Environment Committee

This document contains the written evidence received by the Committee in response to its Call for Evidence, which formed part of its investigation into low-carbon skills in London.

Calls for Evidence are open to anyone to respond to and in September 2023 the Committee published a number of questions it was particularly interested in responses to as part of its work, which can be found on page 2. The Call for Evidence was open from Monday 4 September to Friday 29th September 2023.

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5. Are there other cities nationally (or internationally) that can act as a guide for progress in London in this area?

Response from Ashden

1. **Is London training enough workers to be able to install sufficient lowcarbon energy infrastructure, to implement the transition to net zero?**

London is not training enough workers, particularly in relation to energy upgrades of buildings, both domestic and commercial. The shortfall is particularly acute in relation to skills required for fabric retrofit, especially insulation. This has resulted in an underspend of funds available through government funding schemes such as the Sustainable Warmth and Social Housing Decarbonisation Fund and thousands of homes are signed up for upgrades, but waiting for the work to be undertaken. Contractors such as Wates have reported a 'chronic shortage' of external wall insulation operatives (from presentation delivered to Retrofit London event, March 2023). Anecdotally we have heard that 'there are only 3 building firms in London who can undertake a deep retrofit'.

2. **What is the current demand from employers for low-carbon skills in London?**
    - How is this likely to change over time?

Most boroughs have now conducted analysis of green job projections up to 2050 e.g South London Partnership however these are based on high level scenarios concerning future jobs growth, rather than discussions with employers about nearterm jobs. It would be useful to bring employer groups together to improve the nearterm data (though much of this will be subject to national government funding of retrofit schemes). The analysis should be as granular as possible by occupation.

Government-funded schemes such as the Social Housing Decarbonisation Fund are already providing demand. London boroughs have secured £52m in funding for retrofit programmes through Wave 2.1 of this fund (announced August 2023), and housing associations have also bid successfully, such as London and Quadrant which has secured £27m. This will create demand for retrofit and low carbon heat installers in the short term. Further demand will arise from the Great British Insulation Scheme which launched in Summer 2023, and through the London allocation of HUG funding (£12m).

Social housing providers are also looking to incorporate retrofit into their regular asset maintenance and upgrade programmes which will further boost demand.

3. **Is the current provision of training courses for low-carbon skills sufficient?**
    - Is the Mayor doing enough?
    - What are other bodies, e.g. charities, private companies, London Boroughs doing?

In relation to retrofit, there is currently not enough provision. Retrofit jobs can be broken down into three broad categories:

1) PAS2035 roles including retrofit co-ordinator and assessor
2) Craft-based trades such as insulation installer

3) Building services installers such as heat pump engineers

A search on Trustmark reveals just 14 organisations delivering retrofit co-ordination in London, with most of these being micro-businesses. There are online courses provided by the Retrofit Academy and others, but these do not incorporate onsite learning. There is an opportunity through government-funded programmes such as the Social Housing Decarbonisation Fund to link trainees to onsite training, and to further subsidise training.

Very few London colleges are offering retrofit training, and the construction courses that they do offer focus mostly on new-build and do not incorporate foundational whole house/energy modules. Career pathways into retrofit are not widely promoted, and a London training directory, well-designed and easy to use like this one from Neath Port Talbot Group of Colleges would be useful.

There is a shortage of college teachers with retrofit understanding but this gap could be filled by encouraging employers (including by using procurement levers, see below) to provide training both to college students and teachers. Employers such as St Gobain already do this for new-build construction, providing materials and trainers to colleges teaching plastering for example, though care is needed to ensure that training is not dominated by a single manufacturer.

Currently employers focus on getting the right accreditations (such as PAS2030) for their sub-contractors, rather than skilling up new entrants to insulation work. There is a need for employers to provide work placements in a retrofit context for students taking the new T-level in onsite construction.

New apprenticeships are emerging – the Low Carbon Heat Technician apprenticeship has just been launched and a new Insulation apprenticeship is expected in the next 18 months. London Colleges and employers should be encouraged to offer these.

Using the lever of procurement

With significant government-funded programmes looking to deliver in London over the next 3 years there is a good opportunity to use procurement to deliver training objectives – for example by insisting that Tier 1 contractors support local colleges by training lecturers and also offer work experience and opportunities for newly trained people. To ensure retention of trainees (according to CITB over 60% of those that undertake construction training do not enter careers in construction) procurement contracts must ensure that sub-contractors are fairly paid.

Monitoring/reporting

It is currently difficult to assess progress in training up Londoners on retrofit. Better data is needed on:

- Courses being offered by colleges and private training providers
- Number of people undertaking courses ○ Employer destinations ○ Retention in the retrofit sector.

Innovative training models

The current model of sub-contracted work widely used in publicly procured construction work is not conducive to skills development. Examples such as City Build in Glasgow (a council-owned building and retrofit company) or Ashden Award winner B4Box – a training provider/construction company procured directly by Stockport Homes provide good models for excellent training and staff retention.

Ashden showcases climate innovation through our annual award scheme, and has run a Low Carbon Skills Award for the last three years. Ashden also runs regional learning networks for local authorities on different themes, including retrofit and convenes City Region green skills network.

Response from Association for Public Service Excellence (APSE)[1]

In my view, the Mayor of London needs to invest in further improving the carbon calculator "ready reckoner" tool that London's boroughs are directed to use in relation to assessing their waste management related carbon baselines, targets and impacts of proposed actions. Whilst the tool has been useful in helping the boroughs understand the carbon impacts of their waste management, Eunomia (the consultants that created it for the Mayor) now say that it is coming up against its design limits (an issue that gets worse the further into the future you try to model scenarios). Additionally, it can't model the impacts of switching from diesel to HVO or electric vehicles and it's difficult to model the impacts of diverting food waste for anaerobic digestion if the bio-gas isn't used to produce electricity (in our case it's fed into the National Gas Grid and used to power BioCollectors' fleet of food waste collection vehicles).

Other improvements could include splitting carbon impact outputs into Scope 1, 2 and 3 and showing how the carbon emission "plume" from an authority's waste management changes over time (at present it just gives a single figure for "tonnes CO2eq per tonne of waste managed"). It may well be the case that once an improved tool is available it will be more complicated to use and still highly dependent on the realism or otherwise of any scenario assumptions entered. For that reason it may also help if the GLA (or ReLondon) employed an officer resource to model the carbon impacts of all London boroughs' waste management consistently

[1] This submission contains an individual's response, submitted from Wandsworth Borough Council

Response from BusinessLDN

Introduction

1. BusinessLDN is a business membership organisation with the mission to make London the best city in the world to do business, working with and for the whole UK. We convene and mobilise business leaders to tackle the key challenges facing our capital. We are made up of 180 leading employers across a wide range of sectors.

2. We welcome the opportunity to provide written evidence to the London Assembly Environment Committee to inform its discussion with invited stakeholders at its meeting on 18 October 2023.

3. The Mayor of London has set a target for London to be net-zero-carbon by 2030, putting London at the forefront of global cities and UK action on climate change. This transition to a greener economy will have major implications for the labour market and skills system. Equipping people with green skills at all levels across the capital's sectors will be vital to achieving this and transitioning to a sustainable society more broadly.

4. BusinessLDN has led the development of the Local Skills Improvement Plan (LSIP) in partnership with the Federation of Small Businesses London (FSB), London Chamber of Commerce and Industry (LCCI), and Confederation of British Industry London (CBI), with the backing of the Mayor of London and London government. Over the last year, we have spoken to over 1000 employers, training providers and others, to understand more about skills needs and gaps, how the current system is working, and build a data-driven blueprint for reforming the skills system.

See the full pan-London LSIP report on our website.

5. Green skills is one of our core 'cross-cutting' skills themes we are focussing on in the LSIP. For the purposes of this submission and the LSIP, we have defined green skills as 'the skills which are needed to support the transition to Carbon net zero and a sustainable society'. As such, much of the evidence and insight in this submission is drawn from our data and findings from our engagement with employers, educators and other key stakeholders during the LSIP process.

Current and future demand for green skills

6. There is already significant demand for green jobs and skills in the capital. According to research commissioned by London's sub-regional partnerships, there

were an estimated 234,000 jobs in green priority sectors (i.e. those that have an important role to play in meeting net zero and environmental goals) in London in 2020, with the number of jobs in these sectors expected to grow to 505,000 by 2030 (in a central scenario). Job growth is expected to be particularly strong in green finance, homes and buildings, power, and lowcarbon transport.

7. Given the scale of the labour challenge, supporting those already in work to retrain and upskill to acquire relevant green skills will also be key. In our survey in February 2023 of more than 1,000 London business leaders and HR managers, carried out by Survation, we found that 21% of respondents indicated their business is currently lacking green skills; and 23% indicated they will require more green skills over the next two to five years. However, evidence suggests that the proportion of workers currently in receipt of training in the occupations most affected by greening is relatively low. For example, the London LSIP Evidence Base, which was produced by GLA Economics, found that only a fifth (20%) of individuals surveyed in 2017-19 who worked in a 'green occupation' in their main job reported receiving training in the past three months, compared to a quarter (25%) in non-green occupations.

8. Many existing job roles will also have to change because of the transition to a greener economy. To meet these changes in requirements there is a growing need to increase education provision in subjects and courses that are relevant for green jobs, as well as the proportion of learners progressing to employment within green priority sectors.

9. In terms of specific skills requirements, the implications of all of this are wideranging. The London LSIP found there will likely be increased requirements for skilled trade workers (especially electricians, plumbers and construction trades) – which are already areas of significant shortage. Demand for the specific skills needed for developing green technology (such as electric vehicle charging point and heat pump installers) is also likely to grow in the years ahead. Meanwhile, across industry companies are increasingly looking to recruit Carbon and Sustainability managers who bring core carbon literacy and project management skills. Digital technology, such as the use of building management and Geographic Information Systems, is also seen by employers as a vital tool for reducing carbon emissions.

10. It is also worth noting several challenges faced by employers when identifying and meeting demand for their green skills needs. Firstly, challenges in defining green skills and the associated green 'jargon' can be a barrier to understanding the core competencies required, and to workers' perception of the applicability of the skill to their role. This feeds into a broader lack of awareness around green skills and 'opportunities', even to those candidates

with a suitable technical background for the role. Meanwhile, the lack of demand signals from central government on green skills are often barriers to investing in a stable green skills pipeline. In key green policy areas such as retrofit, the lack of government policy dampens ultimate employer demand, which acts as a barrier to developing the skills supply side.

See the report for further detail on these barriers – Chapter 2: Outlining the LSIP priorities

How current provision supports low carbon skills and what more could be done

11.BusinessLDN has welcomed the role the Mayor has played in supporting the development of green skills provision in London. For example, the Skills Academies Programme has seen the creation of five green Skills Academies Hubs, which bring together employers, education and training providers and sector bodies to work together to develop clear pathways into employment and ensure a coordinated offer of training, work experience and advice and guidance for Londoners. For example, the London South Bank Green Skills Hub, which was founded in February 2022, is made up of a partnership of five education providers, twelve London-based businesses, and three South London boroughs. Overall feedback from BusinessLDN members on the hubs has been positive.

12.There are also lots of other examples of the private sector working collaboratively with education providers on to create new qualifications that meet the green skills needs of industry. For example, South Thames College Group has collaborated with Solar Energy UK to create new courses which support adults to upskill and enter the solar technology industry.

13.Nevertheless, there is a growing need to increase education provision in relevant subjects and courses. BusinessLDN has identified several steps for improving the provision of green skills in London, as part of its roadmap for delivering on the priorities identified in the LSIP. The LSIP roadmap is an extensive set of actions for employers, training providers, and London government over a short-, medium- and long-term timeframe.

14.The actions outlined in the LSIP report do not seek to replicate or replace existing provision and good practice. Rather, the aim of our roadmap is to strengthen, streamline and amplify the work that is already being done by providers, GLA, Boroughs, employers and others to support better employment outcomes for Londoners, and create opportunities for London's businesses to grow and prosper.

15.Specifically in relation to green skills provision, the Mayor should: • Introduce a form of 'carbon literacy' or green skills training in training courses funded by London's Adult Education Budget and associated programmes as standard.

- Convene sector bodies, funders, and educators to increase uptake of electrical engineering courses in London, particularly through employer partnered provision like apprenticeships.
- Deliver a London policy to scale retrofit, which supports work at the national level and draws on the work of the Energy Efficiency Taskforce, establishing robust local delivery plans

16.As well as these specific actions, there are some broader steps in our roadmap which the Mayor should take for the benefit of all of our priority sectors and themes, including green skills. These more general actions would further help to better align employer demand for green skills with new provision, help more business – especially SMEs – to engage with training, and support more Londoners into green jobs. The Mayor should:

- Where possible, move skills funding towards more sustainable multiyear funding settlements as opposed to short-term piecemeal funding pots.
  - o This should include committing to long-term funding for the Mayor's Skills Academies Hubs, including giving them a clearer operating model and ensuring their alignment with the LSIP.
- Continue to grow a more modular, flexible approach to the delivery of existing training, through AEB funded programmes and skills bootcamps, including on green skills.
- Retain and expand the 10% London Recovery Flexibility in the Adult Education Budget to support the delivery of more locally relevant and bespoke skills programmes.
- •ntroduce a 'London Recruitment & Skills Support Hub' including an IAG function, to help employers especially SMEs navigate the employment and skills systems including support with apprenticeship access, working with the emerging 'Wayfinder' service being developed by London & Partners and the GLA.
  - Deliver a clear map of London's skills system through the London Recruitment and Skills Support Hub, that provides accessible information on all the relevant training programmes, their target audiences, a guide to the main actors, and dynamic information on careers that could be linked to different courses.

See the report for further details on the LSIP Roadmap – Chapter 3: A Roadmap to Delivering the LSIP priorities

Improving diversity in green skills training

17. To meet London's growing green skills needs, there is considerable scope to increase the diversity of employment in those occupations most affected by greening. A 2022 study conducted by the GLA found that jobs in green occupations are more likely to be held by men than women (73% were held by men in 2017-19) and a relatively high proportion of job holders are from a White ethnic background (74% compared to 67% for non-green occupations) with fewer from ethnic minorities.

18. Throughout BusinessLDN's engagement with stakeholders during the LSIP process, providers and employers reported a lack of awareness around and enthusiasm for green skills, training, and career pathways, particularly among people from Black, Asian and minority ethnic backgrounds. These findings support the findings of the Skills for a Sustainable Skyline Taskforce 2023 Report, which found that the Built Environment's sector's reputation and low awareness of career pathways were seen as a major barrier to recruitment.

19. The LSIP report also identified several barriers to work and study faced by Londoners from disadvantaged backgrounds. The cost of travel acts as a major barrier to increasing participation in training from under-represented groups, as does the confidence to travel across London and sometimes within Boroughs to training and employment. At the same time, despite the introduction of the Baker Clause requiring that all schools give employers and training providers access to students to promote non-academic routes, it is still too difficult and bureaucratic for many businesses to gain access to schools to break down perceptions and provide careers inspiration.

20. BusinessLDN has identified several actions in the LSIP roadmap which can help to shift the dial on labour market inclusion in London, with actions for employers, training providers and London government, working together in partnership.

21. Specifically, the Mayor should lead on:

- Driving more sustainable engagement between business and schools/colleges, working closely with the Careers & Enterprise Company to ensure schools are promoting the priority sectors and their training and career pathways in each sub region.
- Ensuring that the GLA's programmes and funding (including the AEB, Jobs and Skills for Londoners Fund, No Wrong Door programme, UKSPF funding, Mayoral Skills Academies, Bootcamps and Careers programme) work together to deliver the priority skills needs and employment support

identified in the LSIP for under-represented and disadvantaged Londoners, utilising the support and engagement of London's employers.

- Creating a targeted campaign, promoted through the boroughs and local community learning, to increase awareness of the availability of travel bursaries in London, and build confidence in young people to travel beyond their borough.
- Creating a one-stop-shop model to support job seekers that brings together the co-location of employment support (Job Centre Plus), careers advice (National Careers Service) and skills support (training providers) modernised through private sector expertise.
- Creating a programme that enables large employers to help supply chain SMEs with community outreach and training, with lessons to be learned from the Construction sector.
- Driving better borough collaboration on vacancies, recruitment and apprenticeships. This is to include joint promotional campaigns and support programmes, working together on local labour agreements through the Section 106 process, and sharing resources to expand reach.
- Building a programme that enables the GLA to act as a coordinating body for work placement opportunities for young Londoners.

The London LSIP roadmap is also clear that there are actions for employers to take the lead on to help improve the diversity of the workforce within our priority sectors and themes. These include for sector bodies to lead and co-ordinate improved streamlining and coordination between the various important sectoral initiatives and campaigns designed to improve the attractiveness of the London LSIP priority sectors to Londoners of all ages and backgrounds.

Response from Central London Forward

Is London training enough workers to be able to install sufficient low-carbon energy infrastructure, to implement the transition to net zero?

Unanswered

What is the current demand from employers for low-carbon skills in London? How is this likely to change over time?

There is a large and growing demand for low-carbon skills in London.

CLF recently commissioned research to map green jobs across the capital, to explore the potential growth of green jobs, and to assess the skills implications of this growth. We found that there were already **234,000** green jobs in London in 2020, representing **4.4%** of total employment in the capital[2]. These jobs are split across 11 different sub-sectors, set out below (WPI Economics and IES, 2021).

Table 1: Green jobs in London, 2020

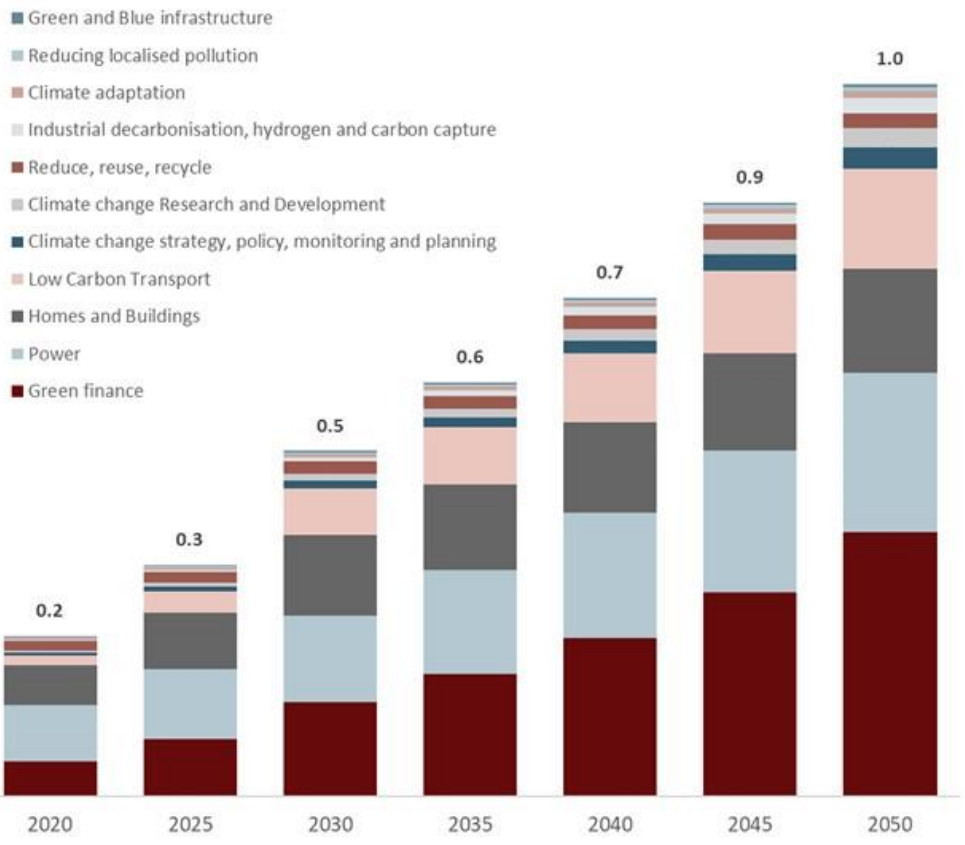
Sector	London		
	Numbers of jobs	% of green jobs	% of total employment
Climate adaptation	2,500	1%	0.0%
Climate change Research and Development	3,700	2%	0.1%
Climate change strategy, policy, monitoring and planning	4,100	2%	0.1%
Green and blue infrastructure	1,600	1%	0.0%
Green finance	50,700	22%	0.9%
Homes and Buildings	58,200	25%	1.1%
Industrial decarbonisation, hydrogen and carbon capture	900	0%	0.0%
Low Carbon Transport	13,700	6%	0.3%
Power	82,900	35%	1.5%
Reduce, reuse, recycle	14,500	6%	0.3%
Reducing localised pollution	1,600	1%	0.0%
Total	**234,400**	**100%**	**4.4%**

Source: WPI Economics (2021): Green Jobs and Skills in London.

[2] WPI Economics used a combination of data from the Low Carbon Environmental Goods and Services Sector (LCEGS) dataset commissioned by the Greater London Authority and supervised machine learning from The Data City to estimate the quantity of green jobs.

The number of green jobs is already increasing rapidly, and this is likely to accelerate significantly in the coming years. Our research finds the number of green jobs in the capital is set to double to **505,000** by 2030, before doubling again to over **1 million** by 2050. Growth is set to be particularly rapid in green finance, low carbon transport, and green power.

Graph 1: Projection of green jobs in London (millions)



Source: [WPI Economics (2021): Green Jobs and Skills in London.]

One of the major areas of growth in green jobs will be in retrofitting homes and buildings. CLF will shortly be releasing analysis of the labour and skills implications of retrofit in central London. The research is based on scraping data from Energy Performance Certificates for homes and buildings across the 12 central London boroughs, to understand the work that will be required to improve energy efficiency. We find that retrofitting all buildings in central London with an EPC rating of C or below would require **148,00 person years** of labour.

This is a vast amount of work to be delivered in a relatively short timeframe, by a workforce which already faces significant skills gaps post-Brexit. The work will require a very significant increase in the workforce in a number of trades. The demand generated by retrofit in central London alone exceeds 20% of the Londonwide workforce for scaffolders, roofers, glaziers and building envelope specialists. On most of the scenarios we have modelled, delivering retrofit in central London alone would require more scaffolders than there are available at present across the capital as a whole.

CLF worked with BusinessLDN to shape the London Local Skills Improvement Plan (LSIP), which sets out the skills needs of employers in the capital, and how the skills system could better meet those needs. A survey undertaken as part of the LSIP found that – among businesses who said they were lacking skills – one in five (21%) said they were lacking green skills. Almost one in four businesses (23%) said green skills were the skills they would need the most in the next two to five years. As part of the LSIP process, CLF engaged with dozens of employers and skills providers across central London to explore employer demand for skills, and the extent to which the skills system locally was meeting this demand. We found a large and growing demand for green skills across sectors (CLF, 2023).

2. Is the current provision of training courses for low-carbon skills sufficient?

London and London Boroughs and the Mayor of London are both working to boost provision of low-carbon skills in order to support the delivery of our net zero commitments. Many businesses are investing in the green skills they will need for the future, and skills providers are re-orienting their training provision to respond to the changing needs of a decarbonising economy.

However, in London – and across the whole of the UK – provision of training courses for low-carbon skills remain far below the levels needed. The lack of progress in developing the green skills that we will need is a growing risk to our ability to deliver on our net zero commitments.

a) Is the Mayor doing enough?

The Mayor of London has made net zero a priority, and has significantly increased the focus on green skills as part of the GLA's skills programmes.

The Mayor's Academy Programme has made green skills one of its priority sectors. This includes the roll-out of a number of Mayor's Academy Hubs focused on green skills across the capital.

London Southbank University (LSBU) has worked with Lambeth Council, Lewisham Council and Southwark Council to deliver a Green Skills Hub. The Hub focuses on green construction, including retrofit and EV installation, green spaces, and waste reduction and recycling. This includes flexible and modular provision for existing

construction workers to re-train and upskill to meet the needs of green construction. The Hub aims for at least half of participants to be from ethnic minority backgrounds and women, helping to address the inequalities in access to green jobs in many sectors (see section 4).
The Hubs have played an important role in coordinating skills providers, employers and residents. The Mayor of London should ensure ongoing funding for Hubs focused on green skills, including for curriculum development.

The Mayor of London has also sought to increase the focus on green skills through the Adult Education Budget. However, there is more work to do here. Analysis commissioned by GLA found that only a small proportion of AEB-funded learners are taking courses that provide specific green skills. For example, in 2019/20 there were just 60 learners taking the Diploma in Refrigeration, Air Conditioning and Heat Pump Systems (GLA, 2022). The Mayor of London should continue to explore how the Adult Education Budget could be used to support Londoners develop the green skills they will need for the future.

b) What are other bodies, e.g. charities, private companies, London Boroughs doing?

London Boroughs

Boroughs across central London – both individually and collectively through Central London Forward – have been seeking to boost provision of green skills.

- **Lewisham Council, Lambeth Council** and **Southwark Council** have been working together as a tri-borough partnership focused on green skills, including:
    - Working with LSBU on their Green Skills Hub;
    - Producing a feasibility study for a local insulation training centre could be delivered across the three boroughs. ○ Utilizing the Social Housing Decarbonization Fund (SHDF) and the Public Sector Decarbonization Fund (PSDS) and other capital works to leverage social value.
- **Haringey Council** are working with the College of Haringey, Enfield and Northeast London to support the Green Skills Academy Hub, which offers a range of training courses for low carbon skills.
- **Camden Council** are working with United Colleges Group to deliver a range of in-person and online Green Skills Training, including in Electrical Vehicle Charging Equipment, Electrical Energy Storage Systems (EESS), and PV installation. The training is currently in development and the council expects to roll out programmes from the new building in Euston from January.
- **Royal Borough of Kensington and Chelsea's** Lancaster West Neighbourhood Team has been developing a Green Skills Academy. The Green Skills Academy is working with a variety of partners to develop and

deliver green, low-carbon training courses for borough residents, Council staff, associated contractors and local SMEs.

Central London Forward has helped shape **London's Local Skills Improvement Plan**. Our Central London LSIP report – developed in conjunction with dozens of employers and providers – included green skills as a priority area (CLF, 2023). CLF has been working with New City Colleges to shape the Local Skills Improvement Fund (LSIF), which supports local FE providers in responding to the skills needs set out in the LSIP. Green skills is one of the two central areas of focus for the LSIF, and the funding will support:

- Installation of **low carbon labs** across colleges in central London, to provide students with an opportunity to learn installation of PV panels, solar thermal, heat pumps, battery storage, and other low carbon technologies.
- **Training of tutors** to help them deliver green skills. - Development of **carbon literacy** to be embedded across provision.

Employers

Many employers in central London and across the capital are committed to reducing emissions, and to investing in the green skills their workforce will need in the future.

However, there is a lack of certainty among many employers about exactly what skills will be needed to support the transition to a net zero economy. Many employers we engaged with as part of developing the Local Skills Improvement Plan were unclear about exactly what net zero would mean for their skills needs.

While many employers are committed to developing the green skills of their workforce, too many employers are not investing sufficiently in the skills we will need for the future. The Employer Skills Survey – the largest national survey of employer investment in skills – found that in 2022:

- Four in ten (40%) employers in the capital had not funded or arranged any training for staff in the last year,
- Over one in three (36%) workers at London-based employers received no training in the last year (DfE, 2023).

Employer investment in training across the UK is significantly lower than most European countries, and the introduction of the Apprenticeship Levy has done little to address this lack of investment. Government and the Mayor of London should seek to boost employer investment in training in general, and in green skills in particular.

The role for government

While London Government continues to seek to boost provision of green skills, there is a critical role for government to play.

The skills system in England is designed to be demand-led, and to respond to employer skills needs. However, while in many sectors it is clear what work is needed to deliver net zero – and what skills will be needed to carry out this work – a lack of certainty from government, and a lack of public investment, are holding back progress.
Retrofit is one such example. The work required to decarbonise homes and buildings is clear and quantifiable, as are the skills that will be needed to deliver retrofit. But providers are not yet responding at scale because demand for retrofit is only increasing gradually.

Central Government could help here by setting clear and ambitious net zero targets, by putting in place smart and consistent regulation to deliver on these targets, and by providing public investment to lever in private investment.

For example, in order to drive progress in upskilling for retrofit, Government could set an ambitious target to decarbonise social housing, increase investment in the Social Housing Decarbonisation Fund, and work with local authorities and housing associations to roll-out retrofit programmes. This would provide immediate and predictable demand for domestic retrofit, and send a clear signal to the construction sector and to skills providers about the skills that will be needed. Such an approach could help develop a pipeline of skilled workers who could then go on to deliver retrofit across the broader housing sector, and across the commercial property sector.

3. What is the level of diversity within the uptake of low-carbon skills courses? How can this be improved?

The transition to net zero represents a huge economic opportunity, and it will create hundreds of thousands of jobs in the capital. Ensuring equality of access to the green jobs that will be created is vital in ensuring that we deliver a just transition which will benefit all Londoners.

The research we commissioned into green jobs and skills in central London highlighted some concerning inequalities in access both to green jobs and to green skills provision. The green workforce as a whole has a lower proportion of female workers and is less ethnically diverse than the overall London labour market (WPI Economics, 2021):

- 34% of green jobs in London are held by women, compared to 46% of all jobs;
- 30% of green jobs in London are held by workers from Black, Asian, and

Global Majority backgrounds, compared to 36% of all jobs;

The Mayor of London has made tackling inequalities in access to green skills provision a key plan of the Mayor's Academies Hubs. London Boroughs have also sought to ensure that increasing diversity is a central aim of interventions relating to green skills. For example, Westminster Adult Education Service is delivering 'Green Live Learning Labs', a project which aims to tackle the lack of diversity within green sectors. The project seeks to involve children and families from under-represented communities to foster interest and aspiration.

Response from the Electrical Contractors Association (ECA)

National context

Why electrotechnical skills are central to the installation of all low carbon technologies.

Electricians, and the firms which employ them, are essential to the UK's ambitions to decarbonise. They possess the knowledge, skills and experience to install, integrate and maintain electrically-based net zero technologies, including solar photovoltaics (PV), energy storage systems (batteries) and electric vehicle (EV) charge-points. Furthermore, they are often involved in heat pump design and installation, working alongside plumbing specialists. Other aspects of electricians' skill-set are also complementary, including energy efficiency assessments, building energy management systems, automation, digital and smart technologies. The electrotechnical sector in the UK encompasses almost 50,000 firms and 276,000 electrically skilled employees (c.213,000 electricians and electrical fitters (SOC 5241) + other specialists). 99.8% of electrotechnical firms are SME, and 99.3% small or micro. UK-wide employers typically recruit between 7,000 and 8,000 apprentices per year (including 5,000-6,000 per year in England).
ECA is the largest trade and employer association in the sector, with nearly 3,000 member firms throughout England, Wales and Northern Ireland – ranging from SMEs to almost all the UK's largest multidisciplinary engineering services contractors. A key priority for is to raise awareness of and active across a wide range of fields of interest to our members and the wider sector, including business, skills, technical, environmental and safety matters.

1) Is London training enough workers to be able to install sufficient low-carbon energy infrastructure, to implement the transition to net zero?

The importance of apprentices
Apprentices remain the lifeblood of the electrotechnical sector,[3] and apprenticeships the sector's preferred route for individuals to acquire the knowledge, skills, experience and behaviours necessary to become a fully qualified and competent electrician.[4]
The Installation and Maintenance Electrician apprenticeship standard consistently attracts the highest take-up of any trade apprenticeship within construction and the

[3] See, for example, chapter 3 of the TESP 2023 Labour Market Intelligence report.
[4] The Electrical Careers website sets out industry-recognised training routes in England, including the Installation Electrician and Maintenance Electrician standard and the Domestic Electrician standard.

built environment in England. It has been recognised as one of six essential 'green' standards.[5] Last year also saw the launch of a new apprenticeship in England, the Domestic Electrician apprenticeship standard, which it is hoped will encourage more employers operating principally in residential markets to recruit and train apprentices of their own. Both apprenticeship standards now include extensive coverage of low carbon and associated 'smart' technologies.

ECA's estimates that electrotechnical firms need to recruit apprentices at the rate of 5% of their existing skilled workforce annually in order to be sustainable, before the increased need for net zero installations. Greater London currently has a start rate of 2.6% and is towards the bottom of the league table. Surrounding areas which have traditionally fed London with electricians, including Essex, Hertfordshire, East Anglia and Kent also display very low recruitment rates.

Calculating apprentice recruitment rates based

The table below, ranks Local Skills Improvement Plans (LSIP) areas according to the rate of apprentice recruitment achieved during the 2021/22 academic year. In each case, the recruitment rate was calculated by comparing the number of apprentice starts with the size of the current electrical workforce living in the area covered by the LSIP.

Comparing 2021/22 electrical apprentice starts as % of the existing electrical workforce living in each LSIP area

2021/22 APPRENTICE STARTS AS % OF WORKFORCE	HOME LSIP AREA		
> 6.0%	Enterprise M3 (jncl. all Surrey) (8.8%) Hull & East Yorks. (6.7%) Lancashire (6.5%)	West of England (8.3%) Sussex (7.1%) Oxfordshire (6.7%) Gloucestershire (6.3%)	Swindon & Wilts. (7.7%) Solent (7.1%) Cheshire & Warr. (6.7%)
5.1%-6.0%	Tees Valley (5.9%)	Cumbria (5.9%)	Liverpool City Rgn (5.6%)

[5] DfE Education Hub blog article, 'Coronation 2023: 6 green apprenticeships and how to apply', 4 May 2023.

4.1%-5.0%	Cornwall & Scilly (5.0%) Thames Valley Berks. (4.8%) Heart of the S.W. (4.5%) Gtr. Lincolnshire (4.3%)	S.E. Midlands (5.0%) York & North Yorks. (4.8%) Stoke & Staffs. (4.5%)	Gtr. Manchester (4.8%) Derbs. & Notts (4.8%) West Yorks. (4.3%)
3.1%-4.0%	Leicester & Leices. (4.0%) South Yorks. (3.6%) New Anglia (3.1%)	Cambs. & P'boro. (3.8%) North of Tyne (3.2%)	Buckinghamshire (3.7%) W. Mids & Warks. (3.1%)
2.5%-3.0%	Kent & Medway Gtr. London (2.6%) (3.0%)	The Marches (3.0%) Essex (2.6%)	North-East (2.8%)
< 2.5%	Hertfordshire (2.2%)	Dorset (2.1%)	

2. What is the current demand from employers for low-carbon skills in London?

There is plenty of evidence to suggest that there are currently not enough qualified and competent electricians in London to service existing needs. This does not take into account the growth in those needs occasioned by the transition to Net Zero. The table below demonstrates how Greater London falls to towards the bottom of the league table of electricians per head of population.

The table below indicates the relative size of the electrical and general populations living in each Local Skills Partnership area – expressed in the form of 'one electrician/ electrical fitter for every [n] of general population'. Areas are ranked so that those with the lowest differential (i.e. a proportionately higher electrical population) appear towards the top, and those with the highest differential (i.e. a proportionately lower electrical population) are placed at the bottom.

Comparing electrical workforce and general populations living in each LSIP area

No. in general electrician/ electrical fitter	*Home LSIP area population for every 1*

150-250	Dorset (153) North-East (184) The Marches (207) Kent & Medway (249)	Hertfordshire (155) New Anglia (198) South Yorkshire (218)	Essex (184) Stoke & Staffs. (201) Worcestershire (247)
251-300	West Yorkshire (253) Heart of the S.W. (274) Buckinghamshire (289) Leicester & Leices. (296)	Gtr. Lincolnshire (262) York & North Yorks. (280) Hull & E. Yorks. (291)	Cornwall & Scilly (271) Derbs. & Notts. (280) W. Mids. & Warks. (294)
301-400	Cumbria (303) North of Tyne (335) Tees Valley (375)	Gloucestershire (307) Liverpool City Rgn. (357)	Lancashire (331) Gtr. Manchester (368)

401-500	S.E. Midlands (419) Gtr. London (462) Oxfordshire (493)	Cambs. & P'boro. (428) Cheshire & Warr. (465)	Sussex (448) West of England (489)
> 500	Thames Valley Berks. (518) Enterprise M3 (jncl. all Surrey) (746)	Solent (563)	Swindon & Wilts. (589)

The relative low size of the electrical workforce speaks for itself, but data gathered quarterly from the sector is even more graphic. Skilled worker shortages represent the single greatest business challenge for electrotechnical and engineering services firms and has been rising as a concern each quarter since the end of the pandemic. Shortfalls in the number of appropriately qualified and competent electricians also constitute a wider challenge for society and the economy. This is because the technical complexity and safety-criticality of most electrical installation work predicates against short-course training of new entrants to become a 'domestic installer', 'EV charge-point installer' or 'solar PV installer' in a matter of a few weeks or months. Contrary to some narratives, in highly skilled technical fields, such as electrotechnical and engineering services, Skills Bootcamps and similar 'fast-track' initiatives for new-entrant learners simply won't work – in either a technical or labour market sense.

3.How is this likely to change over time? Is the current provision of training courses for low-carbon skills sufficient?

In Greater London a combination of low workforce numbers and lower than average apprentice recruitment inevitably begs the question, why.

London and regional labour markets

Deep-seated structural features of the labour market in London and surrounding areas can help to provide part of the answer.

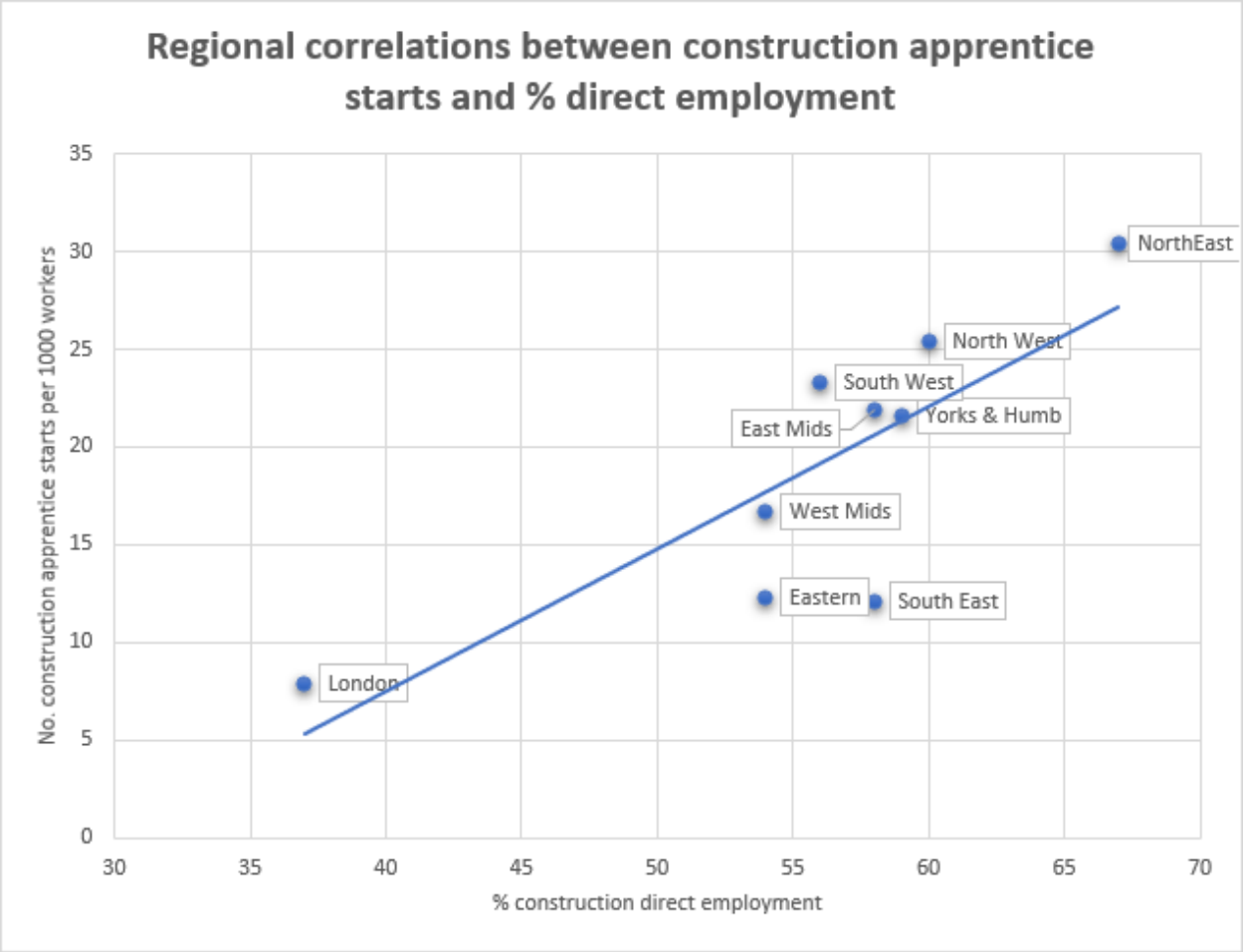
First, London has always tended to suck in skilled workers, including electricians, from elsewhere. In other sectors of construction and the built environment, this has taken the form of high numbers of overseas workers, especially (until Brexit) from central and eastern Europe. In electrical contracting, because of more demanding, UK-specific qualification requirements, migration into London and surrounding areas has tended to come instead from other parts of the UK.

This pattern of London and surrounding areas 'poaching' skills which have been developed elsewhere can be seen in the comparatively low proportion of young workers and high proportion of experienced workers found in a recent set of regional sample surveys sponsored by ECA and the electrical JIB for the Electrotechnical

Skills Partnership. The following table compares the reported electrical workforce nationality and age profiles in both Greater London and Eastern England with UK averages from the survey.

Region	% UK citizens	16-18	19-24	25-49	50+
Whole UK	97%	6%	14%	50%	30%
Greater London	98%	2%	10%	66%	22%
Eastern England	98%	3%	11%	43%	43%

Another factor in Greater London is the artificially inflated scale of the 'selfemployed' workforce, much of it falsely self-employed, facilitated by the UK's permissive employment law and tax and social security regimes. This is a construction-wide phenomenon, where businesses in London maximise their reliance on a subcontracted or agency workforce (avoiding employment, pension and national insurance obligations), and in so doing minimise their willingness and ability to recruit and train new workers. The following chart demonstrates a close relationship between levels of construction direct employment (i.e. less reliance on self-employment) and apprentice recruitment.



Weaknesses in the Greater London skills system

Persistently low starts in Greater London are also, at least in part, down to the very small number of London-based colleges currently offering apprenticeships.[6] Greater London has arguably become too heavily reliant on delivering classroombased electrical courses, with shockingly low levels of progression from these then into an electrical apprenticeship.

Many electrical industry employers regard classroom-based qualifications, with ambivalence at best. This is because they involve teaching and assessment of technical knowledge, but little in the way of work-based or other practical hands-on experience. For a trade which requires extensive skill and judgment acquired only through extensive experience, this means that learners who successfully complete one of these qualifications are very far off from the competence required to practice as an electrician. As the Electrical Careers 'full-time' and 'self-funded' training routes for England illustrate, such learners will still need to complete an apprenticeship or

[6] As of August 2023, the Government's Find apprenticeship training website recorded just nine London-based FE colleges or college groups offering the Installation and Maintenance Electrician standard, and none at all offering the Domestic Electrician standard.

NVQ, as well as the industry-recognised AM2 assessment of competence. All these require extensive further study and work experience.

In principle, classroom-based qualifications do at least offer some grounding in the knowledge required to be an electrician, and so can allow individuals to progress into an apprenticeship, the duration of which may be shortened through recognition of prior learning. In practice, however, disappointingly few learners – typically 10% or less – seem to make the transition into an apprenticeship.

This is a particularly acute problem in Greater London where, because of the imbalance between apprentice and classroom-based provision, annual enrolments on funded classroom based courses (approx. 4000) outnumber apprentice starts (approx. 500) by 800%. This is the highest such imbalance of all LSIP areas by a considerable margin, and is echoed by similar imbalances in surrounding areas, including Hertfordshire (450%), Essex (367%) and Kent (295%).

At an individual borough level, the imbalances can be even worse. Examples include Newham (3,688%), Merton (4,766%) and Enfield (22,133%).

A great deal of the public money currently is therefore being ploughed into electrical classroom-based qualifications in London, which may be going to waste. It certainly is, if a central goal of such investment is the eventual creation of significant numbers of competent practising electricians to prepare for the low carbon transition. Many colleges and independent training providers have more or less abandoned electrical apprenticeship provision as too difficult and/ or expensive – focussing instead on classroom-based, non-apprenticeship qualifications, which are perceived as easier to deliver and lower risk. In some boroughs of London, including those highlighted above. it is not an exaggeration to speak of ‘apprenticeship deserts’. A

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lack of provider interest can make it almost impossible for electrical employers and learners to source provision, even if they want to.

What could the Mayor do?

Use the Adult Education Budget and/or other support to boost NVQ and Experienced Worker (EWA) Routes

For individuals who have already completed a classroom-based or self-funded level 3 knowledge qualification, the NVQ represents their opportunity to demonstrate the practical skills and experience elements required of a competent electrician outside of an apprenticeship, ahead of then sitting the AM2 industry-recognised final assessment of competence.Typically learners are older and might already be working in the industry in an unskilled or semi-skilled capacity. Or, they may need to

acquire their experience piecemeal outside of a conventional employment structure, for example, as agency workers or through work experience (either paid or unpaid) with a friend or other contact.

Individuals undertaking the EWA are different from NVQ candidates. They are not newentrants, but people who have already worked in the electrical industry, or a closely related field, for a substantial period (typically five years or more). The EWA allows such people – provided they can demonstrate adequate existing knowledge, skills and experience – to collate evidence of this and fill in any minor gaps through top-up training and experience, before undertaking the AM2 assessment of competence. The length of time this takes differs from individual to individual. In some cases, it can be as short as three months and in others up to the maximum permitted period of 18 months.

The end-products of the NVQ and EWA processes are therefore potentially highly worthwhile, since following AM2 completion, both produce fully qualified electricians. Individuals undertaking the NVQ are entitled to have this paid for through the Government's Skills for Life initiative. Colleges and other local providers offering the NVQ are thin on the ground, however. EWA candidates enjoy no central source of public funding support, and so either need to fund this for themselves or get it paid for by their employers. Local provision, promotion and awareness are also very low.

ECA recommends the Mayor promotes and uses Adult Education Funding to boost support for the EWA route, including the provider infrastructure to support completion of the EWA. This could yield substantial (and comparatively rapid) upskilling returns, including in the domestic market, where currently many self-styled 'electricians' in Greater London lack the underlying qualificatons and validated competence to install and integrate net zero technologies safely and efficiently.

ECA recommends the Mayor promotes and supports NVQ take up, including the provider infrastructure to support completion of the NVQ.

Rebalance the regional skills system

Left to their own devices, colleges in Greater London have moved away from electrical apprenticeship provision and towards classroom based courses which are cheaper and easier to deliver.

Although we do not dismiss the funding and other constraints which have driven these behaviours, the fact remains that this has left Greater London with a skills system which is staggeringly wasteful of both money and talent and fails to deliver the underlying electrical and other trade skills necessary for the safe and efficient installation of net zero technologies.

ECA recommends, as a matter of urgency, that the Mayor takes the lead in working with industry bodies, colleges, independent training providers and others

(e.g. the LSIP) to rebalance the skills system back towards relevant apprenticeships and away from dead-end classroom based courses.
Given Greater London's dependence on electricians commuting in from elsewhere, **ECA recommends that the Mayor engages with and seeks to influence** skills policy in neigbouring areas, especially Kent, Essex, Hertfordshire and East Anglia as well,

Support T Levels

There is a particular, urgent need for more active and effective collaboration between industry and education within Greater London. **ECA recommends the Mayor supports**:

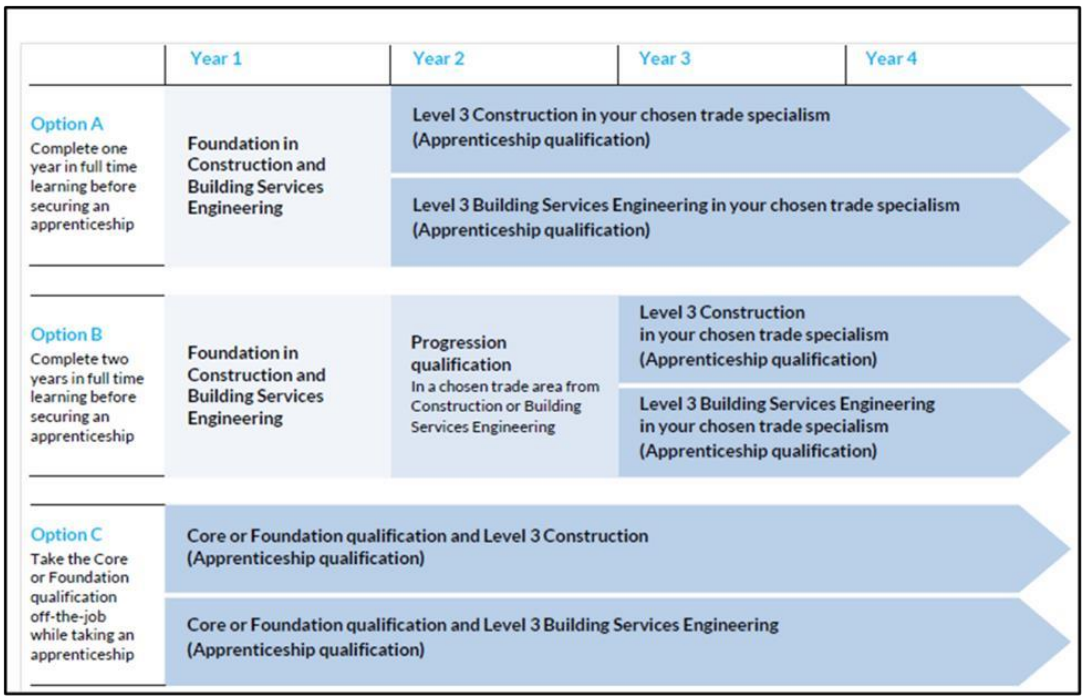
- More local colleges (and schools) start to deliver T levels, especially in technical subjects such as the electrical pathway within Building Services Engineering (to include a realistic assessment of the funding, staffing and facilities required to do this properly);
- Many more local employers sign up to provide T level work placements (to include more generous funding and administrative support, especially for small and micro employers);
- Higher progression rates from T levels into apprenticeships (to include active monitoring of local progression rates and specific, structured bridging pathways for T level graduates, to help them make the transition)

4. **What is the level of diversity within the uptake of low-carbon skills courses? How can this be improved?**

No data to comment on.

5. **Are there other cities nationally (or internationally) that can act as a guide for progress in London in this area?**

Given that significant factors underlying Greater London's problems stem from underlying structural issues and policy failures currently outside the Mayor's direct control, it is difficult to point to examples with an immediate practical application. The nearest parallel we can think of in a UK context is Wales.
With greater devolved powers, the Welsh Government in Cardiff has designed a unified qualifications system under which college-based construction and building services engineering courses are aligned with apprenticeships, and are intended to support progression into trade apprenticeships. This, in effect, creates multiple entry points into trade apprenticeships, such as electrical: straight from school; on completion of the Level 2 Foundation qualification; or, on completion of the Level 2 Progression qualification.



Although establishing a separate technical education system lies outside the Mayor's authority, it is not difficult to see how rebalancing the skills system in Greater London and building stronger links between college provision and employers, including via T levels, could have something approaching the same effect. As in Wales, there could be different entry points into the apprenticeship: straight from school; during the T level (although this would require greater funding flexibility); or, at the end of the T level.

Response from HIES

Is London training enough workers to be able to install sufficient low-carbon energy infrastructure, to implement the transition to net zero?

We are unable to fully comment on this, however the gut feeling would be NO because there is simply not enough demand or will from existing works in the construction industry to do this. After numerous conversations with boiler engineers, the key theme is that they can earn £500 for a day changing a boiler whereas installing a heat pump would take up to 5 days and they probably would only earn £1500 plus the headache. There needs to be a bigger financial incentive for them to change over. Also many gas engineers work by themselves therefore would need to recruit someone so it's a team of 2 plus organise an electrician. This all adds to complexity and difficulty which an engineer simply does not want.

What is the current demand from employers for low-carbon skills in London? o How is this likely to change over time?

The demand has reduced because consumer demand has reduced, therefore employers are potentially looking at downsizing rather than increasing the business headcount.

Is the current provision of training courses for low-carbon skills sufficient?
Is the Mayor doing enough?
What are other bodies, e.g. charities, private companies, London Boroughs doing?

Unable to comment.

What is the level of diversity within the uptake of low-carbon skills courses? How can this be improved?

London should look at a strategy where it has a short, medium and long term plan. The target audience needs to be identified and also influencers who are key to the target audience. Take for example, someone in their teens who is looking for a career but doesn't want to work outdoors or use their hands – what are you going to do about them? Leave them or try to persuade them?

Are there other cities nationally (or internationally) that can act as a guide for progress in London in this area?

Of course France and Germany have seen significant increases and you will probably be able to see some quick wins.

A mentor programme is required whereby someone who has been in the industry for years mentors new entrants – you have to show the success of this job long term and give individuals benefits they would not get elsewhere so its worthwhile them travelling the city and doing physical labour work but they get the reward

Other information shared

City of London Corporation

Skyline Skills Recommendations Report 2023
cityoflondon.gov.uk/assets/Business/skyline-skills-recommendations-report-pdf-9mb.pdf

Skills for a Sustainable Skyline Taskforce 2022-2025 Brochure
PowerPoint Presentation (cityoflondon.gov.uk)

South London Partnership

- This is the link to our research on occupation demand for low carbon construction report and technical annex
- This is a link to our Green Careers Tree – aimed at students, practitioners – really anyone wanting to get an idea of the breadth of opportunity
- Link to the LSIP, this is the pan London LSIP and also includes sub-regional annexes
- This is a link to the reports that all four sub-regions commissioned approaching 2 years ago, looking at defining the 'green sector' and job projections here

The Strategic Development Fund – details for London. This was capital and revenue investment in the development of low carbon and green skills.

South London Partnership	Richmond Chamber of Commerce	£1,880,525	Croydon College, Orbital South Colleges Group, Richmond Upon Thames College, South Thames Colleges Group, London Learning Consortium	Electric and Hybrid Vehicles, Green Construction, Green Energy, Waste Management

West London Alliance	West London Business	£2,416,616	Barnet and Southgate College, Ealing, Hammersmith and West London College, Harrow College and Uxbridge College,	Digital, Electric and Hybrid Vehicles, Green Construction,
			Stanmore College, United Colleges Group, West Thames College	Green Energy
Local London	London First	£2,461,431	Barking and Dagenham College, Barnet and Southgate College, Capel Manor College, Capital City College Group, Lewisham College, London South East Colleges, New City College, Newham College, Newham Sixth Form College, Shooters Hill Sixth Form College, Waltham Forest College	Green Construction, Green Energy, Electric and Hybrid Vehicles

Central London Forward	NAPIT and Microgeneration Certificate Scheme	£2,726,764	Christ the King Sixth Form College, Mary Ward Settlement, Morley College, NCG (Lewisham and Southwark Colleges), New City College Group, South Thames Colleges Group, South Bank Colleges, St Francis Xavier Sixth Form College, The City	Green Construction, Green Energy
			Literary Institute, United Colleges Group, Working Men's College Corporation, Microgeneration Certificate Scheme	

London Councils

Climate Programme Implementation Plan 2023
https://www.londoncouncils.gov.uk/node/40825

London Councils is focused on green skills as part of its overall work for boroughs on skills and climate, as a combined piece between our Economy, Enterprise and Skills team and our Climate Unit. There are two big drivers for this work:

1. The emphasis on green skills as part of the LSIP and boroughs' role in understanding, supporting and delivering skills and employment programmes for their residents, working with the Sub-Regional Partnerships and others
2. The need for specific green skills to underpin delivery of our climate ambitions (e.g. retrofit coordinators, flood engineers etc.), in terms of boroughs' individual net zero targets and the collective ambitions that they have agreed

through our climate programme – I've attached our implementation plan which sets out those shared targets, and I'm sure you've seen the report from the SRPs that sets out the size/ projections/ skills needs for some of those key sectors, like retrofit, heat/ power and green infrastructure that underpin delivery (CLF have also more recently published some work on retrofit labour demand for central London in particular)

Specific pieces that we're working on now are:

1. Green Jobs and Skills in London | London Councils: follow up to our recent green skills report, and I note that this speaks to the coordination of green skills across London and the role of the GLA and might be particularly relevant
2. Analysis of green skills need as a specific piece within the climate programme's green economy theme (set out in the implementation plan)
3. And relatedly, infrastructure skills – which covers many of the same sectors – in boroughs themselves/ their workforce, both technical skills and broadly commissioning skills