premium and well-being benefits for learners, leading to job creation and improved retrofitting quality.
B	Get into Retrofit	West Yorkshire	Supporting greater capacity through new tutor pathways.	Knowledge transfer and skill development to create new job opportunities and bolster local economies' resilience and sustainability.
C	Retrofit Demonstrator	Pan-North East and Yorkshire (to identify areas within)	Engaging learners and industry in real-world retrofit environment to build confidence in the market.	Enhanced community awareness of retrofitting and employment prospects.
D	Retrofit Skills Partnerships	South Yorkshire, West Yorkshire & North East	Building the platforms for engagement between retrofit market drivers, industry, providers, educators, and other stakeholders.	Increased private sector investment in workforce skills, resulting in employment opportunities and wage premiums for learners.
E	Retrofit Careers Bolt-on	Hull and East Yorkshire	Enhancing awareness of careers in retrofitting.	Promotion of career information and employment opportunities to benefit disadvantaged and marginalised communities.
F	Social Housing Skills Support	Pan-North East and Yorkshire (areas identified within)	Supporting a key policy focus to overcome its skills challenges.	Improved services for social housing residents through upskilling landlords for deploying high-quality retrofitting measures, reducing energy bills and health risks.

9.1 Pilot Introduction

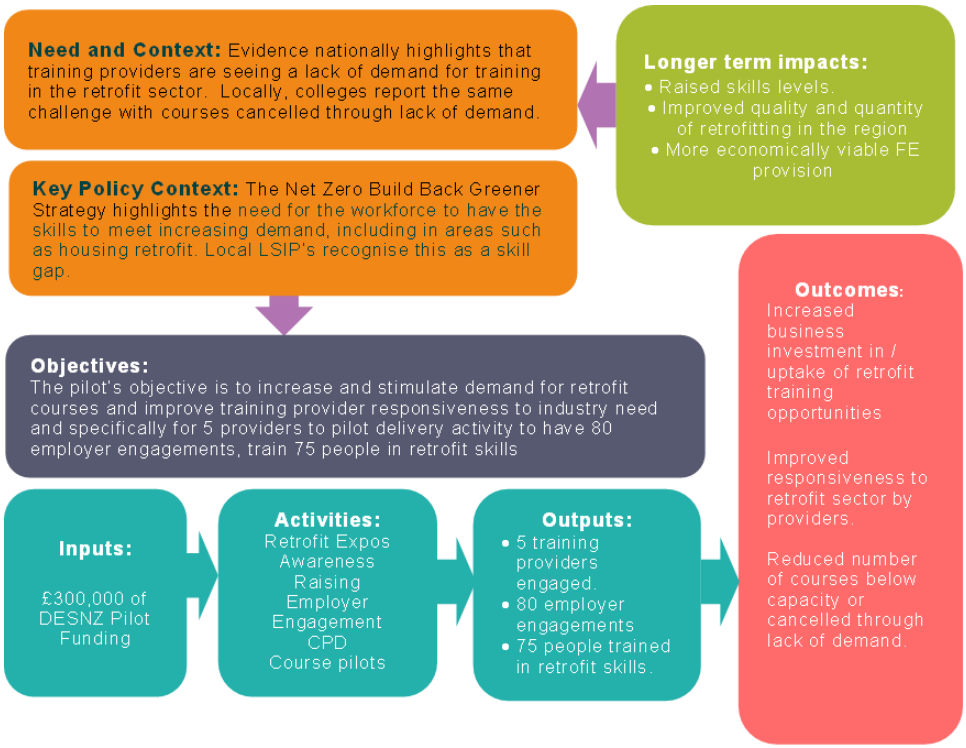
The below sections provide an overview of the pilots and presents a logic chain to explain their linkages to evidence and the focus of activities.

Delivery Innovation Pilot

This pilot project will support 4-5 training providers to better meet the needs of industry through a programme of delivery focused activity. The funding will enable providers to test different approaches to addressing the challenges they face in delivering retrofit training – from awareness raising, employer engagement in the development of curriculum, CPD for tutors to piloting new delivery. The value for money of this pilot is judged as "high" when considering costs and benefits.

To maximise value for money, openness and potentially reduce subsidy control issues, it is considered that the best way to deliver this programme is through an open call for proposals to FE Colleges across the North East and Yorkshire with clear delivery objectives. However, to inform the development of this business case, several organisations have been engaged to outline what activity they would look to deliver under this Fund – Education Partnership North East, Heart of Yorkshire Colleges, Calderdale College and Efficiency North, working with Leeds College of Building. The types of activities to be tested through the pilot programme would include:

- Retrofit Expos – Additional resources to link with businesses such as hosting exhibitions with guest speakers from industry, demonstrating the different retrofit technologies, and showcasing their training facilities to construction sector businesses/ workers.
- Awareness Raising – A programme of engagement activity, marketing, and awareness raising to businesses around both the existing retrofit skills offer available at the colleges, the need for construction workers to undertake retrofit training, and the jobs that are available in the sector, or will be in the future.
- Employer Engagement – Employer/ industry engagement to encourage industry experts to co-design courses. This will ensure courses are industry led and meet industry need, thus boosting industry buy-in and increasing levels of demand and the likely hood that businesses will send their staff on training.
- Continuing Professional Development – CPD and staff backfilling to upskill existing tutors to enable them to deliver retrofit training.
- Course Delivery – Added value to existing retrofit training courses such as industry seminar days, on site delivery and visits to demonstrators to provide practical real work experience to learners.
- Piloting New Activity – Derisking the development and refining of newly developed courses, tailoring them to ensure they meet industry needs, particularly for SMEs, Micros, and sole traders, ready for them to be rolled out for main-stream delivery.



Get into Retrofit Tutoring

The 'Get into Retrofit Tutoring' pilot initiative is a proactive response to the pressing need for skilled workers in the retrofitting sector and is centred upon increasing the number of tutors and teaching staff to address the escalating demand for expertise in this field. The pilot is judged to have a "medium" value for money.

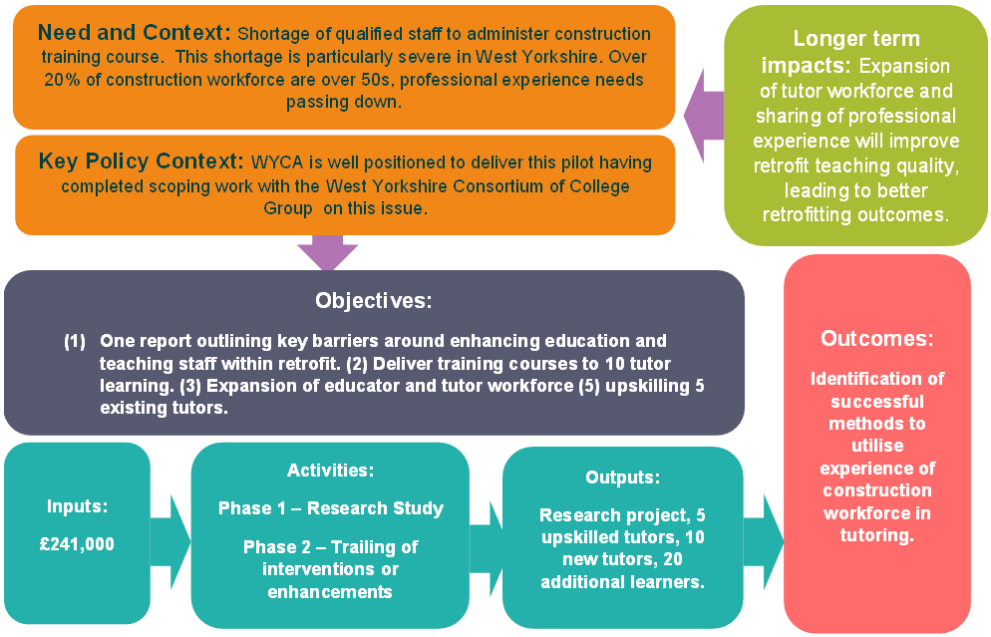
The pilot is focused on bolstering the number of teaching staff to accommodate workforce expansion, the pilot is structured into two pivotal phases:

1. Research - In the research phase, cutting-edge industry studies will be conducted to identify optimal strategies for education and training providers to effectively engage with the construction industry. This groundwork will inform the subsequent implementation phase.
2. Implementation – This aims to operationalise research findings to tackle identified challenges and capitalize on opportunities. This may involve resource allocation, framing interventions to address sectoral challenges, and enhancing the availability and quality of retrofitting courses.

Evidence, including bespoke research for the Skills Plan and recent studies, underscores the anticipated surge in demand for retrofitting skills. The ageing construction workforce poses both challenges and opportunities, with a critical shortage of tutors in key retrofitting areas such as electrical and plumbing. However, this shortage also presents an opportunity for knowledge transfer from older to younger workers, highlighting the importance of mentorship and training initiatives.

Research across the construction sector that commercial involvement in teaching can play a vital role in supporting training expansion and knowledge exchange.

The 'Get into Retrofit Tutoring' pilot aims to establish a sustainable pathway for workforce expansion, promote inclusivity in the workforce, and move the net zero aspirations forward. Led by the West Yorkshire Combined Authority (WYCA), this intervention holds promise for reshaping perceptions, meeting industry demands, and fostering a skilled workforce equipped for the challenges of tomorrow.



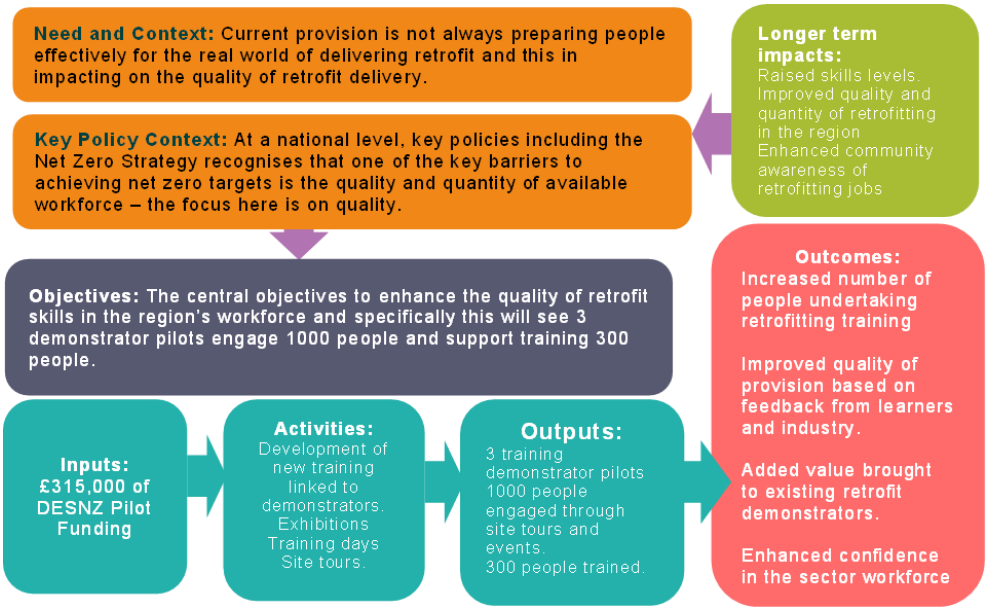
Retrofit Demonstrators

There are several retrofit demonstrator homes being delivered or proposed across the region. These are typically focused on community education around retrofit and there is an opportunity to add a training element to these. This project will therefore test the impact of real world retrofit training and learning environments through developing training pilots as an added value element to retrofit demonstrator homes in the North East and Yorkshire. The pilot is judged to be "high" value for money when costs and benefits are considered.

The pilot projects would be focused on co-ordinating different training providers to utilise the demonstrator houses for training, providing real world environments and different retrofitting scenarios and challenges, in recognition that a one size fits all approach to retrofit does not work. Such an approach will also help to build skills across a range of housing stock, recognising the range diverse mix of housing stock in the region.

Importantly demonstrators would not just be used for technical installation skills training but would provide a real-life learning environment for people undertaking Retrofit Co-Ordinator or Assessor courses for example, which have been highlighted as lacking real-world on-site experience. Demonstrators could also provide a facility for CPD for construction tutors and educators. The demonstrators would therefore help to build retrofit knowledge as well as technical skills – both areas are vital to building the retrofit capacity in the region.

The Retrofit Demonstrator would serve the dual purpose of allowing individuals and organisations considering undertaking retrofit projects to experience a completed site, as well as providing an environment where retrofit training and skills development can be carried out.



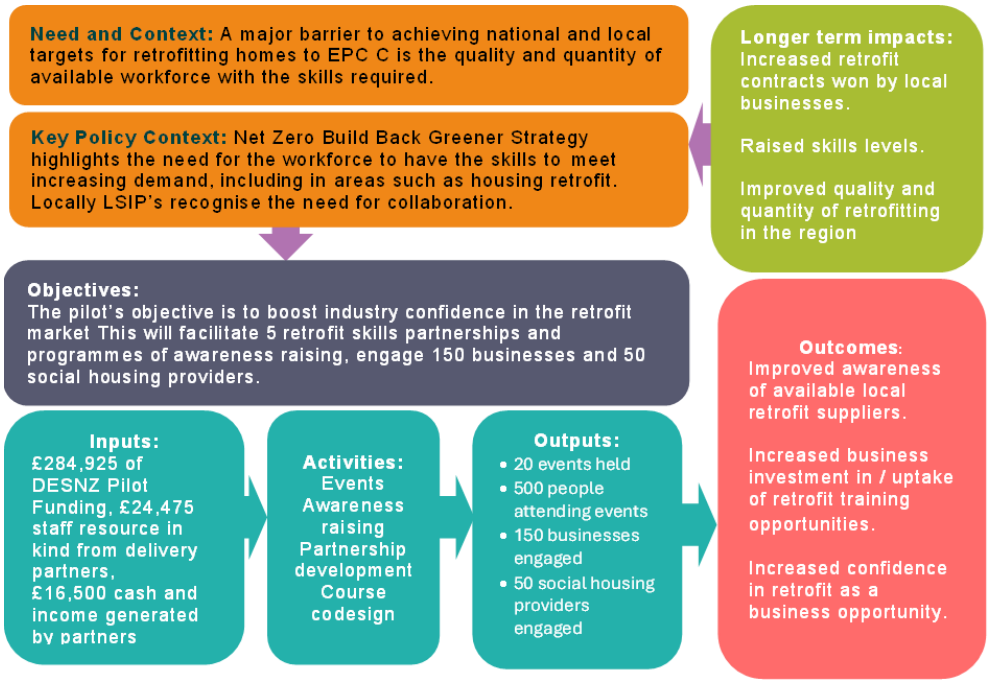
Retrofit Skills Partnerships

This pilot project will test a variety of different approaches designed to increase demand for retrofit training by bringing together retrofit funders, industry, and training providers to boost confidence in the retrofit market and in turn investment in skills. The value for money of this pilot is assessed as "high" when considering the costs and benefits.

The pilot's aim is to bring together stakeholders within the retrofit sector for a year-long programme of pilot activity that will facilitate collaboration and boost industry confidence in the retrofit market, supporting businesses to see retrofit as a business opportunity worth investing in staff training for and in turn increasing the demand for training, and ensuring the training offered is fit for purpose and meets the needs of industry.

The pilot aims to understand the best approaches to maximising the supply-chain and training investment impacts that can be achieved through linking the public, private, education, and third sectors. The pilot has chosen to work with five delivery partners to test different delivery models of new activity in a range of scenarios including: how best to maximise the partnership opportunities around a single specific local retrofit initiative, how to support partnerships within a particular sub-sector of retrofit, and to test whether skills partnerships are more effective at a very local level or at the sub-regional level, recognising the diversity of housing stock and economic circumstances across the region. The identified delivery partners are:

- Efficiency North
- Sheffield City Council
- Rethink Retrofit
- Northern Housing Consortium
- South Yorkshire Combined Authority



Retrofit Careers Bolt-on

The Retrofit Careers "Bolt-on" Hub is targeted career support within the retrofitting sector across Hull and East Yorkshire. Led by the Careers and Enterprise Company and HEY LEP, the hub will deliver guidance to schools, recruit ambassadors and advisers, offer workplace experiences, provide teacher placements, develop curriculum resources, and host informative events, all aimed at fostering interest and diversifying the retrofit workforce. This pilot is judged to be" high" value for money considering the costs and benefits.

The overarching objective of the pilot is to educate and raise awareness of career possibilities in the retrofit sector among the general population, to increase the number and diversity of people joining the retrofit workforce. This strategic initiative aims to enhance workforce skills while promoting awareness of retrofitting practices in an adaptable and sustainable manner.

The pilot presents both a strategic and adaptable approach to catalysing interest and skill development in the retrofitting sector. Its potential for widespread adoption and integration into existing career support structures underscores its importance in fostering a sustainable workforce for the future while simultaneously raising awareness and understanding of retrofitting practices at large. The bolt-on hub will deliver advice and guidance around retrofitting to 50 schools and colleges in Hull and East Yorkshire. It will also recruit additional Career Leaders Ambassadors and Enterprise Advisers, offer workplace experiences to 200 students in the retrofitting sector, provide 30 placements for teachers in retrofitting businesses, develop retrofitting curriculum resources for three subject areas spanning Year 7 to 13 students, and host information events (for parents).

Social Housing Skills Support

The Social Housing Skills Support pilot proposes an intensive support service aimed at guiding Social Housing Providers (SHPs) in the North East and Yorkshire through their skills and knowledge-based challenges. This will initially be centred upon retrofitting maturity, strategy readiness and workforce skills. Latterly the pilot will seek to develop this around further support to progress decarbonisation activities. The pilot is judged at "high" value for money when all costs and benefits are considered.

SHPs are a primary focus for Government funding in decarbonisation and retrofitting efforts. They have challenges in implementing impactful retrofitting initiatives, requiring buy-in from senior leadership, internal skills enhancement, customer engagement, and housing stock data.

The service would be modular with two phases, delivered by a procured provider. The first phase relates to organisational readiness that include organisational retrofit maturity baselining, skills gap analysis with a learning and development plan, net-zero retrofit strategy development, workforce readiness and networking support. The second phase relates to grant mobilisation and delivery of retrofitting programmes. This will include procurement strategy training, developing a delivery plan guide, a project management toolkit, stakeholder and resident engagement training, and monitoring and evaluation strategies training. The programme is tailorable to meet the specific needs of the SHP. The options analysis considers advanced delivery support versus minimal delivery support, whilst organisational readiness is a consistent feature.

The overarching aims of the pilot are to:

- Enhance the ability for social housing providers to conceptualise, develop, fund, manage, and deliver effective high-quality retrofitting programmes.
- Enhance the number of houses that are being decarbonised within the SHP sector.

The pilot will seek to bolster the capacity of SHPs to meticulously plan, execute, and assess retrofitting programmes, thereby contributing to the shift of social housing stock towards sustainability and energy efficiency.

There are several providers that could deliver this service and to drive maximum value for the pilot and to push providers around the added value connected to skills, a procurement exercise is favoured. This will also enable potential providers to utilise their own knowledge and information to focus upon several SHPs that are facing greater/ greatest challenges.

9.2 Programme Management

Commissioning - Where there is a clear lead organisation identified, or strong fit between need and opportunity with a specific delivery partner, a commissioning approach will be used for the delivery of the Skills Pilots. Managing the initial commissioning process, e.g. agreeing the final brief, milestones, budgets etc will require input from the team at NEY NZH.

Procurement - In some instances a procurement exercise will need to be run to secure delivery partners for the Skills Pilots. This will ensure that there is a fair, open, and honest opportunity for all interested parties to be considered as a delivery partner. This approach will need significant input from the team at NEY NZH as the tender process will need to be managed. This approach will be more costly to manage than the commissioning approach.

Contracting - Contractual arrangements will be between the NEY NZH and Skills Pilot delivery leads.

Project Management - Day to day delivery and project management of the individual projects will be undertaken by the contracted Skills Pilot delivery teams, and this has been built into project costs. A project plan/ brief, with milestones and targets will be agreed at the outset, against which the Skills Pilot delivery teams will be expected to deliver.

Programme Management - In addition to the commissioning, procurement and contracting work noted above, the NEY NZH will co-ordinate a programme of monitoring and information capturing activity with the Skills Pilots. This work will hold each Skills Project to account in terms of achieving contracted spend and outputs targets, capturing impacts achieved, assessing best practice, analysing areas of under/ over achievement, supporting dissemination, and championing the projects within Government.

Whilst the existing NEY NZH team have the capabilities to undertake the commissioning, procurement, and programme management role, they currently do not have the capacity within the small team to deliver this work. Additional resources will be needed to support this work.

External Support – Budget has been allocated for specialist external advice as required during the contracting and delivery phase of the Skills Pilots. This includes for activity such as subsidy control advice and any legal fees incurred.

Hosting - It is assumed that TVCA, as NEY NZH host organisation will any new staff members.

Programme Management Costs (set out below):

Table 6: Programme Management Costs - 24-month programme

1 x Programme manager, including on costs	£57,000 per annum at current prices, plus inflation in future years.	£120,000
1 x Officer, including oncosts	£46,500 per annum at current prices, plus inflation in future years.	£98,000
Support from TVCA for staff hosting at 10% of staff costs	n/a	£22,000
Budget for programme delivery	To include and additional fees e.g. subsidy control, legal fees etc. £30,000 per annum	£60,000
Commissioning support	External consultancy support to move projects selected for funding from business case to commissioning / procurement. Interim arrangements whilst DESNZ confirm funding arrangements until programme management resources in place. This is needed to accelerate activity appropriately. Assumed to be 15-20 days of input.	£15,000

These costs assume a full programme of activity based on this Skills Plan. The costs are scalable depending on the level of funding awarded to pilot projects in the region.

9.4 Timeline

The pilots were developed based on guidance which looked at delivery and supply chain interventions across multiple years.

Pilot	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
	2024			2025				2026	
NEY NZH - Management									
Retrofit Demonstrator									
Get into Retrofit Tutoring									
Retrofitting careers bolt-on									
Social Housing Intensive Support									
Retrofit Skills Partnerships									
Delivery Innovation Pilot									

Key:

- **Procurement/Commissioning Detail**
- **Detail with DESNZ or development Time**
- **Recruitment**
- **Start of delivery**
- **Delivery**

Key Dates:

- Notional Start Date: April 2024
- Notional End Date: April 2026
- May 2024 Local Elections
- General Election TBC (*Autumn 2024 assumption*)
- Academic Calendar Ends: July (beginning of Q3)
- Academic Calendar Begins: September (end of Q3)
- SHDF Wave 3: 2025

9.5 Evaluation

Evaluation is a vital part of pilot assessment. We understand there will be an element of overall programme evaluation from DESNZ; we provide individual evaluation assessment within the pilot business cases (Appendix 6) and also an evaluation framework (Appendix 5) for the pilots. An overall evaluation framework for the programme is shown in Figure 7.

We recommend a series of programme level KPIs also support the monitoring of skills pilots in the future. Examples of KPIs will include: number of events held, individuals enrolled on retrofit training courses, individuals completing retrofit training courses, training providers, construction / retrofit businesses and social housing providers engaged, new retrofit courses offered to the market.

Figure 7: Evaluation Framework