



GREEN JOBS:

State of the nation

A report by the Green Jobs Foundation



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Why we need to understand green jobs better



My day job is head of sustainability for a global recruitment company, so I’ve seen how vital green jobs are both for mitigating climate change and preparing workers for the industries of tomorrow. They can also help ensure that people don’t get left behind as older industries sunset and the just transition to a green economy takes hold.

As processes of huge societal change take place, like the UK government’s levelling up agenda’s implementation, we need to understand how green jobs – roles that (directly or indirectly) benefit the environment – are being created and help ensure that they can be accessed in areas of the country where they are most needed. My aim is that this report from the Green Jobs Foundation – a new foundation promoting green jobs and an independent voice in the field – will help make this picture clearer by showing the fast rise of green job creation in the UK, with insights into where and why this is happening.

We’ve seen scars inflicted on communities in the past, when industries have geared down without sustainable replacement jobs becoming available for the hard-working people at the heart of them. From heat pump engineer to chief sustainability officer, green jobs have the potential to offer good careers that dovetail with the UK’s drive to have net zero carbon emissions by 2050.

There are many positives to take from the report’s findings, such as the UK spread of green jobs and the super-quick rise in advertised green jobs seen between 2021 and 2022. The report also highlights how we need to do more to nurture the skills required for green jobs, if we are to reach our net zero goals.

If you share my passion for green jobs, or have any reaction to the findings in the report, please reach out to the Green Jobs Foundation and help continue the conversation.

Thank You

Joanna Bonnett, founder,
Green Jobs Foundation



What is the Green Jobs Foundation?

The Green Jobs Foundation was founded in 2022 in reaction to the climate crisis, with the aim of accelerating awareness and access to green jobs in the UK. It was formed as a ‘think and do’ foundation with the goal of helping to tackle the practical issues around the fundamental question of our time: how the UK and the rest of the world can successfully move to a low carbon and then zero carbon society, whilst leaving no-one behind in a Just Transition.

The foundation’s focus is on jobs in this emerging economy, skills workers will require, how these skills are acquired, and successful pathways from the old to the new economy.

The foundation expects to fulfil its mission with a judicious mix of research, thought-leadership reports and convenings, demonstrators designed to pilot different approaches to just transition reskilling and job placements, ultimately to disseminate and scale learnings. The foundation offers independent dialogue to anyone who wants to know more about green jobs and aims to accelerate the UK closer to the heart of green jobs creation.

The independent charity’s founder and manager is Joanna Bonnett, who launched it after moving into environment, social and governance (ESG) as head of sustainability at PageGroup, a global recruitment firm, in 2017.



[Greenjobsfoundation.org](https://greenjobsfoundation.org)



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[GreenJobsFoundation](https://www.youtube.com/channel/UCv8v8v8v8v8v8v8v8v8v8v8)

Green jobs on the rise

The Green Jobs Foundation was launched in 2023 to make a positive contribution to the climate change debate by accelerating the public’s awareness and access to green jobs. This report, Green Jobs: State of the Nation is the foundation’s first, and focuses on the UK.



Executive summary

The report found that the amount of green jobs – roles that (directly or indirectly) contribute positively to the environment – being offered in the UK is rising sharply: a trend expected to continue.

This is positive news for the government’s drive to have the country reach net zero carbon emissions by 2050, create two million new green jobs by 2030, and stimulate production and jobs in areas deemed to be most in need of attention from the UK levelling up agenda. However, there are still green jobs skills shortages across the country that need to be addressed by more education and training opportunities, if success is to be achieved in all these areas.

Levelling up green

This report is based on research by labour market analytics company Lightcast, which found that 280,589 green jobs were advertised in the UK in 2022, representing a 43 percent year on year rise.

This huge rise is likely largely driven by existing roles becoming green jobs, as companies transition to deal with pressure from authorities, customers and investors to be more sustainable and contribute to the net zero drive.

This green job creation is happening across the country. The government divided regions of the UK into three priority groups for the levelling up agenda, outlined in its February 2022 white paper¹, based on which areas needed most investment and improvement. The size of the share of all jobs being green jobs was not significantly different between the three regional categories, suggesting that while it’s good that green job creation is contributing to jobs on offer in economically challenged areas, even more focus could be placed on these areas for green job creation.

Green jobs, good jobs

Green jobs advertised in the UK in 2022 showed significant salary uplift compared to regional averages for all jobs. The

salary uplift figure was seen across the country and was as high as 29 percent in Scotland. Salary uplifts in general were seen across all skill levels.

Green jobs clearly have the potential to offer good jobs, with competitive salaries, so can be promoted as positive career choices for individuals beyond environmental awareness and a desire to contribute to sustainability. They can also often offer the chance for people in low-skilled, low-income jobs to retrain and increase their earnings.

The next steps

The Green Jobs Foundation will continue to contribute to and promote research into the green jobs landscape in the UK. There is a need for deeper understanding of the breadth and scope of green jobs-related training and courses, from degrees to short free local government-organised courses, to help address green skills shortages. The foundation will seek new ways to accelerate and scale training in green skills and job opportunities.

Green is the word

What is a green job? Most people would agree that creating more green jobs is a good thing for the environment and economy, but there isn't yet global consensus on the exact definition of a green job. It is generally agreed, though, that a green job is a role in a business or organisation that is beneficial to the environment.

On the UK government's online Education Hub² in 2022 a green job was defined as a role with focus on "restoring the natural environment – whether that be in companies that create green goods like electric vehicles or companies that work to reduce the use of natural resources and produce clean energy." Jobs like these have had more attention from British authorities recently, with the government launching a Green Jobs Taskforce³ in November 2020 to help deliver on its Ten Point Plan for a Green Industrial Revolution.

In 2011 the United Nations defined a green job as "work in agricultural, manufacturing, research and development, administrative, and service activities that contribute substantially to preserving or restoring environmental quality". The UN highlighted ecosystem protection, energy reduction, economic de-carbonisation plus avoiding waste and pollution as areas green jobs could exist. Today, a popular way to define a green job is any job falling within the United Nations System of Environmental Economic Accounting definition of the environmental goods and services sector (EGSS).

To be considered part of the EGSS a company must be, according to the UN, "engaged in producing goods and services for environmental protection purposes", or be engaged in conserving and maintaining natural resources. Definitions such as these place focus on a company's wider role with regard to the environment, rather than the nature of a specific job.

This style can lead to complications when defining jobs as green or not. Traditional energy companies produce oil, but if you work for them purely on electric car or wind farm technology, should your job

be considered green? How about if you work as a salesperson for a solar panel company falling in the EGSS definition, but take many flights for your work? As green jobs become more urgent and prominent, more questions like these will need to be considered.

This Green Jobs Foundation report is based on job post data from the labour market analytics company Lightcast, so is using its definition of a green job. Lightcast has developed the Lightcast Skills Taxonomy⁶: a library of over 32,000 jobs skills based on job postings and profiles. The company has identified 442 of these skills as green skills, ranging from cooling efficiency to wind turbine technology, via

pollution regulation, reforestation and sustainable design. To be considered a green job for this report's data a role must have one of these 442 green skills listed in its job post.

What is levelling up?

In February 2022 the British government released a white paper called Levelling Up in the United Kingdom. Broadly, levelling up, a phrase first articulated in this current context by the government in 2019, means reducing regional economic, social and infrastructure inequality across the UK by boosting opportunities and facilities in areas that lack them.



The then-Prime Minister Boris Johnson wrote in the 2022 paper about “radical steps needed to make us more prosperous and more united by tackling the regional and local inequalities that unfairly hold back communities and to encourage private sector investment right across the UK.” In October that year Rishi Sunak, replacing Johnson, claimed in his first speech as Prime Minister⁶ that he would deliver on “levelling up and building an economy that embraces the opportunities of Brexit, where businesses invest, innovate, and create jobs.” The paper noted that economic growth and higher productivity had been concentrated in southeast England, and that previous attempts to level the field in the country had not succeeded. 12 levelling up missions, each with a deadline of 2030, were outlined. These related to areas such as crime, life expectancy, transport, education standards, house ownership figures, devolved local leadership and jobs skills courses. By the time of the government’s spring 2023 budget⁷, levelling up funding for the Department for Levelling Up, Housing and Communities had reached £11 billion (a figure not including government spending on some services including schools and transport).

By stimulating economies and productivity in areas of the UK lagging behind in terms of national averages, and by placing focus on education and job courses, the levelling up process should in theory create many jobs. The levelling up agenda and implementation has, however, faced a lot of criticism.

Critics have said that plans to devolve power to local authorities aren’t being implemented quickly enough, and that Whitehall is ultimately still in control of them⁸. The vast scope of the scheme has led to issues with public perception⁹, with many people reportedly perceiving levelling up as a vague term. Labour has accused the government of using “recycled money” for levelling up in areas such as Sheffield and Wolverhampton¹⁰, and there has been criticism that green jobs and the environment in general are not as core to the agenda as they could be¹¹.

The levelling up agenda does, however, seem here to stay, and the current Conservative government has likened it in significance to the British industrial revolution. Labour has claimed it would deliver on levelling up if it came to power at the next general election, set to take place by January 2025.

Where green jobs meet levelling up

Although the government has not set overall targets for the number of jobs created by levelling up initiatives, by increasing private sector productivity and investing in infrastructure and services, plus having strong focus on new job skills courses, there is potential for the agenda to lead to a huge amount of new jobs.

The government has, however, set an ambition for the UK to create two million full-time equivalent green jobs by 2030, as it aims to achieve the country’s zero greenhouse gas emissions target by 2050¹².

Authorities have highlighted renewable energy, electric vehicle manufacture, carbon capture, utilisation and storage (CCUS) and hydrogen technology as areas that will create jobs as part of levelling up and this net zero drive. The government claimed that the net zero transition could create “huge opportunities for many of the UK’s left-behind places”, noting that analysis commissioned by the Department for Business, Energy and Industrial Strategy (BEIS) showed that by 2050 the North East stands to gain an extra 27,000 jobs¹³.

Commitments by Nissan and Chinese renewable energy company Envision to make electric cars in Sunderland¹⁴ have been given as examples of high-skill, high-wage green job creation already linked to levelling up. However, the government has acknowledged that by transitioning from high-emissions to greener technology there are risks of job losses and long-term unemployment, especially regarding lower-skilled jobs. Here, as well as private sector investment, the onus is on upskilling and retraining in areas of the UK where carbon-intensive sectors may be downscaled.



280,589

advertised green jobs in 2022

There were 280,589 green jobs advertised in the UK in 2022.

35%

Increase in green jobs advertised (in 2022) than existing in 2020

There were more green jobs advertised in the country in 2022 than there were people in green jobs in total in 2020: 207,800 for the latter figure, according to the definition used by the Office for National Statistics (ONS)¹⁵.

43%

This is a 43 percent increase from the 2021 figure of 196,604: a huge and fast rise from a relatively small base.

3%

Three percent of all 2022 UK job postings were green jobs.

Source: Lightcast, job postings data

A snapshot of green jobs in the UK

UK green job creation in 2022: the UK’s economic recovery from the effects of the Covid pandemic has contributed to a rise in job creation in general. However, increasing onus on green technologies and processes aiding more sustainable industry has been the main driving force of this significant year on year rise.

Companies and organisations are under pressure to be more environmentally sustainable as the government moves closer to its 2050 deadline of reaching net zero carbon emissions. Limits on industrial, power and aviation emissions have become tighter, with legislation reforms driven by the UK Emissions Trading Scheme Authority¹⁶, heightening urgency further for firms to pivot to green tech.

This urgency is seen in government incentives such as subsidised payments for customers installing heat pumps in their homes¹⁷, to replace boilers, which result in higher levels of carbon emission. It’s also seen in the creation of green sector-related job training courses, many of which are free to take and can directly lead to green jobs.

Climate Emergency UK data¹⁸ showed that in the UK combined authorities offered 289 courses related to green jobs and skills in 2022, with a total of around 13,000 participants. Courses included those on retro-fitting domestic and commercial buildings for greener technology, electric vehicle battery installation, plus heat pump and electric vehicle charging point installation. London authorities spent around £3.9 million in 2021 and 2022 training 4,800 people with heat pump and RV charging point skills.

Although there is no unified data covering all private sector and further education training and education courses related to green jobs, more have been created and become available. Full university degrees in global sustainable development are now available, as are one-day programs

such carbon reduction infrastructure for engineers, and sustainable drainage systems. Unique to the moment in time in which we live, around King Charles’ coronation in May, six green apprenticeships, including those on low carbon heating and sustainable business, became officially approved by the King, in a move designed to spur more interest in a wider scope of green apprenticeships¹⁸.

The government, via its Green Task Force, has set an ambition for the UK to host two million newly-created green jobs by 2030. While the current figure of three percent of job postings in 2022 being green jobs may not sound particularly high, considering the large rise from the 2021 figure, there’s reason to be optimistic that the two million green job ambition could be realised.

Are green jobs good jobs?

Lightcast's data showed that the median advertised salary for green jobs advertised in 2022 was £36,032: 16 percent above the national UK salary average for advertised jobs that same year, which was £31,040. The median advertised salary for green jobs in skilled trades occupations was £35,000 and for managerial green jobs it was £45,000. For professional jobs, classified as involving tasks requiring a high level of knowledge and experience in the natural sciences, engineering, life sciences, social sciences, humanities and related fields, it was £40,000.

It is likely to be the style of job that tends to be a green job, rather than green jobs being higher paid for like-for-like roles, that has resulted in green jobs as a whole having higher than average salaries. 52 percent of green jobs advertised in the UK in 2022 were categorised as 'managerial/professional' roles: a figure slightly above the national average of 48 percent.

Many green technologies see heavy investment in research and development at their current stages, so have a high need for high-skilled professionals who would command higher salaries. Their need for large numbers of lower-skilled workers is likely to come in the future, when rollout becomes a higher priority compared to development. Some of these green technology areas, such as carbon capture, have talent pools with

skills shortages: another factor that can drive up salaries. It's also worth noting, however, that heavily polluting companies such as oil firms often have to drive up their graduate salaries, because many workers are less keen to work for them due to environmental concerns and the rise of ESG as an important factor for job candidates when considering roles.

Lightcast's data on UK green jobs advertised in 2022 showed that advertised salaries increased on average by six percent year on year from the 2021 figure. With inflation reaching a 41-year high of 11.1 percent in October 2022, this rise is perhaps lower than could have been expected, given the high demand for talent in green technology and sustainability-related jobs in industry. Research in 2023 by the Shirley Parsons consultancy firm found that sustainability professionals expect a salary raise of around 15 percent when they move jobs in the UK²⁰.

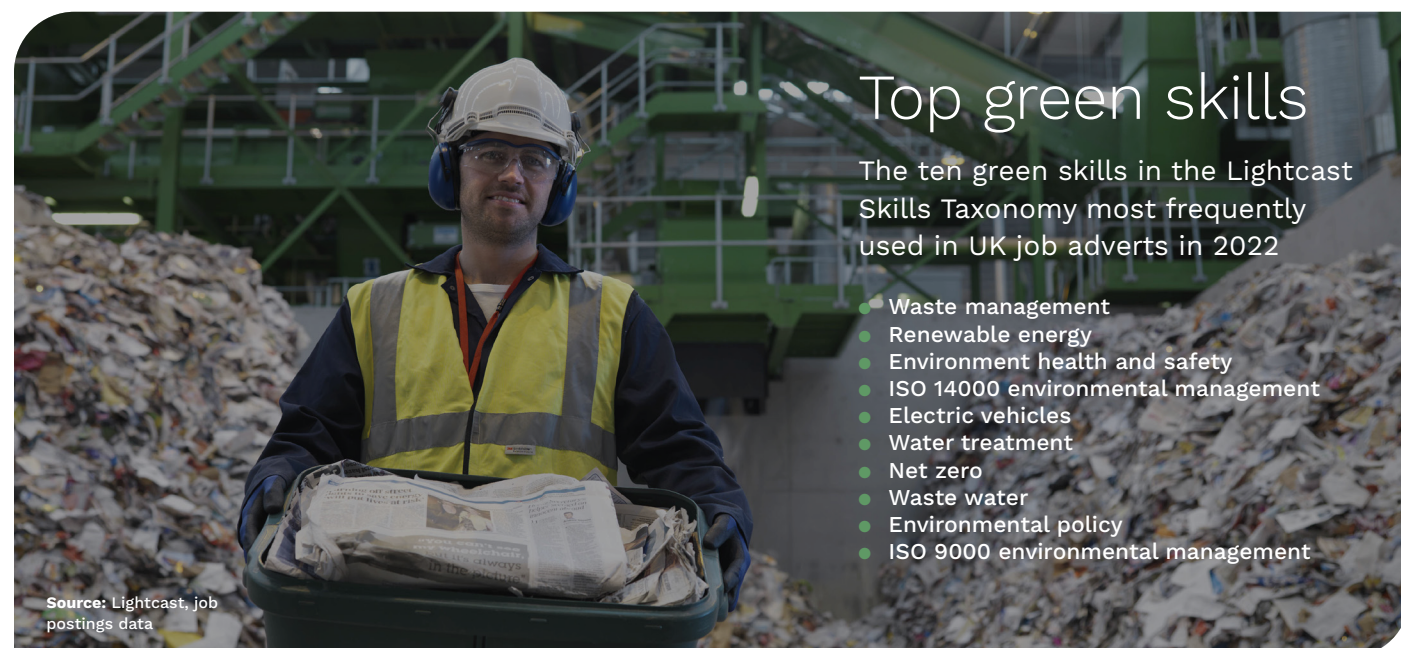
What types of roles are green jobs?

The rise in the number of green jobs being advertised in the UK is not just because of job creation through green technology and primarily sustainability-focused organisations. It is also due to huge swathes of companies having to 'convert' jobs into green jobs alongside creating new roles. According to PWC research, around 37 percent of UK companies now have a chief sustainability officer (CSO)²¹.



We see increased demand for new skills and new jobs within the green jobs space. This increased demand is changing the dynamics within the employment landscape, and as a result, strategic workforce planning remains an integral part of the long-term strategy for organisations. Now more than ever, it is vital to collaborate and ask for expert help on this rapidly evolving topic.

Olly Harris
Global Managing Director Strategic Clients & Page Outsourcing



Top green skills

The ten green skills in the Lightcast Skills Taxonomy most frequently used in UK job adverts in 2022

- Waste management
- Renewable energy
- Environment health and safety
- ISO 14000 environmental management
- Electric vehicles
- Water treatment
- Net zero
- Waste water
- Environmental policy
- ISO 9000 environmental management

Source: Lightcast, job postings data

Why City & Guilds champions green skills

By Kirstie Donnelly MBE, Chief Executive of City & Guilds

Our purpose at City & Guilds has remained the same for nearly 150 years: to help people, organisations and economies develop their skills for growth. And just as we have done in response to major industrial transformations in the past, we must expand access to the skills and credentials necessary for an inclusive, future-ready workforce.

We know we need to transition our society to a green economy to address climate change. With a huge increase in the number of green jobs advertised recently, it's clear that businesses are rising to the challenge.

In line with our commitment to provide people and organisations with the green skills needed to decarbonise our economy, we recently explored the sense of readiness within the energy sector. Our Brighter Futures report, launched in Summer 2023, identified that 46 percent of those currently working in the energy sector felt that they personally had the skills required to support a zero-carbon energy system by 2035.

We also found that 90 percent of the high carbon energy workforce are interested in transitioning to greener

jobs, which helped to reaffirm that our green skills qualifications are both relevant, desirable and instrumental for a just transition. In 2023, City & Guilds has provided nearly 10,000 green skills certifications to four times as many learners looking to upskill or reskill with green capabilities than in 2019, demonstrating the pace of growth and demand in the workforce.

And through our foundation, we're funding projects that support individuals with barriers to entering the green labour market, helping learners of all backgrounds to access

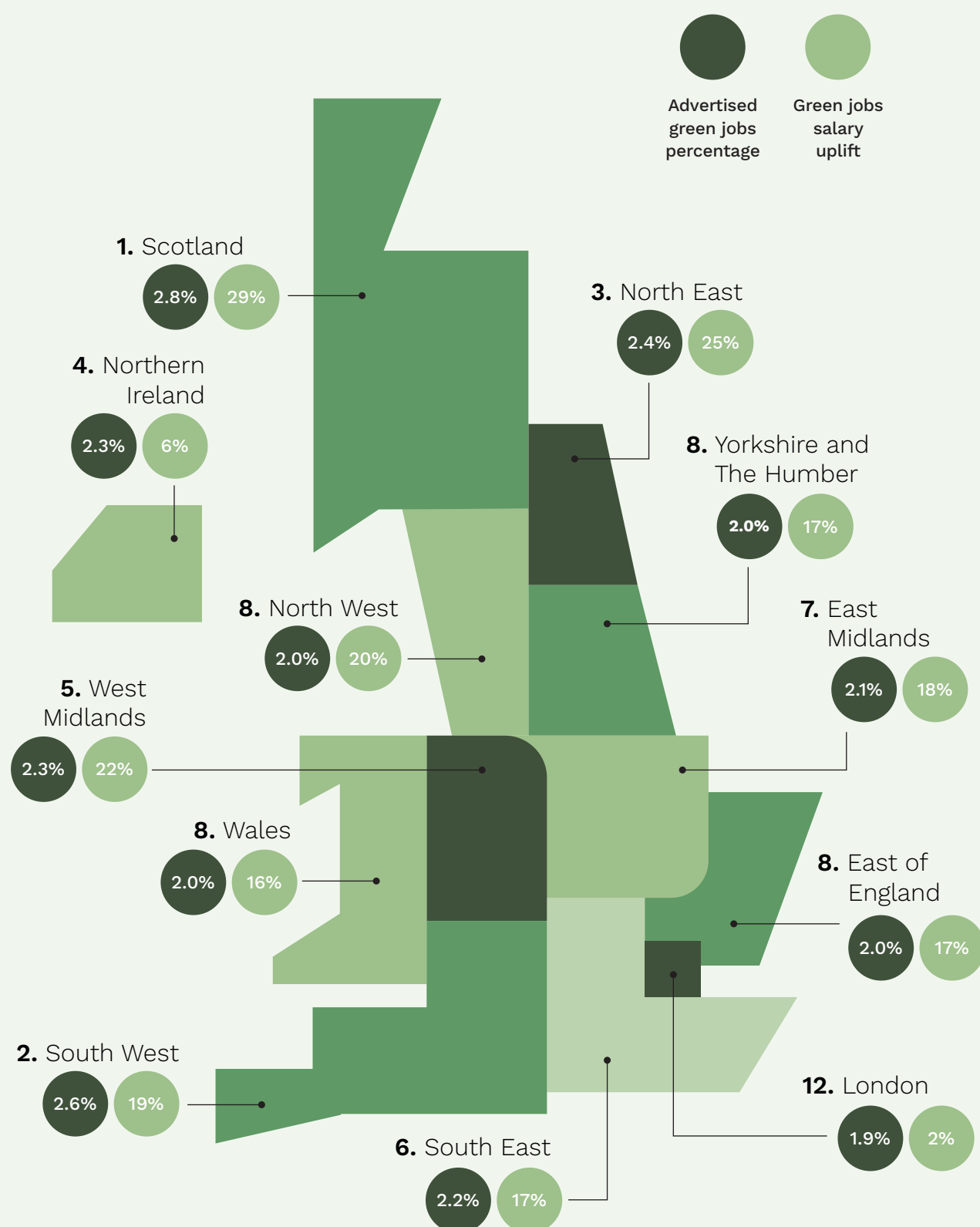
high-demand, well-paid jobs to thrive in tomorrow's economy.

This is not a 'nice to do', it is a necessity in creating a more sustainable future for all. It is vital that the business community and the not-for-profit sector work together in partnerships to ensure that we are equipping the workforce with the skills required for the future, and that is why we are proud to be supporting the Green Jobs Foundation.



Which regions have the biggest green jobs shares?

Top UK regions: percentage of jobs advertised in 2022 that were green jobs, plus average green job salary uplift compared to regional salary average



Source: Lightcast, job postings data



Our brand and heritage is built on getting the numbers right, as well as understanding how confidence in those numbers is critical for shaping and informing business strategy. As an accountant, I am applying my financial rigour and business acumen to emerging challenges such as net zero transformation and sustainability reporting, to ensure ESG strategies deliver measurable value for organisations and society.

Lynne Baber
Sustainability Practice Leader, PwC UK

Converted roles, or transitional roles, fall into one of two categories. Firstly, there are newly-created roles that use existing skills, such as those seen in the energy industry where the government and trade bodies are investigating passporting of skills between professions²². Secondly, there are jobs that exist today but the occupants need new green skills to perform the roles²³.

In London's Canary Wharf certificates in environmental, social and governance (ESG) investing have become highly sought after, amid a rush to recruit finance professionals to help boost firms' sustainability ratings as they face more pressure to do so from clients and shareholders. Procurement management roles have become focused on reducing the environmental impact of supply chains as well as sourcing more environmentally friendly products. In 2022 project management, auditing and risk analysis were also among the specialist skills sets highly in-demand among newly-advertised managerial green jobs. This trend reflects increased amounts of courses offered by professional associations such as the Institute of Chartered Accountants for England and Wales in Sustainability for Finance Professionals. Such courses reflect the need for the occupants of current jobs to reskill by obtaining green skills for the future.

While managerial and professional jobs comprised 52 percent of green jobs advertised in 2022, slightly higher than the national average, there are also many green jobs considered to be at the intermediate and low skilled level. In particular, they were seen in skilled trade occupations that include electronics and construction trades, plus process, plant and machine operation. For the skilled trade occupation job style, 3.4 percent of jobs advertised in the UK in 2022 were green jobs. This is higher than the percentage for managers, directors and senior officials, which was 3.1 percent.

With much of the green business community still in research and development, the next generation of mass jobs within carbon capture, battery technology and hydrogen are yet to arrive. When they do, the emerging roles of today will then potentially become transitional roles of tomorrow.

Where are green jobs being created in the UK?

Scotland plus England's South West and North East were the UK regions that had the highest proportions of green jobs advertised in 2022, within all jobs advertised in their regions. The green job share percentage rises gradually and fairly evenly from the lowest percentage share region, London, up to Scotland, suggesting that new green jobs are spread around the UK relatively evenly in terms of their share of the overall regional job market.

A global change

Jane Cooper, executive director of offshore wind at *RenewableUK*, on jobs and the Just Transition

The move from polluting fossil fuels to clean and green sources of energy is a global change which will transform every part of the global economy. Addressing the challenges and maximising the opportunities which flow from this will only be resolved through broad and cooperative engagement. For this reason, as the

renewables industry leads the way on tackling climate change, RenewableUK and its members will support the principles of a Just Transition.

Along with our members, we take our responsibilities to people and the planet seriously, and we will endeavour to bring about positive change through

our actions and decisions. RenewableUK's member companies are delivering the backbone of the future renewable energy system in the UK and are determined to develop an industry which is synonymous with modern responsibilities, and which sets itself apart by challenging itself to ever higher standards.

On jobs, this means continuing to support the creation of fair and well-paid opportunities, particularly in parts of the country that often lose out on economic growth,



investing in apprenticeships to bring new entrants to the industry, and greater diversity and inclusion.



Hinkley Point C nuclear power station under construction in Somerset, England
Photograph: EDF Energy

2.8 percent of all jobs advertised in Scotland in 2022 were green jobs, compared to 2.6 percent and 2.4 percent for the South West and North East respectively. Regions and local authority areas having higher percentages of green jobs was mainly down to the locations of large green technology and energy factories, plants and centres.

Green jobs such as meter engineer, environmental consultant and engineer, project manager and ecologist were commonly found across all UK regions. In Scotland offshore managers roles were particularly prevalent, due to the amount of offshore renewable energy projects and infrastructure in place off the Scottish coast. In Scotland many jobs in the oil industry are being transitioned to renewable energy. Aberdeen, known as the ‘Oil and Gas Capital of Europe’ for decades, is attempting to rebrand itself



Sustainable living is good for local communities and business, and essential for our planet. Here, in Maidenhead, we are building a Green Skills Library where local residents can access free courses to learn how to upcycle, repair and create.

At an individual level, these courses help our residents to live a more sustainable life. Content in the courses can also provide individuals with new skills, which could lead to sustainable green jobs.

We currently offer several online courses, but through recent funding we are increasing our offer to run group sessions, which will include organic gardening, reupholstery and common repairs. Research has found that isolation leads to illness, so, rather than retiring, we are keen to encourage older people in particular to share the wealth of skills they have accumulated over the years, many of which are inherently sustainable.

Donna Stimson, a former councillor and sustainability cabinet member for the Royal Borough of Windsor and Maidenhead, and founder of the Green Skills Library, on green jobs in her area

as the ‘Net Zero Capital of Europe’²⁴, with increased funding for carbon capture, utilisation and storage (CCUS), hydrogen production and offshore wind. It should be noted, however, that since Russia invaded Ukraine in 2022 there has been more fossil fuel exploration in the North Sea east of Aberdeen, as the UK seeks more domestic energy supplies²⁵.

Projects such as Scotland’s first large-scale windfarm, located in Argyll and Bute²⁶, have also contributed to Scotland’s high percentage of advertised green jobs. Also in that council area there are proposals to develop a tidal power alley demonstration project²⁷, utilising underwater turbines in a water passage separating islands. In the Perth and Kinross area wind farm capacity has increased, with the area also noted for smaller scale hydro schemes and

promoting microgeneration: small-scale energy production using methods such as solar and heat pumps²⁸.

Various large facilities in the South West create green jobs, leading to the region’s high placing on the run-down. Hinkley Point C, the nuclear power station currently under construction and owned by EDF Energy plus the China General Nuclear Power Group, is in Somerset and has employed over 20,000 people so far²⁹. Jobs have been created by companies such as Exeter’s Gorst Energy, an anaerobic digestion firm processing agricultural feedstock into electricity. In the North East, the UK region with the third highest share of green jobs advertised in 2022, Hartlepool hosts a large-scale marine recycling facility, operated by industrial services company Able UK. It is located close to a nuclear

power station that employs one percent of the town’s working age people – although the power station is due to enter its first stage of decommissioning by 2026³⁰. Dogger Bank Wind Farm, 130 kilometres off the Redcar and Cleveland area coast, is currently being developed by the SSE Renewables, Equinor and Vargronn firms³¹. The project is expected to create hundreds of green jobs and when fully completed be able to power up to six million homes annually.

Copeland topped local authority run-down

Cumbria’s borough of Copeland, which was transferred to the new unitary authority Cumberland in April 2023, was the local authority area that had the highest percentage of green jobs advertised in 2022 in relation to all jobs advertised there.

Top 20 green jobs share by local authority

Percentages of all jobs advertised in 2022 that were green jobs

Local authority	Region	Advertised green jobs percentage
1. Copeland	North West	6.8%
2. Barrow-in-Furness	North West	5.9%
3. Sedgemoor	South West	5.1%
4. Gosport	South East	4.7%
5. Aberdeen City	Scotland	4.5%
6. Warrington	North West	4.5%
7. Hartlepool	North East	4.4%
8. Argyll and Bute	Scotland	4.4%
9. Perth and Kinross	Scotland	4.2%
10. Lancaster	North West	4.1%
11. Eden	North West	4.1%
12. Plymouth	South West	4.0%
13. Stroud	South West	3.7%
14. Swindon	South West	3.7%
15. Tewkesbury	South West	3.7%
16. South Oxfordshire	South East	3.7%
17. Highland	Scotland	3.6%
18. Warwick	West Midlands	3.6%
19. Comhairle nan Eilean Siar	Wales	3.6%
20. North Dorset	South West	3.4%

Source: Lightcast, job postings data

This was largely due to the area hosting the Sellafield nuclear facility, which has a workforce of over 11,000 people and dates back to the 1950s. The Moorside area was shortlisted to host the UK's first prototype commercial nuclear fusion reactor, which could potentially produce almost limitless clean energy and may be operational by the 2040s³². Although the site eventually chosen was in Nottinghamshire, Moorside may still host a nuclear power station in the future.

The area also hosted facilities such as the National Nuclear Laboratory, Dalton Nuclear Institute and the Low Level Waste Repository, now part of the UK government's wider Nuclear Waste Services waste management umbrella. In Barrow-in-Furness, the local authority area with the second-highest percentage of green jobs advertised in 2022 in relation to all jobs advertised

there, Carlton Power is working on a commercial hydrogen hub that it plans to open in 2025³³. Also in the area, Spirit Energy is planning a carbon storage cluster to utilise former gas fields, as gas reserves deplete³⁴. The area is also near the Sellafield and Heysham nuclear power stations, and has one of the highest concentrations of wind farms in the world.

Scotland led green salary uplift
Scotland showed a large salary uplift of 29 percent for green jobs advertised in 2022 compared to the average advertised salary for Scotland that year. This is partly due to the large amounts of managerial roles related to offshore facilities. All UK regions aside from London showed large salary uplifts for green jobs, of between six percent (Northern Ireland) and 29 percent (Scotland). London was the anomaly, showing a green job salary

uplift of just two percent, although in absolute terms London-based green jobs had higher salaries, in line with wages generally being higher in the capital. Sustainability consultant, manager and carbon analyst were three green jobs particularly in demand in London in 2022. There were also large salary uplifts for advertised green jobs seen in the north: 25 percent in the North East and 20 percent in the North West. These large salary uplifts in the North are partly explained by salaries generally being low in these areas.

Focus on skills, not just jobs

Joanne Anderson, consultant and former mayor of Liverpool, on fast-track green skills development and tapping into untapped workforces

During my tenure as mayor of Liverpool I was employment and skills lead for the city region, which meant it was vital for me that we had a focus on social value, which meant viewing everything through the lens of people, planet and equity. The green agenda presents a great opportunity to drive social value – not just in Liverpool but in towns and cities around the country. Creating jobs and reducing the cost of living in an energy crisis is good for the planet and good for people.

I'm particularly excited about this opportunity in Liverpool. Its establishment as one of the UK's freeports, with a strategic focus on low carbon logistics, is a good start. However,

we need to be careful to focus not just on jobs but on skills. We have a skills shortage in the city region, and whilst I was the employment and skills lead there, I commissioned a green jobs summit. When it comes to green jobs, if Liverpool could tap into the 'untapped markets' in the region's most disadvantaged communities, and fast-track green skills development and training, this could really drive positive outcomes for people, planet and equity.

For example, the Liverpool City Region Combined Authority is providing funding for unemployed people to be trained as energy assessors. And, in June 2023, a 'Green Academy' was launched



in the region which will train apprentices and experienced heating engineers looking to upskill in the latest green technologies, including air and ground source heat

pumps. Greater focus and funding are needed on schemes such as these around the country if the green economy is to be a fairer and more equitable economy.

Green jobs and levelling up priority areas

Are green jobs in high priority areas for levelling up?

As part of its levelling up agenda, the UK government designated three priority levels that each local authority in the country was placed in, with priority one being most in need of investment and improvement, and priority three the least. 123 local authorities were in each of the priority one and two groups, with 122 in priority three group.

To decide which priority group local authority groups fell in, the government looked at town centre and high street regeneration, local transport and infrastructure, and the maintenance of cultural, heritage and civic assets. As an overall guiding principle of the priority category definition authorities also looked at the need for economic recovery and growth, suggesting that the further up the priority scale a region was, the more in need of job creation it was.

There was not a significant difference between the percentage of green jobs advertised in 2022 out of all jobs advertised for a local authority area, between the three levelling up priority groups. For the priority one group the figure was 2.1 percent, for priority two it was 2.4 percent and for priority three it was 2.1 percent.

Green jobs share by levelling up priority groups

Percentage of all jobs advertised in 2022 that were green jobs, by local authority priority category

Levelling up priority category	Advertised green jobs share
1	2.1%
2	2.4%
3	2.1%

Source: Lightcast, job postings data

Green jobs and the Real Living Wage



The Living Wage is the foundation stone of inclusive growth and delivers benefits to people, businesses and local economies. If we are to build a sustainable and inclusive economy, it is critical that newly created green jobs are also good jobs that pay the Living Wage.

Katherine Chapman
Director, Living Wage Foundation

For 2022/2023, what is known as the Real Living Wage for people aged 18 and over, overseen by the Living Wage Foundation, was £10.90 per hour in the UK aside from London, where it was £11.95 per hour³³. Higher than the national living wage for people aged 23 and above, which was £10.42 an hour across the UK, the real Living Wage is independently calculated based on what it costs to live in the UK.

Generally, there were fewer green job opportunities in 2022 in areas of the country with higher incidences of jobs paid below the Real Living Wage, which is not legally binding for employers, unlike

the minimum wage. This is likely to be partly because many green jobs tend to be higher-skilled jobs in the managerial and professional sectors, but also because areas with low wages tend to not have the benefit of large green technology projects serving their job markets.

There are some exceptions. For example, Redcar and Cleveland is an area where between 20 and 30 percent of all jobs pay below the Real Living Wage, but that has a comparatively high percentage of advertised green jobs compared to all advertised jobs. Wind farm infrastructure investment is on the increase in this area.

Green job shares: lower in lower wage areas

UK areas' Real Living Wage percentages against the percentage of all advertised jobs in the area that were green jobs in 2022

Sources: Living Wage Foundation and Lightcast

Percentage of jobs that pay below Real Living Wage	UK area's green jobs percentage share
Less than 10%	2.2%
10-20%	2.2%
20-30%	1.9%
Over 30%	1.2%

“We’re going to see environmental benefit”

Musab Hassan is an automation process engineer for heating tech company Vaillant, based in Derbyshire. His main focus is heat pumps, which are touted as an important part of the future of low carbon heating.

The most important skills in manufacturing are problem solving and working under pressure. Through my engineering role, mainly working on heat pumps, I’ve learned that production is not a consistent process. But that’s OK – in engineering jobs you’re solving problems continuously.

Our machine parts are sent from Germany to Belper in the UK where we assemble the heat pumps and where I’m involved in automation on the production side. My job is focused on developing automation processes, as well as fixing any operations and maintenance problems.

A heat pump replaces a boiler in your house, but it’s more energy effective. Unlike a boiler, a heat pump doesn’t use gas to boil water – it uses electricity, and for every kilowatt of electricity you put into the heat pump you get five kilowatts



Heat pump take-up isn’t as high here as it is in some countries, but we will get there. The government is already making rules about new homes having to have low-carbon systems.



of heating. It boils water then circulates it around the house via a cylinder.

It’s a great invention, and because it doesn’t have direct emissions, we’re going to see a lot of environmental benefit in the future. The challenge is in the adoption. A heat pump can replace a boiler, but you might need home renovation to get the maximum benefit from it. Heat pump take-up isn’t as high here as it is in some countries, but we will get there. The government is already making rules about new homes having to have low-carbon systems.

I was born in 1989 in Al Fasher, a city in North Dafur in Sudan, and I studied mechanical engineering in Nyala, another city in Sudan. After that I worked in Sudan for the charity Médecins Sans Frontières – Doctors Without Borders – on a renewable energy system. I had to design a system using solar energy to support a health facility where doctors were working.

In Sudan, our second language is English, and I felt that the UK was the best country for education, so I went to the UK to study English and engineering further. I first studied and worked in Doncaster, where I became more interested in robotics, then Sheffield, where I got a degree in mechatronics and robotics from The University of Sheffield. A few months after graduating, I came to Belper to work at Vaillant.

Working on technology that can benefit the environment is important to me. The research and development department here is trying to eliminate anything related to emissions. Even the boilers now being created by Vaillant generate fewer emissions.

When I’ve worked as a volunteer, or engineering with Médecins Sans Frontières, I felt like I was contributing to the world. That’s the same feeling I have now, when I help to produce more heat pumps and see positive coverage of the technology on the news.

Political parties now have green technologies high on their agendas. In October 2022, Labour leader Sir Keir Starmer came to visit Vaillant to discuss low carbon technology, as well as to see our facility. Things like this further emphasise that I’m doing something that can add value to the world and contribute to saving the planet.



Biomass energy production

Conclusion

Pushing for a bright green future

Despite skills shortages still being seen in job markets, green job creation is getting closer to where it needs to be for the country’s net zero and sustainability-focused employment goals.

More good, green jobs

With three percent of UK job postings in 2022 being green jobs, a total of 280,589, and with green jobs on average having significant salary uplift compared to all jobs, good green jobs are being created across the country.

With 43 percent more UK green jobs being advertised in 2022 than in 2021, this large year on year rise suggests that green job creation is accelerating quickly. We expect this to continue as the government attempts to induce the creation of two million new jobs by 2030 and have the UK reach net zero carbon emissions by 2050.

We believe that most new green job postings analysed were the result of openings related to existing roles having a more sustainability and environmental focus, such as renewable energy engineers pivoting to green tech, rather than brand new green jobs being created from scratch. As more green technology-

focused companies gear up in production and rollout stages beyond research and development, we expect more new jobs to be created using emerging skills or by repurposing skills from one industry to another, which will help maintain the high rate of green job postings.

The surge in the amount of green jobs advertised is a positive trend for jobseekers. Across the country, green jobs showed a significant salary uplift (see page 12) compared to salaries for all jobs advertised, including many lower-skilled jobs as well as the managerial-level jobs that have helped push this uplift. More green jobs, and an increasing percentage of all jobs being green jobs, can mean more earning potential across various skill levels and regions.

This positive salary trend, combined with the high self-worth and satisfaction levels that often come with fulfilling a role beneficial to the environment, gives us confidence that the more green jobs there

are in the UK, the more good jobs there will be.

Green jobs and levelling up priority areas

With good green jobs with high salary uplift being created across the country and across skill levels, the trend of more green job postings is making a positive contribution to the UK’s levelling up agenda.

The percentage of green jobs advertised in 2022, out of all green jobs, was not significantly different between the three levelling up priority levels of UK regions. Positively, this shows that the areas of the UK that are deemed to be in the highest need of economic stimulation and job creation, in relation to levelling up, do not appear to be being left behind in this surge of green job creation. However, this data also suggests that more could be done to focus green job creation in regions in the levelling up priority one section, that are most in need of attention.

With much green job generation based on the location of huge infrastructure and energy centre projects, such as nuclear facilities and wind turbine farms, to do so could not be as simple as relocating these. What could potentially be achieved is non-location specific green job training and re-training being focused on levelling up priority one areas, where more economically vulnerable people could benefit from them. To accelerate this ambition, the government and many other training providers are offering free entry-level green skills training which could be translated into a good green job, securing the individual and their community's financial security.

Proud to be green

Green jobs are about more than job posting data points, net zero targets and salary uplift. The Green Jobs Foundation has been launched by people with recruitment industry backgrounds, as well as people working at the heart of economics, skills and the just transition, who have seen first-hand how having a green job can improve job satisfaction, wellbeing and motivation. This arises as those working in a green job feel they are working for the good of the planet. More green jobs can mean we see this more and more, as we see personal benefits beyond economic factors stimulated.

The fast rise in green job creation, and what the job posting data points to, is positive on a very human level, as well as a global one.

Invest more in skills

The fast rise in the amount of UK green jobs being advertised isn't being matched by the speed of the rise in training courses designed to equip people with the right skills for good green jobs. To ensure that the country can reach its net zero ambitions, this skills gap needs to be shortened.

There should be a rise in the amount of courses offered by UK combined authorities related to green jobs and skills, which in 2022 was 289, hosting 13,000 participants. Courses like these tend to be free to attend and don't usually last longer than a few weeks, so have huge potential to steer more people towards green jobs, including many in low-income and skill level brackets. This investment needs to be prioritised and must continue beyond the political party of the day.

There are many different ways to get into good green jobs beyond free government courses. Research into the amount of green job-related training and retraining courses offered in the UK private sector, alongside research into green career-related further education courses, would help us understand how education and training is serving the rising amount of green job vacancies. We are, for example, aware of the rise in sustainability management-related degree courses in the UK in recent years, driven by increased awareness of environmental issues by university-age people.

Highlighting how fast green job creation levels are rising can contribute to the mindset change towards sustainability and environmental issues being seen in much of the country. Demonstrating that seeking a green job is a smart move for the present, and will become even more beneficial as green technology companies and services mature in the medium and long term, can also show that manual jobs considered 'traditional' such as mechanic or heating engineer are included in this change.

Moving towards the Real Living Wage

In the media and public discussion about the UK's green jobs drive, much focus has been rightly placed on how it relates to the country's net zero target deadline of 2030. The potential benefits of green

jobs for people on low incomes should be heavily promoted too. With salary uplift for advertised green jobs seen across the country, when compared to regional averages and not just limited to higher-skilled managerial roles, they could be an important component in getting more of the population earning above the Real Living Wage threshold.

There should be more done to show people on low incomes green job career pathways. As highlighted by the government's Education Hub, for example, someone who has worked in retail and as a personal assistant, can successfully retrain with a Forestry England apprenticeship to move towards a green career.

We've seen significant growth in green jobs, and this is welcome news after the turbulent effects of Brexit and Covid on the UK economy. With more investment in green skills and green jobs, the future state of the nation can be more prosperous.



With thanks

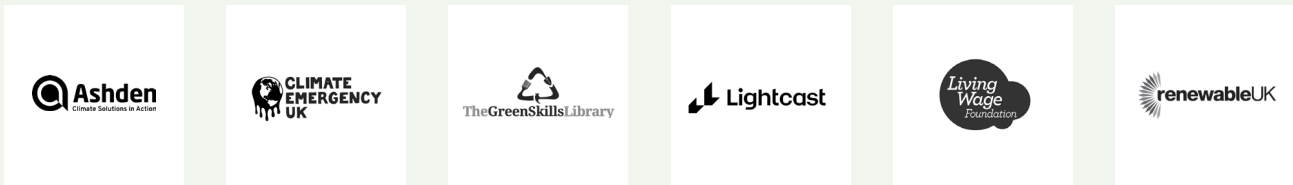
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