EngineeringUK response to the House of Lords Industry and Regulators Committee inquiry:
Skills for the future: apprenticeships and training
October 2024

About EngineeringUK

EngineeringUK is a not-for-profit organisation that collaborates with the engineering community to inspire the next generation of engineers. Our mission is to engage and support young people from all backgrounds in pursuing careers in engineering and technology. Through various programmes, we aim to highlight the diverse opportunities in modern engineering and technology. We partner with numerous organisations to enhance the collective impact of our efforts, helping young people understand and access education and training pathways into engineering and tech careers. Additionally, we conduct research to analyse the current workforce composition, anticipate future needs, and work with partners to influence government policy on educational pathways in the sector.

EngineeringUK's top priorities

To make the apprenticeships and training system in England fit for the future, we recommend that as a matter of priority:

1. Government takes a more strategic approach to address skills shortages and the UK's changing labour market needs, accompanying its industrial strategy with a national engineering and technology workforce strategy supported by a holistic STEM education and skills plan

2. Government ensures that Skills England:

- Leads nationally, responds regionally: While offering national leadership, it must collaborate and link in with local authorities and mayoral combined authorities as well as Local Skills Improvement Plans to address local skills shortages
- Engages with sector bodies: It should work closely with sector-specific bodies such as (in engineering) the Professional Engineering Institutions

- **Collaborates across devolved nations**: Skills England must collaborate with counterparts in the devolved nations to ensure a unified approach to addressing UK-wide skills shortages
- **Links to the forthcoming industrial strategy**: Skills England should align its objectives with the upcoming industrial strategy to ensure a cohesive approach to economic growth
- **Links with Government missions**: It must integrate with the government's missions to support broader policy goals and priorities
- **Strategically influences**: Skills England must be strategic and have the authority to influence employer behaviour and government policy on education and skills

3. Government continues to refocus apprenticeship funding on lower-level apprenticeships and young people. Government should consider taking 16- to 18-year-olds out of the growth and skills levy altogether and look to fund them directly through re-directing unallocated levy receipts

4. Government puts in place appropriate support structures for SMEs to encourage and enable them to open-up more apprenticeship opportunities, such as a growing network of Group Training Associations and financial incentives where needed

5. Government works to foster better collaboration between engineering and technology employers, schools and further education providers to grow the number of industry placements, work experience opportunities and outreach activities, enabling more young people to gain insights into the careers opportunities available

6. Government invests in subject specific teacher CPD in priority subject areas such as STEM that improve teacher retention alongside bursaries as part of its drive to recruit 6,500 new teachers

Background to our response

EngineeringUK welcomes the opportunity to contribute to the House of Lords Industry and Regulators Committee inquiry into the UK's skills and training system at a time when education and skills policy is developing at pace. To help inform the Committee's thinking on next steps for the skills system in light of recent government announcements, our submission draws on insights from EngineeringUK reports including:

- Fit for the future: growing and sustaining engineering and technology apprenticeships for young people
- Engineering skills needs – now and into the future
- Securing the future STEM careers provision in schools and colleges in England
- Unlocking Talent: Ensuring T Levels Deliver the Workforce of the Future', EngineeringUK's Policy Asks for the New Government
- Advancing STEM careers provision in England

Our response

1. What kinds of skills do you think will be needed for the future of the UK economy? Is the UK's skills and training system capable of equipping increasing numbers of people with these skills?

Growing demand for engineering and technology skills

The UK's transition to net zero and advancements in technology are driving a significant increase in demand for engineering skills. As of 2023, there are about 6.3 million jobs in engineering-related occupations, comprising roughly 19.2% of all UK jobs[1]. Between October 2021 and September 2022, over 3.65 million job postings related to engineering were recorded, accounting for more than 25% of all job postings. This suggests a skills shortage in engineering, with employers hiring for both current needs and future growth.[2]

Key sector challenges

- Energy Sector: An estimated 400,000 roles will need to be filled by 2050, with 260,000 of these being newly created positions, requiring about 10,000 new hires annually[3]
- Building sector requirements: The retrofitting of buildings will demand around 45,000 technicians annually at peak levels in the next 5 to 10 years, focusing on fabric improvement and heat pump installation[4]
- Engineering construction: An aging workforce is projected to lose about 20,000 employees each year for the next 6 years, highlighting the need for strategies to attract and retain talent

The Climate Change Committee estimates that between 135,000 and 725,000 new jobs could be created by 2030 in low-carbon sectors, supported by initiatives like the Green Jobs Delivery Group, which aims for 480,000 skilled green jobs by 2030. In addition, demand for engineering skills is high in the nuclear as well as rail and transport sectors. In addition, the demand for green engineering roles is on the rise, with 23,000 engineering job postings for green roles in 2022 and a further 212,000 requiring green skills. Roles like "environmental engineers" and "renewable engineers" are among the most frequently listed green jobs, each accounting for 7.1% and 6% of green job postings respectively.[5] Moreover, demand for engineering skills is high in the nuclear, rail, and transport sectors, as well as in industries critical to achieving the UK's net-zero carbon targets, such as solar energy.

Skills gaps and their impact

[1] EngineeringUK, The engineering footprint (2024)
[2] Upcoming report on 'Engineering skills needs – now and into the future'
[3] EngineeringUK, Net zero workforce report (2024)
[4] EngineeringUK, Net zero workforce report (2024)
[5] EngineeringUK, Engineering skills needs (2023)

The current skills and training system in England has not kept pace with evolving demands, particularly in automation, robotics, and programming languages.[6] This has led to significant skills shortages in the engineering sector, impacting economic productivity and growth. Addressing these gaps is crucial for meeting the needs of emerging engineering fields and supporting the UK's strategic goals. Failure to close the skills gap could cost the UK economy an estimated £1.5 billion annually.[7] [8]

2. What is the appropriate level of government intervention in the development of skills policies? How can government best add value in this area? What should the Government's proposed post-16 education strategy include in relation to apprenticeships and training?

Government's role is to provide strategic direction and to put in place the policy levers and funding to address systemic barriers in the education and skills system. Considering this, and the widely acknowledged skills gaps in the engineering and technology sector, EngineeringUK urges government to develop an Engineering & Technology Workforce Strategy supported by a holistic STEM education and skills plan and linked into the forthcoming industrial strategy. This will ensure training aligns with labour market demands, especially in growing STEM sectors like renewable energy. This strategy must acknowledge that a STEM teaching workforce crisis is threatening progress from the bottom up and that recruitment rates for teachers are alarmingly low—only 17% of the trainee physics teacher target was met in 2022/23.[9] In order to make the government's commitment to training 6,500 new teachers work for the STEM sector, government must consider investment in teacher CPD, bursaries, and updates to recruitment strategies as essential to improve retention and ensure quality education for all.

Government intervention in infrastructure and improving accessibility is also crucial, with many young people facing digital and geographic barriers. A funded digital learning strategy and better transport solutions are needed to make apprenticeships and other training accessible, especially for students from lower economic backgrounds. To support young people, pre-apprenticeship programmes and financial support, such as travel assistance, must be expanded. In light of this, EngineeringUK welcomes the focus on young people and the announcement of foundational apprenticeships and looks forward to working with government on developing these. Women remain underrepresented in engineering apprenticeships, making up only 16% of new starters. Addressing this gap should be a priority.

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[6] https://www.roboticstomorrow.com/story/2024/01/addressing-the-skills-gap-in-manufacturing-through-robotics-training/21991/

[7] EngineeringUK, Engineering skills needs (2023)

[8] https://www.theiet.org/media/press-releases/press-releases-2022/press-releases-2022-october-december/7-december-2022-government-urged-to-tackle-15bn-engineering-skills-shortage-through-primary-and-secondary-education-drive#:~:text=It%20is%20estimated%20there%20is,(source%3A%20STEM%20Learning)

[9] https://www.iop.org/about/news/physics-teacher-training-figures-still-off-target#:~:text=7%20December%202023.%20Too%20many%20young%20people%20will%20continue%20to

Apprenticeship opportunities are unevenly distributed across regions, with some key areas seeing declines. The government must ensure opportunities align with regional strengths and help SMEs access funds and support through better intermediary services, such as a growing network for Group Training Associations. Finally, the post-16 strategy must ensure alignment with labour market needs and increase awareness of lower-level apprenticeship opportunities to reverse declines in STEM apprenticeships since 2016.

3. **Are current Government policies on skills, particularly apprenticeships and training, sufficiently clear? Have policies and the institutional set-up been sufficiently consistent over time? If not, what changes or reforms would you recommend?**

Over the last few years, the UK's qualifications landscape has undergone significant changes to better align education with a rapidly evolving job market. Following the 2016 Sainsbury Review, the previous government introduced T Levels and the apprenticeship levy, and transitioned from apprenticeship frameworks to standards, with this leading to some disruption. More recently, the government has announced the establishment of Skills England and foundation apprenticeships as well as more modular courses, and a curriculum review. While these developments are promising, many details remain unclear.

Making an initial assessment of recent announcements, EngineeringUK welcomes the focus on young people in terms of funding and is looking forward to working with government to develop this further. We also welcome the long-overdue curriculum review but would urge for the review to focus on science as well as English and maths and ensure that it considers the importance of embedding climate education across the curriculum. An element of the review must be focused on ensuring that more young people are equipped and interested in taking up STEM subjects in school, leading to more young people taking up engineering and technology apprenticeships and training in the future.

4. **Are the right institutions in place to ensure an effective skills system for the future? Should coordinating institutions be national, regional or sectoral, or a mixture of each? What is your view of Government's proposal to establish a new body, Skills England?**

EngineeringUK advocates for a mixed model of national, regional, and sectoral coordination. National frameworks ensure consistency, regional bodies address specific local needs, and sectoral councils help meet industry-specific skills requirements. This integrated approach is essential for creating a skills system that can swiftly respond to evolving demands. A national framework is crucial to maintain uniform standards in qualifications and training quality. At the same time, regional arrangements and structures, such as Local Skills Improvement Plans, are pivotal for addressing local skills shortages and tailoring training to regional industry landscapes. By working closely with educational institutions and employers, these bodies ensure that local economic needs are directly addressed in skills development programs. EngineeringUK's 'Unlocking Talent: ensuring T Levels deliver the workforce of the future' report highlights that a national strategy should be informed by both regional and sector-

specific insights to align skills with the economic needs of different areas. This ensures that national policies can support both local economic priorities and broader national goals.[10]

The establishment of Skills England has the potential to improve the strategic leadership to skills in England and across the UK.

However, to be truly effective, Skills England must:

- **Lead nationally, respond regionally**: While offering national leadership, it must collaborate and link in with local authorities and mayoral combined authorities as well as Local Skills Improvement Plans to address local skills shortages
- **Engage with sector bodies**: It should work closely with sector-specific bodies such as (in engineering) the Professional Engineering Institutions
- **Collaborates across devolved nations**: Skills England must collaborate with counterparts in the devolved nations to ensure a unified approach to addressing UK-wide skills shortages
- **Link to the forthcoming industrial strategy**: Skills England should align its objectives with the upcoming industrial strategy to ensure a cohesive approach to economic growth
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- **Strategic influence**: Skills England must be strategic and have the authority to influence employer behaviour and government policy on education and skills.

5. What should the role of business be in encouraging the development of skills in the UK? Should business be a consumer, funder, trainer or co-designer of skills provision?

Businesses should actively participate in developing UK skills by being funders, trainers, and co-designers of the skills landscape. Businesses have long been involved in training the next generation, however, there is more that could be done.

Providing work and industry placements

Currently only 15% of students in years 10 to 13 engage in STEM work experiences, for example, due to barriers like limited availability. And we know that many more T Level industry placements will be needed[11] to ensure that young people can access this qualification. Providing more opportunities for young people to experience the workplace is not only beneficial for the young person, enhancing career awareness and developing their soft skills, but can also support business recruitment strategies.

Supporting the teaching workforce

[10] EngineeringUK, Ensuring T Levels deliver the workforce of the future (2022)
[11] EngineeringUK, More funding and a STEM careers strategy needed (2024)

The salary gap between engineering roles and further education teaching contributes to a shortage of qualified teachers in the FE sector, and businesses have a role to play in addressing this.[12] Engineering, technology and manufacturing businesses must work more closely with training providers in their area, supporting teaching quality through releasing more staff to teach apprenticeships courses in the sector.

Engagement with schools and outreach activities

Careers programmes in schools and colleges are heavily reliant on support from the business community. To bring careers in the engineering and technology sectors alive, young people need access to insights and people working in a range of different sectors and careers. Businesses play a crucial role in enabling this. Recent research shows that there is a link between participation in STEM-based activities and the level of interest in a STEM career. Of those young people who had taken part in any STEM-based activities, 88% were interested in a STEM-based career compared with 69% who had not participated in any such activities.[13] The research also shows that employers benefit from providing these activities and engagement. 86% of employers said their engagement with schools and colleges was encouraging young people to take up careers in the sector and 83% reported it helped them develop new talent pipelines. This rises to 91% for the most engaged employers. 75% of employers also report that their engagement is bringing apprenticeships into their organisation, and 67% say that it is improving the diversity of their workforce.[14]

Promoting diversity and inclusion

To widen opportunities, more work must be done to encourage employers to offer more apprenticeships to young people including those not meeting minimum maths and English requirements and connect applicants with opportunities within their supply chains.

6. **What incentives do employers have to provide training for their employees? Why do you think that employer investment in training has declined in recent decades?**
7. **Should further incentives be put in place to reverse the decline in employer investment in training, and if so, what form should these incentives take? Do smaller employers need greater support to access skills provision, and what form should this support take?**

The decline in employer investment in training overall is the result of a range of developments in the employment market including the rise of short-term employment models, increased job mobility, and

[12] https://www.ascl.org.uk/News/Our-news-and-press-releases/ASCL-survey-shows-teacher-shortages-at-crisis-poin#:~:text=The%20Association%20of%20School%20and%20College%20Leaders%20survey%20of%20766
[13] EngineeringUK, Royal Society, Science Education Tracker 2023 (2024)
[14] https://www.careersandenterprise.co.uk/our-evidence/evidence-and-reports/employer-standards-insight-briefing/

the gig economy.[15] Employers, especially smaller ones, hesitate to invest in training as employees may leave before the company sees a return on investment (ROI). Larger companies tend to see training as part of their long-term strategy, but smaller firms, especially in sectors like engineering, often lack the resources to offer extensive programmes and to engage with the associated bureaucracy. In light of this, SMEs need to be able to access additional support, including intermediary support agencies. Organisations like Group Training Associations (GTAs) and Flexi-job Apprenticeship Agencies can help SMEs manage apprenticeship programs and reduce administrative burdens. More must be done to grow the network of these organisations. Furthermore, government must consider, and continue where already available, financial incentives for SMEs to take on younger apprentices.

8. Concerns have been raised over the operation of the Apprenticeship Levy, particularly in relation to the decline in young people taking on apprenticeships. Is there a case for reforming the levy, for example by ring-fencing more levy funding for training for younger apprentices? If so, what portion of Levy funding should be ring-fenced, and for what ages and levels of qualification?
9. Should the Apprenticeship Levy be made more flexible, allowing funds to be used for shorter courses? What is your view of the Government's proposals for a Growth and Skills Levy?

The Apprenticeship Levy has been widely criticised for contributing to the decline in apprenticeship starts among young people, particularly at entry levels. EngineeringUK's 'Fit for the Future' report highlights a concerning 22% drop in engineering-related apprenticeships for 16- to 18-year-olds since 2016/17. Moreover, the report showed that Level 2 engineering-related apprenticeships have more than halved, from 63,250 starts in 2014/15 to just 30,980 in 2021/22.

Considering this, EngineeringUK has been advocating for a refocusing of funding on lower-level apprenticeships and young people and has welcomed some of the steps recently announced by the government. The introduction of foundation apprenticeships and restrictions in relation to Level 7 apprenticeships are likely to have a positive impact on the availability of opportunities for young people. In addition, the introduction of a more modular approach to apprenticeships, with shorter, most likely cheaper, top-up courses being available and fundable through the levy – a stackable apprenticeship model – should lead to there being more money for entry-level apprenticeships and enable continuous learning at the same time. However, this approach also carries the risk of employers using more of their levy on training for existing staff as they aim to address skills gaps and knowledge in their current workforce. We would therefore urge government to monitor the impact of these changes closely, and not shy away from putting further measures in place to redress the balance

[15] https://learningandwork.org.uk/news-and-policy/why-2024-should-be-a-year-for-employer-investment-in-training/

towards younger people and lower level apprenticeships if necessary, in line with some of the suggestions made by others, such as the Edge Foundation.[16]

EngineeringUK would also like to see the government go further in relation to the growth and skills levy and recommends that the government adopt a model of directly funding apprenticeships for 16- to 18- year-olds – taking apprenticeships for this age group out of the growth and skills levy completely. This could be funded through re-directing unallocated levy receipts which, based on OBR forecasts, returned an estimated £875m to the Exchequer in FY 23/24.[17] Together with other incentives and support for employers, government directly funding 16- to 18-year-olds apprenticeships will have the effect of de-risking employing an age group that is often considered to require a lot of support from employers. This would help government to deliver on its manifesto pledge for a 'Youth Guarantee' of access to training, an apprenticeship or support to find work for every young person. Moreover, it would help to level the playing field between those young people choosing the apprenticeship route and those following A levels, T Levels or other vocational qualifications which are fully funded by government.

10. What is your view of the Government's proposals for a youth guarantee of access to training, apprenticeships, and employment support? If a guarantee was to be introduced, which institutions should be responsible for providing it and would they need additional resources or powers to do so?

The Government's Youth Guarantee is a welcome policy aimed at overcoming barriers to workforce entry and preventing NEET status. However, its success will depend on the education and skills system and the employment market offering more opportunities for young people. EngineeringUK believes that the engineering sector can support the ambitions of the Youth Guarantee. As outlined earlier in this consultation response, there is a high demand for engineering and technology roles across the country and into the foreseeable future. It is therefore vital, that the government looks to link the Youth Guarantee into the forthcoming industrial strategy and puts in place, and monitors measures aimed at increasing youth employment participation in these sectors. If done well, this could be a true game changer and a 'win-win' situation for economic productivity and improving opportunities at the same time. To effectively deliver this guarantee requires a coordinated effort from institutions across the skills landscape. EngineeringUK would also echo recommendations to lower the age of the Youth Guarantee and link it to efforts made to support young people from the age of 16 into apprenticeships and training.

[16] https://www.edge.co.uk/policy/reports/flex-without-compromise/#:~:text=Instead,%20we%20set%20out%20the%20levers%20left%20to%20pull%20in

[17] OBR, 'Economic and Fiscal Outlook' (2023) https://obr.uk/docs/dlm_uploads/E03004355_November-Economic-and-Fiscal-Outlook_Web-Accessible.pdf