green alliance...

# Work in progress

## Getting young people ready for jobs in the 2030s

**Work in progress**
Getting young people ready for jobs in the 2030s

**Authors**
Steve Coulter, Amira Jamal, Manjot Sahota and George James

**Acknowledgements**
We would like the thank the following people for their help in producing this report: the LSE Green Skills Lab, EDGE Foundation, Groundwork, SOS UK, EngineeringUK, Energy and Utility Skills, the Cambridge Institute for Sustainability, the Sutton Trust, the Foundation for Education Development, the Digital Education Futures Initiative and the Future Homes Hub. The focus group research was conducted by Family, Kids and Youth. Thanks also to Roz Bulleid at Green Alliance for her input.

This report was funded by OVO Foundation

**About the Ovo Foundation**
The OVO Foundation is energy company OVO's climate-focused charity. Since 2014, its mission has been to create a greener, brighter future for the next generation. By partnering with charities, it helps young people connect with nature, learn green skills, build communities and make their voices heard.

For more information, visit ovofoundation.org.uk

OVO FOUNDATION

**Green Alliance**
Green Alliance is an independent think tank and charity focused on ambitious leadership for the environment. Since 1979, we have been working with the most influential leaders in business, NGOs and politics to accelerate political action and create transformative policy for a green and prosperous UK.

The Green Alliance Trust
Registered charity no 1045395
Company limited by guarantee
(England and Wales) no. 3037633

Published by Green Alliance
May 2026

ISBN 978-1-915754-73-8

Designed by Howdy

# Contents

# Summary

**“The UK risks missing a major opportunity to prepare the next generation for future work.”**

The transition to a green economy is, according to the government, “the economic opportunity of the 21st century”. It is changing the UK’s labour market, driven by the need to dramatically reduce environmental impacts and compete effectively in fast growing new industries based on clean energy and more efficient use of resources. There is strong demand for new skills across many industries.

Young people are keen to play their part in tackling climate change, but this enthusiasm and potential is not being fully realised. Employers hunting those with ‘green skills’ are struggling to recruit workers, while many young people find it difficult to access relevant training or secure entry level jobs. Without targeted action, the UK risks slowing down economic growth and missing a major opportunity to prepare the next generation for future work.

Preparing young people for a changing labour market must be a priority, especially given rising youth unemployment and the impact of automation on entry level roles. Current initiatives, including apprenticeship reforms, have resulted in some progress but have not tackled deeper systemic issues, such as low employer investment in training and an education system that prioritises academic over practical skills. Information gaps about green careers, unclear progression pathways and employer hesitance to hire those without experience are also not helping.

> “Demand for sustainability skills is growing in areas such as finance, law and professional services.”

In this report, we provide answers, arguing for a more co-ordinated and ambitious policy response. We examine how green and technological transitions will shape skills demand over the next decade, focusing on transferable skills rather than narrow job titles. We also consider how AI and automation are likely to change skill requirements.

Alongside labour market analysis, we explore young people’s attitudes to green careers and why their enthusiasm often fails to translate into employment.

The policy implications extend beyond traditional green sectors. Demand for sustainability skills is growing in areas such as finance, law and professional services.

With the right interventions: better careers guidance, stronger employer incentives and clearer pathways into work, the green transition could support a more productive, inclusive and resilient economy. Without action, uncertainty risks discouraging young people from pursuing emerging opportunities. This will weaken workforce readiness, holding back economic growth and the UK’s climate ambitions.

# Introduction

> “Failure to train workers for the sustainable economy would be disastrous for the UK.”

Young people care deeply about climate change and nature loss. Yet employers appear unable to take advantage of this enthusiasm, with many reporting severe skills shortages in green sectors like clean power and engineering.[1] Industry surveys predict sharply rising demand for green skills, so these shortages could worsen and affect other sectors in the future.

Failure to train workers for the industries emerging and being transformed by the shift to a more sustainable economy would be disastrous for the UK. It would mean missing out on what the government has described as “the economic opportunity of the 21st century.”[2]

It would also mean squandering the talent and motivation of a generation of young people starting out in their careers and looking to make a difference.

There is much policy focus on workers already in the labour market who face skills redundancy and need retraining as older, polluting industries are replaced by cleaner, more technologically advanced businesses. But it is also vital to equip the future workforce with the skills and knowledge they will need, to avoid costly skills bottlenecks further down the line.

With youth unemployment at a ten year high and the growing threat to entry level jobs from automation and artificial intelligence (AI), an inability to engage this pool of recruits at the school and college stage would let down the country and young people.

Policy makers are not blind to this problem. The government has reformed the apprenticeships system, established Skills England to co-ordinate skills policy and offered a Youth Guarantee to help more young people into work.

> “Problems in the UK’s education and training systems have stunted opportunity and contributed to skills shortages.”

While welcome, few experts think these measures will be enough to solve the array of well catalogued problems in the UK’s education and training systems that have stunted opportunity and contributed to skills shortages. These include low employer investment and engagement in training, an overly narrow and academic curriculum which fails to adequately prepare school and college leavers for work and a paucity of good entry level apprenticeship places.[3,4,5]

Other, less well documented factors may be significant too. For instance, are young people well enough informed about possible jobs in green sectors?[6] Do the pathways on offer match their aspirations? Will new technologies, like AI and robotics, disrupt previously well trodden routes from education into the workplace by removing entry level positions and placing new demands on other roles?[7] And are employers willing to take a chance on hiring young people new to the workplace in a fast changing economy and labour market?

# Understanding the future skills landscape

> “Jobs in greener industries tend to be more highly skilled and better paid than other sectors.”

For policy makers, the future skills challenge goes beyond simply issuing more white papers and providing extra training places. It requires rethinking the role of human-centred skills in a cleaner and more sustainable economy and labour market increasingly dominated by new technologies.

There are grounds for both pessimism and optimism. It is true that AI and automation will replace many rules-based, routine and repetitive tasks. Around 70 per cent of UK workers are in occupations involving tasks that AI could potentially perform or enhance, a higher proportion than Europe or the US.[8] But the reallocation of labour and resources it allows could also raise productivity across the economy, boosting economic growth and the demand for workers in new and emerging sectors.[9] These include the industrial and service sectors developing and implementing the clean technologies of the future. The CBI estimates that the value of green industries and infrastructure within the UK’s reach is worth an estimated additional £57 billion to GDP by 2030.[10]

The Climate Change Committee (CCC) expects the green transition to impact around a fifth of all jobs, with potential to create between 135,000 and 725,000 net new jobs by 2030 in low carbon sectors, such as in building retrofit, renewable energy generation and manufacturing electric vehicles (EVs).[11] Jobs in greener industries tend to be more highly skilled and better paid than other sectors.[12] They are also well distributed across the country, so young people do not have to move to London or other big cities to find well paid, rewarding work.

Far from retreating from the green economy in response to President Trump’s opposition to climate action, companies

> “Global demand for green talent grew twice as quickly as supply between 2021 and 2025.”

are demanding more workers with green skills. A recent Harvard Business School survey of firms in Europe and the US showed 85 per cent were increasing their sustainability efforts and only 14 per cent were scaling back.[13] LinkedIn research shows that global demand for green talent grew twice as quickly as supply between 2021 and 2025.[14]

With both the green and technological transitions, there will be radical changes to tasks performed across the workforce. For example, both will require workers with a broad range of technical and interpersonal skills. The green transition is as much an organisational as a technological shift. The technological transition will replace routine tasks traditionally performed by people with machines and AI, placing a premium on interpersonal and skills currently monopolised by people.[15]

An often overlooked dimension of the green transition is that, while technical skills will be extremely important in sectors like heat pump installation and maintenance, many service sectors will also be heavily affected. Regulatory change will increase demand for sustainability reporting and expertise, particularly as the wide scope of regulations and their emphasis on the transparency of value chains means companies will have to report on the practices of their suppliers and partners’ operations as well as their own.

Many jobs, even in sectors like law, finance and accounting, will be ‘greened’ to some extent, even if they are not strictly classified as part of the green economy.[16] LinkedIn data shows that workers with green skills and knowledge in non-green roles now make up the majority of the ‘green’ category of hires for the first time.[17]

Handled carefully, the green and technology transitions could work together to transform the UK into a leader in the industries of the future, offering skilled, secure employment. However, while we can forecast, to some extent, employment growth in green sectors, based on planned investment in technologies that, in many cases, are already well established. But AI and new forms of automation are, to a great degree, uncharted territory in terms of their impact on education, skills and employment. The ubiquity of AI specifically, and how widely it can be

> The lessons of past technology revolutions are not necessarily a good guide to the future.”

applied, means the lessons of past technology revolutions, like the introduction of electricity, are not necessarily a good guide to the future.

If policy makers are unsure about how clean growth and new technologies will shape future labour demand, they may fail to prepare adequately for what is to come. And, if young people lack confidence in their future employment prospects in a workplace increasingly disrupted by new technologies, they may opt to play it safe and avoid careers in emerging sectors because they see them as riskier.

# Our assessment
## Green skills potential and delivery

> **“A radical rethink is needed of how to prepare young people for the careers of the future.”**

A radical rethink is needed of how to interest, motivate and prepare young people for the careers of the future. It requires understanding how the labour market will change over the next ten to 15 years, as it adapts to the way work is evolving. It also requires mapping labour market projections onto an understanding of how young people’s choices about education, skills and jobs are formed.

Here, we report on how the shift to a cleaner economy will impact the UK labour market and affect the mix of skills workers need to thrive.

Using industry and official workforce projections and a European skills taxonomy, we identified the skills that will be in demand when the young people currently in education enter and establish themselves in the world of work. We analysed which are likely to be enhanced or replaced by AI and automation, to guide how policy can futureproof jobs and careers.

Noting that skills shortages in green sectors already exist alongside high youth unemployment, we examined more subjective factors that may be responsible for failures to encourage young people to work in the green economy. This was based on expert interviews and a series of focus groups with young people and experts.

### How we assessed the green labour market

To understand how policy and education need to adapt, we looked at the skills that will be needed for green jobs in five to ten years.

Focusing on skills rather than occupations has several advantages. It reflects how young people communicate their employability in job applications, having had little time to

build up experience; it allows for a more granular and uniform analysis of the impacts of AI and automation on the future of work; and, as careers more commonly span multiple sectors and occupations, skills-based policy is better placed to support young people through the transitions ahead.

> “Skills-based policy is better placed to support young people through the transitions ahead.”

We define a green job as employment in an activity that directly contributes to, or indirectly supports, the achievement of the UK’s net zero cabon emissions target and other environmental goals, such as nature restoration and mitigating climate risks, in line with the definition used by the 2021 Green Jobs Task Force.[18]

Though there are skills that will be in higher demand across green jobs, whether they are ‘green skills’ or not is harder to classify. For instance, analysing financial and economic data could be a skill that supports investment in green technologies or fossil fuel infrastructure. The skills discussed are those required for the green jobs of the future.

To determine future demand, we examined projections from industry bodies, identifying around 90 green occupations expected to grow between 2030 and 2035 in their respective sectors. These were then mapped against the skills required, using the European Skills, Competences, Qualifications and Occupations (ESCO) framework.[19] A literature review then pinpointed the types of skills and tasks most likely to be affected by AI and automation.

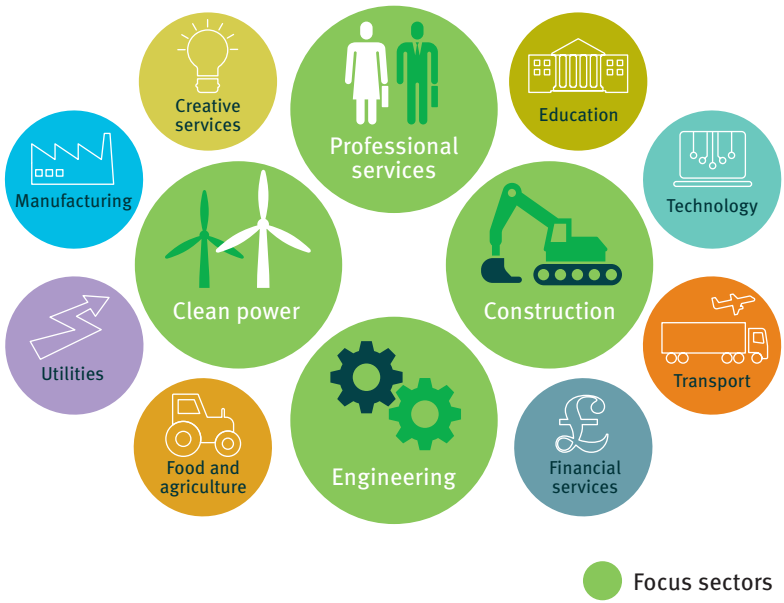
From this research, we developed a set of criteria to assess the potential impact of these technologies on individual skills. Further detail on our approach is provided in the accompanying methodology at the following link: bit.ly/4dvjl6Z.

We applied this methodology to jobs and skills across the 12 industrial sectors likely to be affected by the green transition, as shown opposite. The choice of sectors was based on standard industry codes with some alterations. Sectors such as ‘public admin’ and ‘defence’ were removed as we do not consider them to be part of the green economy. Other sectors such as ‘accommodation’ and ‘food’ were removed as green jobs within them would largely be

represented within the professional services sector. The 'clean power' sector was added as it has been identified as a priority sector for the government and will generate significant numbers of green jobs in the UK.

We further identified four 'focus' sectors expected to account for the bulk of green jobs available in the next five to ten years. To do this we considered several factors, including their predicted employment growth rates to 2030-35, the predicted share of jobs in 2035 and whether they are a priority sector for the government. The four focus sectors chosen were 'construction', 'professional services', 'clean energy' and 'engineering'.

The 12 main green sectors, including our four focus sectors




To identify jobs that will be in demand across the green economy, we looked at government and industry predictions between 2030 and 2035. The table on page 12 presents the ten to 12 jobs forecasted to be in-demand across our four focus sectors (the full list of jobs we considered across all sectors can be found in the accompanying methodology at bit.ly/4dvjl6Z).

## Jobs forecast to be in high demand in 2030-35 across four focus sectors

| Job titles based on the European Skills, Competences, Qualifications and Occupations (ESCO) database | | | |
|---|---|---|---|
| **Clean power** | **Construction** | **Engineering** | **Professional services** |
| Cybersecurity risk manager | Civil engineer | Architect | Accountant |
| Electrical mechanic | Construction manager | Chemical engineer | Business analyst |
| Electrical supervisor | Energy assessor | Chemical ET | Climatologist |
| Electricity distribution technician | Heating, ventilation, air conditioning engineer | Civil ET | Cloud architect |
| Environmental scientist | Insulation worker | Electrical engineer | Cloud DevOps engineer |
| Land planner | Interior architect | Electrical ET | Cloud engineer |
| Offshore renewable energy technician | Land surveyor | Electronics ET | Human resources manager |
| Overhead line worker | Plumber | Environmental engineer | Investment analyst |
| Project manager | Refrigeration air condition and heat pump technician | Mechanical ET | Lawyer |
| Roofer | Sheet metal worker | Process engineer | Software developer |
| Vehicle technician | | (ET=engineering technician) | Supply chain manager |
| Welder | | | |

> “A large proportion of the in-demand jobs will require both technical and interpersonal skills.”

We divided the jobs according to the skills they require and assessed the top 20 skills likely to be in high demand across the green economy in all sectors in the mid-2030s.

| Top green skills needed in the 2030s |
|---|
| 1. Protecting and enforcing |
| 2. Analysing and evaluating information and data |
| 3. Designing systems and products |
| 4. Monitoring, inspecting and testing |
| 5. Building and repairing structures |
| 6. Conducting studies, investigations and examinations |
| 7. Liaising and networking |
| 8. Advising and consulting |
| 9. Developing objectives and strategies |
| 10. Organising, planning and scheduling work and activities |
| 11. Using digital tools for collaboration, content creation and problem solving |
| 12. Documenting and recording information |
| 13. Installing, maintaining and repairing electrical, electronic and precision equipment |
| 14. Teaching and training |
| 15. Using precision instrumentation and equipment |
| 16. Calculating and estimating |
| 17. Setting up and protecting computer systems |
| 18. Programming computer systems |
| 19. Solving problems |
| 20. Creating artistic, visual or instructive materials |

A large proportion of the in-demand jobs will require both technical and interpersonal skills. However, ensuring workers develop this mix of skills may be challenging in the UK’s current education system because it encourages academic specialisation at an early age, with most school students studying either STEM or arts subjects but not both.[20]

> “The ability to work with AI and automative technologies will be essential by the 2030s.”

## The impact of AI and automation on green jobs and skills

Although the exact pace and trajectory of adoption is uncertain, it is clear that the ability to work with AI and automative technologies will be essential by the 2030s. While some jobs will be created and others eliminated entirely, countless others will be changed by technology, some of them radically.

Based on best available information, we looked at the likely impact of AI and automation on employment and skills in green sectors. Using a literature review, we identified aspects of skills involved in performing these jobs that are vulnerable to being changed or replaced by AI. These include traits such as repetition, pattern recognition, low risk or low stakes outcomes associated with a task, low importance of the external context and low levels of empathy. We used these to create a taxonomy, sorting skills impact into the following three categories:

**Unaffected:** skills where AI or automative technologies would not be used predominantly by the person who performs the task: ie the task will continue to be performed by a person in a similar way to before.

**Changed:** skills where the person who performs it will use AI or other technology to help them perform the task; however, adoption of the technology will not result in a significant proportion of workers who perform the task losing their jobs.

**Replaced:** refers to any skill where we believe more than five to ten per cent of workers who perform it may be at risk of losing their jobs because of AI or automation relating to the skill.

The charts opposite divide the skills into two types to plot how they will be affected by technology:

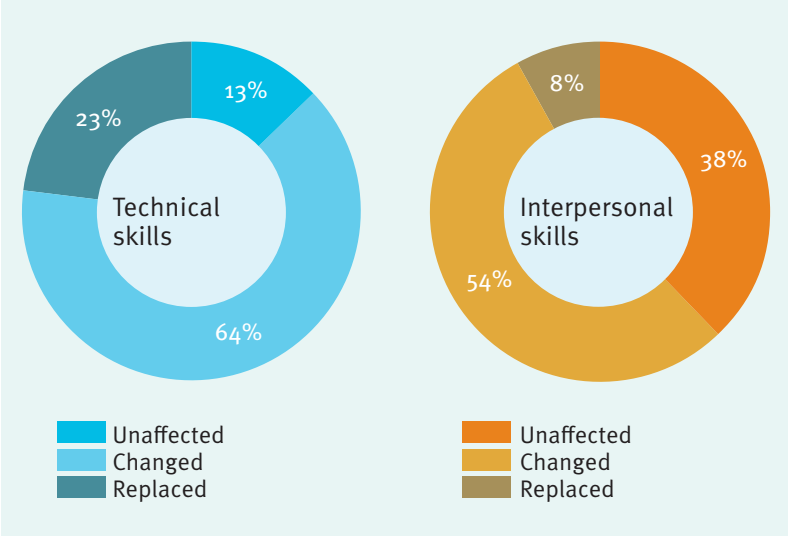
- **Technical skills**, sometimes known as ‘hard’ skills, require specialist knowledge and the ability to perform specific tasks using tools, software or processes in a professional setting.
- **Interpersonal**, or ’soft’, skills allow individuals to communicate, interact and build relationships effectively with others.

> “Interpersonal skills are more immune to being replaced by technology.”

Without AI, technical skills make up 62 per cent of the top 100 skills in green sectors. This falls to 57 per cent when the skills likely to be replaced by AI and automation are removed and the share of interpersonal skills increases to 43 per cent.

Automation will affect over two thirds of technical skills and at least half of interpersonal skills as its use becomes more widespread. This includes changes such as the increased use of AI or automation software, increasingly complex robotics taking over repetitive tasks and expanding the capabilities of AI to support creative tasks. However, interpersonal skills are more immune to being largely replaced by technology. Only eight per cent of these skills are likely to be replaced, compared with a quarter of technical skills.

Impact of automation on the top 100 in-demand skills



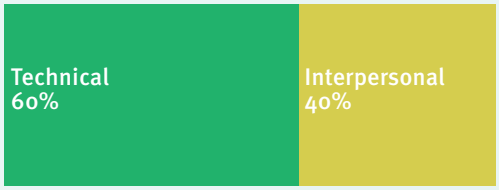

Applying this analysis to our focus sectors, the following charts summarise the top skills needed in each sector, the proportion of them that are technical or interpersonal, and the impact of technology on demand.

# Top ten skills in our four focus sectors

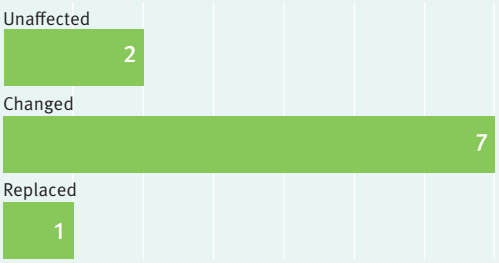
## Engineering

- Designing systems and products
- Analysing and evaluating information and data
- Conducting studies, investigations and examinations
- Protecting and enforcing
- Developing objectives and strategies
- Monitoring, inspecting and testing
- Building and repairing structures
- Organising, planning and scheduling work and activities
- Using precision instrumentation and equipment
- Using digital tools for collaboration, content creation and problem solving

### Balance of skill types



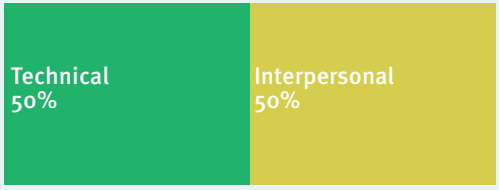

### Impact of AI and automation



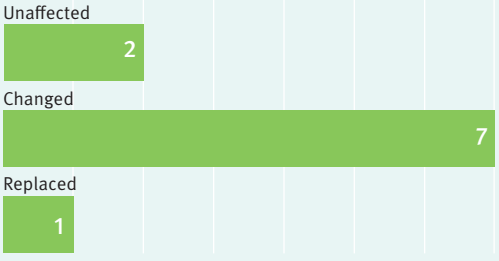

## Professional services

- Analysing and evaluating information and data
- Programming computer systems
- Designing systems and products
- Liaising and networking
- Conducting studies, investigations and examinations
- Advising and consulting
- Setting up and protecting computer systems
- Allocating and controlling resources
- Solving problems
- Monitoring, inspecting and testing

### Balance of skill types




### Impact of AI and automation

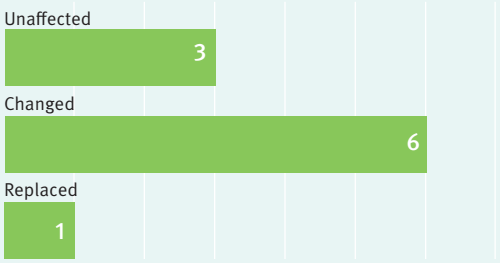


## Construction

- Designing systems and products
- Protecting and enforcing
- Analysing and evaluating information and data
- Installing interior or exterior infrastructure
- Advising and consulting
- Conducting studies, investigations and examinations
- Documenting and recording information
- Building and repairing structures
- Using hand tools
- Calculating and estimating

### Balance of skill types


### Impact of AI and automation

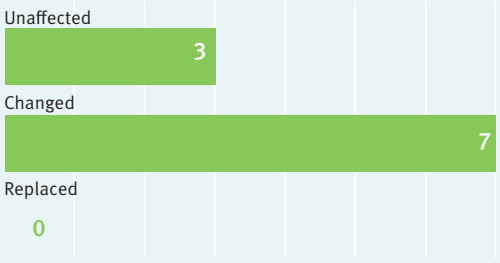



## Clean power

- Building and repairing structures
- Protecting and enforcing
- Installing, maintaining and repairing electrical, electronic and precision equipment
- Monitoring, inspecting and testing
- Analysing and evaluating information and data
- Advising and consulting
- Setting up and protecting computer systems
- Conducting studies, investigations and examinations
- Organising, planning and scheduling work and activities
- Documenting and recording information

### Balance of skill types

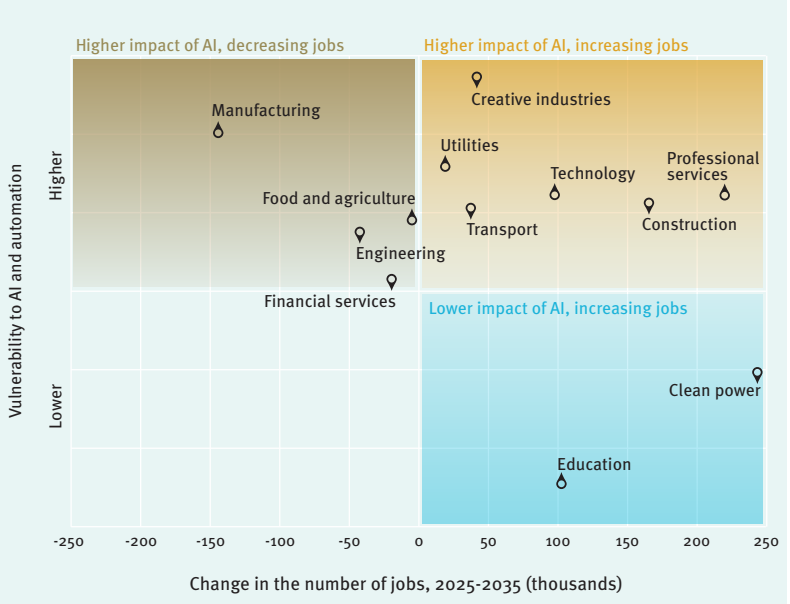

### Impact of AI and automation



Below, we map the sectors based on projected employment change over the coming decade, together with the degree to which skills are vulnerable to AI and automation. Together, these axes capture the dual transition reshaping the labour market: the shift towards a low carbon economy and the accelerating impact of emerging technology.

> “Creative industries will play an important role in climate advocacy and communication.”

Change in the number of jobs and AI impact, 2025-35[21]




Several important shifts are apparent. Creative industries (although not obviously ‘green’) will play an important role in climate advocacy and communication as well as in developing more sustainable consumer products. It will generate an increasing number of roles, like desktop publishers and sustainable fashion designers. However, although this sector will see strong projected employment growth there will also be a higher degree of exposure to AI-driven disruption. Training systems will need to adapt to prepare workers for jobs where creative and interpersonal skills blend increasingly with technological proficiency.

Similar change will be experienced in the construction sector, which will require the use of less carbon intensive materials to meet its UK emissions reductions obligation, while aiming for other government targets, such as building 1.5 million homes by 2029.[22, 23] This raises urgent questions

for the government and industry about attracting and retaining talent in a sector where perceptions around pay and job security are already a concern, and where the nature of the work may change rapidly.

Manufacturing, on the other hand, will see a decline in employment as well as significant AI exposure. Here, policy will need to prioritise longer term workforce planning, support for workers transitioning into new roles or sectors, and targeted welfare provision for communities most at risk. However, the outlook for manufacturing employment is not entirely unfavourable. Roles that persist are expected to demand higher levels of skill and, in many cases, formal academic qualifications for new entrants.

> “Manufacturing roles are expected to demand higher levels of skill.”

While robotics will lead to the displacement of certain technical positions involving manual dexterity, it will also create entirely new occupations across the economy, including in many green sectors, such as ‘intelligent manufacturing’ engineers. Furthermore, the advancement of AI is increasing demand for highly skilled professionals, and those who possess multi-disciplinary skills and knowledge.[24]

The ways in which job opportunities will change over the next five to ten years will profoundly affect the career course of young people. Which sector they enter will influence how difficult it is to find a job and start earning money, how different that job will be compared to now and how well prepared they must be to thrive in it.

These challenges can be minimised through adequate foresight and support by industries and government, determining when and where jobs and skills will be needed. This needs to be communicated to young people. Long term planning could include better provision for entry level jobs, to ensure the UK avoids further exacerbating skills gaps in the future and avoids a significant brain drain. It could link up national strategies and Local Skills Improvement Plans to ensure that efforts are coherent across the economy.

# Sector analyses

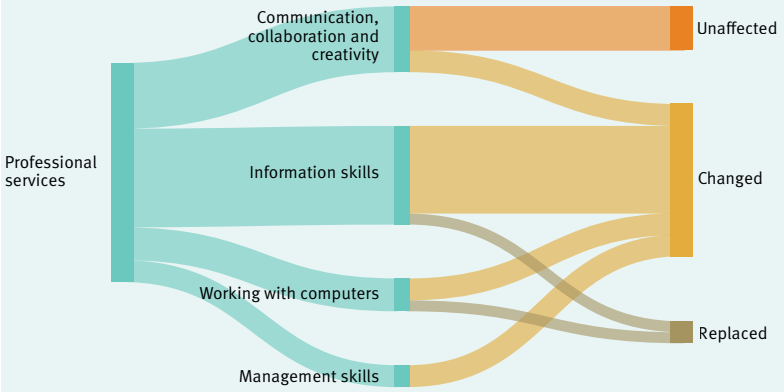
> **“Engineering and professional services are expected to experience a similar level of exposure to AI.”**

Drawing on direct input from professional bodies, we looked at the top 20 skills likely to be in demand across two of our focus sectors by 2030 and explain the experiences of an employee.[25]

Both engineering and professional services are expected to experience a similar level of exposure to AI. However, there will be differences, as engineering roles typically require a more complex mix of capabilities. As a result, the impact may be more multifaceted, involving new digital tools, alongside changes in the use of machinery, design processes and collaborative work.

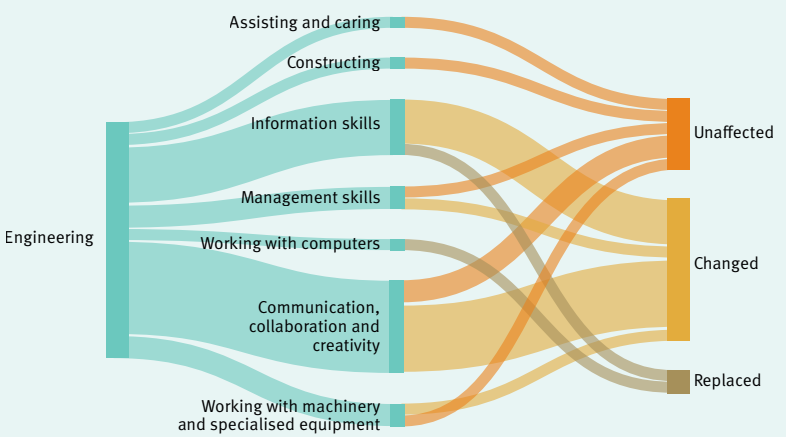
In contrast, professional services are more likely to centre on new software tools that reshape information processing, data analysis and client communication.

## The employee's view: the lawyer




| Simon Colvin, partner and head of the Environment Team at Weightmans | |
|---|---|
| **How will AI and automation affect your job or sector?** | "AI reduces the time I spend on routine work such as research, due diligence and regulatory analysis. It allows me to focus more on judgement, risk and strategy. My role is less about processing information and more about interpreting it. We are seeing less of a need for junior team members to do research tasks and more of a drive to accelerate their role to being strategic advisers. The challenge is how to ensure there is not a knowledge and skills gap at that level. As a firm we are more focused on apprentices now than graduates which means we can give junior team members that experience in another way." |
| **How will the move to a more sustainable economy affect your job or sector?** | "It makes my work more central, not more marginal. Environmental law now underpins business strategy, investment and infrastructure. I am increasingly advising on transition risk, scrutiny and challenge, helping clients justify decisions in a highly political and regulated environment. The shift means more opportunity and demand for our services, and we are responding to that with a growing environment and sustainability capability." |
| **Which skills relevant to your job do you see remaining in demand considering the impacts of AI and the green transition and why?** | "Strategic judgement, regulatory insight and credibility will remain critical. Clients value my ability to weigh risk, anticipate regulatory behaviour and defend decisions under pressure. AI literacy is important but experience and trusted judgement are the differentiators." |

## The employee's view: the engineer




| Inez Awuley, mechatronics engineer, industrial automation systems | |
|---|---|
| **How will AI and automation affect your job or sector?** | "AI tools will be used increasingly to streamline some aspects of the job and save time. For example, to retrieve and distill information quickly from various sources of information or to automate well defined tasks. In the sector, more roles enabling automation may exist but potentially fewer roles where it is possible for the entire design process to be automated from the ground up." |
| **How will the move to a more sustainable economy affect your job or sector?** | "There will be increased importance put on optimising supply chains and product lifecycle management. For example, parts or materials selected for a design may be subject to more specific requirements to be more sustainable. Thinking about the full lifecycle of a product and what happens at end of life will also be more important." |
| **Which skills relevant to your job do you see remaining in demand considering the impacts of AI and the green transition and why?** | "Maximising the use of AI or making the most effective sustainable decisions would require a lot of data and would take some time to develop systems around. Skills to support this could be ones related to dealing with ambiguous requirements, eg considering information from various inputs, defining priorities and tradeoffs clearly and managing changing interfaces and varied applications." |

# Cross sector co-ordination will help young people

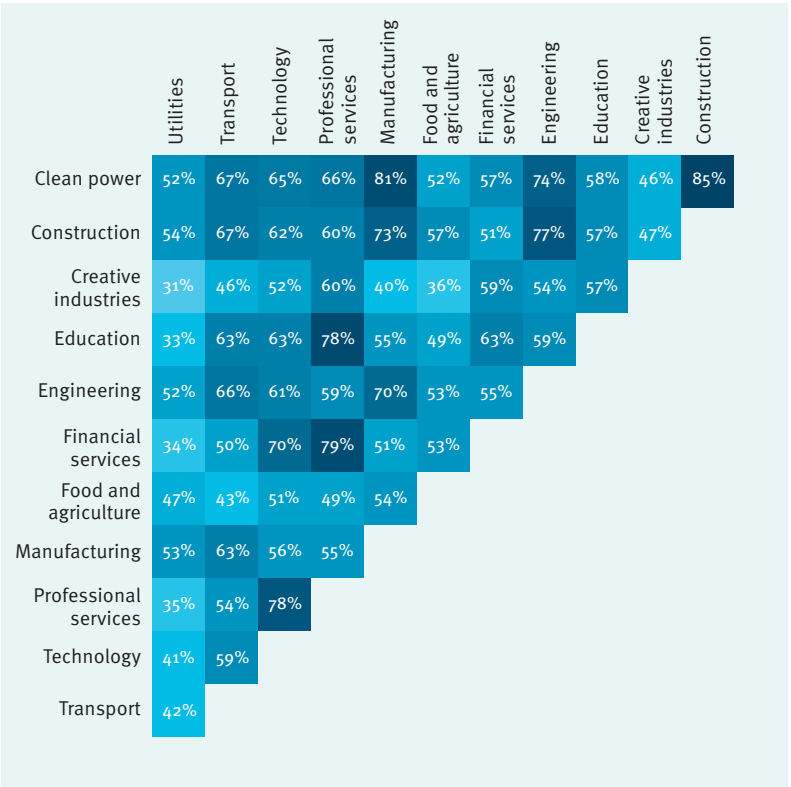
> **“Those with a more balanced set of technical and interpersonal skills will be more adaptable.”**

A potential implication of the greater penetration of technology into the workplace is that those with a more balanced set of technical and interpersonal skills will be more adaptable and so can more easily move between sectors, as their skills will be less specific to an industry. While generally positive for employment and productivity, it depends on the right education and training policies to facilitate it.

On page 24, we illustrate the overlap in skills between sectors. For example, when comparing clean power and creative industries, roughly half (46 per cent) of the skills required across both sectors are shared. This analysis considers skills only and not other factors that influence a worker’s ability to transfer between sectors, such as prior experience, qualifications or portfolios, which are particularly important in certain sectors.

> “Sectors such as food and agriculture depend on more specialised skillsets which render workers less mobile.”

## Skills overlap across sectors




This shows clusters of sectors requiring a workforce with similar sets of skills. Examples of clusters which have a 70 per cent or higher overlap of the same skills are:

- clean power, construction, engineering and manufacturing
- professional services, financial services and technology

An implication is that sectoral bodies representing these clusters could pool their resources to offer more impactful and effective outreach. Some sectors, such as engineering and manufacturing, rely on a high number and mix of technical and interpersonal skills, which can facilitate transitions into a wider range of industries. Whereas sectors such as food and agriculture depend on more specialised skillsets which render workers less mobile. As a result, workers seeking to move out of these sectors may require additional training or reskilling. Conversely, employers seeking to attract and retain workers need to be

aware of this drawback and offer additional inducements, like higher pay, better conditions or job security guarantees, to young people to work in their sector.

## Summary of analysis

Our analysis indicates a number of broad trends:

- **The technological and green transitions will impact the economy significantly in the coming decade.** With rapid change, a skills focus will prepare young people well to enter and remain in good employment.
- **Green sectors require workers with a mix of technical and interpersonal skills.** This trend is already underway but will be accelerated by the introduction of new technologies,
- **Interpersonal skills will be highly valued** as they are less prone to replacement by AI, although technical skills will be prominent in green sectors.
- **Different industries face different pressures**, suggesting a need for sector based skills policies.

> “The government has a strong role to avoid skills gaps opening up.”

The government has a strong role in curriculum reform, private sector facilitation and funding to avoid skills gaps opening up which could hamper the growth of new industries.

# What young people think about the green jobs of the future

We commissioned expert interviews and focus groups across the country (both in person and online) with groups of young people aged 15-21, in school, at university, on a traineeship or those who were not in education, employment or training (NEET), as well as teachers, school careers advisers and educational experts.[26] Here is what they told us:

I feel a lot of pressure. Because right now, climate change isn't necessarily at the forefront of a lot of political agendas. Like, as a generation, we're going to have to be the ones who build society and actually do something about it.
Girl, year 10 (age 14)

## Young people worry older generations aren't doing enough to protect the environment, leaving them to clean up the mess

They understand climate change impacts but struggle to apply this concern to their own lives. They realise it's a big challenge for their generation but feel helpless that those in power are not prioritising the environment. They don't directly link this broad concern with how they can play a direct part; for example, by working in sectors that tackle or manage environmental challenges. There's limited understanding of the concept of 'the green economy' and young people are uninformed about its job opportunities.

I'd like the job to be flexible, and have time for other things other than work.
Girl, year 10 (age 15)

## Young people want a good work-life balance

They are highly goal driven regarding careers. They know what they want from work but can lack a clear plan to achieve their goals. In general, pay, social impact, work-life balance and a short commute to work are what they seek in a job. They think work should be interesting but that it ultimately exists to support their personal life financially. Participants' instincts were that green careers could fit in with their aspirations but they needed more information about how. Those still at school are cooling on the idea of higher education because of student debt and uncertain graduate job prospects, but they are unsure about the alternatives, such as industry training schemes.

I think there should be more education in schools about [green jobs], and how we can help prevent [climate change].
Girl, year 12 (age 16)

## Young people don't know much about green jobs, but are eager to learn about the opportunities

When the question 'what is a green job?' was posed, participants in all groups assumed it meant 'working with nature', and so thought there would be little point in acquiring green skills for the jobs they were most interested in (see a summary of the jobs they initially described as 'green' on page 28). However, when shown the list of green jobs and skills required to do them, their views shifted about what working in the green economy involved and they saw that a wide range of rewarding careers was possible. This included professional occupations not obviously connected to the environment, such as law or consultancy. They considered that the jobs would be valuable in serving the community, although they said this was still less important to them than pay and conditions.

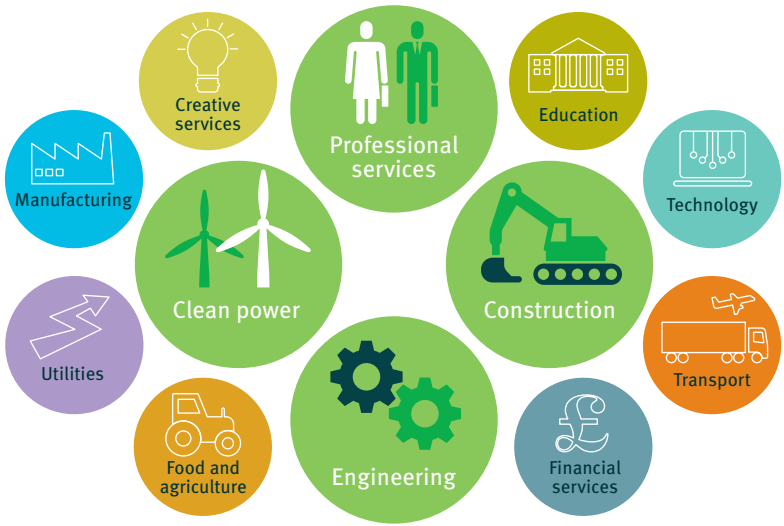
The jobs I'm choosing are the jobs I believe won't be replaced by AI.
Boy, year 12 (age 16)

## Young people recognise that advanced technology will make some jobs obsolete

They expect certain sectors to be affected more than others, for example creative roles, such as designers, artists and animators, as AI can create images and pictures. They also understand that many physical jobs will also be replaced by machines, such as agricultural workers and cashiers. But detail orientated tasks, such as those carried out by architects, engineers and software developers, are also in danger of being substituted by machines, and they were less sure about the impacts of these. Young people want policy makers to adapt the education and skills system to better prepare them for AI. They were receptive to our analysis that green jobs were more likely to be changed, and possibly enhanced, than replaced by AI.

## Young people still have a narrow view of green jobs

### Our categories




### Young people's perceptions[27]


Focus sectors

Parents would be a focus – getting them on board, and also awareness. These jobs wouldn't necessarily spring to mind so raising awareness of what green jobs actually are would be ideal.
Careers adviser

## Young people are influenced by their parents and teachers but rely on online resources more as they get older

They discuss future careers and jobs with their parents. School has a role in influencing career decisions and how to achieve them through resources such as UniFrog. Social media is also a powerful tool, but young people are sceptical about the motives of content creators. Young people over 17 are more likely to use career specific online resources (eg LinkedIn or Indeed), and careers advisers are used when available. But there is little careers guidance about green roles specifically; and advice about green careers or related content is absent from social media channels. Despite scepticism about social media, they thought more information via this route would be valuable (from trusted influencers) to help them think seriously about green careers.

They have general understanding when it comes to careers and sectors... but struggle to synthesise more detailed labour market information.
Assistant headteacher and careers lead, secondary school

## Young people have a general understanding of green careers, but struggle with very detailed information

The nature of the school and personal environment can have a big influence on aspirations. Practical experience of a job, rather than written material or a technical explanation, was more powerful at sparking real interest. They thought green 'youth ambassadors', either in person or online, could be a good way to raise awareness and explain possible pathways.

## University students think degrees fail to focus on employability

Students and experts agreed that teaching in Higher Education is still very traditional and focused on narrow academic disciplines, largely motivated by the desire of college leaders to push their institutions up academic league tables. Students in all disciplines are aware of the need to combine technical and transferable skills to maximise their employability but are unsure how to achieve this through their studies, assuming instead they will gain them through work experience. University students thought jobs in green sectors offered better long term prospects amid AI-driven uncertainty and noted that the need to address climate change could create many new sectors and roles in managing scarce resources.

> With NEETS, where they may not have qualifications, they start with skills and then take it from there. Build confidence and then match to career choices.
> Careers adviser

### Young people who are NEET worry their lack of qualifications will be a barrier to work

Skills are becoming more important for work, but qualifications are still prioritised at the recruitment stage, particularity for entry level roles. This puts young people classed as NEET at a disadvantage. Gaining experience through training routes, such as through apprenticeships, can help, but opportunities are still hard to come by without having prerequisite qualifications. Experts we spoke to agreed the education system's focus on qualifications is outdated. But, without a big shift in how employers assess young people's skills, qualifications like A levels and degrees are likely to remain the main way of assessing job candidates, which can put this category of young people at a disadvantage. The government has tried to rollout new qualifications which demonstrate skills rather than academic achievement, such as T levels and Higher Technical Qualifications, but having wider choice is not useful unless it is clear what they can provide. This is the case for many green jobs due to widespread unfamiliarity with what they involve.

> The main issue was ignorance, not resistance... once they had some information (about green jobs), they were actually extremely enthusiastic.
> Academic and former teacher

### Discussion of the environment and green jobs is not central enough in the school curriculum

Experts agreed the best place to ensure young people hear about green jobs is as part of the school curriculum. However, although the curriculum includes discussion of environmental issues, this is from an academic perspective and leaves little room for discussion of related career options. Careers information typically reaches students through specific subject teachers providing additional context alongside what they are learning.

## The green transition and employment inequality

> “In sectors where green job growth is expected, women account for a smaller share of the workforce.”

The UK’s green transition risks reinforcing existing inequalities. It could fail to fulfil its economic potential unless diversity and inclusion are actively addressed across education, training and employment pathways.

Research shows that green jobs are more likely to be held by white males. When women and people of colour work in these roles, they face a pay gap of more than ten per cent compared to their male and white peers.[28]

### The environment sector lacks diversity

The 2025 RACE report highlights a significant disparity in ethnic representation within UK organisations specifically focused on environment and conservation.[29] Although 17 per cent of the UK’s employed population identify as Black, Asian or from other marginalised ethnic groups, only 4.7 per cent of employees in these organisations come from these backgrounds.

In sectors where green job growth is expected, women account for a smaller share of the workforce. This is exemplified by women accounting for just two per cent of employees in skilled employment such as construction and vehicle trades.[30] Despite being half the UK workforce, women also remain underrepresented in leadership. Only 34 per cent of managers and directors in the creative industries are women. Female leadership representation in the energy sector, including clean power, is stagnating below the 40 per cent benchmark set.[31,32]

### Disparities start in education

Such differences do not suddenly arise at the employment stage. They are a continuation of disparities present in education and training pathways. Marginalised ethnic groups are notably underrepresented in environmental sciences compared to other fields. Six to 14 per cent of students taking higher education courses related to environmental careers identify as Black, Asian, Mixed or other ethnicities, compared to 26 per cent across all higher education subjects.[33] Data also shows that, in 2024, women gained less than a third (around 30 per cent) of the total number of STEM higher education qualifications.[34] This is reflected in the labour market. In STEM industries, women make up only 27.6 per cent of the UK workforce, with engineering showing the greatest imbalance at 10.6 per cent.[35]

### Diverse businesses do better

Limited diversity is narrowing the talent pool just when demand for green skills is growing, exacerbating workforce shortages and constraining productivity. Research by McKinsey shows that companies with high racial and ethnic diversity are 35 per cent more likely, and those with high gender diversity are 15 per cent more likely to outperform financially, and low diversity is linked to poorer performance.[36] Increasing participation and inclusivity is therefore essential to improve the UK's productivity and economic success.

> “Low diversity is linked to poorer performance.”

### Energy companies have taken new approaches

Evidence from UK energy companies shows that targeted recruitment and outreach strategies can improve diversity in the green economy. Ørsted provides a clear example with its apprenticeships, following an initial cohort made up entirely of white males, the company introduced gender neutral job adverts, targeted outreach at careers fairs and Women into Manufacturing and Engineering (WIME) events, and used more diverse recruitment panels to reduce bias, these efforts form part of a broader strategy to increase gender balance (targeting 40 per cent women by 2030) and has now expanded outreach to disadvantaged schools too. Scottish and Southern Energy has also shown measurable progress on inclusion. Between 2021 and 2025, it reduced its median gender pay gap from 18.3 to 11.5 per cent, reflecting increased female representation across its workforce and in higher paid roles.[37]

These examples show that targeted recruitment and progression strategies can improve diversity in the green economy, although significant gaps remain.

# Insights and recommendations

> “Green sectors will benefit from the productivity improvements of new technologies, resulting in better paid roles .”

Well managed, the green and technology transitions could transform the UK economy and labour market for the better. As our analysis shows, many green sectors will benefit from the productivity improvements of new technologies, resulting in better paid, more satisfying roles for future workers.

Based on our research, and the direct insights from young people and educators, we have summarised the following conclusions and recommendations for business and government:

### 1. Policy makers and employers need more accurate labour market intelligence on green skills gaps and the AI impacts

Since the abolition of the UK Commission on Employment and Skills (UKCES) in 2017 the UK has lacked a well resourced body to survey employers on skill gaps and advise on employment and training. Although Skills England (which sits alongside its devolved equivalents) was founded by the government in 2025 to fill this gap and was welcomed by employers’ groups, the experts and employers we interviewed criticised it for lacking impact. The transfer of Skills England to the Department for Work and Pensions in 2025 has raised fears that skills policy could be subsumed into the drive to reduce spending on worklessness. Employers warn that the complex funding and regulatory system for skills across the UK makes it harder for them to plan their training needs.[38]

#### How to improve labour market intelligence

- The government should fully resource and mandate Skills England and its devolved equivalents. Detailed sectoral and regional labour market intelligence should be supplied to employers and the government so that qualifications and the curriculum can be regularly

updated and adapted to the needs of employers.

- Skills England should analyse the impact of AI and automation on green and other sectors, and create a roadmap for avoiding skills gaps through national interventions and Local Skills Improvement Plans.
- Industries, education providers and the government should work together to ensure that careers outreach and training programmes are better co-ordinated. Sector specific councils or regional coalitions should align training programmes with employer needs, accelerate curriculum development and target apprenticeships towards the most in-demand sectors. Outreach efforts should highlight the portability of skills across green sectors.

> “Skills England should analyse the impact of AI and automation on green and other sectors.”

## 2. Young people need to know more and earlier about green career pathways

As future career prospects are heavily determined by the subjects school students choose at GCSE and A level, schools, and potentially employers, should discuss their options with them. Otherwise, too narrow choices made at this point could close off potential pathways to future jobs.

### How to give young people better information

- The government should standardise early discussion of potential careers, ideally before year 9 (age 13-14) when students must pick their GCSE options. It could be trialled first by selected academies.
- Teachers should be given more information about green jobs and the green economy via existing local career hubs, school support clusters or Continuing Professional Development (CPD) teacher training.

> “Three quarters of teachers think the curriculum puts too much emphasis on passing exams.”

### 3. Green issues and careers need to be introduced early in a structured way

Resources for careers education have been cut over the years and there is no obvious place for green jobs or skills in careers guidance. There is existing guidance within the curriculum to inform teachers how to discuss careers generally with young people, as set out in the Gatsby Benchmarks. However, this focuses on what should happen rather than how to have those discussions, which can vary between teachers, depending on their knowledge.

Students have most interactions with employers during career fairs in years ten to 12 (aged 14-16) but by this point their choices have often been limited by prior education choices. Also, a lot of these interactions with employers and outside speakers are conversations or talks, which are not as impactful as taking part in workshops or activities. Three quarters of teachers think the curriculum puts too much emphasis on passing exams and not enough on preparing young people for employment or teaching soft skills.[39]

#### How to insert green skills into the curriculum

- Schools should invite in external speakers, especially businesses and employers, as this provides young people with specific real world career and pathway examples. Models already exist for this, for example the Bridges to Schools programme in New Zealand, run by the Institution of Civil Engineers. This sees a child-sized cable-stayed bridge broken down into sections and taken to schools. Volunteers explain the bridge and engineering basics to the students, before helping them put the bridge together, testing their engineering understanding as they go. Another example is the ‘equalex’ framework, developed by the Careers and Enterprise Company, which embeds workplace experiences into the curriculum and is in operation in several schools.
- Trials should begin in selected academies of how, when and where in the curriculum instruction on green jobs and skills can be added. These changes could then be scaled up across Academy Trusts to show how it would work across a range of schools and ensure the approach

is robust and effective. This would help to create a comprehensive set of recommendations to the government to update the curriculum.

### 4. Other influences to promote opportunities in green sectors are needed

> “Trusted youth ‘ambassadors’ could help to close the information gap.”

It was clear from our focus groups that young people are not well informed about green jobs. It was also evident that social media, despite its flaws, could be effective at overcoming that, particularly for older age groups. Trusted youth ‘ambassadors’ could help to close the information gap around climate and environmental issues and related work by talking to young people and their parents, helping to emphasise job security which might reassure parents about their children’s career choices.

#### How influencers can help

- Mechanisms already exist which should be scaled up by government, employers and the Third Sector. For example, the Department for Education funds a network of Climate Ambassadors who give talks to schools, which could be expanded to cover green careers. The government already uses social media influencers to promote its policies. For example, the Ministry of Justice does this to encourage people to apply for roles as prison officers. The Department for Energy Security and Net Zero, in conjunction with the DfE, should engage well known environmental influencers to help spread the message about green careers.

### 5. A broader curriculum and focus on transferable skills should prepare young people for the future

Under the previous government, education policy chased international attainment rankings, resulting in a very narrow curriculum focused on acquiring knowledge, not building the skills useful to employers. This approach is being rendered increasingly obsolete by advances in technology and the higher value put on interpersonal skills in the workplace. Experts have dubbed these the ‘4Cs’ (critical thinking, creativity, communication and collaborative problem solving).[40] A very effective way of developing these skills is through extracurricular activities

like music, art and drama. However, due to the focus over the last 15 years on a narrowly academic curriculum, teaching of these skills has declined. Between 2012 and 2025 the number of teachers in arts subjects in English schools fell by a quarter.[41] While the 2025 post-16 Education and Skills White Paper included welcome emphasis on employability, this is largely framed through the introduction of V (vocational) Levels, a new set of qualifications.

> "An expert commission should advise on embedding the 4Cs in the national curriculum."

### How to improve transferable skill development

- An expert commission should advise on embedding the 4Cs in the national curriculum, based on minimum proficiencies for numeracy, oracy, literacy, science and, eventually, digital skills and sustainability.
- School performance should be measured against the OECD's new PISA benchmarks that test complex skills, to incentivise continuous improvement.[42]
- Schools and careers services should be encouraged to use online resources like Skillsbuilder's 'Universal Framework', which explains the importance of soft skills for various jobs and careers.

## 6. Expanding green career provision should be supported through apprenticeships and further and higher education

The Post-16 Education and Skills White Paper made a welcome start in overcoming the traditional but artificial divide between academic and vocational training. However, successive governments have failed to create clear, workable and accessible programmes of vocational training.

A complex system of vocational pathways into the workforce has often disadvantaged those from lower socioeconomic backgrounds.[43] The disastrous fall in the number of apprenticeships since 2018, which is only slowly being reversed, has also undermined an important non-academic route into the workplace and a vital way to provide workers with niche skills for sectors like utilities and food production.

University education is also often narrowly academically focused and students in our focus groups complained it doesn't prepare them for work.

### How to prepare young people better for work

- Investment in apprenticeship training providers is needed to ensure they have the capacity to scale up and deliver. This includes properly funding further education colleges.
- Small and medium-sized businesses should be incentivised to take on apprentices in occupations where there are shortages, to build employer confidence and deliver on the UK's skills and clean energy ambitions.
- A more skills-focused approach should be developed in higher education, taught in conjunction with local employers and applied technology institutes.

Many young people are not yet seeing the green economy as their career path. They mainly see it as a niche passion. If more employers, and young people themselves, are to reap the benefits of a mainstream, greener, more technologically sophisticated economy, this needs to change.

# Endnotes


1 M Crowhurst and A Taylor, 2023, *Generation green jobs? Exploring young people's readiness for the net zero skills revolution*, Public First

2 Department of Business and Trade, 2025, *The UK's modern industrial strategy*, UK Government

3 S Evans, 2022, *Raising the bar: increasing employer investment in skills*, Learning and Work Institute

4 S Coulter, A Iosad and J Scales, 2022, *Ending the big squeeze on skills: how to futureproof education in England*, Tony Blair Institute

5 The Sutton Trust, 2023, *Where next: what influences the choices of would-be apprentices?*

6 M Crowhurst and A Taylor, 2023, op cit

7 The Pissarides Review, *The Pissarides review into the future of work and wellbeing*, pissaridesreview.ifow.org

8 M Cazzaniga et al, 2024, *Gen-AI: artificial intelligence and the future of work*

9 A Arnon, 2025, *The projected impact of generative AI on future productivity growth*, Penn Wharton Budget Model

10 CBI, 2023, *Going for green: the UK's net zero growth opportunity*

11 Climate Change Committee, 2023, *A net zero workforce*

12 A Valero et al, 2021, *Are 'green' jobs good jobs? How lessons from the experience to-date can inform labour market transitions of the future*, London School of Economics

13 N Hawkins and K Cooper, September 2025, 'Are companies actually scaling back their climate commitments?', *Harvard Business Review*

14 LinkedIn, 2025, *Global green skills report 2025*

15 International Labor Organization, 2023, 'Generative AI and jobs: a global analysis of potential effects on job quantity and quality', ILO Working Paper 96

16 Cedefop, 2024, *Tracking the green transition in labour markets: using big data to identify the skills that make jobs greener*

17 LinkedIn, op cit

18 Green Jobs Taskforce, 2021, 'Report to government, industry and skills sector'

19 The ESCO database was chosen as it closely aligns with the skills taxonomy being developed by the UK government and weights the skills needed in a job. This allowed us to analyse the top skills across each sector, and the green economy as a whole.

20 *The Times*, June 2022, *Final report of the Times Education Commission*

21 For most sectors the change in the number of jobs between 2025 and 2035 was taken from the Department for Education's 'Labour market and skills projections: 2020 to 2035' dataset. Job numbers for the clean power sector were not represented in this data, and so were taken from: Department for Energy Security and Net Zero, 2025, 'Clean energy jobs boom to bring thousands of new jobs'. This number covers the years 2025 to 2030.

22 A Jamal, 13 March 2025, briefing: 'Decarbonising the cement industry', Green Alliance

23 Ministry of Housing, Communities and Local Government, 12 December 2024, 'Planning overhaul to reach 1.5 million new homes'

24 S Zhenglong et al, 2025, 'A systematic review of AI's impact on employment and skill demand', *International journal of research and innovation in social science,* vol 9, pp 484-507

25 With thanks to Simon Colvin, partner and head of the Environment Team at Weightmans, and Inez Awuley, mechatronics engineer, Ocado Technology.

26 The focus groups were conducted between February and March 2026 by Family, Kids and Youth.

27 During the focus groups, participants were asked to list green jobs. Across the six workshop groups, 13 jobs were mentioned, which have been grouped according to our sector definitions.

28 D Whittard, 2025, *Working towards an environmentally sustainable and equitable future? New evidence on green jobs,* ADR UK

29 Race Report UK, 2025, *The race report 2025*

30 Green Jobs Taskforce, 2021, op cit

31 Creative Industries Policy and Evidence Centre, 2025, 'UK arts, culture and heritage: audiences and workforce'

32 POWERful Women, 2025, 'Female representation in the UK Energy Industry 2025'

33 SOS UK, 2022, 'Racial diversity in environment professions: 2022'

34 STEM Women, 'Women in STEM statistics: progress and challenges', www.stemwomen.com/women-in-stem-statistics-progress-and-challenges

35 WISE Campaign, 'Workforce data – December 2024', www.wisecampaign.org.uk/workforce-data/

36 McKinsey, 2018, *Delivering through diversity*

37 SSE, 2025, *Inclusion and diversity report 2025*

38 Engineering and Utility Skills, 2025, 'Skills strategy 2025-30'

39 Department for Work and Pensions, April 2026, *Interim report: young people and work report - survey with education professionals*

40 S Coulter, A Iosad and J Scales, 2022, op cit

41 Department for Education, June 2025, 'Schools workforce in England'

42 OECD, 2023, *How are education systems integrating creative thinking in schools?*

43 Social Market Foundation, 2025, 'Post-16 White Paper has potential to improve social mobility; but must be accompanied with additional measures on careers guidance and family support'

Green Alliance
18th Floor
Millbank Tower
21-24 Millbank
London SW1P 4QP

020 7233 7433
ga@green-alliance.org.uk

www.green-alliance.org.uk
@GreenAllianceUK
blog: www.greenallianceblog.org.uk