South West
NET ZERO
HUB

SOUTH WEST NET ZERO HUB RETROFIT SKILLS ROADMAP

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WRITTEN BY GEMSERV AND QA RESEARCH

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INTRODUCTION

BACKGROUND

The South West Net Zero Hub (SWNZH) has been awarded funding by the Department of Energy Security and Net Zero to conduct a research project into the retrofit supply chain, with a focus on addressing labour and skills shortages within the retrofit sector in the region. This report is the first phase of a retrofit skills action plan that will make recommendations for how funding and policy initiatives can be best used to address gaps in the South West's retrofit supply chain and skills systems.

This report's objective is to provide evidence-based recommendations for interventions to grow the retrofit supply chain. It will summarise and supplement existing literature and research on the current state of the retrofit supply chain in the South West, provide an overview of the skills system in the region and current provision, summarise the views and recommendations articulated by stakeholders interviewed by Qa Research. We then combine these elements into a Retrofit Skills Roadmap that sets out the final recommendations, costs, and suggestions for implementation.

AIMS AND OBJECTIVES

The project has the following aims and objectives.

- Build on existing research to provide a robust assessment of the current state of the retrofit supply chain in the South West region.
- Identify key challenges, gaps, and pinch points for the retrofit and energy efficiency sectors in the South West region, to achieve Net Zero targets.
- Identify the necessary steps to develop supply chain capacity and how these could be implemented in future.

THE SOUTH WEST NET ZERO HUB

The South West Net Zero Hub (SWNZH) is one of five Net Zero Hubs operational in England. The SWNZH is made up of seven Local Enterprise Partnership (LEP) areas with over 40 Local Authorities of which most have declared climate emergencies to attain Net Zero by 2030. The seven LEPs provide the strategic direction and governance for the SWNZH. The Accountable Body for and organisation hosting the SWNZH is the West of England Combined Authority.

METHODOLOGY

QUALITATIVE RESEARCH

Qualitative research was undertaken using online focus groups and one-to-one telephone or Teams depth interviews. Contacts provided by Gemserv and the SWNZH included those within the region working in a range of different sectors covering Further Education, installers, manufacturers, social housing, employer & business representative bodies and local government. All the qualitative interviews and case studies were undertaken by Qa Research. The qualitative research comprised:

- 5 x 90-minute focus group discussions split by sub-region:
  - Bath, Bristol & North Somerset
  - The Solent
  - Cornwall & the Isles of Scilly
  - Wiltshire, Swindon & Gloucestershire
  - Devon, Plymouth & Torbay
- 5 x 60-minute depth interviews with Further Education providers (the original target had been 10)

Additional top-up depth interviews with local government, installers, business and employer representative bodies, and social housing providers who could not attend the focus group sessions have also been undertaken. Qa Research emailed all those on the contact database and then telephoned them to ask them to participate in the research. Those taking part in the qualitative research were from the following sub-regions:

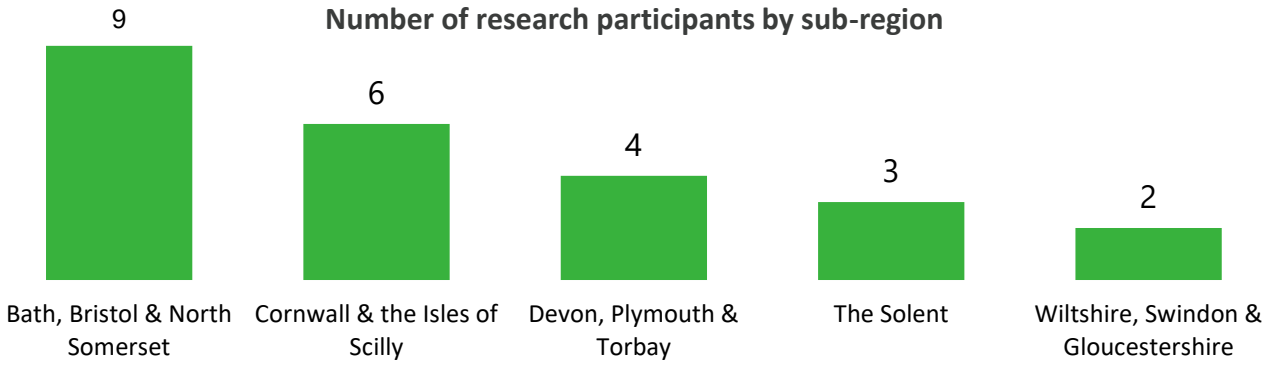

Figure 1 – Number of research participants by sub-region

Figure 2 shows the interviewees by sector. Of the local government representatives interviewed – four are in receipt of UK government retrofit funding through either the Social Housing Decarbonisation Fund, the Homes Upgrade Grant, or Local Authority Delivery Fund. The social housing provider was also in receipt of UK government retrofit funding. Experience of engaging with UK government schemes and procurements was well represented in our research.

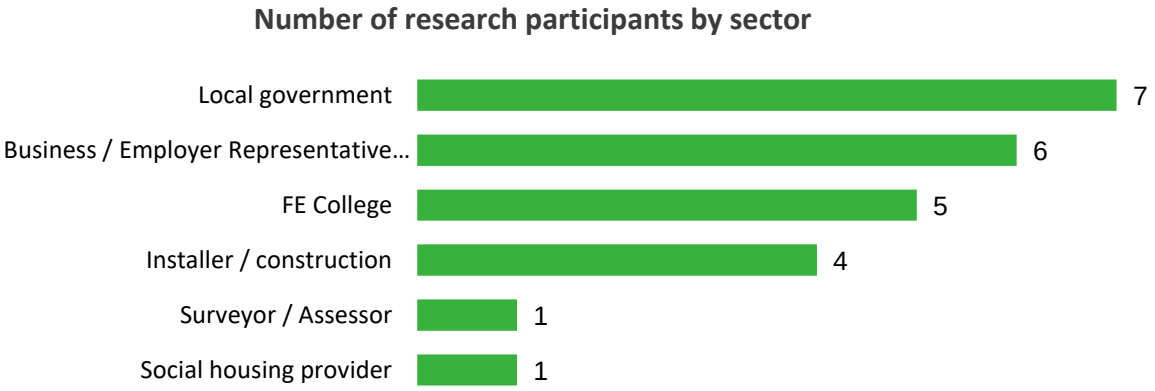

Figure 2 – Number of research participants by sector

The qualitative research was undertaken between w/c 29 January & w/c 19 February. Discussion guides for the focus groups and depth interviews were designed by Qa Research and approved by Gemserv and the SWNZH. Illustrative quotes have been used throughout this report to highlight some of the issues discussed. The retrofit skills survey sent out by Gemserv was completed by 10 organisations covering installers and local government. Their responses to this

survey have been incorporated into this report to further support the qualitative findings from the more in-depth focus groups and one-to-one discussions.

QUANTITATIVE RESEARCH

Supply chain and training rates

The quantitative research builds on analysis completed for the SWNZH's previous retrofit skills report, with current and required skills estimates updated according to the most recent data[1] and assumptions[2], where relevant. This gave an up-to-date view of the skills challenge in the South West. Research was completed to review the training centres in the region and the retrofit courses offered by each one, with data on course costs, level and duration also recorded where available.

To compare the size of the skills challenge to current training rates, historical training rates were estimated by role type for the whole of England[3] and were broken down to the South West region using third party data sources which indicated changes in provision in the region over time[4]. Training was categorised by role type and training level, enabling an estimation of training by role and training centre using the data collated on courses offered at each centre. Courses at each centre were then categorised by entrant type (apprentice, upskill, and other new entrants) by reviewing the duration and cost of courses. A similar matching exercise was then completed to understand the breakdown of training by entrant type, assuming that where courses were of the same level and type, they were prescribed equally.

Value for money analysis

The value for money case of different training, by region and role, relied on a variety of analysis approaches. Firstly, using a combination of the updated current/required skills, and data on the current demand for retrofit measures[5,] the skills gap was defined by timeframe, region, and role type. A comparison of the training by LEP region (according to the prior analysis of Ofqual training data and courses offered by centre) and the current provision of training (taken from the analysis completed within the previous report) was then developed to understand whether there was a correlation between the two.

Data on the courses offered at each centre was characterised by role type (the role the course trains people to complete) and cost, and the total courses offered by each centre within a certain role type was compared to the cost of the courses per learning day, to understand whether there was a correlation between education specialisation and cost effectiveness.

[1] ONS (2024) LCREE; MCS (2024) The MCS Data Dashboard.
[2] For example, required retrofit coordinator and assessor figures were updated to account for the fact that an assessment might be made on multiple properties per property retrofitted.
[3] Ofqual (2023) Vocational qualifications dataset
[4] ONS (2024) LCREE used for insulation and retrofit project managers; MCS (2024) The MCS Data Dashboard used for heat pump installers.
[5] MCS (2024) The MCS Data Dashboard; DESNZ (2024) Household Energy Efficiency Statistics

The final area of the value for money case was the economic potential of training within different roles compared to the cost of training. This analysis relied on estimates for potential Gross Value Added (GVA) creation per unit of training. To understand this, assumptions were made around the industries that trainees worked in prior to training, informed by the split of entrant types within each role. The weighted GVA contribution of trainees prior to training was then calculated using the roles performed prior to training and the GVA intensities of those roles[6].

The share of trainees that go into the role they are trained to do was then estimated by comparing the historic training rates to the current provision of skills, to account for those trained that may choose to work in a different industry, work outside of the region, or not work full time within the retrofit industry.

The economic value of the retrofit roles was then calculated by reverse calculating GVA intensities using the ratio of turnover to employment within the retrofit sector[7] and the ratio of turnover to GVA in the wider industry (e.g. for heat pump installers, the wider industry would be construction)[8]. Average course costs were then collated by entrant type and role from the research on courses offered in the region. In combination, these data points enabled the analysis team to estimate the potential for economic value added in the region from training. Costs were then collated by roadmap area, with the assumptions described in the technical annex, and both costs and values were aggregated across the region according to the required skills analysis completed previously to create a complete cost benefit analysis.

[6] ONS (2023) UK input-output analytical tables, product by product
[7] ONS (2024) LCREE
[8] ONS (2023) Non-financial business economy, UK and regional (Annual Business Survey): 2021 results

THE RETROFIT REQUIREMENT AND SUPPLY CHAIN IN THE SOUTH WEST

The SWNZH's Retrofit Skills Report[9] provided a detailed overview of existing policies that impact the retrofit market and the associated skills requirement. This report provides a summary of this literature and introduces any new policies or research that has been published since the Retrofit Skills Report was released (May 2023).

As in the case of the policy context, the SWNZH's Retrofit Skills Report[10] provides a detailed insight into the current retrofit supply chain and challenge for the region. The South West region requires installation of over 2.5 million air source heat pumps and 485,000 ground source heat pumps to reach net zero. In terms of insulation, the South West requires 1.4 million installations of solid and cavity wall insulation to meet net zero. At current deployment rates for each measure, it would take the following amount of time to meet net zero:

- 600 years to deploy enough solid wall insulation measures,
- 132 years to deploy sufficient loft insulation and 166 years to deploy sufficient cavity wall insulation,
- 200 years to install sufficient air source heat pumps, and 278 years to install sufficient ground source heat pumps.

The current provision of relevant labour was estimated using a variety of third-party data sources and desk-based research. The current retrofit skills supply chain varies by technology significantly, as shown in Figure 3:

- As a well-established trade, there is significant provision of double-glazing installers with 1,791 FTE of installers estimated to be in the SWNZH region.
- There is an ever-increasing provision of heat pump installers as consumers make the switch to low carbon heating and heating engineers upskill to meet the growing demand for heat pumps. There has been a 9% increase in MCS heat pump contractors between 2022 and 2024 within the South West[11].
- As one of the most common fabric efficiency installations demanded by consumers, the provision of loft insulation installers (1,181) is estimated to be higher than the current provision of cavity wall insulation (462) and solid wall insulation (498) installers[12].
- The provision of retrofit services / project management is relatively low, totalling 342 between retrofit assessors (291) and retrofit coordinators (51).

[9] South West Net Zero Hub,' Retrofit Skills Report' (2023) https://www.swnetzerohub.org.uk/wp-content/uploads/2023/05/SWNZH-retrofit-skills-report-FINAL-2.pdf
[10] South West Net Zero Hub, 'Retrofit Skills Report' (2023) https://www.swnetzerohub.org.uk/wp-content/uploads/2023/05/SWNZH-retrofit-skills-report-FINAL-2.pdf
[11] MCS (2023) 'Data Dashboard' https://datadashboard.mcscertified.com/InstallationInsights
[12] Note that these estimates are in full time equivalent terms and installers may work across multiple insulation types.

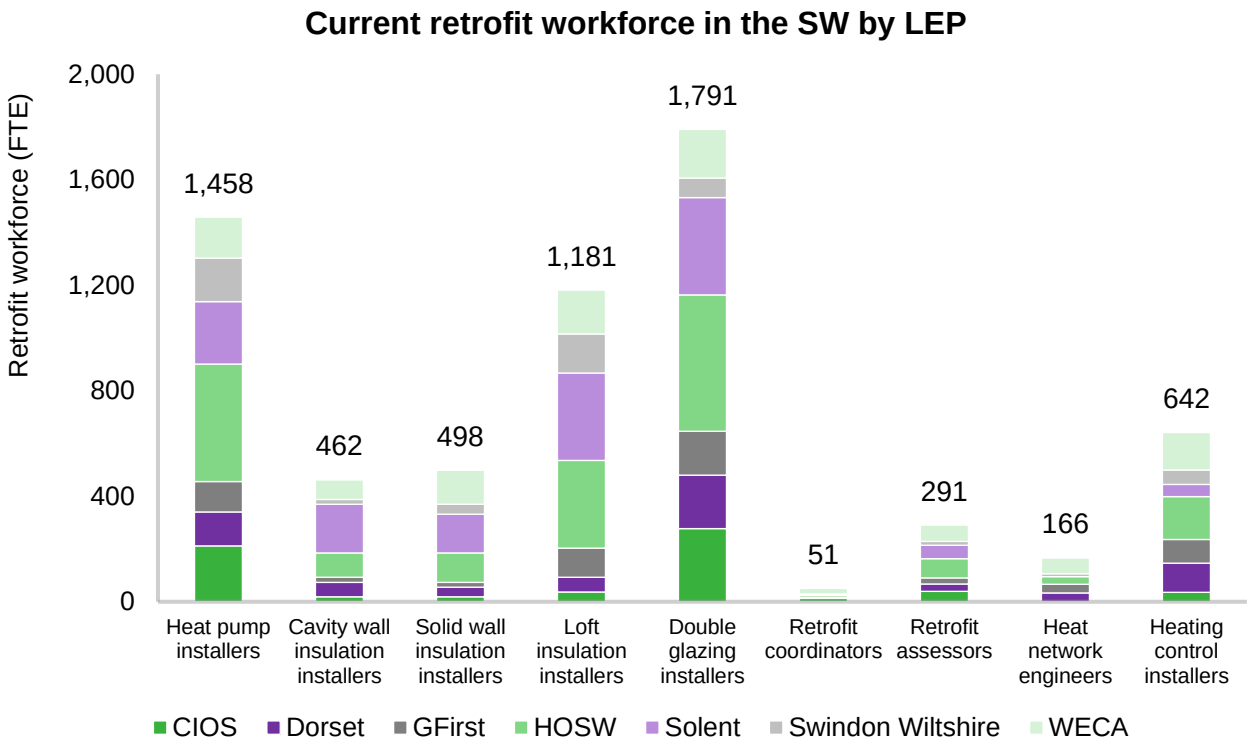

Figure 3 - Current retrofit workforce in the SW by LEP

Examining the regional split of the current workforce shows some disparities in the readiness of the retrofit supply chain between areas within the SWNZH, as displayed in Figure 4. Generally, distribution of low carbon heating installers, defined as installers of heat pumps or heat networks, is concentrated further west with Torridge and West Devon estimated to have the greatest provision of installers per 100,000 households. Despite both the local authorities with the greatest provision of low carbon heating skills being in the Heart of the South West (HotSW), the LEP with the greatest provision overall is Cornwall and Isles of Scilly (CIOS) with an estimated 74 FTE in low carbon heating installers per 100,000 households.

This trend could be explained by the higher demand for installs in these areas. This higher demand in turn could be attributed to the high density of rural, off grid homes in these regions. Uptake of heat pumps tends to be highest outside of urban areas. For example, 56% of all air source heat pumps installed under the Boiler Upgrade Scheme have been in rural areas[13]. Conversely, WECA and Solent, both relatively urban areas, have the lowest current provision with 42 FTE low carbon heating installers per 100,000 households in both LEP regions.

[13] DESNZ (2024) Boiler Upgrade Scheme statistics: February 2024

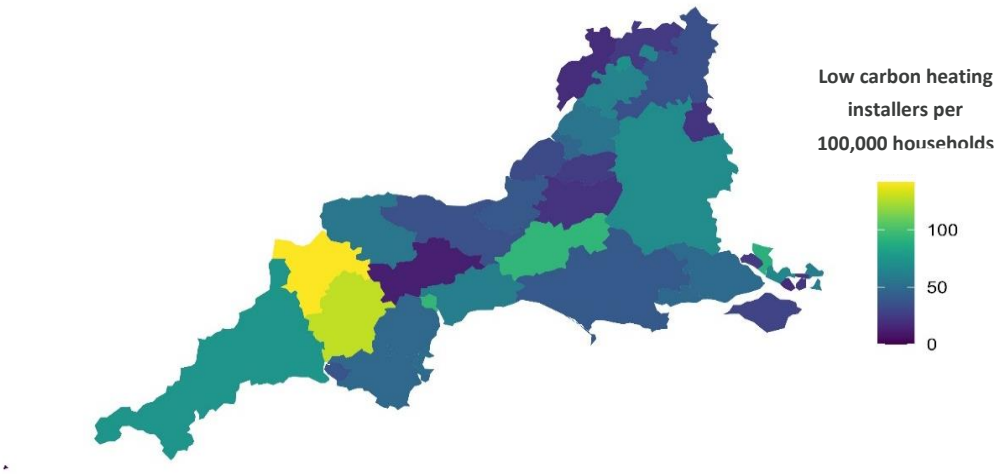

Figure 4 - Low carbon heating installers per 100,000 households by local authority

The provision of insulation installers in the region is shown in Figure 5. In contrast to low carbon heating installers, the greatest provision of fabric efficiency (double glazing, loft insulation, cavity wall insulation, solid wall insulation) installers is in the Solent region with 185 FTE installers per 100,000 households and the LEP region also having the highest density of solid wall, loft, and cavity wall insulation installers. Swindon LEP has the lowest current provision of labour with 85 FTE installers per 100,000 households. Installers of low carbon heating tend to be focused in more rural areas, while many of the hotspots for insulation installers are in more urban local authority areas such as Fareham (547 FTE per 100,000 households), Gloucester (224 FTE), Gosport (291 FTE) and Plymouth (214 FTE). This high provision of insulation skills in urban areas could be the result of the type of businesses that tend to offer insulation installation/management services. These businesses tend to offer more general construction services and so locating in more highly built-up areas means access to a larger potential market.

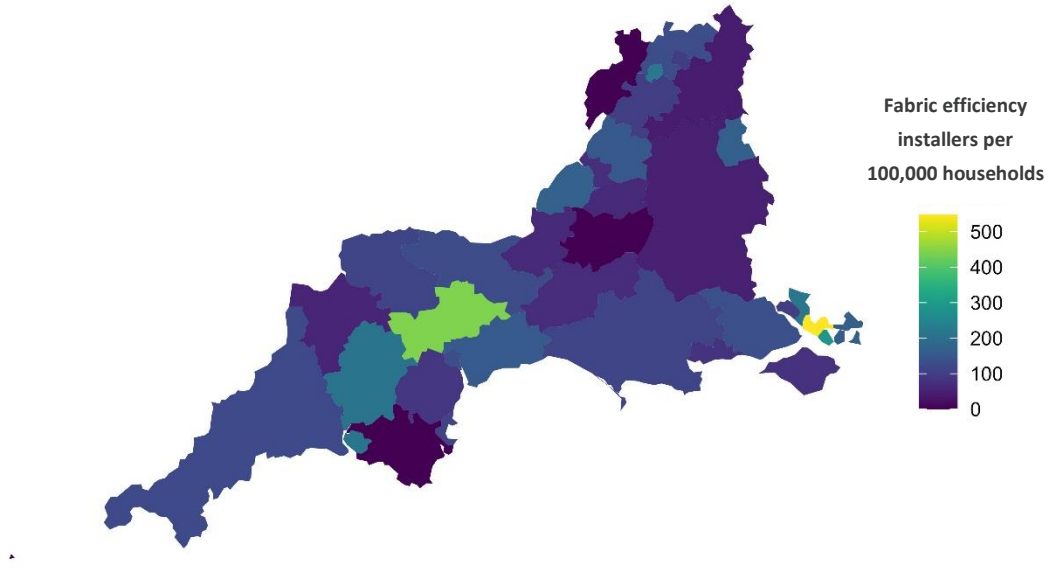

Figure 5 - Insulation installers per 100,000 households by local authority

Retrofit project managers (retrofit assessors and retrofit coordinators) are concentrated in both the most south-westerly and northern parts of the SWNZH region, as shown by Figure 6. CIOS is the LEP with the greatest current provision of retrofit project managers with 18 FTE per 100,000 households. Swindon Wiltshire LEP has the lowest

current provision with just 5 FTE in retrofit project managers per 100,000 households. Hotspot areas exist in South Gloucestershire (26 FTE per 100,000 households), Tewkesbury (29 FTE), West Devon (30 FTE) and Torridge (24 FTE).

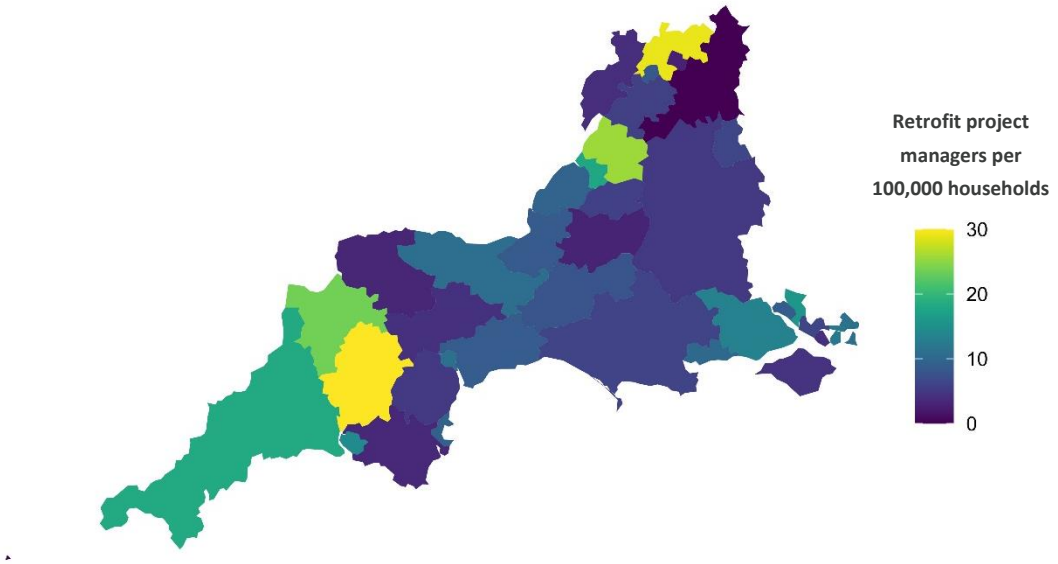

Figure 6 - Retrofit project managers per 100,000 households by local authority

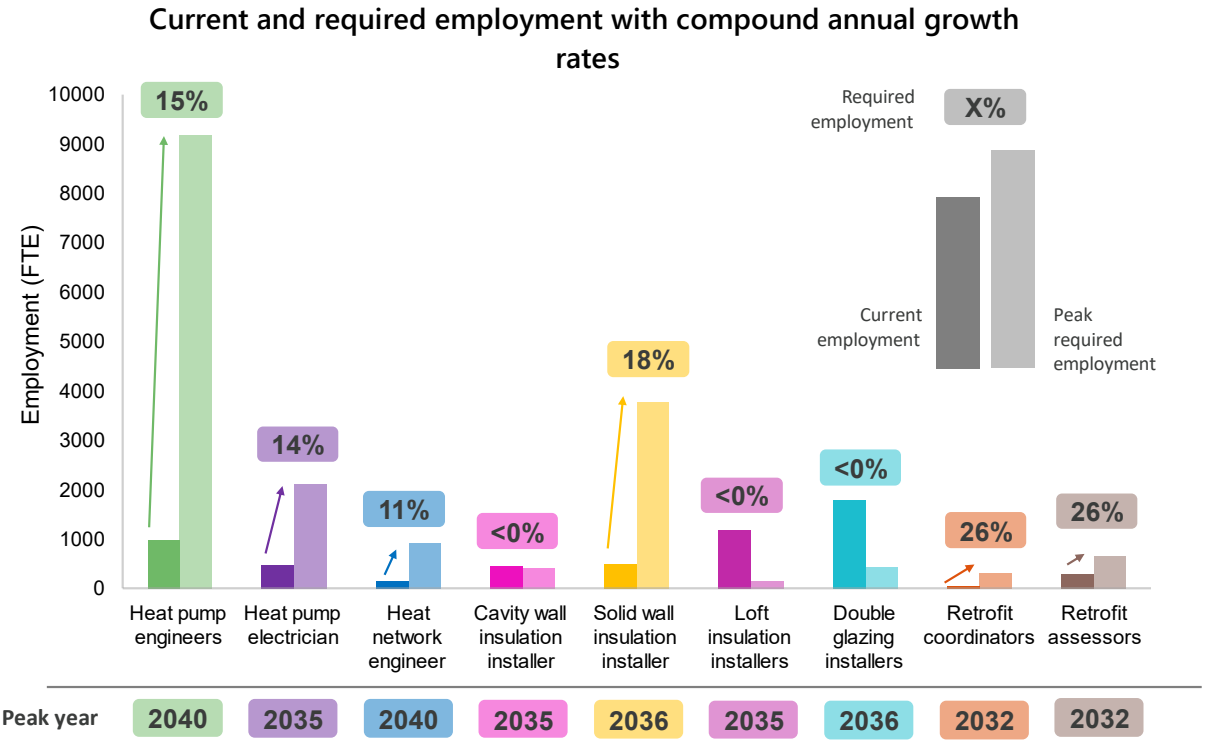

Figure 7 - Current and required retrofit employment with compound annual growth rates

Perhaps unsurprisingly considering the above, our analysis found that there are significant shortages in key roles, specifically heat pump engineers and electricians, solid wall insulation installers and retrofit coordinators, which all

require annual compound growth rates of over 10% to meet a net zero housing stock by 2050. To decarbonise its heating and building sectors by 2050, the South West will require the following number of job roles:[14]

- 3,263 additional solid wall insulation installers by 2036 – 272 FTE per year.
- 360 additional retrofit assessors and 275 additional retrofit coordinators are required by 2032 – 45 and 34 FTE required per year.
- 9,815 additional heat pump installers by 2040 – an additional 660 FTE per year.
- A total of 16,679 FTE workers required across retrofit project managers, insulation installers and low carbon heating / controls installers by 2038.

The profile of retrofit roles that are required to decarbonise the building stock in the South West by 2050 is shown in Figure 8. The largest skills requirement is within low carbon heating, largely for installers of heat pumps. The high share of roles required within low carbon heating is due to the requirement for most homes to decarbonise their heating (whereas only around a half of properties are estimated to require additional insulation); the requirement for maintenance of systems once they are installed; ongoing requirement for skills to refit heating systems as they reach end of life and the high labour intensity involved with moving properties to low temperature heating. A significant number of insulation installers are forecasted to be required, though this requirement fades off as the bulk of installations are completed, with insulation measures not requiring regular maintenance and replacement.

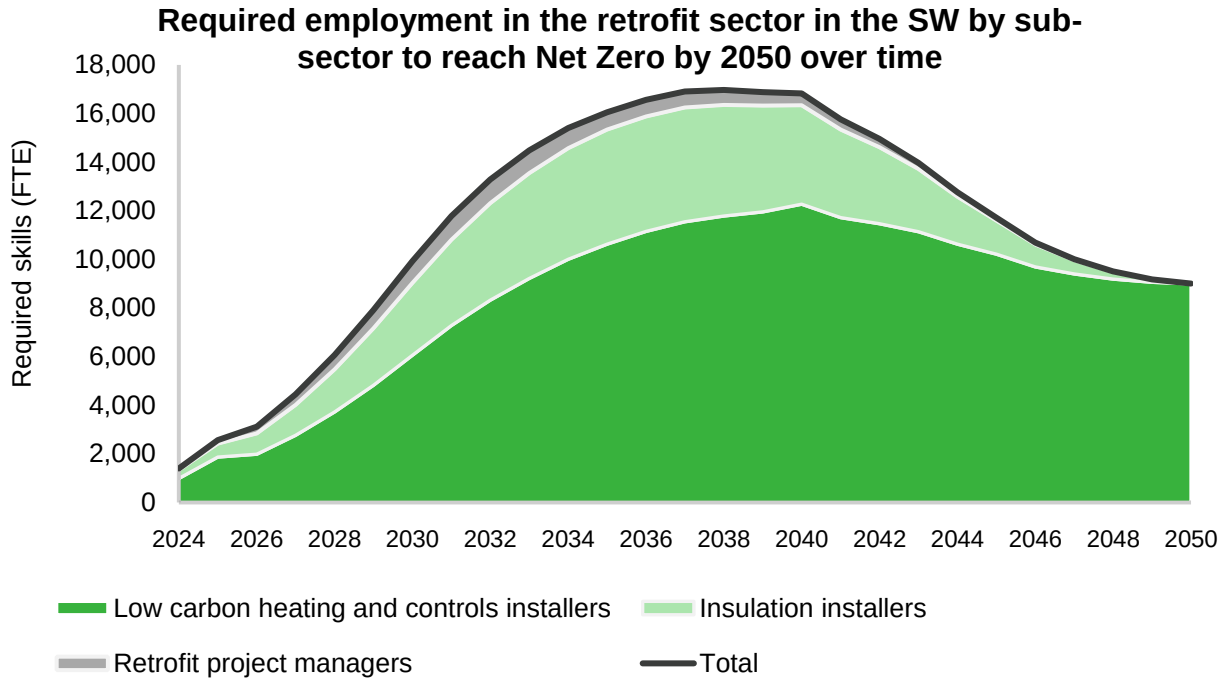

Figure 8 - Required employment in retrofit sector in the SW by sub-sector to reach Net Zero by 2050 over time[15]

[14] All roles in figure 7 and this analysis more generally are full time equivalent. This means that the requirement for training will likely be higher in total individuals trained than is set out here. We would expect that many individuals will only carry out retrofit part time, or in some cases will have multiple trades and skills.

[15] Retrofit project managers: Retrofit assessors, retrofit coordinators. Insulation installers: Double glazing installers, solid wall insulation installers, cavity wall insulation installers, loft insulation installers. Low carbon heating and controls installers: heat pump electricians, heat pump engineers, groundworkers, heat network engineers, heating control installers.

The largest skills requirements exist in the HoSW and WECA LEP regions, largely due to the higher overall number of properties but also due to the large share of solid walled properties requiring highly labour-intensive solid wall insulation. GFirst, CIOS and Swindon Wiltshire LEP have the lowest requirement overall, with the LEP regions having 909,000 domestic properties between them, just 70,000 more than in the HoSW LEP region.

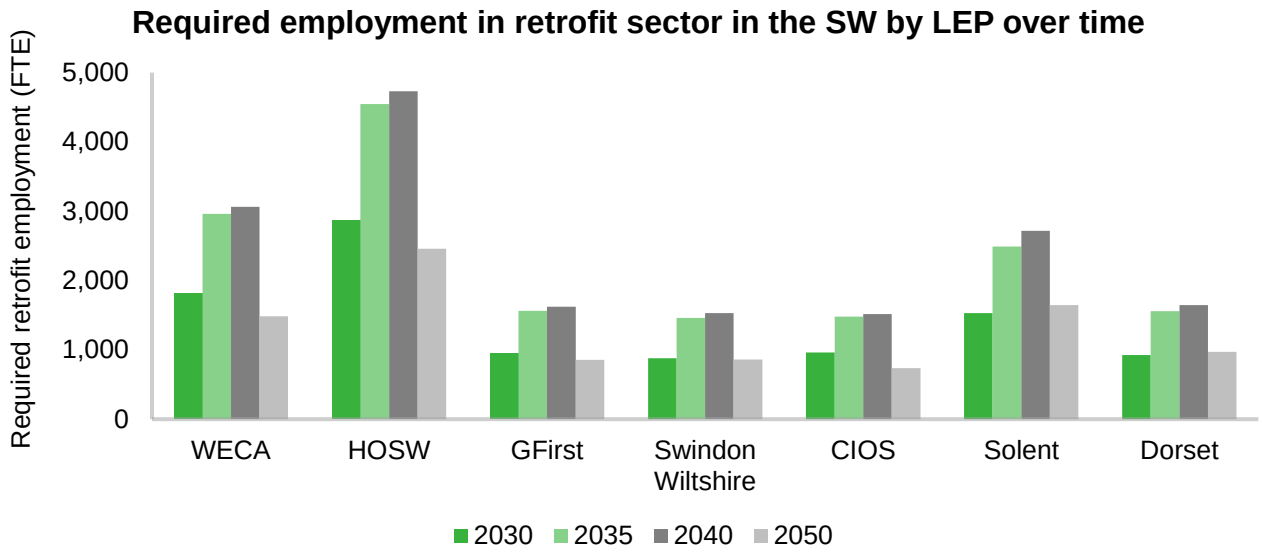

Figure 9 - Required employment in retrofit sector in the SW by LEP over time

RATE OF TRAINING IN THE SOUTH WEST

Analysis of Ofqual and MCS data sources[16] revealed insight into patterns of course completions measured by certificates issued. Overall training within the sub-sectors analysed has increased, especially between 2020 and 2023 but training rates in the region are insufficient to meet net zero by 2050. However, these trends vary by sub-sector:

- **Heat pump installers** *was defined as any level of course that involved the installation and/or maintenance of any hydronic heat pump technology (e.g. ASHP or GSHP)*. Heat pump training in the region initially peaked at 414 trainees per year in 2019, however, has since risen to an estimated 654 trainees per year in 2023[17].
    - This is 170 completions short of the 824 required completions of heat pump installer course per year by 2050.
    - Increased take-up of training in recent years is likely to be largely a result of greater demand for heat pump installs as well as Government support via the Heat Training Grant and other local support schemes.
- **Insulation installation** *was defined as any level of course that involved the installation and/or maintenance of any thermal/fabric efficiency measure.* Insulation installation training initially peaked in 2013 with 340 trainees in the year alone within the SWNZH. However, training rates have since been far lower until a resurgence in the last couple of years, with an estimated 356 insulation installers trained in 2023.
    - This is 62 completions short of the 418 required completions of insulation installer courses per year by 2050.

[16] Ofqual (2024) Vocational and other qualifications over time; MCS (2024) The MCS Data Dashboard; ONS (2022) Experimental low carbon and renewable energy economy

[17] Note that as no data was available for the fourth quarter of 2023, all results for the first three months of 2023 were multiplied by 4/3.

- Take-up of training has generally followed the various expansions and retractions within publicly funded energy efficiency schemes, especially the Energy Company Obligation.

- **Retrofit project management** *was defined as any occupational course which trained individuals to be retrofit coordinators or assessors.* The popularity of retrofit management courses has greatly increased in the last 6 years going from 45 trainees per year in 2020 to 244 in 2023.[18]
  - This is 134 more completions per year than required to train enough retrofit project managers to reach net zero by 2050.
- **General retrofit** *was defined as any vocational retrofit course which did not fit into any of the other categories*[19]*.* Similarly, to retrofit project management, training in the sub-sector has only emerged recently with 65 trainees in 2021 and 392 in 2023.

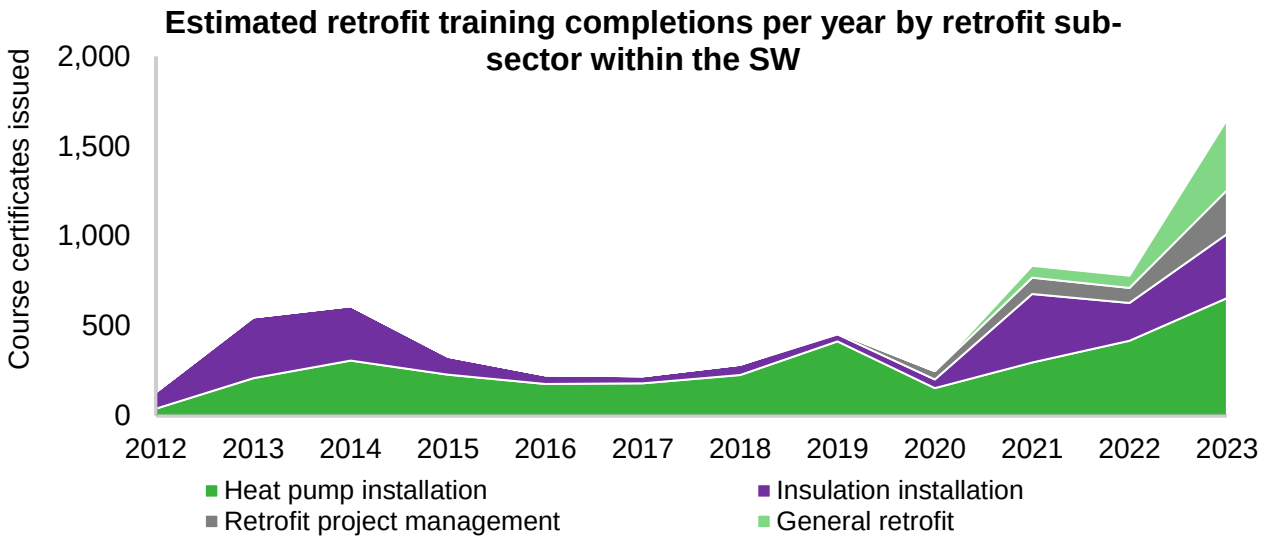

Figure 10- Estimated retrofit training completions per year by retrofit sub-sector within the SW

Training within the retrofit sector has commonly been dominated by level 2 qualifications, however, recent years have seen an increased take-up of level 3 and to a lesser extent, level 5 qualifications, as shown in Figure 11. Level 2 qualifications were mostly made up of insulation installation courses between 2012 and 2015, however, since 2015, heat pump installation courses have made up more than half of level 2 qualifications. The recent rise in level 4 and level 5 qualifications is a result of the increased demand for retrofit services, project management and other general retrofit courses. Level 3 qualifications are the most common as of 2023, this is largely due to increased take up of heat pump installation courses, of which 76% were level 3 in 2023, however, an increasing share of insulation installation courses are also level 3, with 0% of insulation installation courses at a level 3 in 2015 and 55% in 2023.

[18] PAS 2035 roles were only introduced in 2019, so retrofit professional roles are likely to show rapid growth.
[19] For example, courses include ETCAL Level 2 Award in Understanding Domestic Retrofit and NOCN Cskills Awards Level 2 Award in Understanding Domestic Retrofit.

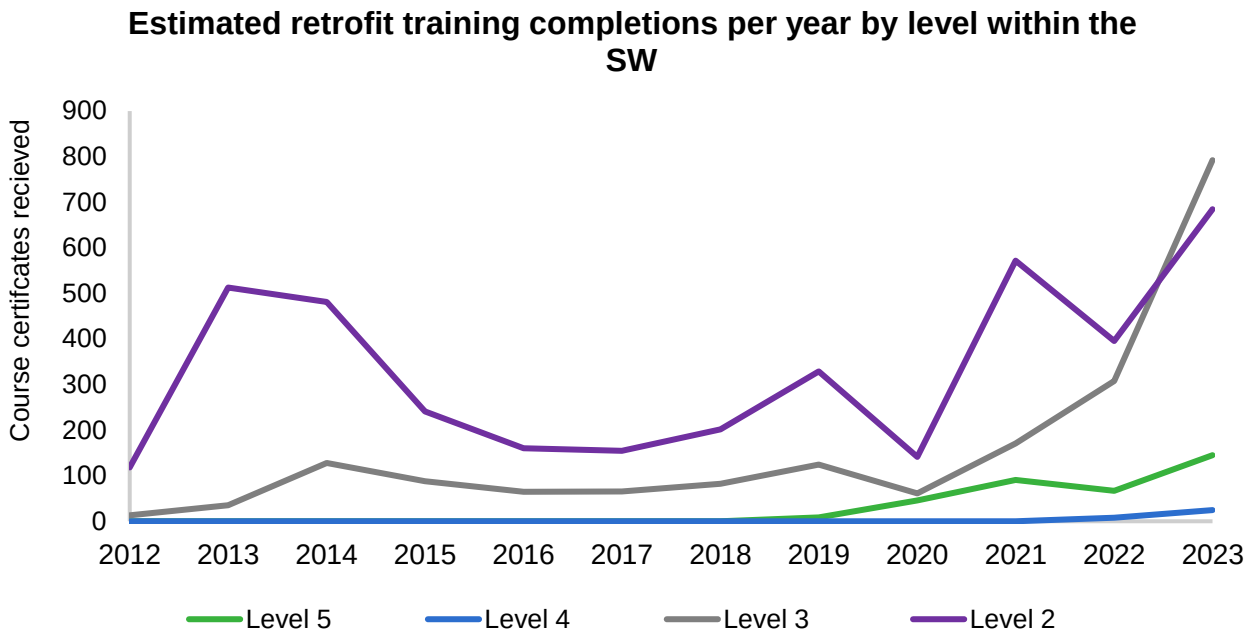

Figure 11 – Estimated retrofit training completions per year, by level within the SW

Courses were defined by role and level, and training data was compared to data on the current course offerings by centre in the South West to estimate the geographical split of training. The results are displayed in Figure 12 and a more detailed breakdown is given in the technical annex. The key findings are:

- The LEP region with the most training is the HotSW with an average of 217 course completions per year across the selected roles since 2012, accounting for 42% of all training in the region. Two thirds of this training is from insulation installers with a further 16% from heat pump installers.
- The LEP region with the second most training was Solent, with 189 course completions per year on average and 88% coming from heat pump installers. Due to the higher provision of level 2 qualifications, training rates have not seen the same growth in the last three years as seen in other LEP regions.
- Elsewhere, online training has seen a sharp increase in completions, especially since the Covid-19 pandemic, and the Swindon Wiltshire, Dorset and GFirst LEPs have all seen 10 or fewer course completions per year since 2012.

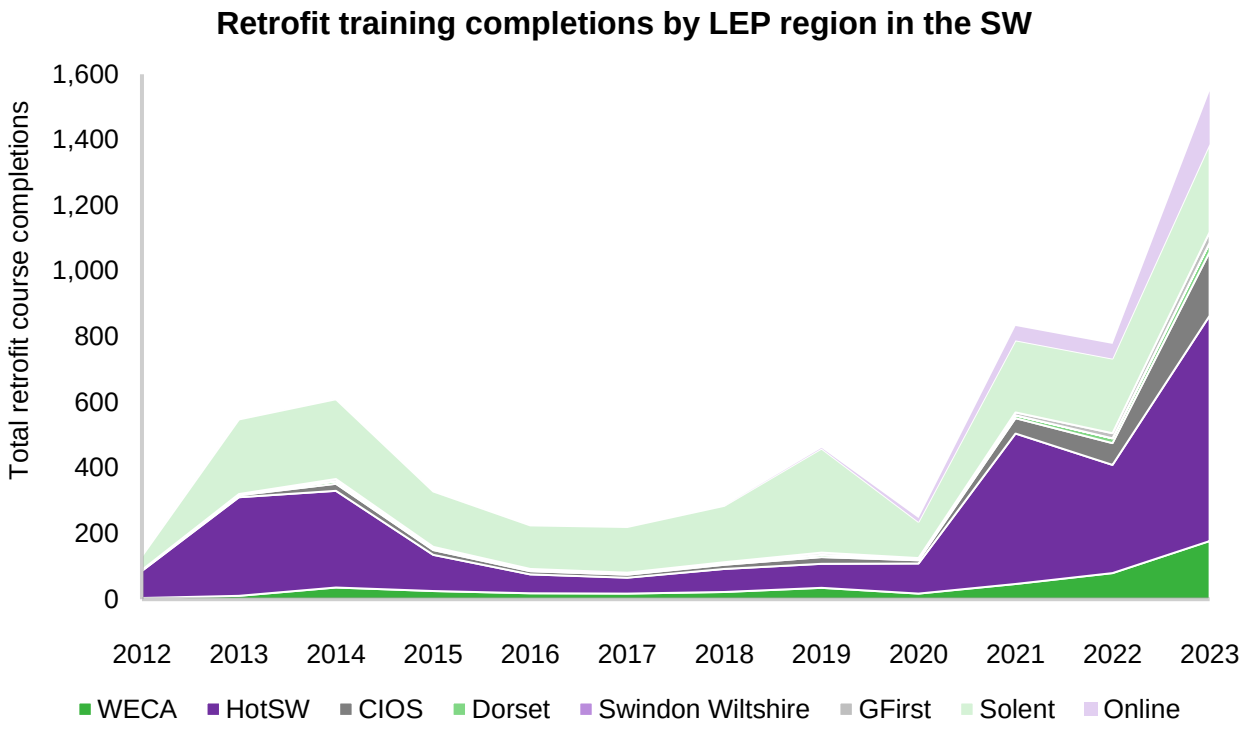

Figure 12 - Retrofit training provision by LEP region in the SW

Courses offered by centres were also summarised according to the type of industry entrant:

- **Apprentices –** Courses that were described as an apprenticeship, commonly requiring more than 365 days in course duration. Plumbing apprenticeships that may have included a low carbon heating pathway were not included due to a lack of available data. Of the retrofit-related apprentices completed within the South West, almost all are estimated to be level three.
- **Other new entrants –** Defined as those that completed retrofit courses with more than 20 learning days. Commonly those coming from non-heating construction courses to low carbon heating, and those learning insulation installation or general domestic retrofit skills with a non-construction background.
- **Upskills –** Courses with less than 20 learning days. Commonly current fossil fuel heating installers upskilling to install low carbon heating or other people with construction skills upskilling to install insulation or provide other retrofit services.

Figure 13 shows that most of the training since 2012 has come from upskilling (59%) and almost all (90%) of all training for roles in insulation installation, retrofit project management, and general domestic retrofit has come from upskilling. 95% of all apprentices went on to the role of heat pump installers, although, as this did not include general plumbing and heating apprenticeships with potential low carbon heating strands, this is notably a lower threshold estimate. Despite this, the share of training that is from apprenticeships is on the rise with just 1.1% of all course completions from apprenticeships in 2012 and 3.9% in 2023. 38% of all training came from other new entrants, with this share peaking in 2019 at 69% largely due to the rise in level 2 heat pump qualifications at the time[20].

[20] Estimates of training split are based on analysis of training data (Ofqual (2024) Vocational qualifications dataset) in combination with data on current skills provision (MCS ONS) and manual research of courses offered in the region at each centre. Courses were defined by entrant type according to the course duration, level and type and total values for each entrant type were then estimated by matching the levels and types of course completed in the region to the share

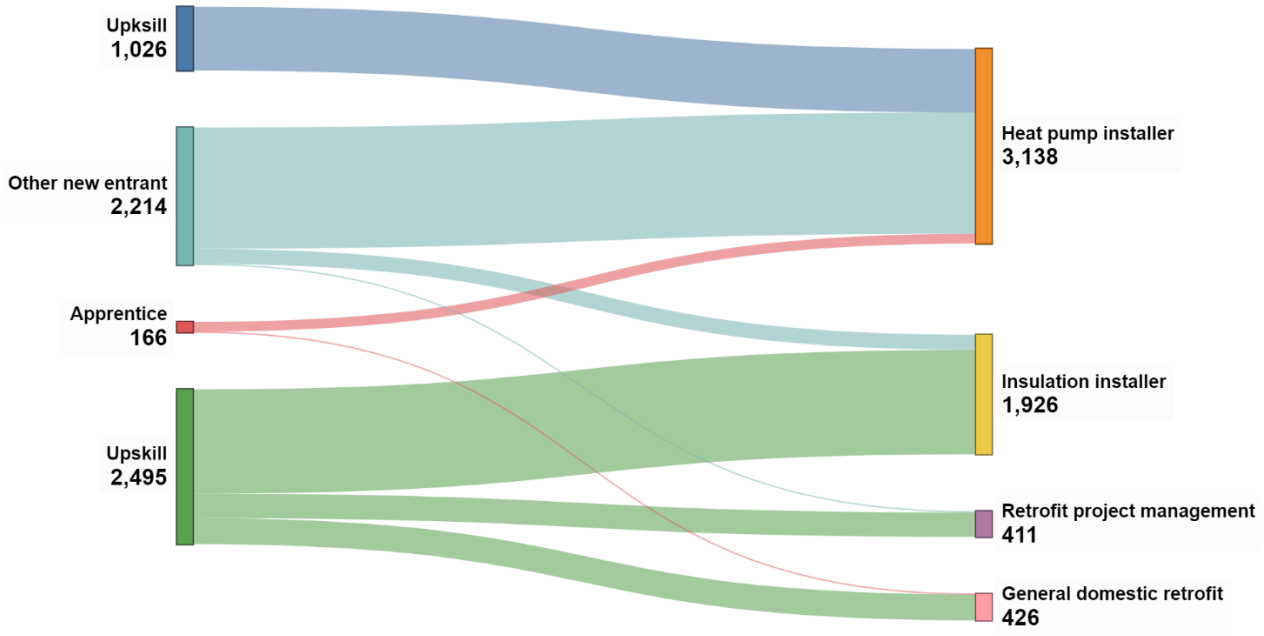

Figure 13 - Course completions by entrant type

RETROFIT TRAINING LANDSCAPE IN THE SOUTH WEST

Consistent with the introduction to the supply chain and training rates, our research on the retrofit training landscape in the South West shows that the region's retrofit training landscape is not currently constituted to deliver the type of retrofit training required at the scale needed to build the workforce required to deliver a net zero housing stock in the South West by 2050.

Our research shows that there are 45 FE colleges and independent training providers in the South West that either deliver or can deliver construction and retrofit training. Of these, 34 are FE colleges and 11 are independent training providers (ITPs). This gives a regional average of 155,000 people per college or training provider per region.[21] FE colleges in the South West have an average enrolment of around 12,000 students per year, or around 10 percent of their 'population' inclusive of adult learners, and part- and full-time students. This figure primarily consists of the enrolment figures of FE colleges given that it is more challenging to find numbers for independent training providers.[22]

There has been significant investment in training facilities recently in the region. Cornwall College Group are building two new facilities: one in St Austell in the east of the county and one in Camborne in the west. Truro and Penwith are building a new training centre at their Truro campus and Exeter College's specialised Retrofit Training Centre is opening in September 2024.

of entrant type, assuming all courses with the same characteristics are equally filled. See "Methodology > Quantitative research > Supply chain and training rates" for more details.

[21] This figure was reached by dividing the regional population by the number of training providers.

[22] Training providers do not have intakes of students in the same way that FE colleges do. They tend to run courses on a demand basis meaning that it is harder to estimate student cohorts on an annual basis as they are not measured yearly like in FE colleges.

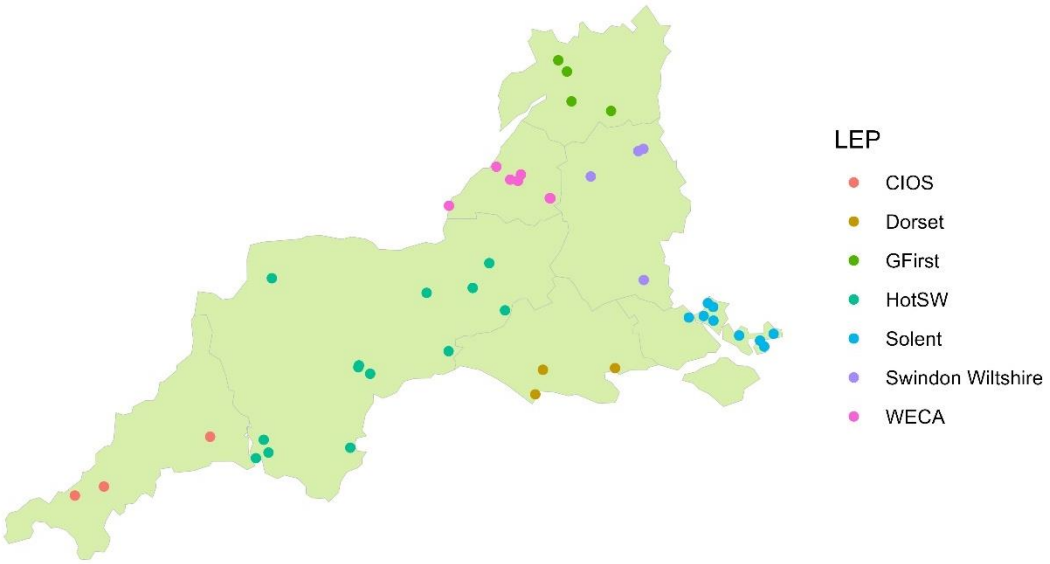

Figure 14 - Education and training providers in the South West

Analysis of the geographies and locations of the training providers in the South West shows a reasonable spread of training providers across locations in the region, but with a degree of variation. The Solent and HotSW LEPs have the largest number of training providers with 9 and 12 respectively, nearly half of all training providers across the South West region. The largest number of training providers is in the HotSW LEP with 12 training providers.

Geographic cold spots include North West Devon, Dorset (North Dorset), Wiltshire and North Cornwall. These areas have significant spots with no training providers that deliver, or are, in our view capable of delivering retrofit training. This could present a challenge to scaling up retrofit in these areas, particularly North Cornwall and North West Devon where road and transport links are poorer compared to more urbanised areas liked Bath and Bristol, and Portsmouth and Southampton for example.

REGIONAL OVERVIEW

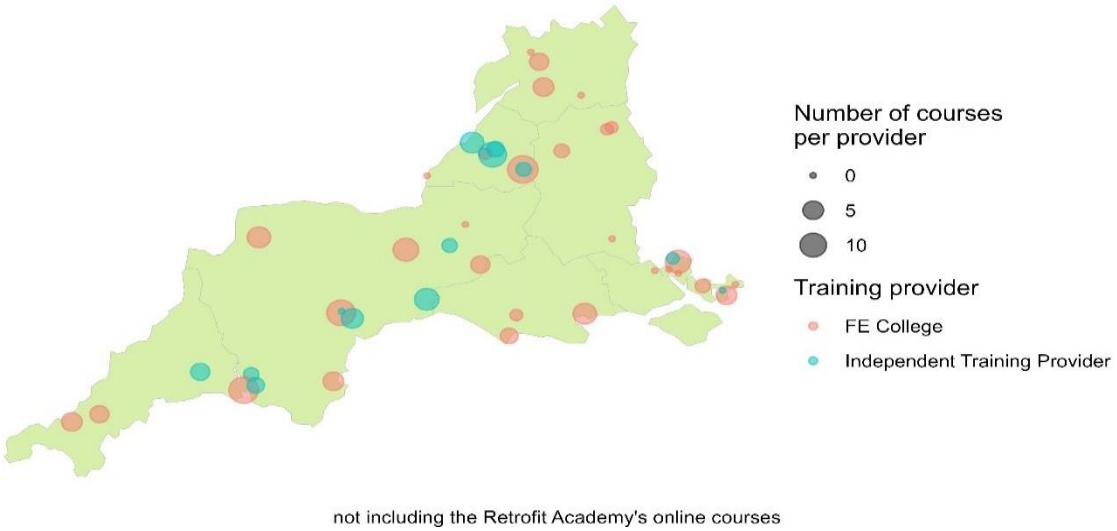

Figure 15 – Retrofit and construction courses per provider in the South West

At the provider level, there is a large range of retrofit courses offered in the South West of between 0 and 12 per provider. The average training provider has 3.5 retrofit and construction courses and the median number of courses is 2. Bath College and City College Plymouth offer the highest number of courses in the region, with 14 and 13 respectively. South West Assessment and Training is the ITP with the highest number of courses with 11. This suggests that most providers offer a lower number of courses of around 0-5, with a minority offering significantly more.

Table 1 - Training providers offering the most courses in the South West

TRAINING PROVIDER	NUMBER OF COURSES
Bath College	14
City College Plymouth	13
Exeter College	12
South West Assessment and Training	11
Bridgewater & Taunton College	9

Analysis of courses by geography shows that the HotSW and WECA regions are the areas with the highest number of courses with 50 and 35 respectively. This constitutes over half of the region's total number of courses. Provision of courses does not correlate with the density of the colleges, given that the WECA area has just 6 providers delivering 35 courses. By contrast, HotSW LEP has double the number of providers delivering 50 courses. Regional cold spots include Wiltshire, Dorset, and Gloucestershire. Wiltshire is the clear outlier in this respect, with just four retrofit courses, while Dorset and GFirst have 9 each.

Table 2 - Training providers offering the most courses in the South West by region

LEP	NUMBER OF COURSES
HotSW	71
Solent	17
Online	15
CIOS	13
Dorset	11
GFirst	9
Swindon Wiltshire	4
Total	**178**

Assessed at a provider type level, FE colleges offer 62% of all retrofit courses. This is an underperformance compared to the split of training providers given that FE colleges represent 75% of all providers in the region. Independent training providers meanwhile represent just a quarter of all providers but deliver nearly 40% of all courses. This would again

suggest that Independent Training providers are more focussed on retrofit specific courses than FE colleges, but FE colleges offer greater throughput of students and general construction training.

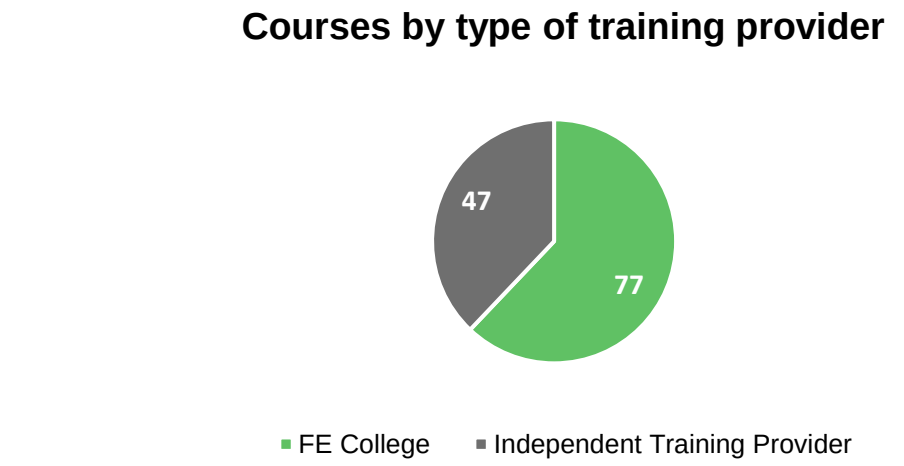

Figure 16 – Courses offered in the South West by type of training provider

Assessed in terms of the number of courses leading to a retrofit role, those with the most courses are plumbing with 37% and electrician with 20%. Taken together they represent nearly 60% of all the retrofit-related courses in the South West.[23] A concern is the relatively smaller number of heat pump installer and insulation installer specific courses with just 18 (14%) and 6 (5%) of the total number of courses. That there are more plumbing and electrician courses should not be a surprise. However, the volume of provision is completely insufficient to the challenge. The 6 heat pump courses would need to train 137 trainees each per year to meet net zero.

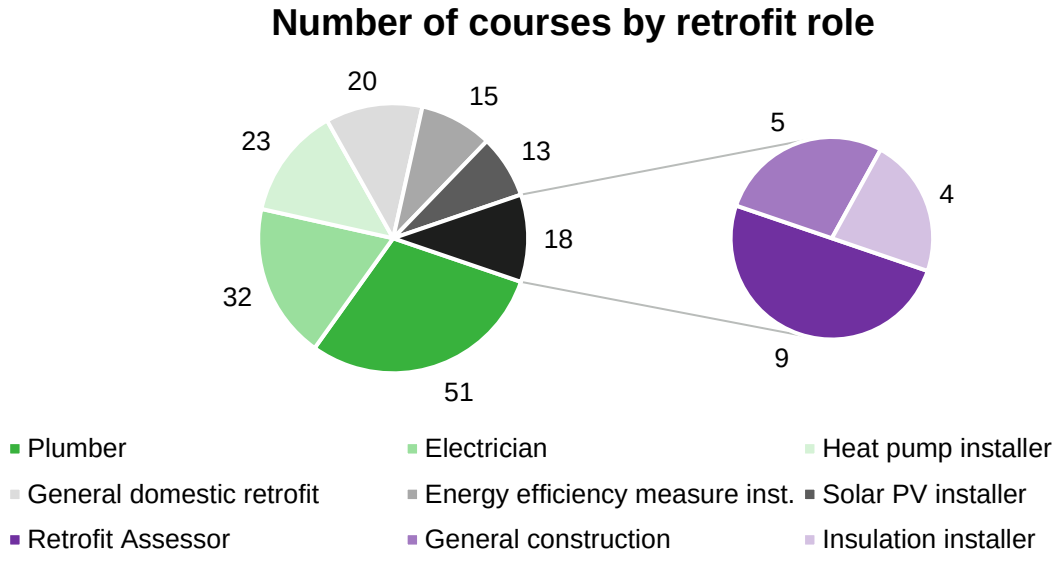

Figure 17 - Number of courses by retrofit role offered in the South West

[23] The total number of electrician and plumbing courses in the South West is likely to be higher. We have excluded general plumbing and electrician courses that have no retrofit content. While these may be prerequisites to retrofit roles, including them would have diluted the focus of this study on retrofit skills and training courses.

CHALLENGES FOR THE RETROFIT SUPPLY CHAIN AND SKILLS SECTOR IN THE SOUTH WEST

This section will set out the results of stakeholder research undertaken by Gemserv's research partner, QA research.[24] As in previous reports, we found a structural relationship between demand, development of the supply chain and the skills system. Challenges around clear policy and funding stymies demand, which limits investment in the workforce, which in turn limits investment in the supply chain. This is set out in Figure 18 below.

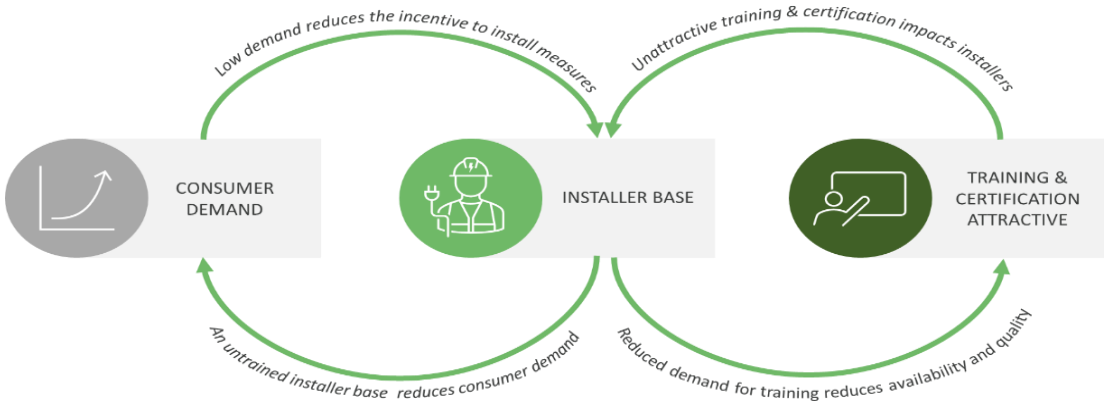

Figure 18 - Demand and supply cycle

These challenges must be addressed to break the cycle of stunted growth in the retrofit supply chain in the South West to develop a vibrant, large, well trained retrofit workforce with the right qualifications.

POLICY UNCERTAINTY

Within the supply chain, there is uncertainty about the immediate timescales for retrofit, which stems from uncertainty around government policy. Changes in policy and targets at the top have made some contractors unwilling to invest significantly in retrofit training of their staff. Long term certainty is required to get businesses and FE colleges to respond with confidence, and invest in retrofit as a long-term investment, or at least a regulatory requirement.

> *"Unless there's some really devout targets, the industry is not going to get on board and retrofit, because why would they spend money and time doing it if they feel the goalposts are going to keep changing"* **– Local government representative**

INADEQUATE INFRASTRUCTURE

In some regions of the South West, there are concerns that the existing infrastructure is insufficient to deal with an expansion of the supply chain. The electricity grid, especially in rural areas, is unable to support the installation of a high volume of retrofit measures in one location.

> *"The electricity grid isn't really able to keep up at the moment … we're at a point where we put even four PV Arrays in a small village in Exmoor, and the local grid can't handle the export of 12 kilowatts. And it might be six years*

[24] A full version of their report, including their methodology is available as an Annex to this report. This report includes an abridged summary of challenges identified in their research.

before we get there. With the infrastructure and the skills issues, all of our plans are worth nothing really" – **Installer**

"It's the same in Cornwall in rural areas and the National Grid can't really give you any timeframe of when they're going to upgrade the network … you can't use certain measures, because there's not enough capacity in the grid to take them" – **Building consultant**

On this evidence, it seems likely in the South West that as the uptake of retrofit increases, the capacity of the electricity grid could become a stumbling block. This could be compounded by rurality of many of the areas in the South West, with smaller roads and long driving times between jobs. Most journeys in the South West are on minor or a-roads. [25] Travel timer adds to the time for installation of measures which could be an acute problem as retrofit ramps up and the distance between jobs is larger.

LACK OF DEMAND FOR RETROFIT MEASURES

Stakeholders identified a shortfall in demand for retrofit, especially amongst the able to pay sector. Recognising that all homes in the South West require low carbon measures to help the region reach net zero, there were concerns that those who would need to pay for their homes to be retrofitted were reluctant to do so. This is supported by national research, for example from the Citizens Advice Bureau that show significant reluctance to install retrofit measures in the able to pay sector amid concerns around financial costs and benefits of retrofit. For the able to pay market, retrofitting is expensive, and many homeowners are unwilling to take a risk and pay for relatively unknown measures, such as heat pumps.

"There's not a lot of help there for private homeowners or incentive for you to go and retrofit your own home. Because it's expensive and people don't have the money to be doing that in the current climate, people don't see the importance of doing that" – **Local government representative**

SKILLS SHORTAGES IN THE CONSTRUCTION SECTOR

Lack of demand for retrofit measures is compounded by the lack of skilled staff in the construction sector more generally.

"There's a skill shortage … we're pushing the existing contractor base to its limits. And that's before we actually take off with our mass retrofit, which will be in about two years' time" – Social housing representative

"We know there are labour market shortages for construction sectors, they've asked for roles as varied as masons and bricklayers and joiners to be added to the shortage occupation list since Brexit." – **Business representative organisation**

This is supported by quantitative evidence which shows there was an estimated 140,000 vacancies in construction in 2023.[26] This is corroborated by the 2022 Employer Skills Survey which found that construction had a vacancy of 5.2%,

[25] Department for Transport (2022) Road Traffic Statistics https://roadtraffic.dft.gov.uk/regions/1
[26] PBC Today (2023) 'Skills shortage reaches 140,000 vacancies in construction trades in the UK' https://www.pbctoday.co.uk/news/hr-skills-news/skills-shortage-140000-vacancies-construction-trades-uk/129918/

one of the highest sectors, with among the largest growth in vacancies and the sector with the highest skills shortage vacancies in the UK at nearly 52%.[27]

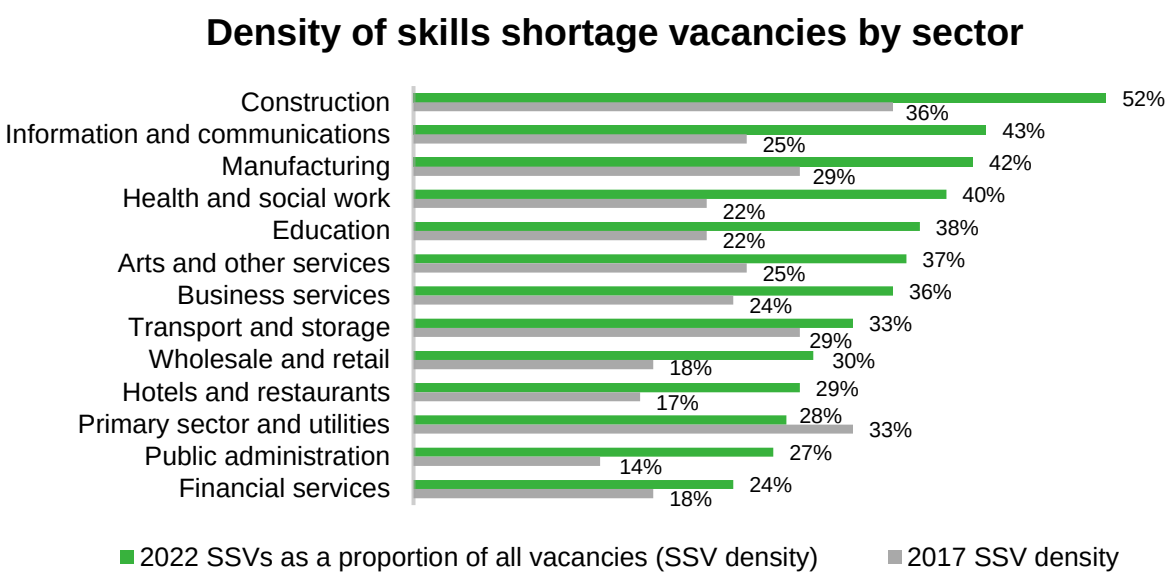

Figure 19 - Density of skill-shortage vacancies by sector[28]

THE CONSTRUCTION SECTOR IS UNABLE TO SERVICE EXISTING DEMAND

This can potentially be explained by the fact that, from an industry perspective, with the current shortage in workers with construction skills, businesses already have plenty of work without having to look to reskill their existing workforce to move into doing retrofit. Being extremely busy prevents them from having the time or the short term need to focus on developing their businesses towards providing retrofit solutions. For example, many employers have sufficient work doing more traditional construction work such as fitting gas boilers. As one Business Representative told us:

> *"If you are strapped for time, struggling to recruit, and there's 30 times as much demand for gas boilers as heat pumps, it's unlikely you're going to dedicate your time towards heat pumps. People are risk averse and change averse, so if you can't keep up with demand for gas boilers, which is your bread and butter, you're unlikely to look at heat pumps at present"* – **Business representative organisation**

> *"Many tradesmen are fully booked up months in advance so they have no incentive to move towards retrofit, we need to find a way to incentivise them"* – **Local government representative**

This leads to a classic resource allocation problem where limited numbers of staff can only be allocated to a limited number of projects. It's in the suppliers' interest to ensure that the limited supply is meeting the overwhelming demand for workers and skills, which for them at this point, doesn't appear to be retrofit.

> *"You've got a tight labour market. So generally, across all skill programmes, it is hard to get engagement on reskilling or upskilling people who are in work. There is not enough people in construction, so there is no incentive*

[27], Office for National Statistics (2022) 'Employer Skills Survey' https://explore-education-statistics.service.gov.uk/find-statistics/employer-skills-survey/2022
[28] Office for National Statistics (2022) 'Employer Skills Survey' https://explore-education-statistics.service.gov.uk/find-statistics/employer-skills-survey/2022

for them to expand into the retrofit market, and expand the expertise within their team because they've got enough work as is" – **Local government representative**

LACK OF DEMAND FOR RETROFIT TRAINING

As a result of the skills shortages and high demand in the sector set out above, there is low demand for retrofit skills and training. Some training providers have put on courses, at 16-19 and bootcamps, only to find the take-up to be much lower than anticipated. There is sufficient demand for general construction skills without needing to focus on retrofit.

"… if we had a choice between sending our guys to site to be working on a project, where we're going to be earning an income from that or sending them on a training course to train them up for apparent opportunities that are coming but we haven't been made clear how those opportunities are going to come through, we probably wouldn't send them on that course." – **Large building contractor**

At a training provider level, this remains a challenge because courses providing retrofit or green construction skills compete against other courses for space and student demand. The demand for workers with construction skills is reflected in the current focus of many FE colleges. Courses teaching general construction skills are already full in most FE colleges and taking up the capacity of existing teaching staff.

"Because we've got such numbers in domestic electrician courses and general plumbing it's [retrofit] something that is on our radar, but it's not something that we can commit to at the minute" – **FE college representative**

COMPETITION WITH RETROFIT TRAINING

This challenge is compounded by the fact that there are other regional specialisms that take up space or capacity within FE colleges that could otherwise be used on retrofit. For example,

- Southampton, Eastleigh, and Fareham Colleges work closely with local industry to provide skills training for the marine industry.
- Bridgwater & Taunton College has worked closely with EDF to develop courses to provide vocational training in the construction and maintenance skills required at Hinkley Point C.

"Particularly down in Devon, you've got great opportunities around advanced manufacturing, engineering, MoD, maritime technology, we've got Hinkley just on our border, we've potentially got floating offshore wind and the vast skill set that that's going to need, you've already got health and social care." – **Local government representative**

"We've got large projects going on, such as Hinkley Point C which has a big impact on our training needs … to furnish the training needs of the industries locally and regionally… we're offering bespoke programmes, whether it be steel fixing, or pipe welding, so very much it works in collaboration." – **FE college representative**

TRAINING PROVIDER FINANCES AND FUNDING

Risk aversion has been exacerbated in the training sector and innovation has been stifled until recently by low budgets for training (See Annex 4). Low levels of funding have made course providers at FE colleges reluctant to put on new courses providing retrofit training. With tight budgets, colleges are inevitably risk-averse. Any new courses must be an immediate financial success and provide routes into jobs. The education providers we spoke to are unlikely to take a risk on starting a new course, especially when they can run existing ones with established and known demand.

> *"FE colleges are going into the red, they're struggling with continuing to function as institutions so they will not take a risk. Unless there's a guaranteed number of learners, they will not put that course on, unless they're paid to do that and have the risk taken away."* **– FE college representative**

There was also concern that the regulatory system is not in place to incentivise training providers to take risks on innovating and offering new courses. We can see here the impact of low demand for retrofit courses and retrofit measures is impacting the provision of retrofit courses in the South West.

> *"If I'm going to offer, say, a 16-18 programme that's based on retrofit. The first thing Ofsted will say to me when they come in and inspect my premises is: Talk to me about this offering, where's the progression routes? Where are the jobs? Where are the companies that are going to employ these people? Why is it even part of your curriculum offer? And at that point, Ofsted get really upset and give us a grade three. It's got to be driven by industry requiring the people that we're going to produce."* – **FE college representative**

TRAINING STAFF RECRUITMENT, RETENTION AND UPSKILLING

FE colleges all mentioned the challenge of recruiting and then retaining suitably qualified staff. The skill set required is difficult to come by, needing someone with up to date and ideally practical knowledge in specific retrofit skills, along with a desire and ability to teach others. The salary levels those with retrofit skills can earn in industry means that FE colleges cannot compete in terms of financial renumeration.

Existing FE lecturers and course tutors may have an industry background but to feel confident and comfortable teaching students in detail about new green technologies they themselves will need to be trained up. This training has a cost to the institution, both in terms of funding the training and the lost teaching time from stepping out of the classroom to do the training. But even with the best training, construction is an industry where teaching is derived from experience. It will take time for this to be developed at scale.

> *"Building services is notoriously quite a challenging area to recruit because you have to have specific qualifications in order to assess and deliver the qualifications and not everybody's got a gold card or level three plumbing and the ACS. So it's quite a difficult area to recruit in."* – **FE college representative**

The salary levels those with retrofit skills can earn in industry means that FE colleges cannot compete in terms of financial renumeration.

> *"We worked recently with a training provider, and they said they could deliver another two or three cohorts of a particular retrofitting course but they couldn't, because they can't get the trainers in. We have the targets for net*

zero, but you need the people then to deliver it. I think there's a huge shortage of people currently. Colleges can't get people in because they can't meet the same wage the industry can. So there's a lack of providers that are able to actually deliver the training in the first place." – **Business representative organisation**

Finding suitable companies to send tutors to visit can be time-consuming for individual colleges, so help sourcing and matching up companies with tutors would be gratefully received. Allocating funding to cover supply teachers in order that FE tutors can be released for training may also be required.

POOR COORDINATION BETWEEN THE SECTOR AND INDUSTRY

Another major issue with expanding the supply chain, both now and in the future, is the lack of coordination between the green construction industry, FE colleges, local government, and other organisations involved in retrofit. Firstly, FE colleges need more contact with industry. To set up new courses which can teach retrofit skills and provide accreditation, education providers need to know what jobs are available for potential students locally when they complete training.

"The issue is people can't see the opportunity in the here and now. So, it's kind of why take up that green skills training because there's not a job, per se, in the today. But we know this is coming and this is what we are constantly grappling with." – **Local government representative**

With limited funds, FE colleges need to ensure that new courses will guarantee their students jobs. Currently, the education providers we spoke to are unclear about where the labour shortages are in the retrofit industry in their areas, so they are unlikely to take a risk on starting a new course, especially when they can run existing ones with established and known demand. Education providers need more contact with companies undertaking retrofit, so they can understand where the skills shortages are, and establish retrofit skills courses that are viable, and will provide long-term employment for their students.

"For what I'm going to offer, I don't get funding for anything until I'm actually delivering it … so I've got to be really careful. So, if I'm going to put a new course on, I need to know with 100% certainty that I'm going to fill it, otherwise it's not going to be viable." – **FE college representative**

Respondents also told us there was a lack of coordination between funding locally, leading to duplication and inefficient outcomes. There is also room to coordinate shared bids for funding, bringing together local authorities, and making the process more efficient. It was suggested that retrofit programmes could be area-wide, bringing local stakeholders, such as local authorities, housing associations, and installers, together to share knowledge and resources to speed up the retrofit process.

AWARENESS AND PERCEPTION OF RETROFIT CAREERS

Construction in general has a poor image for young people. Poor careers advice and lack of understanding of 'green construction' and retrofit career routes could present a barrier to young people entering the workforce in the South West. Research from the Prince's Trust suggest that lack of knowledge of green jobs and careers could be a barrier to uptake of retrofit jobs and training. Only 27 per cent of all young people have heard the term 'green jobs' and could explain what this means. It found that worryingly, young people are least interested in the jobs that will be most

needed to make the transition to Net Zero, such as heat pump installer or retrofit coordinator with just 7 and 9 percent of young people interested in these jobs respectively.[29] This was reflected in feedback from those we interviewed who told us about scepticism from parents and clarity over roles and career progression.

> *"I think speaking to a lot of young people and their parents at the moment, they don't see it as a long-term viable career. They see the green agenda as very fuzzy. They don't understand what the green agenda is. They don't understand what the green economy is, none of that has been communicated out; so how are you buying into it if you don't know what it is. That's where the skills gap comes in, because people aren't buying into it or being brought in."* – **Local government representative**

But there is also evidence to suggest that young people are motivated by concerns about the climate crisis. Research by YouGov found that 78% of UK adults believe it is important to play a part in achieving net zero and that a career in tackling climate change was the second most popular choice for young adults (aged 18-24)[30]. Attracting a new pipeline of installers for the retrofit market can be achieved initially by providing the relevant courses, promoting the benefits of long-term job security and positive climate impacts. This is supported by a study and survey of around 1,000 respondents[31], with two-thirds of 'Gen-Z' employees highlighting they want to work for a sustainably conscious business. Evidence suggests that sustainable businesses have better talent attraction and retention[32]. This suggests that with the right career advice, young people could be attracted to retrofit roles. This should be targeted at young people in retrofit-adjacent courses like plumbing, electrical and general construction courses. This trend was noticed by industry figures, one noting that:

> *"We're not necessarily doing enough in schools. The CITB [Construction Industry Training Board] say that 85% of young people are willing to work in sustainability. But only 23% are willing to work in construction. And actually, you need someone to tie those two figures together and get 50% of people willing to work in sustainable construction. And then suddenly, you've got a pool of young people that you can engage with at college level."* – **Social housing representative**

Productive measures in this area could involve training careers advisors on retrofit careers or developing resources for them or employers to use in schools, FE colleges and training providers.

PROCUREMENT

Procurement processes and bureaucracy remain a barrier to developing retrofit in the South West. There is still a considerable amount of paperwork required to apply for these tenders.

> *"It's quite complicated. It lends itself towards larger organisations where you have dedicated resources to it. Some of the larger projects you're expected to return 20,000 words and if you're already working 12-hour days to try and*

[29] The Prince's Trust, (2023) 'Green skills crisis is looming' https://www.princes-trust.org.uk/about-us/news-views/green-skills-crisis-is-looming
[30] Installer Online, 2022, 400,000 energy jobs needed to achieve net zero says new report. https://www.installeronline.co.uk/400000-energy-jobs-needed-achieve-net-zero-says-new-report/
[31] Play Studio, 2022, 'Corporate Climate Crisis. Available at: https://play-studio.com/insights/corporate-climate-crisis
[32] HR review, 2022, Younger employees prefer to work for sustainable companies. Available at: https://www.hrreview.co.uk/hr-news/younger-employees-prefer-to-work-for-sustainable-companies/140909#:~:text=Sustainability%20initiatives%20attract%20talent,them%20to%20become%20more%20sustainable.

keep up with your bread and butter work you're unlikely to be well placed to write 60 answers to an in-depth procurement platform." – **Business representative organisation**

The bureaucracy involved tends to favour larger suppliers with the time and capacity to respond. Respondents were concerned that requirements for certification and accreditation such as TrustMark, MCS and PAS2030/PAS2035 favoured large developers and contractors who could afford compliance.

"The thing that takes up a lot of time for any company is sorting out your PAS accreditation, submissions to Trustmark. And if you're a sole trader, you're never going to get any building done. If you're an SME, you've got basically one person dedicated to that." – **Installer**

Those responsible for trying to improve council-run local social housing thought more could be done to swap best practice and learn from each other in terms of effective retrofit approaches.

"There needs to be partnership coordination of the Registered Providers [of social housing], they don't really speak to each other, they don't share best practice. We need to share best practice in our housing stock, and I think that should start with RPs sharing what they're doing so that the smaller ones can kind of learn from what the bigger ones have been doing." - **Local government representative**

OPTIONS FOR DELIVERING A SKILLS ROADMAP IN THE SOUTH WEST

To deliver funding for retrofit skills training and address the retrofit supply chain challenges in a region the size of the South West requires decisions over how that funding is best allocated. This has several different component elements. These are:

- **Thematic**: On what should the funding be spent? Investment in funded places for courses, investment in facilities and equipment, on training for teachers?
- **Geographic**: Where should investment in training be concentrated? Where are the current gaps in skills most severe? Can training in each LEP be facilitated through centres situated in neighbouring LEP regions?
- **Value for money** What type of centres provide the best value for money and which roles provide the best value for money in terms of stimulating economic growth in the region?

Based on the barriers and recommendations set out in the previous section, we suggest the following thematic approach to the retrofit skills roadmap in the South West.

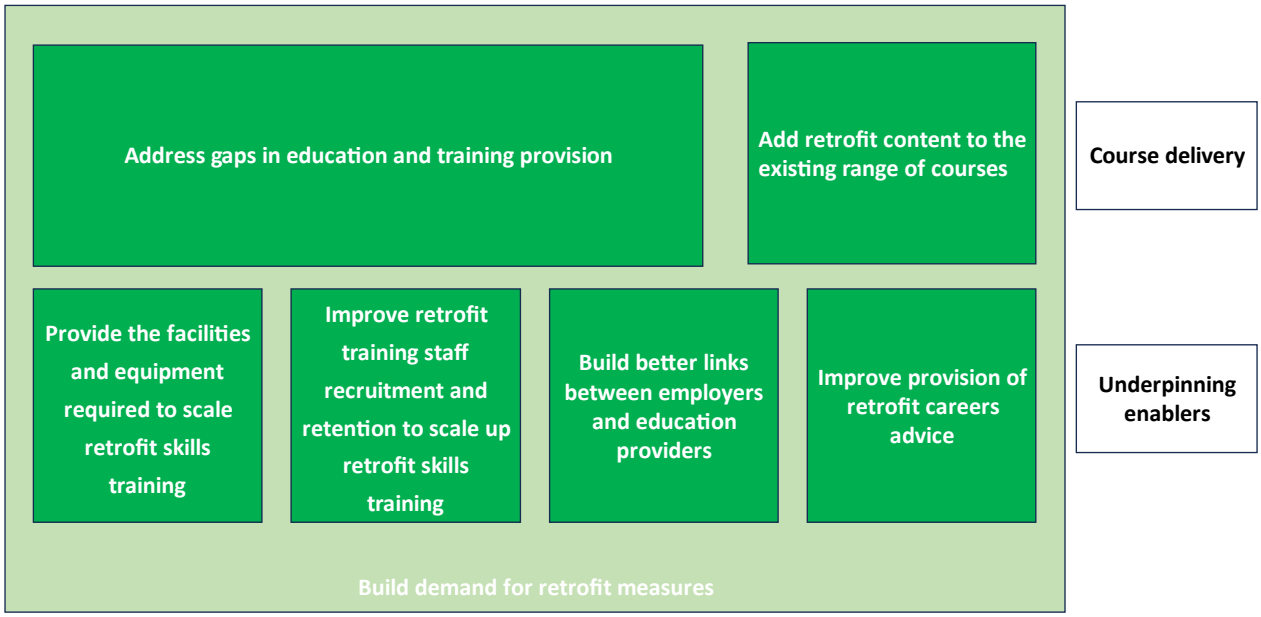

Figure 20 - Thematic approach to the retrofit skills roadmap

TARGETING OF TRAINING AND FUNDING FOR RETROFIT

Each LEP region was ranked according to the current and future skills gap with 7 indicating the LEP with the highest skills gap and 1 indicating the LEP with the lowest skills gap, as shown in Figure 21. The current skills gap was estimated based on the ratio of current demand for skills to the current provision of skills, with the current demand estimated based on installation rates [33]. The future skills gap was estimated based on the ratio required skills in 5 years' time to current skills provision. Whereas the current skills gap may indicate regions where trained individuals are most likely to operate at maximum capacity in the short term, the future skills gap indicates regions where pressures on the supply chain are likely to be greatest in the medium term without intervention.

[33] MCS (2023) The MCS Data Dashboard. DESNZ (2023) Household Energy Efficiency Statistics

The greatest current skills gap for heat pump installers is in CIOS, largely due to a relatively high demand for installs rather than a low current provision of skills, as demonstrated by CIOS having the lowest future skills gap. The greatest heat pump installers future skills gap was in the WECA LEP region with the future requirement for installs one of the highest in the South West. The highest current skills gap for insulation installers is in the Swindon Wiltshire LEP and the highest future skills gap is in the WECA region – largely a result of the future requirement for solid wall insulation installs. The current lack of provision of retrofit services (retrofit coordinators and retrofit assessors) in Swindon Wiltshire LEP means that both the current and future skills gap is greatest in the LEP region.

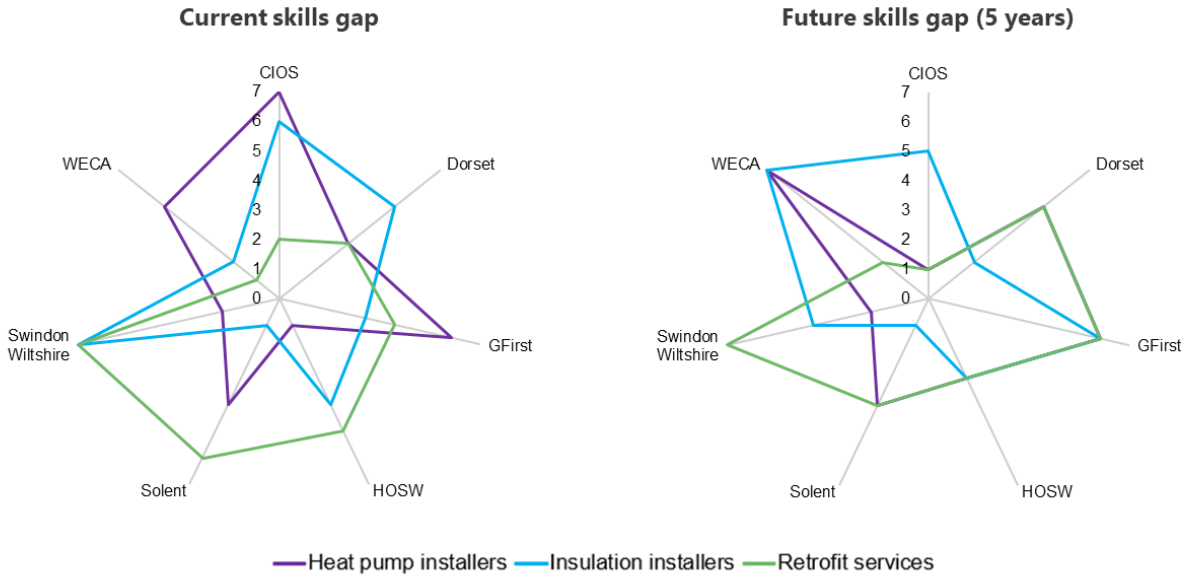

Figure 21 - Current and future skills gaps ranked by region and role.

Although the skills gaps are notably different in each LEP region, the evidence does not generally suggest that this means that training support should be in the regions with the greatest skills gaps. Figure 22 displays the current skills provision against total course completions by role and LEP region, in terms of FTE / course completions per 10,000 households. For heat pump installers, the trendline show that regions which host the most training do not necessarily have the greatest current skills provision, with no notable correlation between the two, suggesting that people are travelling to take courses outside of their home LEP region or the LEP region where they intend to work. For example, the Swindon Wiltshire and Dorset LEP regions have roughly equal current provision of skills to the WECA and Solent LEPs despite no training being available in the area.

For insulation installers, there is a slight correlation between training and skills provision, suggesting that there may be a lower willingness to travel for insulation training rather than heat pump training. Note that as a large share of training for retrofit project managers is done online, this was not plotted on the graph below.

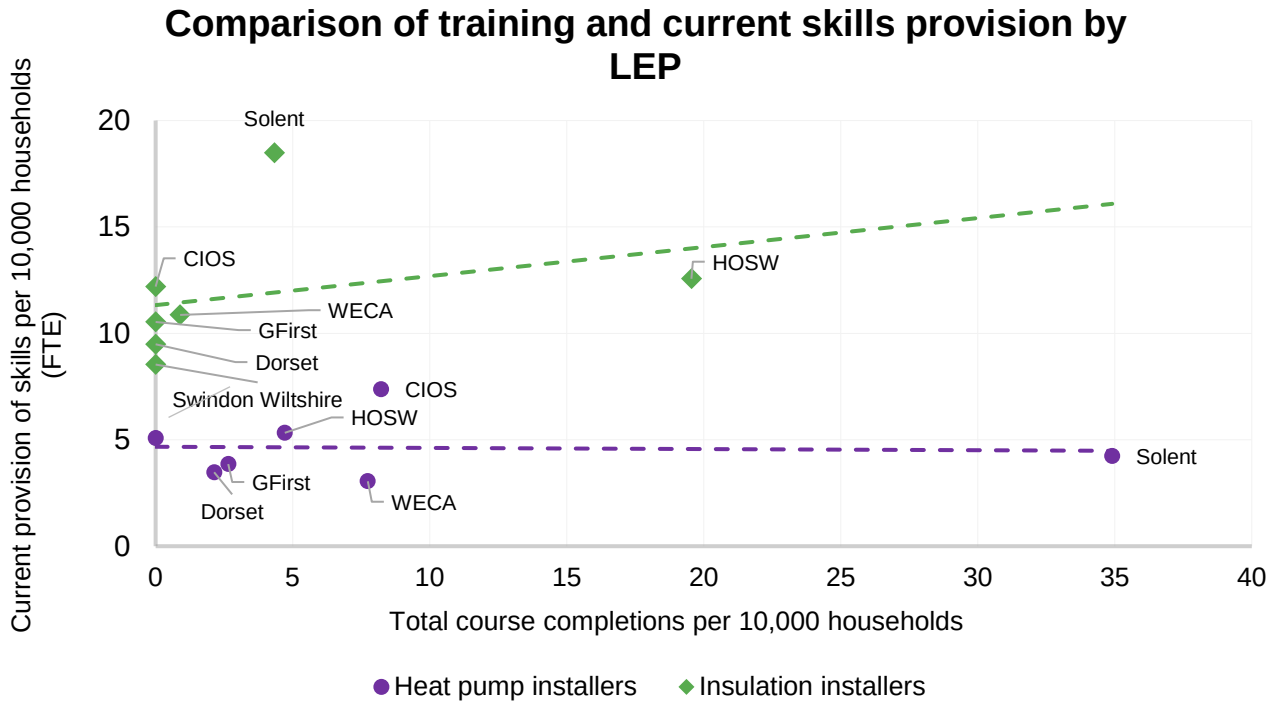

Figure 22 - Comparison of training and current skills provision by LEP

Figure 22 demonstrates that training outside of a LEP region can support growing skills provision within the LEP region, especially for heat pump installers although, this may not be the case for insulation installers. Therefore, support can be provided in areas where training provision is lacking or in hotspot areas where there is already training provision.

Figure 23 shows the cost of a selection of courses (excluding apprenticeships) in terms of cost (inclusive of VAT) per learning day by the total cost of courses offered at that centre for that role. This gives an indication of cost effectiveness by centre for retrofit training. The data suggests training hubs that offer more courses tend to offer training at a reduced cost for heat pump installer, insulation installer and general domestic retrofit courses[34]. Assuming that the quality of training is the same between centres, this suggests that it may be more cost effective to support additional training at current hotspots for retrofit training rather than developing new courses in areas without current provision of training.

Though this may be the case for shorter courses (upskilling), trainees may be less willing to travel for longer courses, such as apprenticeships, that are longer term. Put simply, people may be willing to travel for a temporary training course but are unlikely to relocate or endure a long commute over months or years, so providing a greater availability of training may be required for new entrants.

[34] Note that as all courses examined for retrofit project management were two days in duration, no trend could be observed.

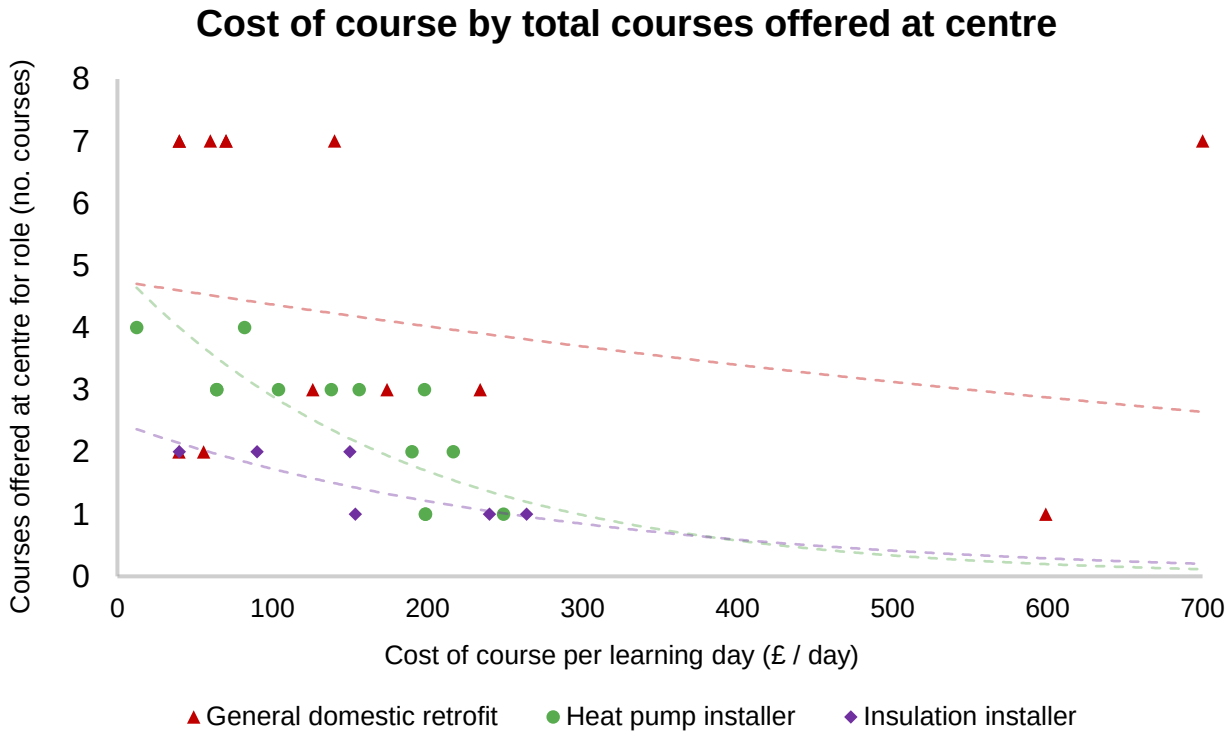

Figure 23 - Cost of course by total courses offered at centre

In terms of the value for money of training in different roles, there are five factors that will determine which roles create the most economic value per pound spent on training:

- **The cost of the course** was taken from the average cost of similar courses offered in the South West[35].
- **The capacity that trainees will operate at within the role they are trained to complete**, expressed in terms of FTE / course completions, and taken from a comparison of the current provision of skills and historic training in the region since 2012[36].
- **The split of entrant types ranging from apprentice to upskill,** taken from the analysis of training patterns, used to estimate the career duration of trainees following training.[37]
- **The roles that trainees would have completed prior to the training** and the economic contribution of those roles expressed in annual GVA / FTE[38].
- **The economic contribution of personnel following the training** if they work full time in the role, expressed in annual GVA / FTE[39].

[35] Variety of sources. Based on review of websites for each centre within the South West.
[36] Based on comparison of current skills provision analysis, as displayed in "The retrofit requirement and supply chain in the South West" section, and training levels taken from analysis displayed in the "rate of training in the South West section".
[37] Training types estimated based on level of qualifications and date of training according to Ofqual.
[38] Split of employment based on assumptions made on the roles of different entrant types (e.g. apprentices, new entrants) worked within by retrofit role prior to training. GVA intensities taken from ONS and adjusted to account for inflation.
[39] Based on a reverse calculation of GVA intensities using turnover to employment ratios (ONS) and local turnover to GVA ratios (ONS).

The results of the analysis into value for money of training in different roles is shown in Table 3.. This analysis estimates the return on investment in terms of economic growth, from funding within different roles. We find that all training delivers significant net economic gains with trainees improving their contribution to the local economy via the training. This increase in economic value is significantly greater than the cost of training in all cases, even when considering that not all those trained will go into the role. The analysis suggests that training insulation installers delivers the greatest value for money, with the greatest ratio of net lifetime economic value to the cost of training. However, it should be noted that these values may evolve over time with external economic factors such as demand for the retrofit measures, training costs, and evolutions in the demographics of people being trained. For example, currently demand for heat pumps is relatively low and therefore those that complete heat pump installation training may not operate at full capacity, limiting the additional economic value they can deliver compared to the roles they would have previously worked in. As policy supports additional demand for heat pump installations, this is likely to change and improve the value for money of heat pump training. A fuller exploration of the financial benefits of retrofit training are at Annex 2.

Table 3 - Value for money by role type analysis summary (expanded version in technical annex)[40]

	UNIT	HEAT PUMP INSTALLER	INSULATION INSTALLER	RETROFIT PROJECT MANAGEMENT
Share from upskill	%	33%	87%	96%
Share from apprenticeships	%	5%	0%	0%
Share from other new entrant	%	62%	13%	4%[41]
Share of trainees going into role	FTE / course completion	46%	65%	72%
Assumed share from construction	%	64%	72%	39%
Assumed share average UK employment	%	16%	24%	10%
Assumed share from unemployment or no career	%	21%	3%	1%
Assumed share from general services	%	0%	0%	50%
Weighted starting GVA	£s / FTE year	£31,483	£39,024	£33,584
GVA per full time equivalent trained	£s / FTE year	£47,467	£91,005	£65,962
Additional economic value per FTE trained	£s / FTE year	£15,984	£51,981	£32,378
Weighted cost per FTE trained	£s / FTE	£5,392	£2,469	£2,061
Weighted discount lifetime net economic contribution per FTE trained	£s / FTE	£171,355	£453,260	£273,500

[40] See references on page above for data sources used in analysis for this table.
[41] Based on Future Skill's Centre green skills courses which tend to have longer form retrofit project management training.

Ratio of lifetime economic value to cost of training.		**32**	**184**	**133**

CONCLUSIONS

The economic value of key retrofit roles entails a strong return in investment from training all key roles with identified skills gaps. The largest return is for insulation installers, heat pump installers and retrofit services respectively.[42] This correlates with the extent of the skills gap for each role in the region.

We have found little to no correlation between the location of a workforce and provision of training, while our value for money assessment suggests that larger providers can offer better value for money. This implies both that people are willing to travel for specialist training and that education providers benefit from economies of scale in terms of building and equipment utilisation and higher staff to student ratios. There is also a more general argument in favour of specialisation. Staff shortages such as they are, and with limited capital investment for new buildings and facilities tend to favour specialisation in terms of regional hubs. But in summary, we recommend the following approach to addressing retrofit skills gaps in the South West.

- General construction courses should be funded to expand into retrofit in all areas where there is interest in training providers to do so. This would ensure that all new construction graduates would learn retrofit skills alongside existing training. Many of these modules or courses already exist, they're unlikely to require much cost to deliver, are unlikely to require staff retraining and represent minimal risk for training providers to offer. Moreover, only 40% of all retrofit training in the South West is for new entrants. This needs to expand given the ageing workforce and the growth requirement for industry. These courses are likely to be longer and more time intensive, so it's necessary to provide training across the region in close commuting distance for most learners.

- Insulation installer courses and facilities should be targeted on Cornwall and the Isles of Scilly, in the next year and in Wiltshire and Swindon and the West of England Combined Authority over the next 5 years, given demand for these roles is greatest in these areas and our analysis indicates that insulation installer courses are likely to require a local presence.

- Heat pump installer courses should be funded to rapidly scale up over the next 5 years. This is the sector with the highest overall skills gap. There is also a cost saving associated to specialisation and scale with heat pump delivery, so it makes sense to focus on areas with greatest expertise, not on specific areas. If there is appetite to scale this training up locally the evidence suggests this should be done in the WECA and Cornwall areas where demand is highest.

- Retrofit services courses could be subsidised for residents of Dorset and WECA over the next 5 years. This could ideally be offered as subsidised access to online retrofit professional training, given that much of the training for these roles is online or remote learning.

Retrofit careers advice and support remains critical to supporting broader growth in the retrofit supply chain. A significant majority of retrofit training is for upskilling in the South West but to meet net zero targets the sector will

[42] A list of potential courses for funding is set out in the Retrofit Skills Roadmap below.

need to attract school leavers. National research has found that while young people care deeply about reaching net zero, knowledge and understanding of retrofit careers is poor, and construction retains a reputation as an undesirable sector to work in with low-skill, low paying jobs. Supporting growth in the retrofit supply chain will require improved careers advice to increase demand for training from school, college, and university leavers.

SOUTH WEST RETROFIT SKILLS ROADMAP – PRIORITY ACTIONS

This first part of the South West Retrofit Skills Roadmap sets out the priority actions for the South West Net Zero Hub to implement. As such, they meet the following criteria:

- They are essential to implement to address the retrofit skills gap in the region.
- They are appropriate for the SWNZH to deliver and can be delivered effectively by the SWNZH.
- They can be completed in the next year.
- There is strong and clear evidence that these are necessary prerequisites to supporting the supply chain in the region.

For these interventions we have provided general costings for delivering the interventions overall, as well as suggesting budgets for the Hub to invest in these areas. We have assumed that the Hub should cover roughly one third of the total costs in the region. The rest would be made up by the private sector (such as investment by the industry in training) or by the rest of the public sector through existing funding streams.

SUMMARY OF PRIORITY ACTIONS COSTINGS

The priority actions will cost the Hub £550k-£775k and result in direct economic benefits, as summarised in the table below. Evidence suggests that one pound of public investment results in an additional 2 pounds in private investment[43], therefore, it can be estimated that the investment from the hub would results in an additional £1.1 ml – £1.6m of private investment. This assumption has been used within years two to five of the budget below, if the Hub must fund 1/3 of all costs with the rest coming from the private sector. Therefore, where values are given, just the output directly related to investment from the hub is given, although, it should be assumed that double that output will also be achieved because of private investment.

Table 4 - Summary of spend on priority actions

AREA	BUDGET	SKILLS OUTPUT	ECONOMIC OUTPUT
Add early-stage retrofit content to existing construction training	Year 1: £250k-£350k	357-511 additional course completions and resulting in 189-362 FTE in additional skills provision	Additional GVA of £3.7 mil – £7.2 mil per year.
	Years 2-5: £286k-£390k per year	128-171 additional course completions resulting in 88 FTE in additional skills provision per year.	Additional GVA of £2.3 mil per year

[43] Matvejevs, Tkacevs (2023) Invest one – get two extra: Public investment crowds in private investment

Address gaps in dedicated retrofit training	Year 1: £250k-£350k	68-96 additional course completions and resulting in 36 - 67 FTE in additional skills provision	Additional GVA of £960k – £1.8 mil per year.
	Years 2-5: £867k-£1.17m per year	384-513 additional course completions resulting in 263 FTE in additional skills provision per year	Additional GVA of £6.9 mil per year.
Improve provision of retrofit careers advice	Year 1: £50k-£75k	1.5 – 2.8 FTE of dedicated retrofit careers advice per year	No direct economic output.
	Years 2-5: £50k-£86k per year	1.5 – 2.8 FTE of dedicated retrofit careers advice per year	No direct economic output.

PRIORITY ACTION 1: ADD EARLY STAGE RETROFIT CONTENT TO EXISTING GENERAL CONSTRUCTION TRAINING

AREA	KEY PERFORMANCE INDICATORS	COSTS PER TIME PERIOD	COSTS TO THE SWNZH
Add early stage retrofit content to existing general construction training *Ensure those taking part in construction courses receive suitable training for undertaking energy efficiency and heat pump installation measures where appropriate*	Number of • Enrolments • Course completions • Employments in retrofit roles	Year 1: **£860k - £1.2m**	Year 1: **£250k - £350k**
		Years 2-5 **£1.7m - £2.3m** per year	Years 2-5: **£286k-390k** per year

Strategic rationale

Education and training providers in SWNZH told us in our research that the largest uptake of construction courses in their colleges is through 'general' construction courses.[44] But due to the slow-moving nature of the skills system, most of these courses do not include training on retrofit, and often do not meet the prerequisites for progression into retrofit type training or apprenticeships. This creates a constraint on the pipeline of construction professionals entering the trade who are either ready to start installing measures or who are well positioned to upskill. Moreover, most people upskilling into retrofit roles are existing professionals, so there need to be more younger people and school leavers entering the retrofit sector.

[44] By general construction courses we mean any courses that pertain to traditional construction or 'biblical' trades at level 3 or below. This could include retrofit adjacent roles such as plumbing and heating engineers, electricians, carpenters, scaffolders or painting and decorators. Examples could include Level 1 or 2 Certificate in Construction Operations, Level 2 Certificate in Construction & Building Crafts, Level 2 in Plumbing and Domestic Heating.

Cost to the SWNZH

Year 1

With £250k-350k of budget invested in adding retrofit content to general construction training, the Hub could:

- Support 357-511 people to complete retrofit training by fully funding retrofit courses. Fully funded training would result in:
    - 255-367 people completing heat pump installer training resulting in 119-227 FTE of additional skills provision in the region. ***Budget allocation of £157k-£220k***.
    - 15-21 people completing heat network installer training resulting in 7-13 FTE of additional skills provision in the region. ***Budget allocation of £9k-£13k.***
    - 74-106 people completing insulation installer training resulting in 53-104 FTE of additional skills provision in the region. ***Budget allocation of £65k-£92k.***
    - 13-19 people completing retrofit project management training resulting in 10-18 FTE of additional skills provision in the region. ***Budget allocation of £18k-£25k.***
- This would generate an additional GVA of £3.7 m – £7.2 m per year. A fuller exploration of the financial benefits of retrofit training are at Annex 2.

Year 2

With £286k-390k of budget invested in adding retrofit content to general construction training, the Hub could:

- Support 128-171 people to complete retrofit training by fully funding retrofit courses. Fully funded training would result in:
    - 92-122 people completing heat pump installer training resulting in 57 FTE of additional skills provision in the region. ***Budget allocation of £230k-£306k***.
    - 5-7 people completing heat network installer training resulting in 3 FTE of additional skills provision in the region. ***Budget allocation of £13k-£18k.***
    - 26-35 people completing insulation installer training resulting in 23 FTE of additional skills provision in the region. ***Budget allocation of £42k-£57k.***
    - 5-6 people completing retrofit project management training resulting in 14 FTE of additional skills provision in the region. ***Budget allocation of £7k-£9k.***
- This would generate an additional GVA of £2.3 m per year.
- The training numbers detailed above are given for a scenario where all training costs are covered by the Hub. It is our recommendation that the Hub covers a third of all costs. In that case, total training volumes should be as three times the ones demonstrated above.

Years 3-5

Same as year 2

Recommended next steps

Short term (1-12 months	**The Hub should establish appropriate sub-regional partners for delivery of courses.** The SWNZH should over the next 6 months seek to establish key delivery partners for this provision either regionally, or in the sub-regions set out in this report. Any partners should ideally meet the following criteria: • Have an existing offer for construction, green construction or retrofit. • Have sufficient capacity for, or willingness to invest in capacity for retrofit training. • Have sufficient staff with knowledge of construction/retrofit and a willingness to upskill.

	The Hub should fund a local training provider to introduce first stage construction/retrofit training and qualifications that will act as a prerequisite to further specialisation into retrofit careers. This could include courses such as but not limited to: • EAL Verification, Inspection and Testing • Retrofit Academy: Retrofit 101 online course • Initial and Periodic Electrical Inspection and Testing (2391) • Energy Efficiency and Sustainability **The Hub should work with colleges to provide retrofit content in existing mainstream construction and building services courses.** There are two potential approaches to this. First, is to focus on adding retrofit to general construction courses. This would facilitate creation of skills in retrofit project management and insulation installation and would include courses such as but not limited to: • The Retrofit Academy Retrofit 101 • NOCN Cskills Awards Level 2 Award in Understanding Domestic Retrofit • The Retrofit Academy 'Understanding Domestic Retrofit', • ABBE Domestic Energy Assessor and Retrofit Assessor • C&G Award in Retrofit Second, this would include adding retrofit role specific content to more specialised roles such as plumbers, plasterers, carpenters and electricians. It would include heat pump and insulation specific courses such as those set out in 'Priority action 2' addressing gaps in training.
Medium term (1-3 years)	**FE colleges and training providers should:** Conduct a review of appropriateness of existing courses, replacing them with more modern courses. Update and improve retrofit modules offered within existing courses. • Consider adding retrofit modules to existing courses where possible. **The Hub could:** Seek to introduce or build consensus on a 'retrofit first' pledge among training providers in the South West, calling for all construction courses to include retrofit content as standard across all FE providers in the South West by 2026.
Long term (3+ years)	**The Hub could:** • Make funding available to invest in new construction qualifications with integrated retrofit content in the South West. They could consider business cases from training providers.

Implementation risks

- **Lack of demand from training providers:** It's possible that training providers could be unwilling to modify their existing courses due to the risk of impacting course attendance. Resource for project managers to identify training providers with an interest in delivering this provision is a mitigation.
- **Lack of qualified providers:** In the case of adding more specialised provision such as heat pump, or insulation installation, providers could lack the skilled staff. However, evidence does suggest that there is retrofit provision of all types in the region, so this shouldn't be an issue in all cases.
- **Lack of time:** Teaching additional content will take time, that providers may not be able to accommodate in busy staff and student schedules.

- **Lack of space/equipment to deliver the training.** Providers may have the staff and the facilities for the current intake of students but lack the capacity to expand their offer further. This is mitigated by investments in many places into construction facilities, but this may not be the case everywhere and could influence the approach to finding prospective delivery partners.

PRIORITY ACTION 2: ADDRESS GAPS IN DEDICATED RETROFIT TRAINING

AREA	KEY PERFORMANCE INDICATORS	COSTS PER TIME PERIOD	COSTS TO THE SWNZH
Address gaps in education and training *Ensure skills system meets projected demand for retrofit skills through addressing gaps and capacity in the retrofit skills system in SWNZH*	Number of • Enrolments • Course completions • Employments in retrofit roles	Year 1: **£2.5m - £3.5m**	Year 1**: £250k - £350k**
		Years 2-5: **£5.1m - £7.0m** per year	Year 2-5: **£867k-£1.17m** per year

Strategic rationale

Analysis of the current provision of retrofit skills provision suggests that there are gaps in provision of courses in the following areas with the following requirement for training in the key roles.

- Heat pump installers 1100-1467 trained per year.
- Solid wall insulation installers 298-398 trained per year.
- Cavity wall insulation installers: 17-23 trained per year.
- Retrofit assessor and coordinator 57-76 trained per year.

Cost to the SWNZH.

Year 1

With £250k-350k of budget invested in addressing training gaps, the Hub could:

- Support 68-98 people to complete retrofit training by fully funding retrofit. Fully funded training would result in:
    - 49-70 people completing heat pump installer training resulting in 23-43 FTE of additional skills provision in the region. ***Budget allocation of £159k-£222k.***
    - 3-4 people completing heat network installer training resulting in 1-2 FTE of additional skills provision in the region. ***Budget allocation of £9k-£13k.***
    - 14-20 people completing insulation installer training resulting in 10-19 FTE of additional skills provision in the region. ***Budget allocation of £79k-£110k.***
    - 3-4 people completing retrofit project management training resulting in 2-3 FTE of additional skills provision in the region. ***Budget allocation of £3k-£5k***
- This would generate an additional GVA of 960k – £1.8m per year. A fuller exploration of the financial benefits of retrofit training are at Annex 2.

Year 2

With £867k-£1.17m of budget invested in addressing training gaps, the Hub could:

- Support 384-513 people to complete retrofit training by fully funding retrofit. Fully funded training would result in:

- 276-366 people completing heat pump installer training resulting in 171 FTE of additional skills provision in the region. ***Budget allocation of £690k-£918k.***
- 15-21 people completing heat network installer training resulting in 9 FTE of additional skills provision in the region. ***Budget allocation of £39k-£54k.***
- 78-105 people completing insulation installer training resulting in 69 FTE of additional skills provision in the region. ***Budget allocation of £126k-£171k.***
- 15-18 people completing retrofit project management training resulting in 42 FTE of additional skills provision in the region. ***Budget allocation of £21k-£27k.***

- This would generate an additional GVA of £6.9m per year.
- The training numbers detailed above are given for a scenario where all training costs are covered by the Hub. It is our recommendation that the Hub covers a third of all costs. In that case, total training volumes should be as three times the ones demonstrated above.

Years 3-5

Same as year 2

Recommended next steps

Short term (1-12 months)	**The Hub should establish appropriate sub-regional partners for delivery of courses** The SWNZH should over the next 6 months seek to establish key delivery partners for this provision either regionally, or in the sub-regions set out in this report. Any partners should ideally meet the following criteria: • Have an existing offer for construction, green construction or retrofit • Have sufficient capacity for, or willingness to invest in capacity for retrofit training • Have sufficient staff with knowledge of construction/retrofit and a willingness to upskill.
Medium term (1-3 years)	The Hub should fund the following courses in the following regions of the South West. Insulation installer courses and facilities should be targeted on Cornwall and the Isles of Scilly, in the next year and in Wiltshire and Swindon and the West of England Combined Authority over the next 5 years, given demand for these roles is greatest in these areas and our analysis indicates that insulation installer courses are likely to require a local presence. Unlike in other cases, providers will be funded to introduce this training as it is not currently offered. This could include courses such as but not limited to • C&G Insulation and Building Treatments (level 1 and 2) – MCS accredited • NVQ level 2 or 3 in loft, cavity wall and solid wall insulation Retrofit services courses should be subsidised for residents of Dorset and WECA over the next 5 years. This could ideally be offered as subsidised access to online retrofit professional training, given that much of the training for these roles is online or remote learning. This could include courses such as but not limited to: • Level 4 Award in Domestic Retrofit Assessment • Level 5 Diploma in Retrofit Coordination and Risk Management • ABBE Domestic Energy Assessor and Retrofit Assessor

	• C&G Award in Retrofit Heat pump installer courses should be funded to rapidly scale up over the next 5 years. This is the sector with the highest overall demand. There is also a cost saving associated to specialisation and scale with heat pump delivery, so it makes sense to focus on areas with greatest expertise by funding providers that already deliver heat pump training, not on specific areas. If there is appetite to scale this training up locally the evidence suggests this should be done in the WECA and Cornwall areas where demand is highest. This could include courses such as but not limited to • BPEC Level 3 Award in Air Source Heat Pumps, • OFT21-504G Installation of Ground/Water Source Heat Pumps • OFT21-504D Design of Heat Pump Systems • LCL Level 3 Award in Ground Source Heat Pump Systems (Non-refrigerant Circuits) • OFTEC 21-504A Installation of Air Source Heat Pumps
Long term (3+ years)	**FE Colleges and Training providers should:** Introduce new courses for direct entry to retrofit roles for new entrants as they are developed and come online

Implementation risks

- **Lack of demand from training providers:** It's possible that training providers could be unwilling to modify their existing courses due to lack of space, or competition with existing courses that are more stable and reliable sources of income. Resource for project managers to identify training providers with an interest in delivering this provision is a mitigation.
- **Lack of qualified providers:** In the case of adding more specialised provision such as heat pump, or insulation installation, providers could lack the skilled staff. However, evidence does suggest that there is retrofit provision of all types in the region, so this shouldn't be an issue.
- **Lack of demand from industry:** Without measures to stimulate the industry demand for retrofit, there could be low demand overall for additional training. The Hub could fund the training without take up. Reducing the costs of the training or offering it for free should mitigate this as it reduces the cost barrier to take up.
- **Lack of space/equipment to deliver the training.** Providers may have the staff and the facilities for the current intake of students but lack the capacity to expand their offer further. This is mitigated by investments in many places into construction facilities, but this may not be the case everywhere and could influence the approach to finding prospective delivery partners.

PRIORITY ACTION 3: IMPROVE PROVISION OF RETROFIT CAREERS ADVICE

<table>
<tr><th>AREA</th><th>KEY PERFORMANCE INDICATORS</th><th>COSTS PER TIME PERIOD</th><th>COSTS TO THE SWNZH</th></tr>
<tr><td rowspan="2">Improve provision of retrofit careers advice
Increase the visibility of retrofit as a career to those leaving school/college/university or considering a mid-career transition</td><td rowspan="2">Number of:
Careers resources created
Careers sessions held and young people reached
Retrofit industry partners engaged</td><td>Year 1: £50k - £88k</td><td>Year 1: £50k - £75k</td></tr>
<tr><td>Years 2-5 £100k – £175k per year</td><td>Years 2-5: £50k-86k per year</td></tr>
<tr><td colspan="4">Strategic rationale
Training providers noted that in the absence of offering retrofit courses many colleges are not providing careers advice on retrofit, school leavers are unaware of retrofit careers opportunities or see retrofit roles as construction roles and not for them. Additionally, many providers noted that those already in the industry are often unaware of new green careers and opportunities to upskill. This is compounded by the generally poor perception of construction careers in general. This puts off school leavers doing construction training and deters career changers from considering construction.

Cost to SWNZH

Year 1

With £50k-75k of budge invested in retrofit careers advice, the Hub could:
Hire 1.7-2.5 FTE of dedicated retrofit careers advisors or project managers to oversee a programme of careers advice.
This would be equivalent to between 2-5 working days of retrofit careers advice per course funded by the Hub, depending on the split of budget.
If the South West meets the average training rate required to reach net zero, this budget will enable between 0.20 and 0.38 working days of retrofit careers advice per retrofit course completed in the South West.
Year 2

With £50k-86k invested in retrofit careers advice, the Hub could:
Hire 1.7-2.8 FTE of dedicated retrofit careers advisors or project managers to oversee a programme of careers advice.
If the South West meets the average training rate required to reach net zero, this budget will enable between 0.20 and 0.43 working days of retrofit careers advice per retrofit course completed in the South West.
Years 3-5

Same as year 2</td></tr>
<tr><td colspan="4">Recommended next steps</td></tr>
<tr><td>Short term (1-12 months</td><td colspan="3">The Hub could develop partnerships with relevant stakeholders to support retrofit careers.
This could include Jobcentres, Careers Hub, employability providers, charities, and community groups in the South West. This could involve:
Engage with STEM fairs to ensure graduates at the universities in the area are aware of the local need for retrofit skills.
Inviting local Jobcentre Plus representatives and local careers organisations or charities to GCAP</td></tr>
</table>

	• Hosting a retrofit careers event in the South West to advertise retrofit training opportunities. **The Hub should develop a SW retrofit careers outreach programme.** This could involve bringing together local retrofit businesses and training providers together under the remit of the GCAP to build new relationships and link employers and training providers together to deliver an outreach programme into schools and FE colleges. This could involve: • Creating lesson plans and school outreach materials for training providers and retrofit employers • Delivering outreach at local schools and colleges about retrofit careers. • Paying for adverts locally talking about green construction or retrofit careers. • Hosting information on the Hub website about retrofit jobs, training, and skills. **Training providers should appoint green careers leads in local training providers and colleges** This role could naturally be done by existing construction teachers and leaders within providers and/or careers advisors with an interest in the area. Some training might be required, but this could be done through careers research, familiarising themselves with their course options and general careers pathways in retrofit and green skills. This could be achieved by taking taster courses like Retrofit 101. **Training providers should pilot retrofit careers advice to existing construction students.** This could involve several approaches. • Signposting to existing resources. This should be tailored by specialism. Plumbers could be directed to heat pump courses, electricians to Solar PV etc. This can be implemented quickly and easily with minimal prior preparation and training of teaching staff and integrated easily into conversations about next steps. • Training providers to utilise existing relationships with employers in the region to deliver sessions on working for them on retrofit projects. This has the dual benefit of making careers 'real', talent spotting for the business and showing genuine employment.
Medium term (1-3 years)	**The Hub should develop targeted a careers programme for those under-represented in the retrofit sector.** This includes women and those from minoritised ethnic backgrounds. Activities could include • Targeted promotion or outreach to these groups (e.g. social media, via community groups), • Additional support for these residents to complete retrofit training at subsidised or free rates • Targeted or intensive careers advice and progress into suitable roles.
Long term (3+ years)	Not applicable.

Implementation risks

- **Breadth of options available:** There are a significant range of interventions for careers advice. This introduces the possibility of scope creep and a lack of focus.
- **Engagement from the industry sector.** Developing proper careers advice requires engagement from employers. They can support the development of resources and campaigns that 'bring careers to life' by offering direct insight into the sector to young people. Efforts to engage young people without widespread engagement from the sector in the South West.
- **Engagement from training providers and schools.** Interest and commitment from schools and training providers in the South West will be key to delivering any resources completed. Finding partners who are willing to participate in careers outreach programmes/pilots will be key to ensuring that any materials are delivered.

ANNEX 1: SOUTH WEST RETROFIT SKILLS ROADMAP – ENABLING ACTIONS

The enabling actions part of the roadmap sets out enablers that are necessary for the growth of the retrofit supply chain but do not meet the criteria to be a priority action for the roadmap. However, this is not to suggest that they are not important. In many cases they will be essential to delivering

- Not directly responsible for addressing skills gaps.
- Are outside of the remit of the SWNZH to deliver or will be delivered primarily by other parties and actors in the South West.
- Will require longer than 1 year to deliver the actions.

For these interventions we have only provided general costings for delivering the interventions overall, as well as we do not envisage the Hub funding activities in these areas in the next 6-12 months.

This is not to suggest that the SWNZH has no role to play. They should in any eventuality be responsible for disseminating this report to the relevant actors in the region, communicating the importance of taking actions on the issues raised and implementing the solutions that are raised here. Priorities also do change over time, and as they change, the prioritisation of this roadmap may change. We recommend that the SWNZH keeps these recommendations under review as part of monitoring progress and retrofit workforce strategy.

BUILD BETTER LINKS BETWEEN EMPLOYERS AND EDUCATION PROVIDERS

AREA	KEY PERFORMANCE INDICATORS	COSTS PER TIME PERIOD
Build better links between employers and education providers *Ensure effective collaboration to share insights on skills gaps, improve curriculum, share best practice, promote job/training opportunities, support funding bids*	• Increase in uptake of retrofit training and apprenticeships for retrofit aligned construction roles • Successful establishment of a regional GCAP • Launching a regional training database	Year 1: **£40k - £60k** Years 2-3: **£80k – £120k** Years 4-5: **£80k – £120k**

Strategic rationale

Throughout the research, many providers noted that an increase in collaboration would be beneficial. Specifically, between industry and colleges. To ensure effective collaboration providers need an understanding of the skills shortages in industry at present. This needs to be effectively communicated between colleges and industry to ensure training provision is aligned with current gaps in the labour market. Effective collaboration would ensure insights are shared across the industry to meet demand.

Costs

Costs for this objective consist of funding for 1-2 FTE project managers to administer the regional GCAP, construction and maintenance of the database, workforce model and business development activity is also included. Commissioning of the skills and employability programme also represents a significant direct cost.

Recommended next steps

Short term (1-12 months	**Training providers and colleges should undertake business development activity to market existing courses and provision in retrofit careers.** We recommend allocating existing business development staff time to foster relationships with local businesses, attend forums, discussions and advertise apprenticeships and courses. They could • Support the creation of partnerships between local training providers, employers, and Jobcentres in SWNZH • Support the creation of more apprenticeships partnerships between employers and training for the September 2024 academic year
Medium term (1-3 years)	**The Hub could establish a region wide sector collaboration panel for the development of retrofit skills.** We recommend creating a cross-sectoral collaboration panel. This should build on the success of GCAP in providing its services region wide. This will improve communication and delivery across the industry leading to increased efficiency of training and enhanced understanding of gaps. It would organise events, schedule speakers, create shared resources, oversee a programme of activity, and chair and minute meetings. **The Hub could create a retrofit workforce monitoring tool for the region.** This should track the retrofit workforce over time. This would provide real time or regularly updated workforce information on the development of the sector. This would address concerns over lack of workforce intelligence locally and inform debates about the right level of training and employment in the region. This could be commissioned externally or developed in house by the SWNZH. It would be important for monitoring progress against targets locally. **The Hub could provide a regional database of retrofit training qualifications available locally for employers**. We recommend creation of a database to ensure the supply chain has visibility of the training opportunities available to them in SWNZH. The next step is to collate the list of courses provided through this research and to engage with training providers to corroborate this evidence. The SWNZH could then determine whether this resource should be hosted by them, or jointly by the colleges and a regular schedule for updating.
Long term (3+ years)	**FE colleges and training providers could work with industry to develop bespoke qualifications for the SWNZH context.** This would ensure that training and provision meets local needs and requirements. It could be done through a regional GCAP, if one were to be developed building on the example of Exeter College.

Implementation risks

- **Lack of initiative and engagement from industry and training providers**: Coordination of the retrofit sector in the South West requires the cooperation of training providers, industry and local government. If they do not recognise the legitimacy of the Hub (or any other convening body) then it will be impossible to deliver any of the actions set out here.
- **Duplication with other functions:** It is arguable that some of these objectives, such as workforce monitoring duplicate the role of Local Skills Improvement Plans and that a regional coordination body or regional GCAP replicates the original GCAP. This is in some senses, the point. These initiatives are in turn either not focussed enough, or too small for the scale of the retrofit challenge. But the duplication risks legitimacy challenges and undercutting successful existing infrastructure.

IMPROVE TRAINING STAFF RECRUITMENT AND RETENTION

AREA	KEY PERFORMANCE INDICATORS	COSTS PER TIME PERIOD
Improve staff recruitment and retention to scale up retrofit skills training *Ensure colleges can recruit and retain the staff required to deliver retrofit training at the scale required to meet net zero. Put equality, diversity, and inclusion considerations at the heart of building a retrofit training workforce.*	Number of: • Staff hours in training and development • Average retrofit staff salary • Average retrofit staff turnover rate	Year 1: **£270k - £360k** Years 2-3: **£540k – £710k** Years 4-5: **£520k – £690k**

Strategic rationale

During our research, many training providers highlighted staff recruitment as an issue. Currently, there are not enough trained teachers able to provide courses. There were reports of colleges taking on fewer students as their teacher to student ratio was at full capacity. Additionally, many providers highlighted that in most cases, teachers can earn more money working their trade than they can teaching. Some providers noted the current cost of living crisis may be impacting the uptake of teaching roles at present. Many providers are already offering competitive salaries and cannot afford to increase pay.

Costs

Investment in staff recruitment and retention will need to consist in funding for CPD, backfill pay, career path development.

Recommended next steps

Short term (1-12 months	**FE colleges and training providers should undertake a staff skills audit and quantify staff labour shortages.** We recommend this is completed by each college in the region to develop an understanding of labour shortages regionally. This would mean cataloguing the prior experience and teaching qualifications of staff to deliver retrofit training. Implementing this in the short term will enable colleges to understand and prioritise recruitment needs. In the long term, they can invest strategically in staff training and recruitment to address gaps. **FE colleges and training providers should deliver training and development for existing staff to enable them to deliver retrofit training.** Strategic investment in training of staff in key strategic area and support the initial steps identified by SWNZH and local training providers. Upskilling staff in the short term will enable colleges to meet future demand, potentially at an increased capacity. **The Hub could invest in funding to backfill positions for staff to undertake training and development.** One of the barriers to funding staff development and training is freeing up time and capacity to do this because training for staff requires taking them 'out of the classroom' impacting on students trained and profitability. Investing funding to backfill teaching positions allows training providers to invest in upskilling staff without losing out on teaching.
Medium term (1-3 years)	**Industry and FE colleges and training providers could work together to deliver training.** Encouraging industry to work with training providers to offer skilled practitioner time to deliver training will enhance college capabilities, whilst producing a cohort of students with relevant skills for this industry. Additionally, this will support building student and industry relationships.

	FE colleges and training providers could share CPD and training opportunities. Where training providers have similar training and workforce development needs, it could make sense to jointly procure training and development together. Delivering this at scale could develop communities of practice in the region while saving providers money.
Long term (3+ years)	**FE colleges and training providers should develop local partnerships with technology manufacturers to offer affordable or free training for installation of their technologies.** Technology manufacturers such as heat pump and insulation manufacturers have an interest in ensuring that their products are installed to a high standard to ensure the reputation of their products is maintained and proficiency in installation of their products is likely to make an installer favourable to installation. They may provide training on installing their products so developing a partnership is a logical approach. **Industry working with FE colleges and training providers could create 'end of career' pathway into training roles for their staff.** Recognising the ageing workforce and challenges with lack of skilled trainers and teachers it makes sense to give skilled workers career pathways into training roles at local colleges/training providers. This could involve: • Employers releasing their staff part time to deliver training to maintain their earning potential • FE colleges sharing vacancies and employment opportunities

Implementation risks

- **Lack of funding:** As we have shown throughout this report, challenges with recruitment and retention of training staff is largely down to the wage differential between the construction/retrofit industry and training without funding to address this core issue, other interventions could have limited efficacy.
- **Lack of engagement from the training provider sector:** Without buy-in from the training provider sector in the concept of retrofit overall, they are unlikely to invest in training staff on retrofit and keeping them.
- **Competition within the training provider sector:** Many of our proposed interventions focus on collaboration between training providers to deliver economies of scale or share information. These organisations are typically competitors so collaboration may be tricky to secure on a sustainable basis.

BUILD DEMAND FOR RETROFIT MEASURES AND SUPPORT THE LOCAL RETROFIT SECTOR

AREA	KEY PERFORMANCE INDICATORS	COSTS PER TIME PERIOD
Building demand for retrofit measures *Increase demand for retrofit measures to stimulate growth in employment in the retrofit sector.*	• Number of retrofit measures installed in the region • Growth rate of retrofit measures in the region • Number of MCS/Trustmark registered businesses/traders in the region	Year 1: **£33k - £48k** Years 2-3: **£110k – £143k** Years 4-5: **£105k – £130k**

Strategic rationale

The demand for retrofit measures is not strong enough to stimulate growth in employment and training within the retrofit sector given the current demands on the construction sector. Measures must be taken locally to increase demand for retrofit to encourage the supply chain to respond.

Costs

Costs for this objective include funding for targeted outreach to businesses, consumers, and retrofit businesses. Database construction and website design is included too. Funding for direct retrofit measures is out of scope for this project and expensive, though there is a case for local investment to build demand. This is a determination that could be made locally.

Recommended next steps

Short term (1-12 months	**The Hub could initiate consumer marketing and engagement campaign demonstrating the benefits of retrofit, including targeting priority residents and buildings.** We recommend that SWNZH commissions an external marketing agency to run a programme of outreach based on addressing consumer concerns about retrofit such as affordability, financing and quality and impact of measures. This could be targeted at residents of properties with low EPC scores as these are likely to be overlooked by retrofit measures. This is necessary to overcome consumer reticence for these measures in both the short and long-term. **The Hub could collate information, advice, and guidance on accessing start up finance for market entrants, or finance to expand for SMEs operating in the retrofit sector.** We recommend SWNZH collates existing available support from the Council and central government into a single resource for retrofit businesses and SMEs. This could be brought together with existing information for consumers as part of the SWNZH's offer regionally to encourage market entrants to address the demand in the region. **The Hub could encourage local retrofit installer registration on MCS and TrustMark schemes.** We recommend that this outreach campaign is operated through the regional GCAP to promote the benefits of registration on MCS and TrustMark schemes. This could be done informally through the partnership or completed through targeted outreach and advertising to the sector through Hub activity or a sub-contractor.
Medium term (1-3 years)	**Create a database of properties eligible for ECO funding by cross-referring EPC data with IMD data.** Connect local public sector organisations with a similar requirement for retrofit to commission a joint or coordinated retrofit programme.

Long term (3+ years)	**The Hub could develop an Able to Pay' retrofit loan fund scheme.** We recommend that SWNZH and the West of England Combined Authority considers establishing an able to pay retrofit loan fund scheme to spur demand for retrofit measures in the region. This is needed long term to spur demand for most homes in the region that are owner occupied to undertake retrofit measures.

Implementation risks

- **Interventions stretch the definition of supply chain support:** While building demand for retrofit is vital for breaking the supply/demand cycle constraining the retrofit in the South West, it's questionable whether these interventions constitute supply chain interventions.
- **Interventions are insufficient to change the supply/demand dynamic:** While building demand for retrofit is vital for breaking the supply/demand cycle constraining the retrofit in the South West, it's questionable whether these interventions on their own are enough to break the cycle. The argument would be that they are 'necessary but not sufficient'. The risk is that investment in these measures have limited efficacy. It may be better addressed nationally.
- **Support for ambitious measures could be challenging to secure:** The more ambitious measures here such as an able to pay loan fund and joint public sector procurement for retrofit measures are ambitious measures and would cost in the region of hundreds of thousands to millions to fund but would support development of the supply chain.

IMPROVE THE FACILITIES AND EQUIPMENT TO UNDERTAKE RETROFIT TRAINING

AREA	KEY PERFORMANCE INDICATORS	COSTS PER TIME PERIOD
Provide the facilities and equipment required to scale retrofit skills training *Ensure colleges and training providers have the facilities and equipment needed to deliver specialist, high quality retrofit training at the scale required*	• Investment in £ per region • Number of places created in retrofit training courses • Amount of equipment purchased by type	Year 1: **£30k - £40k** Years 2-3: **£360k – £640k** Years 4-5: **£330k – £600k**

Strategic rationale

Discussion with education and training providers has identified challenges around providing the correct facilities and particularly equipment to deliver education and training for retrofit. Equipment is typically specialised, with requirements for installations that are bespoke, to enable students to install or uninstall measures as appropriate. Capital investment will be needed to upgrade facilities and purchase equipment to enable the training. For this objective, we recommend prioritising investment in equipment given investment in facilities in recent years in the region has been significant (see page 13) and the qualitative research did not find that facilities or equipment were a blocker to retrofit training. Equipment is also specific to retrofit meaning the case for investment here is clearer for a fund of this type.

Costs

Cost estimates for this element of the roadmap have been derived from the estimates of investment in equipment provided to us in interviews by ITPs. Large scale investment in space and capacity is not required and costs reflect this.

Recommended next steps

Short term (1-12 months	**FE colleges and ITPs should conduct a facilities and equipment capacity assessment for delivering retrofit courses.**

	We recommend this is undertaken by each of the education providers looking to provide retrofit skills training. This should identify whether there is sufficient space and equipment to respond to and accommodate increases in demand and learner uptake. This work should follow from recommendations in previous elements of the roadmap, which set out differentiation between providers. This ensures the investment represents value for money for taxpayers and the colleges by delivering long term value.
Medium term (1-3 years)	**The Hub could consider making a fund available for investment in equipment.** Should evidence of significant need develop for investment in retrofit training equipment and be evidenced by training providers in the region, the Hub could consider making funding available to invest in these areas. However, it should be secured via submission of business cases and kept under review by SWNZH. **FE colleges and ITPs could develop a business case for funding.** We recommend that colleges/training providers should develop business cases for additional investment required, and work both direct and in partnership with SWNZH to secure investment. SWNZH coordination here helps ensure that training meets the needs of the planned delivery of retrofit courses and represents long term value for the college and the taxpayer.
Long term (3+ years)	Not applicable.

Implementation risks

- **Questionable demand for new facilities:** There has been significant recent investment in facilities and equipment in the South West in recent years, so the requirement for facilities in the region is questionable. This wasn't raised by respondents as a priority issue/barrier for scaling up retrofit training, so demand for new facilities may not exist on scale required to make funding available for that purpose.
- **Administration costs:** Assessment of bids by the Hub would incur significant administrative costs in overseeing and assessing bids for funding.
- **Facilities and space are fungible:** Investment in facilities for retrofit is risky, given that space can easily be repurposed and it is challenging to ensure that the space will be used for that in the long-term. The direct value for retrofit training in facilities investment is therefore unclear.

ROADMAP COST ESTIMATES AND VALUE COMPARISON

The key roadmap themes across course delivery and underpinning enablers, as summarised in Figure 20, present a comprehensive option of measures to address the retrofit skills gap in the South West. Cost estimates for the delivery of the roadmap were developed for each area across three time periods, as shown in Figure 24. It is likely that funding for training will be shared across public investment and private investment, including investment from individuals and businesses. The costs in Figure 24 represent all required funding, not just public investment. A breakdown of assumptions used in this analysis can be found in the accompanying technical annex.

Across a five-year period, total investments of between £19.9 million and £27.5 million will be required, equivalent to between £3.98 million and £5.50 million in investments each year. Around 85% of all costs are expected to be for course delivery, addressing gaps in education and training provision as well as adding retrofit content into existing courses, with the remaining 15% across underpinning enablers. Annual costs are expected to be greatest in the middle period, the second and third year, at between £4.02 million and £5.57 million per year. However, annual costs in the first and last periods are only marginally lower.

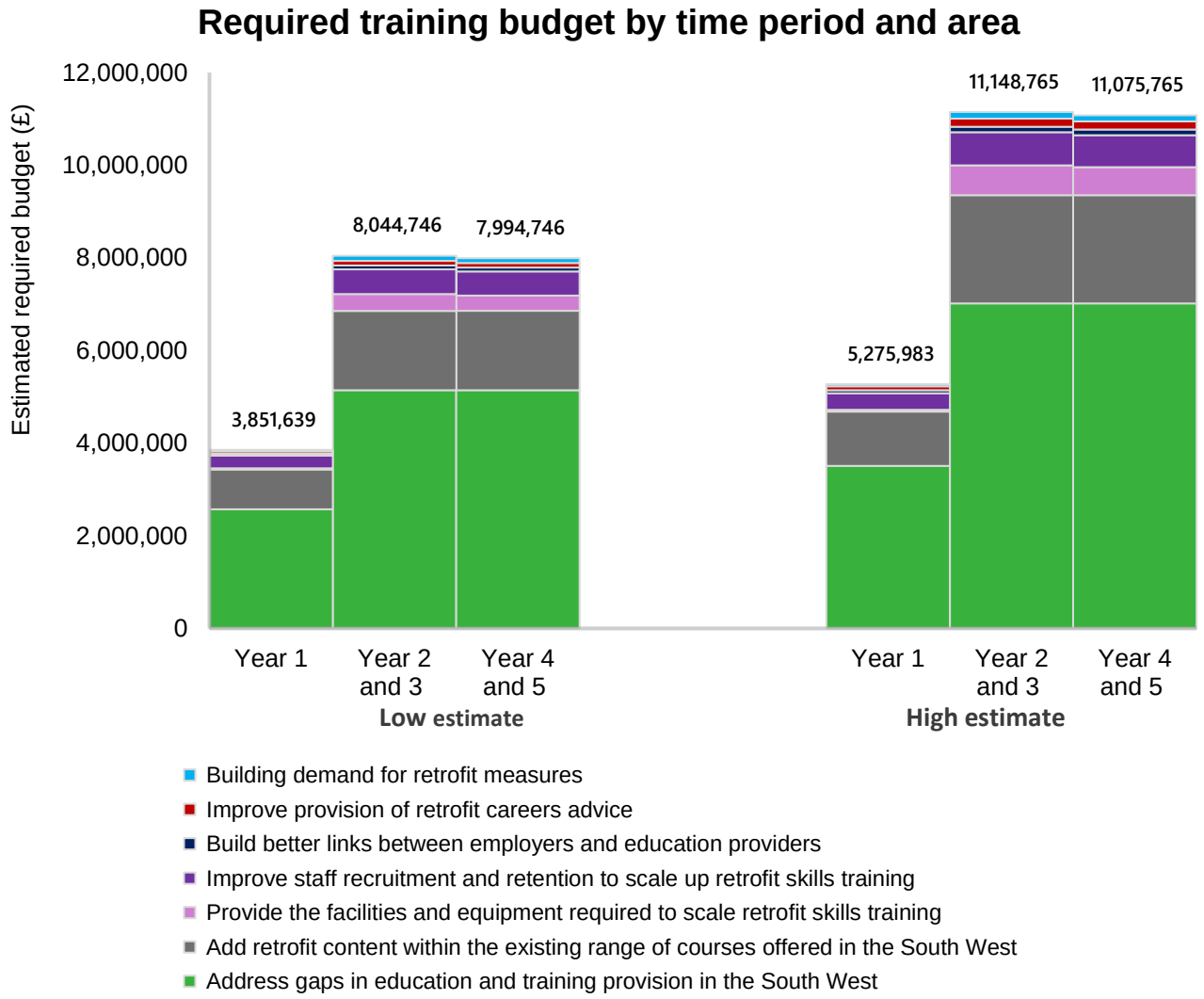

Figure 24 - Required training budget by time period and area

ANNEX 2 – ECONOMIC VALUE OF RETROFIT TRAINING

For the analysis presented above, average required training rates were used between 2024 and the year in which the peak skills requirement was for each role. This is different to the "bell curve" training requirements presented in Figure 8. Using average required training rates, the total economic value of retrofit training was estimated, showing that the retrofit training plan given is estimated to have a significantly positive net impact of £392 million on the South West economy, even over a relatively short time of 5 years. Within each cost / benefit element in the figure below, values are broken down by the relevant role families. The areas of cost summarised in the figure below are:

- **Cumulative gross GVA creation in five-year period** indicating the total value added within the 5-year period of all people trained within the five-year period.
- **Counterfactual gross GVA creation in five-year period** indicating the total value added of individuals had they not trained within the given retrofit roles. By retraining people in the South West, this economic value is not realised and so represents a net cost.
- **Cost of training** indicates the costs detailed in the graph above broken down by each role family as well as costs that could not be attributed to a specific role, "other". Note that a midpoint of the low and high estimate was taken.
- **Net economic value over five years** indicates the net benefit of the training over 5 years considering all relevant costs and benefits.

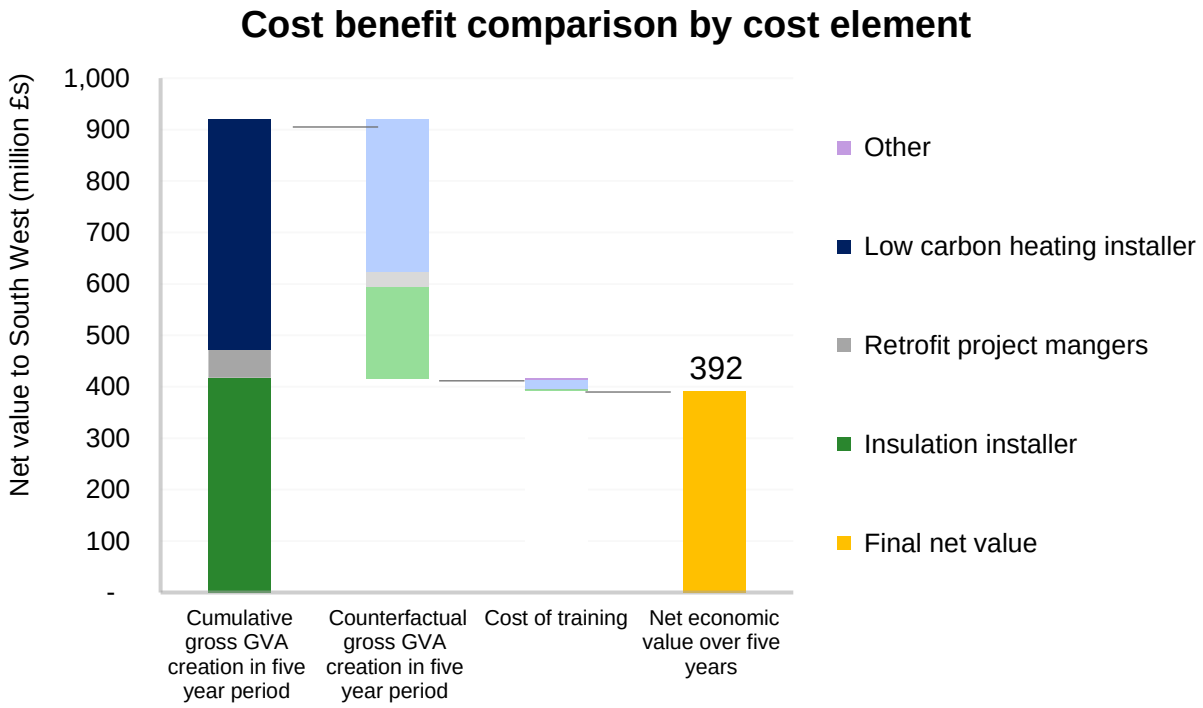

Figure 25 - Cost benefit comparison over five-year period (lighter colours indicate a net cost)

Figure 26 gives the net value of retrofit training in the South West. As all training is estimated to have a relatively significantly positive impact on the gross value added of employment per head, the value of training is greater than the

costs, even from the first year. In a scenario where net zero is achieved by 2050, by 2035, training of low carbon heating installers could contribute towards an additional £143 million in annual GVA, training of insulation installers could contribute towards an additional £187 million in annual GVA, and training of retrofit project managers could contribute towards an additional £15 million in annual GVA.

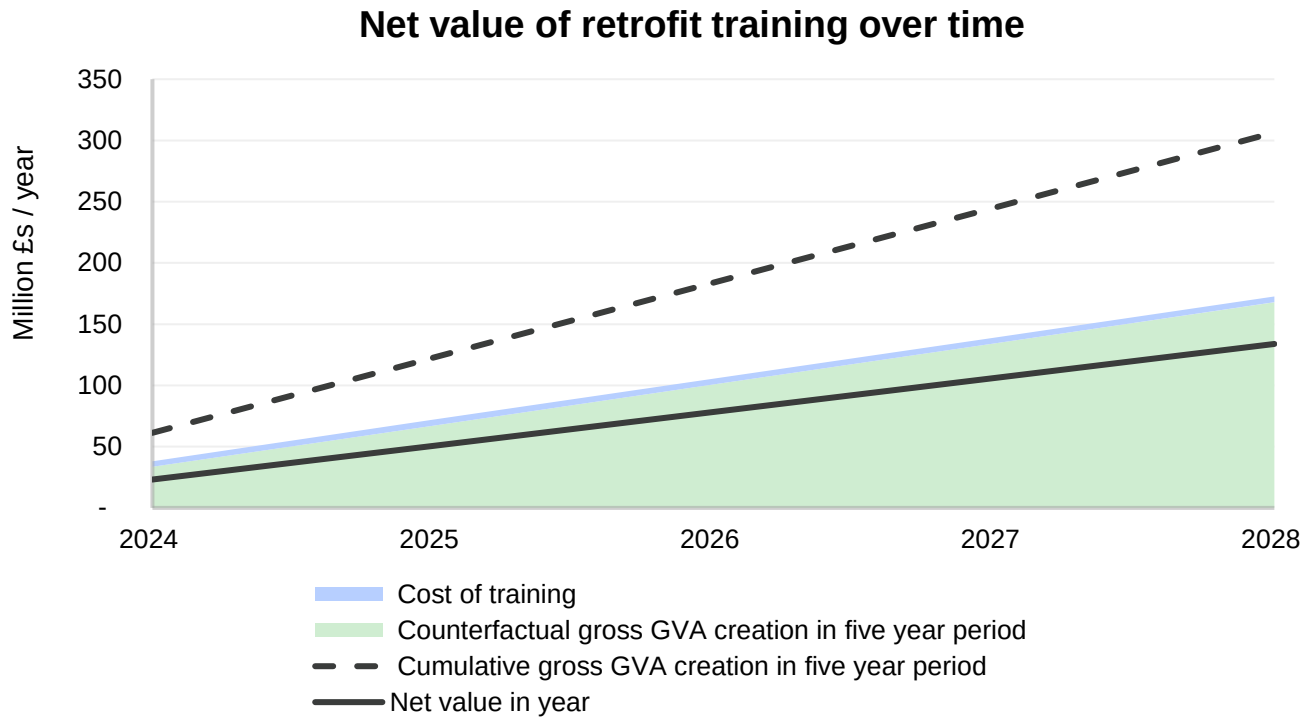

Figure 26 - Net value of retrofit training over time

ANNEX 3 – SKILLS PROVISION IN THE SOUTH WEST BY COURSE TYPE

HEAT PUMP COURSES

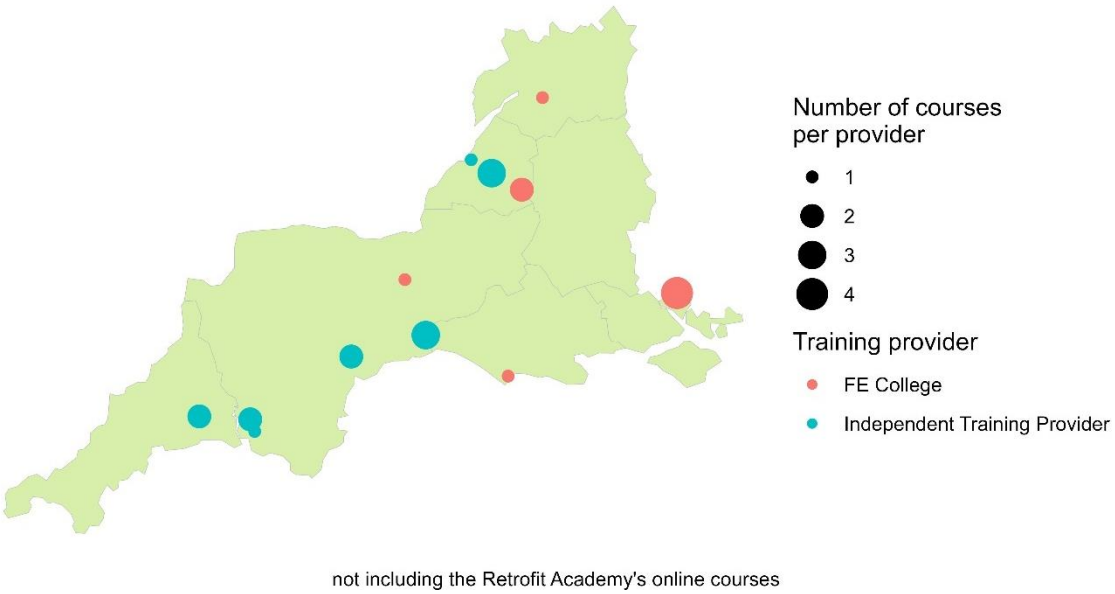

Figure 27- Heat pump installer courses in the South West by training provider type

In the South West, the training landscape for heat pump technology is heavily influenced by Independent Training Providers, with a significant 64% (7 out of 11) of the courses being offered by them. This points to a market trend where Independent Training Providers (ITPs) are possibly more responsive or specialised in this technology area. There are a total of 20 heat pump installer courses offered across the South West. Eastleigh College, offering four courses, emerges as a leader in this space among the colleges, demonstrating a strong commitment to advancing heat pump technology skills. The average course offering per provider stands at 2, indicating a focused but relatively limited range in the scope of training. A notable aspect of these courses is their MCS accreditation, which is essential for accessing public funding for heat pump retrofit installations, reflecting an alignment with industry standards and funding opportunities.

INSULATION INSTALLER COURSES

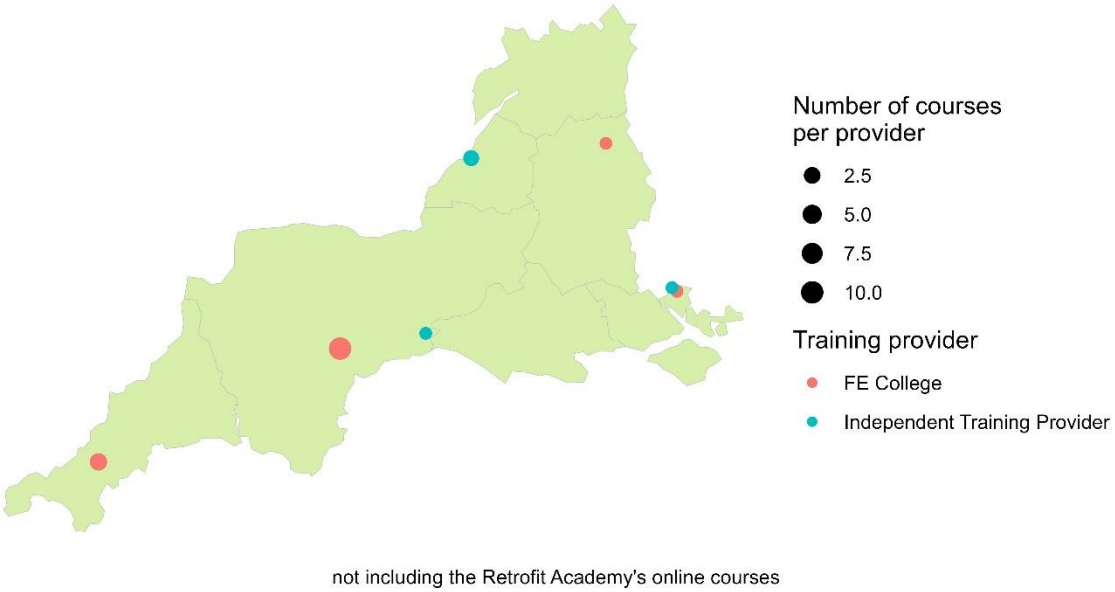

Figure 28- Insulation Installer courses in the South West by training provider type

In the South West region, the landscape of insulation installer courses presents a moderate level of availability with a total of 18 courses offered across various counties. This geographic distribution, however, is uneven, with some presence in Wiltshire, Bristol, Cornwall, Devon, and Solent, but a marked scarcity in counties like Dorset and Gloucestershire. Further investment could be required in these areas to prevent emergence of regional inequality.

The training opportunities are provided by both Further Education (FE) colleges and Independent Training Providers with 4 FE colleges offering courses and 3 independent training providers. Notably, Exeter College emerges as the predominant provider in this sector, offering 10 out of the 18 available courses, which underscores its significant role and specialization in insulation installer training. Other institutions such as Truro and Penwith College, NAPIT Training, The Green Register, and Eastleigh College collectively contribute the remaining 8 courses, reflecting a varied but more limited range of training options compared to Exeter College.

RETROFIT ASSESSOR AND COORDINATOR COURSES

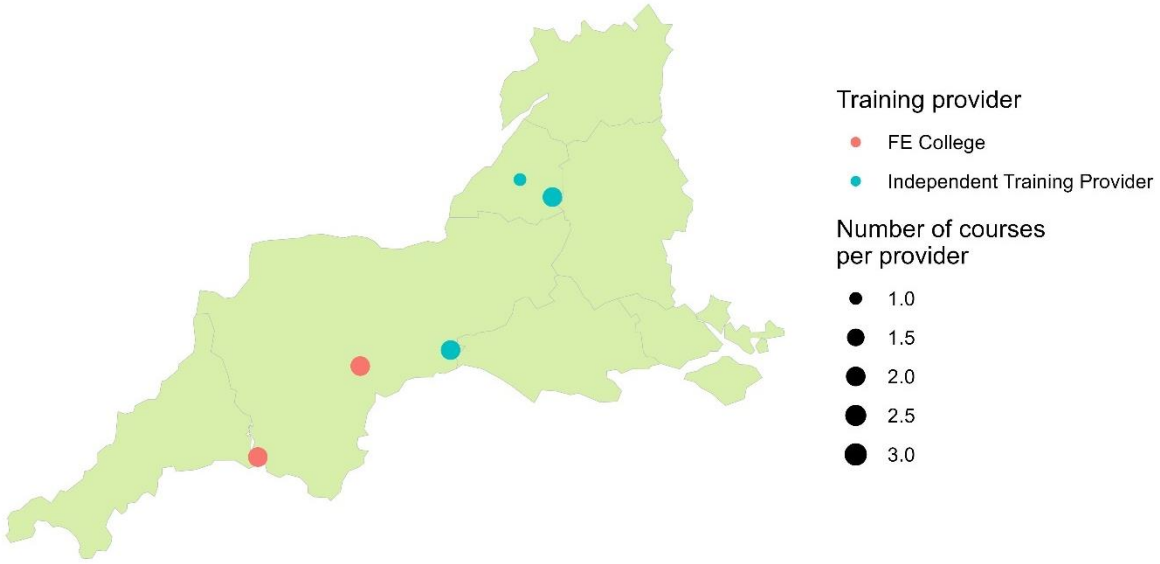

Figure 29- Retrofit assessor & coordinator courses in the South West by training provider type

The training landscape for Retrofit Assessors and Coordinators is significantly influenced by the Retrofit Academy's approach, which includes utilizing online platforms. This method indicates a strategic effort to extend geographic reach and enhance accessibility, likely aiming to counterbalance the regional disparities in the availability of physical courses. The involvement of City College Plymouth and Exeter College in providing physical courses also underscores the increasing recognition of the need for skilled project management in retrofitting projects. However, the availability of courses is predominantly focused on Devon and Bristol, leading to a noticeable absence in regions such as Dorset and Wiltshire.

In terms of the number of courses offered, the Retrofit Academy leads with three courses, followed by City College Plymouth, Quidos, and Exeter College, each offering two courses The overall distribution and concentration of these courses around Plymouth and Exeter indicate that there are valuable opportunities for training in retrofit assessment and coordination. There are regional inequalities, leaving Cornwall, Dorset, Wiltshire, and Gloucestershire regions underserved in terms of physical location, though these may be mitigated by online courses offered by providers such as the Retrofit Academy.

PLUMBING COURSES

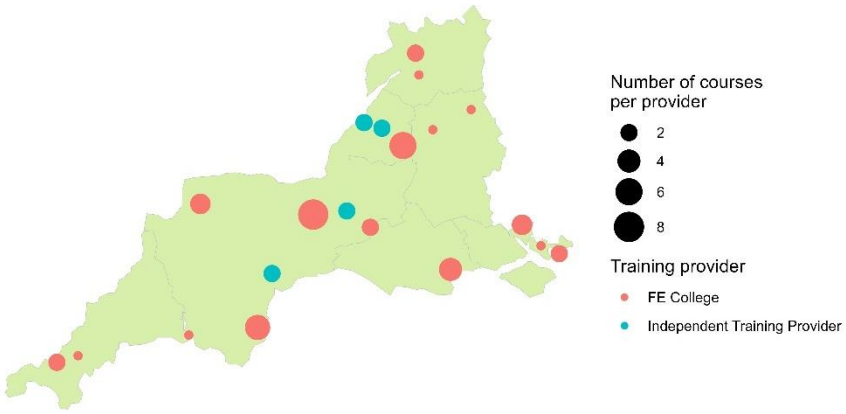

Figure 30- Plumbing courses in the South West by training provider type

Bridgwater & Taunton College's extensive range of plumbing courses signifies a strong institutional focus on this trade, with other colleges close in their number of offerings. FE Colleges are dominant in this space representing 15 of the 19 providers. (79%). The wide geographic spread of these courses across the region indicates a well-established and comprehensive training infrastructure. This widespread availability is essential for meeting the consistent demand for plumbing skills, which are crucial in both traditional construction and the growing retrofit sector. The extensive coverage also points to a well-developed market for plumbing training, with robust pathways and opportunities for learners.

ELECTRICIAN COURSES

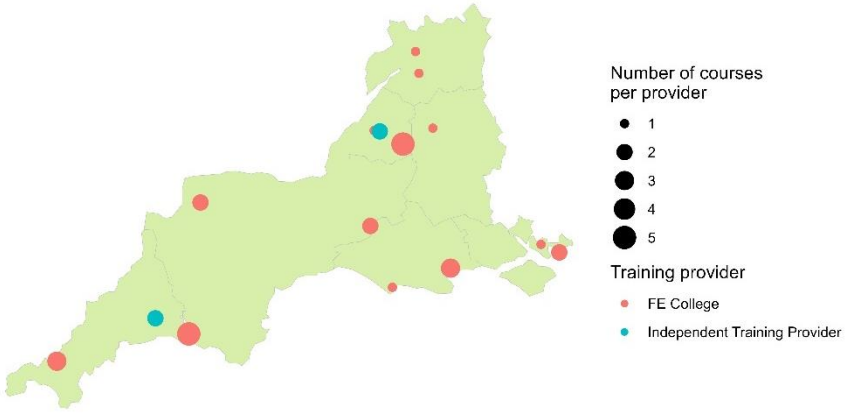

Figure 31- Electrician courses in the South West by training provider type

Bath College's range of electrician courses positions it as a leading provider in this sector, complemented by the contributions of other colleges like Petroc College and Yeovil College. FE Colleges lead in this space providing 15 of the 17 offerings (88%). The amount of course available and the geographic spread indicates a strong regional focus on electrical training. The courses are widely distributed across the region with most regions represented, reflecting a comprehensive provision to meet the ongoing and evolving demand for electrical skills in both traditional construction projects and retrofit initiatives. This widespread availability suggests a mature and well-established training landscape for electricians.

ANNEX 4: UPDATED RETROFIT POLICY CONTEXT

NEW POLICY AND RESEARCH

Since the SWNZH's Retrofit Skills Report, there have been developments in policy that impacts retrofit skills and increasing demand for retrofit measures. Additional grant schemes have come to the forefront and been developed, which include:

- **Boiler Upgrade Scheme (BUS)**[45] – This provides grant funding for the installation of heat pumps and biomass boilers, which replace a fossil fuel heating system. The scheme has seen recent uptake in new applications owing to the increase in grant funding that has been allocated to the different measures that can be installed. Applications are made through installers who must be Microgeneration Certification Scheme (MCS) accredited to ensure quality installations.
- **Great British Insulation Scheme (GBIS)**[46] - The scheme delivers improvements to the least energy-efficient homes across Great Britain (with an energy performance certificate (EPC) of D to G) and aims to help reduce energy bills and carbon emissions by providing free or cheaper insulation to eligible households. The scheme complements ECO4, but GBIS will mostly deliver single insulation measures unlike ECO4's 'whole-house approach'.

Key to skills funding is the Heat Training Grant that has been created for heat pump installers[47] and those in the heat network industry[48]. This provides applicants with a £500 discount off the cost of their training. Applicants must partner with a listed training provider, commonly manufacturers or key industry players offering training, who will then access the funding. Currently, the grant has funded around 1,500 courses and is expected to support 10,000 training opportunities by April 2025[49].

Other key policies have come into play since the Retrofit Skills Report that directly impact the retrofit market. These include:

- **The Clean Heat Market Mechanism (CHMM)**[50] - Government consulted on the CHMM which has since come into effect in 2024. This market-based mechanism will support the development of the UK market for heat pumps, placing an obligation on fossil fuel heating system manufacturers. The CHMM will create a market incentive to grow the numbers of heat pumps installed on a yearly basis.

[45] Ofgem (2024) 'Boiler Upgrade Scheme' https://www.ofgem.gov.uk/environmental-and-social-schemes/boiler-upgrade-scheme-bus
[46] Ofgem (2024) 'Great British Insulation Scheme https://www.ofgem.gov.uk/environmental-and-social-schemes/great-british-insulation-scheme
[47] Department for Energy Security and Net Zero (2024) 'Heat Pump Training Grant' https://www.gov.uk/government/publications/heat-training-grant-for-heat-pumps
[48] Department for Energy Security and Net Zero (2024) 'Apply for the Heat Training Grant: discounted heat network training', https://www.gov.uk/guidance/apply-for-the-heat-training-grant-discounted-heat-network-training
[49] UK Parliament. (2024) District Heating: Training https://questions-statements.parliament.uk/written-questions/detail/2024-01-15/9369
[50] Department for Energy Security and Net Zero (2024)'Consultation Outcome: Green Heat Market Mechanism' https://www.gov.uk/government/consultations/clean-heat-market-mechanism

- The Future Homes Standard (FHS)[51] – The FHS was initially announced in 2021, ensuring that all new homes built from 2025 will produce 75-80% less carbon emissions than homes delivered under current Building Regulations. New homes will therefore need to be built with low-carbon measures, but this policy and the associated Building Regulations have elements that relate to existing buildings and therefore the retrofit market.

Finally, the UK Government announced in September 2023 key legislation relating to net zero that was being delayed / pushed back[52]. Within this, the Government set out an exemption to phase out fossil fuel boilers by 2035 - pushing it back from 2026.

INITIATIVES TAKEN TO DEVELOP THE RETROFIT INSTALLATION SUPPLY CHAIN

There is a recognised need for upskilling to meet the demands of the retrofitting industry in the South West. Initiatives like the Retrofit Academy and partnerships with local authorities aim to train over 1,000 people by 2023 in retrofit skills to address the current skills gap[53]. Retrofitting, however, is complex, requiring tailored surveys and designs for each project. Challenges include the complexity of standards like PAS2035, the convoluted and burdensome delivery process for contractors, and the disruptive nature of retrofit work[54]. Efforts to build the local retrofit supply chain include engaging various stakeholders like building contractors, heating engineers, and local authorities to address challenges such as the need for more skilled workers, better access to materials, and improved procurement processes for government grant programmes[55].

Locally to the South West, initiatives have been taken to increase the number of skilled retrofit professionals. Cornwall and the Isles of Scilly, Dorset, G-First, Heart of the South West, Swindon and Wiltshire and the West of England each have local skills reports for their regions setting out skills shortages and proposed interventions and provision for their areas[56]. There are now plans for a national rollout of Local Skills Improvement Plans (LSIPs), led by employer representative bodies. Additionally, the Centre for Sustainable Energy has been working to scale up retrofit services, fostering collaboration among professionals in the retrofit industry to address supply chain challenges and support micro and small businesses through initiatives like Retrofit West[57].

[51] Department for Energy Security and Net Zero (2024) 'The Future Homes Standard: Changes to Part l and Part F of the building regulations for new dwellings' https://www.gov.uk/government/consultations/the-future-homes-standard-changes-to-part-l-and-part-f-of-the-building-regulations-for-new-dwellings
[52]BBC News (2023) 'Rishi Sunak: Cars, boilers and net zero - key takeaways from PM's speech' https://www.bbc.co.uk/news/uk-66871073
[53] Ashden (2024) 'Retrofit: solving the skills crisis' https://ashden.org/sustainable-towns-cities/retrofit-solving-the-skills-crisis/
[54] Local Government Association(2024) 'Technical Briefing 2: Developing Effective Partnerships with the Supply Chain' https://www.local.gov.uk/our-support/climate-change-hub/lga-climate-change-sector-support-programme-regional-retrofit-2
[55] Centre for Sustainable Energy (2023) 'Building the Local Retrofit Supply Chain' https://www.cse.org.uk/news/building-the-local-retrofit-supply-chain/).
[56] Ibid
[57] Ibid

Retrofit West is an initiative from the West of England Combined Authority.[58] It is a community interest Company that offers concise and independent advice and support for domestic retrofit projects in the West of England. Their expertise helps householders plan, design, and deliver energy-efficient and sustainable home improvements. They are also building a supply chain network. This will comprise of professionals interested in or already engaged in retrofit, to foster growth in the local market. They will offer guidance on training, accreditation support, and attaining the required quality standards. The objective is to promote delivery partners and uphold high standards, ensuring a collaborative approach and the advancement of the retrofit industry.

The Green Construction Advisory Panel is an initiative established by Exeter College to bring together the training providers, industry and local government to define the skills need in Devon, develop the curriculum and build the supply chain.[59] It was hailed by many of those we interviewed as taking a real lead in this area, and it was often held up as an exemplar.

> *"The Green Construction Advisory Panel which Exeter College facilitate is brilliant, I have to say, they get a real mix of supply chain providers, housing, construction, housing developers, they are providing that kind of vital opportunity to network, to learn, to connect, so that is really helpful" – Local government*

THE GREEN CONSTRUCTION SKILLS ADVISORY PANEL (GCAP)
A consortium of further education and training providers aims to upskill the current workforce through business needs alignment across the Heart of the South West Local Enterprise Partnership area to build the retrofit supply chain. To do so Consortium members, Exeter College, City College Plymouth, Bridgewater & Taunton College, Petroc, South Devon College, Strode College, Yeovil College, Focus Training and SWATPRO (DSTPN) were awarded a pot of £2.5 million from the Department for Education[60].
Consortium members work together to deliver significant skills and training projects across the region covering green construction, automotive, digital, engineering and advanced propulsion. GCAP are developing their own bespoke curriculum to meet the skills need of the region. It involves industry[61] directly in the delivery and development of courses and placement of students. There are plans to create the first Retrofit Skills Centre in Devon, building on Exeter College's Construction Centre.

Table 5- Case Study: Green Construction Advisory Panel

HISTORIC POLICY ON RETROFIT AND ADULT EDUCATION FUNDING

Analysis of completed training in retrofit roles per year in Figure 17 provides an interesting barometer of the impact of national policy on retrofit training. Retrofit course completion rates shows a marked increase from 2019 with around 500 completions per year, to a high of around 1500 in 2023. There was a drop off in 2020, but this can be explained by

[58] Retrofit West (2024) 'About Us' https://www.retrofitwest.co.uk/about/
[59] Exeter College (2022) 'Green Construction Advisory Panel recognised in the Exeter sustainability awards' https://exe-coll.ac.uk/green-construction-advisory-panel-recognised-in-the-exeter-sustainability-awards/
[60] Exeter College (2022) College consortium awarded 2.5 million to address regional skills need. Available at: https://exe-coll.ac.uk/college-consortium-awarded-2-5m-to-address-regional-skills-needs/
[61] Industry representatives including Taylor Lewis, APG, Bell Group, Mears

the Covid-19 pandemic and lockdowns of that year. However, the overall trend of increasing training is more important to examine and can be largely explained by two national policy interventions impacting retrofit training in the South West.

The first is the increase in adult education funding starting in 2020. The Institute for Fiscal Studies suggests that reductions in adult education funding disproportionately impacted training provision for courses at Level 2 and Level 3 qualifications, where most of qualifications in retrofit and retrofit related trades can be found.[62]. But as investment in adult education funding has increased, so has completion of level 2 and level 3 courses. This shows that the funding increases set out in Figure 33 have worked to grow course completion rates.

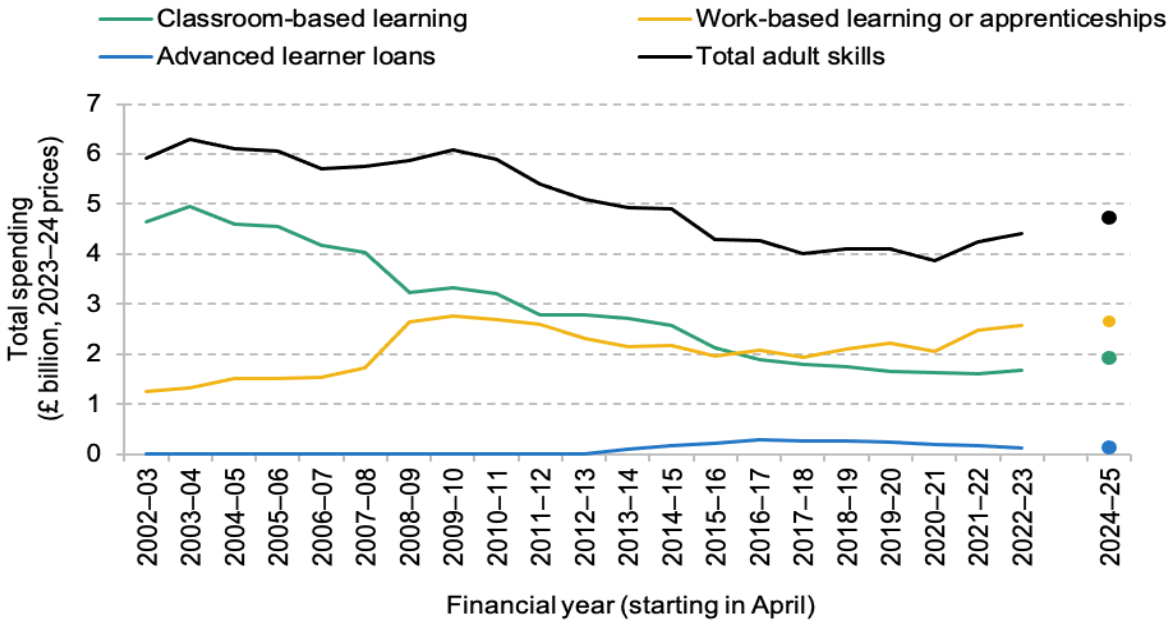

Figure 32 - Adult education funding rates in England 2003-2023[63]

The second explanation is changes to government funded support for retrofit policy. Retrofit schemes have been driving demand for workers to complete works in the early 2020s. For example, the Social Housing Decarbonisation Scheme, Homes Upgrade Grant, the Boiler Upgrade Scheme were all introduced between 2021 and 2023. This aligns with the trend of the growing retrofit workforce and has had a positive impact on the number of trained professionals in the South West. This shows that measures to grow demand for retrofit taken alongside investment in education and training can support growth in the workforce.

[62] Institute for Fiscal Studies (2023) 'Adult Education and Skills' https://ifs.org.uk/education-spending/adult-education-and-skills
[63] Institute for Fiscal Studies (2023) 'Adult Education and Skills' https://ifs.org.uk/education-spending/adult-education-and-skills

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