London Green Jobs and Skills

Cross-London final report summary

Prepared by WPI Economics on behalf of the sub-regional partnerships of London

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Contents

This is a summary of the report ***London Green Jobs and Skills*** carried out by WPI Economics and the Institute for Employment Studies for the sub-regional partnerships of London. The full report, including all sources and reference for the information in this slidepack, can be found at: http://wpieconomics.com/publications/green-jobs-and-skills-in-london-cross-london-report

Key findings

Green jobs now

- The term "green job" is directly related to policies aiming to deliver environmental goals, so we define ***green jobs as those jobs that facilitate meeting net zero and broader environmental goals***
- We estimate there were some **234,300 green jobs** in the capital in 2020, **4.4% of total employment.** The largest sectors were Power (83,000 jobs), Homes and Buildings (58,200) and Green Finance (50,700)
- Green jobs in London are predominantly high-level managerial, professional and associate professional/technical roles. There is also an over-representation in skilled craft jobs **(19%, compared with 6% of all jobs in London)**
- The green workforce is male dominated (66% as compared to 54% of all workers in London are men) and there is a lower proportion of workers from Black, Asian and Minority Ethnic backgrounds in comparison with all sectors in London (30% as compared with 36% of all workers).
- The green workforce is highly qualified, and two thirds have first degrees or equivalent or higher qualifications. Among those with vocational qualifications the most common subject areas are building and civil engineering, and electricity and energy

Skills supply considerations

- Green sectors tend to draw staff from other sectors, rather than straight from education: around **1% of the workforce enter straight from full-time education each year, compared with 3% across all sectors**
- There is a substantial pool of relevant skills in other sectors, but this is **lowest for homes and buildings and the associated skilled-craft occupations**

Key findings

Green jobs in the future

- Our central projection finds a potential for green jobs to increase to **505,000 by 2030 and over 1 million in 2050** in London if a net zero pathway is followed. Green jobs would increase by **8% per year** this decade, which is double the rate of the fast-growing Information and Communication sector in the decade preceding the pandemic
- There is substantial uncertainty in projecting green jobs; projections made in the report present a range of **0.6 to 1.8 million green jobs.**
- These are not net jobs as existing jobs may be lost and replaced with green jobs. However, we find that **net jobs in London could increase by around 50,000 in 2030** due to positive macroeconomic impacts.
- The central projection implies **an increase of around 140% in skilled craft workers by 2030** (including electricians, gardeners and landscape gardeners, and plumbers and heating & ventilation engineers). Nationally, there are currently skills shortages for many of these occupations – electricians, plumbers, and production managers in construction, In particular. We also project **an increase of around 120% in managerial and professional employment**; however, there is currently a greater pool of people with relevant skills in non-green jobs.
- To ensure a sufficient supply for these new jobs, there is an urgent need to increase education provision in relevant subjects and courses, increase the proportion of those taking relevant courses who progress to green employment, and increase the flows from other, non-green, sectors into green sectors, including through re-skilling training. This is most urgent in skilled craft occupations.

Jobs in carbon intensive sectors

- The research finds that London has **390,000 jobs (7% of London employment) in carbon intensive sectors** that will need to change substantially due to the transition. Construction, land transport and aviation account for the majority of these jobs.
- **38% of people in these sectors identify as non-White** versus 11% nationally. However, this is in line with London employment more broadly, where 36% of employees identify as non-White. We also find that these sectors are likely to be male-dominated with **female workers accounting for only 18% of the employees in these sectors nationally**.

Project goals and method

Project goals

1. Develop a shared definition of green jobs to facilitate collaboration and joint working between London's sub-regional partnerships.
2. Understand demand for green jobs and skills to help member authorities shape employment and skills provision.
3. Develop a shared narrative on green jobs and skills, emphasising the sub-regional partnerships' collective commitment to de-carbonisation, to support their public affairs work.

How the project was carried out

Literature review: Review of literature on the definition of green jobs and skills, how to quantify them and sources for projecting growth in green jobs over time

Engagement with boroughs and stakeholders: Extensive engagement with sub-regional partnerships, borough Skills Officers and Recovery Leads, range of external public and private stakeholders

Data analysis:

- Mapping of Low Carbon and Environment Goods and Services sector data to jobs in eleven key green policy areas
- Supervised machine learning to understand companies active in the green economy across sectors
- Analysis of Labour Force Survey data on current green skills and flows into and out of relevant occupations
- Analysis of Business Register and Employment Survey data for jobs at high risk from the transition, and the equalities implications

Defining green jobs

Existing definitions

We reviewed six potential approaches:

i. Environmental Goods and Services Sector (EGSS)

ii. Low Carbon and Renewable Economy survey (LCREE)

iii. Low Carbon and Environmental Goods and Services Sector (LCEGS)

iv. International Labor Organization (ILO) definition

v. Task based approach (American examples using O*Net data)

vi. Mission-based approach (Green Jobs Taskforce approach)

Through desk-research and stakeholder engagement we assessed the pros and cons against several criteria – see table overleaf. We concluded that there is no definition of the terms green jobs or the green economy that is divorced from policy goals – the terms exist because of the imperative to deliver on net zero and broader environmental goals.

We therefore recommended a practical "mission-based" definition:

Green jobs are those jobs that facilitate meeting net zero and broader environmental goals.

To decide which activity is likely to facilitate meeting net zero goals we follow the Committee on Climate Change's recommended pathways.

Summary prioritisation table for definitional approaches

Name	Definition	Government recognised definition?		Comprehensibility & strength of relationship to political narrative	Feasibility		Sector coverage			
							Broader than net zero?	Up to date with modern economy		In London context?
Environmental Goods and Services Sector (EGSS)	*Areas of the economy engaged in producing goods and services for environmental protection purposes, as well as those engaged in conserving and maintaining natural resources*	✓✓✓	National statistic	✓	✓✓	Would require ONS to provide data	✓✓✓	✓	Based on SIC codes	✓
Low Carbon and Renewable Energy Economy estimates (LCREE)	*Economic activities that deliver goods and services that are likely to help the UK generate lower emissions of greenhouse gases, predominantly carbon dioxide*	✓✓✓	National statistic	✓✓	✓✓	Would require ONS to provide data	X	✓✓	Survey updated annually but still misses areas due to SIC code limitations	✓
Low Carbon and Environmental Goods and Services Sector (LCEGS)	*EGSS sectors expanded to include activities that contribute and enable growth in the sector, including value and supply chains*	✓✓	GLA commissioned report	✓✓	✓✓✓	Requires data purchase	✓✓✓	✓✓✓	Approach updated regularly	✓✓✓
Task-based approaches	*Approaches typically from the United States that identify green tasks, and then the proportion of each job type that is spent on green tasks*	X	Current applications US based	✓✓✓	X	Timescale too short	✓✓✓	✓✓✓	Depending on approach	✓✓✓
International Labor Organization	*Jobs which reduce the consumption of energy and raw materials, limit greenhouse gas emissions, minimize waste and pollution, protect and restore ecosystems and enable enterprises and communities to adapt to climate change. In addition, green jobs have to be decent.*	✓	Internationally recognised	✓✓	X	Not operationalised	N/A	N/A		N/A
Mission-based definition following Green Jobs Taskforce	*Employment in an activity that directly contributes to - or indirectly supports - the achievement of the UK's net zero emissions target and other environmental goals, such as nature restoration and mitigation against climate risks. 7 specific policy areas identified*	✓✓	National Government commissioned report	✓✓✓	✓✓✓ ✓✓	With modern methods With publicly available data	✓✓✓	✓✓✓	Can use modern methods	✓✓
Mission-based definition: tailored to London context	*Same as above but tailored to London context - suggested 11 areas including Green Finance, Environmental R&D and Reducing Localised Pollution (air, water and noise)*	✓	Adapting a government recognised approach	✓✓✓	✓✓✓ ✓✓	With modern methods With publicly available data	✓✓✓	✓✓✓	Can use modern methods	✓✓✓

Mission-based definition: sectors for a London based definition

To develop a mission-based definition for London we reviewed three key sources:

- The sectors used by the Green Jobs Taskforce (2020/2021)
- The London Councils and London Environment Director's Network Joint Statement on Climate Change
- The Mayor of London's London Environment Strategy (2018)

Combining these three sources we proposed 11 policy areas that reflect both net zero and broader environmental policy goals, shown overleaf. Although for this analysis it is useful to split these areas, it is important to stress that environmental policy crosses these boundaries – in particular, broader environmental goals and contribute to net zero and vice versa.

Mission-based definition: sectors for a London based definition

Net zero focus

1. **Homes and buildings:** Including retrofit, building new energy-efficient homes, heat pumps, smart devices and controls, heat networks and hydrogen boilers.
2. **Low carbon transport:** Including low or zero emission vehicles, aviation and maritime, rail, public transport and walking or cycling.
3. **Power:** Including renewables (such as wind, solar and hydropower), nuclear power, grid infrastructure, energy storage and smart systems technology.
4. **Industrial decarbonisation, hydrogen and carbon capture and storage**: Including hydrogen production and industrial use, carbon capture, utilisation & storage (CCUS) and industrial decarbonisation.
5. **Green Finance:** The concentration of financial activity in Central London means that in our context Green Finance could be a key area to identify separately.
6. **Climate change research & development:** Including private sector, academic and public research.
7. **Climate change strategy, policy, monitoring and planning:** Including public, private and NGO sector strategy and policy, outreach to citizens, environmental monitoring and use of planning system to achieve net zero.
8. **Climate adaptation:** Including flood defences, retrofitting of buildings to be resilient to extreme climate events, nature-based solutions to reduce climate impacts and civil and mechanical engineering for infrastructure adaptation.

Broader environmental goals (may have some impact on climate change goals)

1. **Reducing localised pollution:** Including air pollution, water pollution and noise; London has ambitious goals across all three of these areas.
2. **Reduce, reuse, recycle:** Including waste management and circular economy.
3. **Green infrastructure:** Within a London context this will focus on urban green infrastructure, and include activity aimed at increasing biodiversity directly or through offsetting.

Green jobs and skills in London: now

Quantifying green jobs - sources

To quantify the gross number of jobs in London in the eleven green sectors we use two sources:

1) The Low Carbon Environmental Goods and Services (LCEGS) sector dataset

This dataset is prepared by the consultancy kMatrix and commissioned regularly for London by the Greater London Authority, and includes a broader set of activities than official definitions such as the ONS EGSS and LCREE data. However, we could not map our Climate Adaptation and Green and Blue infrastructure sectors sufficiently well so used the Data City tool discussed below. To allocate the jobs identified within LCEGS to our sectors these results we:

- Mapped data from the 2017/18 LCEGS dataset to our green jobs categories
- Estimated 2020 job figures using UK growth rates from the most recent LCEGS estimates. London figures for the period 2018/19 to 2020/21 have not been published yet, so we have currently assumed that growth for London has been in line with UK growth rates.

2) The Data City Real-Time Industrial Classification tool

This guided machine learning tool allows us find companies working within specific fields, based on the way companies actually describe themselves on their websites. We worked with the Data City team to provide an initial "training set" of companies and keywords, and then iteratively improve the results by guiding the machine learning algorithm on which companies should be excluded or included. This tool allows us to identify data for the two sectors that the LCEGS data does not and identify a broad range of companies within each sector that are operating within London. As it is a tool ultimately geared towards finding companies, it is limited in its ability identify green jobs within firms that are not fully within our definition of the green economy.

Estimated green jobs in London, 2020

- Using these two sources, gives us these estimates of green jobs in London in 2020

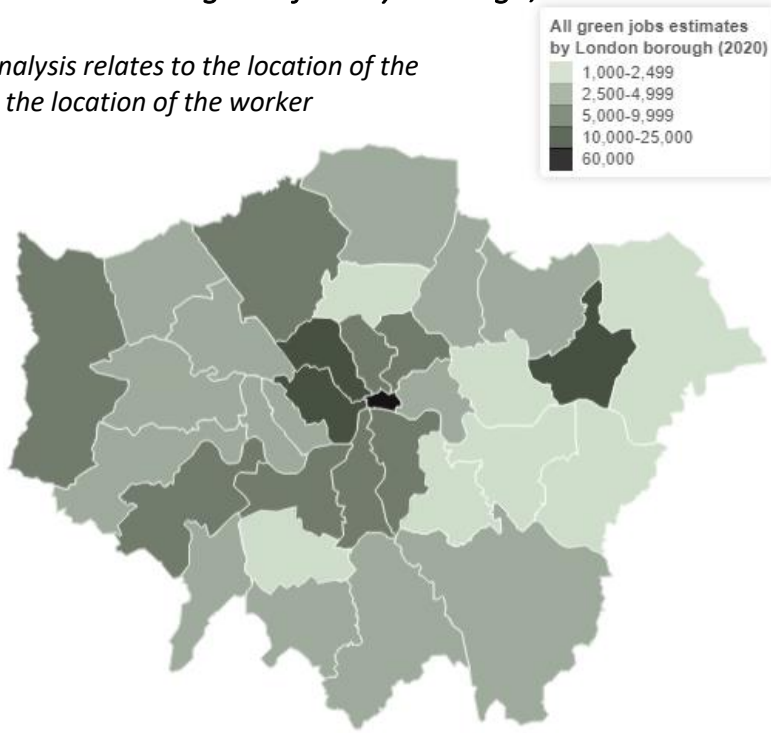
Sector	London		
	Numbers of jobs	% of green jobs	% of total employment
Climate adaptation	2,500	1%	0.0%
Climate change Research and Development	3,700	2%	0.1%
Climate change strategy, policy, monitoring and planning	4,100	2%	0.1%
Green and blue infrastructure	1,600	1%	0.0%
Green finance	50,700	22%	0.9%
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 calculations based on data supplied by kMatrix on their Low Carbon Environmental Goods and Services methodology and The Data City, and ONS Business Register and Employment Survey for total employment

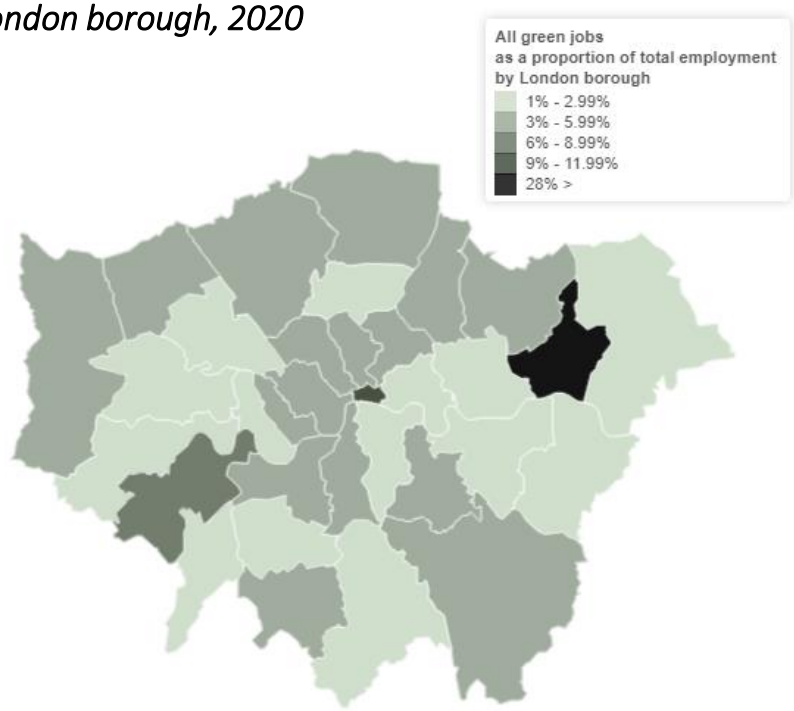
Estimated green jobs in London

Total estimated green jobs by borough, 2020

Note: Analysis relates to the location of the job, not the location of the worker



Estimated green jobs as a proportion of total employment by London borough, 2020



Note that this borough-level data represents 2017 data uprated by UK growth rate of green jobs to 2020, so will not reflect areas that may have seen growth out of line with national averages due to e.g. the establishment of a large local green employer since 2017. 2020/21 data is expected to be available shortly

Predominance of green finance means the City of London has the highest number of green jobs, and there are relatively greater numbers of green jobs in many central London boroughs in line with the majority of jobs being located in Central London

However, as a proportion of total employment, there is less variation across London with the notable exception of Barking & Dagenham. The presence of the B&D Energy District Heating network is likely to explain this

Source: WPI Economics calculations based on data supplied by kMatrix on their Low Carbon Environmental Goods and Services methodology and The Data City, and ONS Business Register and Employment Survey for total employment by borough.

Understanding green skills in London

Best place to start in understanding skills needed for green jobs, is to consider the skills of those currently in green jobs.

We have used Labour Force Survey data to understand the skills and demographic characteristics of those working in green jobs, through identifying the most common SIC codes within each sector.

The table shows the three most common sector classes (4-digit SIC) within each of our sectors. This illustrates both:

- a good matching (eg electrical installation in Low Carbon Transport, or plumbing in Homes and Buildings),
- but also a shortcoming of SIC codes in that many green companies fall into 'other activities not elsewhere classified.

The skills analysis has combined these sectors into four broader ones:

- Power
- Homes, buildings and infrastructure (including transport, industry and localised pollution)
- Reduce, reuse, recycle
- Consultancy/finance (including climate adaptation and strategy)

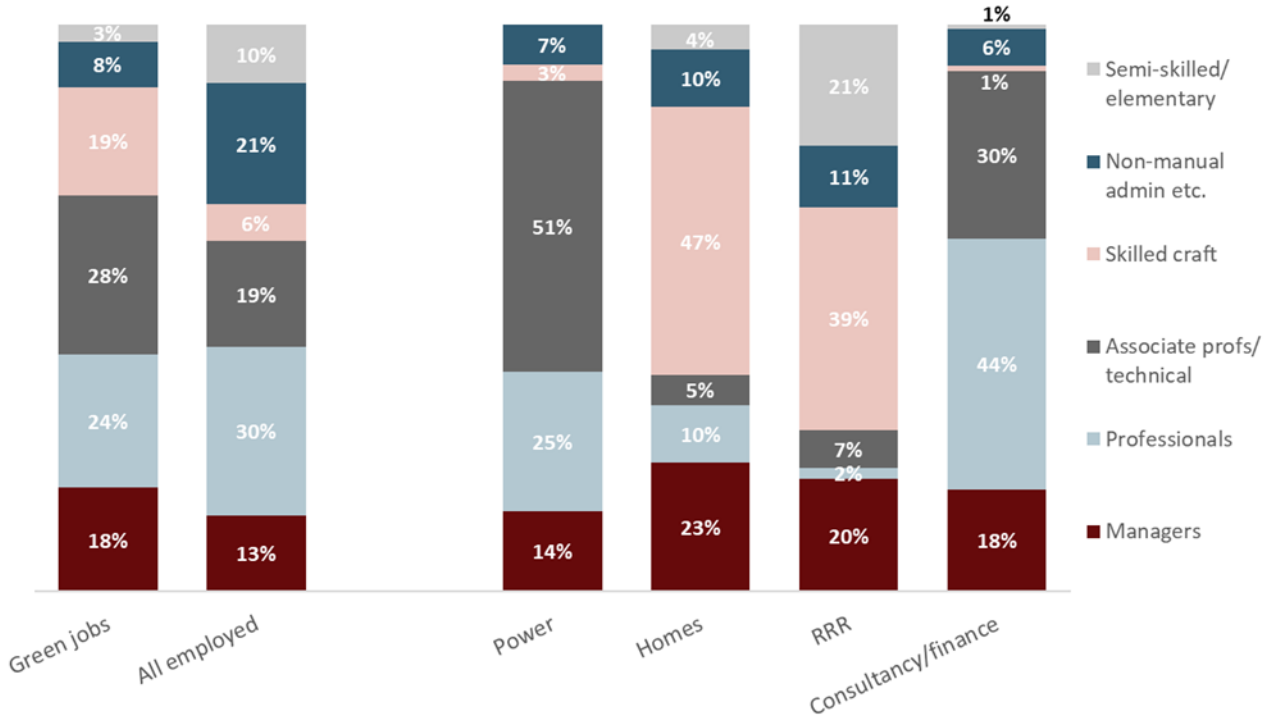
Climate adaptation	
Environmental consulting activities	21
Engineering related scientific and technical consulting	11
Management consultancy activities other than financial	11
Green and blue infrastructure	
Other business support service activities n.e.c.	11
Landscape service activities	8
Environmental consulting activities	8
Low Carbon Transport	
Electrical installation	29
Retail sale via mail order houses or via Internet	19
Other business support service activities n.e.c.	12
Reducing localised pollution	
Environmental consulting activities	37
Other professional, scientific and technical activities n.e.c.	25
Engineering related scientific and technical consulting	16

Climate change strategy, research & monitoring	
Environmental consulting activities	75
Management consultancy activities other than financial	59
Other business support service activities n.e.c.	38
Homes and Buildings	
Plumbing, heat and air-conditioning installation	59
Other business support service activities n.e.c.	27
Electrical installation	16
Power	
Production of electricity	409
Other business support service activities n.e.c.	140
Management consultancy activities other than financial	82

Green Finance	
Management consultancy activities other than financial	20
Other business support service activities n.e.c.	14
Financial intermediation not elsewhere classified	12
Industrial decarbonisation, hydrogen and CCUS	
Engineering related scientific and technical consulting	11
Other business support service activities n.e.c.	8
Management consultancy activities other than financial	8
Reduce, re-use and recycle	
Collection of non-hazardous waste	34
Recovery of sorted materials	31
Treatment and disposal of non-hazardous waste	30

Occupational patterns of employment

- Green jobs in London are predominantly high-level managerial, professional and associate professional/technical roles (70%); however, professional jobs are under-represented compared with all sectors in London
- There is also an over-representation in skilled craft jobs (19%, compared with 6% of all jobs in London)
- Power, and consultancy/finance have the highest concentrations of managerial/professional/technical jobs, while homes, buildings and infrastructure and reduce, reuse, recycle have substantial proportions of skilled craft roles



The detailed occupations reflect the main activities within each sector, for example:

- Electricians, gardeners and plumbers in homes, buildings and landscape
- Management consultants and other finance, sales and marketing professionals and managers in consultancy/finance

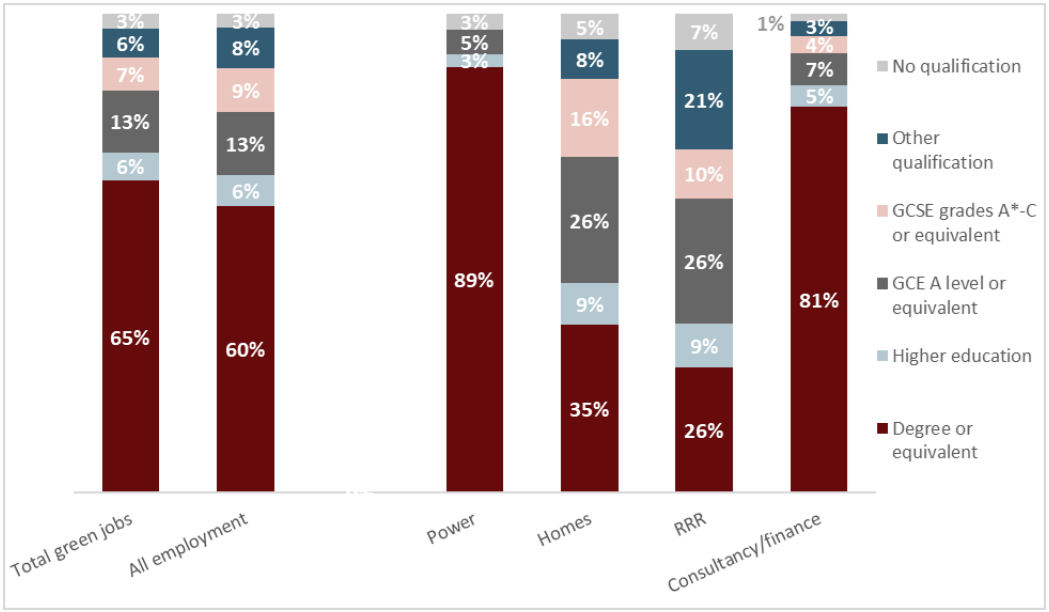
Source: Quarterly Labour Force Survey, Jan-Mar 2020 to Oct-Dec 2020 combined

Demographics and qualifications of the workforce

- The green workforce is male dominated, with a lower proportion of workers from Black, Asian and Minority Ethnic backgrounds in comparison with all sectors in London
- The consultancy/finance sector has the highest proportion of female workers, while the reduce, reuse, recycle sector has the highest proportion of workers from Black, Asian and Minority Ethnic backgrounds

	All green jobs	All sectors	Power	Homes	Reduce, re-use and recycle	Consultancy / finance
Male	66%	54%	77%	80%	77%	59%
Female	34%	46%	23%	20%	23%	41%
White	70%	64%	94%	72%	64%	70%
Black, Asian and Minority Ethnic	30%	36%	6%	28%	36%	30%

Source: Quarterly Labour Force Survey, Jan-Mar 2020 to Oct-Dec 2020 combined



Source: Quarterly Labour Force Survey, Jan-Mar 2020 to Oct-Dec 2020 combined

- The green workforce is highly qualified, and two thirds have first degrees or equivalent or higher qualifications (more than four fifths in power, and consultancy/finance)
- Engineering graduates, those with physical/environmental science degrees, and those with business/finance degrees are over-represented
- Among those with vocational qualifications (mainly in homes, building and landscape, and reduce, reuse, recycle sectors), building and civil engineering, and electricity and energy are the most common subject areas

Skills supply considerations

Green sectors tend to draw staff from other sectors, rather than straight from education

- Around 1% of the workforce enter straight from full-time education each year, compared with 3% across all sectors
- Entrants from other sectors to green sectors make up 6% of the current workforce each year
- Manufacturing sectors are a key source of labour and skills

There is a substantial pool of relevant skills in other sectors

- The number of workers in key occupations related to green sectors but working in non-green sectors is around twice as large as the current green workforce
- This additional 'pool' is largest for consultancy/finance, and smallest for homes, buildings and landscape

Provision in the FE sector

- Just over 20,000 learners in relevant courses in FE; stable over recent years, but large increases in numbers in building and construction courses
- Similarly, around 20,000 apprenticeship starts in relevant sector subject areas - mostly in business apprenticeships rather than craft apprenticeships
- Around 7,000 apprenticeship achievements
- Learners in FE/apprenticeships are just under 20% of the size of the workforce

Provision in the HE sector

- There is a large HE student population in London, c. 250,000 first degree students
- The number of business/finance graduates each year is almost half the size of the workforce with these degrees
- However, new engineering graduates represent a quarter of the number of employed in green sectors
- And new graduates in physical/environmental sciences represent 15% of the graduate workforce

Green jobs and skills in London: the future

Projections for growth in jobs

- We reviewed a wide range of UK based and international literature to gather sources for anticipated growth rates in green employment in each of the policy areas. Where available we have used London specific data
- Key sources include:
  - CCC (2017): UK business opportunities of moving to a low carbon economy
  - LGA / Ecuity (2020): Local green jobs - accelerating a sustainable economic recovery
  - Building the net zero energy workforce (National Grid)
  - Net Zero Housing workforce / London Councils Pathways Report (Parity Projects)
  - ILO (2020) The employment impact of climate change adaptation
  - Vivid Economics and Barton Willmore (2020) Levelling Up and Building Back Better Through Urban Green Infrastructure: An Investment Options Appraisal
  - Green Alliance / Wrap (2015) Opportunities to tackle Britain's labour market challenges through growth in the circular economy
- We constructed a central scenario on the basis of the apparently most likely outcomes, and a low and high scenario that represent issues such as:
  - **Low:** More likely outcome if there are green skills shortages, lower uptake rates of green technology and / or less effective policy
  - **High:** Possible outcome if London captures a greater share of exportable green services and makes fast progress towards the 2030 net zero target that allows London green industry to capture more of the market both in London and outside

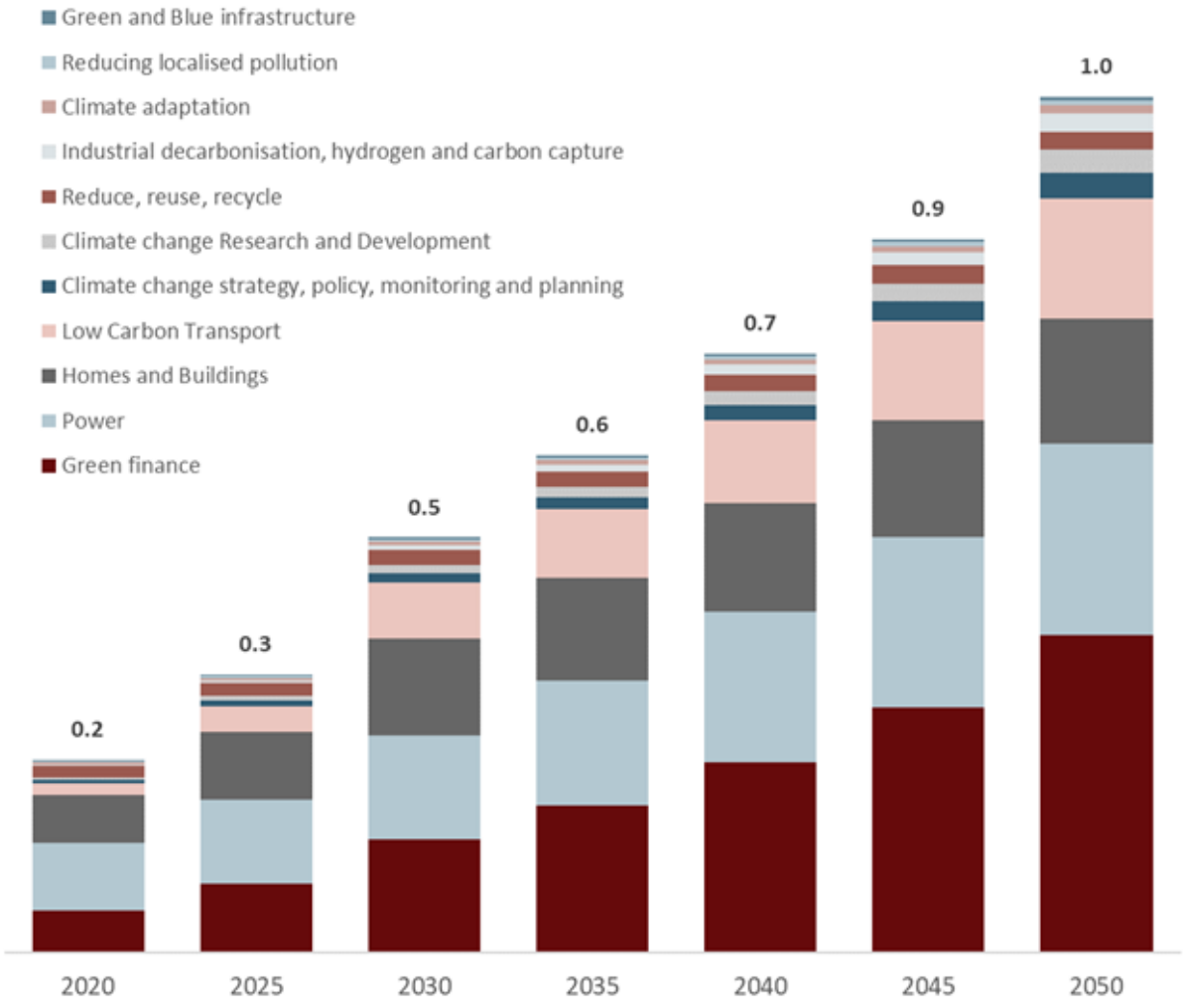
Projections of yearly growth rates of green jobs by sector, central scenario (gross increase)

	2021-2030	2031-2040	2042-2050
Green finance	11%	5%	5%
Power	4%	4%	2%
Homes and Buildings	7%	1%	1%
Low Carbon Transport	18%	4%	4%
Climate change strategy, policy, monitoring and planning	11%	5%	5%
Climate change Research and Development	11%	5%	5%
Reduce, reuse, recycle	2%	1%	1%
Industrial decarbonisation, hydrogen and carbon capture	22%	6%	6%
Climate adaptation	5%	5%	5%
Reducing localised pollution	5%	5%	5%
Green and Blue infrastructure	4%	2%	2%
Total	8%	4%	4%

Source: WPI Economics calculations

Central projection for 1 million green jobs by 2050

Projections of green jobs in London (millions)

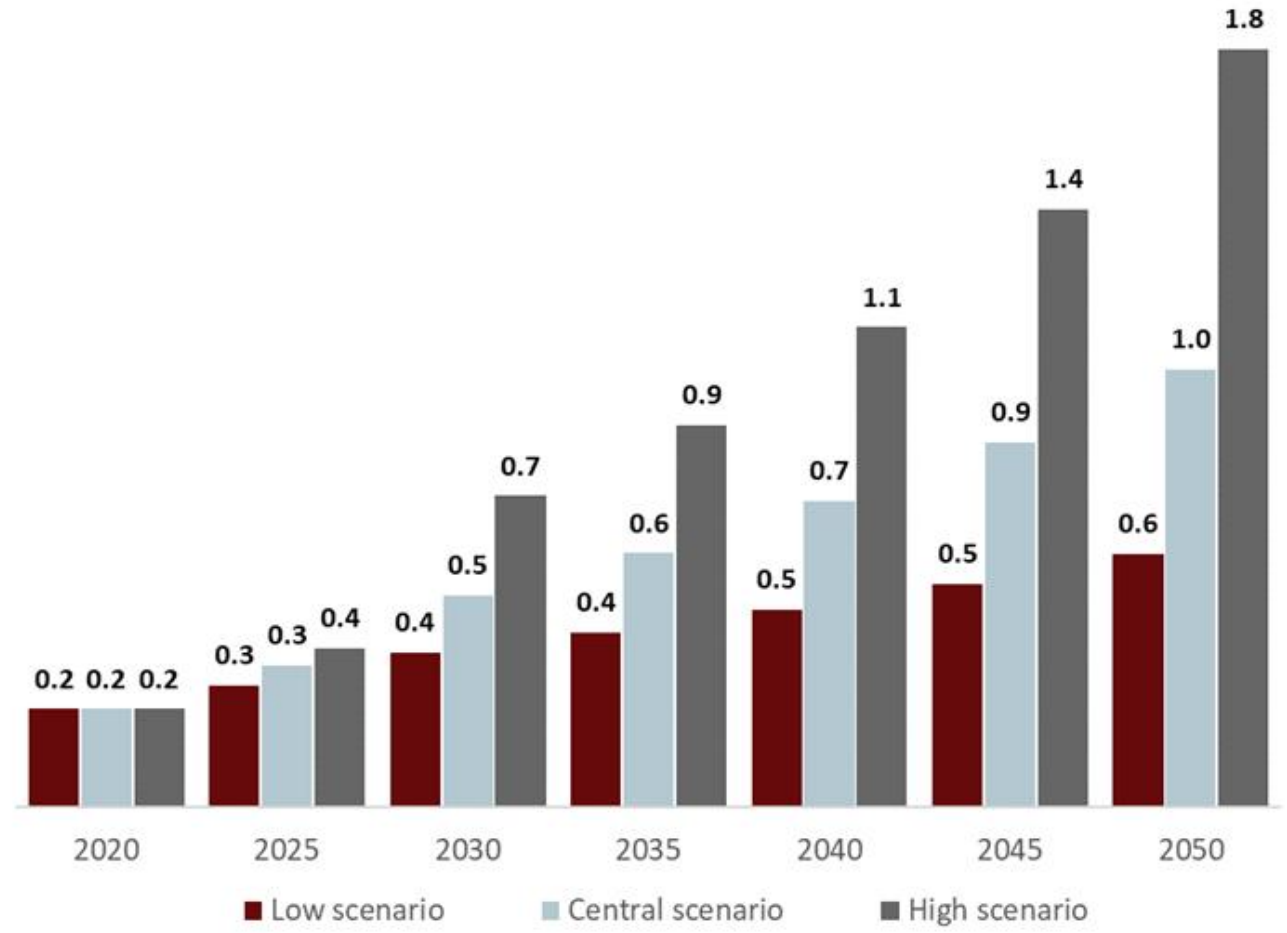


Source: WPI Economics calculations

- Our central projection is for around half a million green jobs in London by 2030 and around 1 million by 2050
- Average rate of growth:
  - 8% per year between now and 2030
  - 4% per year between 2030 and 2050
- This represents extremely fast growth. Over the decade preceding the pandemic, total employment grew by 13% over the whole period, or **1.2% per year**
- The fastest growing sectors were:
  - Real Estate activities: **4% per year**
  - Information & Communication: **4% per year**
  - Professional, Scientific and Technical activities: **3% per year**

The number of green jobs in the next three decades is highly uncertain

Scenarios for projections of total green jobs in London (millions)

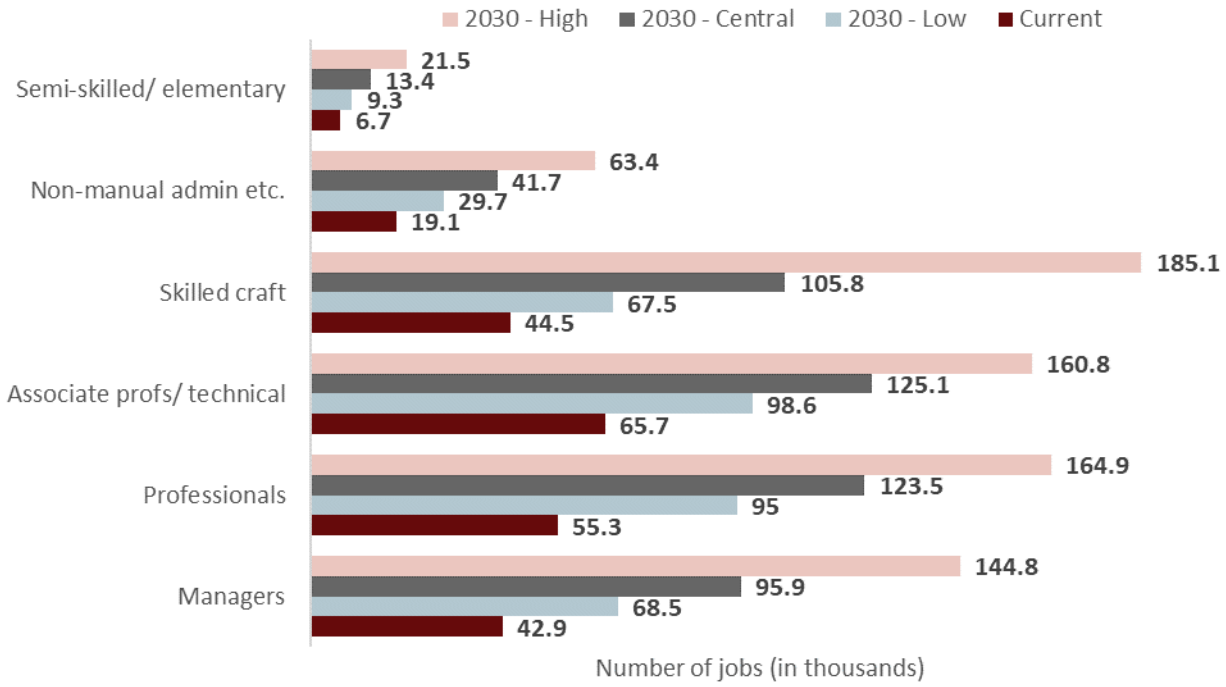


- Our low projection still sees substantial growth, but to only around 600,000 green jobs by 2050 rather than 1 million. This represents the potential impact of skills shortages, lower uptake rates and / or less effective policy
- Our high projection represents the potential for London to capture a greater share of the green services sector globally, and the potential benefit of moving faster to meet the 2030 net zero target – this could lead to up to 1.8 million green jobs by 2050

Source: WPI Economics calculations

Projections of jobs by occupation to 2030

- The implications of the central scenario for employment by occupation to 2030 are an increase of 138% in skilled craft workers, and increases of 123% in managerial and professional employment; associate professionals are projected to grow more slowly (90%)
- In 2030, there would be 125,000 associate professional workers, a similar number of professionals, 106,000 skilled craft workers, and 96,000 managers
- But under the high growth scenario, the number of skilled craft workers in 2030 would be 185,000, more than four times the current level …
- … with a threefold increase in managers and professionals
- These occupational projections assume the occupational mix within each of the four broad sectors will remain the same over time, but each sector grows at a different rate



Detailed occupational changes, and skills supply implications

Largest increases to 2030 among skilled craft workers under central scenario

- 17,500 more electricians – 140% increase
- 12,600 more gardeners and landscape gardeners – 161% increase
- 9,900 more plumbers and heating & ventilation engineers – 161% increase

Largest increases to 2030 among man/prof/ technical workers under central scenario

- 24,900 more business associate professionals (business systems analysts, data analysts etc.) – 61% increase
- 15,200 more management consultants – 167% increase
- 9,800 more production managers in construction – 161% increase

- Nationally, there are skills shortages currently for many of these occupations – electricians, plumbers, and production managers in construction
- Green sectors currently draw substantially more staff from other sectors, than straight from education – but if all new jobs were filled by entrants from education, the sector would need to attract half of all FE/HE leavers with relevant skills
- To ensure a sufficient supply for these new jobs, there is an urgent need to:
    - Increase education provision in subjects and courses that are relevant for green jobs
    - Increase the proportion of those taking relevant courses who progress to employment within green sectors; and
    - Increase the flows from other, non-green, sectors into green sectors, including through re-skilling training

Impact of net zero on the total number of jobs in London

Overall impact on employment

All these jobs are not all additional jobs to the London economy because:

- A non-green job may have become a green job;
- Some jobs may cease to exist.

But modelling for the CCC has found that there will be an increase in the **net number of jobs in the UK** due to the change to a net-zero carbon economy by 2050 because:

i. The transition to a low carbon economy requires that investment is brought forward into capital-intensive technologies, stimulating economic demand;

ii. The decarbonisation of power reduces the imports of oil and gas, which in turn increases domestic production, leading to increases in GDP and employment; and

iii. Electricity prices are expected to fall, as economies of scale for low carbon energy technologies are substantial. Low electricity prices boost GDP and employment and also reduce consumer prices across the economy.

Employment is projected to be around 1% higher by 2035, equivalent to 300,000 net jobs across the whole of the UK economy.

We have estimated the impact on the London economy of the move to net zero policies by overlaying these sectoral changes on London's pattern of sectoral employment.

Estimated impact of net zero policies on net employment in the UK, by sector

Sector	Employment, UK (% change from baseline of current policies rolled forward)	
	2030	2050
Agriculture	4.2%	2.9%
Mining and refinery	-7.8%	-11.0%
Utilities	4.5%	35.5%
Manufacturing and construction	1.1%	0.5%
Distribution, retail, hotel and catering	1.8%	0.9%
Transport and communications	2.0%	0.1%
Services	0.2%	0.0%

Source: Climate Change Committee (2020) Economic Impact of the Sixth Carbon Budget (Cambridge Econometrics)

Estimated impact of net zero policies on net employment in London

- We find that if London's sectoral changes are in proportion to the rest of the UK then overall employment in London could increase by around 50,000 by 2030, and 20,000 by 2050 due to the move to net zero policies compared to current policies
- This is a positive, although represents only a small proportion of overall employment (less than 1%)

Estimated impact of net zero policies on net employment in London

Sector	Jobs in London, 2019	Estimated jobs in London, 2030			Estimated jobs in London, 2050		
	Latest data	Based on current policies	With net zero policies	**Change due to net zero policies**	Based on current policies	With net zero policies	**Change due to net zero policies**
Agriculture	1,800	1,600	1,600	**0**	1,200	1,300	**100**
Mining and refinery	2,500	2,300	2,100	**-200**	1,700	1,600	**-100**
Utilities	28,000	25,300	26,500	**1,200**	19,600	26,500	**6,900**
Manufacturing and construction	328,000	325,900	329,500	**3,600**	311,400	312,900	**1,500**
Distribution, retail, hotel and catering	1,054,000	1,106,800	1,126,800	**20,000**	1,134,900	1,145,100	**10,200**
Transport and communications	708,000	766,900	782,200	**15,300**	838,000	838,800	**800**
Services	3,246,000	3,624,200	3,631,500	**7,300**	4,136,000	4,136,000	**0**
Total	5,368,000	5,853,000	5,900,000	**47,200**	6,443,000	6,462,000	**19,400**

Source: WPI calculations based on Climate Change Committee (2020) Economic Impact of the Sixth Carbon Budget (Cambridge Econometrics) and ONS Business Register and Employment Survey

Jobs at risk from decarbonisation

Carbon intensive industries

Following the method in the report *Greening the Giants (Onward, 2021)* we gathered information on "carbon intensive sectors" i.e. those sectors that either have emissions above 100tCO2e per job or which contribute more than 2% of annual total UK emissions. These are:

- Agriculture
- Aviation
- Carbon intensive manufacturing
- Coal and lignite mining
- Construction
- Electricity, gas, steam and air conditioning supply
- Land Transport
- Oil and gas
- Retail*
- Shipping and fishing
- Steel
- Waste and sewerage

*In common with Onward, we exclude retail from the cross-sectoral analysis because the sector has been assessed as having 91% of jobs not exposed to the transition. We also exclude Coal and lignite mining, as there are no jobs in this sector in London in 2019.

Jobs in carbon intensive sectors, London

- Although it is not possible to get demographic data at a detailed industrial breakdown, we can establish the likely picture by using the broad section level SIC codes for each of the ten areas
- We identify that 390,000 of London's 5.3m jobs (7%) are in carbon intensive industries and therefore at highest risk of change. This is slightly lower than the rest of the economy (11%)
- The ethnic mix of these sectors is approximately in line with London employment as a whole
- National data suggest that the carbon intensive industries have relatively more male employees, with female workers accounting for only 18% of the employees. London data is not available for many of the SIC does from the ONS unfortunately; and
- There is no strong pattern in the age of workers in the 11 carbon intensive sectors.

Jobs in carbon intensive sectors

	SIC code section	Employment, 2019	Proportion of employees that identify as an ethnicity other than "White"		Proportion of people in employment that identify as female	
		London	*London*	*Great Britain*	*London*	*Great Britain*
			NB/ This data is at the SIC code section level only			
Construction	F	205,000	24%	7%	-	14%
Land Transport	H	112,700	55%	18%	39%	22%
Aviation	H	37,000	55%	18%	39%	22%
Waste and sewerage	E	12,750	56%	7%	-	23%
Electricity, gas, steam and air conditioning supply	D	12,000	44%	10%	-	23%
Carbon intensive manufacturing	C	6,260	38%	9%	-	27%
Shipping and fishing	Mostly H	3,050	55%	18%	39%	22%
Oil and gas	B	1,750	44%	7%	-	23%
Agriculture	A	1,000	4%	1%	-	26%
Steel	C	185	38%	9%	-	27%
Total in carbon intensive sectors		**390,000**	**38%**	**11%**	**-**	**18%**
All industries		**5,252,000**	**36%**	**13%**	**-**	**48%**

Source: ONS Business Register and Employment Survey (BRES) and Annual Population Survey (APS). Notes: The data on gender breakdown of industries in London for SIC codes A-F is not available; the ONS say the figures are suppressed as they are statistically unreliable.

CONTACT US

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