



# Net Zero and the Labour Market: Evidence from the UK

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RESEARCH



## ABSTRACT

The urgent need for tackling climate change brings with it the need to understand the impacts of net zero policies on the labour market. Various approaches have been taken in attempts to measure and describe *green jobs*, and compare them to their non-green counterparts. This essay focuses on the UK and summarises findings from an occupational approach, which classifies jobs as being green when they involve new tasks or skills required by the transition to net zero, or when they are likely to see increased demand due to the transition. Drawing on this analysis, and other complementary approaches, this essay sets out evidence that green jobs have the potential to be good jobs, requiring higher skills and paying well. However, they have not been accessible to all workers to date. In the next phase of the transition, net zero is expected to be a net creator of jobs. Overall, this is largely a story of change in existing jobs and sectors—very few jobs will be phased out. The transition and its impacts on the labour market will be difficult in specific sectors and places, requiring targeted programmes and broader skills policies to ensure that net zero can not only be delivered, but delivered in an inclusive way.

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## 1. INTRODUCTION

As governments around the world increase their commitments to tackling climate change, there is a growing need to quantify and characterise the ‘green economy’ as it stands today. This will better enable the identification of the opportunities to be seized in the transition to net zero greenhouse gas emissions and the challenges to be overcome. One key area in this context is the labour market. The development and deployment of net zero technologies and practices across the economy will lead to new jobs being created and existing jobs being changed or even destroyed. Understanding the nature of this change, as well as how it varies across sectors and places, is key for policy makers seeking to deliver net zero objectives in an inclusive manner. This is particularly important in the UK given the urgent need to accelerate the delivery of net zero and to address the large-scale and persistent inequalities across and within places.

A key challenge in understanding the impacts of the net zero transition on the labour market is that there currently is no single or commonly agreed definition of a ‘green job’. To some degree, any job that survives the transition will become a de facto ‘green job’, as it will be consistent with a low-carbon economy. But, identifying and analysing characteristics of the types of jobs that are required for decarbonisation and wider sustainability objectives is important for understanding and managing impacts on the labour market during the transition phase.

Studies tend to use different measures depending on the context, the research question, and the type of data available. Some measures are best seen as ‘top down’. These are those based, for example, on counting all employment in sectors that provide environmental goods or services. This is the approach taken by the UK’s Office for National Statistics in the *Low Carbon and Renewable Energy Economy Survey*. It considers all jobs in firms identified as being in such sectors as green jobs, and estimates that these collectively accounted for around one per cent of total UK non-financial employment in 2020 [1]. Recent analysis by the Climate Change Committee takes a broader sectoral approach to classifying sectors that are likely to be affected by net zero in different ways [2]. It estimates that 12% of jobs are in sectors that are likely to grow due to the net zero transition (e.g., building construction and retrofit or battery manufacturing), while 7% are in sectors that will need to redirect their products and services (e.g., energy intensive industry), and less than 1% are in sectors that will need to phase down as a result of the transition (e.g., coal or oil and gas production). The rest of the workforce are in sectors that are ‘enabling’ for the transition (key services such as regulation, finance, education, and knowledge are in this category), and those that are peripheral.

‘Bottom up’ approaches tend to use occupation-level information. Such approaches typically define green jobs as being those that involve new green tasks and skills, or that are in greater demand during the transition to net zero [3]. As such, these approaches allow for the identification of workers performing tasks that are relevant for net zero regardless of sector and across the economy, and they enable the comparison of key attributes of green jobs and non-green jobs, even within narrowly defined sectors. Such studies tend to estimate that between 10 and 20 per cent of employment can be considered green (depending on context and precise measure of ‘greenness’ used).

This essay sets out key findings based on a bottom-up, or occupational approach, to classifying green jobs as applied in the UK context. It also summarises findings based on analysis of online job postings, where descriptions allow for more granular classifications of green jobs within the broader occupations available in labour force survey data. Overall, the evidence suggests that green jobs can be considered ‘good jobs’ insofar as they tend to command higher wages and are more highly skilled. However, thus far, green jobs appear to be more likely to be held by older, male workers, and those transitioning into green jobs have tended to do so from non-green jobs that were already more similar in terms of tasks and skill requirements.

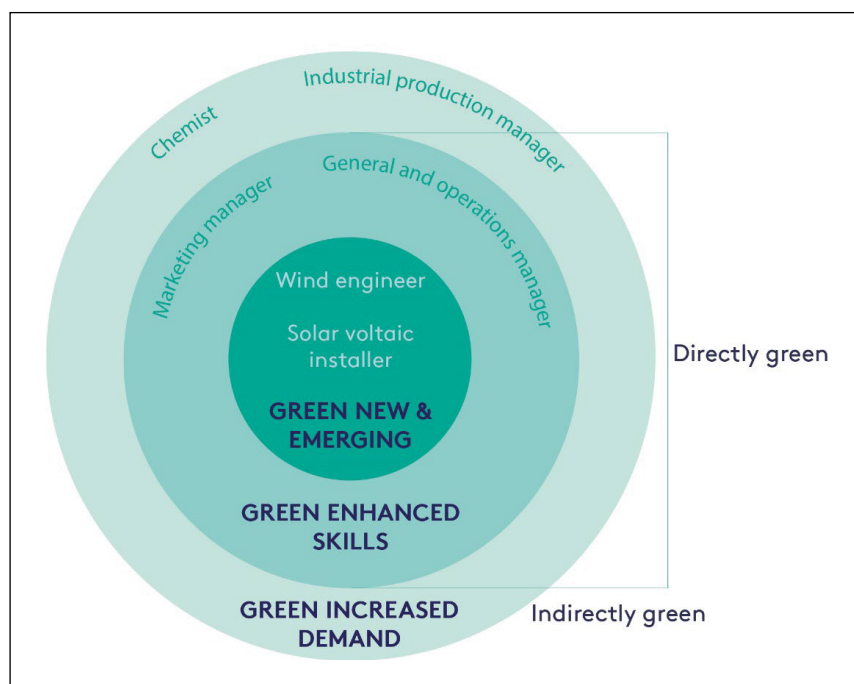
The experience to-date and the projections on worker requirements in the future suggest that the net zero transition will have a large structural impact on labour markets. However, unlike the structural change experienced during the 1980s process of deindustrialisation, this transition does not generally imply closing down whole sectors in the UK (other than phasing out fossil fuel extraction entirely) [4]. Instead, it means adopting new technologies and processes within sectors and across energy, transport, and urban systems, as well as the broader economy. This will create new roles and change the way that many jobs are done.

Taken together, these findings imply that as the net zero transition picks up pace, it will be crucial for policymakers and industry to ensure that (i) the skills are in place to deliver the investment and the change it requires, (ii) new job opportunities are accessible to all groups, and (iii) targeted transition programmes are provided for those displaced in particular sectors or places.

The essay is structured as follows. Section 2 describes an occupational approach to classifying green jobs. Section 3 describes green jobs in the UK according to this definition, and reflects on the workers that have tended to be employed in them. Section 4 then compares a subset of these to ‘brown jobs’—those that are particularly prevalent in high-emissions sectors. Section 5 sets out some findings from more granular analysis of green job creation based on online job postings. Section 6 puts the evidence set out in the context of the largescale change required this decade and beyond for the UK to meet its net zero commitments, and Section 7 concludes with implications of these findings for policy.

## 2. AN OCCUPATIONAL APPROACH TO CLASSIFYING GREEN JOBS

Much of the literature defining and analysing green jobs at the occupation level relies on classifications developed by O\*NET in the United States [5]. The green economy is defined as the ‘economic activity related to reducing the use of fossil fuels, decreasing pollution and greenhouse gas emissions, increasing the efficiency of energy usage, recycling materials, and developing and adopting renewable sources of energy’. O\*NET identifies ‘directly green’ jobs—those that involve new green tasks or skills—within two categories. First, there are Green New and Emerging (GNE) jobs: new occupations arising due to the transition to a sustainable economy, involving unique tasks and worker requirements. An example would be a solar voltaic installer. Second are Green Enhanced Skills (GES) jobs: existing jobs where the transition to a sustainable economy involves new tasks, skills, and knowledge requirements. An example would be a general and operations manager for whom new green tasks relate to managing the sustainability of operations. Finally, O\*NET also identifies ‘indirectly green’ jobs, which are existing jobs that are likely to see an increase in demand due to the transition, though the task and skill content of these jobs is not expected to change significantly. Examples include materials scientists or industrial production managers. These types of green job are illustrated in Figure 1.



**Figure 1** Green occupations according to O\*NET.

Notes: Representation taken from Valero A, Li J, Muller S, Riom C, Nguyen-Tien V and Draca M, Are ‘green’ jobs good jobs?, Centre for Economic Performance, London School of Economics, 2021 October.

A number of studies based on the US context have used these O\*NET classifications to estimate the number of green jobs, and used details about their task content to identify their characteristics and requirements. The green jobs share in the US was estimated at just over 19% in 2014 [6]. Examining the nature of these jobs, ‘directly green’ jobs are found to require more education and to involve more non-routine analytical tasks than non-green jobs (for example,

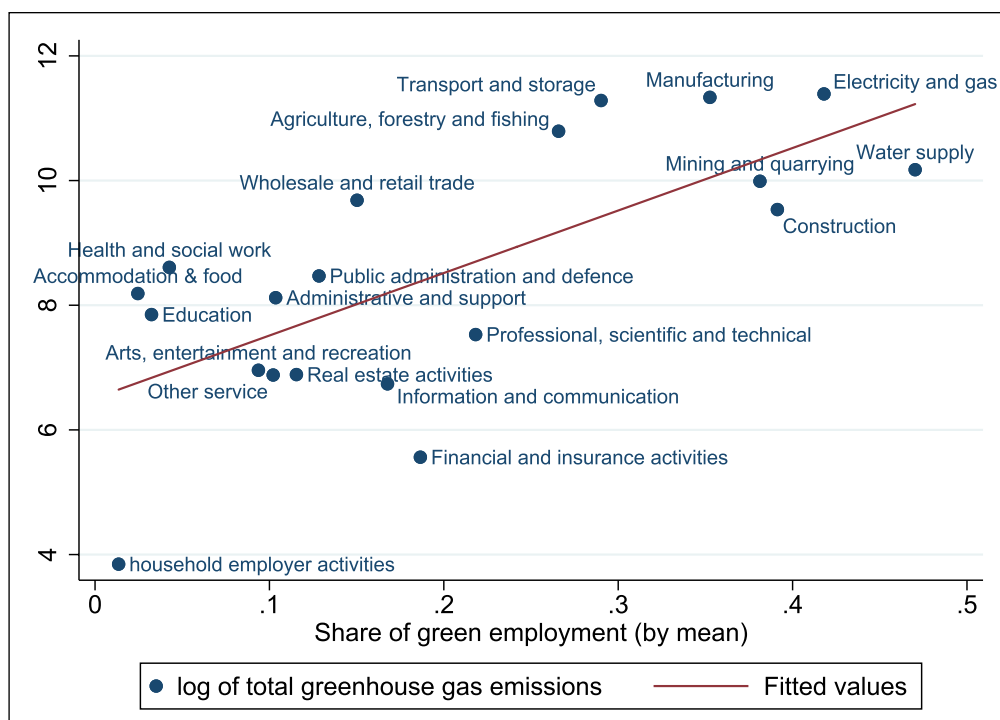
creative problem solving) [7, 8]. Other research has identified sets of ‘green general skills’, which are the general skills associated with greener occupations (those with a higher share of green tasks) [9]. In particular, there are two core areas where green jobs differ from non-green jobs: (i) engineering skills for the design and production of technology and (ii) managerial skills for setting up and monitoring environmental organisational practices. Within the first set, there relate to jobs that require both high and low levels of education (e.g., engineering and construction, respectively), while the latter primarily require higher levels of education. Overall, directly green jobs tend to require higher skills than non-green jobs, while indirectly green jobs tend to be more similar to non-green jobs.

### 3. DESCRIBING AND CHARACTERISING GREEN JOBS IN THE UK

Recent work has applied the O\*NET green jobs classifications to labour-force micro-data in the UK [3]. A number of caveats should be applied in evaluating this research. First, it operates on the assumption is that occupations considered green in the US can be considered so in other contexts. Second, these classifications were generated in 2010 and, therefore, they might omit jobs that have emerged more recently. Finally, the UK system is more aggregated than the O\*NET occupations. Where multiple US occupations are mapped to a single UK occupation, we take a simple average of the ‘greenness’ amongst these. Notwithstanding these limitations, and while statistical offices work on embedding green job classifications into survey data to provide more direct methods of measurement [10], this type of approach allows for a systematic analysis of the stock of employment in green jobs and the characteristics of workers that hold them.

The central estimate is that around 17% of UK employment in 2019 could be considered green, with 12% of this related to directly green jobs (GNE and GES), and the rest relating to indirectly green jobs (GID). The share of all three types of green job has increased moderately since 2011.

Green jobs are quite evenly spread around the UK’s twelve regions—with GES jobs being slightly more prevalent across Wales, the West Midlands, and the South East; and GNE having slightly higher shares of employment in the South of England, Scotland, and the North West. Looking at the composition of green jobs across sectors (Figure 2), it is interesting to note that sectors with a high share of green employment, as we have defined it, also tend to be higher emissions sectors, such as with electricity, gas, and water supply. To some extent, this is a mechanical relationship, given the sectors of focus in the O\*NET green jobs classifications include renewable energy generation, transportation, green construction, and manufacturing. Some sectors stand out as having relatively high shares of green employment and low emissions (financial and insurance activities; professional, scientific and technical; and information and communication). However, further analysis shows that there is no clear relationship at a more

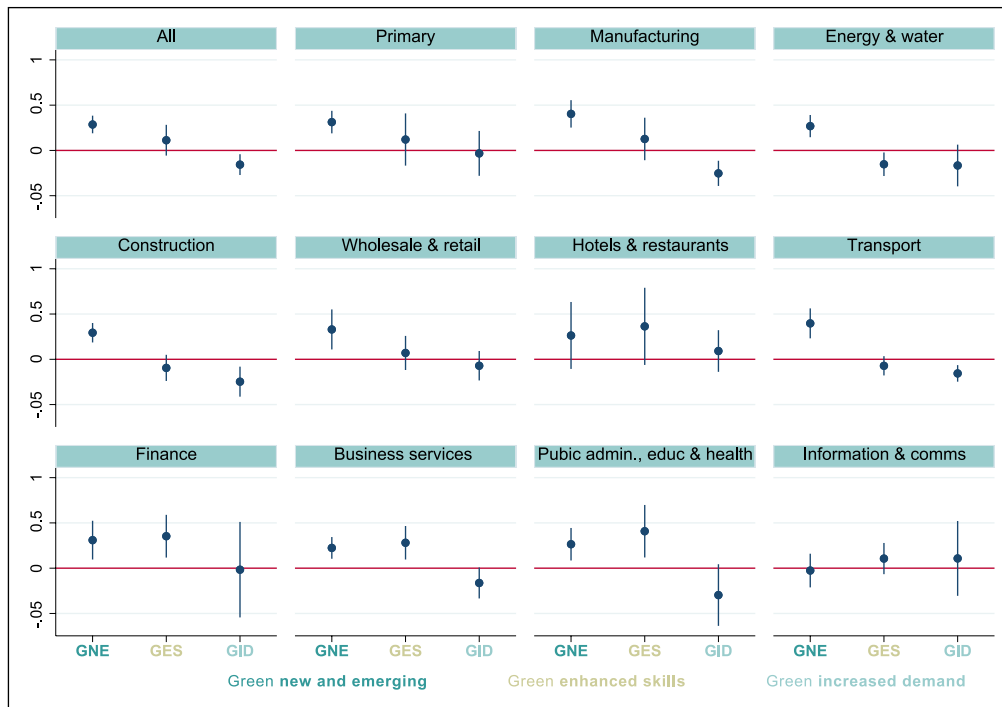


**Figure 2** UK green employment shares versus greenhouse gas emissions. Notes: Sectoral emissions are plotted against averages of the green mean occupational classifications across 20 SIC sections. Source: Sectoral emissions data were sourced from Final UK greenhouse gas emissions national statistics: 1990 to 2019, published 2 February 2021. The natural log of 2019 emissions in thousand tonnes of carbon dioxide equivalent is shown on the y-axis. Analysis of ONS, Labour Force Survey. Source: Valero A, Li J, Muller S, Riom C, Nguyen-Tien V and Draca M, Are ‘green’ jobs good jobs?, Centre for Economic Performance, London School of Economics, 2021 October.

disaggregated sectoral level, reflecting the heterogeneity of activities within broad sectoral groupings and the fact that at the sub-sectoral level it is easier to delineate low- versus high-carbon activities.

Labour force survey data contain a number of job attributes that can give us an indication of job quality. Specifically, these data make it possible to observe the skill level of the worker, whether or not they have received work-related training (in the four weeks prior to being surveyed), whether or not they are on a permanent contract (an indicator of job security), and their hourly wage. We find that the directly green jobs appear to be ‘good’ jobs relative to their non-green counterparts across these measures. Even comparing green and non-green jobs within particular sectors and regions, those in GNE jobs in particular are more likely to be university graduates, recipients of training, and on permanent contracts.

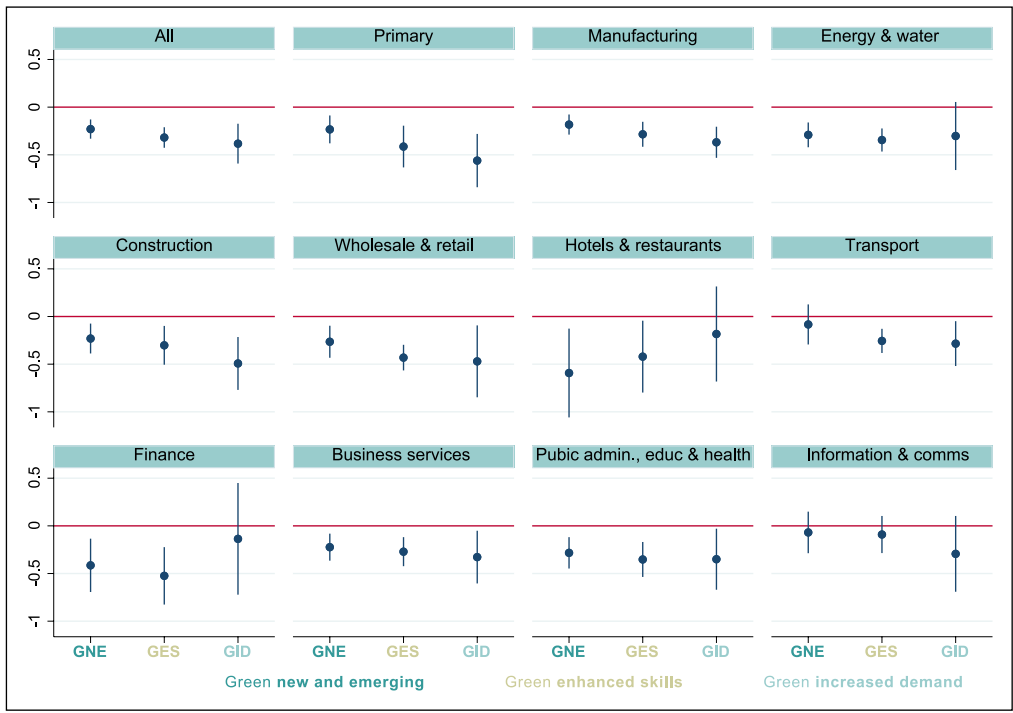
Such relationships vary across sectors. For example, **Figure 3** shows that the higher likelihood of workers being graduates in the case of green new and emerging jobs appears to be driven in particular by the ‘primary’ (agriculture and mining), manufacturing, utilities, construction, and transport sectors. Green enhanced skills jobs also appear to be more prevalent amongst graduates in finance, business services, and public administration. In contrast, green increased demand jobs are less likely to be held by degree holders in some sectors (e.g., manufacturing and construction).



**Figure 3** University graduates and the greenness of jobs.  
 Notes: The dots show the estimated coefficients on GNE, GES, and GID jobs respectively in regressions including controls for year, region and 3 digit industries. Sample includes employed and self-employed workers aged 16-65, Labour Force Survey person weights applied. Standard errors are clustered at the occupation level, and the bars show the 95% confidence intervals. The sector category ‘other services’ is left out. Analysis of ONS, Labour Force Survey. Source: Valero A, Li J, Muller S, Riom C, Nguyen-Tien V and Draca M, Are ‘green’ jobs good jobs?, Centre for Economic Performance, London School of Economics, 2021 October.

Moreover, we find that those in directly green jobs are likely to command a higher wage. The overall green wage premium holds even after controlling for education and experience in standard wage regressions, and including controls for broad occupational groupings (e.g., ‘Managers, Directors and Senior Officials’, ‘Skilled Trades Occupations’, and ‘Elementary Occupations’). In fact, looking at the wage premium more closely, we note that this is largely a phenomenon in lower and middle skill occupations. For the most highly skilled workers (those in managerial or professional roles), there is little difference in wages from being in a green or non-green role.

This analysis suggests that directly green jobs can be considered to be good jobs on range of observable characteristics (while indirectly green jobs appear quite similar to their non-green counterparts overall). However, we also find that directly green jobs are more likely to be held by older, male workers, suggesting that some groups might be better placed to benefit from the transition under the status quo than others. Interestingly, all types of green job, even the indirectly green ones in most sectors, are less likely to be held by women, as shown in **Figure 4**. It follows that while green jobs appear to be good jobs, an inclusive transition is likely to require policy interventions to ensure that new opportunities are accessible to all.



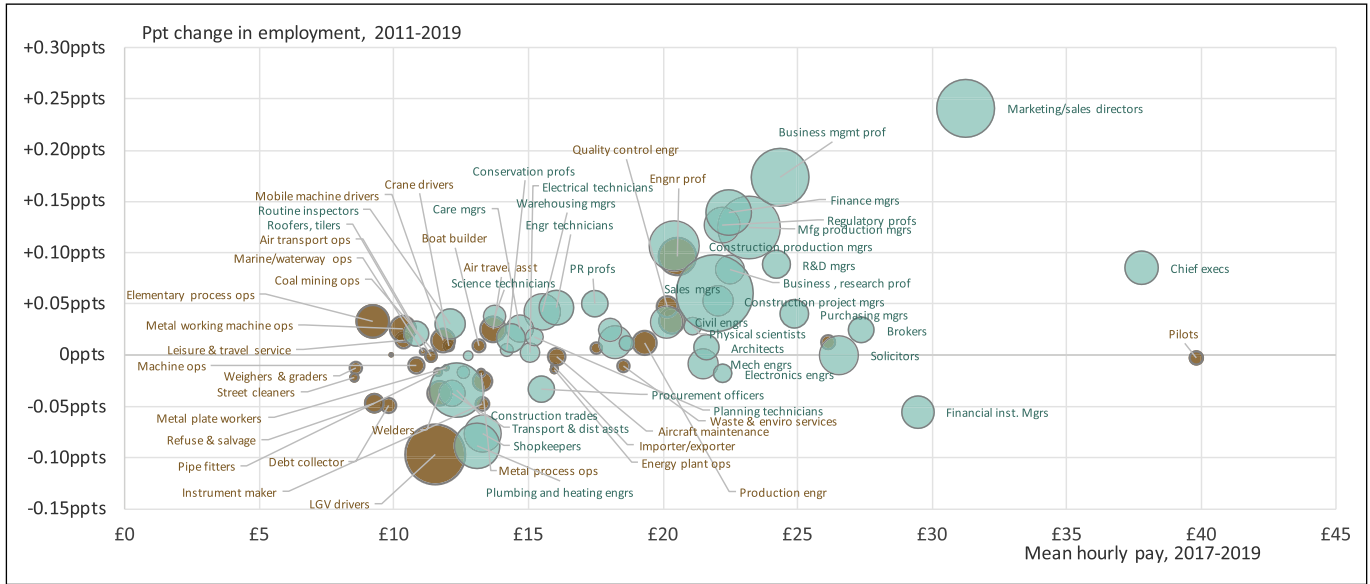
**Figure 4** Gender and the greenness of jobs.  
 Notes: The dots show the estimated coefficients on GID, GES, and GNE jobs respectively in regressions including controls for year, region and 3 digit industries. Sample includes employed and self-employed workers aged 16-65, Labour Force Survey person weights applied. Standard errors are clustered at the occupation level, and the bars show the 95% confidence intervals. The sector category 'other services' is left out. Analysis of ONS, Labour Force Survey. Source: Valero A, Li J, Muller S, Riom C, Nguyen-Tien V and Draca M, Are 'green' jobs good jobs?, Centre for Economic Performance, London School of Economics, 2021 October.

**4. COMPARING GREEN AND BROWN JOBS**

Another analysis of green jobs in the UK builds on the occupational approach, taking a subset of the most directly green jobs and comparing these to 'brown' jobs [4]. Here, brown jobs are defined as those occupations that are particularly prevalent in high emissions sectors, and are therefore in most need of change due to the net zero transition. This analysis estimates that around 13% of employment in 2019 was in green jobs, while 4% was in such brown jobs.

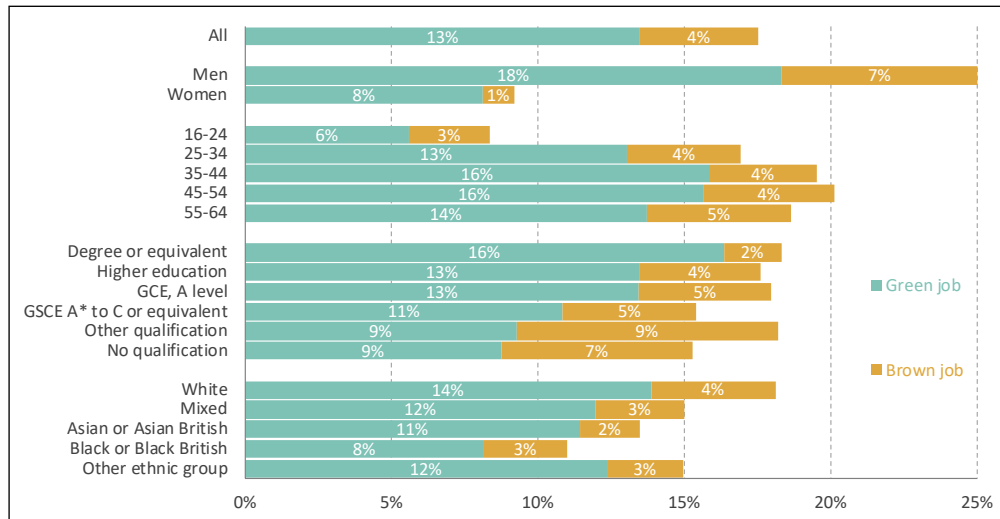
Figure 5 displays green and brown occupations according to their share of employment in 2019 (bubble size), their average hourly pay in 2019 (horizontal axis), and the extent to which they have grown-or shrunk-as a share of employment since 2011 (vertical axis). It is clear from this chart that many of the largest categories of brown jobs have remained static in terms of their share of employment. But it is also clear that many of these jobs will not cease to exist due to the net zero transition, but rather will need workers to adopt new technologies or practices. For example, the largest category is Large Goods Vehicle (LGV) drivers (accounting for about 0.9% of UK employment in 2019), who will need to switch from internal combustion engine vehicles to electric vehicles. Coal mining operatives, a job that will need to be phased out over time given net zero objectives, accounted for just 0.01% of employment in 2019. Some relatively highly paid green occupations, like marketing and sales directors, or business management professionals, are relatively large in terms of their employment share and have expanded over time.

**Figure 5** Change in employment from 2011 to 2019 and mean hourly pay in 2019, green, and brown jobs.  
 Notes: The bubble size indicates occupation's share of employment in 2019. Green jobs refer to 'core green task' jobs (based on a mapping of occupations from O\*NET, see Box 1) and brown jobs refer to 'brown changer' jobs (occupations particularly prevalent in emissions-intense sectors, see Box 2). Analysis of ONS, Labour Force Survey. Source: Broome M, Cellini S, Henehan K, McCurdy C, Riom C, Valero A, Ventura G. Net Zero Jobs: The impact of the transition to net zero on the UK labour market, The Economy 2030 Inquiry, 2022 June.





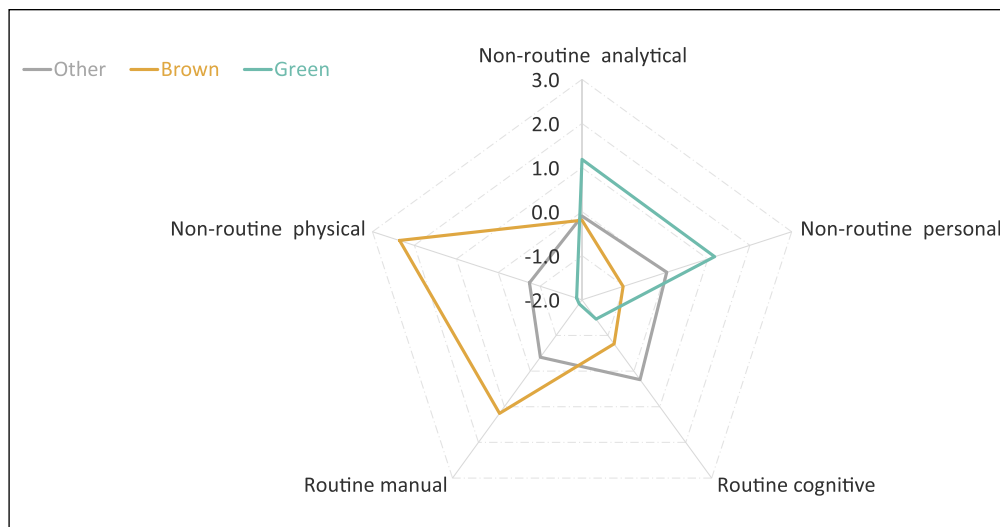
A detailed comparison of workers in these two types of jobs finds that green and brown jobs are similar in some respects. For example, both are male dominated. Just 1% of female workers are employed in brown occupations, compared to 7% of male workers, while 18% of men work in green jobs, but only 8% of women (see Figure 6). However, green and brown jobs differ in other dimensions. Green jobs are most concentrated among those aged 35–54, while there is far less variation across the age distribution for brown jobs. Moreover, green jobs are particularly prominent amongst graduates (16% of graduates work in an occupation we class as green) and brown jobs are most common among workers with ‘other’ qualifications (like trade apprenticeships, where 9% work in brown jobs) or with no qualifications. Finally, 14% of workers of white ethnicity are in a green job, higher than other groups, particularly workers of Black ethnicity, where the equivalent figure is 8%.



**Figure 6** Proportion of workers in green or brown jobs, by personal characteristic.

Notes: Analysis of ONS, Labour Force Survey. Source: Broome M, Cellini S, Henehan K, McCurdy C, Riom C, Valero A, Ventura G. Net Zero Jobs: The impact of the transition to net zero on the UK labour market, The Economy 2030 Inquiry, 2022 June.

It is also possible to compare green and brown jobs (and other jobs in the economy that are not defined as green or brown) in terms of the types of tasks that they require. Figure 7 shows in green occupations, non-routine analytical and personal tasks (which tend to be associated with occupations requiring higher levels of education, like managerial, professional, and technical roles) play a relatively important role. In contrast, routine and physical tasks (which tend to be associated with occupations requiring lower levels of education, like elementary or operational roles) are particularly relevant in brown jobs. Job-to-job transitions observed in the data rarely occur between jobs with such different overall task profiles.



**Figure 7** Relative intensity of different types of tasks across types of occupations.

Notes: The measures of task intensity are standardised across all SOC 2010 four-digit level occupations. Analysis of O\*NET and ONS, Labour Force Survey. Source: Broome M, Cellini S, Henehan K, McCurdy C, Riom C, Valero A, Ventura G. Net Zero Jobs: The impact of the transition to net zero on the UK labour market, The Economy 2030 Inquiry, 2022 June.

Examining the types of workers that transition into green jobs reveals that these tend to be university graduates, and of prime working age. It also indicates that workers moving from brown to green jobs are crossing from specific jobs that share a similar task profile. This analysis highlights the fact that some groups might find it hard to transition or reskill, and points towards a need for targeted policies in specific places which high concentrations of brown jobs (such as in Wales, Northern England, or Scotland), or where there is a mismatch between the new job opportunities (green and ‘other’) that might arise.

## 5. MORE GRANULAR INSIGHTS FROM JOB POSTINGS

Analyses based on labour force survey data allow researchers to describe the characteristics of workers in different types of jobs and summarise the composition of employment at a given point in time. However, these are restricted to the extent that specific green jobs can be identified within the occupational categories available in the data. For example, within the occupation of ‘Engineering Professionals’, it is not possible to identify those working on green products or projects.

This is where analysis of the rich text available in online job postings can yield important insights, building classifications of specific green jobs based on a set of keywords selected from existing definitions of green tasks and products. A recent analysis applying this technique to UK data found that around 1.5% of job ads could be considered green in 2021 [11], and this is quite similar to equivalent estimates from the US. There has been some change in this share in recent years, with a decline after 2012 coinciding with a decline in policy support for climate initiatives, and a rise following enhanced commitments in more recent years.

This analysis also points towards green jobs being good jobs. The authors consider the extent to which a core set of green jobs require skills across five broad categories: cognitive, IT, management, social, and technical; finding that green jobs are more likely to require these skills than non-green jobs. It is also noted that green jobs tend to be concentrated in occupations that pay higher wages. Looking at green roles within occupations, there is an overall premium for green jobs, although this has weakened in some areas in more recent years and such a premium not present in some key occupations such as engineering professionals. However, there are green wage premia in certain occupations such as in the skilled construction and building trades, even in more recent years. This is likely to reflect well-documented skills shortages in these areas as the UK steps up its efforts at decarbonising buildings [12].

Mapping job ads across the country finds that while brown (‘high carbon’) jobs are spatially concentrated around centres of fossil fuel extraction, green job vacancies are more dispersed. There is a correlation between low- and high-carbon job ad shares across places, but the geographical overlap is limited for low-skill occupations, again suggesting that targeted programmes might be needed to help workers transition into other work (green, or in other occupations more broadly).

## 6. LOOKING FORWARD

Much of the UK’s emissions reductions to-date have been achieved in the energy sector, and while further decarbonisation of the UK’s energy system is required, rapid progress is now needed across the economy—in particular, in the decarbonisation of buildings, surface transport, and industry [13]. The previous sections have shown that green jobs tend to have high skill requirements and it is clear that ensuring that skills needs are met will be key to delivering net zero, to realising new opportunities for firms and workers, and to managing transitions well.

A number of studies have sought to estimate the economic and job creation opportunities in the transition to net zero for the UK. An analysis of the UK’s current capabilities and specialisations in clean innovation, products, and services suggests that there are significant potential growth opportunities which could be realised with the appropriate environmental, industrial, and innovation policies in place [14]. Moreover, analysis of different datasets suggests that building on the UK’s net zero capabilities as part of a coordinated growth strategy could be consistent with addressing regional disparities in economic activity, since less productive regions appear to be more specialised in such technologies, goods, and services. A key example is carbon capture usage and storage (CCUS), which is being developed within the UK’s industrial heartlands and which can also benefit from the UK’s transferrable expertise in oil and gas and relevant infrastructure [15]. The UK’s innovative strengths in tidal stream energy also appear to stand out, and this is an area where Scotland is well-placed to lead in development—given an ample marine resource and transferable capabilities from established offshore wind and oil and gas sectors [16].

Forward-looking studies that estimate jobs and skills needs in the transition more explicitly tend to take sectoral or technology-based approaches. A previous review of ex-ante studies that focused on rapidly deployable net-zero aligned investments found that investments in



areas such as electric vehicles production and charging infrastructure, hydrogen and CCUS for industry, renewable power generation and distribution, and housing energy efficiency were each estimated to have the potential to generate tens of thousands of new jobs this decade (and more beyond that) [17]. Recent work from the Climate Change Committee, also based on a review of the literature, concludes that the net zero transition is likely to be a net creator of jobs, with estimates ranging from 135,000 to 725,000 additional jobs by 2030 in low-carbon sectors such as building retrofit, renewable energy generation, and the manufacture of electric vehicles [2]. However, it notes that in the context of international competition, the growth of these jobs is not guaranteed, and it would require active reskilling and upskilling of the workforce. Moreover, the potential for net zero to yield an overall uplift to employment depends on the tightness of the labour market. Change in high-emitting sectors due to phase-down or the transformation of processes could imply that 8,000 to 75,000 workers' jobs would not be able to continue in their current form.

In terms of skills needs, in 2021, the Government's Green Jobs Taskforce considered three groups of sectors relevant for the transition to net zero: those that are well-established and will experience significant growth (e.g., offshore wind or buildings retrofit); sectors that are predicted to grow ahead of the transition (e.g., CCUS); and sectors that are experiencing significant transformation and perhaps decline in some areas (e.g., automotive, heating and cooling, or oil and gas) [18]. While noting specific, technical skills requirements across these areas, the Taskforce also highlighted the importance of general skills for the transition, including the ability to work between and across disciplines. A key example is in the decarbonisation of homes which will require multiple technologies such as solar panels, electric vehicle charge points, heat pumps, batteries, and smart systems to control and enable technologies to work together. Other key areas, such as general STEM skills, together with digital, project and change management, and leadership skills are also emphasised.

## 7. CONCLUSIONS FOR POLICY

The analysis set out in this essay suggests that the net zero transition has the potential to create good, high-skilled jobs across the country, but that these might not always be accessible to all, and that the transition might be particularly disruptive for specific workers in particular sectors or locations. The net zero transition itself will not happen without strong policies and incentives for investment in infrastructure, innovation, and skills [19]; and strong policies are also needed to ensure that the transition is an inclusive one, managing unequal impacts or disruptions in the labour market.

An effective policy response will involve both economy-wide and targeted actions. Ensuring that schools, further education colleges, and universities are providing the technical, analytical, and managerial skills for net zero is key. Reskilling the existing workforce will need on the job training, but this has been in decline for some time in the UK [20], and the country faces skills shortages in a number of areas relevant for net zero [21] as well as more broadly. The government can examine ways to incentivise firms to invest in workers via tax credits [22], and whether these can be enhanced in priority areas such as net zero [23]. More broadly, policy efforts to help inform career choices and training routes for current and future workers in areas that are growing or changing are likely to be required. For example, recent research found that relatively few people know what green jobs are available to them, and where to look for a green job [24]. Given the localised nature of specific sectoral challenges, stronger coordination between local policymakers, businesses and skills institutions will be crucial.

The good news is that lessons can be learned from previous attempts to manage change. For example, the relative success in transitioning Germany's Ruhr region away from coal and towards technology and education, as compared to the less successful experience in the Welsh valleys, was due, in part, to better coordination between national and local policy, investments in skills and complementary assets, and a focus on good jobs and environmental activities. Targeted sectoral training programmes in the United States have been shown to be successful mechanisms for improving labour market outcomes in areas undergoing change [25].

The UK can also learn from what other countries are doing contemporaneously—in particular, the long-term and targeted incentives being provided for the net zero transition in the US Inflation Reduction Act. The Act contains largescale and long-term tax credits and also direct

expenditures which seek to accelerate net zero investments. But these are enhanced in a number of ways to encourage businesses to invest in particular places (e.g., areas that have been reliant on high-carbon industries), and in ‘good’ jobs (those that offer apprenticeships or a living wage).

Finally, given the range of approaches being taken to understand the impact of net zero on the labour market, each with its advantages and disadvantages, more analysis is required. This will enable more informed and effective policy by allowing a greater understanding of how to build consistent and comparable measures of green jobs and their skill requirements and how the net zero transition and broader technological change will continue to interact and shape labour markets.


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## COMPETING INTERESTS

The author has no competing interests to declare.

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