

EngineeringUK's evidence to the Transport Committee: inquiry into skills for transport manufacturing – September 2025

About EngineeringUK

EngineeringUK is a non-profit organisation that works with over 400 [organisations](#) across engineering and technology-related sectors to inspire and enable young people from all backgrounds to progress into engineering and technology careers. We directly reach over 200,000 young people each year with activities such as the [Big Bang Programme](#), [Climate Schools Programme](#), and [Tomorrow's Engineers Week](#). As an organisation, we pride ourselves on providing in-depth research and evidence-based recommendations.

Focus of our submission

Engineering skills are central to transport manufacturing and to developing and achieving future solutions. This requires a workforce with the necessary knowledge and skills, including those in engineering, technology and science. Transport manufacturing falls within the remit of the 'engineering footprint'¹ as defined by EngineeringUK, the Engineering Council and Royal Academy of Engineering. In light of this, we draw on our insights into manufacturing and engineering more broadly to inform your inquiry.

We have focused on the following questions listed in the Committee's terms of reference for the inquiry: A, B, C, D and H.

EngineeringUK's summary points

There is a need for workforce planning across engineering and technology, given overlapping needs in different sectors.

- We ask the government to take a strategic approach to engineering and technology workforce planning and to look across the skills and people elements of the Industrial Strategy sector plans to ensure that common skills needs are identified and addressed.
- We also ask the government to regularly 'back-cast' to identify the number of students required to enter an engineering and technology pathway at different stages of the education system, set policies aimed at achieving these numbers and track performance against them.

¹ Link here to our engineering footprint

How the education system can provide a skilled workforce in manufacturing and beyond:

- We ask the government to commit to publishing a new careers strategy that supports the government's Industrial Strategy ambitions, and ensures that young people's educational journeys, starting in school through to further and higher education, are linked into the wider economic growth agenda. We also ask the government to reaffirm the £85m budget promised in the Labour Manifesto for delivering work experience and careers advice for all young people, and to outline mechanisms for fulfilling Labour's earlier ambition to train 1,000 new careers leaders.
- We ask the government to take decisive action to address STEM teacher recruitment, training and retention. This includes ensuring that STEM teachers have subject-specific training and continuing professional development needed to deliver quality learning for young people.
- We ask the government to maximise the success of T Levels including those related to manufacturing. We ask the government to:
 - Build on work with the engineering community to raise awareness of T Levels amongst employers, students and parents.
 - Maintain funding for BTECs and other Level 3 technical pathways as alternative routes to T Levels.
 - Keep under review financial incentives for employers to support their engagement in T Level industry placements, particularly SMEs.
 - Explore how to replicate or expand the Digital Apprenticeship Service to cover T Level placements.

There is a need to support a diverse manufacturing workforce that has the skills needed by employers. There is a particular need to address current gender imbalances in the education system and workforce.

- There is an urgent need for a strategic and appropriately funded response from government – including DfE and DWP with its new skills brief – targeted at increasing the numbers of girls and young women on pathways into engineering, and also recruiting and retaining them in the workforce. We ask that government work with the organisations involved in the Gender Pathways into Engineering & Technology Partnership² to develop impactful policies and programmes that help address the

² [Gender pathways into engineering and technology](#)

inequity in the uptake of subjects in schools that provide a springboard into engineering careers, including those in transport manufacturing.

To address issues with apprenticeships, we ask that the government:

- Enables SMEs to play an active role in apprenticeships by reforming the apprenticeship standard system to make sure it works for small and large employers and ensuring the funding system supports the delivery of resource-intensive courses.
- Enables the roll-out of more Group Training Associations (GTAs) and continue funding existing GTAs, which support engineering SMEs with the recruitment of apprentices, training and access to levy funds.
- Moves towards a new model of directly funding apprenticeship training for young people between the ages of 16 and 18 (in line with other education funding for this age group) by re-directing unallocated apprenticeship levy funding.
- Provides clarity on who foundation apprenticeships are for, what problem they address, how they fit into the wider skills system, and whether they can work for the engineering and technology sector.

The government announced a £100 million investment to support engineering skills in the Industrial Strategy. To ensure this investment is used in the best possible way, and that it adds value, we suggest that the Committee seeks clarity from ministers and officials on how it will be used.

EngineeringUK's submission – detailed evidence

A. and B. What are the main skills needs facing transport manufacturers?

And, how far is there overlap between the skills needs of manufacturers in different transport sectors?

We ask the Transport Committee to consider transport manufacturing in the context of the broader engineering and manufacturing workforce. There are common vocational and academic pathways which cut across sectors. For example, someone undertaking a level 2 apprenticeship as an engineering operative may ultimately specialise in a maintenance role, mechanical manufacturing, electrical and electronic engineering, fabrication, procession and

finishing, or technical support³. An academic degree in engineering may, similarly, lead to many different career paths including manufacturing.

The question asks about the overlap of manufacturing needs in different transport sectors. Beyond this, it is vital to recognise that the workforce needs of transport manufacturing significantly overlap with other sectors, including the growth sectors, that depend on engineering, technology and manufacturing. **We therefore ask that the government takes a strategic approach to engineering and technology workforce planning and looks across the skills and people elements of the Industrial Strategy sector plans to ensure that common skills needs are identified and addressed⁴.**

We welcome the work that Skills England has undertaken on this so far, in particular its assessment of priority skills to 2030. The assessment recognises the cross-cutting nature of engineering and technology and quantifies the expected growth in the number of engineers required by 2030 for priority sectors including advanced manufacturing⁵.

EngineeringUK also asks the government to regularly ‘back-cast’ to identify the number of students required to enter an engineering and technology pathway at different stages of the education system, set policies aimed at achieving these numbers and track performance against them.

C. How effective are the pipelines for new workers into transport manufacturing, including from schools and colleges, from universities and apprenticeships, and recruiting older workers returning to or changing jobs?

There are issues in the STEM education system that feeds the skilled manufacturing pipeline

A good barometer of the issues affecting the pipeline of skilled manufacturing workers is the take-up of STEM subjects at GCSE level. While many have increased in popularity, take-up of others has declined. In particular, entries to design and technology GCSE have halved since 2016⁶.

³ Skills England (undated), [apprenticeship standard for a Level 2 Engineering Operative](#)

⁴ EngineeringUK (2025), [Investing in the future: EngineeringUK policy priorities](#)

⁵ Skills England (2025), [Assessment of priority skills to 2030](#)

⁶ EngineeringUK (2025), [GCSE and Scottish National 5 results day briefing 2025](#)

There are also challenges in securing high quality STEM related work experience. For example, a quarter of students surveyed for the Science Education Tracker 2023 said that they had wanted to secure STEM-related work experience but had been unable to⁷.

EngineeringUK's survey of careers leaders and staff working on careers provision in secondary schools and colleges in England found that 61% of respondents said that students of work experience age at their school take part in STEM work experience each year⁸. This leaves a sizeable minority of schools where STEM work experience is not regularly available. We welcome the government's aspiration that all students complete 2 weeks of work experience⁹. However, the government will need to invest properly in careers infrastructure to deliver on its ambitions and to ensure that high-quality work experience preparing young people for a wide range of careers is available. **EngineeringUK therefore asks the government to commit to publishing a new careers strategy that supports government's aims as outlined in the industrial strategy and ensures that young people's educational journeys, starting in school through to further and higher education, are linked into the wider economic growth agenda. We also ask the government to reaffirm the £85m budget promised in the Labour Manifesto for delivering work experience and careers advice for all young people, and to outline mechanisms for fulfilling Labour's earlier ambition to train 1,000 new careers leaders.**

Shortages of specialist STEM teachers are problematic in this context too, and are in many areas acute, particularly in deprived areas¹⁰. 28% of secondary school teaching hours for physics for example were delivered by a teacher without a relevant post-A-level qualification in the 2023/24 academic year, while for Design and Technology the figure was 23%¹¹. The Institute of Physics has found that, for physics, teachers who are specialists in their fields have a small but significant positive effect on students' grades at GCSE¹². More importantly, a specialist teacher improves students' engagement, identification and enjoyment of the subject, resulting in a deeper understanding and increased progression to A-level¹³.

EngineeringUK asks the government to take decisive action to address STEM teacher recruitment, training and retention. This includes ensuring that STEM teachers have subject-

⁷ EngineeringUK (2024), [Advancing STEM careers provision in England: key lessons and opportunities](#)

⁸ EngineeringUK, (2024), [Advancing STEM careers provision in England: key lessons and opportunities](#)

⁹ DWP (2024), [Get Britain Working White Paper](#)

¹⁰ EngineeringUK (2024), [Engineering facts and statistics](#)

¹¹ EngineeringUK reading of DfE data tables: [School workforce in England, Reporting year 2024- Explore education statistics- GOV.UK](#)

¹² Institute of Physics (2025), [The physics teacher shortage and addressing it through the 3Rs: Retention, Recruitment and Retraining \(England\)](#), appendix three

¹³ Institute of Physics (2025), [The physics teacher shortage and addressing it through the 3Rs: Retention, Recruitment and Retraining \(England\)](#)

specific training and continuing professional development needed to deliver quality learning for young people¹⁴.

In addition, the National Engineering Policy Centre (NEPC), a coalition including 40 Professional Engineering Institutions¹⁵, in its response to the curriculum and assessment review, also highlighted concerns with the STEM curriculum¹⁶. The curriculum is crowded and there is often not enough time for practical work, which motivates many students. This may have an even greater impact on girls than on boys: 54% of girls and 50% of boys say they are motivated by practical work¹⁷. EngineeringUK has also highlighted concerns around assessments. The linear, terminal assessment nature of GCSEs and A levels rely too much on knowledge retention and recall. This does not enable the development of a broad range of skills beneficial for engineering and more general employment¹⁸.

There is still work to be done to ensure T Levels are part of an equitable skills pipeline into manufacturing

T Levels relevant to transport manufacturing include ‘Design and development for engineering and manufacturing’, ‘Engineering, manufacturing, processing and control’, and ‘Maintenance, installation and repair for engineering and manufacturing’. The number of students completing relevant courses remains fairly low – a total of 1,909 in 2025. Nevertheless, they have been growing fast, as shown in Figure 1. For example, completions of the ‘Design and development for engineering and manufacturing’ T Level doubled between 2024 and 2025, reaching 1,110 this year¹⁹.

¹⁴ EngineeringUK (2025), [Investing in the future: EngineeringUK policy priorities](#)

¹⁵ The NEPC coalition includes EngineeringUK, the Engineering Council and the Royal Academy of Engineering

¹⁶ EngineeringUK (2024), [Response to the Curriculum and Assessment Review consultation](#). EngineeringUK’s response cites the broader NEPC view.

¹⁷ EngineeringUK (2025), [School report: barriers to practical science](#)

¹⁸ EngineeringUK (2024), [Response to the curriculum and assessment review](#)

¹⁹ EngineeringUK (2025), [T Levels results 2025 | Insight and analysis](#)

Figure 1: Number of students completing T Level courses, including T Levels relevant to manufacturing

T Level Course	Number of learners			
	2022	2023	2024	2025
Design, Surveying and Planning for Construction	207	441	686	1,022
Digital Production, Design and Development	340	687	1,034	1,472
Building Services Engineering for Construction	-	207	318	539
Digital Support Services	-	182	294	411
Onsite Construction	-	75	138	125
Design and Development for Engineering and Manufacturing	-	-	555	1,110
Engineering, Manufacturing, Processing and Control	-	-	175	310
Maintenance, Installation and Repair for Engineering and Manufacturing	-	-	398	489
Agriculture, Land Management and Production	-	-	-	165
All engineering and tech-related T Levels	547	1,592	3,598	5,643
All T Levels	1,029	3,448	7,380	11,909

Source: EngineeringUK²⁰

Challenges remain for T Levels. Our 2022 report with Make UK²¹ found that capacity, time and financial constraints could make it challenging for employers to provide industry placements – particularly given existing apprenticeship requirements, something that has been confirmed by the more recent National Audit Office (NAO) report as still being an issue²². **We ask the government to:**

- Build on work with the engineering community to raise awareness of T Levels amongst employers, students and parents.

²⁰ EngineeringUK (2025), [T Levels results 2025 | Insight and analysis](#)

²¹ EngineeringUK and Make UK (2022), [Unlocking talent: ensuring T Levels deliver the workforce of the future](#)

²² National Audit Office (2025), [Investigation into introducing T Levels](#)

- Maintain funding for BTECs and other Level 3 technical pathways as alternative routes to T Levels.
- Keep under review financial incentives for employers to support their engagement in T Level industry placements, particularly SMEs.
- Explore how to replicate or expand the Digital Apprenticeship Service to cover T Level placements.

Gender inequities start at school age

The Institute for Manufacturing has highlighted the ‘leaking pipeline’ of women in the manufacturing sector. Women constitute 28.1% of the manufacturing workforce between 16 and 24 years old, and just 18.6% of the manufacturing workforce between 50 and 64 years old²³. Meanwhile, pay gaps are greatest for women aged 50 and over²⁴.

Gender differences in participation in engineering and technology pathways begin to show clearly at secondary school age. Our 2025 analysis found that, in England, Northern Ireland and Wales, girls made up roughly half of those taking GCSE maths and physics²⁵, but the proportion drops at A level. Also in England, Northern Ireland and Wales, girls made up 37% of pupils taking A level maths and 24% of pupils taking A level physics²⁶.

Furthermore, take-up of engineering and technology-related T Levels by girls is low: among students completing an engineering and technology-related T Level course in 2025, just 12 per cent were female²⁷.

EngineeringUK, with other organisations²⁸, is leading a collective looking at pathways into engineering and technology, and how the government can work with education providers and industry to improve the gender balance²⁹ in STEM education and beyond.

Most of the government’s recent strategies that cover the engineering and technology workforce highlight the need to address this gender imbalance, yet we see almost no actual

²³ Institute for Manufacturing (2024), [Women in UK manufacturing 2024: addressing labour shortages and bridging the gender gap](#)

²⁴ Institute for Manufacturing (2024), [Women in UK manufacturing 2024: addressing labour shortages and bridging the gender gap](#)

²⁵ EngineeringUK (2025), [GCSE and Scottish National 5 results 2025](#)

²⁶ EngineeringUK (2025), [A level and Scottish Higher results 2025](#)

²⁷ EngineeringUK (2025), [T Levels results 2025 | Insight and analysis](#)

²⁸ EngineeringUK is leading this work together with BCS, the Chartered Institute for IT, the Royal Academy of Engineering, Women’s Engineering Society (WES) and Women into Science and Engineering (WISE). See our webpage [Gender pathways into engineering and technology](#).

²⁹ EngineeringUK (2025), [Gender pathways into engineering and technology](#)

investment in doing so. We have struggled to engage DfE Secretary of State and Ministers on this issue, including reaching out as part of the gender pathways collective. **There is an urgent need for a strategic and appropriately funded response from government – including DfE and DWP with its new skills brief – targeted at increasing the numbers of girls and young women on pathways into engineering, and also recruiting and retaining them in the workforce.**

Apprenticeships

Figure 2, below, illustrates the significant decline in apprenticeships at level 2 across engineering and manufacturing. When this data is broken down further, it appears that there has been a particularly steep decline in manufacturing apprenticeship starts. Between 2018/19 and 2023/24, manufacturing level 2 apprenticeship starts fell by 80%, falling from 11,670 to 2,330 over the period³⁰. We have outlined possible reasons behind the overall trend of decline in engineering and technology-related apprenticeships at level 2, including manufacturing. Factors explaining the decline include falling employer demand at lower levels, a lack of suitable apprenticeship standards which work for employers, and the poor viability of lower-level apprenticeships for training providers, particularly in the context of a constrained further education workforce³¹.

Trends in SMEs' engagement with apprenticeships are particularly 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 engineering and manufacturing apprenticeship starts with a large employer fell by nearly one-third (31%) over that period, equivalent starts with an SME fell by almost two-thirds (63% for medium employers, 64% for small employers)³².

Engineering and manufacturing apprenticeship starts at level 2 have fallen fast among young people. Between 2018/19 and 2023/24, the number of under-19s starting a level 2 engineering and manufacturing technologies apprenticeship fell by 55% to 4,000³³.

Those starting level 2 apprenticeships in engineering and manufacturing technologies are also predominantly male. In 2023/24, just 11% of those starting an engineering and

³⁰ EngineeringUK (2025), [Pathways to success: shaping foundation apprenticeships in engineering and technology](#)

³¹ EngineeringUK (2025), [Pathways to success: shaping foundation apprenticeships in engineering and technology](#)

³² EngineeringUK (2025), [Pathways to success: shaping foundation apprenticeships in engineering and technology](#)

³³ EngineeringUK (2025), [Pathways to success: shaping foundation apprenticeships in engineering and technology](#)

manufacturing apprenticeship at level 2 were female³⁴. A central component of addressing workforce shortages must therefore be improving the diversity of the workforce through better attraction, training and retention of women and other under-represented groups.

The government has introduced foundation apprenticeships. There are 7 foundation apprenticeship standards currently, including one in 'Engineering and manufacturing' which could potentially be relevant to transport manufacturing. We support the government's intention to support young people into level 2 apprenticeships, but we do believe that the government needs to do more to set out which problems it aims to resolve with foundation apprenticeships, and how foundation apprenticeships sit alongside other educational pathways and programmes³⁵.

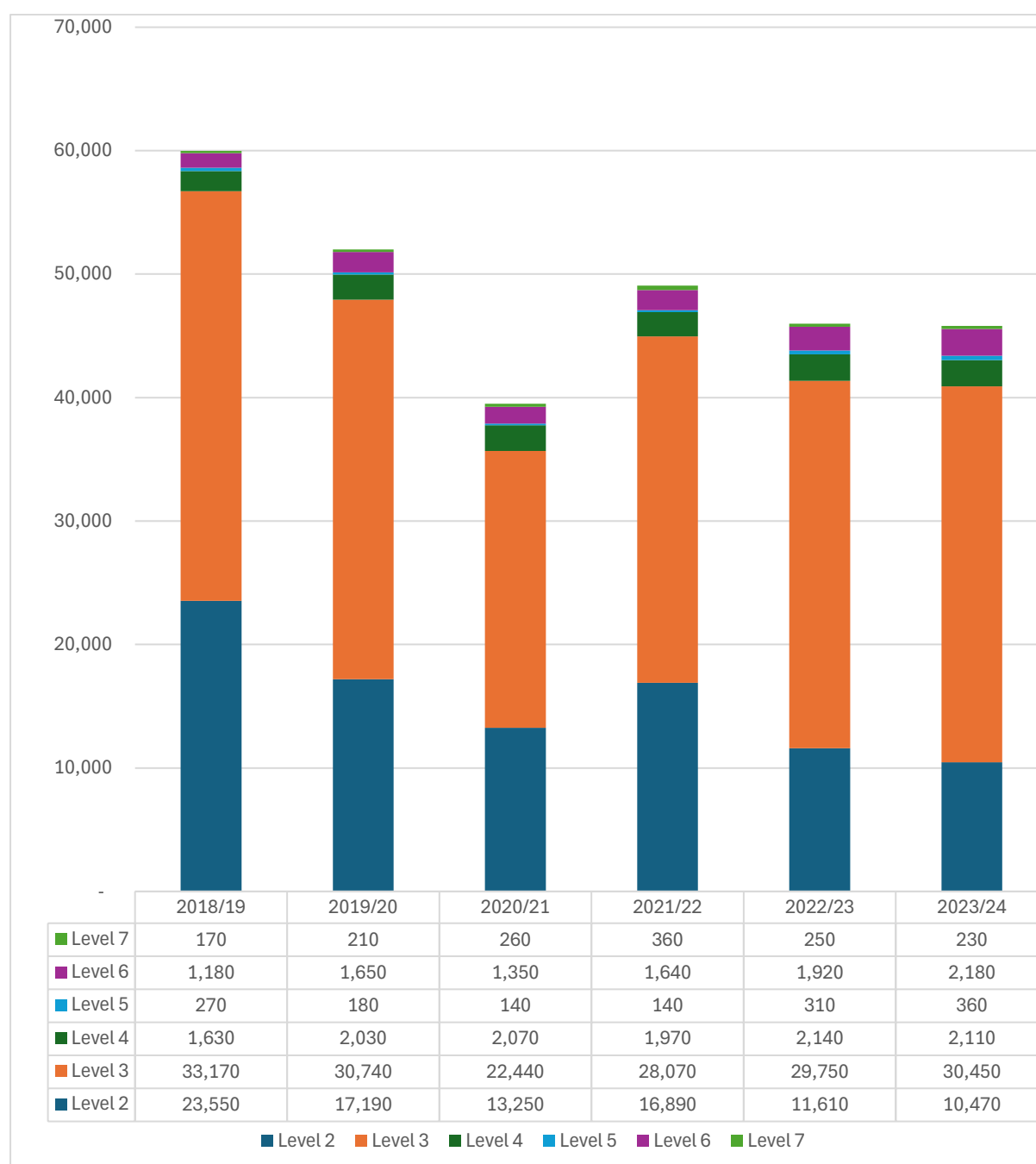
To address these issues, we ask that the government:

- enables SMEs to play an active role in apprenticeships by reforming the apprenticeship standard system to make sure it works for small and large employers and ensuring the funding system supports the delivery of resource-intensive courses
- moves towards a new model of directly funding apprenticeship training for young people between the ages of 16 and 18 (as with other FE funding for these ages) by re-directing unallocated apprenticeship levy funding
- enables the roll-out of more Group Training Associations (GTAs) and continue funding existing GTAs, which support engineering SMEs with the recruitment of apprentices, training and access to levy funds
- provides clarity on which groups foundation apprenticeships are for, what problem they address, how they fit into the wider skills system, and whether they can work for the engineering and tech sector.

³⁴ EngineeringUK (2025), [Pathways to success: shaping foundation apprenticeships in engineering and technology](#)

³⁵ EngineeringUK (2025), [Pathways to success: shaping foundation apprenticeships in engineering and technology](#)

Figure 2: 'Engineering and manufacturing' apprenticeship starts in England, by RQF level, 2018/19 to 2023/24



Source: EngineeringUK analysis of DfE's apprenticeships data

Note: RQF = Regulated Qualifications Framework

D. How have technology and net zero changed the skills mix that is needed, and how prepared are transport manufacturing industries for future changes?

EngineeringUK's 2025 analysis of other organisations' research on net zero³⁶ found a range of forecasts relating to transportation and net zero, including skills for transport manufacturing. For the manufacture of electric vehicles (EVs), the Faraday Institution forecast that there will be 90,000 new jobs in the EV and battery industry by 2040, from 180,000 to 270,000). The report emphasises the importance of retaining battery production in the UK, and associated skills challenges³⁷.

H. How effectively will the government's Modern Industrial Strategy and sector plans support skills in transport manufacturing? What is missing?

EngineeringUK welcomes the government's ambitions to promote more industry placements and to encourage staff to use their skills and experience to teach courses at further education colleges³⁸. We also welcome the government's intentions to promote a diverse, inclusive and sustainable workforce as set out in the Advanced Manufacturing Sector Plan³⁹.

The test of both ambitions will of course be in implementation, including the detailed policy plans and funding required to make them a reality. We have heard from some engineering and technology sector employers that they find the skills landscape confusing, excessively fast-moving and that (through demands for work placements for apprenticeships, T Levels and work experience) the level of contribution required is not always realistic or manageable. This is particularly the case for small and medium-sized employers⁴⁰.

EngineeringUK also welcomes the government's recognition of engineering skills and the announcement of an investment of £100 million in the Industrial Strategy to support engineering skills in England⁴¹. However, we note the lack of transparency over this funding – how much is revenue and how much capital; whether it is truly new funding; and how it will be spent.

To ensure that this investment is used in the best possible way, and that it adds value, we suggest that the Committee seeks clarity from ministers and officials on the £100 million investment, announced in the Industrial Strategy, to support engineering skills in England.

³⁶ EngineeringUK (2025), [Net zero workforce: an analysis of existing research](#)

³⁷ Faraday Institution (2024), [Faraday Report – UK Gigafactory Outlook 2024](#)

³⁸ Department for Business and Trade (2025), [The UK's Modern Industrial Strategy](#)

³⁹ Department for Business and Trade (2025), [Advanced manufacturing sector plan](#)

⁴⁰ EngineeringUK (2025), [Pathways to success: shaping foundation apprenticeships in engineering and technology](#)

⁴¹ Department for Business and Trade (2025), [The UK's Modern Industrial Strategy](#), page 68