Innovate UK

POLICY INSIGHTS

The UK's retrofit workforce for heat and fabric efficiency

An introduction to the challenge and ideas for local authority participation

JANUARY 2025

Created for Innovate UK Net Zero Living programme by Regen

regen transforming energy

About Regen

Regen is an independent centre of energy expertise with a mission to accelerate the transition to a zero-carbon energy system. We have nearly 20 years' experience in transforming the energy system for net zero and delivering expert advice and market insight on the systemic challenges of decarbonising power, heat, and transport.

Regen is also a membership organisation, managing the Regen members network and the Electricity Storage Network (ESN) – the voice of the UK storage industry. We have over 150 members who share our mission, including clean energy developers, businesses, local authorities, community energy groups, academic institutions, and research organisations across the energy sector.

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Acknowledgements

We would like to express our sincere appreciation to all those who contributed to the successful completion of this report. This work benefited greatly from the support and assistance from the Net Zero Living Retrofit Working Group members and:

- Cara Jenkinson, Ashden and National Retrofit Hub
- Emily White, Bristol City Council
- Jenn Linsey, York City Council
- Olivia Smalley, The Heat Pump Association
- Nicola Moore, Haringey London Borough Council
- Nathan Gambling, Beta teach
- Simon Mansfield, Liverpool City Council

Purpose of this paper

This insight paper maps out some of the high-level challenges and considerations for a competitive, competent and thriving retrofit industry capable of providing upgrades for 21st-century, warm, resilient homes.

The next 10 years will determine whether the UK's retrofit market matures in time for our climate/carbon promises. After several years of challenges and false starts, there are now positive signs that the sector is moving in the right direction, with an uptick in training delivery and measures fitted.

Still, given the significant increase in the retrofit delivery required over the next decade, there is an ongoing conversation about what supportive policy and/or activity is needed to help ensure the supply chain grows in tandem with demand.

Are there opportunities for local authorities to address previous market led failures and help alleviate growing pains?

This insights paper draws together ideas for local authorities to support the relatively nascent sector to grow and deliver quality for the consumer and indeed for the delivery of local authority led retrofit projects. It identifies emerging findings and compares the potential impacts versus risks and challenges of considered activities.

Who is this paper for?

This report is designed to help local authorities understand the challenges and emerging ideas around how to support local retrofit supply chains. It may be of interest to local authority officers whose roles include housing, net zero, climate, education, economic development, and/or procurement.

Contents

Section 1: **The future of the home retrofit supply chain at scale**

This section provides context before proposing local authority actions in Section 2. We begin by examining the estimated scale of job and skills growth needed, then address key nuances within the sector, and conclude with the main challenges and opportunities to achieving these objectives.

1.1. **Tracking progress towards supply chain targets**

Training rates in recent years show signs that the sector is moving in the right direction. However, to meet government targets and carbon commitments, the sector needs to rapidly scale to maturity over the next 10 years.

Retrofitting the UK's housing stock at scale will require new jobs in; generalist and high skilled specialist trades; designers and architects and surveyors; specialist supportive skillsets to conduct outreach, advisory services, and coordination. It is also important to acknowledge that there will be a growth in specialist skills and roles adjacent to the sector, such as retrofit programme commissioners within councils.

In this subsection, we provide projected jobs needed nationally and compare to current trajectory, where possible. These numbers are intended to offer context for the scale of this skills challenge, despite a research gap in quantifying what constitutes a healthy retrofit supply chain and how to effectively track it.

1.1.1. **Heat pumps**

Heat pumps, have clear government targets, namely, 0.6 and 1.6 million to be installed across the UK by 2028 and 2035 respectively. The Heat Pump Association (HPA) estimates the workforce required for this will be approximately:

- **40,000 FTEs individuals by 2028**
- **120,000 FTEs individuals by 2035**.[1]

Given the current heat pump installation workforce is estimated at 7,000 FTE individuals,[2] an annual growth rate of at least 50% for the next four years is required to meet the above (see Figure 1, p.7).

There are positive signs that the sector is moving in the right direction, with a significant increase in training compared to previous years. However, clearly there is still work to do to stay on track. In 2025, 5,000 FTE new entrants will be needed, and

[1] Projecting the future domestic heat pump workforce

[2] HPA estimates based on MCS and Gemserv data (see p. 15 Projecting the future domestic heat pump workforce)

in 2024, estimates suggest the sector saw 3,000 FTE new entrants enabled by 8,000 individuals completing training.[3]

1.1.2. Thermal efficiency upgrades

It is estimated that the extra workforce required to advise, design and fit thermal efficiency upgrades will rise from **100,000 to 400,000** new full-time equivalents (FTEs) by 2030.[4] This uncertainty is partially due to targets for fabric intervention volumes being uncertain; neither the government nor the industry has settled on an optimum balance of investment in fabric.

Much of this work is, and will continue to be, intertwined with the wider construction and repair, maintenance and improvements (RMI) workforce. Data regarding the size of this industry is readily available. However, it is challenging to quantify and separate the time spent on retrofit-specific work.

The Office for National statistics (ONS)[5] has begun tracking green jobs. This experimental data collection acknowledges retrofit roles specifically by measure, namely "energy-efficient windows and doors" and "insulation". However, no data has *yet* been shared regarding these.

1.1.3. Supportive roles

Estimates state that **30,000 to 50,000** FTE coordinators will be required as the sector reaches maturity.[6] To the best of our knowledge, no national statistics of the current number of coordinators is available; it is not acknowledged in the ONS green jobs tracker. However, we do know that some growth has occurred; over the last seven years, the Retrofit Academy has grown to train over 2,500 retrofit coordinators.

Collating targets on advice roles is also challenging, but there is evidence of progress. The Community Energy State of the Sector in 2023 identified 74 new advice services run by community groups across Scotland, England, and Wales.[7]

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[3] Heat pump statistics. Note one person trained does not directly result in FTE new entrants; not everyone completing the qualification will pursue it full-time, as their skills span a broader expertise.

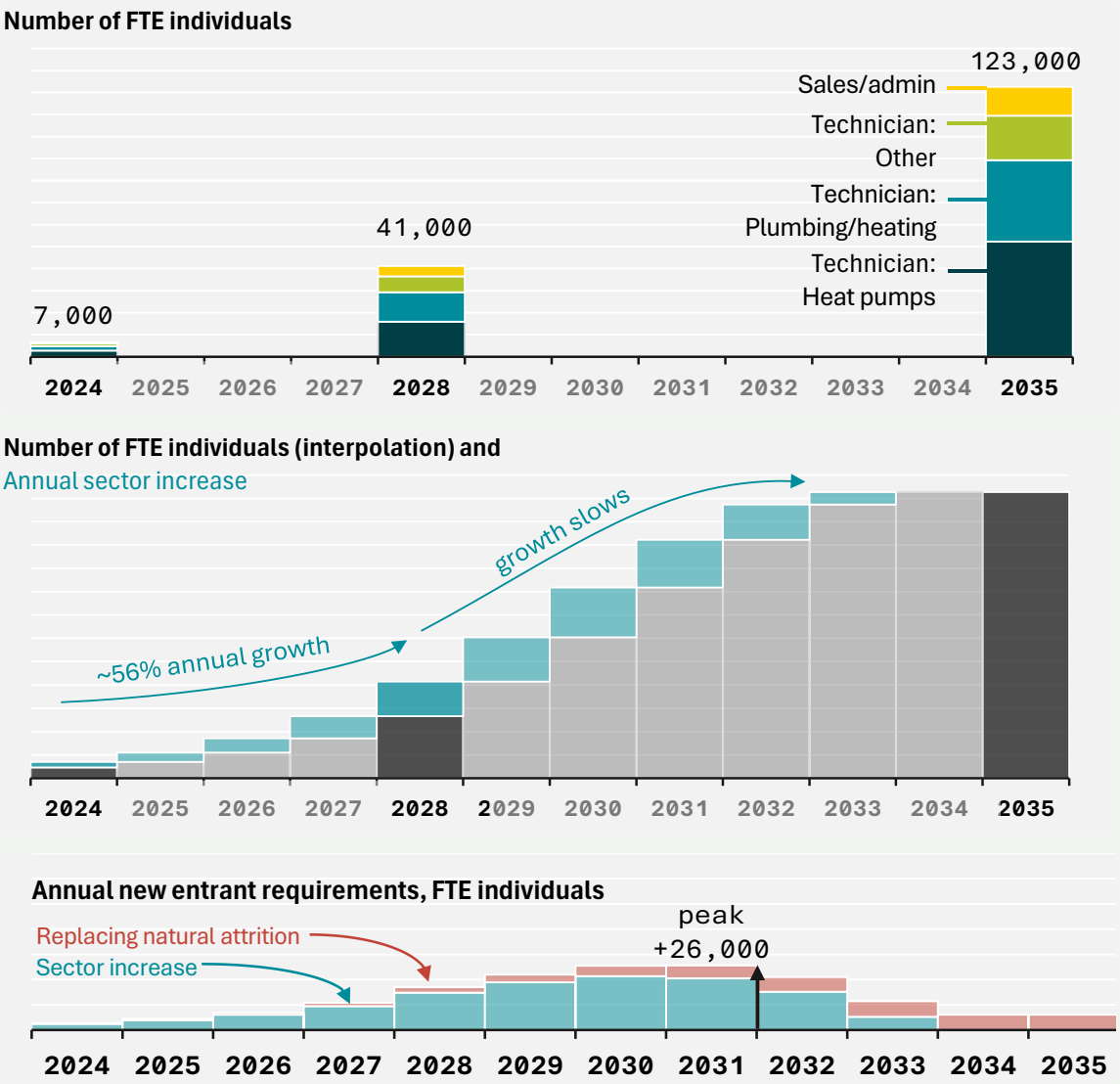
[4] "At the peak, employment increases by 108,000" Building the Future: The economic and fiscal impacts of making homes energy efficient – Verco and Cambridge Economics.
The Construction Leadership Council estimated that 500,000 new direct jobs would need to be created to meet a minimum EPC 'C' target by 2030.

[5] Office for National Statistics (ONS), released 14 March 2024, ONS website, statistical bulletin, Experimental estimates of green jobs, UK: 2024 Retrofit job data collected via the Low Carbon and Renewable Energy Economy Survey

[6] A Green Stimulus for housing: The Macroeconomic impacts of a UK whole-house retrofit programme

[7] Community Energy State of the Sector 2024

Figure 1: Heat pump workforce requirements to meet government targets of 0.6 million, 1.6 million heat pumps in 2028 and 2035 respectively.
Regen analysis of Heat Pump Association projections (2024)



Analysis assumptions used:

- 41,000 and 123,000 FTE individuals are required to achieve government targets in 2028 and 2035 respectively and the workforce size today is approximately 7,000, according to the HPA.
- Natural annual attrition occurs at 5%
- Sector growth is steady from 2025 to 2028.
- Growth slows to reach the maximum sector size in 2034 from which point it is maintained.

1.2. **The changing retrofit supply chain**

The retrofit supply chain will need to respond and adapt to an evolving market. The supply chain of the future will need to consider the following:

Coordination: Collaboration across service providers is needed to deliver comprehensive support for customers. The customer can facilitate this collaboration, but for technically robust, whole-house retrofits, a specialised retrofit coordinator is needed. Additionally, stronger regional/local coordination – through multi-skilled businesses or local supply-chain managers – can connect supply and demand signals, foster relationships across the chain, and help the sector grow with confidence.

Competition: SMEs face increasing competition from large corporations, which can subsidise installation services and selectively target customers to maximise profitability. Smaller installers may play an important role in catering to niches. Emerging digital service platforms like Heat Geek will be critical in enabling SMEs, alleviating their marketing challenges, and ensuring a healthy competitive market.

Advisors and reach: Trusted intermediaries will play a critical role in building trust, to ensure a just transition. They are needed to help engage everyone, including hard-to-reach groups.[8] However, these roles often struggle with the funding needed to fully realise their potential.[9]

Local bubbles: As the sector grows to maturity, the quality and capacity of local supply chains may vary from one town to the next. Firstly, different areas have varying housing challenges that may or may not be incentivised by national and local policies. Secondly, installers will service reasonable travel radiuses. Finally, social marketing, whereby awareness spreads through local communities, may significantly impact interest and business investment.

Electricity network connections: To ensure the efficient delivery of heat pumps, it is crucial that DNOs develop a strong pipeline of connection engineers and offer streamlined online self-service tools to handle new installations. Slow and inconsistent processes can hinder the speed and efficiency of heat pump deployment.[10] Ofgem is currently (December 2024) consulting on the end-to-end connections process, and the outcome of the consultation could shape future processes for connecting low carbon technologies like heat pumps.

Evaluators and quality assurance: Certification challenges persist, with some maintaining that it is still not a guarantee of quality or competence. Independent

[8] Warmer Homes: How can Grant Subsidy Schemes Improve Engagement with Participants? P.28
[9] "Intermediating energy justice?" M. Lacey-Barnacle, C.M. Bird (2018) Applied Energy
[10] Electrification: The local grid challenge Regen (2024)

evaluators could play a key role in bridging this gap, providing robust quality assurance and ensuring that standards are consistently met across installations.

1.3. Challenges and opportunities

1.3.1. Challenge 1: stable demand growth is essential

Reliable and stable growth in demand is needed to support supply chain development. The stop-start nature of funding for retrofit measures in the past has proved challenging for the sector. Demand fluctuations within incentive scheme periods can also prove challenging. *"I think the Government dithering about green issues is a killer for a proper beneficial strategy."* Electrician, via RMI Index Survey.

Regarding heat pump uptake specifically, the ongoing commitment to the Boiler Upgrade Scheme (BUS) scheme is helpful; a year since its inception, uptake has begun increasing steadily.[11]

However, it is also important to note that stable demand growth is not just about funding and finance. It is also about the awareness, speed of delivery, other signals like clarity on the future role of the gas network, and the removal of 'hassle-barriers' which prevent customers from taking the next step, including electricity network connections and planning rules.

Implications:

- We need to embrace steady growth to avoid supply chain disruptions, maintain customer confidence and balance stakeholder and policy expectations accordingly.
- While the sector scales, confidence and commitment must be maintained to retrofit policies under the Warm Homes plan, e.g., Warm homes Grant and BUS.
- There are further financial opportunities to strengthen demand signals, which national government and financers are considering, e.g., low interest loans.
- The changes to permitted development for heat pumps, will need to be disseminated through planning teams to ensure this is applied effectively.

1.3.2. Challenge 2: Competing market signals

There are many homeowners and community groups who struggle to find the skilled workforce. Therefore, it is not entirely true that this is *just* a demand problem. While stable demand growth will be critical to supply chain growth, there is a more nuanced

[11] Current-news: Boiler Upgrade Scheme: Applications rise 27% year on year

motivator; the incentives to grow (for businesses) or switch jobs (for individuals) must **outweigh competing signals**.

Firstly, no matter how guaranteed the demand is, it is not appearing to persuade those with relevant skills to engage in retrofit-specific activities when they are already sought after in their current roles. Industry surveys show the wider RMI sector is busy[12] and the wider construction sector is facing 'catastrophic' shortages.[13] This will be compounded by the upcoming wave of house building.

Secondly, there is always risk associated with growing a business, switching jobs, or hiring apprenticeships, including the investment in courses or certification, the time away from profitable work, continued upskilling, and building a customer base.

Moreover, plumbers and electricians face specific barriers in hiring apprentices. For example, apprentice contracts generally operate within traditional working hours, which can put off SMEs who respond to emergencies.

Thirdly, there has been repeated erosion of trust due to policy uncertainty. Given this, and the reasons above, it is no wonder that the sector appears hesitant to grow, and this can grate against expectations to scale yesterday. While challenging, this **trust must be rebuilt** carefully and consistently. In addition, there is also an uphill battle against misinformation, with strong messaging from incumbents.[14]

Levelling these incentives and risks is, therefore, key. However, caution is needed to ensure that perverse incentives are not built in, and that funding is spent wisely. For example, funding free training to transition those with relevant skills might help in some cases, but some have found minimal impacts on local workforce growth; without sharing the risk, attendees may see benefit in taking courses to bolster their CV but could ultimately be drawn to maintaining their business as usual.

There is, however, more value in supporting SMEs to help bridge the significant bottleneck in transferring college education into practical competencies via apprenticeships or otherwise. Aldersgate Group have asked that "HM Treasury should consider increasing the Apprenticeship Incentive Payment to support SMEs to take on apprentices."[15] This is discussed more in the following section.

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[12] Travis Perkins RMI Index (2023)

[13] "Trade vacancies are now at record highs, with widespread shortages particularly prevalent among plumbers, bricklayers, carpenters and electricians." https://www.kingfisher.com/tradeskills

[14] https://ukerc.ac.uk/publications/incumbency-in-the-heat-sector-implications-for-policy/ https://news.sky.com/story/campaigns-of-misinformation-around-heat-pumps-says-energy-minister-amid-record-number-of-installations-13052428

[15] Aldersgate Group https://www.aldersgategroup.org.uk/content/uploads/2024/10/Beyond-the-levy-Ensuring-the-effective-implementation-of-the-Growth-and-Skills-Levy.pdf

Implications:

- Acknowledge that sector growth is not only influenced by financial demand signals, but also wider construction market signals, confidence in government direction, messaging from incumbents, and investment risk.
- Businesses and national or local governments should share the risk of upskilling and hiring such that they both have a stake in its value.

1.3.3. Challenge 3: Career pathways

There is currently a lack of **clear and well communicated** career pathways and a gap between theoretical training and training in the **practical competencies** required.[16]

While various courses and qualifications are available, they do not translate into readiness to work. To keep pace with the growth rate mapped out on page 7, there is currently an inadequate number of apprenticeship *positions* to provide the practical experience required.[17] There has been a sharp decline in intermediate apprenticeship and youth apprenticeships over the last decade. As discussed above, the incentives to take on apprenticeships are inadequate compared to other motivators.

Better hiring incentives and support is needed to bridge this,[18] acknowledging the specific motivators, while ensuring that perverse incentives are not built in. There is also a need to 'train-the-trainer' to ensure that outdated or incorrect practises are not passed on. (See Bristol City Council's case study on page 17.)

Additionally, given the rate of growth required in the sector, active engagement with young people is important to prime new entrants needed; many young people are unaware of opportunities specifically within clean heat.[19] (Perhaps unsurprisingly due to the sectors relative nascent size.) However, there are also social factors at play. There is evidence of unconscious bias within schools towards discussing trade

[16] A Study of Tutors' and Students' Perceptions and Experiences of Full-time College Courses and Apprenticeships in Plumbing

[17] Blog: too many plumbing students: "The real shortage is not young people wanting to learn a trade – we have hundreds of thousands of them – the real shortage is job opportunities and employers willing to take an apprentice on."

[18] Kingfisher research

[19] Getting Gen-Z into retrofit and renewables jobs: the appetite is there, but not the awareness, MCS Foundation

careers with particular demographics.[20] The heating and construction workforce undeniably lacks diversity – the lack of diverse role models will also be having an impact on interest in under-represented groups.

Outreach must improve visibility of success stories and role models, which includes women and other under-represented groups in trade careers. The sector also has a responsibility to realise and promote an inclusive environment for those outside the current narrow demographic. The annual Women Installers Together event is an example of combatting this; "this event is the only opportunity for many to meet others who share their unique experiences."

Efforts to provide, co-create, and communicate clearer career pathways are in progress. These include new retrofit-tailored courses and qualifications,[21] retrofit modules being introduced to existing courses, and digital solutions, such as Greenworkx, aiming to bring more people onto courses. The National Retrofit Hub has also developed a "Qualifications & Training Map."

However, there continues to be innovation opportunities in the education models. For example, with increasing developments in digital learning, facilitated education could move more online, enabling more time to be spent onsite, rather than in the classroom. An example of this is the new Trainee Renewables Scheme designed and run by Your Energy Your Way – an SME and CIC based in Surrey.[22]

Implications:

- More opportunities into the sector, via apprenticeships or otherwise, could be prioritised by national and local government.
- Better incentives are required to encourage SMEs to take on apprentices. Businesses and national or local governments could share the financial risk of this such that they both have a stake in its value.
- Awareness of clean heat and trade careers needs to be raised in schools *inclusively* to combat unconscious bias.

[20] Kingfisher research There is "an imbalance in advice given at schools, with only a quarter (26%) of young women saying they were given information about trade careers, compared to almost half (47%) of young men."

[21] Low carbon heating technician (level 3) started in September 2024

[22] Launched in 2024, Your Energy Your Way have designed a training programme that is rooted in real world experience as a response to the gaps in the current apprenticeship models; trainees are with the team full time, facilitated learning is conducted via an online platform, and they meet fortnightly 'learning manager' as well as regularly with a personal external mentor.

1.3.4. **Opportunities**

Delivering retrofit for warm and low carbon heat has many climate and social benefits.[23] Purely from the career perspective, there are many exciting opportunities:

- **Rewarding:** The career not only aligns with the growing demand for 'green' jobs, but is also rewarding on a much smaller, but more tangible scale – this work has direct impact in people's homes.
- **Irreplaceable:** While there is the potential for some digital innovation to improve efficiencies, ultimately much of the work must be done by human hands. In an age of AI, such work is increasingly appealing.
- **Multidisciplinary:** The variety of jobs in the sector will require a wide range of skill sets. There is unequivocally a need for technical and trade skills, but there is also a significant requirement for coordination, design and interpersonal skills.
- **Inclusion:** The expansion of construction and RMI (repair, maintenance and improvement) into the relatively nascent retrofit market creates opportunities to rewrite cultural assumptions and create positive environments for new entrants with more diverse backgrounds and experiences.

[23] "…transforming heat is an essential aspect of modernising Wales and achieving better outcomes for our people, our businesses, and our environment" p. 5, Heat Strategy for Wales, Welsh Government "Transforming our buildings by making them more energy efficient and converting them to zero emissions has the potential to make a significant economic contribution and represents a sizeable opportunity for Scottish businesses over the next 24 years." P. 105, Heat in Buildings Strategy, Scottish Government "The benefits of more efficient, low-carbon buildings for consumers are clear: smarter, better performing buildings, reduced energy bills and healthier, more comfortable environments. Additionally, studies indicate that more energy efficient properties typically have a higher value than less efficient ones." Heat and Buildings Strategy, HM Government

Section 2: **Ideas for local authority action**

2.1. **Summary**

This section presents the emerging findings on how local authorities can best support their local retrofit supply chain to scale.

It is too early to share a step-by-step best practice guide on the local authority's role in this. However, the list below includes seven activities that local authorities and other local/regional bodies have undertaken. Evidence of success/impact has been explored via desk research and the Net Zero Living retrofit working group, but nonetheless, it is not conclusive. **We welcome feedback on this to update in light of activities missed.**

In the following subsections, we discuss the top three types of activities for any local authority considering retrofit. Emerging evidence suggests these are important because of their ease of delivery, risks, and potential impact, which are discussed in detail over the coming pages.

Note also that the National Retrofit Hub has developed, and is continuing to develop, a checklist for setting up a 'regional retrofit skills hub', which proposes a more comprehensive framework for addressing this challenge. You can find the living document online on their resources.

Figure 1: Summary of ideas for local authority action on supporting the local retrofit supply chain to scale

ACTIVITY	EXAMPLES/EVIDENCE	ACTION
Promoting career opportunities, e.g. through schools and job centres.	BristolWORKS, Solar for Schools,	Should consider
Proactively investing in supply chain gaps, e.g. via procurement and social value contracts.	Cosy Homes Oxfordshire, Energy Saving Devon, YorkEnergy,	Should consider
Leveraging trusted intermediaries for outreach	Northern Devon Primary Care Fuel Poverty Crisis Programme, Carbon Co op retrofit champions (Calderdale),	Should consider
Codeveloping career pathways with key groups	Cornwall College Green Skills pathway, City of Portsmouth Net	Could consider

	Zero Training Hub, Energy Skills Partnership	
Having an internal 'supply chain manager' and facilitating a Community of Practice	Carbon Coop: Contracts and Supply Chain Officer RetrofitWorks: Supply Chain Development Manager	Could consider
Monitoring local supply chain health	International review of domestic retrofit supply chains, BEIS research 2021 Retrofit Skills Market Analysis, WECA	Could consider
Funding free training	Funded home retrofit training for trade professionals	Limited positive evidence in isolation

2.2. **Promoting career opportunities**

As discussed in the previous section, low awareness of retrofit careers could limit intake over the next decade. Therefore, it is critical to proactively engage the next generation and the economically inactive and do so inclusively.

- **Potential impact:** The influx of new entrants into the sector needs to scale significantly over the next decade (see Figure 1). Additionally, there are broader social impact opportunities, such as inviting in everyone and raising awareness of new job opportunities.
- **Risks:** Finding adequate routes into the sector remains a challenge. However, engaging young people should be low risk because, at a minimum, programmes will benefit from engaging young people in the energy transition more broadly. What's more, given that the sector is relatively nascent, there is a high risk that *without* priming young people now, courses and businesses will struggle to recruit at the volume needed in the coming years.
- **Ease of delivery:** By working with or strengthening existing careers programmes, delivery should be straightforward compared to other supply chain development activities proposed in this document.

2.2.1. Key Actions

Awareness and recruitment strategy: combined authorities can make a difference through shared prosperity funding by working with regional job centres. Greater Manchester based organisation, B4Box, focus on "recruiting local people, particularly those who face challenges finding work, and supports them in gaining vital skills."[24]

Raise awareness in schools: Young people don't necessarily need to be further persuaded about the importance of climate change. Instead, it is important that they are made aware of the specific opportunities in green trades (see section on opportunities). They also need to be given opportunities to innovate and practice their problem-solving skills beyond the curriculum in a hands-on forum.

Leverage proven models: Solar for schools practices the above approach. "We link the curriculum in the classroom with the solar on the roof. This means the learning is extremely relevant and tailored to each school." They use hands-on equipment to learn about solar energy, use job cards that encourage students to role-play various green jobs associated with solar projects and often involve real installers in their workshops. Bristol City Council also works with well-established BristolWORKS—see case study overleaf.

Ensure diverse representation and address unconscious bias: It must be ensured that anyone for whom a career in retrofit may be right is encouraged into the sector, regardless of their demographic. This is not only fair but critical to avoid a major skills shortage in the near future. In addition to the sector ensuring the workplace is more inclusive, we must be aware of unconscious bias in career engagement and ensure diverse representation. Young men are significantly more likely to consider a job installing renewable technology over young women,[25] and there is evidence of unconscious bias within schools regarding who they engage in trade careers.[26]

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[24] Ashden awards case study: B4Box

[25] Getting Gen-Z into retrofit and renewables jobs: the appetite is there, but not the awareness, MCS Foundation https://mcsfoundation.org.uk/wp-content/uploads/2023/11/Getting-Gen-Z-into-Green-Jobs-report.pdf

[26] https://www.kingfisher.com/en/media/news/kingfisher-news/2023/uk-to-lose-out-on-p98bn-of-growth-by-2030-due-to-shortage-of-tra.html

Case study: Bristol City Council – Mission Net Zero

Connecting the dots on workforce development

Overview

Context: the Mission Net Zero project, operating across the West of England and funded by the Innovate UK Net Zero Living programme, is pioneering a holistic approach to developing the retrofit supply chain to support the delivery of net zero neighbourhoods. This project and workstream are ongoing and will cumulate in November 2025.

While there are already many workforce development initiatives in the region, some have struggled to gain traction and/or buy-in. Mission Net Zero aims to fill these gaps by fostering connections between existing initiatives.

Mission Net Zero is working with schools, training providers, businesses and communities, and connecting key regional supply chain actors, including the West of England Combined Authority, Retrofit West CIC, Bristol City Leap and Vattenfall Heat UK.

By aligning goals and resources, the project's joined-up strategy aims to improve awareness and instigate education interventions at all levels concurrently.

Skills pipeline - inspiring the future workforce

- Retrofit content has been embedded into work experience sessions by partnering with BristolWORKS which is a well-established programme that helps young people overcome barriers to employment by providing tailored career support, moving beyond traditional work experience, and showcasing the city's diverse career opportunities.
- Four training providers will offer specialised training to existing apprentices on heat pumps and more. The project and training providers recognise that "training-the-trainer" is critical.
- Commissioners and project managers are being trained to quality-assure decarbonisation projects effectively, i.e., becoming "intelligent clients".

Local businesses and communities - bridging supply chain gaps

- It was identified that better alignment between public and private initiatives is needed. The project, therefore, helps businesses navigate this and improve related operational capabilities, such as contract bidding.
- Efforts to integrate SMEs into larger procurement pipelines aim to democratise access to regional decarbonisation projects.
- The project recognises the importance of upskilling community groups so that they are enabled to design and implement climate action plans that address local needs. *[This integrates with Mission Net Zero's other work packages]*

2.3. **Proactively investing in supply chain gaps**

To meet the UK's climate goals and society's heating needs, multiple types of service providers must work together to deliver a more complete retrofit package. Different supply chain integration/coordination models are emerging to provide this, however, a number of market failures mean new entrants are not being brought into the sector.

Potential impact: Alongside long-term national funding, local authorities could leverage a significant programme of future work to enable local businesses to invest in upskilling via their own procurement of building upgrades or by drawing in private investment.

Risks:

- There is not yet a consensus on defining what a healthy retrofit supply chain looks like, what metrics can be used to quantify this,[27] nor how the different services might best be integrated to deliver, i.e., exactly how these roles are shared and split across organisations.[28]
- There is still some doubt about whether procuring retrofit coordinators for deep retrofit projects is appropriate for community groups or local authorities. Coordinators must be confident in building relationships with designers and installers, which could be challenging when operating separately.
- Fully integrated supply chains run the risk of 'marking their own homework' or developing a bias toward installing measures that are the most profitable rather than those best in the homeowner's interests.
- Unfettered investment risks creating perverse incentives; both local government and commercial entities should have a stake in the value created by investment.

Ease of delivery: Acquiring the investment and local authority appetite for investment risk is a significant challenge for local authorities looking to bring any aspect of the supply chain in-house. Assessing and identifying supply chain gaps quickly remains challenging; arguably a long-term relationship with key actors is required for this.[26]

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[27] Facilitating Retrofit: a comprehensive sectoral analysis, MCS Foundation and UKGBC

[28] Organisations can be sole trader installers, or large organisations encompassing stretches of the supply chain. Individuals can also take on multiple roles within the retrofit process, provided they have the appropriate qualifications. For instance, someone trained in retrofit assessments and evaluation could survey buildings before and after installations, potentially increasing efficiency by streamlining the process.

2.3.1. Key Actions

Motivate employers to take on apprenticeships: As discussed on page 9 and 11, there are limited opportunities for new entrants to develop practical competencies via work experience and apprenticeships. Local authorities could use their own procurement programmes of work, social value contracts, adult skills budgets, and apprenticeships to support SMEs in investing in new entrants.

The Net Zero Living project, Upskilling Domestic Retrofit Haringey, is working with London Councils, LGA and the London construction framework to test accessible social value 'lift and shift' models to develop local economy and stakeholder capacity for retrofit.

Integrate SMEs into council procurement pipelines: Aim to improve access to regional decarbonisation projects for SMEs and/or pass large employer's unspent levy to local SMEs. (This could also be used to help set up shared apprenticeship schemes.) The Be:One partnership in the North East has developed a long-term retrofit delivery contract with a large contractor and three local SMEs. Alongside this, the contractor, RE:GEN Group, is also running a training academy.

Fund supporting services: One example of a developing service structure is a 'wrap-around' service, which conducts outreach, provides advice, coordinates the delivery with sole traders or other contractors and finally delivers valuation. This service can help manage expectations with the customer and ensure quality assurance with installers. Many community groups across the UK have started doing this work, benefiting from their impartiality to build trust and bring in customers.

Local authorities could play a similar role, particularly in this emerging market stage, via' one-stop shops'. York City Council is piloting a one-stop shop, funded by the Net Zero Living programme.

Joint venture: Another Net Zero Living project with Liverpool City Council is developing a strategy to take this a step further. A costed investment plan is being drawn up to deliver their retrofit targets for net zero 2030. The aim is to establish a special delivery vehicle, potentially in a joint venture, which will directly hire the workforce needed. See case study overleaf.

Case study: Liverpool City Council – Realising Net Zero Liverpool

Direct delivery of retrofit for the 'less able to pay'

Overview

Starting in early 2024, Liverpool City Council, in partnership with New Resource Partners, has been developing a city scale decarbonisation plan under Innovate UK's Net Zero Living Programme. Its high-level strategy prioritises social value and economic growth, ensuring no one is left behind in its transition to net zero by 2030. To do this, the project will put forward an investment portfolio/costed delivery plan ready for investment to reduce reliance on innovation funding within 18 months; they are currently looking at the development of fair commercialisation and/or joint venture models and believe they will be able to showcase significant cost savings and tangible benefits.

Liverpool's strategy is ambitious, addressing decarbonisation at a city-wide scale while simultaneously addressing inequality. Amongst other activities, the council is aiming to ensure the market gap of those less able to pay upfront for retrofit is filled, with plans to retrofit 40,000 homes annually by 2030. They have estimated that this will require 3,500 skilled installers.

The project aims to deliver this in a well-planned and well–timed manner, developing relationships with project partners, householders and associations.

In-house supply chain development

- The project is developing an investable delivery plan for a special purpose vehicle to deliver its retrofit targets. This vehicle will operate across the entire supply chain at scale, from planning and product sourcing to delivery.
- Once established, the council plans to take a holistic pipeline approach to ensure they can hire new entrants, preparing to engage schools and colleges in employment, with direct links to hiring by the special purpose vehicle.
- The project has engaged local and national manufacturers, such as Kingspan, Allgreen Energy, NSG Pilkington and Mitsubishi, to identify the best products for different housing types.

Multi-vector outreach programme

- The project has identified a spectrum of outreach roles, partners and strategies to give them the best chance of broad reach. This work is backed by research with citizens' juries and behavioural insights.
- Partners include local champions, trusted intermediaries, housing associations, public health teams, fire prevention services, etc.
- Activities include demonstrator homes alongside wider regeneration of green spaces, arts/cultural activities, media, sports etc.

2.4. **Leveraging trusted intermediaries**

Outreach roles are a vital but often overlooked segment of the retrofit supply chain. Trusted intermediaries play a critical role in combating misinformation, ensuring equitable access to retrofit services, and gathering valuable community insights to inform better policy decisions.

Potential impact: Without advocates and advisors embedded in trusted spaces, some groups risk being left behind in the clean heat transition. A well-rounded outreach strategy should not only help create consistent demand for retrofit services, feeding the supply chain with a steady flow of potential projects and customers but also aid a just transition.

Risks: Retrofit solutions are rarely straightforward, with solutions varying significantly depending on property type, location and individual needs. This complexity can make outreach challenging, particularly if oversimplified messages fail to address real concerns or raise unrealistic expectations. Poor communication strategies resulting in mixed messages from different sources run the risk of creating confusion and reducing public confidence in retrofit initiatives. However, given these challenges, trusted voices become even more critical. They can deliver nuanced, context-specific messages in open forums and one-on-one engagements, helping to clarify complexities, manage expectations and explain trade-offs.

Ease of delivery: Identifying retrofit outreach advocates could take time, research and iterations. Leveraging and empowering existing community groups, networks, and public services is critical to ease of delivery, but there are potential challenges; community groups, public services, and trusted intermediaries may face resource constraints or funding challenges, limiting their ability to upskill and engage consistently.

2.4.1. **Key actions**

Identify the best-placed trusted intermediaries. When considering a local outreach strategy, who can be trusted for retrofit advice is an ongoing area of research.[29] Beyond community groups and public services, there are wider opportunities to think creatively about who might be appropriate as the trusted voices in a specific local area and how to leverage this.

This could include other third-sector groups, commercial groups, arts/culture groups, and public figures, and it need not be limited to groups with obvious retrofit associations. What is important is that they are credible, empathetic, and passionate

[29] The Local Energy Advice Demonstrator Competition, is currently testing new approaches to retrofit advice across England and will conclude in March 2025.

about retrofit and that a positive link can be drawn between their identity and the cause.[30]

Liverpool City Council is developing a multi-vector outreach strategy to support its net zero ambitions, i.e., the council has identified a spectrum of outreach roles, partners and strategies. (See case study on page 21.)

Leverage existing community groups. Many community energy groups have been developing dedicated teams of specialist local volunteers in this area, and national policy makers are beginning to understand this. Some groups have also been developing the idea of 'local retrofit champions'.

Leverage public health sector. Other public sector organisations could also play a role. An emerging example is the public health sector—see Northern Devon Primary Care Fuel Poverty Crisis Programme, Warm Homes Prescription trial, and Severn Wye Energy Agency: Warmth on Prescription.

Collating local lists: Collating and sharing lists of trusted installers can help link supply and demand. Recommending installers can present a legal challenge for local authorities, but this has been achieved. For example, Herefordshire partnership between Marches Energy Agency and local community group Building Sense.[31]

[30] This was identified by recent research by Climate Exchange, which demystifies the science behind trusted communicators and provides a framework for it.

[31] Future Ready Homes Directory