# Pathways to success

## Shaping foundation apprenticeships in engineering and technology

EngineeringUK

INSPIRING FUTURES TOGETHER

# Contents

# Foreword

## Foundation apprenticeships in engineering and technology in England

**The government's Industrial Strategy has outlined significant ambitions for the next decade. It aims to position the UK as a global leader in advanced manufacturing, clean energy, and professional and business services. I am pleased to see the government's recognition, in the Industrial Strategy and more widely, that addressing the shortages of engineers and technicians will be crucial in enabling the UK to prosper and grow.**

I am also encouraged that the government is pursuing its mission to break down barriers to opportunity, by aiming to support young people into growth-driving, inclusive careers. Helping young people from every background to realise they could have a future in engineering and technology is at the heart of EngineeringUK's work.

This briefing on foundation apprenticeships in England builds on our 2023 inquiry into apprenticeships, Fit for the Future, led by Lord Knight and Lord Willetts in partnership with EngineeringUK. That inquiry examined the reasons for the fall in engineering, manufacturing and technology apprenticeships, including barriers to these routes for young people, and offered solutions and good practice.

In this briefing, we draw on data analysis, published literature, and roundtables with stakeholders to look at how foundation apprenticeships might work in engineering and technology. We compare our early findings against criteria that politicians and civil servants might consider as they develop the policy, and we offer recommendations about what we believe will support success.

Like any new policy, foundation apprenticeships are likely to benefit from refinement. We therefore encourage the government to learn from the successes and shortcomings of previous programmes and build in evaluation, and if necessary iteration, from the outset of the roll-out of foundation apprenticeships.

A skills system that supports young people's entry to the workplace must be constantly responsive to employers' needs, as well as those of society more broadly. To achieve these aims, it is essential that there are strong connections between engineering and technology industry representatives and government. We are grateful to the Department for Education and Skills England for joining our roundtables with employers, awarding organisations and providers earlier this year. We look forward to facilitating future connections between government and industry, wherever possible.

**Dr Hilary Leevers,**
Chief Executive, EngineeringUK

# Definitions and methods

**For this work, we have analysed a variety of publicly available datasets – mostly published by the Department for Education (DfE). We also held discussions with employers, awarding organisations, providers and other stakeholders in the engineering and technology sector.**

EngineeringUK's work encompasses a variety of engineering and technology-related apprenticeships and industry sectors. The major definitions that guide the scope of our work are as follows.

When we analyse data that can be broken down by occupation, based on Standard Occupational Classification (SOC) codes, we use the 'engineering footprint'. This encompasses all aspects of engineering and technology and is agreed by EngineeringUK, the Royal Academy of Engineering and the Engineering Council[1].

Data about apprenticeships and qualifications cannot usually be broken down by occupation. Instead, DfE groups apprenticeships or qualifications into 15 tier-1 sector subject areas (SSAs). Of these, 3 are engineering and technology-related:

- construction, planning and the built environment
- engineering and manufacturing technologies
- digital (previously information and communication technology).

Where we use more granular breakdowns, or categorisations in other datasets, we provide detail in footnotes and in the methods appendix to this report.

[1] EngineeringUK (2024), **The engineering footprint.**

# About foundation apprenticeships

**Keir Starmer announced in September 2024 that the government intends for foundation apprenticeships in England[2] to give young people a route into critical sectors while they earn, helping them to develop valuable skills[3].**

In May 2025, DfE published apprenticeship funding rules for 2025/26 including the parameters for foundation apprenticeships[4]. IfATE (now Skills England) published standards for 7 foundation apprenticeships in construction, engineering and manufacturing, digital technologies, and health and social care at the same time. Education Secretary Bridget Phillipson has linked the choice of these sectors to the Industrial Strategy. The government expects foundation apprenticeships to drive up to 30,000 apprenticeship starts by the end of this Parliament in 2029. It is not clear how many of these are expected to be engineering and technology-related. However, targeted government support for construction – and the ambition that 100,000 more construction workers per year should be recruited by the end of the Parliament in 2029[5] – point towards construction being a significant part of the expectation. The government is exploring the potential for foundation apprenticeships in further sectors[6].

## Key features of the foundation apprenticeships announced in May 2025[7]

**They are aimed at young people:**

- aged 16 to 21 or
- aged 22 to 24, if they have an education, health and care plan; if they are in the care of, or previously in the care of, a UK local authority; or if they are a prisoner or prison leaver.

**They are at level 2.**

**They have a typical duration of 8 months, with an off-the-job training requirement of 187 hours (5 to 6 weeks if training full-time).**

**Studying functional skills is required, but there is no requirement for assessment of these.**

**There are incentives for employers. All 7 foundation apprenticeships qualify employers for "up to £2,000 per foundation apprentice, subject to retention and progression". DfE has said that payments will be generated and paid via the provider, with payments in 3 instalments:**

- 90 days after the apprentice's learning start date, if the apprentice is still undertaking their foundation apprenticeship
- 242 days after the learning start date, if the apprentice is still undertaking their foundation apprenticeship
- 90 days after the foundation apprentice starts a new (non-foundation) apprenticeship with the same employer.

**Further benefits for employers, according to Skills England, are that they get to see the apprentice in work-based settings while the apprentice receives extra support, and a broader talent pool of young learners.**

**Skills England's standards for foundation apprenticeships set out the intention that onward progression will be to level 2 or level 3 apprenticeships, to employment, or to other study.**

[2] Foundation apprenticeships in England are employment-based and differ from those in Scotland, where they are school- or college-based.

[3] Government press release (2024), **Prime Minister overhauls apprenticeships to support opportunity**

[4] DfE (2025), **Apprenticeship funding rules, 2025 to 2026.**

[5] Government press release (2025), **Thousands more to get the tools they need to start construction careers.**

[6] UK Parliament (2025), **Apprenticeships and skills training: statement made on 2 June 2025 by Bridget Phillipson.**

[7] These features are taken from DfE (2025), **Apprenticeship funding rules 2025 to 2026** and from Skills England's **foundation apprenticeship standards**.

# Summary and recommendations

## We welcome the intention behind foundation apprenticeships.

The government has said that it wants to create more opportunities for young people at the start of their career. It also wants to meet employers' growing needs for a skilled workforce now and into the future. To achieve these aims, government recently introduced 7 foundation apprenticeships. These are 8-month, level 2 apprenticeships, aimed at those aged 16 to 21 years old – or up to 24 years for some young people, such as those with an education, health and care plan. Government intends that young people should progress from the foundation apprenticeship to a more specialist apprenticeship at level 2 or 3, to employment, or to other education or training. Government envisages that there will be up to 30,000 foundation apprenticeship starts by the end of this Parliament in 2029. Six foundation apprenticeships are relevant to the engineering and technology sector – in construction, planning and the built environment; digital; and engineering and manufacturing.

We welcome the intention for foundation apprenticeships as part of the landscape of support for skills development. We are keen that they work for the engineering and technology sector, and for young people, wherever there are appropriate vacancies.

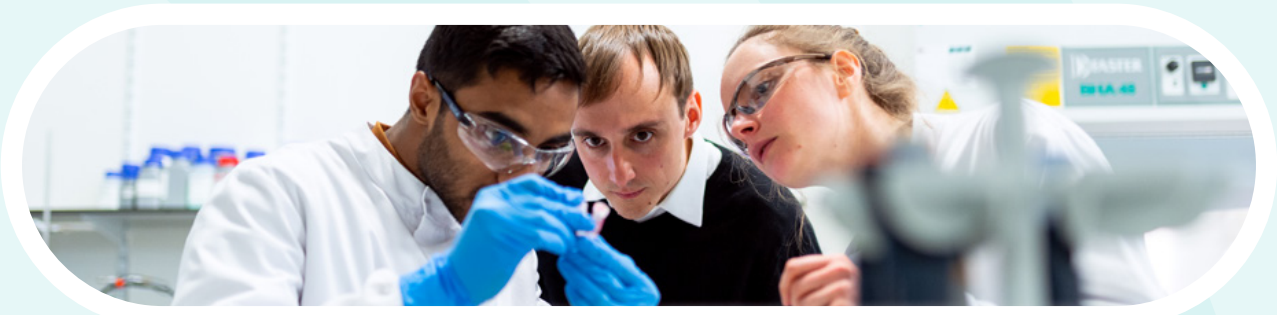
## Key evidence

(see section 1 for further detail)

There are 200,000 people working in level 2 engineering and technology occupations that Skills England classifies as being in critical or elevated demand. Government policies to boost housing, defence, energy infrastructure and wider growth mean that demand for such skills is likely to rise further. However, it is well known that level 2 apprenticeship starts have declined in recent years, including in engineering and technology – with under-19s one of the groups most affected.

## Our message to government

We welcome the intention that foundation apprenticeships should contribute to a rebalancing of apprenticeship funding towards young people beginning their careers. We set out below a checklist of 7 criteria that we believe foundation apprenticeships must meet to succeed in opening up opportunities for young people in engineering and technology and beyond.



# Our 7 criteria for the success of foundation apprenticeships

## CRITERION 1

# Are the objectives for foundation apprenticeships clear, and do they complement other policies?

1

## KEY EVIDENCE

**(see section 2 for further detail)**

**The government intends there to be up to 30,000 foundation apprenticeship starts before the end of 2029.** We do not know how many of these the government expects to be engineering and technology-related. However, announcements point towards construction foundation apprenticeships being a significant component.

**Foundation apprenticeships require employers to take responsibility for getting young people work ready.** They look to address work readiness issues, alongside technical training in sectors prioritised in the Industrial Strategy, while young people earn. In the past traineeships – now discontinued as a national programme – required young participants to improve their work readiness while unpaid. Foundation apprentices, by contrast, will be paid – shifting responsibility to employers to pay young people while they improve their work readiness.

**Some stakeholders have questioned what foundation apprenticeships will add to existing training, and whether they will displace other employment.** Employers, not-for-profit organisations, the Department for Education (DfE) and the Department for Work and Pensions (DWP) already offer a wide range of skills and employability courses. There are also many classroom-based engineering and technology courses outside apprenticeships, with thousands of entries each year. These provide another clear opportunity to bridge education and employment. If they were supported further, they could help to address the issues that foundation apprenticeships aim to tackle.

## RECOMMENDATIONS

1. **To secure participation in foundation apprenticeships by young people and employers, government must communicate clearly which problems it aims to resolve through foundation apprenticeships, and which industries and young people should benefit.**
2. **Government must communicate clear progression pathways so young people and employers can understand how foundation apprenticeships can lead to further work or skill development.**
3. **The government should evaluate foundation apprenticeships, including looking at whether they generate new apprenticeships, and how the policy sits alongside other educational pathways and programmes.** This should include examining whether there is potential, for example through careful use of the growth and skills levy, to support employers to collaborate more with colleges and other training providers on classroom-based courses for young people.
4. **If employers do not take up foundation apprenticeships in large numbers, policymakers should be prepared to think broadly about which government department is responsible for developing young people's work readiness, and to work with employers and other stakeholders to develop a new approach.** For example, there may be opportunities to build further on DfE's existing work with DWP.

## CRITERION 2

# Are there sectors with current or potential demand for level 2 foundation apprentices?

2

## KEY EVIDENCE

**(see section 1 for further detail)**

**Level 2 apprenticeship starts have fallen sharply in some sectors.** For example, there were no digital level 2 apprenticeship starts in 2023/24 compared with nearly 4,000 in 2018/19. Manufacturing level 2 apprenticeship starts fell by 80% in just 5 years, going from 11,670 in 2018/19 to 2,330 in 2023/24. Other sectors have also seen a notable, but less extreme, decline at level 2. In construction, building and planning, level 2 apprenticeship starts have fallen by 12% in 5 years, from 12,960 in 2018/19 to 11,430 in 2023/24.

**This may reflect that some engineering and technology sectors require skills at level 3 or above.** Overall, the fall in level 2 apprenticeship starts does not appear to be explained by an increase in apprenticeship starts at level 3. However, some engineering and technology employers tend to recruit apprentices above level 2, often at level 3. Employers may recruit at these higher levels because they have plentiful skilled applicants, or because regulations require new starters to begin with high-level existing qualifications. The number of entrants to undergraduate engineering degrees has not grown in recent years, but there has been growth in undergraduate entries to related fields such as computing (up 47% between 2019/20 and 2023/24), which may reflect and drive technological changes to engineering and technology-related occupations.

**There are, though, other possible explanations for the fall in level 2 starts.** For example, employers have highlighted that some previous frameworks have not been replaced or integrated into new standards, leaving employers unable to offer those entry routes.

**Forecasts and other predictions of future demand suggest that there may be longer-term future demands at level 2.** Not all datasets on forecast demand are disaggregated by skill level. Where they are, they suggest that a minority of forecast engineering and technology shortage occupations will be at level 2, with more opportunities at level 3 and above. However, we have heard that some employers, for example in the construction sector, would value a foundation apprenticeship, as a means for employers and young people to find a good match through a relatively short apprenticeship.

**Some employers questioned the narrow age range for foundation apprenticeships in the engineering sector.** A broader range would increase the potential supply of apprentices, particularly in sectors where safety and safeguarding issues (such as working offshore, or with high voltages) limit apprenticeships to those aged 18 or over. This could also benefit young people who were unable to gain work experience during the pandemic.

## RECOMMENDATIONS

1. **DfE must take a sector-by-sector approach to continue refining its understanding of the potential benefits of foundation apprenticeships.** There is an opportunity to learn whether political and funding support can increase take-up of apprenticeships at level 2 in some sectors.
2. **Government should be prepared to consider further changes to the foundation apprenticeship model if take-up is low.** Widening the age range could increase take-up and benefit both employers and young people.
3. **A potential alternative model is pre-apprenticeships, which have worked well for employers in some sectors.** Government could consider funding employers' costs from the growth and skills levy to encourage further take-up.
4. **There may be potential for local skills improvement plans to identify ways of matching local needs to training provision.**

## CRITERION 3

# Do employers buy in to the idea that foundation apprenticeships are worthwhile?

3

## KEY EVIDENCE

**(see section 3 for more detail)**

**Engineering and technology sector employers we spoke to did not generally expect foundation apprenticeships to lead to new training or jobs.** Some were concerned that foundation apprenticeships would lengthen the training pathway and time until employers see a return on investment.

**The government will pay a financial incentive to employers for foundation apprenticeships, but this is subject to demanding conditions.** The £2,000 incentive compares to minimum salary costs of around £9,000 for the 8-month apprenticeship. For the employer to receive all instalments, the apprentice must remain with their employer for at least 242 days and must progress to spend at least 90 days on another apprenticeship with the same employer.

**Incentives take time and work to bed in.** It takes time for employers to become familiar with new pathways and to change their behaviour to adopt them. Employers told us that they are still adapting to T Level work placements, introduced between 2020 and 2022. The Federation of Small Businesses has found low awareness among small and medium-sized enterprises (SMEs) of earlier incentives for employing apprentices.

## RECOMMENDATIONS

1. **DfE must communicate a clear vision of foundation apprenticeships' value distinct from, and complementary to, other training and employability programmes.**
2. **DfE should make accessing the financial incentive for taking on a young person on a foundation apprenticeship as simple as possible.**
3. **Government should review regularly whether incentives are sufficient to engage employers.**
4. **Skills England must build on the engagement that the Institute for Apprenticeships and Technical Education (IfATE) undertook with employers, to ensure their needs are met through foundation apprenticeships.**

## CRITERION 4

# Are small and medium-sized employers starting to offer foundation apprenticeships?

4

## KEY EVIDENCE

**(see section 3 for more detail)**

**In 2022/23, SMEs employed around half of engineering and technology-related apprenticeship starters at level 2 or level 3.** The proportion is even higher in the construction sector.

**Between 2018/19 and 2022/23, engineering and technology-related apprenticeship starts for SME employers declined faster than for large employers.** Changes to the apprenticeship system in the mid-2010s do not appear to be working well for all SMEs. Since April 2024, the government has paid the full costs of training for SMEs' apprentices up to the age of 21, in an attempt to curtail this trend. Still, the broader employment environment remains challenging for some SMEs – for example, in light of recent increases to the apprenticeship wage.

## RECOMMENDATIONS

1. To maximise SME engagement with foundation apprenticeships, government must address broader issues such as low awareness of the benefits of apprenticeships among SMEs, and how to access levy funding.
2. We recommend that the government promotes Group Training Associations to support engineering and manufacturing SMEs with the recruitment of apprentices, training, access to levy funds and wider funding issues.
3. Skills England must ensure that SMEs have opportunities to shape apprenticeship standards, including those for foundation apprenticeships.

## CRITERION 5

# Are standards defined in a way that encourages high quality foundation apprenticeships?

5

Do standards encourage appropriate durations and training requirements, and the right content that supports progression?

## KEY EVIDENCE

**(see section 4 for more detail)**

**A broad-based introductory apprenticeship may benefit young people yet to settle on a career direction, but progression routes must fit with employers' needs.** Skills England's occupational maps help to outline likely career paths for foundation apprentices. Foundation apprenticeships theoretically provide broad-based entry routes to more specialist apprenticeships at level 2 or level 3. This may be helpful to young people, leading to more specialised onward pathways. However, some employers we spoke to were not convinced that they would be able to offer progression routes for young people who had completed a foundation apprenticeship.

**The new engineering and technology-related foundation apprenticeship standards vary in how far they differ from existing apprenticeship standards.**

- The engineering and manufacturing foundation apprenticeship is only a few months shorter than the existing level 2 'Engineering operative' standard.
- The construction sector foundation apprenticeships appear to offer a more distinctive introduction, with onward pathways to longer, more specialised apprenticeships at level 2.
- The digital foundation apprenticeships (re-) establish level 2 qualifications in this sector. It remains to be seen whether this is in line with employer demand, and whether a foundation apprenticeship at level 2 is sufficient to prepare for progression to a level 3.

**Some stakeholders we spoke to were concerned that foundation apprenticeships at level 2 could undermine the broader apprenticeship brand.** They felt that including employability skills in an 8-month apprenticeship will leave significantly less time for technical content, compared with existing level 2 engineering and technology apprenticeships. This was particularly the case for employers in safety-critical industries.

## RECOMMENDATIONS

1. **DfE should monitor foundation apprentices' progression, via the individualised learner record, and should evaluate how progression works for different sectors.**
2. **DfE and Skills England should consider how to communicate foundation apprenticeships' status, as distinct from other apprenticeship standards, to address concerns that they dilute the apprenticeship brand.**

## CRITERION 6

# Are foundation apprenticeships supporting young people from a range of backgrounds to succeed?

6

## KEY EVIDENCE

**(see section 5 for more detail)**

**There is significant under-representation of women across all engineering and technology apprenticeships.** This is particularly the case in engineering and manufacturing, and in construction, planning and the built environment – with the most pronounced under-representation at levels 2 and 3. For example, in 2023/24, 11% of those starting a level 2 engineering and manufacturing apprenticeship were female. Of those starting a level 2 construction, planning and built environment apprenticeship in 2023/24, 2% were female.

**In 2023/24, only 5% of level 2 engineering and technology-related apprenticeship starts were by UK ethnic minorities (excluding white minorities).**

**Apprenticeships can offer social mobility, but the apprenticeship wage, in combination with high costs of living, are barriers for some young apprentices.**

## RECOMMENDATIONS

1. **Government should ensure that careers guidance services present foundation apprenticeships in a way that appeals to a broad range of students.**
2. **Government and employers should consider additional support for young people from low-income families.** This might include support for transport costs, and expanding or learning from existing scholarship schemes.
3. **Government should also consider how the benefits system, and the financial circumstances of the wider family might contribute to young people's decision-making.** For example, the government should allow parents of those under 20 who start an apprenticeship to claim child benefit, as is possible for those undertaking college or sixth-form study.
4. **Government should use the curriculum and assessment review, and work with employers, to support wider interest in science, technology, engineering and maths (STEM) apprenticeships.** This should include looking at how apprenticeships can be promoted among girls and UK ethnic minorities.

## CRITERION 7

# Are foundation apprenticeships financially viable for providers?

7

## KEY EVIDENCE

**(see section 6 for more detail)**

**The volume of foundation apprentices could threaten viability.** While foundation apprenticeships differ from previous policies with similar objectives, like traineeships, there are common features to learn from. For example, the focus on a tightly defined age group limits numbers. This may make the viability of off-the-job training challenging for many providers.

**The funding bands may not be high enough.** Funding bands for apprenticeships have not been lifted in recent years and the government has acknowledged that many are concerned they are too low. The funding band for the 'Engineering and manufacturing' foundation apprenticeship appears low compared to funding for the current 'Engineering operative' level 2.

**Some stakeholders were concerned that completion rates could affect providers' payments.** Training providers will be paid monthly, with a final 20% payment for completion, in line with other apprenticeships. Given that the target group is likely to be further from the labour market than other apprentices, and retention may prove more challenging as a result, this could reduce providers' payments.

## RECOMMENDATIONS

1. **Working closely with education providers and employers, DfE and Skills England must monitor and evaluate the funding approach to ensure foundation apprenticeships' viability.**
2. **We ask that DfE maintains the £1,000 payment to employers and providers, designed to support additional costs of training for any apprentices aged 16 to 18, or for those aged 19 to 25 with an education, health and care plan or who have been in the care of their local authority.**
3. **We welcome the government's intention to reconsider funding bands and ask government to review these regularly in future.**
4. **The government must monitor drop-out rates in foundation apprenticeships to keep a handle on the possibility that providers suffer from high non-completion rates.**

# Section 1
# Core policy design: Is there a need to expand entries into engineering and technology at level 2?

# Demand for engineering skills

Many engineering occupations are in high demand or growing rapidly, leading to increasing demand for a skilled workforce. Meanwhile, the number of young people not in education, employment or training (NEET) has been rising since 2021, to 923,000 at the start of 2025. This labour market trend is not reflected in other age groups[8], suggesting that there is a need to help young people make the bridge from education to the labour market. Government's response to this so far includes the Youth Guarantee, which aims to ensure that every 18- to 21-year-old in England gets access to education, training, or help to find a job or an apprenticeship.

## Current demand across the engineering footprint

Skills England identifies jobs currently in demand across the UK labour market, through its 'Occupations in demand' index[9]. Our analysis of Skills England's data (Figure 1) finds that, looking at all skill levels across the UK, there are 555,100 workers in 'critical demand' engineering and technology occupations (10% of all those in engineering and technology occupations[10]). Another 2,703,000 workers in the sector are in occupations in 'elevated demand' (50% of all those in engineering and technology occupations).

Figure 1 also shows that:

- Within the dataset, 436,200 workers (8% of those in the engineering and technology sector) are in occupations that Skills England designates as being at level 2[11]. Of workers at this level, 46% are in critical-demand or elevated-demand occupations.

  Critical-demand occupations at this level include rail construction and maintenance operatives and crane drivers. Elevated-demand occupations at this level include routine inspectors and testers, assemblers of vehicles and metal goods, and scaffolders, stagers and riggers.

- The majority of workers in the engineering and technology sector require higher levels of training.

- Of the 2,147,800 engineering and technology workers at levels 3 to 5, 1,265,800 (59%) are in critical-demand or elevated-demand occupations[12].

  Examples of critical-demand occupations at this skill level include 'metal working production and maintenance fitters', 'metal machining setters and setter-operators', and 'electrical service and maintenance mechanics and repairers'. Elevated-demand occupations at this level include 'electricians and electrical fitters', and technicians working on vehicles, on building and civil engineering, and on electrical engineering and electronics.

These numbers are reflected in industry concerns about shortages. For example, the 2025 Industrial Strategy Skills Commission led by Make UK reported 55,000 unfilled long-term vacancies in the UK manufacturing sector[13].

[8] Youth Futures Foundation (2025), **Trends in young people not in education, employment or training (January - March 2025).**

[9] See methods appendix for more information on this and our approach to the analysis of this dataset.

[10] EngineeringUK worked with the Royal Academy of Engineering and the Engineering Council to agree a list of SOC codes encompassing all aspects of engineering, which we call the engineering footprint. **More information on this is available here.**

Note that Skills England's 'Occupations in demand' dataset excludes occupations either labelled as 'not elsewhere classified' (n.e.c.), or for which data for five or more of the indicators making up the index were missing or imputed. As a result, 15 engineering and technology occupational codes (15.5% of the engineering footprint) normally counted within our footprint are excluded from this analysis.

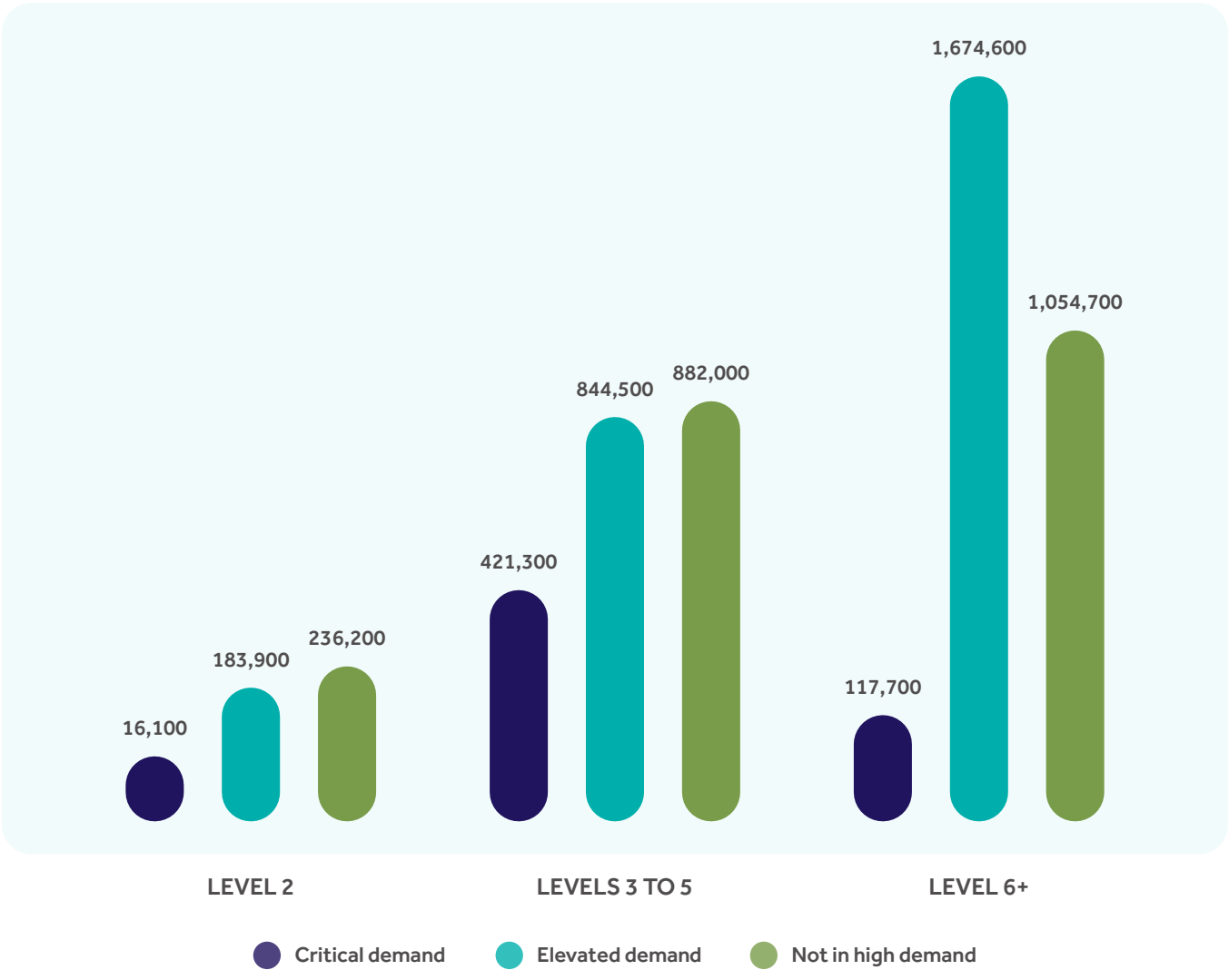
[11] EngineeringUK analysis of Skills England's 2024 'Occupations in demand' dataset. The skill levels used in Skills England's datasets are **ONS skill levels**. **Skills England's technical report on the 'Occupations in demand'** index maps ONS skill levels to England RQF ones used in this report. In this paragraph, we refer to ONS skill level 2, which also maps onto RQF level 2.

[12] This grouping maps to ONS skill level 3. (Please see previous footnote on ONS skill levels.)

[13] Make UK (2025), **Industrial strategy skills commission report.**

FIGURE 1

## Number of engineering and technology sector workers in occupations in critical demand, elevated demand, or not in high demand, 2024




**Notes:** The skill levels used in Skills England's datasets are ONS skill levels.

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**Source:** EngineeringUK analysis of Skills England's 2024 'Occupations in demand' dataset

# Forecasts and projections

Looking to likely future demand, 2023 Lightcast research for EngineeringUK[14] suggests that occupations in the engineering footprint are projected to grow faster than the national average of all occupations. Based on labour market trends at the time (and not taking into account government policy, which is likely to increase demand further) Lightcast projected that, compared to 2021, there would be approximately 173,000 new jobs in 2030. Of these, the greatest numbers of new jobs were projected to be in ICT and software, skilled construction trades and civil engineering.

Other workforce forecasts that consider likely disruptions, such as those from policy, often indicate that workforce growth will be even faster –most of the forecasts and expectations below were formulated before the government's Industrial Strategy and Infrastructure Strategy announcements. These generally give more certainty about investment, and workforce needs may therefore be still higher.

Skills England's 2025 sector skills needs assessments found that there is likely to be shared demand for some occupations. For example, construction workers will be required both for building clean energy infrastructure and for working towards the government's target of building 1.5 million homes by 2030[15]. 'Electrical engineers' and 'metal working production and maintenance fitters' are also shared across the defence, advanced manufacturing and digital and technology sectors[16].

Skills England has also found that skills are, and will be, required from level 2, for example in electrical trades and in welding and mechanical trades[17], with high growth anticipated by the CITB for carpenters and joiners and other trades[18].

[14] EngineeringUK (2023), **Engineering skills needs**.
[15] Skills England (2025), **Sector skills needs assessments: clean energy industries**.
[16] Skills England (2025), **Sector skills needs assessments: defence**.
[17] Skills England (2025), **Sector skills needs assessments: clean energy industries**.
[18] Skills England (2025), **Sector skills needs assessments: construction**.

# Spotlight: clean energy

The National Engineering Policy Centre (NEPC), a partnership of 42 professional engineering organisations including EngineeringUK, has found that an additional 200,000 UK workers are needed to meet expansion demand for clean power by 2030, on top of those required to replace the existing ageing workforce[19]. This is broadly in line with the Climate Change Committee's estimate that "between 135,000 and 725,000 net new jobs could be created by 2030 in low-carbon sectors [in the UK], such as buildings retrofit, renewable energy generation and the manufacture of electric vehicles"[20].

The sector's growth is already visible in recent recruitment data. According to 2024 analysis of Lightcast data by the Department for Energy Security and Net Zero (DESNZ), the share of clean energy jobs in 2024 was roughly double the levels seen 5 years ago[21].

Looking specifically at the skills that could be provided by level 2 and level 3 apprenticeships, DESNZ has identified a variety of potential high-demand occupations at levels 2 and 3, though it has not quantified shortages:

- In the power and networks sector, there is high demand and high difficulty in recruiting at levels 2 and 3 include welding trades and mechanical trades. Other potentially in-demand jobs at levels 2 and 3 include plant operatives; those with digital skills; construction labourers; trade supervisors; electrical trades; steel erectors; cable jointers and plant mechanics[22]. Level 3 multi-skilled craftspeople and level 3 telecoms technicians are also expected to have workforce gaps[23].
- For carbon capture, utilisation and storage, pipefitters, labourers, welders and crane operators[24].
- In construction, level 2 labourers[25] and scaffolders[26].

Energy & Utilities Skills has forecast growth in demand for skills in the energy and utilities industry by skill level between 2024 and 2030. Engineering or engineering-related occupations within this include[27]:

- Level 1 process, plant and machine operatives (52% growth in new jobs between 2024 and 2030, requiring an average of 2,600 new people per year).
- Level 3 skilled metal, electrical and electronic trades (40% growth in new jobs between 2024 and 2030, requiring an average of 4,500 new people per year).
- Level 3 skilled construction and building trades (11% growth in new jobs between 2024 and 2030, an average of 3,900 new people per year).

[19] National Engineering Policy Centre (2024), **Rapid decarbonisation of the GB electricity system**.
[20] Climate Change Committee (2023), **A Net Zero workforce**.
[21] DESNZ (2025), **Assessment of the clean energy skills challenge**.
[22] DESNZ (2025), **Assessment of the clean energy skills challenge** – Figure 6.
[23] DESNZ (2025), **Assessment of the clean energy skills challenge** – Figure 9.
[24] DESNZ (2025), **Assessment of the clean energy skills challenge** – Figure 10.
[25] DESNZ (2025), **Assessment of the clean energy skills challenge** – Figures 11 and 13.
[26] DESNZ (2025), **Assessment of the clean energy skills challenge** – Figure 11.
[27] Energy & Utility Skills (2024), **Workforce demand estimates – 2024 to 2030 – the energy and utilities sector** – Figure 4.

# Sector trends in level 2 and level 3 apprenticeships: implications for foundation apprenticeships

Despite the apparent need outlined above, the last few years have seen downward trends in investment in training, and in apprenticeship starts at levels 2 and 3.

Within engineering and technology-related apprenticeships, Figure 2 shows the trends in level 2 and level 3 apprenticeship starts by sector.

## Engineering and manufacturing technologies

The fall in level 2 starts between 2018/19 and 2023/24 has been most pronounced in the engineering and manufacturing technologies sector.

Digging more deeply into the data for this sector, (as shown in Figure 3) it appears that some high-volume manufacturing apprenticeship frameworks – such as 'Industrial applications', which had around 8,000 starts in 2018/19 – have not been directly replaced by new standards. This has contributed substantially to a steep decline in manufacturing apprenticeship starts at levels 2 and 3.

## Construction, planning and built environment

By contrast, the number of level 2 apprentices in the construction, planning and built environment sector has stayed roughly constant since 2018/19.

## Digital technology

There has been a notable change in the digital technology sector: level 2 starts fell from nearly 4,000 in 2018/19 to zero in 2023/24. The Education and Skills Funding Agency withdrew funding approval for learners aged 16 and above from qualifications in this sector subject area at level 2 from 1 August 2022[28]. It is not clear to us whether this withdrawal of policy support is the only driver.

Overall, there does not appear to have been compensating growth in level 3 apprenticeship starts. Figure 2 shows that level 3 apprenticeship starts have grown only slowly (where they have at all), while level 2 starts have declined rapidly, reflecting fewer entry level opportunities.


[28] What is now called the digital technology sector subject area was, at the time that funding was withdrawn, labelled as information and communication technology. See **DfE's transparency data** about the withdrawal of funding, and **Ofqual's 2023 consultation about the name change**.

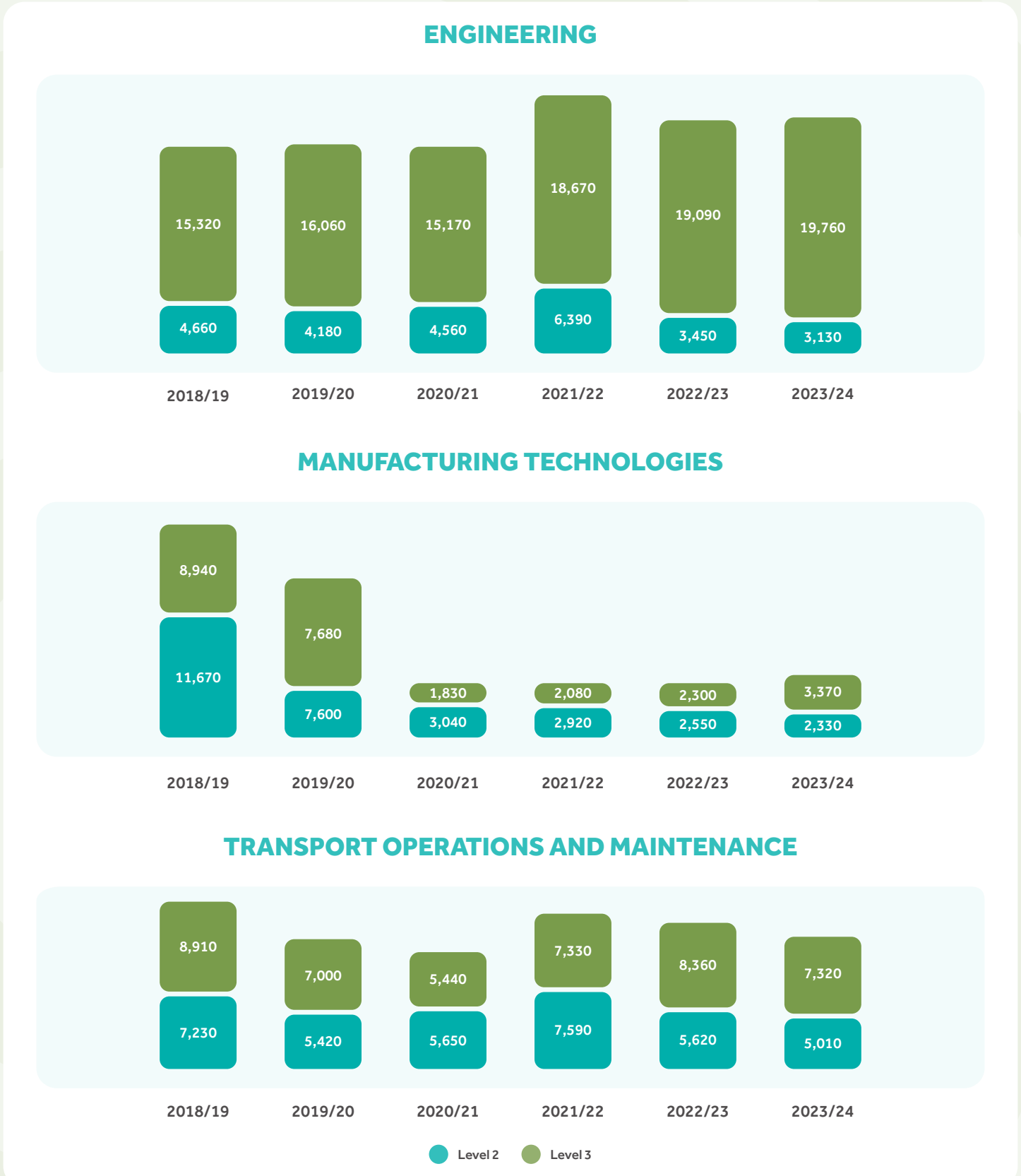
FIGURE 2

## Engineering and technology-related apprenticeship starts at levels 2 and 3, by sector, between 2018/19 and 2023/24


**Source:** EngineeringUK analysis of DfE's apprenticeships statistics

FIGURE 3

## Level 2 and level 3 apprenticeship starts in engineering and manufacturing technologies, by sub-sector




**Source:** EngineeringUK analysis of DfE's apprenticeships statistics

# Young people's participation in apprenticeships

The 2022 Employer Skills Survey found that, across all sectors, 37% of UK employers offering apprenticeships did so exclusively to young people under 25 years old. This is a decrease since 2016, when the equivalent figure was 47%[29].

Looking at engineering and technology-related apprenticeships as a whole (Figure 4), under-19s still make up a significant proportion of apprenticeships. However, there have been substantial falls in the number of under-19s undertaking level 2 apprenticeships. Looking at the different sub-sectors:

## Engineering and manufacturing technologies

The number of under-19s undertaking level 2 apprenticeships fell by more than half between 2018/19 and 2023/24.

## Construction, planning and the built environment

Under-19s are the biggest group by some way, with a particularly high proportion of apprenticeship starts at level 2 being under 19. There has been some growth in level 3 starts among under-25s. Looking at changes in individual apprenticeship standards (and frameworks as they have been withdrawn), this may be partly explained by plumbing courses no longer being commonly offered at level 2 but instead being at level 3.

## Digital technology

Level 2 apprenticeship starts have entirely fallen away, and there have also been large falls between 2018/19 and 2023/24 in the number of under-25s starting level 3 apprenticeships. However, the 25+ age group has grown substantially for level 3s.

[29] IFF Research for Government Social Research (2023, updated 2024), **Employer Skills Survey 2022: Research report**, page 158

FIGURE 4

## Apprenticeship starts at levels 2 and 3 in 2023/24, and percentage change since 2018/19, by age and by engineering and technology-related sector

| | Number of level 2 starts in 2023/24 | % change in level 2 starts since 2018/19 | Number of level 3 starts in 2023/24 | % change in level 3 starts since 2018/19 |
|---|---|---|---|---|
| **Engineering and manufacturing technologies** | | | | |
| Aged under 19 | 4,000 | -55% | 14,970 | +2% |
| 19-24 | 3,020 | -21% | 10,360 | -21% |
| 25+ | 3,450 | -5% | 5,120 | -5% |
| **Construction, planning and the built environment** | | | | |
| Aged under 19 | 7,280 | -8% | 3,690 | +49% |
| 19-24 | 2,850 | -12% | 2,520 | +1% |
| 25+ | 1,300 | -27% | 1,220 | -6% |
| **Digital technology** | | | | |
| Aged under 19 | 0 | -100% | 1,680 | -49% |
| 19-24 | 0 | -100% | 3,550 | -32% |
| 25+ | 0 | -100% | 6,300 | +166% |

**Source:** EngineeringUK analysis of DfE's apprenticeships statistics.

The fall in level 2 starts is, unsurprisingly, mirrored in the provider landscape.

The number of providers with recorded engineering and manufacturing technologies apprenticeship starts at level 2 fell 27%, from 455 in 2019/20 to 330 in 2023/24. For construction, planning and built environment level 2 starts, the fall was much smaller, with the number of providers at 254 in 2023/24 – just 5% lower than in 2019/20[30].

There are a few particularly large (employer-) providers. For example, the British Army and Royal Navy had the highest number of engineering and manufacturing level 2 apprenticeships – together accounting for nearly 2,000 of the total of around 10,500 apprenticeship starts in this area[31]. This concentration of provision presents opportunities for DfE to target large pools of demand.

[30] EngineeringUK analysis of DfE's apprenticeships data.

[31] EngineeringUK analysis of DfE's apprenticeships data.

# Employers' appetite for a new route at level 2

Employers we spoke to supported the principle of helping young people into the labour market. However, we heard that engineering employers' training generally starts at level 3, not level 2. This may be partly a product of the current labour market, with employers easily able to recruit workers with an existing high level of skill. Data from providers shows that there are more candidates than vacancies for some apprenticeships. For example, Baltic Apprenticeships reported in 2024 that, for every software apprenticeship start, there were over 80 applications[32]. We also heard that in some sectors there is already a lack of progression opportunities for those who have undertaken a level 3 apprenticeship.

This may not be a transient situation. For example, there is an increasing supply of STEM graduates. The number of entrants to engineering and technology undergraduate degrees fell by 1% between 2019/20 and 2023/24, while there has been growth in entrants to undergraduate degrees in computing (up 47% between 2019/20 and 2023/24) and in architecture, building and planning (up 22% between 2019/20 and 2023/24)[33]. Young people's growing interest in undergraduate-level engineering is also indicated by UCAS data showing a 14% increase in applications for UK engineering and technology courses between January 2024 and January 2025[34]. The fact that entrant numbers have not kept pace with the increase in applications is thought to be due partly to the high costs of providing such courses[35].

Some stakeholders we spoke to described the well-known drives for productivity and automation in many engineering and technology companies. For some engineering and technology-related occupations, it may be that growth in the number of young people with higher-level digital skills combines with increased automation and digitisation to mean fewer apprenticeships are needed at level 2.

However, this must be weighed against the forecasts described above which do outline increases in demand in some industries. We have also heard that some employers – for example in construction– would value a foundation apprenticeship as a means for employers and young people to find a good match through a relatively short apprenticeship.

[32] Baltic Apprenticeships (2024), **Unleashing potential: unlocking opportunities for young apprentices**.

[33] EngineeringUK analysis of **HESA data**.

[34] Financial Times (2025), **Surge in 18-year-olds applying for UK engineering degrees** and UCAS (2025), **2025 cycle applicant figures – 29 January deadline**.

[35] Financial Times (2025), **University places for science and engineering fail to keep pace with UK demand**.

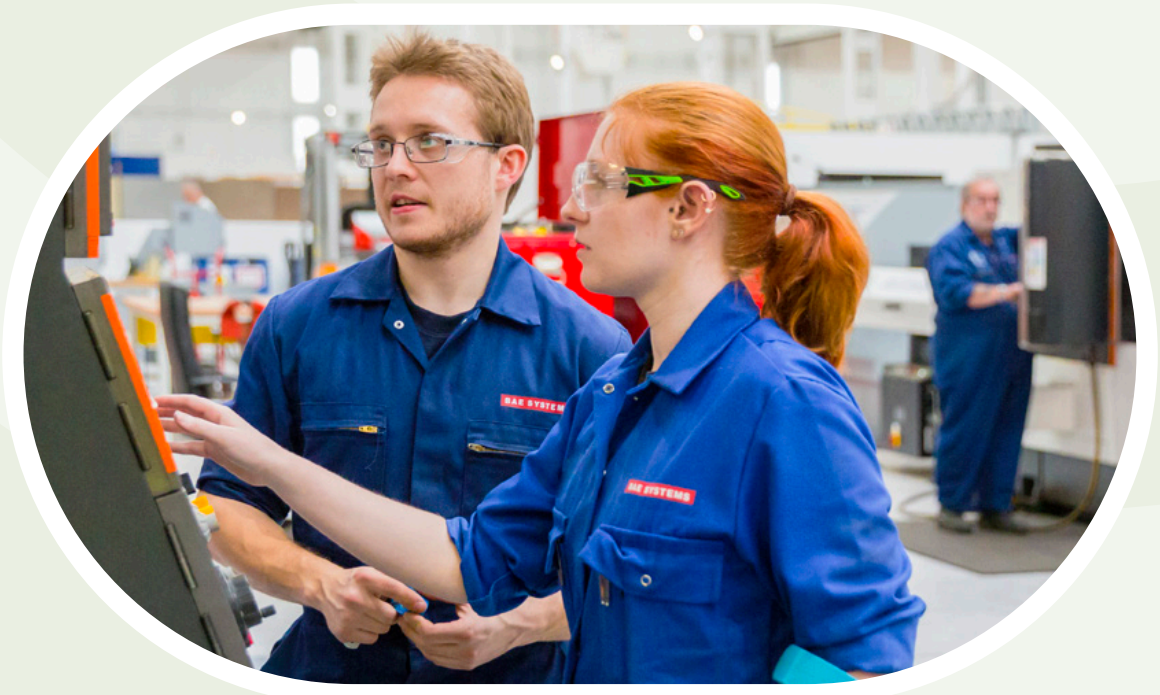
# Our takeaway on the need for a new apprenticeship route at level 2

We welcome that the government is looking at how to support young people into entry-level careers in engineering. There are long-term needs, in engineering and technology, for skills at levels 2 and 3. Broadening entry routes at level 2 could both support a pipeline of young people who can progress to higher skill levels and ensure a sufficient workforce to carry out work at level 2.

It is important that the government is realistic in its expectations regarding uptake of foundation apprenticeships given the decline in many level 2 apprenticeships. As DfE develops foundation apprenticeships and the broader growth and skills offer, it may be fruitful to examine in more detail the rapid declines in manufacturing and digital apprenticeships. This could help understand whether, and how much, the switch from frameworks to standards and other policy changes have contributed to gaps in level 2 provision. This would help illuminate how far there is simply a falling need for apprenticeships at level 2, and how far system improvements could increase take-up at this level. Skills England's sector skills needs assessment for advanced manufacturing states that there are gaps in provision in manufacturing – including standards having failed to adapt to evolving industry needs[36]. These issues are worth exploring in more depth.

One potential selling point is that foundation apprenticeships could furnish apprentices with core basic skills which can be complemented by additional modules, which could be flexibly updated to meet employers' contemporary needs.

It is worth testing whether employers are willing to pay apprentices while they develop these core skills. However, many employers may argue that basic skills should be supported by government education budgets, not through employers' investment.



[36] Skills England (2025), **Sector skills needs assessments: advanced manufacturing**.

# Section 2
# Core policy design: How do foundation apprenticeships fit alongside other skills and employability initiatives?

# Current educational training routes

There are many ways to start a career in engineering and technology ranging from apprenticeships, higher national diplomas through to higher education (Figure 5).

The landscape has changed over recent years. For example, T Levels in construction and engineering were rolled out between 2020 and 2022, and apprenticeship starts have fallen since the mid-2010s.

In 2023/24, in England:

- 35,060 under-19s started an engineering and technology-related apprenticeship, 11,280 at level 2 and 20,340 at level 3[37].
- 30,500 19- to 24-year-olds started an apprenticeship: 5,870 at level 2 and 16,430 at level 3[38].
- 3,598 learners completed engineering and technology-related T Level courses[39].
- Among 16- to 18-year-olds, there were 94,852 entries to engineering and technology-related vocational qualifications (other than T Levels)[40], including 38,946 for engineering and manufacturing technologies, 15,249 for construction, planning and the built environment, and 40,657 for information and communication technology[41].
- There were 25,840 entrants to undergraduate engineering and technology degrees, 34,205 entrants to undergraduate computing degrees and 11,795 entrants to undergraduate architecture, building and planning degrees[42].

[37] EngineeringUK analysis of DfE apprenticeships data.

[38] EngineeringUK analysis of DfE apprenticeships data.

[39] EngineeringUK (2024), **T Level results**.

[40] These include **Applied general qualifications**, **Tech level qualifications and Technical certificates**.

[41] EngineeringUK analysis of DfE data on A level and other 16 to 18 results – vocational qualifications by subject and student characteristics. One individual may enter more than one subject. Some of these qualifications may form part of an apprenticeship.

[42] EngineeringUK analysis of HESA data.

FIGURE 5

## Pathways in England by level, including foundation apprenticeships

< SCHOOL, COLLEGE OR UNIVERSITY -BASED • WORK-BASED >

| | | | | | |
|---|---|---|---|---|---|
| Entry level | | | BTEC Firsts and equivalents | | |
| Level 1 | GCSE (grades 1 to 3 | | BTEC Firsts and equivalents | Traineeship (no longer funded nationally) | National Vocational Qualifications (NVQs) and equivalents |
| Level 2 | GCSE (grades 4 to 9) | T level foundation year (formally T level Transition Programme) | BTEC Firsts and equivalents | Foundation and intermediate apprenticeships | NVQs |
| Level 3 | A-level | T level | BTEC National Diploma / Certificate, Tech Levels or Applied Generals | Advanced apprenticeship | NVQs |
| Level 4 | Certificate of Higher Education (HE) | | Higher National Certificate (HNC) | Higher apprenticeship | NVQs |
| Level 5 | Diploma of HE / foundation degree | | Higher National Diploma (HND) | (Some higher apprenticeships go to Level 5) | NVQs |
| Level 6 | Honours degree | | | Degree apprenticeship | NVQs |
| Level 7 | Master's degree | | | (Some degree apprenticeships go up to Level 7) | NVQs |
| Level 8 | Doctorate | | | | |

**Notes:** Types of route are grouped in columns. However, individuals would not necessarily follow only one column. Instead they might study for multiple qualifications or standards through their education and career – for example taking GCSEs, Level 3 BTECs, an undergraduate degree, and an NVQ.

**Source:** EngineeringUK summary, drawing on the Higher Education Policy Institute (2024), Policy Note 59, UCAS information on BTECs, UCAS information on higher apprenticeships and gov.uk information on qualification levels.

# Existing pre-employment programmes

Those interested in starting a career in engineering and technology, but who are not yet ready for employment, may be supported through pre-employment programmes – with or without qualifications involved. A variety of organisations, including employers, run these.

DfE funds Skills Bootcamps (previously through local grants or contracts managed by DfE, and through mayoral strategic authorities and other local areas from 2025/26[43]). They are for learners aged 19 or over, are free to the learner and to employers in many cases, take up to 16 weeks to complete, and are available in skill shortage sectors including digital, technical and green jobs

The Department for Work and Pensions offers programmes for target groups including:

- supported internships, for young people with an education, health and care (EHC) plan
- sector based work academy placements, for young people aged 18 or over receiving certain benefits and looking for work – with opportunities in sectors including construction

Bodies like the Engineering and Construction Industry Training Board (ECITB) and Construction Industry Training Board (CITB) – both arm's-length bodies of DfE – provide support for new entrants to engineering construction and to construction. For example, the ECITB runs the Work Ready programme for people of any age, but it specifically targets NEETs and ex-offenders. This 16-week programme involves full-time off-the-job training and assessment alongside work placements and employer visits[44]. The ECITB also provides engineering scholarships to around 150 young people per year, across Great Britain. Learners receive a weekly allowance paid by the ECITB and undertake industry standard qualifications over the course of one or two academic years – roughly 85% per year at level 2, and 15% per year at level 3. In both instances the learners are not employed during their studies[45].

Not-for-profit organisations such as Movement to Work[46] and the King's Trust[47] offer young people employability and sector-based training – often of relatively short durations – alongside work experience or contact with employers.

Individual employers may work with colleges on full-time, classroom-based courses, which prepare young people for future careers in engineering and technology. (Case study below.)

[43] DfE (2025), **Skills Bootcamps funding allocations: 2025 to 2026**.
[44] ECITB (undated), **Work Ready**.
[45] ECITB (undated), **ECITB Scholarships**.
[46] Movement to Work (undated), **About the Movement**.
[47] The King's Trust (undated), **Get Into courses**.

# Case study:
# Shaping a classroom-based pre-employment programme[48]

**Babcock International Group (Babcock) is a FTSE 100 international defence company.**

In the South West, Babcock owns and operates Devonport Royal Dockyard in Plymouth, the only UK sole licensed site capable of undertaking submarine maintenance, defuelling and refuelling activities on the entirety of the UK's submarine fleet, as well as delivering support to the Royal Navy's ship programmes, the British Army and wider military systems capability.

In Plymouth, Babcock is offering a programme that it calls pre-apprenticeships, to build its future workforce and to provide increased opportunities for more people to experience a career in engineering.

The programme is open to those suitable to pursue an engineering apprenticeship with Babcock, but who narrowly miss the required GCSE grades. The current cohort consists of 18 young people aged 16 to 18, but the programme is open to all ages. Babcock will be increasing this offering to 36 pre-apprenticeships next year.

Pre-apprentices study full-time for a classroom-based level 2 engineering course that Babcock has worked with a local college to co-create. Successful pre-apprentices must also pass maths and English qualifications as part of the programme. The content is designed to prepare young people to be capable of performing safety-critical work. For those enrolled on the course, Babcock provides 60 hours of work experience and college training costs are funded from the Department of Education's 16-19 budget.

Once the pre-apprentices successfully complete all the elements of their pre-apprenticeship and have demonstrated throughout the year the behaviours that Babcock expects, the pre-apprentices will be invited to an interview for entry to Babcock's Level level 3 apprenticeship programme.

Based on similar established programmes in Scotland, Babcock anticipates a high retention rate. In Clyde, Scotland, between 85% and 90% have successfully moved to an employed position as an apprentice.

Babcock's pre-apprenticeship programme increases social mobility, diversity and access to a broader range of talented people that just need some additional support to start their career.

This is further demonstrated through Babcock's use of gamification as a recruitment tool for the pre-apprenticeship programme, which allows players to demonstrate various skills through a fun platform with mini-games contained within. This inclusive approach allows Babcock to assess a candidate's suitability for its programme through a selection tool aimed at a different demographic than their usual apprenticeship recruits.

[43] **Sources:** Unpublished information provided by Babcock, and **Babcock's press release**.

# Learning from past schemes and from other countries

Previous schemes can shed some light on foundation apprenticeships' likely challenges and successes, and where the government may develop them further.

## Traineeships

DfE-funded traineeships, which ran between 2013 and 2024, were aimed at a similar group of young people to foundation apprenticeships. This skills development programme was aimed at young people between 16 and 24 years old (or 25 for those with an education, health and care plan) and qualified below level 3, but with potential for being ready for employment or an apprenticeship within 6 months of starting the traineeship. A traineeship involved a work experience placement of at least 70 hours[49], employability skills training, and English and maths courses for those without a GCSE at grade 9 to 4 (or A* to C). It typically lasted between 6 weeks and 6 months. Employers received a small incentive and did not have to pay wages to participants, although some provided support for costs like transport[50].

Evaluation in 2019 cautiously reported some positive outcomes, although impacts were not tested over the long term[51]. Some employers and trainees also felt the scheme was valuable in preparing young people for apprenticeships, when they might not otherwise have been ready for employment[52]. At its peak in 2015/16, there were 24,110 traineeship starts across all sectors, but this fell to 11,610 in 2022/23. The government announced in December 2022 that the national scheme would be scrapped due to low starts and a wish to focus on other provision[53]. Some providers have blamed low volumes on the lack of learner incentives, excluding those who are not willing to take on an unpaid placement[54] - an issue which foundation apprenticeships aim to address.

Foundation apprenticeships may therefore fill a gap left by traineeships. It remains to be seen whether employers will be willing to take on enough young people for foundation apprenticeships to make an impact on the youth employment challenges they intend to help resolve. (See also Section 7 of this report.)

## International comparisons

The Sutton Trust has highlighted that many countries have pre-apprenticeship systems, or modified apprenticeship programmes to support those with limited prior attainment into training. It highlights the 15-week Access to Apprenticeships programme in Ireland, which gives young people short experience in a range of apprenticeships, as well as providing access to wider support[55]. However, it is not always clear which factors determine the success of pre-apprenticeship programmes[56]. Some resources on this are now available, such as the pre-apprenticeships toolkit, bringing together international evidence, from the What Works Centre for Local Economic Growth[57]. The Youth Futures Foundation has also published a Youth Employment Toolkit, which summarises international evidence on the impact, cost and effectiveness of activities to help young people into work[58]. The government should evaluate foundation apprenticeships to add to this evidence base and to learn from the programme.

[49] DfE (last updated 2024), **Traineeship information for training providers**.

[50] House of Commons library (2020), **Traineeships briefing paper CBP 7305**.

[51] Richard Dorsett, Helen Gray, Stefan Speckesser and Lucy Stokes for DfE (2019), **Estimating the impact of traineeships: final report**.

[52] EngineeringUK (2023) **Fit for the future: a 5-point plan to grow and sustain engineering and technology apprenticeships for young people**.

[53] UK Parliament (2022), **Skills update: statement made on 12 December 2022 by Robert Halfon, statement UIN HCWS434**.

[54] FE Week (2022), **Traineeships scrapped amid years of low starts**.

[55] Sutton Trust (2025), **A world of difference**.

[56] Viktoria Kis (2016), **Work-based learning for youth at risk: getting employers on board**.

[57] What Works Centre for Local Economic Growth (2017), **Apprenticeships toolkit: pre-apprenticeships**.

[58] Youth Futures Foundation (undated), **Toolkit unwrapped**.

# Employers', awarding organisations' and providers' views on the fit of foundation apprenticeships with other programmes

We spoke to engineering and technology employers[59] about foundation apprenticeships in March 2025, hearing their views alongside DfE's vision of the policy at the time.

Some employers commented that they might not be able to offer foundation apprenticeships in addition to other workforce development activities they currently participate in, such as T Level work placements. Others thought any foundation apprentices would simply displace Level 2 or Level 3 opportunities. This raises a question whether the scheme would really create more training openings.

Participants noted that it will take time for any initiative to bed in and government should not expect quick results. Participants noted that it takes time to learn what works in supporting employees or those undertaking work placements. For example, employers are only just getting to grips with T Level placements.

Employers we spoke to had mixed views on which age group would be appropriate. In the engineering sector, safeguarding and safety issues can be challenging, particularly for under-18s. There may be difficulties for engineering firms in taking on under-18s for this reason – limiting the pool of foundation apprentices to 18- to 21-year-olds (or 18- to 24-year-olds for eligible groups). This is reflected also in feedback provided to Skills England by clean energy industries[60]. Additionally, several employers felt that young people who would have been starting their careers during the pandemic have suffered lasting effects from the challenges in gaining experience during that time. They argued that the age range for foundation apprenticeships should be widened to help them catch up in the labour market.

# Our takeaway on the fit of foundation apprenticeships with other education and pre-employment training routes

Rapid policy change can cause disengagement among employers. DfE must clearly articulate and communicate the unique added value of foundation apprenticeships.

Foundation apprenticeships are, of course, just one part of the skills policy landscape. It is important that DfE continues to assess the merits of other training routes, including those which support young people prior to employment. There is potential to improve the links between employers and classroom-based courses for 16- to 18-year-olds. This is likely to be challenging for smaller employers, but there is potential to learn from industry schemes which facilitate this connection.

Foundation apprenticeships have an inbuilt tension – they look to address some foundational employability skills issues alongside technical training, raising questions as to who is responsible for addressing some of the skills gaps they look to fill.

[59] Please see the methods appendix to this report for more information about which employers and other stakeholders we spoke to.

[60] Skills England (2025), **Sector skills needs assessments: clean energy industries**.

# Section 3
# Core policy design: Will foundation apprenticeships be worthwhile for employers of all sizes?

# Foundation apprenticeships – a viable option for employers?

As a paid position, employers of all sizes must be convinced that foundation apprenticeships are worth their while.

We have heard that some employers are particularly concerned about this in light of announcements in the 2024 Autumn Budget about increasing the apprenticeship wage, and national insurance contributions. Recent changes are outlined in the boxed text below.

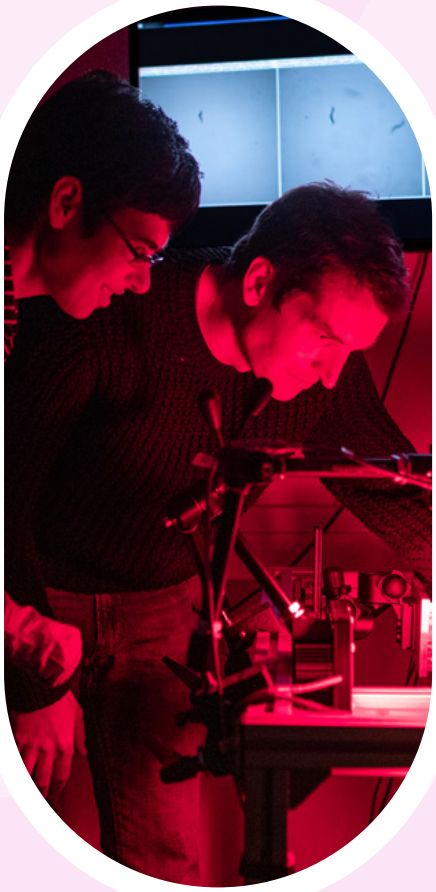
While several studies suggest that apprentices offer good return on employers' investment, some employers have expressed concerns that the apprenticeship model may not make business sense in the short term.

Analysis undertaken in 2025 of the costs and benefits of electrotechnical apprenticeships found that, for the first 2 years, apprentices are a net cost for businesses with 'low' or 'medium' charge-out rates. However, employers can gain a substantial net benefit over 4 years, so long as their charge-out rates for apprentices are 'medium' or 'high'. Those with a 'low' charge-out rate for apprentices attained a small net benefit after 4 years[64].

This analysis quantifies what may be common-sense to many. Businesses' returns on apprenticeships increase over time. For lower-level apprentices whose time cannot be charged or otherwise valued at a higher rate, the time taken for a return to be gained will be longer. Along these lines, an international review has suggested that the government should design apprenticeship durations to allow employers to recoup their investment, which may involve making durations longer in sectors where productivity gains are slow to achieve. The same paper highlights that financial incentives may not be enough to motivate employers to take on apprentices, if broader benefits and support do not suit employers' needs[65].

**Successive governments have increased the apprenticeship wage, which applies to young apprentices aged 16 to 18 and to those aged 19 and over in the first year of their apprenticeship[61]. Between April 2024 and April 2025, the government increased the minimum apprenticeship wage for those aged 16 to 18 by 18% (from £6.40 to £7.55 per hour), following a 21% increase the previous year (from £5.28 to £6.40 per hour)[62]. While this is potentially a significant boost to young people's wages, it is important to monitor whether this could be impacting employers' ability and willingness to employ young apprentices at all.**

**Employers of apprentices under 25 are usually exempt from paying Class 1 national insurance contributions[63], but some stakeholders we spoke to questioned whether all employers are aware of this.**



[61] Gov.uk information (undated), **Employing an apprentice: pay and conditions for apprentices**.

[62] HMT (2024), **Autumn Budget 2024**, and DfE (2023), **Autumn Statement 2023: what does it mean for apprenticeships?**

[63] Gov.uk (undated), **Paying employer National Insurance contributions for apprentices under 25**. Apprentices must still pay employee national insurance (**Youth Employment UK**).

[64] Pye Tait Consulting for the Electrotechnical Skills Partnership (2025), **Electrotechnical apprentice return on investment**.

[65] Viktoria Kis (2016), **Work-based learning for youth at risk: getting employers on board**.

Small and medium-sized employers (SMEs) are particularly important to target, because they an important employer of apprentices, especially at lower levels – and taking on new people exposes smaller employers to more risk, compared with larger employers. In 2022/23, SMEs employed around half of those starting engineering and technology-related apprenticeships at levels 2 and 3. SMEs are particularly significant in the construction sector – with 66% of level 2 and 3 apprentice starts employed by SMEs[66].

Trends in SMEs' engagement with apprenticeships are concerning. Between 2018/19 and 2022/23, the number of engineering and manufacturing level 2 apprenticeship starts fell particularly quickly among SMEs. While the number of level 2 apprenticeship starts with a large employer fell by nearly one-third (31%), equivalent starts with an SME fell by almost two-thirds (63% for medium employers, 64% for small employers)[67].

EngineeringUK has previously reported that the shift from frameworks to standards-based apprenticeships was difficult for some companies, with SMEs particularly negatively affected[68].

Skills England also found from recent engagement with construction employers that apprenticeships, in general, are not always financially viable for SMEs, and are complex, requiring too much administration. Employers also told Skills England that short-term contracts for construction projects deter employers from taking on apprentices, and that rapid technological changes can outpace training programmes[69].

The government has changed apprenticeship levy funding rules, in an attempt to reverse this pattern. Since April 2024, the government has paid the full costs of training for SMEs' apprentices up to the age of 21[70].

[66] EngineeringUK analysis of DfE apprenticeships data. Large employers are defined as having 250 or more employees; medium as having between 50 and 249 employees; and small as having 0 to 49 employees. While most data is available for 2023/24, the most recent information that DfE has published on apprenticeships and employer size is for 2022/23, due to the time it takes to produce the data. Note that the number of apprentices working for an unknown size of employer has fallen significantly over the period.

[67] EngineeringUK analysis of DfE apprenticeships data. We have not included construction or digital sector apprenticeship starts in our trend analysis due to particularly large changes, over time, in data classified as 'unknown' for these sectors.

[68] EngineeringUK (2023), **Fit for the Future: a 5-point plan to grow and sustain engineering and technology apprenticeships for young people**.

[69] Skills England (2025), **Sector skills needs assessments: construction**.

[70] Government press release (2024), **Prime Minister to announce major reform package to boost apprenticeships and cut red tape for thousands of small businesses**.

# Employers', awarding organisations' and provider representatives' views on whether employers are likely to get value from foundation apprenticeships

Many larger employers we spoke to doubted the feasibility of an employed position of the nature proposed in their companies. They expected low take-up if the scheme was introduced as outlined and expected that the conversion rate (from recruitment to successful retention) would also be low. They favoured the idea of a pre-employment programme – which they believed should not be an employed or paid position. They had found that shorter programmes – of 2 or 3 months – can work well for young people.

However, some employers suggested that wage subsidies might encourage recruitment, and the government's offer of financial support for employers taking on foundation apprenticeships is therefore likely to be welcome.

However, we note that, for the employer to receive the full payment, the apprentice must remain with their employer for at least 242 days and must progress to spend at least 90 days on another apprenticeship with the same employer[71]. This is likely to mean that many employers who take on a foundation apprentice will not receive the full £2,000.

For such incentives to drive take-up by employers, it is important that the government communicates effectively that incentives are available, and that their administration works efficiently. Previous schemes have shown that both awareness and administration of incentives can be a stumbling block, particularly for small businesses.

In 2022 the FSB looked at the impact of the £3,000 incentive for employers who hired an apprentice during the pandemic, and at the separate £1,000 incentive for employers hiring apprentices aged between 16 and 18 years old, or for those under 25 with an education, health and care plan or who had been in the care of their local authority. They found that 39% of small business employers were aware of the £3,000 incentive and 14% had used it. However, 40% of eligible small businesses had not received the £1,000 incentive, with one-third saying they were not aware of it[72]. The FSB has suggested this is because SMEs "rely completely" on training providers to pass on information about incentives, and incentives themselves – and training providers' services in this regard are highly variable[73].

# Our takeaway on the value of foundation apprenticeships for employers

We welcome the inclusion of the £2,000 financial incentive for employers, to offset any short-term costs of taking on a foundation apprentice – particularly in light of findings from the Federation of Small Businesses (FSB) that incentives of around this size can influence some employers' behaviour[74].

To put this £2,000 in context: we have calculated that minimum salary costs for a foundation apprenticeship would be around £9,000[75].

We ask the government to ensure that payments are administered in a way that minimises burden for employers, and that it reviews regularly whether the incentives are sufficient to engage employers.

[71] DfE (2025), **Apprenticeship funding rules, 2025 to 2026**.

[72] FSB, 2022, **Scaling Up Skills**.

[73] FSB, 2019, **Fit for the Future: making the apprenticeship system work for small businesses**.

[74] FSB, 2022, **Scaling Up Skills**.

[75] Based on payment of the 2025/26 **apprenticeship wage of £7.55** over a 35-hour work week for 8 months, with no employer National Insurance contributions (as per HMRC rules on apprentices under 25) and no employer pension contribution (as auto-enrolment applies to those 22 and over). Larger businesses would additionally pay 0.5% of the apprentice's gross salary towards the apprenticeship (future growth and skills) levy.

# Section 4
# Delivery challenge: Ensuring quality through appropriate progression routes, content, durations and off-the-job training requirements

# Foundation apprenticeships' position in the wider apprenticeship landscape

DfE and Skills England can maximise benefits to employers from foundation apprenticeships by ensuring that standards cover the knowledge, skills and behaviours which fit employers' needs and allow progression, and by setting duration and training requirements which give confidence in the apprenticeship brand.

In Figure 6 on page 35, we compare foundation apprenticeships announced in May 2025 with pre-existing level 2 and level 3 apprenticeship standards that Skills England lists as relevant. The features shown in the table, in combination with Skills England's other announcements, suggest that:

## Skills England intends the new foundation apprenticeships to be relevant to some of the highest-volume pre-existing level 2 and level 3 apprenticeship standards in their sectors.

The volume of starts for pre-existing level 2 and level 3 standards is well into the thousands for most of the relevant foundation apprenticeships. Only the 'Finishing trades' foundation apprenticeship has slightly lower volumes for pre-existing apprenticeships. As such, foundation apprenticeships do appear to have potential to provide a broad introduction to young people, off-setting criticisms some apprenticeships encourage excessive specialisation at early career levels[76].

## The potential for progression to other apprenticeships appears to differ significantly across the new foundation apprenticeships.

Skills England's information about the new foundation apprenticeships, in combination with their occupational maps[77], suggest that the foundation apprenticeships announced so far could lead into further apprenticeships which have in the past, for some people, formed part of a pathway up to level 6. Additionally, the structure of the £2,000 employer incentive – with one-third being paid only if the foundation apprentice starts another apprenticeship with the same employer – suggests that DfE intends that a further apprenticeship is a key destination.

For the 'Onsite trades' and 'Finishing trades' foundation apprenticeships, there are pre-existing level 2 apprenticeships with typical durations of 24 to 30 months, offering possible onward progression at the same level.

For the 'Building service engineering' foundation apprenticeship, there are high-volume apprenticeships at level 3, between 24 and 48 months long. This seems to offer onward progression at a higher level, so long as the young people participating in foundation apprenticeships have the potential to progress to level 3.

For the 'Engineering and manufacturing' foundation apprenticeship, there appears to be potential crossover with the existing level 2 standard ('Engineering operative'), which is typically between 4 and 10 months longer than the foundation apprenticeship.

For the digital foundation apprenticeships – 'Hardware, network and infrastructure' and 'Software and data' – the only relevant standards are at level 3. Again, this appears to offer progression for young people able to proceed to that level.

## Foundation apprenticeships are currently entirely uniform in their durations and off-the-job training requirements – with 8-month durations and 187 required off-the-job training hours.

Duration and off-the-job training requirements are important elements of apprenticeship quality. In the past, too-short apprenticeships and those with insufficient training have undermined apprenticeship quality – and the standards system aimed to rectify this[78]. These required off-the-job training hours are similar in proportion to the required hours for existing standards. We anticipate that off-the-job training requirements and durations may need to be refined as foundation apprenticeships are developed in more detail.

[76] EngineeringUK (2023), **Fit for the Future: a 5-point plan to grow and sustain engineering and technology apprenticeships for young people**, and Gatsby (2018), **Taking training seriously: lessons from an international comparison of off-the-job training for apprenticeships in England**.

[77] Skills England publishes **occupational maps** based on individualised learner movement data and knowledge and skills statements. These show where transferable knowledge and skills exist between two occupations and therefore show progression pathways between occupations.

[78] Vahé Nafilyan and Stefan Speckesser (2018), **The longer the better? The impact of the 2012 apprenticeship reform in England**.

# Employers', awarding organisations' and providers' views on content, duration and progression routes that will supply good-quality apprentices

Stakeholders we spoke to were concerned that foundation apprenticeships should not undermine apprenticeships' reputation for quality. Some were concerned that the policy of allowing durations as short as 8 months – even when applied selectively – could undermine the apprenticeship brand. In particular, some felt that the inclusion of employability skills and behaviours within a short apprenticeship could dilute the brand – especially given that it is being communicated as a level 2 position.

Some employers emphasised that maths and English skills are important for engineering and technology roles – sometimes for safety reasons. They were keen that maths and English continue to be a part of apprenticeships at this level. However, other employers have told us that maths and English exit requirements can be an unnecessary barrier to completion[79]. Some stakeholders we spoke to suggested that teaching approaches might be improved to help young people make progress in these functional skills. For example, teaching maths and English in a contextualised way can suit some young people who have not thrived with traditional classroom-based learning.

# Our takeaway on quality

Whether foundation apprenticeships are, and are seen as, high-quality will be a key determinant of the policy's success or failure. DfE should continue to examine whether foundation apprentices are meeting employers' needs and supporting apprentices to progress.

[79] EngineeringUK (2023), **Fit for the Future: a 5-point plan to grow and sustain engineering and technology apprenticeships for young people**, page 39.

FIGURE 6

# Foundation apprenticeships (all at level 2) and relevant pre-existing apprenticeship standards

| Foundation apprenticeships – all at level 2 | | | Relevant pre-existing apprenticeship standards – at levels 2 and 3 | | | | |
|---|---|---|---|---|---|---|---|
| **Name of foundation apprenticeship** (Sector in brackets) | **OTJT hours / typical duration in months** | **Maximum funding** | **Name of pre-existing standard** | **Level** | **OTJT hours / typical duration in months** | **Maximum funding** | **Number of starts 2023/24** |
| Onsite trades (Construction and the built environment) | 187 hrs / 8 mths | £4,000 | Carpentry & joinery †<br>Bricklayer<br>Plasterer † | 2<br>2<br>2 | 557hrs / 24mths<br>578hrs / 24mths<br>626hrs / 24mths | £13,000<br>£13,000<br>£13,000 | 4,150<br>1,990<br>390 |
| Building service engineering (Construction and the built environment) | 187 hrs / 8 mths | £4,000 | Plumbing and domestic heating technician †<br>Refrigeration air conditioning and heat pump engineering technician<br>Low carbon heating technician<br>Building services engineering installer * | 3<br>3<br>3<br>2 | 857 hrs / 48 mths<br>835 hrs / 36 mths<br>835 hrs / 36 mths<br>487 hrs / 24 mths | £22,000<br>£20,000<br>£22,000<br>£12,000 | 2,590<br>410<br>"low"<br>180 |
| Finishing trades (Construction and the built environment) | 187 hrs / 8 mths | £4,000 | Painter and decorator<br>Floorlayer<br>Wall and floor tiler | 2<br>2<br>2 | 578 hrs / 24 mths<br>605 hrs / 30 mths<br>605 hrs / 30 mths | £10,000<br>£17,000<br>£14,000 | 590<br>240<br>40 |
| Engineering and manufacturing (Engineering and manufacturing) | 187 hrs / 8 mths | £4,500 | Engineering operative<br>Lean manufacturing operative * | 2<br>2 | 300 hrs / 12 - 18 mths<br>300 hrs / 12 mths | £10,000<br>£6,000 | 1,800<br>1,210 |
| Hardware, network, infrastructure (Digital) | 187 hrs / 8 mths | £4,000 | Information communications technician †<br>Digital support technician †<br>Network cable installer<br>IT solutions technician<br>Radio network technician<br>Cyber security technician<br>Digital device repair technician | 3<br>3<br>3<br>3<br>3<br>3<br>3 | 348 hrs / 18 mths<br>370 hrs / 15 mths<br>348 hrs / 15 mths<br>370 hrs / 18 mths<br>418 hrs / 24 mths<br>418 hrs / 18 mths<br>487 hrs / 21 mths | £15,000<br>£13,000<br>£11,000<br>£15,000<br>£15,000<br>£11,000<br>£11,000 | 3,090<br>450<br>220<br>220<br>90<br>30<br>"low" |
| Software and data (Digital) | 187 hrs / 8 mths | £4,000 | Data technician<br>*Information communications technician †*<br>*Digital support technician †*<br>Software development technician<br>*Cyber security technician* | 3<br>*3*<br>*3*<br>3<br>*3* | 348 hrs / 24 mths<br>*348 hrs / 18 mths*<br>*370 hrs / 15 mths*<br>326 hrs / 18 mths<br>*418 hrs / 18 mths* | £12,000<br>*£15,000*<br>*£13,000*<br>£15,000<br>*£11,000* | 6,160<br>*3,090*<br>*450*<br>190<br>*30* |

**Notes:** OTJT stands for off-the-job training. Pre-existing standards marked with an asterisk (*) are not listed on Skills England's website as relevant, but we include them for comparison. Pre-existing standards marked with a cross (†) include multiple specialisms. Standards relevant to multiple foundation apprenticeships are repeated and italicised on their second appearance.

**Source:** Information on foundation apprenticeships from Skills England's website. Information on pre-existing standards from DfE's publications on apprenticeship standards (for levels, typical durations and funding), **apprenticeship funding rules** (for pre-existing standards' minimum off-the-job training hours) and on apprenticeship starts (for numbers of starts).

# Section 5
# Delivery challenge: Potential for foundation apprenticeships to contribute to improved diversity

# The current diversity picture across engineering and technology apprenticeships

**Gender.** In 2023/24, 17% of those starting an engineering and technology-related apprenticeship were female[80]. Breaking this figure down[81], gender imbalances are most pronounced at lower levels. There are also marked differences between sub-sectors:

- In the construction, planning and built environment sector, 3% of those starting level 2 apprenticeships, and 8% of those starting level 3 apprenticeships, were female.
- In the engineering and manufacturing technologies sector, 11% of those starting level 2 apprenticeships and 8% of those starting level 3 apprenticeships were female.
- In the digital sector, 38% of those starting a level 3 apprenticeship were female – and there were no level 2 starts by either gender.

Some employers may target women in their recruitment of apprentices, and there is potential to learn from them. For example, Transport for London runs the Women into Transport and Engineering programme, which encourages women to consider careers in the transport and construction industries through training and work experience[82].

There is also under-representation of **UK ethnic minorities** in some engineering and technology-related apprenticeships. In 2023/24, only 5% of level 2 engineering and technology-related apprenticeship starts were by UK ethnic minorities (excluding white UK minorities)[83]. This under-representation extends across multiple sectors. The Youth Futures Foundation has suggested multiple potential explanations for the under-representation of UK ethnic minorities in apprenticeships, including UK minority ethnicity communities having or experiencing:

- lower awareness of apprenticeships
- preferences or aspirations for higher, not vocational, education
- financial barriers due to the apprenticeship wage
- racism and discrimination in some workplaces[84]

Apprenticeships offer good potential for **socio-economic mobility**. In 2023/24, learners starting an engineering and technology-related level 2 or level 3 apprenticeship were relatively evenly spread across the 5 quintiles of area deprivation[85]. However, EngineeringUK has previously found that some low-income families do not want their children to take up apprenticeships because of low initial wages. We have also heard that travel costs (particularly to industrial sites in remote locations, as is sometimes the case in the engineering and manufacturing sector) can be a barrier to participation in apprenticeships[86]. We have also heard that families sometimes discourage young people from taking up jobs, including apprenticeships, if it could mean that household benefit entitlements are reduced.

[80] EngineeringUK (2024), **Apprenticeship pathways into engineering: 2023/24 annual data update**.

[81] All the statistics in this section are based on EngineeringUK analysis of DfE apprenticeships data.

[82] Transport for London, **Responsible Procurement Case Studies 2022/23**.

[83] EngineeringUK analysis of DfE apprenticeships data.

[84] Youth Futures Foundation (2025), **Ethnic disparities and apprenticeship participation: qualitative research findings**.

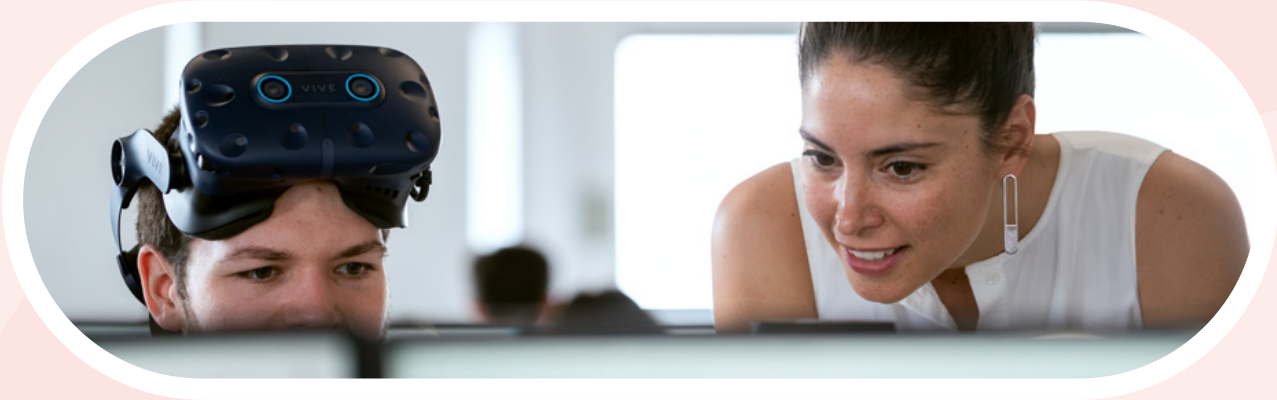
[85] EngineeringUK analysis of DfE apprenticeships data.

[86] EngineeringUK (2023), **Fit for the Future: a 5-point plan to grow and sustain engineering and technology apprenticeships for young people**.

# Employers', awarding organisations' and provider representatives' views

At our roundtable for employers, participants shared their views about how foundation apprenticeships might be made as inclusive as possible. They told us that employers taking a collective approach can raise awareness of engineering and technology jobs to all potential employees, including those who are under-represented in the sector, such as women. For example, less well-known employers can benefit from the initial draw of household names.

Participants also flagged wider issues, such as gender stereotyping in schools, that employers cannot address alone. EngineeringUK's 2024 analysis supports this point. For example, in England, Northern Ireland and Wales, girls made up half of those taking GCSE maths and physics[87]. However, the proportion drops at A level: girls made up 37% of pupils taking A level maths and 23% of pupils taking A level physics[88].



# Our takeaway on improving diversity through foundation apprenticeships

Where employers offer foundation apprenticeships, there is good potential for them to support social mobility. The government could consider relatively low-cost ways to support young people from low-income families, such as support for transport costs, loans, or scholarship schemes. The government should also make sure that the benefits system does not discourage young people from pursuing apprenticeships. The government could support the value of apprenticeships, compared with other education or study, by allowing parents of those under 20 who start an apprenticeship to claim child benefit, in the same way as is possible for those undertaking college or sixth-form study[89].

Tackling the under-representation of young women in engineering and technology is likely to be a long-term task, and government should use the curriculum and assessment review to support greater interest in STEM careers and the apprenticeship route by girls. The government should also work with employers to highlight good practice examples of what has worked to attract more young women into engineering and technology apprenticeships. Employers could increase their own transparency by including, in their gender pay gap report, the number and percentage of apprentices in their organisation who are female.

[87] EngineeringUK (2024), **GCSE and Scottish National 5 results**.

[88] EngineeringUK (2024), **A level and Scottish Highers results 2024**.

[89] Gov.uk (undated), **Child Benefit: How it works**.

# Section 6
# Delivery challenge: Financial viability for awarding organisations and training providers

# Reviewing funding bands for engineering and technology apprenticeships

The government has acknowledged in its Industrial Strategy[90] that there is a need to examine whether funding bands reflect the costs of delivering training. We welcome this, given longstanding concerns in the sector that these are too low.

As shown in Figure 6 (page 40), the maximum funding for foundation apprenticeships is generally roughly in line with funding levels for the relevant pre-existing courses, given the shorter required off-the-job training. An exception is the 'Engineering and manufacturing' foundation apprenticeship. The maximum funding for this foundation apprenticeship appears low compared to the pre-existing 'Engineering operative' level 2. Required off-the-job training hours for the 'Engineering and manufacturing' foundation apprenticeship are 62% of those for the pre-existing level 2 standard, but the maximum funding for the 'Engineering and manufacturing' foundation apprenticeship is proportionately lower, at just 45% of the pre-existing level 2.

Previous schemes show that sufficient volumes of learners are important for courses' financial viability. Traineeships (described in Section 3) have been described as "almost impossible to deliver successfully" – with private providers and colleges unable to reach the target numbers required to make them work[91]. It has been recommended that, to replace traineeships, the government should simply incentivise employers, especially SMEs, to take young people onto full level 2 apprenticeships[92].

[90] DBT (2025), **The UK's Modern Industrial Strategy**.

[91] Professor Baroness Alison Wolf DBE (2025) **Saving apprenticeships: a policy primer**, Social Market Foundation.

[92] Professor Baroness Alison Wolf DBE (2025) **Saving apprenticeships: a policy primer**, Social Market Foundation.

# Employers', awarding organisations' and providers' views

We also heard from awarding organisations and training provider representatives that Level 2 courses don't always make financial sense, as they can make more profit by focusing their resources on higher-level courses. We heard that profits are more achievable at higher levels because employers have greater demand for higher-level courses, and because funding bands under-estimate the costs of level 2 course[93]. We have also heard there is not enough capital funding for the independent training providers who run most apprenticeships in the engineering and manufacturing sector, making delivery of these courses even more challenging[94].

Providers and awarding organisations also asked that payment structures reflect the fact that the target group of young people may be further from the labour market compared to some programmes. It is possible that achievement rates will be lower for this group, affecting completion payments. Currently, DfE's funding rules state that providers receive 80% of the total negotiated price in monthly instalments, with 20% paid on completion[95].

# Our takeaway

There is a risk that foundation apprenticeships suffer from some difficulties of traineeships in struggling to reach high enough volumes. The target age-group is relatively narrow, and employers may see them as high-risk compared with plentiful alternatives, particularly in current labour market conditions with plentiful applicants. For foundation apprenticeships to work in engineering and technology, it may take significant development work to identify enough employers needing not only the more basic skills that would make employing a foundation apprentice worthwhile but also a continuing pathway.

We therefore ask that DfE maintains the £1,000 for employers and providers, designed to support additional costs of training for apprentices aged 18 or under[96]. We also welcome the government's intention to reconsider funding bands and would ask government to review this regularly to ensure providers are able to offer these courses. The government must also monitor drop-out rates and engage with providers, to ensure that providers do not suffer from the higher non-completion rates that might be expected for the targeted group.

[93] IFF Research for IfATE and the ESFA (2020), **Cost of delivering apprenticeship standards**.

[94] AELP (2024), **AELP submission #121 – Autumn Budget 2024: a mission for growth**.

[95] DfE (2025), **Apprenticeship funding rules, 2025 to 2026**.

[96] DfE (2025), **Apprenticeship funding rules, 2025 to 2026** – paragraph 101. Apprentices aged 19 to 24 with an education, health and care plan or having been in local authority care are also eligible.

# Appendix: Methods

# Data analysis

This report focuses on England. However, not all datasets are disaggregated by nation, and where it has been impossible to produce England-only figures, we have flagged that analysis applies to the UK.

We analysed a number of datasets to inform the report. EngineeringUK, the Royal Academy of Engineering and the Engineering Council have established an agreed list of SOC codes encompassing all aspects of engineering, which we call the engineering footprint[97]. However, many education and skills datasets cannot be grouped using SOC codes. We outline below what we included in our analysis.

## Information on apprenticeship characteristics

We collated information about individual apprenticeship standards from Skills England's website[98] and from DfE's funding rules[99].

## DfE data on apprenticeships (England)

We used a number of datasets on apprenticeships published by DfE[100]. We used Sector Subject Area (SSA) tier 1 groupings for the majority of our analysis. Where we refer to 'engineering and technology-related apprenticeships', this refers to 3 SSA tier 1 categories:

- engineering and manufacturing technologies
- construction, planning and the built environment
- digital technology[101]

Additionally, we looked at SSA tier 2 groupings, which decompose SSA tier 1 groupings, where this data was available. The engineering and manufacturing technologies sector breaks down into:

- engineering
- manufacturing technologies
- transportation operations and maintenance

We did not provide SSA tier 2 breakdowns for the construction, planning and the built environment sector, nor for the digital technology sector, because each of these is dominated by a single sub-category.

[97] Please see EngineeringUK (2024), **The engineering footprint**, which provides an overview, and EngineeringUK (2025), **Engineering footprint methodology**.

[98] Skills England (2025), **Foundation apprenticeships**.

[99] DfE (2025), **Apprenticeship funding rules, 2025 to 2026**.

[100] DfE (2025), **Apprenticeships statistics**.

[101] What is now called the digital technology sector subject area was previously labelled as information and communication technology. Please see **Ofqual's 2023 consultation about the name change**.

## Skills England's 'Occupations in demand' dataset (UK)

We analysed Skills England's 'Occupations in demand' dataset to get an overview of current areas of high demand in occupations in our engineering footprint.

Skills England's overall demand index draws on 7 indicators, including visa applications, online job adverts, and changes in wages, hours worked, and use of contract or temporary workers for each occupation. More information on the index is available from 'Skills England: driving growth and widening opportunities' – pages 44 to 45 – and DfE's statistical release 'Occupations in demand'.

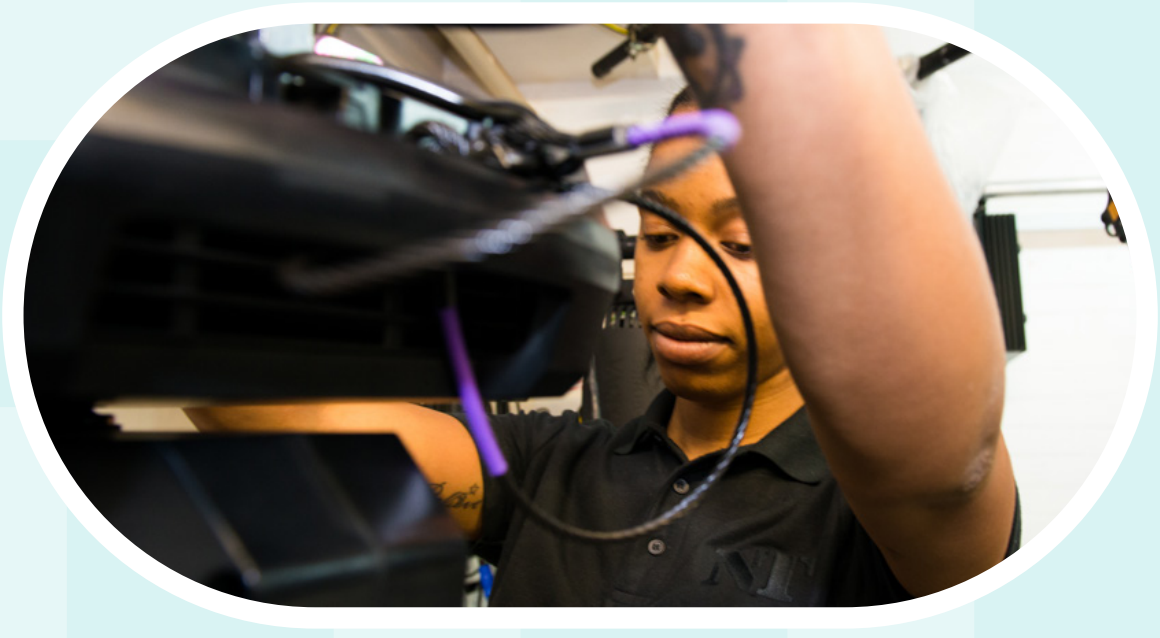
Skills England's index presents results for 336 occupations out of a total of 412 across all sectors, because Skills England excluded occupations either labelled as "not elsewhere classified" (n.e.c.), or for which data for five or more of the indicators making up the index were missing or imputed. As a result, 15 engineering and technology occupational codes (15.5% of the engineering footprint) which are normally counted within our footprint are excluded from analysis in this report using Skills England's 'Occupations in demand' dataset. See Skills England's technical report for more details on their approach to exclusions: 'Occupations in demand in 2024 – technical report'.

## Higher Education Statistics Agency (HESA) dataset (available by nation within the UK – so we analysed this for England)

We used HESA's data on HE student enrolments by subject of study and permanent address, 2019/20 to 2023/24 (Table 52) to understand changes in enrolments in undergraduate degrees. We looked at all undergraduate enrolments, and all modes of study (full-time or part-time) for the following subject groupings:

- engineering and technology (code CAH10)
- computing (code CAH11)
- architecture, building and planning (code CAH13)

We present data for students with their permanent address in England, on the assumption that many students would stay within their home nation. However, we also looked at data for students from other geographies, to ensure that migration of students – both within the home nations and internationally – would not radically change the pattern.



# Roundtables with employers, provider representatives, awarding organisations

Representatives from DfE and IfATE (now Skills England) attended two roundtables to listen to stakeholders' views. Employers attending our roundtable on 17th March:

- Babcock International
- Drax
- E.ON
- EDF Energy
- Leonardo
- National Grid
- National Highways
- Network Rail
- Nuclear Waste Services
- Rolls-Royce SMR
- RWE
- Siemens
- Thales
- Transport for London

Awarding organisations, provider (including employer-provider) representatives and engineering and technology sector representatives attending our roundtable on 14th May:

- Association of Colleges
- Association of Employment and Learning Providers
- Association of School and College Leaders
- Chartered Institution for Further Education
- City & Guilds
- EAL
- Enginuity
- GTA England
- Ministry of Defence
- Multiverse
- Pearson
- Royal Academy of Engineering

# Individual conversations with other organisations

We spoke to a number of other organisations, to understand small businesses' and sectoral perspectives not covered by other conversations or research.

- Electrical Contractors Association
- Engineering Council
- Federation of Small Businesses
- Make UK
- Royal Academy of Engineering
- St Martin's Group
- UK Power Networks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