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How can we measure the number of green jobs? ONS experimental estimates provide some insights

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Introduction

This note explores the recently released experimental estimates of green jobs produced for the first time by the Office for National Statistics (ONS) in September 2023.

Tracking the number of green jobs is important. The Mayor of London has set a target for London to achieve net zero carbon by 2030. This transition to a greener economy will have major implications for the labour market and skills system in the capital.

The Local Skills Improvement Plan (LSIP) for London, a plan to better match training to employer demand at a local level, highlights that green economy related skills are cross-cutting and transferable. The LSIP proposes that green skills be embedded in education for new labour market entrants as well as in the upskilling of existing staff.

The estimates of green jobs produced by the ONS complement previous analysis undertaken by GLA Economics to identify green skills and jobs by analysing online job postings produced by Lightcast as well as identifying green occupations in London.

Defining green jobs

Currently, there is no agreed upon definition of "Green" jobs from which official statistics can be produced. For this publication, the ONS used a definition of green jobs which refers to "employment in an activity that contributes to protecting or restoring the environment, including those that mitigate or adapt to climate change".

The ONS uses three approaches to estimate green jobs, namely:[1]

1. an **industry-based approach**, which includes all jobs in a "green" industry or sector, with such industries classified according to activities undertaken in them.

2. an **occupation-based approach**, which includes all jobs that are green based on the tasks undertaken by workers or objectives of their work, regardless of the industry those jobs are in.

3. a **firm-based approach**, which includes all jobs in a green firm, which could be classified based on firms' environmental commitments, such as an emissions target and/or their trajectory of emissions.

As the ONS highlights, there are overlaps in these approaches and thus each should be considered individually and not aggregated. In addition, the definition of green jobs used is based on activities undertaken within jobs and does not consider the environmental impact of any individual job.

This note presents the estimates of green jobs based on the three approaches, industry, occupation and firm based.

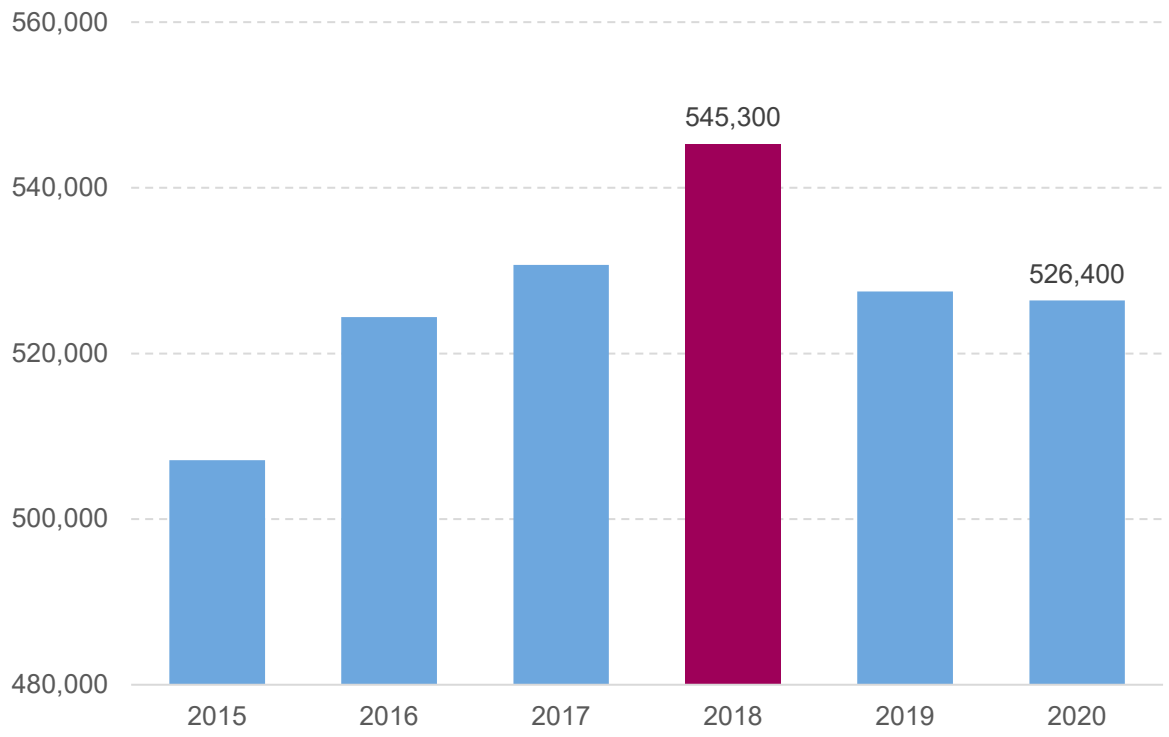
[1] The three approaches used by the ONS are defined in the publication "Developing estimates of green jobs in the UK methodology"

Jobs in green industries

The industry approach includes all jobs in green industries or sectors and is the ONS' headline estimate of employment in green jobs.[2] The ONS has identified a list of 22 green activities which are used in defining green jobs.[3]

The data points to a near 4% increase in full-time equivalent green jobs across the UK between 2015 and 2020. The number of full-time equivalent (FTEs) green jobs in the UK increased from 507,100 FTEs in 2015 to 526,400 in 2020 (Figure 1).[4] A high of just over 545,000 green jobs was reached in 2018.

Figure 1: Estimates of FTE green jobs, UK, 2015-2020



Source: ONS Experimental estimates of green jobs, UK, 2015-2020

Two activities accounted for close to 2 out of 5 green jobs FTE in 2020. These were energy efficient products (21.4% of green jobs) and waste management (18.4%). In 2020, energy efficient products accounted for 112,700 jobs and waste management 96,800 jobs.

[2] Data from the Environmental Goods and Services Sector estimates, the Low Carbon and Renewable Energy Economy Survey and the Business Register Employment Survey. As such, the estimates are subject to the same quality features as those. The Environmental Goods and Services Sector Estimates are themselves experimental.
[3] These include activities such as alternative fuel, bioenergy, carbon capture and storage, grid infrastructure, low carbon transport, renewable energy. For a full list see ONS Jobs in green industries, (3. Jobs in green industries)
[4] Employment is measured in full-time equivalents (FTEs) employees. An FTE employee is one person working full time for one year.

Between 2015 and 2020, there was an **increase in the number of jobs in 13 out of the 22 activities**, the largest of which were in:

- Renewable energy (10,200 jobs or 41%)
- Water quality (7,700 jobs or 26%)
- Environmental charities (6,100 jobs or 22%)
- Low carbon transport (5,600 jobs or 41%)
- Nuclear power (3,300 jobs or 27%)

In contrast, **job declines were largest** in:

- Wastewater (-3,700 jobs or -16%)
- Alternative fuels (-3,300 jobs or -85%)
- Environmental consultancy not elsewhere classified (-3,200 jobs or -36%)
- Repairs (-3,100 jobs or -6%).

No reasons were given for these changes, and speculation on this is difficult given the broad spectrum of activities affected.

Green occupations

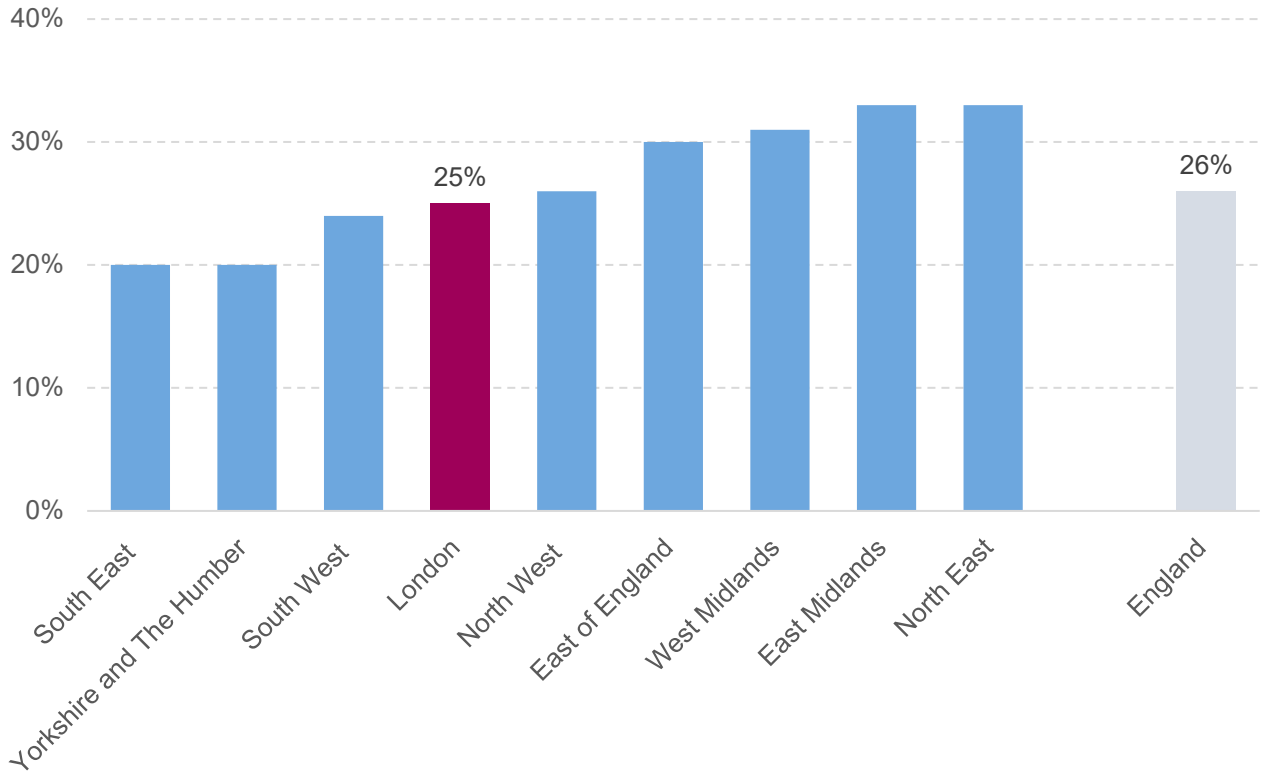
The green occupation approach measures all green jobs (based on activities and objectives of work) regardless of the industry. Data for these estimates were collected via the Opinions and Lifestyle Survey during the period 4th to 14th May and 17th to 29th May 2023.[5]

More than 1 in 4 working adults describe any part of their job as one that would qualify as a green job. A **green job** refers to employment in an activity that contributes to protecting or restoring the environment, including those that mitigate or adapt to climate change.

The survey finds that 26% of working adults in England describe any part of their job as a "green job". Around 4% of respondents indicated that all/most of their jobs are related to green activity.

Key findings to highlight are the high proportion of working adults in London (25%) who deem any part of their jobs to be 'green-related'.[6] This was in line with the England average, but below the high of 33% of working adults in both the Northeast and the East Midlands (Figure 2).

Figure 2: Share of working adults who described any part of their job as 'green', by region, May 2023



Source: ONS Experimental estimates of green jobs, regional and England, May 2023

[5] The Opinions and Lifestyle Survey is a survey collected fortnightly of approximately 2,000 to 2,500 individuals, covering Great Britain. Respondents were asked a series of green job questions. The questions were on people's opinions, so are only indicative of the number of those working in green jobs under the occupation approach. The ONS also notes that the responses have not been edited and so inconsistencies may be present in the data. For example, respondents who said they would describe any part of their job as green may then go on to report they spend no time on green activities, and vice-versa.

[6] Given a working age population (16-64 years) in London of 6.1 million for the 12 months ending March 2023, this would equate to 1.5 million Londoners.

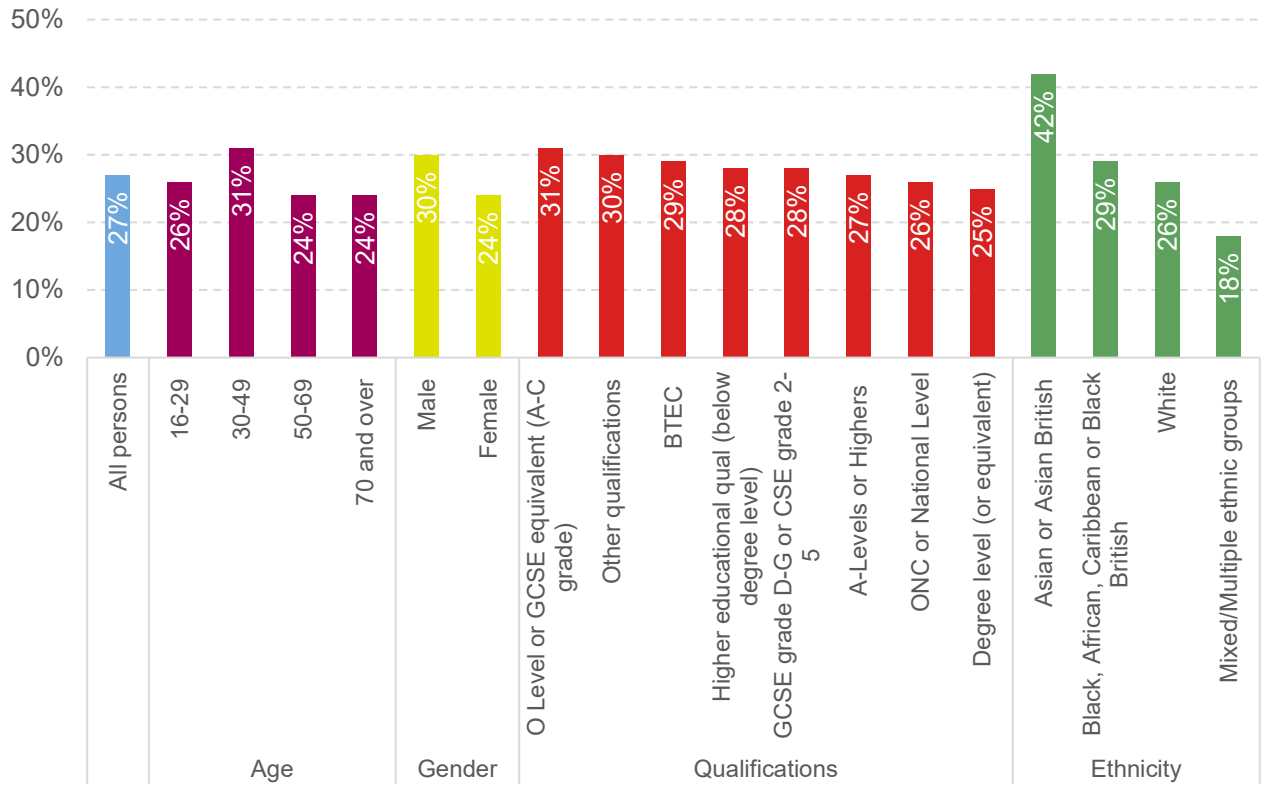
Certain groups in Great Britain were more likely to describe any part of their job as a 'green job' (Figure 3). Those who were more likely to indicate that any part of their job was considered a 'green job' were:

- Working people between the age of 30-49 years (31%)
- Working men (30%)
- Working adults with an O level qualification/GCSE grade A-C (31%) or other qualifications (including foreign qualifications between degree level) (30%)
- Working adults from Asian or Asian British ethnicities (42%).

Those least likely to describe any part of their job as a 'green job' were working adults:

- aged 50-69 and 70 and over (24% respectively)
- with a degree level or equivalent qualification (25%)
- from mixed/multiple ethnic backgrounds (18%).

Figure 3: Share of working adults who described any part of their job as a 'green job, by selected indicators, Great Britain, May 2023



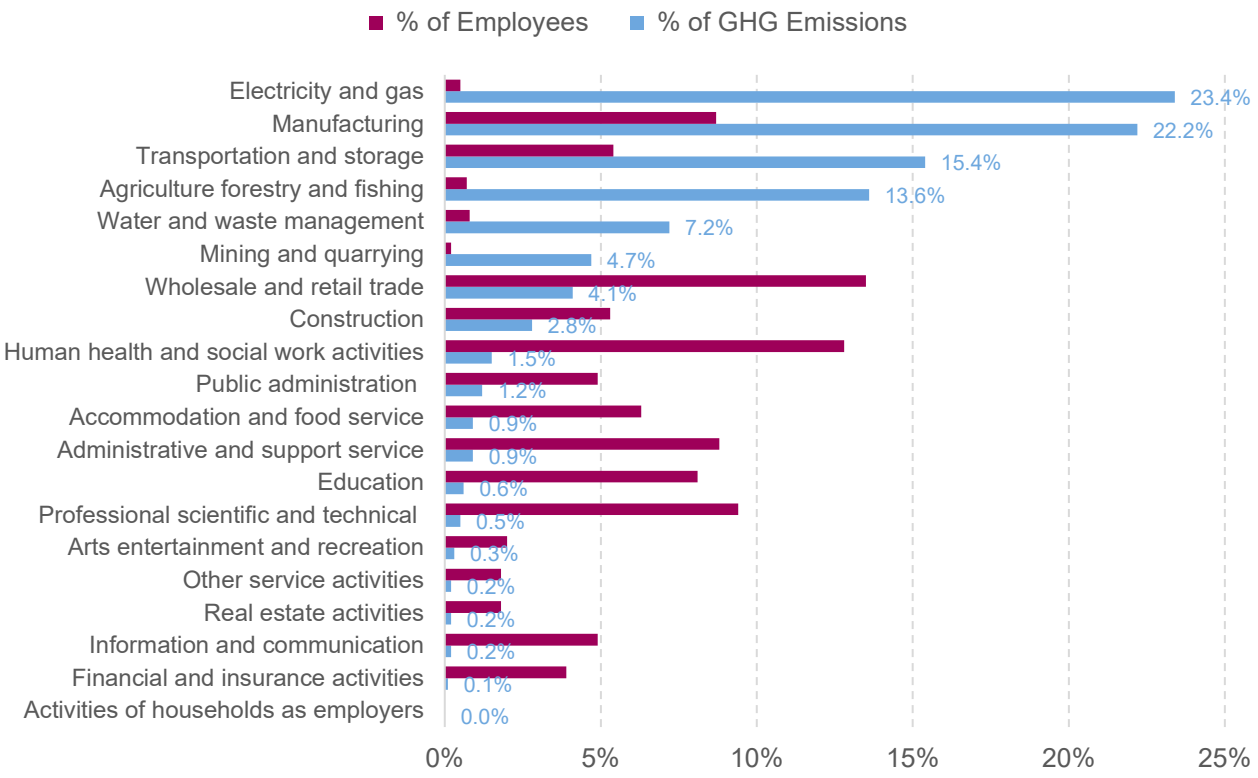
Source: ONS Experimental estimates of green jobs, Great Britain, May 2023

Jobs in green firms

The firm-based approach to estimating green jobs measures all jobs in firms that are classified as green. The ONS uses data on greenhouse gas (GHG) emissions by industry and considers those industries that emit less than 1% of the UK's total GHG emissions (and the firms in these industries) as "green".

Across the UK, a small number of industries contribute significantly to total GHG emissions. Three industries, electricity, gas, steam and air conditioning; manufacturing; and transportation and storage, accounted for over 61% of total GHG emissions in 2021. These industries employed 3.8 million people, or 15% of total UK employees (Figure 4).[7]

Figure 4: Share of GHG emissions and employees, UK, 2021



Source: ONS Experimental estimates of green jobs, UK, 2021

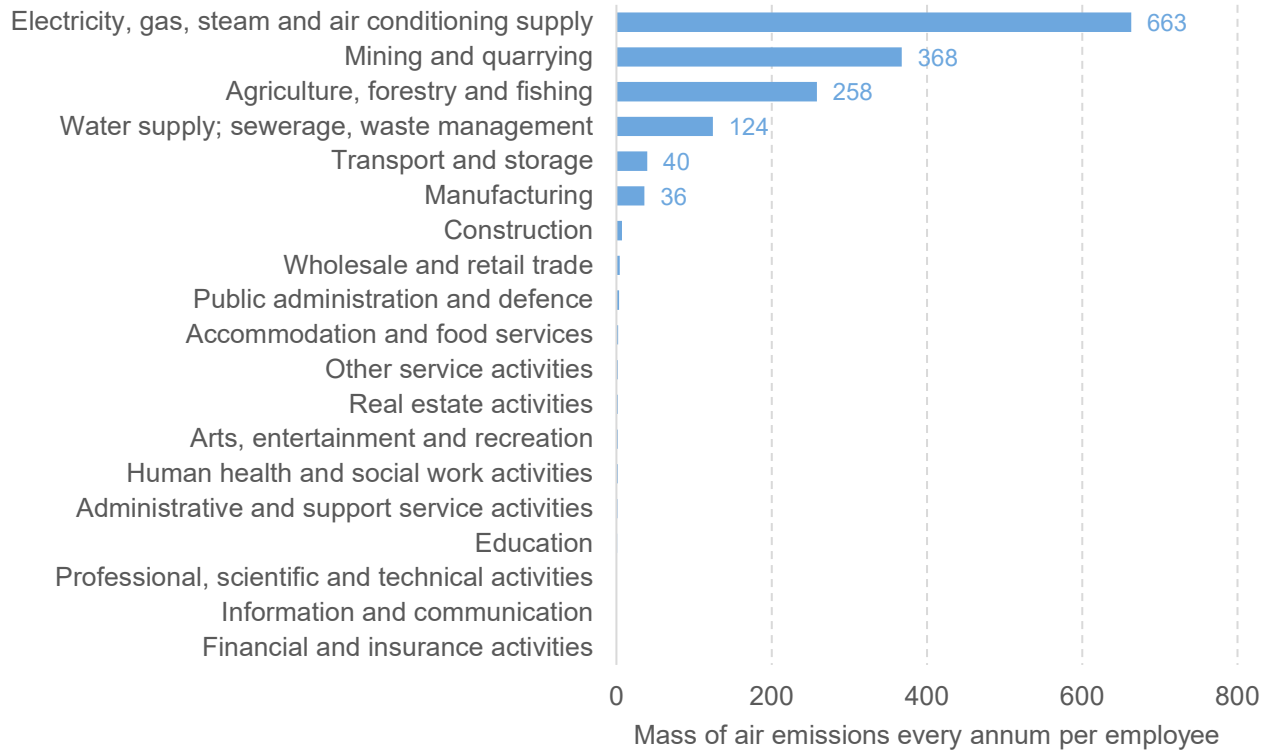
The analysis also finds that in 2021, 10 industries had GHG emissions of less than 1%. These 10 industries collectively accounted for 4% of total GHG emissions but employed 47% of total UK employees (or 12.3 million out of nearly 26 million employees across the UK).[8]

In 2021, the highest GHG emissions per employee at industry level was in electricity, gas and steam (663 mass of air emissions every annum per employee), mining, (368), agriculture (258), water supply and sewerage (124), transport and storage (40) and manufacturing (36) (Figure 5).

[7] At London level electricity, gas, steam and air conditioning; manufacturing; and transportation and storage accounted for 6.7% of employees and employed 359,000 people in the capital. (Source BRES 2021)

[8] The 10 industries (Figure 4) were Accommodation and food services, Administrative and support, Education, Professional scientific and technical, Arts entertainment and recreation, Other service activities, Real estate, Information and communication, Finance and insurance and Activities of households as employers.

Figure 5: Greenhouse gas emissions per employee and industry, UK, 2021



Source: ONS Experimental estimates of green jobs, UK, 2021

Other data sources on green jobs

Research suggests that there were already 234,000 jobs in so-called green priority sectors[9] in London in 2020, with that number set to increase significantly in the coming years.

For example, according to WPI Economics, the number of jobs in green priority sectors could reach 505,000 by 2030, an increase of around 27,000 per year (or just under 6%). The largest growth is expected to come from:

- Green finance (137,600 jobs in 2030, up from 50,700 in 2020 - increase of 171%)
- Homes and Buildings (117,600 jobs in 2030, up from 58,200 - increase of 102%)
- Power (126,600 jobs in 2030, up from 82,900 - increase of 53%)
- Low Carbon Transport (69,200 jobs in 2030, up from 13,700 - increase of 405%)

Using a broader, occupation-based approach which accounts for jobs that are both directly and indirectly affected by decarbonisation[10], research by the LSE estimated that in 2019 the share of green employment at the UK level was 17%. The sectors with the highest share of green jobs were utilities, construction, manufacturing, the primary sector (agriculture and mining) and transport.

Analysis by GLA Economics[11], following a similar approach based on the O*NET[12] classification of green jobs to identify occupations that are likely to be affected by the transition to a low-carbon circular ('greener') economy[13], finds that in 2019 there were 1.5 million jobs in occupations in London affected by greening, accounting for 28% of all jobs in the capital. The number of jobs in green occupations grew at a greater pace than that in non-green occupations (4.1% per year vs 0.6% per year). In addition, 72% of jobs affected by greening were in managerial, professional and associate professional and technical groups, while 14% were in skilled trades. Those sectors accounting for the largest share of jobs in green occupation are also high emitting sectors, namely electricity and gas (70% of jobs), construction (65%), manufacturing (42%) and transport & storage (36%).

[9] Sectors that have an important role in meeting net zero and/or environmental goals.
[10] The approach used applies an occupational-level classification of green jobs developed by the O*NET. This database can be used to classify occupations based on the greenness of their related task content and applies a relatively broad definition of green jobs within 12 sectors that were deemed to be most affected by decarbonisation. O*NET classifies any occupation that will be affected by greening as a green job.
[11] Identifying Green Occupations in London, GLA Economics, 2022
[12] Occupational Information Network (O*NET), an occupational database produced by the United States Department of Labor.
[13] This approach is broader as it includes all jobs in a green occupation, whereas other green definitions tend to focus on jobs or businesses directly involved in low carbon or environmental activities.

Conclusion

The green sector is a priority sector for the Mayor of London, and as such the GLA welcomes the data release by the ONS to estimate the number of green jobs.

The analysis undertaken by the ONS and GLA Economics highlights how methodological approaches defining and measuring green jobs impact the magnitude of estimates which are produced. The alignment of various definitions and the production of regional estimates will be important next steps for the analysis of green jobs at the London level.

As the GLA moves towards achieving the target of net zero by 2030, we will continue to track both green jobs and skills to ensure that future environmental policy at the local level is reinforced by a robust and clear evidence base.

Further reading and analysis:

- Online postings for green jobs in London a blog and data on online job postings and skills
- Identifying Green Occupations in London, GLA Economics, 2022
- Measuring green jobs and skills, Nesta, 2023
- Green jobs: rapid evidence review, Nesta, 2023

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