



Department
for Education

Skills England: Driving growth and widening opportunities

September 2024

Contents

Table of figures	3
Foreword by the Secretary of State for Education	4
Foreword by Richard Pennycook, Interim Chair of Skills England	6
Executive Summary	8
Introduction	11
Chapter 1: Skills England will help boost growth and spread opportunity	13
Skills drive economic growth and spread opportunity	13
Several challenges must be overcome to create a high-performing skills system	16
How Skills England will address these challenges	18
Unified assessments of national skills needs	18
Qualifications and training designed in line with skills needs	19
Local skills systems which meet skills needs, forming a coherent national network	20
Skills at the heart of joined-up decision making across government	20
Functions which support and inform one another	22
Chapter 2: Skills, Growth, and Challenges	24
A decade of sluggish growth	24
Skills challenges for growth	28
Local level disparities and immobility	28
Mismatched skills	29
Future megatrends	38
Chapter 3: Initial Skills Assessment	44
Jobs in high demand	44
How these jobs are projected to grow in the future	48
Skills needs in key sectors	49
Digital technologies	49
Green workforce	52
Life sciences	56
Housebuilding and Construction	56
Next steps	60
Annex	62

Table of figures

Figure 1: Skills England's key functions	18
Figure 2: Skills England interventions aim overall to improve productivity, growth and social justice	22
Figure 3: UK productivity growth has been weak since the Financial Crisis	25
Figure 4: The UK workforce contains several skills mismatches.	31
Figure 5: UK training expenditure has reduced from 2011 to 2022.	35
Figure 6: Future megatrends will impact the future of the UK labour market.	39
Figure 7: The Occupations in demand index uses an index of seven indicators	45
Figure 8: Employment volumes and level for occupations in critical demand	46
Figure 9: Occupations in critical and elevated demand across industries (SIC)	48

Foreword by the Secretary of State for Education

The first mission of this government is economic growth. Central to this mission is a skills system fit for the future. We need to harness the talents of all our people to unlock growth and break down the barriers to opportunity. Each and every young person and adult in the country must be able to learn the skills they need to seize opportunity. Businesses need a highly skilled workforce to draw on if they are to drive economic growth and expand opportunity in our communities.

Skills are vital to the change this government wants to deliver. We will need skilled workers to deliver our commitment to build 1.5 million new homes, to make our country a clean energy superpower, and to ensure we have an NHS fit for the future.

But, as this first Skills England report makes clear, we face a long list of skills challenges. We have a fragmented and confusing skills landscape that lets down learners, frustrates businesses and holds back growth. While the country is home to many highly skilled workers and a host of high-quality colleges and universities, there are too many businesses that cannot recruit staff with the right skills. This sorry situation is made worse by the decline in businesses investing in the training of their own staff. And colleges and universities lack the certainty they need to invest in future skills needs.

All this is playing out at a time when a thriving skills system has never been more important. The need to meet our carbon emission targets, the adoption of new technologies, the risks and opportunities of AI, all these global trends demand a strong and inclusive skills system.

That is why we have launched a new government body, Skills England – to transform opportunities and drive growth. The creation of Skills England brings together the fractured skills landscape and creates a shared national ambition to boost the nation's skills. However, we will need the help of key partners in the system to grow the economy and achieve this ambition. This is why Skills England will bring businesses, training partners and unions together with national and local government to develop a clear assessment of the country's skills need – and map pathways by which they can be filled.

Skills England will work closely with the Industrial Strategy Council, Migration Advisory Committee and across Government, ensuring that our missions are underpinned by the necessary skilled workforce. It will support the join up of national and regional systems to deliver both local and national priorities.

Skills England will shape the government's response to skills needs by identifying key priorities, including advising on the new Growth and Skills Levy. In doing so, we will provide a structured feedback loop to government to inform funding and policy decisions.

This report is a key first step in our long-term strategy to reform our education system. By setting out our vision to meet skills needs, the report invites members across the skills system to use key data insights to inform, challenge and build towards a responsive and collaborative skills system, aiming to align with the future Industrial Strategy. It will ensure that people can access the training they need to get great jobs and provide the tools to plan for a better future for all.



Bridget Phillipson

Rt. Hon. Bridget Phillipson
Secretary of State for the Department for Education

Foreword by Richard Pennycook, Interim Chair of Skills England

We intend for Skills England to be the driving force behind a much-needed upskilling of our economy in the coming decades. We are the sixth largest economy in the world, and yet our businesses and public services have been laggards in productivity over the past 30 years.

In the more recent past, the Covid Pandemic, Brexit and the war in Ukraine have combined to present threats to business not experienced since the end of the Second World War. Similarly, our public services face huge pressures in meeting the needs of an aging and more diverse population

Looking ahead, we face the challenges of decarbonising our economy and taking advantage of the opportunities presented by continuing technological and scientific innovation.

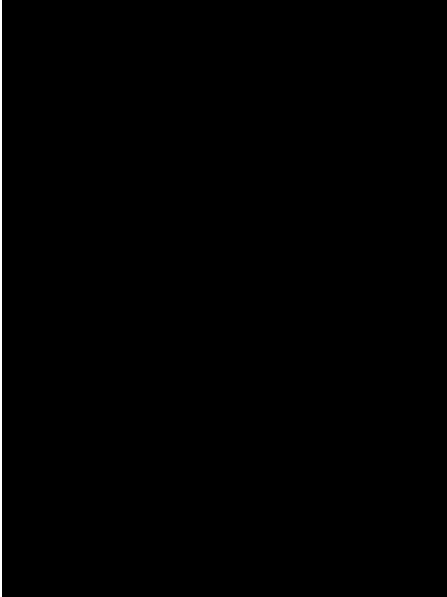
If we are to succeed in the years ahead, we need to transform the skills landscape. Students need to be guided towards what they do best and supported to achieve their potential. Employers need to know that there will be a pool of talent able to deliver the opportunities they create. Providers need to be celebrated and respected as the enablers of our skills-based economy.

Skills England has been established to accelerate our progress. We will:

- Seek to understand employers' skills requirements in the short, medium and long term and ensure that provision will meet demand;
- Work with providers in both further education and higher education to clarify and strengthen the qualifications landscape and focus hard on successful outcomes for students;
- Work with the schools system to emphasise that the foundation of any skills development is satisfactory levels of attainment in literacy and numeracy, and support our schools in the provision of high quality advice to students on career opportunities and pathways;
- Work with employers to bring the skills agenda into the Boardroom, under the sponsorship of Chairs and CEOs, and to encourage the celebration of continuous improvement and skills development in the workplace;
- Encourage employers to step-change their investment in skills, partly through improved flexibility in the operation of the Levy and partly through better cooperative working at sector level;
- Collaborate intensively with our colleagues across government and in the regions. Ultimately, skills are nurtured locally for local employers. The centre can facilitate and enable but must not dictate. And whilst we are called Skills England, the UK's skills needs do not change or stop at Carlisle or Chepstow. We will work closely with our colleagues in the devolved nations to ensure that students and employers (the customers of our system) have a seamless experience throughout the four nations.

This is the first report by Skills England. It does nothing more than set the scene. I have been delighted by the response from all quarters to its establishment and have high hopes that our ambitions can be fulfilled.

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES



A handwritten signature in blue ink, appearing to read 'R. Pennycook', written in a cursive style.

Richard Pennycook
Interim Chair of Skills England

Executive Summary

The government's first mission is to grow the economy and that will only be possible if we harness the talent of our people, meet businesses' skills needs and break down the barriers to opportunity. Skills England will transform the skills system to make it truly world leading. It will help to build a high-skill, high-productivity workforce that is matched to employers' needs and ensure that everyone, regardless of their background, can access the opportunities they need to thrive.

To provide an initial foundation for developing its wider set of functions, together with its partners in the system, this report presents Skills England's first assessment of skills needs in the economy. Skills England will take forward further consultation on the issues raised in this report over the autumn.

Summary of key findings

- There are some significant skills barriers to growth that Skills England aims to overcome:
 - UK employers report that over a third of UK vacancies in 2022 were due to skills-shortages, a relatively big increase from the period 2013 to 2017, where skills-shortage vacancies (SSVs) remained stable at around 22%.¹
 - For employers, the qualifications landscape can be opaque; skills supply may be mismatched against demand; and there are insufficient mechanisms for encouraging employers to invest in skills.
 - For learners, the pathways into skilled careers are not always sufficiently clear, and the current skills system and employer investment in skills are not always equipping learners with the essential literacy, numeracy and digital skills they need to succeed.
- Studies have consistently highlighted the importance of skills for economic growth, with around one third of average annual UK productivity growth attributable to an expansion of skills available in the workforce between 2001 and 2019.² Additionally, with over 300 higher education providers operating in the UK, the sector contributed around £265bn to the UK economy in 2021-22.^{3,4}

¹ Employer Skills Survey 2022: [Employer skills survey: 2022 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/108422/employer_skills_survey_2022.pdf)

² https://assets.publishing.service.gov.uk/media/63f4bee8d3bf7f62eaaf2e75/Skills_and_UK_productivity.pdf

³ [LE-UUK-Impact-of-university-TL-and-RI-Final-Report.pdf \(universitiesuk.ac.uk\)](https://www.universitiesuk.ac.uk/le-uuk-impact-of-university-tl-and-ri-final-report)

⁴ [The economic impact of higher education teaching, research, and innovation - London Economics](https://www.london-economics.com/publications/the-economic-impact-of-higher-education-teaching-research-and-innovation)

- The labour market and the skills required to increase productivity and economic growth vary considerably by region. Employment rates vary across the country and Local Skills Improvement Plans have indicated how specific sector skills are concentrated in different regions. For example, one third of the UK's finance industry is based in London and a large proportion of the Nuclear industry is in the North West.^{5,6} Furthermore, the proportion of people highly-qualified ranges considerably, with 61% of those in London qualified at level 4 or above, compared to 38% in Cornwall and 33% in Greater Lincolnshire.⁷
- Employer investment in training has been in steady decline over the past decade. Training expenditure is at its lowest since the introduction of the Employer Skills Survey (ESS) in 2011, with investment per employee down by 19% in real terms.⁸ More research is needed, but from the available evidence, we hypothesise that this fall in investment has been driven by a range of different causes. These include: employers perceiving that their staff are sufficiently skilled; not having the resources to upskills staff beyond minimum requirements; a lack of a clear industrial strategy providing a foundation for a linked skills strategy; strong international labour supply and flexible labour market; a shift in attitudes, shifting responsibility for upskilling from employers to government; and low overall business investment.
- Across the UK, almost 1 in 10 or over 2.5m roles are in critical demand.⁹ More than 90% of these are in roles requiring periods of work-related training or education.
- Demand for occupations, and associated skills, differs across industries. The health and social care industry has the highest volume of roles in demand. Other high demand occupations include those in the education, manufacturing, and professional scientific and technical industries.
- Looking to the future, many of the skills needed in the labour market in 2035 will be impacted by demographic and technological shifts, as well as the transition to more green skills. Many of the occupations currently in demand are also those

⁵ [State of the sector annual review of UK financial services 2023 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

⁶ [Record growth in nuclear workforce from new build projects - Nuclear Industry Association \(niauk.org\)](https://niauk.org)

⁷ department-for-education.shinyapps.io/local-skills-dashboard/

⁸ Employer Skills Survey 2022, https://assets.publishing.service.gov.uk/media/65855506fc07f3000d8d46bd/Employer_skills_survey_2022_research_report.pdf

⁹ Skills England has produced a composite index of seven indicators (called the "Occupations in Demand" index) looking across occupations to identify which are currently seeing high levels of demand. See Annex A for more information.

projected to see employment growth in the future, including those in health, social care and life sciences, green jobs, AI, creative industries and service-orientated roles. Occupations requiring higher education (such as building and civil engineers) and interpersonal skills (e.g. youth and community workers) are expected to see the most employment growth by 2035.¹⁰

- Sectors will be affected differently by these influences on the labour market. For example, in construction the transition towards green skills will require the development of new and updated qualifications to meet energy efficiency retrofit targets. In other areas, such as hydrogen, existing green-skilled workforces will need to grow substantially to meet new demand. There is a need to help individuals and businesses to gain new skillsets while also expanding the workforce to meet increasing skills demands.
- Whilst rapidly changing technologies can create uncertainty around upskilling and reskilling needs, we know that an organisation's ability to adopt and deploy new technologies directly affects their ability to grow and innovate. Technology developments in areas such as AI will increase the demand for skills to harness these new technologies in many sectors, while in others (for instance, Cyber Security) such developments may change the focus of roles and lead to the development of new specialisms.

Following publication of this report, Skills England will build on its early engagement with a wide range of stakeholders by conducting a series of roundtables and webinars in the autumn to further test and refine the initial assessment of skills needs (including in key sectors), and provide opportunities to help shape decisions on how it will execute its functions.¹¹ It will undertake and share further analysis, including the delivery of a standardised skills taxonomy for the UK and mapping occupations onto education pathways to understand the most common routes into priority professions. It will also consult employers and other key organisations to provide initial views on what high-value training should be accessible through the Growth and Skills Levy.

¹⁰ [Labour market and skills projections: 2020 to 2035 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/labour-market-and-skills-projections-2020-to-2035)

¹¹ This report outlines key emerging trends in four sectors where there is strong evidence of economic importance and available forecasts: digital technologies, life sciences, green, and housebuilding. This provides an illustration of how Skills England will approach sector assessments. Future skills assessments will focus on sectors identified with significant skills needs, including those identified by the Industrial Strategy Council and wider Government priorities.

Introduction

The Prime Minister and Secretary of State for Education announced the establishment of Skills England on 22 July 2024, launching it in shadow form with immediate effect.¹²

Skills England will:

- Provide an authoritative assessment of national and regional skills needs in the economy now and in the future, combining the best available statistical data with insights generated from employers and other key stakeholders.
- Ensure that there is a comprehensive suite of apprenticeships, training and technical qualifications for individuals and employers to access, and which are aligned with skills gaps and what employers need. As part of this, it will play a crucial role in identifying which training should be available via the new Growth and Skills Levy.
- Work together with Combined Authorities¹³ and regional organisations (such as employer representative bodies) to ensure that regional and national skills needs are met (at all levels – from essential skills to those delivered via higher education), in line with the forthcoming Industrial Strategy.

Crucially, Skills England will ensure that skills sit at the heart of joined-up decision making across government and bring HE and FE systems closer together. It will work closely with the Industrial Strategy Council so that we have the skilled workforce needed to deliver a clear, long-term plan for the future economy and the Migration Advisory Committee to ensure that growing the domestic skills pipeline reduces our reliance on overseas workers. Other critical links will include close work with the devolved administrations to boost growth and spread opportunity UK-wide; the Department for Energy Security and Net Zero (DESNZ) which has set up the Office for Clean Energy Jobs to meet our Clean Energy Superpower Mission; the Department for Work on Pensions on the government's plan to Get Britain Working; and with the Department for Science, Innovation and Technology on priority science and technology sectors.

It is by bringing these functions together within a single organisation, with a single feedback loop back into government to help inform funding and policy decisions, that Skills England will be able to affect change.

This report sets out in more detail how skills can drive UK growth, the challenges in the system that Skills England is being designed to address, and the functions it will perform

¹² [Skills England to transform opportunities and drive growth - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/skills-england-to-transform-opportunities-and-drive-growth)

¹³ As well as equivalent authorities in places which have devolution deals but where no Combined Authority is present.

to meet those challenges (chapter one). It provides more context for the creation of Skills England by describing the economic and skills landscape that Skills England is navigating and the skills challenges that can limit growth (chapter two). It also provides Skills England's initial assessment of the UK's skills needs, outlining current jobs in demand, projecting how these jobs will grow and looking in detail at four key areas anticipated to be impacted by future megatrends (chapter three). The report concludes with a description of the steps that will follow its publication.

This is the first step in what will be an ongoing, iterative process towards developing an authoritative assessment of skills needs in the economy, involving close collaboration with a wide range of stakeholders over the coming months. It is intended to provide a springboard for Skills England to lead further dialogue between employers, unions, providers, experts, regional bodies and government to interrogate, corroborate and build out our shared understanding of what skills the economy needs. This will, in turn, provide the strong foundation on which Skills England can develop and deliver its wider set of functions to help transform the skills system, helping to boost growth and spread opportunity in support of the government's five missions.

Chapter 1: Skills England will help boost growth and spread opportunity

This chapter sets out how skills drive economic growth and spread opportunity, before describing several challenges that are preventing the skills system from realising its ability to drive progress across the Government's five missions. It concludes by explaining how Skills England will address these challenges, bringing together key functions to maximise connections and deliver tangible benefits for businesses and individuals.

Skills drive economic growth and spread opportunity

Studies have consistently highlighted the importance of skills to economic growth, with around one third of average annual UK productivity growth between 2001 and 2019 attributable to an expansion of skills available in the workforce.¹⁴ Training and education build skills, which in turn contribute to growth and productivity by:

- **Ensuring that employees perform their jobs more efficiently and effectively.** Knowledge and new capabilities can support smarter ways of working. They also promote innovation: firms that are more skilled are more innovative.¹⁵
- **Supporting businesses to reap the benefits of investment in new technology and capital.** As businesses invest to become more automated and capitally intense to increase their productivity, they need more skilled workers to use this new technology.
- **Addressing shortages in sectors and regions where skills gaps are limiting growth.** Although the size of the impact varies, increases in skill levels have been shown to contribute to productivity growth in all sectors and regions.¹⁶ Cities with a high share of their employment in high-skill occupations, such as Leamington Spa and Reading, experienced the fastest employment and productivity growth in recent decades.¹⁷ Strategic education and training choices can unblock productivity sticking points and support growth, especially in the sectors and regions where shortages are a clear issue.

¹⁴https://assets.publishing.service.gov.uk/media/63f4bee8d3bf7f62eaaf2e75/Skills_and_UK_productivity.pdf

¹⁵ [Workforce Skills and Innovation: An Overview of Major Themes in the Literature | OECD Science, Technology and Industry Working Papers | OECD iLibrary \(oecd-ilibrary.org\)](#)

¹⁶ [Skills and UK productivity research report \(publishing.service.gov.uk\)](#)

¹⁷ https://industrialstrategycouncil.org/sites/default/files/attachments/UK%20Regional%20Productivity%20Differences%20-%20An%20Evidence%20Review_1.pdf

- **Supporting transitions between jobs and back into work.** Increasing the size of the active workforce makes it easier for employers to recruit individuals with the right skills.
- **Attracting foreign direct investment into the UK.** In turn, this can boost economic growth and reduce regional inequalities.^{18,19} Skilled workers enhance productivity and innovation, making the UK an attractive destination for foreign investors. This influx of investment not only creates jobs, but also stimulates technological advancement and knowledge transfer, further driving economic development.

Skills can also improve individual outcomes, which in turn contribute to enhanced growth and improved wellbeing as measured nationally. This happens through:

- **Increasing individuals' earnings,** leading to increased spending and improved health and wellbeing outcomes for individuals, as well as increased tax revenue, which allows for increased investment in public services.
 - In further education (FE), individuals who complete a level 2 qualification or level 3 qualification receive a wage premium of 9% or 16% respectively, 3-5 years after completion.²⁰
 - For those completing apprenticeships, individuals receive wage premiums of between 12% for level 2 apprenticeships and 22% for level 4/5 apprenticeships, 3-5 years after completion.²¹
 - Graduates receive an earnings premium of, on average, over £100k over their lifetime compared to non-graduates (although this can vary significantly by subject and subsequent industry sector, degree classification, and student characteristics, such as socio-economic status and ethnicity).²²
- **Increasing the likelihood of future employment (including high-skilled employment),** thereby growing the size of the active workforce.

¹⁸ [High-quality skills as a means of attracting FDI and reducing regional inequalities - HEPI](#)

¹⁹ [Skills-Taskforce-2022-FINAL.pdf \(worldskillsuk.org\)](#)

²⁰ [Measuring the Net Present Value of further education in England 2018-19 \(publishing.service.gov.uk\)](#)

²¹ [Measuring the Net Present Value of further education in England 2018-19 \(publishing.service.gov.uk\)](#)

²² [The impact of undergraduate degrees on lifetime earnings \(publishing.service.gov.uk\); The returns to undergraduate degree by socio-economic group and ethnicity; How much does it pay to get good grades at university?](#)

- For example, achieving a full level 3 qualification increases the likelihood of being employed 3-5 years after completion by 4 percentage points for a learner age 19+.²³
- Graduates are almost three times more likely than non-graduates to be in high-skilled employment.²⁴
- **Increasing individuals' opportunities and reducing inequalities**, as well as improving individuals' health and wellbeing and enhancing social cohesion.^{25,26,27,28}
 - For example, apprentices from disadvantaged backgrounds see larger wage premiums from apprenticeship completion than their non-disadvantaged peers, and the returns to qualifications are higher in areas with poorer economic performance.^{29,30}
 - In higher education, for women the average net discounted lifetime return to £140k for the lowest socioeconomic status (SES) and £70k for the top. For men, the returns are similar to the estimates for women for the bottom four SES quintiles, but higher at around £110k for the top SES quintile.³¹

This evidence highlights how important boosting skills will be to delivering the Government's five missions, particularly those focused on growth and opportunity.

²³https://assets.publishing.service.gov.uk/media/628e2505d3bf7f1f3c97ddaf/Would_additional_investment_in_skills_benefit_areas_of_the_country_that_are_poorer_performing_economically.pdf Measuring the Net Present Value of Further Education in England 2018-19 (publishing.service.gov.uk)

²⁴ [Graduate labour market statistics, Calendar year 2023 - Explore education statistics - GOV.UK \(explore-education-statistics.service.gov.uk\)](https://explore-education-statistics.service.gov.uk)

²⁵ [Learning and Work | Time for Action Skills for economic growth and social justice.pdf](#)

²⁶ [Education and Health: Insights from International Comparisons | NBER](#)

²⁷ [Education, Happiness and Wellbeing | SpringerLink](#)

²⁸ [Improving Health and Social Cohesion through Education | Educational Research and Innovation | OECD iLibrary \(oecd-ilibrary.org\)](#)

²⁹ [Apprenticeships and Social Mobility](#)

³⁰ [Would additional investment in skills benefit areas of the country that are poorer performing economically? \(publishing.service.gov.uk\)](#)

³¹ [The returns to undergraduate degrees by socio-economic group and ethnicity](#), Institute for Fiscal Studies, 2021

The Government's five missions

- 1) Kickstart economic growth** to secure the highest sustained growth in the G7 – with good jobs and productivity growth in every part of the country making everyone, not just a few, better off.
- 2) Make Britain a clean energy superpower** to cut bills, create jobs and deliver security with cheaper, zero-carbon electricity by 2030, accelerating to net zero.
- 3) Take back our streets** by halving serious violent crime and raising confidence in the police and criminal justice system to its highest levels.
- 4) Break down barriers to opportunity** by reforming our childcare and education systems, to make sure there is no class ceiling on the ambitions of young people in Britain.
- 5) Build an NHS fit for the future** that is there when people need it; with fewer lives lost to the biggest killers; in a fairer Britain, where everyone lives well for longer.

Several challenges must be overcome to create a high-performing skills system

The skills system in England has a crucial role in ensuring that businesses and individuals are equipped to thrive in the modern economy. However, several features of its current design and operation prevent it from being the driver of economic growth and individual opportunity that the country needs.

Foremost among these challenges is fragmentation. For the skills system to enable opportunity and be equipped to fill the skills gaps described in chapter two, its different parts must become more coherent, underpinned by a unified, authoritative assessment of skills needs in the economy. Data – including on the extent and causes of skills gaps and how far existing provision helps fill them – must flow between central government, regional bodies and local providers, with strong feedback loops and lines of accountability. Higher education and further education systems must be brought closer together. Unions must be key partners, as is the case in high-performing systems elsewhere in Europe. Localised pockets of innovative best practice must be identified quickly, evaluated effectively and spread rapidly.

There are also other, related challenges. Government-funded training products must be developed and made available in a more flexible and responsive way. There will be 1.4m

new jobs in the economy by 2035.³² When acute skills needs emerge as the labour market evolves, or new technology presents opportunities to gain a competitive advantage, the skills system must be quick to respond through developing new training products and updating existing ones, flexing them to the needs of different sectors where appropriate. These products must always provide a genuine passport for progression. They should be designed in a way that prioritises quality and rigour while ensuring accessibility for those with additional needs or who, for example, need to fit learning around other commitments.

The skills system has also been too complex, making it confusing and difficult to navigate for both individuals and businesses, and contributing to insufficient employer investment in skills. Employers, training providers and their representative bodies report that it is hard to navigate the skills programmes available. They identify a lack of clarity in how different programmes fit together and difficulty understanding the responsibilities of different government bodies.³³ The impact is that employers, and particularly smaller businesses, may be dissuaded from engaging.³⁴ Employer investment in training lags behind many comparator nations with UK employers investing half as much per employee in vocational training as the EU average, and fell by 8% between 2017 and 2022.^{35,36} This has resulted in fewer people being able to access opportunities to upskill or retrain, constraining productivity.

Employers play a key role in investing in training and must be supported to engage with the skills system in a simple and consistent way. They must be able to easily obtain information about the training products that are available, the differences between them, and how they provide opportunities for boosting productivity. Similarly, individuals must be able to access information which supports them to make effective decisions about how best to upskill or retrain, wherever they live or whatever their background.

³² Technological scenario of Skills Imperative 2035 projections. Available at <https://www.gov.uk/government/publications/labour-market-and-skills-projections-2020-to-2035>

³³ National Audit Office, Developing workforce skills for a strong economy (2022), [Developing workforce skills for a strong economy \(nao.org.uk\)](#), pp. 46, 52.

³⁴ National Audit Office, Developing workforce skills for a strong economy (2022), [Developing workforce skills for a strong economy \(nao.org.uk\)](#) p. 46.

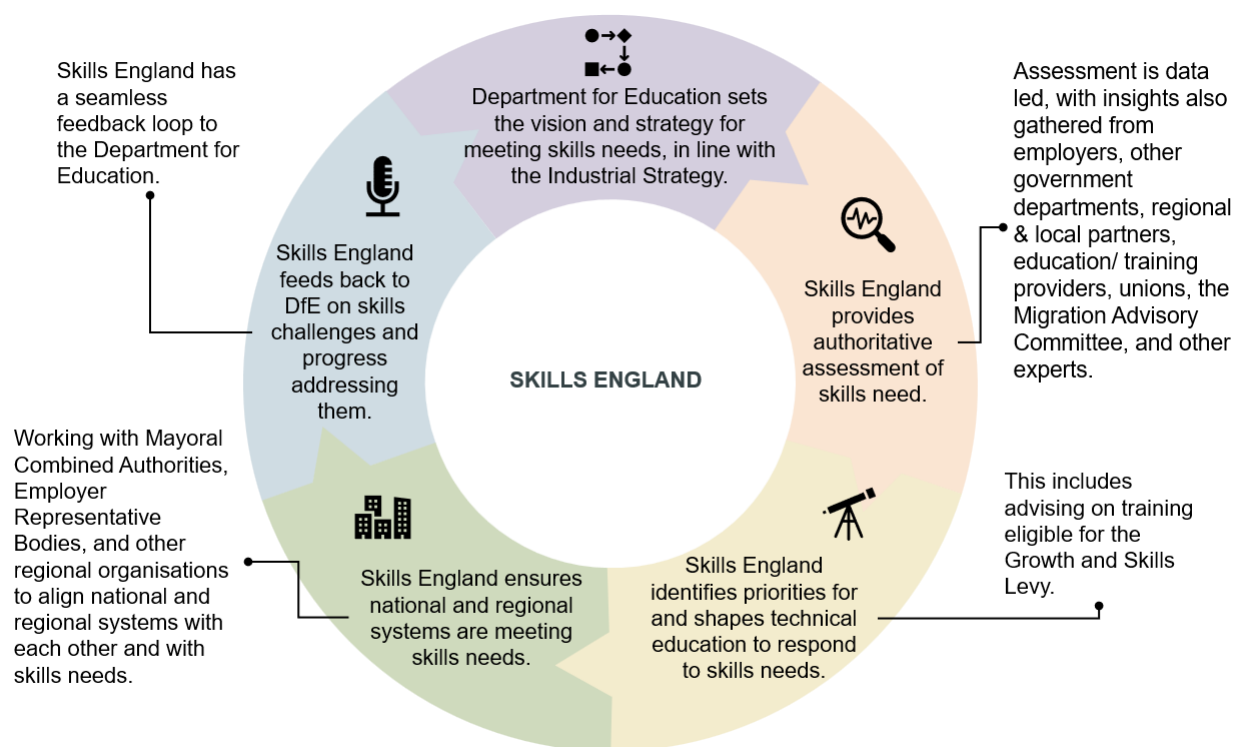
³⁵ [Investment in training and skills | Institute for Fiscal Studies \(ifs.org.uk\)](#). Note this conclusion is drawn from 2015 data.

³⁶ Skills England Analysis of Employer Skills Survey (2022), <https://explore-education-statistics.service.gov.uk/find-statistics/employer-skills-survey/2022>

How Skills England will address these challenges

Skills England is being set up to address these challenges. It will transform the skills system so that it is clearer, more data-driven, more joined-up and more responsive. This, in turn, will support delivery of the Government's five missions.

Figure 1: Skills England's key functions



Skills England will a) help to build a high-skill, high-productivity workforce that is matched to employers' needs and enables strong and sustained economic growth, and b) ensure that everyone, regardless of their background, can access the opportunities they need to thrive. It will join up previously disparate functions into a single organisation, with the ability to drive positive behaviours throughout the system and provide a single feedback loop into Government.

Unified assessments of national skills needs

In collaboration with its partners across the system, Skills England will develop and iterate authoritative analyses of national and local skills needs. The first of these – a broad, initial assessment of skills needs – is included in Chapter 3 of this report. It will be followed by more detailed reporting as Skills England continues to analyse data and insights. Local Skills Improvement Plans (LSIPs) have identified both significant local differences and some key commonalities in the skills required to boost economic growth and plug skills gaps. Skills England's initial assessment of skills needs draws on evidence from LSIPs, as well as a government-wide audit of skills data and previous data

and insights from the Unit for Future Skills and the Institute for Apprenticeships and Technical Education (IfATE).³⁷

Many sources of data exist on labour market jobs and skills which facilitate national and local measures of demand and employment for different cuts of the labour market. Skills England has produced one such measure (called the “Occupations in Demand” index) to support its skills needs assessment.³⁸ It uses information from seven indicators across the labour market, including wage growth, online job adverts and visa applications to index demand for occupations. The ‘Next steps’ chapter at the end of this report sets out more examples of future analytical work that Skills England will publish, as well as outlining stakeholder engagement to test and refine this initial skills assessment.

Producing these assessments and ensuring they are understood, recognised by, and accessible to all parts of the skills system will provide greater clarity on which occupations and sectors are facing skills gaps. It will also give an indication of the scale of these gaps, and where in the country they are present or anticipated to grow. This deep, data-led understanding of skills needs will provide a solid platform on which central and local government, employers, providers, unions, and regional organisations (e.g. Employer Representative Bodies) can come together to make effective decisions on where to focus to close skills gaps and mismatches.

Qualifications and training designed in line with skills needs and made accessible to employers and learners

Working with the Department for Education, Skills England will ensure that there is a comprehensive suite of apprenticeships, training and technical qualifications for individuals and employers to access that are aligned with skills needs, building on the progress made by IfATE. This will include linking the national picture of skills needs with occupational standards, working closely with employers and other partners. Skills England will also work with the higher education sector to ensure graduates are well prepared for employment opportunities.

Government will introduce a new Growth and Skills Levy, which will enable employers to access a broader range of high-quality training offers and thereby address the rigidity of the current Apprenticeships Levy. Skills England will play a crucial role in determining which training will be eligible for the expanded levy, in line with its assessment of skills needs and future demand, and through extensive engagement with its partners in the skills system.

³⁷ The Unit for Future Skills has now moved to form Skills England Analysis, as of 5th July 2024.

³⁸ [Occupations in demand in 2024](#), Skills England

Local skills systems which meet skills needs and form a coherent national network

Combined Authorities are the central commissioners of adult education in their areas and play an essential role in boosting skills in line with economic need.

Skills England will collaborate with Combined Authorities³⁹ and regional organisations, as well as other local and regional partners (e.g. Employer Representative Bodies). It will support them to construct skills systems which reflect and feed into both local and national priorities. Together with the Department for Education, it will ensure that all post-16 providers (including school sixth forms, sixth form colleges, further education colleges, independent training providers, institutes of adult learning, and higher education institutions) are incentivised to meaningfully engage in and help grow their local skills ecosystems.

We know that there are pockets of good practice where institutions are actively participating in local skills planning, with providers of higher and further education working closely with local organisations to create centres of excellence in boosting skills. Skills England will identify examples of best practice and encourage and incentivise these kinds of partnerships across the country. The UK's higher education providers are world-leading and already provide a significant pipeline for meeting the UK's current and future skills needs. There are especially strong benefits to be realised by ensuring higher education institutions are even more engaged with local skills needs, as well as those that are strategically important for our country, such as medicine and science.

Skills England will also support the creation of a set of new, specialist Technical Excellence Colleges to deliver the highly trained workforces that local economies need. This new system will align with the Government's commitment to devolve more adult skills funding to Combined Authorities and equivalent authorities, as part of its pledge to deepen and widen devolution across the country. This combination of funding, information, networks and incentives will empower leaders to boost skills development in their areas.

Skills at the heart of joined-up decision making across government

Skills England will not only help to bring about a more coherent, data-driven skills system, but it will also plug into other crucial areas to enable joined-up decisions, helping Government deliver on its five missions. It will consolidate and draw on data from across

³⁹As well as with equivalent authorities in places which have devolution deals but where no Combined Authority is present.

government on where skills gaps exist and what is causing them – enabling a clearer diagnosis of our skills challenges. And it will find solutions, helping to address complex challenges wherever possible.

In doing so it will collaborate across government organisations, including, but not limited to:

The Industrial Strategy Council (ISC) to develop the skilled workforce needed to deliver a clear, long-term plan for the future of the economy. Skills England will work closely with the ISC on the introduction of a new Industrial Strategy, which will develop in partnership with employers as well as trade unions and local leaders. The Industrial Strategy will aim to secure investment into crucial sectors of the economy to drive long-term sustainable, inclusive and secure growth.

The Department for Business and Trade (DBT) to support businesses and investors in navigating, participating in, and developing the UK skills landscape.

The Department for Work and Pensions and his Majesty's Treasury on understanding labour market trends and supporting Government's plan to Get Britain Working, driving towards the UK's long-term ambition of an 80% employment rate (the highest in the G7). A forthcoming white paper will focus on preventing people from falling into economic inactivity and help them return to work, developing earning potential, building skills that enable career progression and supporting people to work more hours and in higher paid roles. This will include delivery of the Youth Guarantee, which will provide greater support for young people to access education and training, alongside reform of employment support by combining the National Careers Service and Jobcentre Plus.

The Migration Advisory Committee so that growing the domestic skills pipeline supports a reduced reliance on overseas workers.

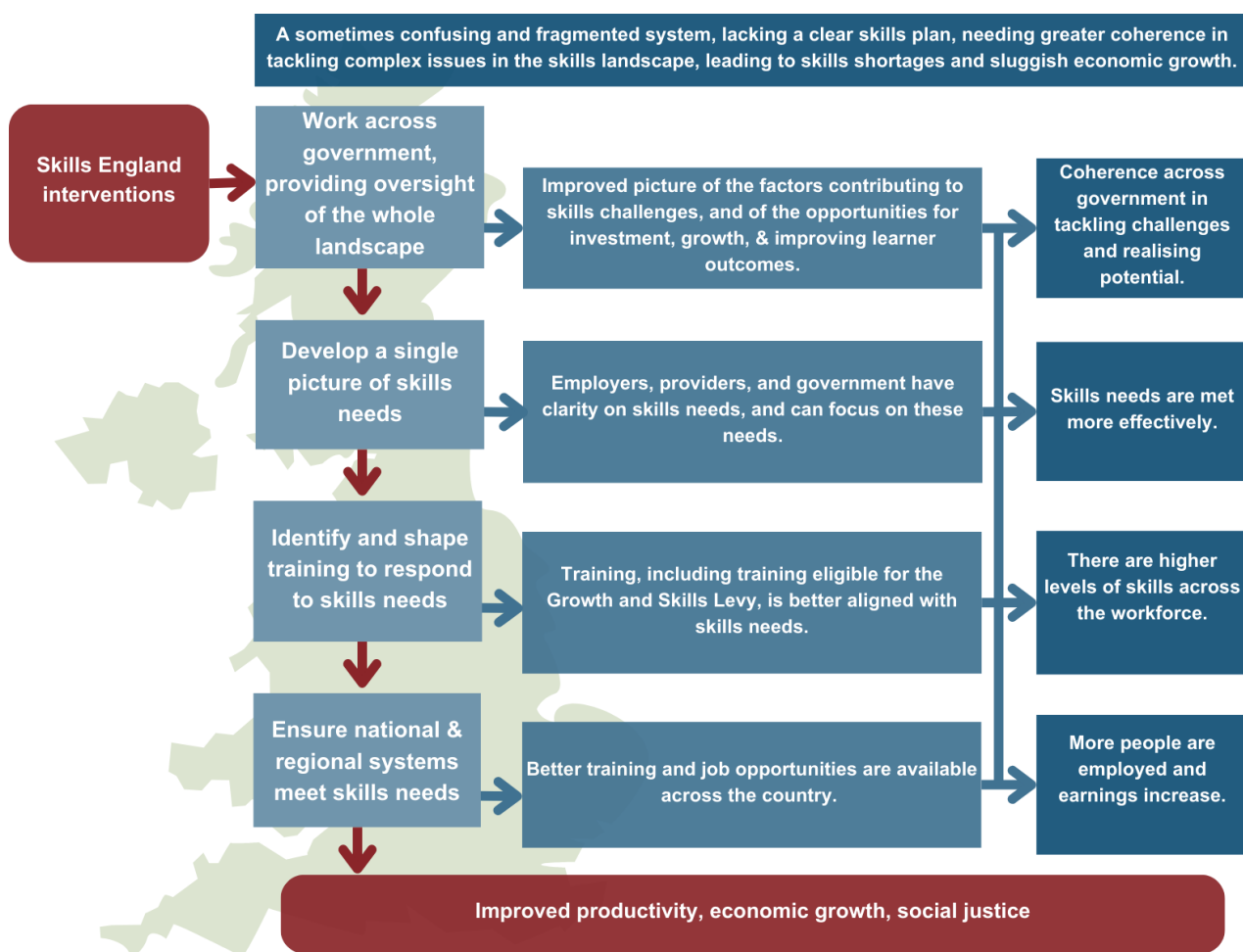
Devolved administrations in Scotland, Wales and Northern Ireland. Cross-UK collaboration will help to spread best practice and will equip the four nations to support one another in boosting growth and spreading opportunity throughout the UK. Opportunities for improved collaboration include more effective data sharing to support a better understanding of the UK labour market; identifying challenges in how the UK's skills systems interact, and how these can be overcome to facilitate growth across nations; providing fora for cross-border working on specific sectors; and pinpointing and implementing ways to facilitate investment in skills.

The Department for Energy Security and Net Zero and the Office for Clean Energy Jobs to ensure the UK has the skills needed to deliver the Clean Energy Mission, feeding into Skills England's wider assessment of skills needs.

Functions which support and inform one another, with a feedback loop into government

It is by bringing these functions together within a single organisation, with a single feedback loop back into Government to help inform funding and policy decisions, that Skills England will be able to affect change – i.e. by bringing together key stakeholders to identify and assess skills needs, ensuring that this assessment is reflected in the content and provision of technical qualifications and training, and then ensuring that national and local skills systems evolve in line with the identified needs and available training (see Figure 2).

Figure 2: Skills England interventions aim overall to improve productivity, growth and social justice



To support its core functions, Skills England will also work closely with employers, unions, government departments, local and regional authorities and organisations and other agencies to help:

- a) ensure the skills system is clear and navigable for employers and delivers training that they need;
- b) ensure the skills system is clear and navigable for individuals (both young people and older adults), strengthening careers pathways into jobs across the economy, and;
- c) increase the quality and quantity of skills development in the workplace.

Chapter 2: Skills, Growth, and Challenges

This chapter outlines the economic and skills landscape that Skills England is navigating. It reviews recent trends in labour productivity and economic growth and examines current UK labour market conditions. It then identifies the skills challenges for growth, drawing on evidence and international comparisons of UK skills mismatches and low employer investment. It concludes with a discussion on future megatrends likely to influence the UK labour market.

A decade of sluggish growth

Skills drive growth. They do this by enhancing workforce productivity through improved knowledge and capabilities, addressing skills shortages, and aiding job transitions. Training and education build these skills, leading to more efficient job performance, inspiring innovation and attracting more investment to the UK. More skills also support better use of new technology and capital investment. Skills also help fill local and sectoral skill gaps, closing gaps in regional productivity that will support both the Government's Growth and Opportunity Missions.

Skills transform opportunities. Beyond GDP growth, skills boost individual earnings, employment prospects, and social outcomes, contributing to overall UK health and wellbeing and to the Government's Opportunity Mission, breaking the link that children's future earnings are determined by those of their parents.^{40,41}

Labour productivity and growth

Compared to the decade before the financial crisis of 2008-09, the UK has experienced only modest economic growth, lowered by sluggish productivity. Since 2010, the UK experienced less than half the rate of economic growth seen between 1996 and 2010.⁴² The only G7 nation seeing slower productivity growth since the financial crisis is Italy.⁴³ Though the UK's post-crisis growth slowdown is not unique, the economy has seen further setbacks in recent years following the COVID-19 pandemic and soaring energy prices.

⁴⁰ L&W (2020) <https://learningandwork.org.uk/wp-content/uploads/2020/02/Time-for-Action-Skills-for-economic-growth-and-social-justice.pdf>

⁴¹ [Mission-breaking-down-barriers.pdf \(labour.org.uk\)](#)

⁴² Skills England analysis of ONS real GDP per capita data, <https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/ihxw/pn2>

⁴³ <https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/bulletins/internationalcomparisonsofproductivityfinalestimates/2021>

Underlying this is a significant slump in productivity growth compared to pre-2008 levels (Figure 3). Had UK productivity continued to grow at the pre-crisis rate, it would be nearly a third (31.7%) higher than it is today.⁴⁴

Figure 3: UK productivity growth has been weak since the Financial Crisis

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES



Source: Skills England analysis of ONS data

Skills play an important role in the UK's productivity shortfall. If the level of skills mismatch in the UK economy were brought into line with OECD best practice levels, average labour productivity could be increased by as much as 5% (equivalent to current GDP being over £100bn higher).⁴⁵

Higher education as a driver for economic growth

Higher education providers are central to the missions of this government, acting as vital engines of economic growth. They provide high-quality graduates, are large local employers, sources of innovation and both domestic and international students contribute considerably to local economies. With over 300 higher education providers operating in the UK, UUK analysis suggests that the sector contributed around £265bn to the UK

⁴⁴ [Output per hour worked, UK - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk)

⁴⁵ [Skill Mismatch and Public Policy in OECD Countries | OECD](#)

economy in 2021-22.^{46,47} The sector supports wider economic growth through its high return on investment of public expenditure, UUK analysis suggests that each £1 of public money invested in higher education generates £14 back into the economy.⁴⁸

Higher education providers also play a key role in local and regional economies and in the academic year 2022/23, HE providers in the UK employed approximately 240k staff with academic contracts. These providers are some of the largest employers in areas of the North East.

One of the major strengths of the UK's skills system is the high proportion of people from all backgrounds who achieve higher level degree qualifications at high-quality universities. Much of our businesses and economy is dependent on skills gained in three-year degree courses, and future job projections suggest that professional occupations, those typically requiring a degree, are expanding.⁴⁹ On average, students completing a degree will be £100k or more better off.⁵⁰ Additionally, the success of degree apprenticeships has been a significant development. Since their introduction in 2015, degree apprenticeships have grown rapidly and are now seen as a vital pathway for students seeking both education and employment opportunities⁵¹.

Tight labour market conditions have limited skills investment and made recruitment more difficult

In recent years, tight labour market conditions (when it is more difficult to recruit staff as there was a smaller pool of potential workers to fill a larger number of jobs) have likely reduced incentives to invest in skills for both employers and individuals. Since the COVID-19 pandemic, the supply of people actively looking for work has dropped, with unemployment reaching its lowest level since the 1970s. At the same time, demand for labour, shown by job vacancies numbers, has increased. In 2022, the labour market reached its tightest when the number of unemployed workers briefly surpassed the number of job vacancies. This coincided with the percentage of businesses reporting recruitment difficulties reaching a peak (of 13.4%) in late 2022.⁵²

Greater competition between employers to attract skilled workers has created upward pressure on wages, making it easier for individuals to seek higher pay through job

⁴⁶ [LE-UUK-Impact-of-university-TL-and-RI-Final-Report.pdf \(universitiesuk.ac.uk\)](#)

⁴⁷ [The economic impact of higher education teaching, research, and innovation - London Economics](#)

⁴⁸ [The economic impact of higher education, teaching, research and innovation \(universitiesuk.ac.uk\)](#)

⁴⁹ [Future skills projections and analysis - GOV.UK \(www.gov.uk\)](#)

⁵⁰ [The impact of undergraduate degrees on lifetime earnings | Institute for Fiscal Studies \(ifs.org.uk\)](#)

⁵¹ [future-degree-apprenticeships.pdf \(universitiesuk.ac.uk\)](#)

⁵² [Business insights and impact on the UK economy - Office for National Statistics \(ons.gov.uk\)](#), this trend is also reported in local areas [Local skills improvement plans and designated employer representative bodies - GOV.UK \(www.gov.uk\)](#).

switching rather than increased education or training. From a business perspective, increased labour costs and difficulty in recruiting can lead to employers prioritising immediate labour needs over long-term skills development.

Overall, these conditions have left a legacy of large skills gaps, meaning finding adequately skilled workers has been more difficult for businesses. This was something that was highlighted across multiple Locals Skills Improvement Plans (LSIPs).⁵³ However, it is notable that since 2022, labour market conditions have been loosening. This is demonstrated in recruitment: the percentage of business reporting recruitment difficulties dropped to 7.4% in June 2024.⁵⁴ The percentage of firms facing worker shortages has also declined significantly from late 2022 to June 2024.

Underlying the low levels of unemployment recently seen are increasing levels of disengagement, reducing the overall pool of workers. Since COVID-19, growth in the active workforce has fallen below trend and a record 9.4m working age people were recorded as economically inactive in February-April 2024. Driving this growth in inactivity is sickness; the number of working-age individuals out of work due to long-term sickness hit a record 2.8m in February-April 2024 – some 700k more than before the pandemic.⁵⁵ Disengagement among young people who would be entering the workforce is also on the rise. There is a growing proportion of 16-to-24-year-olds not in education, employment or training (NEET), up 0.9 percentage points (to 12.2%) on the year in the second quarter of 2024.⁵⁶ Once NEET, young people are likely to remain NEET or become long-term unemployed.^{57,58}

Over 2.4m students were enrolled in higher education with English providers in academic year 2022/23, an increase of approximately 80k (3%) over the previous year.⁵⁹ Participation in further education courses is also increasing: in 2022/23 there were 1.8m students participating, an increase of 5.8% over the previous year.^{60,61}

⁵³ [Local skills improvement plans and designated employer representative bodies - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/local-skills-improvement-plans-and-designated-employer-representative-bodies)

⁵⁴ [Business insights and impact on the UK economy - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk/economy/budgetandpublicfinance/businessinsightsandimpactontheuk), this trend is also reported in local areas [Local skills improvement plans and designated employer representative bodies - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/local-skills-improvement-plans-and-designated-employer-representative-bodies).

⁵⁵ [Labour market overview, UK - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk/economy/labourmarket/labourmarketoverview)

⁵⁶ [Young people not in education, employment or training \(NEET\), UK - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk/peopleandpopulation/youngpeople/youngpeoplenotineducationemploymentortraining)

⁵⁷ [NEET: Young People Not in Education, Employment or Training - House of Commons Library \(parliament.uk\)](https://www.parliament.uk/researchandpublications/2020-07-20/young-people-not-in-education-employment-or-training)

⁵⁸ [Youth-Jobs-Gap-The-Long-Term-NEET-Population.pdf \(svdcdn.com\)](https://www.svdcdn.com/youth-jobs-gap-the-long-term-neet-population.pdf)

⁵⁹ [HE student enrolments by level of study \(Who's studying in HE? | HE Statistics Agency\)](https://www.he.ac.uk/who-s-studying-in-he/)

⁶⁰ [HE student enrolments by level of study \(Who's studying in HE? | HE Statistics Agency\)](https://www.he.ac.uk/who-s-studying-in-he/)

⁶¹ [Further education and skills, Academic year 2022/23 - Explore education statistics - GOV.UK \(explore-education-statistics.service.gov.uk\)](https://www.gov.uk/government/news/further-education-and-skills-academic-year-2022-23)

Skills challenges for growth

Local level disparities and immobility

The labour market and the skills required to increase productivity and economic growth vary considerably by region. At a high level, this is demonstrated by disparate employment rates. The South East boasts the highest employment rate at 78.6%, while the North East and Wales trail at 69.0% and 68.9%, respectively. Rates are also changing at a different pace: over the past year, employment in the North East decreased 4.8 percentage points whereas employment in London has increased by 1.6 percentage points.⁶² Rural, isolated, and dispersed populations also face unique skills challenges and recruitment difficulties. 52% of businesses in rural areas of the North East, South West and West Midlands reported difficulty hiring and retaining suitably skilled workers in 2023, compared to 47% in urban areas.⁶³

Skills England Analysis' [Local Skills Dashboard](#)⁶⁴

This provides published local data from a variety of sources, covering topics such as employment, qualifications, and education outcomes across England.

Data is available to view and download for various geographies, including local authority (LA), local skills improvement plan (LSIP) area, local enterprise partnership (LEP), Mayoral Combined Authority (MCA), regional and national.

Different regions also require a different composition of skills, due to varying sector focuses. For instance, though there is some commonality across the skills themes identified in the Local Skills Improvement Plans (LSIPs), there are also significant differences.⁶⁵ Almost all LSIPs identified AI and automation as an emerging skills priority to some degree. Other top sectors mentioned across all areas include manufacturing and engineering, health and social care, digital, and creative industries. However, some sectors are concentrated in specific regions – for example, one third of the UK's finance

⁶²<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/regionallabourmarket/latest>

⁶³ [Skills and labour shortages hinder rural business performance and growth - NICRE](#)

⁶⁴ department-for-education.shinyapps.io/local-skills-dashboard/

⁶⁵https://assets.publishing.service.gov.uk/media/655f663a3d774100124200dd/AI_analysis_of_local_skills_improvement_plans.pdf

industry is based in London and a large proportion of the nuclear industry is in the North West and agriculture is concentrated in predominantly rural regions.^{66,67}

Labour immobility can pose a significant challenge for skills supporting growth and mobility across labour markets is relatively low, particularly among nongraduates.⁶⁸ Furthermore graduates are concentrated in some regions. Over two-thirds of graduates now work in graduate jobs in Inner London, up from 61% in 1993.⁶⁹ This can hinder an efficient allocation of talent and expertise and highlights the importance of regional-level skills strategy, joined up at a national level. Investment in skills alone is unlikely to sufficiently boost economically poorer performing areas and other support to attract labour to developing regions will be needed. In rural regions for example, difficulties such as poor public transport connections and low availability of affordable housing for workers make it harder to attract workers.⁷⁰

Ensuring local labour markets operate with high-quality and consistent data, evidence and coordination is essential to resolving regional disparities and ensuring everyone can access all the opportunities available. As described in chapter one, a crucial part of Skills England's role will be to collaborate with regional bodies to ensure that they deliver in line with local and national skills priorities.

Mismatched skills

There is clear evidence of a gap between the skills demanded by employers and the skills supplied by the system and possessed by individuals, i.e. a skills mismatch. Mismatches occur across the spectrum of skills levels: from graduates being underemployed, to individuals lacking the core literacy, numeracy and digital skills (sometimes referred to as “essential employment skills”) needed to gain and progress in employment.

⁶⁶ [State of the sector annual review of UK financial services 2023 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

⁶⁷ [Record growth in nuclear workforce from new build projects - Nuclear Industry Association \(niauk.org\)](https://niauk.org)

⁶⁸ Ehrenfried, F et al, (2022). New region, new chances: does moving regionally for university shape later job mobility? <https://doi.org/10.1080/00343404.2022.2119217>

⁶⁹ [The changing geography of jobs | Institute for Fiscal Studies \(ifs.org.uk\)](https://ifs.org.uk)

⁷⁰ [Understanding Rural Durham - NICRE](https://www.nicre.org.uk)

Skills mismatch: a disconnect between the skills sought by employers and those possessed by individuals.

Skills shortage: when difficulties in recruiting for a given job are due to the demand for particular skills exceeding supply in the labour market.

Skills gap: when employers consider their current workforce to have either the wrong type or level of skills to those required to do the job.

The UK workforce has a number of skills mismatches, as demonstrated in Figure 4. The UK has a particularly large level of underqualification compared to other countries. The OECD Skills for Jobs database indicates that 26% of the UK workforce is underqualified for their occupation, compared to an OECD average of 18%.⁷¹ Only Ireland (30.7% underqualified) and New Zealand (28.2%) have a greater proportion of underqualified workers. Furthermore, the OECD estimates the UK has a shortage in 10 of the 14 groups of skills and knowledge analysed. Conversely, just 14.5% of the UK workforce is overqualified, the second lowest among G7 economies and lower than the OECD average of 16.5%. This aligns with claims made by employers that workers are not properly prepared for the workforce.⁷²

⁷¹ OECD Skills for Jobs database: [OECD Data Explorer - Archive • Mismatch by country](#), note OECD are currently updating all databases]

⁷² https://assets.publishing.service.gov.uk/media/5b51fbdae5274a3fd124c916/Foresight-future-of-skills-lifelong-learning_V8.pdf

Figure 4: The UK workforce contains several skills mismatches.⁷³

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES



Source: Skills England Analysis

Skills mismatches have substantial impacts on individuals, businesses, and the economy. For individuals, skills mismatches are associated with wage penalties, reduced employability, and lower job satisfaction. For businesses, skills mismatches harm productivity, competitiveness, and quality of work. This limits businesses' ability to innovate and adapt to changing conditions, hampering growth.

⁷³ References for Figure 4: [1] [Graduate Labour Market Statistics, 2023](#), [2] [Investigating the untapped potential of UK skills](#), [3] [Understanding skills and qualification suitability in the labour market, UK: August 2024](#), [4] [OECD - Getting Skills Right: United Kingdom](#), [5] [Qualification mismatch estimates in England and Wales: 2021](#), [6] [Employer Skills Survey 2022](#), [7] [Vacancies and jobs in the UK: August 2024](#)

Skills mismatches can appear because of both low supply of skills and low demand for them. Over a third (36%) of UK vacancies in 2022 were down to skills-shortages, a relatively big increase from the period 2013 to 2017, where SSVs remained stable at around 22%. Low demand for skills can also occur as the economy retracts, and employer behaviour changes, innovation, and technology replace the demand for skills. Changing population demographics can have a big influence on both supply and demand.

Mismatches differ across sectors, occupations and locations, and are connected to socioeconomic inequalities which themselves have significant geographic dimensions. The Employer Skills Survey allocates establishments to sectors. Of these, in 2022 the sectors reporting the highest density of SSVs include construction (52%), manufacturing (42%) and information and communications (43%).⁷⁴ Construction, manufacturing and engineering have also been frequently identified as being local skills priorities.⁷⁵ More granular sub-sectors also see significant pressures. A lack of skills in these sectors is a fundamental risk to delivering the government’s housebuilding, green and infrastructure commitments.

Skills mismatches extend across other critical sectors too. For example, the Employer Skills Survey found that management and leadership skills were difficult to find for 44% of SSVs. In addition, OECD analysis shows the UK has shortages across management skills and cross-country research has found UK firms, on average, score lower on management quality metrics than firms in countries like the US, Germany, and Sweden. This gap in managerial practices is linked to lower productivity levels in the UK.^{76,77}

Essential skills for work

Essential employment skills are foundational capabilities that enable the competent performance of tasks across all areas of work. Employers often refer to these as “transferable skills” and they can include skills such as teamworking, creative thinking, leadership, as well as digital literacy, numeracy and writing.

Despite the importance of essential employment skills, the UK has key skills gaps in these areas. The most recent data (from 2011, due to be updated in late 2024) shows

⁷⁴ <https://explore-education-statistics.service.gov.uk/data-tables/permalink/e39fbff6-4bb3-43c7-93b6-08dcafcfd28b>. Annex A in the technical document shows show industries have been allocated: [Employer Skills Survey 2022, Methodology](#).

⁷⁵ <https://www.gov.uk/government/publications/designated-employer-representative-bodies/notice-of-designated-employer-representative-bodies>

⁷⁶ In administration and management, management of financial resources, management of personnel resources and time management

⁷⁷ [Measuring and Explaining Management Practices Across Firms and Countries* | The Quarterly Journal of Economics | Oxford Academic \(oup.com\)](#)

that 9m working aged adults in the UK had low literacy or numeracy skills or both.⁷⁸ Additionally, digital skills are increasingly important in the modern economy, with basic digital skills being important to the majority (92%) of employers.⁷⁹ However, around 7.5m working age adults do not have basic digital skills, less than half (41%) of the UK workforce can do all 20 tasks deemed essential digital skills for work and 15% of 18-24 year olds could only do 9 or less of the tasks deemed essential digital skills for work.^{80,81} The OECD have also found the UK to have other significant skills gaps including cognitive skills (e.g. reasoning and problem solving) and social skills (e.g. judgment and decision making).⁸² For subject knowledge shortages, the most prevalent in the UK is in teaching and education and in STEM related subjects.

Together, these essential skills in literacy, numeracy and digital provide individuals with core skills that allow clear communication, robust reasoning, confidence with numbers and the functional use of technology. They are the skills needed to gain employment, progress within and move between roles, and access higher levels of training. They have been consistently cited across Local Skills Improvement Plans (LSIPs) as being key for upskilling in these areas.⁸³ Existing essential skills training for work, including functional skills training provision, can unlock opportunities and upskill individuals so they are more likely to move into work, as well as benefitting employers.

Under-supply of higher technical training

As seen above, the UK workforce is particularly underqualified (26%) compared to the OECD total (17.8%).⁸⁴ Partially, this comes down to the 'missing middle' in the skills system: level 4/5 uptake of technical training in England is low compared to other levels of study, internationally and historically. Despite strong employer demand for higher technical skills and positive outcomes for learners, taxpayers, and the economy, only 4% of people attain a level 4 or 5 qualification by age 25.⁸⁵ In the UK, around 10% of all adults aged 18-65 hold a level 4-5 qualification as their highest qualification, compared to

⁷⁸ From 2011 OECD fieldwork published here: <https://search.oecd.org/education/building-skills-for-all-review-of-england.pdf>. **Note this study is being updated, due for publication in December 2024.**

⁷⁹ [Disconnected? Exploring the digital skills gap - Learning and Work Institute](#)

⁸⁰ https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/231122-lloyds-consumer-digital-index-2023-report.pdf

⁸¹ <https://futuredotnow.uk/essential-digital-skills-for-work-report/>

⁸² OECD Skills for Jobs database: <https://stats.oecd.org/Index.aspx?DataSetCode=S4J2022> [Accessed Jan 2024, note OECD are currently updating all databases]

⁸³ <https://www.gov.uk/government/publications/designated-employer-representative-bodies/notice-of-designated-employer-representative-bodies>

⁸⁴ OECD Skills for Jobs database: [OECD Data Explorer - Archive • Mismatch by country](#), note OECD are currently updating all databases]

⁸⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/705269/Post_16_education_highest_level_of_achievement_by_age_25.pdf

around 20% in Germany and 34% in Canada.⁸⁶ Low uptake of level 4 and 5 also means learners miss out. One estimate is that at age 26, level 4/5 qualifications lead to additional earnings of up to £9,800 per annum compared to those with only a level 3 qualification.⁸⁷

Furthermore, this has been getting worse: the number of learners pursuing level 4/5 qualifications has dropped significantly, with a 37% decrease from 1996-97 to 2014-15, despite the introduction of foundation degrees.⁸⁸ Since 2014-15, numbers studying at level 4/5 have remained stable, primarily due to increases in apprenticeships at this level. However, classroom-based level 4/5 enrolments have continued to decline sharply, with enrolments recognised by the Office for Students dropping nearly 40% from 2016/17 to 2020/21.⁸⁹ This persistent decline poses a significant challenge to addressing the economy's skills shortages at this level.

Whilst uptake for level 4 and 5 is low, employer demand for technical skills is growing. Some of the most persistent skills shortages are in skilled trades (such as technicians) and the acute shortage of technician-level STEM skills has been attributed to an undersupply of people with level 3-5 vocational qualifications over the last 20 years.^{90,91} Labour market analysis of emerging trends suggests that this demand is only set to grow in the coming years.⁹² The introduction of Higher Technical Qualifications at levels 4/5 will help to meet this demand. The Department is deeply committed to supporting people in acquiring level 4 and 5 skills, ensuring a comprehensive approach to lifelong learning that enables individuals to gain the skills they need to enter into, or advance their careers.

Variable returns from higher education

While the expansion of the higher education system and graduates has been positive overall for the UK economy, there is also significant variation in returns for individuals. A study by the Institute for Fiscal Studies research shows that there are significant differences in the wage gains graduates receive, depending on their choice of course and university. Certain degrees can result in graduates earning little to no wage-premia

⁸⁶ <https://commonslibrary.parliament.uk/research-briefings/cbp-8732/>

⁸⁷ Post-18 education: Who is taking different routes and how much do they earn? - [cverbrf013.pdf \(lse.ac.uk\)](#)

⁸⁸ https://www.qaa.ac.uk/docs/qaa/about-us/sub-bachelor-higher-education-in-the-united-kingdom.pdf?sfvrsn=f0e9fe81_6

⁸⁹ <https://explore-education-statistics.service.gov.uk/find-statistics/higher-level-learners-in-england#releaseHeadlines-tables>

⁹⁰ <https://www.gov.uk/government/publications/employer-skills-survey-2017-uk-report>

⁹¹ <https://www.nao.org.uk/wp-content/uploads/2018/01/Delivering-STEM-Science-technology-engineering-and-mathematics-skills-for-the-economy.pdf>

⁹² <https://www.cbi.org.uk/media-centre/articles/higher-skilled-roles-rise-as-skills-gap-grows-cbipearson-annual-report/>

compared to their non-graduate peers: one in five students would have been better off financially had they not gone to university. For instance, degrees in medicine and law tend to yield high financial returns, whereas degrees in creative arts often result in lower earnings.⁹³

This disparity is further highlighted by the high number of graduates working in non-graduate jobs. The IFS study into this indicates that a substantial proportion of graduates end up in roles that do not require a degree, which can limit their earning potential and overall return on investment in higher education.⁹⁴

Overall, the evidence suggests that some students who go into higher education could be better served by choosing an alternative degree course or advanced training short of a degree. Helping students to make a better choice can improve their life chances and support more productive jobs, as well as improve the value for money of the student loans system

Low private investment

To resolve skills mismatches, there is a role for employers to play in investing in workforce training and encouraging on-the-job skills development. However, UK employer investment in training has been in steady decline over the past decade. Training expenditure is at its lowest since the introduction of the Employer Skills Survey (ESS) in 2011, with investment per employee down by 19% in real terms.^{95,96}

Though largely driven by a decline in off-the-job training, on-the-job training expenditure has also decreased. Whilst declining investment may not seem like a problem on its own, employers are finding it increasingly difficult to fill skill-shortage vacancies. The number of employers providing training has also declined in recent years, with two-fifths of employers stating that they would have liked to provide more training for their staff.

Figure 5: UK training expenditure has reduced from 2011 to 2022.⁹⁷

Adjusted for 2022 prices (£ billion)

⁹³ [The impact of undergraduate degrees on lifetime earnings | Institute for Fiscal Studies \(ifs.org.uk\)](#)

⁹⁴ [The changing geography of jobs | Institute for Fiscal Studies \(ifs.org.uk\)](#)

⁹⁵ [Employer Skills Survey , Calendar year 2022 – Explore education statistics – GOV.UK \(explore-education-statistics.service.gov.uk\)](#)

⁹⁶ [Investment in training and skills | Institute for Fiscal Studies \(ifs.org.uk\)](#)

⁹⁷ [Employer Skills Survey , Calendar year 2022 – Explore education statistics – GOV.UK \(explore-education-statistics.service.gov.uk\)](#)

Source: Skills England analysis of Employer Skills Survey 2022

Although the UK has a higher training participation rate than the European average, training participation fell by 5% between 2010 and 2019, whilst the average EU training participation rates have increased in the same period. Furthermore, relative to the EU average, UK employers were found to invest half as much per employee in vocational training, suggesting that while a high proportion of UK employers may be offering training, this training tends to be shorter and cheaper than in other EU countries.⁹⁸

Possible causes of this decline in employer investment include:

- **Lack of time and funding.** For employers that would have liked to provide more training, the main barriers to doing so were not being able spare more staff time and lack of funds for training.⁹⁹
- **Employers believe their staff are fully proficient.** For employers not providing training in the last 12 months, the most common reason cited was believing that their staff were fully proficient or there was no need to provide training.¹⁰⁰

⁹⁸ [Investment in training and skills | Institute for Fiscal Studies \(ifs.org.uk\)](https://www.ifs.org.uk/publications/1048).

⁹⁹ Employer Skills Survey 2022, https://assets.publishing.service.gov.uk/media/65855506fc07f3000d8d46bd/Employer_skills_survey_2022_research_report.pdf

¹⁰⁰ Employer Skills Survey 2022, https://assets.publishing.service.gov.uk/media/65855506fc07f3000d8d46bd/Employer_skills_survey_2022_research_report.pdf

- **A strong international labour supply and flexible labour market** has provided easy access to skills through recruitment, reducing the incentive to train.^{101,102}
- **A lack of industrial strategy as well as economic, financial and political uncertainty**, has made it difficult for employers to engage in long-term workforce planning, resulting in short-term skills decisions.^{103,104}
- **A complex skills landscape** has made it difficult for employers to identify suitable training programmes for their staff and has led to employers disengaging with the skills system.¹⁰⁵
- **Low overall business investment** in the UK may also reduce the demand for skills and skills training. The UK has the lowest level of business investment in the G7 and has had the lowest level of investment for 24 of the last 30 years.^{106,107}
- **A shift in attitudes about responsibility for training, with responsibility perceived as sitting more with government than employers**, and a reduction in the use of HR which can reduce the focus on long-term skills needs, particularly for smaller businesses.¹⁰⁸
- **Delivery models for training have become more cost-effective**, with a shift to online and hybrid training but easy access to outside-of-work training has shifted the burden increasingly onto the employee rather than employer.¹⁰⁹

Supporting better alignment between the skills employers demand and skills people have can improve productivity, leading to better outcomes for individuals and businesses. Furthermore, quality Labour Market Information (LMI) can help identify where and how to achieve better skills alignment.

¹⁰¹ *Economica*, Volume: 90, Issue: 359, Pages: 851-881, First published: 17 April 2023, DOI: (10.1111/ecca.12472)

¹⁰² Centre for Educational Research [cverdp040.pdf \(lse.ac.uk\)](#)

¹⁰³ De Lyon, J. and Dhingra, S. (2020). Firm investments in skills and capital in the UK services sector, OECD

¹⁰⁴ Costa, R. et al (2019). Trade and worker deskilling: Evidence from the Brexit vote, Centre for Economic Performance, LSE

¹⁰⁵ National Audit Office, Developing workforce skills for a strong economy(2022), [Developing workforce skills for a strong economy \(nao.org.uk\)](#) p. 46.

¹⁰⁶ [Rock bottom June24 2024-06-18-081624 arsv.pdf \(svdcn.com\)](#)

¹⁰⁷ [Boosting productivity: why doesn't the UK invest enough? - The Productivity Institute](#)

¹⁰⁸ [A memo to HR: The changing role of human resource management | Deloitte Insights](#)

¹⁰⁹ Employer Skills Survey 2022, https://assets.publishing.service.gov.uk/media/65855506fc07f3000d8d46bd/Employer_skills_survey_2022_research_report.pdf

Future megatrends

UK employment is expected to grow modestly by 2035, with 1.4m new jobs.¹¹⁰ However, as shown in Figure 6, the distribution of jobs will be impacted by future megatrends including an ageing population, the move towards a green economy and increased usage of technology and artificial intelligence. Both new jobs and a changing composition will require different skills than are needed in the current labour market.

Following recent labour market trends of increasing female participation and historical shares of women working in growing sectors, most (60%) of the newly created jobs in 2035 are projected to be taken by women.¹¹¹ This follows growth in sectors such as health and social care, in line with the ageing population, where historically more women have been employed. To meet the growing demand for labour in other emerging or expanding sectors, historically male-dominated industries may need to increase female participation.

Transferable, essential employment skills are projected to be most in demand by 2035, with six key skills highlighted: communication, collaboration, problem-solving, organising, planning and prioritising work, creative thinking, and information literacy.¹¹² Creativity has also been identified as the most significant predictor of occupation growth up to 2030.¹¹³

¹¹⁰ Skills England Analysis of the Technological Scenario in [Labour market and skills projections: 2020 to 2035 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/614442/labour_market_and_skills_projections_2020_to_2035_-_gov_uk.pdf) Skills England analysis of the Technological Scenario in [Labour market and skills projections: 2020 to 2035 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/614442/labour_market_and_skills_projections_2020_to_2035_-_gov_uk.pdf)

¹¹¹ [the skills imperative 2035 working paper 2 headline report.pdf \(nfer.ac.uk\)](https://www.nfer.ac.uk/wp-content/uploads/2021/03/the_skills_imperative_2035_working_paper_2_headline_report.pdf)

¹¹² [The Skills Imperative 2035: An analysis of the demand for skills in the labour market in 2035 - NFER](https://www.nfer.ac.uk/wp-content/uploads/2021/03/the_skills_imperative_2035_working_paper_2_headline_report.pdf)

¹¹³ [New research shows creativity will become even more important to the growth of jobs between now and 2030 | Nesta](https://www.nesta.org.uk/resources/publications/new-research-shows-creativity-will-become-even-more-important-to-the-growth-of-jobs-between-now-and-2030)

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES



Demographics

The UK's population is changing due to two key factors: improved life expectancy and a decrease in the fertility rate.¹¹⁵ This has resulted in a population which is continuing to age: in 2018, approximately 1 in 5 people in the UK were aged over 65, but this is expected to increase to 1 in 4 by 2050.^{116,117} An ageing population both means a smaller

¹¹⁴ Figure 6 sources: [1] New jobs: [Labour market and skills projections: 2020 to 2035 - GOV.UK \(www.gov.uk\)](https://www.gov.uk), [2] Heat-pump installation targets: [Building the installer base for net zero heating, June 2020](#); [3] [Skills England analysis using Skills Imperative Technology Scenario, and adapting UFS: 'Labour market and skills projections' to use March 2023-April 2024 APS to look at employment growth.](#)

¹¹⁵ Office for National Statistics, 2018. Living longer: how our population is changing and why it matters

¹¹⁶ (ONS 2019d). as cited in Department for Education, 2022. Labour market and skills demand horizon scanning and future scenarios.

¹¹⁷ Department for Education, 2022. Developing workforce skills for a strong economy

active workforce as the proportion of those age 16+ in retirement rises, and increased demand for services such as health and social care.¹¹⁸

An ageing population and increasing retirement age also means individuals are likely to stay in the workforce for longer, for example, there were more than 2m more 50- to 64-year-olds working in 2019 than there were in 2008, but there will be fewer young workers entering.¹¹⁹ Overall, the workforce will be older. These factors are also likely to exacerbate labour shortages in sectors dominated by physically demanding roles, such as construction. These sectors already tend to have higher rates of early retirement due to physical or health related drivers and we are seeing a decline in younger workers entering these sectors.¹²⁰

Though the workforce is ageing, it is still projected that over 71% of jobs in 2035 are expected to be filled by someone already in the workforce.¹²¹ The current workforce will need to continually adapt to the changing landscape – both learning new skills in the same job and retraining to enter new jobs. The ageing population will itself also drive shifts in practices and the development of new technologies, which will require the development of new skills. For example, in the construction sector, new technology is allowing for development of offsite products, such as superstructures and external cladding products, which will require upskilling but reduce the demand for physical tasks.

In health and social care, adoption of preventive healthcare and early diagnostics techniques will support the ageing population by increasing data and improving analysis. Such new technology and methods can make it possible for quicker identification, enabling accurate and preventative care.¹²² The NHS is already investing in these areas, launching strategies to boost access to innovative medical technology and allocating nearly £250m to modernise diagnostics.^{123,124} These efforts aim to provide faster diagnosis and earlier treatment, which would assist health and care workers in focusing on supporting patients' multiple needs as complexities and co-morbidities are increasing.

An exception to the ageing population will be the current 'demographic bulge' of young people who will enter the labour market over the next decade. The number of people aged 20-29 in England is projected to peak at 8.0m in 2036, a 7.6% increase on 2024.¹²⁵ In the shorter-term, this will likely result in increased competition for entry level roles and

¹¹⁸ UKCES, 2014. The Future of Work: Jobs and Skills in 2030.

¹¹⁹ [Health matters: health and work - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/404222/Health_matters_health_and_work_-_GOV.UK.pdf)

¹²⁰ [Older Construction Workers: Needs And Abilities](#)

¹²¹ DfE internal analysis 2024. Source: Annual Population Survey and ONS population projections.

¹²² [EIT-Health-paper Early-Diagnostics Shaping-Healthcare-Society.pdf \(eithealth.eu\)](#)

¹²³ [New strategy to boost NHS access to innovative medical technology - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/404222/New_strategy_to_boost_NHS_access_to_innovative_medical_technology_-_GOV.UK.pdf)

¹²⁴ [£250 million in NHS technology to modernise diagnostics - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/404222/250_million_in_NHS_technology_to_modernise_diagnostics_-_GOV.UK.pdf)

¹²⁵ ONS 2021-based population projections for England - <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/tablea24principalprojectionenglandpopulationinagegroups>

means a larger proportion of the workforce will be inexperienced, requiring individuals to access training to develop skills over the course of their careers.

AI and Technology adoption

Artificial intelligence (AI) is expanding the number of automatable tasks, as well as providing opportunities for augmentation of tasks within jobs. Adoption of new technology is changing the way jobs can be done. These changes have the potential to have significant impact across the economy, changing both job composition and skills required. Analysis by the IPPR suggests that 11% of tasks in the UK economy are exposed to existing generative AI and this figure could increase to 59% if companies integrate AI more deeply, with deployment of AI providing the opportunity to free up resource to jobs in demand.¹²⁶ Department for Education research suggests Professional Occupations (normally requiring a degree) are most exposed to AI, particularly those associated with more clerical work and across finance and business management roles.¹²⁷ AI will also shape new roles in law and security, as implementation risks such as privacy, cyber security and copyright are explored.

The changes caused by AI and technology will differ by sector, occupation and region. London and the South East have been found to have the highest exposure to AI, largely driven by the high concentration of professional workers.¹²⁸

UK employers and the skills system will need to adapt to ensure individuals have the skills required to make the most of the potential benefits of AI and new technology. For employers, this is particularly relevant as a recent survey suggested that more than half of business leaders felt a lack of readiness for AI due to a lack of understanding.

Overall, there will be a general increase in demand for basic and advanced digital skills with estimates suggesting more than three quarters of all jobs globally will require some element of digital skills by 2030.¹²⁹ The changes will require both general training in essential digital skills for work as well as advanced digital skills and highly specialised skill sets for the development of frontier technologies. The latter will be particularly important if the UK is to maintain and drive its competitive edge in critical areas including quantum and life sciences and, to lay the foundations for roles in the design and development of AI itself.

¹²⁶ <https://www.ippr.org/media-office/up-to-8-million-uk-jobs-at-risk-from-ai-unless-government-acts-finds-ippr>

¹²⁷ [Impact of AI on UK Jobs and Training \(publishing.gov.uk\)](#)

¹²⁸ [Impact of AI on UK Jobs and Training \(publishing.gov.uk\)](#)

¹²⁹ [Why are the young not prepared for the jobs of the future? | World Economic Forum \(weforum.org\)](#)

Green transition

The impact of climate change and government working to achieve net zero and clean energy targets will continue to shape the labour market.

Job change (as opposed to job loss) is expected, with a significant proportion of carbon-intensive jobs (those that pollute or use fossil fuels) adapting to greener roles, such as engineers working in oil and gas moving to renewables, as we transition to a clean power system by 2030.^{130,131} Clean energy targets will also require new jobs and skills in other areas, such as to aid in protecting the natural environment, to support rural and coastal communities and to support the UK in becoming the green finance capital of the world.¹³²

Anticipated growth in green industries will lead to increased demand for training and development in green construction techniques, including home retrofit techniques such as insulation. Demand for specialised construction roles will increase, such as air source heat pump installation workers and retrofitting of historic buildings.

The transition to net zero will likely affect around one in five UK jobs. Around half of these workers have skills that could be in greater demand while the other half are more likely to require reskilling.¹³³ Employment in green industries is already growing rapidly, with a notable increase in the administrative and support activities sector where full-time employees more than doubled between 2021 and 2022.¹³⁴ This will likely lead to a demand for training and development in green construction techniques, including home retrofit techniques such as insulation.

For both AI and the green transition, high-skilled training will be required, including for jobs in areas like engineering. These types of courses can be expensive to run, with their providers facing significant financial pressures. It is important that we work together with industry to identify the right mix of courses needed to future-proof the workforce and ensure skills demands are met. Doing so will allow us to assess whether we have the right funding and support in place to incentivise the right mix of provision.

The Office for Clean Energy Jobs

As outlined, to deliver the government's clean energy and net zero targets the workforce will need to adapt. The Department for Energy Security and Net Zero

¹³⁰ [Ending Stagnation: A New Economic Strategy for Britain \(resolutionfoundation.org\)](https://www.resolutionfoundation.org/publications/ending-stagnation-a-new-economic-strategy-for-britain/)

¹³¹ Prosperity through partnership: Labour's Industrial Strategy, [Industrial-Strategy.pdf \(labour.org.uk\)](https://www.industrial-strategy.gov.uk/)

¹³² [Make-Britain-a-Clean-Energy-Superpower \(labour.org.uk\)](https://www.industrial-strategy.gov.uk/~/media/102020/20200923-make-britain-a-clean-energy-superpower.pdf)

¹³³ [Investing in a just transition in the UK - Grantham Research Institute on climate change and the environment \(lse.ac.uk\)](https://www.grantham-institute.com/wp-content/uploads/2020/06/Investing-in-a-just-transition-in-the-UK-Grantham-Research-Institute-on-climate-change-and-the-environment.pdf)

¹³⁴ [Green Economy | Green industries growing four times faster than the rest of UK economy \(greenintelligence.org.uk\)](https://www.greenintelligence.org.uk/green-economy-green-industries-growing-four-times-faster-than-the-rest-of-uk-economy/)

(DESNZ) has set up The Office for Clean Energy Jobs, which will focus on ensuring we have the skilled workforce in core energy and net zero sectors, critical to meeting the government's Clean Energy Mission: to make the UK a clean energy superpower. It will focus on supporting regions transitioning from carbon-intensive industries to clean energy sectors, and ensuring clean energy jobs are high quality, with fair pay, favourable terms and good working conditions. It will engage across the energy sector, trade unions and industry to deliver on this.

The Office for Clean Energy Jobs will also work closely with the Department for Education and Skills England to ensure the UK has the skills needed to deliver the Clean Energy Mission, forming a view across DESNZ sectors to feed into Skills England's wider assessment of the UK economy's structural skills needs, and supporting with targeted delivery of specific policy solutions in the energy sector.

Adult retraining and barriers to entry

We know that future megatrends will affect the composition of the labour market. Ensuring that the future workforce is prepared for these transitions is essential and is not only relevant for those currently in education. Adult retraining and resolving barriers to entry, such as required experience and low starting pay, will be key in supporting job transitions.

The government recognises that lifelong learning is a core part of a sustainable higher education system which provides opportunities for all and offers learners greater flexibility in an ever-evolving economy. The Department will also deliver improvements in careers advice infrastructure, including careers transitions to help secure optimum value, and support adult training and retraining through the Adult Skills Fund. Currently, there are a range of publicly-funded options that support this, including the Adult Skills Fund (which includes Free courses for jobs), Advanced learner loans funding, Skills Bootcamps and the Department for Work and Pensions' Sector-based Work Academy Programmes (SWAPs). Beyond this, the Department for Education is working to ensure that its approach to lifelong learning will be as effective as possible, enabling people to gain the skills they need to support their careers.

Chapter 3: Initial Skills Assessment

This chapter sets out an initial assessment of skills needs and should be seen as the start of an iterative process toward developing full assessment which will be published in due course. Future analysis will consider wider issues and other sectors, working closely with other government departments, businesses and other key stakeholders.

Whilst skills are critical for delivering all five of the Government's Missions, this initial assessment from Skills England focusses primarily on skills and training for driving economic growth. Ensuring that the UK has a skilled workforce to meet business needs also supports the delivery of the Clean Energy Superpower Mission, and can provide more opportunity for all people to enter high-quality jobs. As part of its full skills assessment, Skills England will also consider the supply of skilled workers into public services, including health and social care and education workers which are currently seeing high demand. This underpins the missions to improve the NHS and break down the barriers to opportunity for young people.

This initial skills assessment leverages three pieces of analysis:

1. A new Skills England measure capturing current labour demand: the Occupations in Demand index.¹³⁵
2. Estimates of future job projections.¹³⁶
3. Initial engagement with key government departments to identify and define priority workforces they are responsible for or reliant on.

Jobs in high demand

Skills England has just published a new "Occupations in Demand" index, which identifies the jobs currently in demand across the UK labour market.¹³⁷ Figure 7 describes how the Occupations in Demand index has been developed. It is a composite index of seven indicators (including visa applications, online job adverts and wage growth) looking across the ONS' standard list of around 400 occupations (SOC2020 4-digit level) to identify which are currently seeing high levels of demand in the UK labour market.¹³⁸

¹³⁵ [Occupations in demand in 2024](#), Skills England. See Annex A for more detail

¹³⁶ [Labour market and skills projections: 2020 to 2035](#), Department for Education, March 2023. Note: The estimates are not responsive to policies of future governments or any unforeseen shocks to the economy such as those we saw in the period following the COVID-19 pandemic.

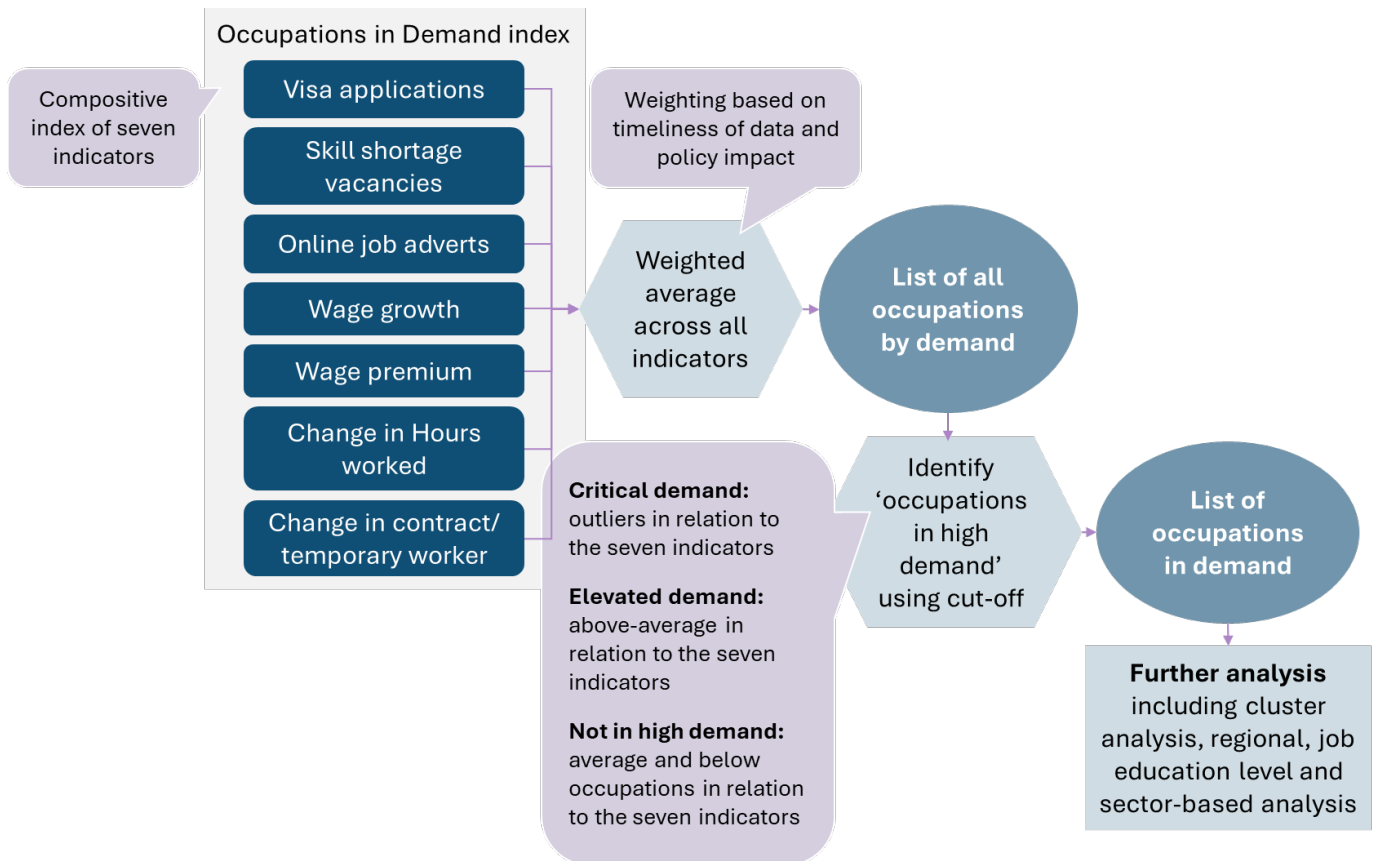
¹³⁷ [Occupations in demand in 2024](#), Skills England. See Annex A for more detail.

¹³⁸ Note the composite index is a weighted average across all indicators to produce a list of occupations by demand, more information in Annex A.

The index identifies occupations in demand using cut-off points:

- **Critical demand:** outliers (at or above the 25th percentile) in relation to the seven indicators. 39 occupations are identified as in the most critical demand.
- **Elevated demand:** above average (at or above 50th percentile of the index) in relation to the seven indicators. 128 occupations are identified as showing elevated demand.

Figure 7: The Occupations in Demand index uses an index of seven indicators



Around 1 in 10 (8%) jobs in the UK are currently in critical demand across the UK labour market, over 2.5m roles in total. A further 12.6m roles are in elevated demand (39%).

Of the jobs in critical demand, the level of qualification required varies by role, as shown in Figure 8. More than 1m of the 2.5m roles in critical demand are those requiring qualifications that broadly map to around level 2 which require work-related training on top of standard compulsory education.¹³⁹ These include care workers and home carers (current workforce of 816k) and senior care workers (99k).

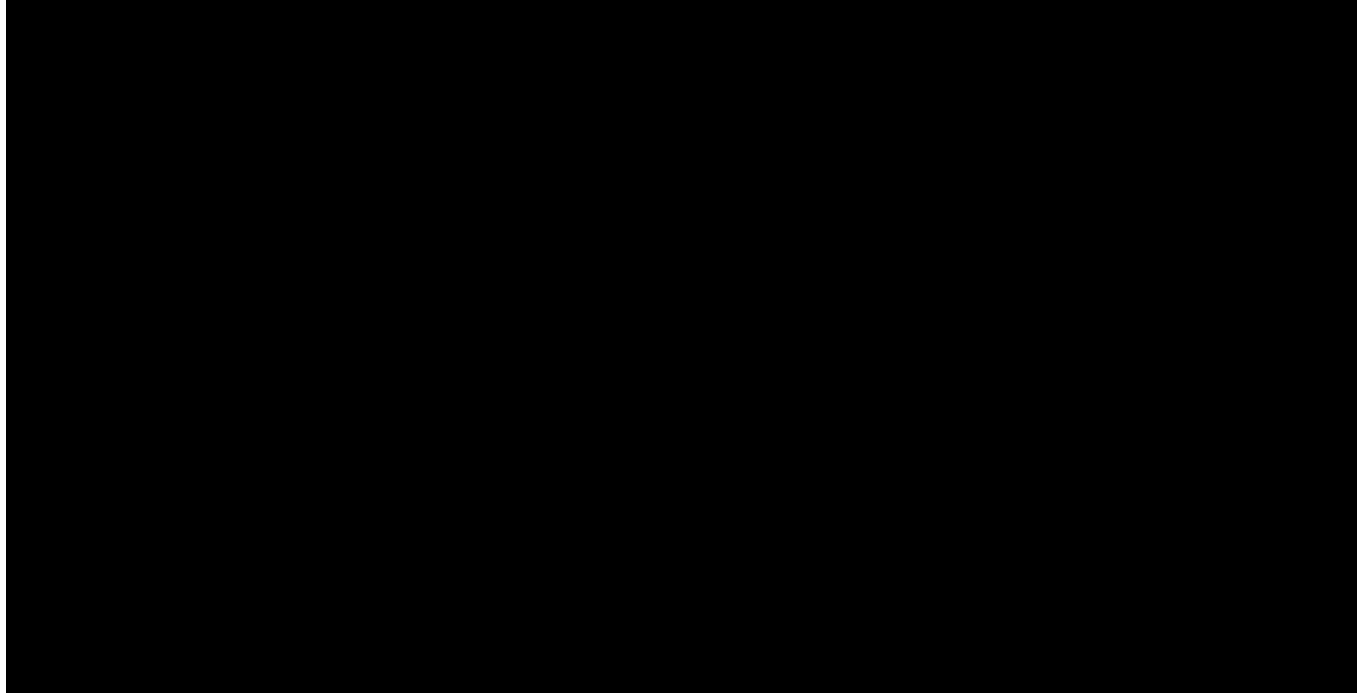
¹³⁹ [ONS Occupation skill level and skill specialisation](#)

A further 896k jobs in critical demand require knowledge associated with a period of post-compulsory education, but not normally to degree level: broadly mapping to qualifications level 3-5. These jobs include sales accounts and business development managers (331k), metal working production and maintenance fitters (196k); and IT user support technicians (140k).

Less than half a million jobs (449k) in critical demand require degree or equivalent period of relevant work experience, broadly mapping to level 6+ qualifications. These include researchers (71k)¹⁴⁰, quantity surveyors (69k) and physiotherapists (56k).

Figure 8: Employment volumes and level for occupations in critical demand

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES



Source: Occupations in demand analysis, 2024

The health and social care industry has the highest number of jobs in critical (980k) and elevated demand (2m), followed by the education industry (114k and 1.6m respectively) and manufacturing industry (330k and 1.2m respectively), as shown in Figure 9.¹⁴¹ The top three largest occupations in critical demand in the health and social care industry are:

- Care workers and home carers (725k),
- Senior care workers (83k), and
- Physiotherapists (47k).

¹⁴⁰ Here “researchers” refers to SOC code “2162 Other researchers, unspecified discipline”

¹⁴¹ ONS data can distort the size and shape of the health industry, for in-depth analysis of the Adult Social Care (ASC) workforce Skills for Care data is a preferred source.

Demand for health and social care related occupations, including care workers, nursing professionals and special medical practitioners, is indicated by relatively high year-on-year growth in the proportion of visa applications and contract or temporary workers contracts.

Critical demand for occupations in the manufacturing industry, for example metal working production and maintenance fitters (100k) and electrical engineers (27k), tends to be seen in high relative growth in the proportion of online job adverts. This particularly applies to electrical engineers, which report relatively high skills-shortage vacancies.

A number of industries have low volumes of occupations in demand but these make up a relatively large proportion of total employment in the sector, for example:

- In the finance and insurance industry, 69% (944k) are in demand including insurance underwriters (30k), sales accounts and business development managers (12k), and financial and accounting technicians (7k) which are in critical demand.
- In the motor trades industry, 65% (241k) of roles are in demand including metal working production and maintenance fitters (17k), vehicle valeters and cleaners (14k) and sales accounts and business development managers (3k) which are in critical demand.

It is worth noting the spread of different occupations and occupation types across industries. Industries such as child development, health and social care or construction have a relatively tight sector-occupation relationship with the majority of the workforce being trained and employed in sector-specific roles. In contrast, occupations such as those in business management, law and legal services or marketing and sales may be employed across a much wider range of industries.

Figure 9: Occupations in critical and elevated demand across industries (SIC)

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES



Source: Occupations in demand analysis, 2024

Labour market data, such as the data used to provide the analysis on occupations in critical demand, give us a comprehensive view across the entire labour market as it is currently and projected to be in the future. Additional evidence from local areas, such as Local Skills Improvement Plans (LSIPs) developed by designated Employer Representative Bodies (ERBs), provide a valuable view of the priorities and skills needs of employers, providers and other stakeholders.¹⁴² Most priority sectors identified by LSIPs align with national skills priorities.¹⁴³ However, given the local nature of the LSIPs, some sectors, such as more area-specific sectors (e.g. tourism and hospitality, financial and professional services, and agriculture and land-based sectors) are only mentioned by a subset of the LSIPs.

How these jobs are projected to grow in the future

Future megatrends such as demographic shifts, technological changes and the transition to a greener economy will impact the distribution of jobs and the skills needed in the

¹⁴² [Local skills improvement plans and designated employer representative bodies](#), Aug 2023

¹⁴³ [AI analysis of local skills improvement plans](#), Nov 2023

future. Labour market and skills projections assess the impact of these on the demand for jobs and skills up to 2035.¹⁴⁴ They use current trends in employment and growth to predict several potential future scenarios to assess employment growth by occupation.¹⁴⁵

Across the labour market, many of the occupations currently in demand are also those projected to see employment growth in the future, including those in health and social care, life sciences, green and AI and service-orientated roles. Occupations requiring higher education, such as chemical and biological scientists (24%), specialist technical skills including CAD drawing and architectural technicians (35%) and education occupations for example including higher education teaching professionals (13%) are expected to see the most employment growth by 2035.¹⁴⁶

Skills needs in key sectors

The growth projections that have been published by Skills England are based on past trends and do not reflect new policies and government priorities. For example, the Government's commitment to deliver 1.5 million homes over this parliament (a 50% increase on the previous 5 years), which will boost the growth in demand for construction and related workers such as town planners, architects, surveyors and environmental experts, above past rates.¹⁴⁷ New technological advances, such as Artificial Intelligence are also likely to transform demand.

These changes are complex, and assessment of their impact will require input from experts and businesses representatives. Therefore, this initial skills assessment will not include consideration of these potential impacts. Instead, this report outlines key emerging trends in four sectors where there is strong evidence of economic importance and available forecasts: digital technologies, life sciences, green, and housebuilding and construction. This provides an illustration of how Skills England will approach sector assessments, which will align with any future decisions and announcements on priorities for the Industrial Strategy.

Digital technologies

It is widely anticipated that ICT and digital skills will become increasingly important to jobs across many sectors in the future. This extends beyond roles that can be defined as

¹⁴⁴ [Labour market and skills projections: 2020 to 2035](#), Department for Education, March 2024.

¹⁴⁵ Note the estimates are not responsive to policies of future governments or any unforeseen shocks to the economy such as those we saw in the period following the COVID-19 pandemic.

¹⁴⁶ [Labour market and skills projections: 2020 to 2035](#), Department for Education, March 2024. These figures are calculated from technology scenario of the labour market and skill projections using APS employment figures for 2024 as the baseline

¹⁴⁷ Labour (2023) <https://labour.org.uk/updates/stories/just-announced-labour-will-build-1-5-million-homes-to-save-the-dream-of-homeownership/>

'digital' and includes even those that do not currently require significant ICT or digital skills. Across all skill levels, around three-quarters of job adverts require baseline digital skills, and more than half (56%) require specific digital skills.¹⁴⁸ In addition, a small number of occupations are likely to need more advanced digital skills, such as those utilising emerging advanced digital techniques like AI and automation.

Digital skills

In 2024, there were 1.8m workers in the 14 occupations most relevant to digital and computing in the UK, accounting for 5.5% of all UK employment.¹⁴⁹ The largest occupation in this group were programmers and software development professionals (561k workers). Notably, less than 1 in 6 (16%) programmers and software development professionals are women. Looking to the future, projected growth in these occupations is estimated to be between 109k (6%) and 238k (13%).¹⁵⁰

Digital and computing occupations in the UK face significant shortages with hard-to-fill vacancies in digital and computing occupations and were much more likely to be due to skills shortages (81%) than they were across all occupations (63%).¹⁵¹ Furthermore, less than a third of UK businesses are confident that they will be able to access the digital skills needed in the next 3-5 years.¹⁵² Across LSIP reports, various aspects relating to digital skills and digital education and their importance in the modern workforce were discussed.¹⁵³ For example:

- The growing demand for digital skills and the challenges faced by employers in finding appropriate training.
- Consideration of a comprehensive digital skills education and inclusivity in the workforce, alongside age, gender and socio-economic disparities in digital education participation.
- The need for a broad spectrum of digital skills, from basic to advanced.
- The importance of tailoring digital skills training to meet the needs of employers in various sectors.

¹⁴⁸ [No longer optional: employer demand for digital skills](#). DCMS, 2019

¹⁴⁹ Published as part of [UFS Supply of skills for jobs in science and technology](#), May 2024

¹⁵⁰ Skills England Analysis of Skills Imperative 2035 projections and Annual Population Survey

¹⁵¹ Employer Skills Survey 2022 - [Employer Skills Survey , Calendar year 2022 - Explore education statistics - GOV.UK \(explore-education-statistics.service.gov.uk\)](#)

¹⁵² Department for Digital, Culture, Media and Sport, 2021. Initial Workforce Assessment: Digital and Tech Workforce.

¹⁵³ [AI analysis of Local Skills Improvement Plans](#), Unit for Future Skills, November 2023

Artificial intelligence

Advances in AI have the potential to increase productivity and create new high value jobs in the UK economy. Digital skills will be the basis of this adoption and provide an opportunity for a wider range of people to benefit from digital jobs.

It has been estimated that between 10-30% of jobs are automatable, with significant changes for most jobs likely in 10-15 years.¹⁵⁴ Professional occupations are more exposed to AI, particularly those with more clerical work and across finance, law and business management roles. Additionally, employers with more advanced qualifications are typically in jobs more exposed to AI.

At the local level, almost all Local Skills Improvement Plan areas covered AI and automation to some degree, recognising that it is an area they will continue to engage on with employers.¹⁵⁵ The lens through which LSIPs examined AI and automation varies. Some took an industry approach and examined the skills needs of businesses in that industry, whilst others considered the AI and automation needs of employers across a wide range of sectors.

When considering across all sectors, LSIPs discussed the impact of technological change and automation on the labour force, specifically in relation to helping employers adapt to technology and integrating these tools into existing practices. They also discussed the need to deliver consistent digital training across programmes in both basic and advanced digital skills, including those related to automation, robotics, agri-tech, virtual reality, software programming and data analytics.

Spotlight case study: Cyber Security

Cyber security is one workforce facing evolving skills needs due to AI. At the end of 2023, around 137k individuals worked in cyber security. The remit of this workforce covers the protection of internet connected systems, the data on them, and the services they provide, from unauthorised access, harm or misuse.¹⁵⁶

Four potential changes were identified in the 2024 Cyber Skills in the UK Labour Market survey which would impact on future skills needs¹⁵⁷:

- Increasing automation of cyber tasks;
- The need for skills to understand and act upon AI tools;

¹⁵⁴ <https://www.gov.uk/government/publications/the-impact-of-ai-on-uk-jobs-and-training>

¹⁵⁵ [AI analysis of Local Skills Improvement Plans](#), UFS, November 2023

¹⁵⁶ [Cyber security sectoral analysis, DSIT, 2024](#)

¹⁵⁷ [Cyber security skills in the UK labour market 2024: technical report - GOV.UK \(www.gov.uk\)](#)

- Roles becoming 'AI cyber' rather than just 'cyber' and;
- The emergence of deep specialisms such as 'cyber security machine learning'.

Green workforce

The green workforce will be key to delivering net zero, on the Clean Energy mission and on the UK's targets for environmental improvements.¹⁵⁸ A fifth of all workers (19%) will have a core role in delivering net zero, with a further fifth (21%) helping enable the transition.¹⁵⁹

There is potential for the net zero transition to create huge numbers of jobs and opportunities across the country. In 2022, the ONS estimated that there were around 640k full-time equivalents (FTE) directly employed in green jobs, 8.4% higher than the estimated 590k in 2021, and 19.9% higher than 535k estimated in 2020.¹⁶⁰ Overall, growth in green jobs was nearly four times the rate of overall UK employment growth between 2020 and 2022.

The emergence and rising use of low and zero emission fuels and technologies in transport, freight and logistics will increase the demand for skills (especially STEM) and regular upskilling and reskilling of the workforce. The Climate Change Committee estimate that between 135k and 725k net new jobs could be created by 2030 in low-carbon sectors, such as buildings retrofit, renewable energy generation and the manufacture of electric vehicles.¹⁶¹ This is also significant opportunity for sectors such as aviation, where an estimated 60k jobs could be created by 2050 from UK Sustainable Aviation Fuel production.¹⁶²

Many of the sectors expected to grow in the net zero transition are in jobs related to:

- Energy supply and transmission including solar, wind and nuclear;
- Land use including non-livestock agriculture and potentially food processing;
- Buildings construction and retrofit including jobs required to meet housebuilding ambitions, energy efficiency and low carbon heating;
- Hydrogen and carbon capture and storage; and
- Electric vehicle and battery manufacturing.

¹⁵⁸ <https://www.gov.uk/government/news/new-legally-binding-environment-targets-set-out>

¹⁵⁹ <https://www.theccc.org.uk/wp-content/uploads/2023/05/CCC-A-Net-Zero-Workforce-Web.pdf>

¹⁶⁰ [Experimental estimates of green jobs](#), UK: 2024, ONS, 2024

¹⁶¹ [A Net Zero Workforce](#), Climate Change Committee, 2023

¹⁶² [Net Zero Carbon Road-Map](#), Sustainable Aviation, 2023.

Green also refers to jobs and skills that will be needed for a sustainable economy and will also be key to delivering net zero and environmental targets and ambitions. For example, developing a skilled nature workforce will include ensuring we have skilled workers in environmental education, data collection and analysis, planning activities, environmental conservation, and species-specific action. Of all green jobs, waste and energy efficient products were the two highest employment sectors, with around 139k and 116k FTE employees respectively in 2022, accounting for 40% of total employment in green jobs in 2022.

While developing their LSIPs, ERBs were required by legislation and statutory guidance to consider green skills and the needs created by net zero targets. The reports covered wide-ranging discussion regarding green skills and net zero.¹⁶³ For example:

- Developing sector-specific short courses on green technology, clean energy, waste management, and low-carbon transition skills, alongside the integration of green skills into all study programmes;
- Addressing language and terminology barriers related to net zero requirements and broader understanding of decarbonisation policies; and
- Cross-sector relevance and transferable nature of green skills, particularly in net zero supply chains including energy storage, green finance, and agri-tech (the application of technology and digital tools to farming).

Although the expansion of new roles will provide opportunities for workers in decarbonising sectors to transition into new roles in clean energy and wider green sectors, building the supply of necessary skills with take time, with some complex occupations requiring reskilling to meet the standards needed. As the economy transitions to low carbon, without action there is a risk that businesses will be unable to find staff with the necessary skills, thereby slowing down pace of business activity and growth of the green economy.¹⁶⁴

Clean energy jobs

Clean energy jobs are a subset of green jobs which are required for the transition to more sustainable energy systems. Meeting skills needs in clean energy sectors will be crucial to deliver the Government's clean energy mission, including clean power by 2030. The Office for Clean Energy Jobs will work closely with Skills England and DfE to ensure the UK workforce has the skills needed to deliver net zero and the Clean Energy Mission,

¹⁶³ [AI analysis of Local Skills Improvement Plans](#), UFS, November 2023

¹⁶⁴ Green Alliance Policy Insight, 2022. Closing the UK's green skills gap

feeding into further iterations of Skills England's need assessments and supporting with targeted delivery of specific policy solutions in the energy sector.

These jobs are needed across a variety of sectors including:

- Renewables (such as Onshore and Offshore Wind, Nuclear, and Solar);
- Electricity Networks;
- Hydrogen and Carbon Capture Utilisation and Storage (CCUS);
- Heat Networks and Heat Pumps;
- Energy Efficiency and Retrofit;
- Industrial Decarbonisation.

Latest ONS estimates show that in 2022, the UK low carbon and renewable energy economy (LCREE) employed more than 272k people with a turnover of more than £69.4bn.¹⁶⁵ Low carbon electricity has seen the largest year-on-year increase in turnover, more than doubling between 2021 and 2022 to £29bn.¹⁶⁶ The highest LCREE employment in 2022 was estimated to be in the energy efficient products group (135k) however, low carbon services, including consultancy, advisory and offsetting services, saw the greatest increase between 2021-22, up 92% to 16k.¹⁶⁷

Demand in areas including renewable energy, smart system technologies and building retrofit, including for older and historic buildings, is expected to continue to expand.¹⁶⁸ For example, in 2023, offshore wind capacity was expected to increase with an estimated extra 39k direct jobs and 33k jobs in the supply chain (indirect jobs) by 2030, with many of these roles potentially being covered by workers currently in the oil and gas sector. It is estimated that 90% of the UK's oil and gas workforce have medium to high skill transferability to the offshore renewable sector, with targeted retraining or upskilling needed to bridge any gaps.¹⁶⁹ The Offshore Wind Industry Council identify anticipated long-term skills shortages in the sector.¹⁷⁰ These included:

- Electrical technical and engineering skills
- Project management
- High level digital specialisms
- On and offshore logistics
- Construction resource

¹⁶⁵ [Low carbon and renewable energy economy](#), UK: 2022

¹⁶⁶ This group includes both offshore and onshore wind, solar, hydropower, nuclear power, carbon capture and store, and other renewable electricity

¹⁶⁷ This group includes energy monitoring, saving or control systems, energy efficient lighting and other products

¹⁶⁸ [Labour market and skills demand: horizon scanning and scenarios - GOV.UK \(www.gov.uk\)](#)

¹⁶⁹ [Powering up the Workforce](#). Energy Transition Institute, September 2023

¹⁷⁰ [Offshore Wind Skills Intelligence Report](#), Offshore Wind Industry Council (2023)

Spotlight case study: Heat-Pump Installation

Heat pump installation is an example of a clean energy workforce that will need to expand. The workforce is estimated to be in line with current demand but will need to grow significantly to meet rapid increases in future demand.

Government commissioned research found that among employers surveyed, two-thirds of the heating and cooling installer workforce is aged 45 or over, 95% are male and 95% white.¹⁷¹ Approximately 95% of heating and cooling businesses are sole traders or microbusinesses (fewer than 10 employees).¹⁷² The Heat Pump Association (HPA) estimate that the total number of individuals qualified since the beginning of 2022 is 13k.¹⁷³

The HPA estimates that the number of full-time equivalent heat pump installers would need to increase from 2k in 2020 to 35k to keep up with future demand.¹⁷⁴

A Hydrogen Task and Finish group led by The Hydrogen Skills Alliance estimated that the UK hydrogen economy could support around 29k direct and 65k indirect jobs by 2030. However, 84% of employers surveyed by the task and Finish Group reported that the UK's current workforce doesn't adequately serve the sector's needs. Many of the roles needed to fulfil the needs of a hydrogen economy are STEM roles, which are in shortage throughout the UK.^{175,176} Carbon Capture and Storage (CCS) is also expanding as a workforce. The Engineering Construction Industry Training Board (ECITB) estimated the CCS direct workforce (in transport and storage) could peak at approximately 2,5k-3k roles by 2030, while the roles in the wider CCS sector (including the deeper supply chain) could peak at around 15k roles by 2030.¹⁷⁷

A secure supply of construction and critical minerals will be required to support many of these clean energy technologies. As a result, the UK needs access to skilled physical scientists, engineers, and other critical minerals related skills.

¹⁷¹ [Heating and Cooling Installer Study \(HaCIS\)](#) (2023)

¹⁷² [UK business: activity, size and location, ONS](#) (2023). Figures based on enterprises with a SIC code of 43220 "Plumbing, heat and air-conditioning installation".

¹⁷³ [Heat Pump Association statistics](#)

¹⁷⁴ [Building the Installer Base for Net Zero Heating, HPA, 2020](#). Note these estimates are currently being refreshed by the HPA, and the Department of Energy Security and Net Zero is working to develop its own internal estimates.

¹⁷⁵ [Green Jobs Delivery Group – Hydrogen Task and Finish Group, Hydrogen Skills Alliance, 2024](#)

¹⁷⁶ [department-for-education.shinyapps.io/ufs-jobs-and-skills-dashboard/](#)

¹⁷⁷ ['New report on Green Jobs and Carbon Capture & Storage'](#), ECITB, 2024 (Estimates were based on the previous government's ambitions)

Life sciences

Life Sciences is key to the Government's Growth mission. According to the Office for Life Sciences (OLS) definition, which includes biopharmaceutical and medical technology sectors, there were 304k people employed in the life sciences sector in 2022, an increase of 5% year-on-year.¹⁷⁸ Turnover of businesses in the UK life sciences industry has seen an upward trend since 2015, generating £108.1bn in 2022; now the most productive sector by gross value added per worker.

The Science Industry Partnership Futures Group projected that the sector would need at least 133k roles to meet forecasted skills growth demands.¹⁷⁹ It is expected there may be skills shortages in the following sectors if the sector is unable to meet its growing needs to support innovation:

- **Specialist science and research occupations:** specialist roles such as laboratory technicians and biological scientists are key roles within the life sciences sector and may be affected by difficulty attracting international talent for more senior research positions. The sector is heavily focused around regional clusters, typically linked to universities with an internationally mobile workforce and very high knowledge intensity.
- **Digital and data roles, including AI:** roles such as software developers and data scientists are expected to increase in demand as the sector adopts technological innovation. To maintain pace with innovation and new technologies, attracting AI and digital skillsets to the sector will be critical.
- **Medicines manufacturing talent:** roles require commercial and practical experience (e.g. aseptic clean room experience), especially as new techniques emerge.
- **Translation and commercialisation talent:** life sciences entrepreneurs, regulatory affairs and supporting, non-scientific business management, administration, marketing and sale talent is needed to ensure effective translation of research into commercial products and services for the NHS.

Housebuilding and Construction

Housing is a critical part of the Government's Growth mission. The government plans to publish a housing strategy which will set out a long-term vision for a housing market that works for communities, builds 1.5m high-quality homes over the Parliament, and delivers

¹⁷⁸ [Bioscience and health technology sector statistics 2021 to 2022](#), May 2024

¹⁷⁹ [Life Sciences 2030 Skills Strategy](#)

the biggest increase in affordable housing in a generation. Building new homes will also require the construction of new infrastructure including transport and social infrastructure, as well as commercial development, educational and healthcare facilities. In addition, the period to 2030 will see significant investment in sectors such as energy and water, requiring additional capacity in specialist roles to deliver.

Government's commitment to deliver 1.5m homes represents a significant increase in outputs compared to current delivery. It will require an expansion of the UK's construction workforce, which will simultaneously need new workers and to upskill existing workers to improve competence, safety and productivity. The government has committed to publishing a ten-year infrastructure strategy that map and address these delivery challenges.¹⁸⁰

In Q2 2024, the UK construction workforce was 2.03 million, according to the latest figures from the ONS.¹⁸¹ Despite an average of 38k vacancies advertised per month, almost a third (31%) of construction employers report that finding suitably skilled staff was their key challenge.¹⁸² Before taking account of the skills needed to deliver government commitments to build 1.5m homes, improve the quality and energy efficiency of housing, and wider infrastructure commitments, the Construction Industry Training Board (CITB) forecast that the construction sector will need 252k extra workers over the period 2024-28 to meet UK construction output (a 50,300 annual recruitment rate). The main sub-sectors for demand are private housing, infrastructure and repair and maintenance. In demand occupations include labourers, other professionals and technical staff working in construction, architects, plant operatives and civil engineers.¹⁸³

Spotlight case study: Energy efficiency and Retrofit

Regarding skills opportunities in construction and green skills, there is likely to be a need for new training to meet retrofit targets. The Construction Leadership Council have identified that to deliver effective retrofit, new standards and qualifications need to be developed and existing ones updated to align with the competencies needed in industry.¹⁸⁴ Research conducted by the Energy Systems Catapult (ESC) suggests that 70% of the knowledge and skills needed to deliver effective retrofit are not currently addressed in the relevant occupational standards.¹⁸⁵

¹⁸⁰ [Labour Party manifesto 2024](#)

¹⁸¹ Annual Population Survey, ONS, Apr 2023-Mar 2024 figures for Construction industry (SIC F)

¹⁸² [Labour market intelligence report: UK, 2024-28](#), CITB

¹⁸³ [CSN Industry Outlook - 2024-2028](#), CITB, 2024

¹⁸⁴ [CLC-Roadmap-of-Skills-for-Net-Zero-Report_07-May-2024.pdf \(constructionleadershipcouncil.co.uk\)](#)

¹⁸⁵ [Skills for an integrated and customer-focused retrofit process, Energy Systems Catapult, 2023](#)

The Home Builders Federation's 2023 workforce census indicates that up to 20% of the housebuilding workforce is made-up of non-UK nationals. These figures vary across areas. In London, the construction workforce relies on up to 65% of foreign labourers (51% of the entire workforce originating from EU/EEA nationals and 14% from other overseas nations).¹⁸⁶

More than 70% (27 of 38 areas) of LSIPs highlighted construction and related sectors as a priority in their reports.¹⁸⁷ Discussion relating to the construction sector covered a wide range of topics, for example:

- Tailoring training to meet needs of particular areas of growth, such as off-site construction, sustainable construction and site supervisors;
- Specific occupations or skills that are in high demand, including carpentry and joinery skills, plumbing and retrofitting, and understanding how these might continue to change in the future; and
- Growing demand for skills related to environmental technology, sustainability and achieving net zero emissions.

Construction typically has highly cyclical and unpredictable profit margins and therefore struggles to invest in skills and innovation. High rates of sub-contracting and self-employment also disincentivise employer investment in training for on-site workers. The UK construction industry and supply chain is currently highly fragmented and lacks transparency. It has also lagged behind that of other countries and other sectors of the UK economy.¹⁸⁸ In 2023, the Construction Leadership Council identified that output per worker lagged 13.5% behind the economy average.¹⁸⁹

The use of Modern Methods of Construction (MMC) has the potential to reduce construction's reliance on skilled labour pools and drive productivity in the sector. The use of MMC in a 430-home site in Birmingham improved efficiency by 50%, and stakeholders across the sector note that workforce shortages are a key driver behind MMC adoption. However, due to its currently limited use in the sector, MMC adoption will need to be expanded considerably to bring a notable impact on our current skilled workforce requirements.

¹⁸⁶ [Home Building Workforce Census, HBF, 2023](#)

¹⁸⁷ [AI analysis of Local Skills Improvement Plans](#), November 2023

¹⁸⁸ [Trust and Productivity – the private sector construction playbook](#), Construction Productivity Taskforce, 2022

¹⁸⁹ [Creating a Productive Environment for UK Construction](#), Construction Leadership Council, 2023

Initial Skills Assessment Summary

Demand for skills will be driven by the government's five missions, which include kickstarting economic growth, making Britain a clean energy superpower and breaking down the barriers to opportunity. This report has identified key skills needs across our economy and some of the sectors that will play a central role in delivering these missions.

- Across the UK, almost 1 in 10 or over 2.5m roles are in critical demand, more than 90% of these are in roles requiring periods of work-related training or education at or above level 2.
- Demand for occupations, and associated skills, differ across industries. The health and social care industry has the highest volume and proportion of roles in demand, driven by the demand for care workers and home carers. Other high demand occupations include those in the education, manufacturing and professional scientific and technical industries.
- Looking to the future, many of the skills needed in the labour market in 2035 will be impacted by demographic and technological shifts, as well as the green transition. Both digital and green sectors should consider comprehensive skills education and inclusivity in the workforce, alongside historic age, gender and socio-economic disparities in education participation.
- It is widely anticipated that digital skills (including AI) will become increasingly important to many jobs across sectors in the future. In addition to this, a small number of occupations are likely to need more advanced digital skills such as those utilising emerging advanced digital techniques such as AI and automation.
- The green workforce will be key to delivering net zero, however only a fifth of workers (19%) will have a core role in delivering net zero, with a further fifth (21%) helping enable the transition. Many of the sectors expected to grow in Net Zero transition are in jobs related to buildings construction and retrofit, land use and energy supply.
- The life sciences sector needs a projected 133k additional roles to meet forecasted skills growth demands and harness associated productivity gains. To continue to support innovation in the sector, demand is expected in several key areas. These include specialist science and research roles, digital and data roles, including AI, medicines manufacturing and non-specialist roles such as business administration to support the sector.
- Government's commitment to deliver 1.5m homes over this Parliament, as well as infrastructure investment in sectors such as water and energy represents a significant increase compared to current construction and housing output. This will require an expansion of the UK's construction workforce, which simultaneously needs to upskill to improve competence, safety and productivity.

Next steps

An open and collaborative approach to build relationships with partners across the system will be crucial as Skills England begins to lay the foundations for long-lasting change. This work has already begun, including through convening key government departments and early engagement with Mayoral Combined Authorities and Employer Representative Bodies. The publication of this report will provide the springboard for Skills England to lead further dialogue with the different parts of the system.

- Skills England will launch a **series of roundtables and webinars in the autumn** to test and refine the initial assessment of skills needs provided in this report, and to provide an opportunity for stakeholders to help shape decisions on how it will execute its key functions. These discussions will help Skills England to set up effective structures for engagement in the longer term to facilitate cooperation and joint working across the system.
- Over the coming months, Skills England will work with government departments and relevant stakeholders to **expand on the initial assessments of skills needs within sectors**. As part of this, Skills England will develop consistent workforce definitions and supporting departments to employ these definitions when undertaking new analysis or collating existing data and evidence, alongside work to develop a detailed, consistent approach to skills measurement across the UK.¹⁹⁰ This engagement will also include a focus on the sectors included in the sector-based assessments in chapter three, enabling them to become testbeds for how Skills England can identify and help address skills gaps. Skills England's sector-focused work will evolve in line with the Industrial Strategy, through close collaboration with the Industrial Strategy Council once established.
- Skills England will consult **employers and other key organisations to provide initial views on what high-value training should be accessible through the Growth and Skills Levy**, within a set of agreed parameters in line with available budgets.
- Skills England will **publish further analysis**. This will include building upon some of the work previously led by the Unit for Future Skills, including: the delivery of a standardised skills taxonomy for the UK (the UK Standard Skills Classification); working with the Office for National Statistics on their development of online job

¹⁹⁰ UK Standard Skills Classification: [A Skills Classification for the UK \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

advertises; launching further research to understand the causes behind falling employer investment in skills; and mapping occupations onto education pathways to understand the most common pathways into priority professions.¹⁹¹

- Skills England will collaborate with its regional partners, the Ministry for Housing, Communities and Local Government, and the Department for Education so that it operates in line with **devolution agreements and the Government's commitment to simplify and devolve adult skills funding to Combined Authorities**.
- Skills England will **collaborate with devolved administrations** in Scotland, Wales and Northern Ireland, to boost growth and spread opportunities throughout the UK. Opportunities for collaboration include: effective sharing of data and insights, joint work to address UK skills system challenges, and cross-border forums for sector-specific work to facilitate investment in skills.
- Skills England will ensure that skills sit at the heart of joined-up decision making across Government. It will **work closely with the Migration Advisory Committee** to grow the domestic skills pipeline and reduce our reliance on overseas workers **and the Industrial Strategy Council**, so that we develop the skilled workforce needed to deliver a clear, long-term plan for the future economy.
- Skills England will support the outcomes of the forthcoming white paper, **Get Britain Working**. The paper will focus on developing earning potential, building skills that enable career progression and supporting people to work more hours and in higher paid roles. This will be delivered through the introduction of the Youth Guarantee providing greater support for young people to access education and training, in conjunction with the reformation of employment support by combining the National Careers Service and Jobcentre Plus. The paper outlines the need to tackle inactivity through working with families to overcome barriers to employment as well as reforming Early Years and Childcare to remove barriers for parents.

¹⁹¹ UK Standard Skills Classification: [A Skills Classification for the UK \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

Annex

Annex A: Further information on the Occupations in Demand methodology including weighting and caveats

Skills England has produced a composite index of seven indicators (including visa applications, online job adverts and wage growth) looking across the ONS' standard list of around 400 occupations to identify which are **currently** seeing high levels of demand across the labour market. This is the Occupations in Demand index.¹⁹²

Identifies occupations in demand using cut-off:

- *Critical demand*: outliers in relation to the seven indicators
- *Elevated demand*: above average in relation to the seven indicators

The methodology identifies 39 occupations in the most critical demand and a further 128 showing elevated demand across the UK labour market.

Caveats

- Data-led approach that doesn't consider qualitative input from industries as was the case with the MAC SOL
- Assumed relationship between changes in the indicators and real demand in the labour market
- High labour demand is not the same as shortage and is not necessarily due to a skills issue, e.g. due to wider structural issues such as pay
- Due in part to the pace of sectoral change, particularly in areas such as digital and technology, roles do not necessarily align to the ONS' standard list of occupations.

Table 1: Indicators used to determine occupations in demand

Indicator	Weighting	Sources	Time period	Geography
Visa application density	1	Home office (HO) sponsored work entry clearance visas by occupation and industry & Annual population survey (APS)	April 2023 – March 2024 (HO Visas) & April 2023 – March 2024 (APS)	UK (HO Visas) UK (APS)

¹⁹² [Occupations in demand in 2024](#), Skills England

Indicator	Weighting	Sources	Time period	Geography
Skill shortage vacancy density	0.5	Annual population survey (APS) Employer skills survey (ESS) (Update with SOC20 link)	June 2022 – March 2023 (ESS fieldwork)	UK (ESS)
Online job advert posting density	1	ONS Textkernel data & Annual population survey (APS)	January 2023 – December 2023 & January 2023 – December 2023 (APS)	England + UK (ONS Job ads) England + UK (APS)
Annual wage growth	1	Annual survey of Hours and Earnings (ASHE) employee earnings in the UK Consumer price index	April 2022 – April 2023 (ASHE) & 2023 (CPI)	England + GB (ASHE - GB) UK (CPI)
Wage premium	1	Annual survey of Hours and Earnings (ASHE) employee earnings in the UK	April 2023	England + UK (ASHE)
Year on year change in hours worked	1	Annual survey of Hours and Earnings (ASHE) employee earnings in the UK	April 2022 – April 2023	England + UK (ASHE)
Year on year change in temporary or contract worker density	1	Annual population survey (APS)	April 2023 – March 2024 (APS) April 2022 – March 2023 (APS)	England + UK (APS)



Department
for Education

© Crown copyright 2024

This publication is licensed under the terms of the Open Government Licence v3.0, except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3.

Where we have identified any third-party copyright information, you will need to obtain permission from the copyright holders concerned.

About this publication:

enquiries <https://www.gov.uk/contact-dfe>

download www.gov.uk/government/publications

Follow us on Twitter: [@educationgovuk](https://twitter.com/educationgovuk)

Connect with us on Facebook: facebook.com/educationgovuk