

## EngineeringUK response to the Skills Commission *Workforce of the Future* inquiry December 2020

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### About EngineeringUK

EngineeringUK is a not-for-profit organisation, which works in partnership with the engineering community to inspire tomorrow's engineers and increase the number and diversity of young people choosing academic and vocational pathways into engineering via programmes designed to excite young people about the variety and opportunity presented by a career in modern engineering. EngineeringUK aims to grow the collective impact of work across the sector to help young people understand what engineering is, how to get into it, and be motivated and able to access the educational and training opportunities on the way.

We also undertake research and work with partners in the engineering sector to influence government thinking in relation to the educational pipeline into engineering, and what systems, structures and funding need to be in place to enable all young people to decide whether a career in engineering is for them.

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### About engineering

Engineers play a vital role in shaping our world, from where we live and how we communicate, to what we do for leisure. We frequently highlight their importance in response to global challenges – including achieving Net Zero and securing sustainable food, water and energy for all. But their importance has rarely been more visible or significant than during the global pandemic – engineers, technicians and manufacturing companies have been integral to producing personal protective equipment, ventilators and medical infrastructure and supplies.

Engineers will also be needed to achieve the government's ambitions around Net Zero and infrastructure as well for its endeavour to make the UK a global science superpower.

### Engineering skills shortages

Despite the economic downturn and increasing unemployment as a result of the COVID-19 pandemic, the UK exiting the European Union at the end of 2020 and the introduction of a points-based immigration system will drive a reliance on domestic labour going forward. This comes at a time when 40% of SME decision-makers say that it is more difficult now than it was five years ago to find employees with the right skills<sup>1</sup>. While the pool of candidates for jobs is increasing as a result of the pandemic, business leaders still report skills shortages. The Open University's annual Business Barometer recently highlighted that 56% of organisations surveyed said they continue to experience skills shortages and 61% say that they are not as agile as they need to be because of shortfalls in their skills. Engineering and construction were among the sectors most aware of local skills shortfalls.<sup>2</sup>

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<sup>1</sup> <https://www.aoc.co.uk/news/sme-leaders-fear-not-enough-being-done-help-them-prepare-their-workforce-the-end-the-brex>

<sup>2</sup> Open University (September 2020), [Business Barometer 2020](#)

In addition, and National Grid predicts that the UK energy sector alone will need 400,000 roles over the next thirty years in order to reach net zero, 260,000 roles of which will be newly created.<sup>3</sup>

### Diversity in engineering – an imperative for change

Women currently make up just 12%<sup>4</sup> of the engineering workforce overall (8% of engineering and manufacturing technologies apprenticeships) and those from minority ethnic backgrounds, 9%.<sup>5</sup> In addition, only 24% of those working in engineering come from lower socio-economic groups, with this underrepresentation largely a consequence of low participation and attainment in the engineering pipeline<sup>5</sup>.

### COVID-19 and the challenges facing young people

In July 2020 EngineeringUK commissioned Ipsos Mori to undertake a survey of over 1,000 young people (aged 11-19) to gauge their attitudes and the degree to which their educational and career aspirations may have been affected by the pandemic. The findings are clear - young people are concerned about their future.

- The majority of young people surveyed believe the pandemic will adversely affect the educational routes and job opportunities available to them. There was also concern that going to university or becoming an apprentice would become more difficult as a result of the pandemic.
- 62% felt that finding a job in the future has become more difficult due to the pandemic. 52% felt that going to university has become more difficult and 41% felt that becoming an apprentice has become more difficult.
- 44% felt that, when considering career choices, 'having a job you can be certain to keep' had become more important to them due to the changes brought about by the pandemic.

### Addressing the skills gap while opening-up opportunities

The UK needs a thriving engineering sector to become the green science superpower that the Government wants to build and to support post-pandemic economic growth. At the same time, it needs the engineering sector to be more diverse to enhance our collective ability to solve some of the largest social and economic challenges facing the UK.

The skills gap on the one hand and the government ambition for the UK to have a thriving engineering sector on the other hand, has the potential to provide opportunities for young people to transition into sustainable, well-paid work even during these turbulent times. However, for these opportunities to materialise and for young people to be able to access them, EngineeringUK believes that the Government must do the following:

1. [Establish a new STEM education strategy with large-scale funding across the whole of the UK informed by strategic workforce planning and evidence of what works](#)

The strategy must address STEM teacher shortages, teacher professional development, STEM careers

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<sup>3</sup> <https://www.nationalgrid.com/document/126256/download>

<sup>4</sup> EngineeringUK, 'Gender disparity in engineering', Research Briefing, 2018.

<sup>5</sup> EngineeringUK, *Educational pathways into engineering*, 2020

education, outreach, diversity and progression to post-16 academic and technical qualifications.

EngineeringUK is particularly concerned that the strategy improves access to high quality careers provision, as we believe that giving young people access to effective and impartial careers education, information, advice and guidance (CEIAG) in school, can play an important part in increasing the number of young people on pathways into STEM careers and in improving outcomes, opening up opportunities for these young people. A 2019 study conducted by Education and Employers<sup>6</sup> for example found that pupils who had careers engagement sessions with employers were more motivated to revise for exams and more likely to exceed predicted GCSE grades.

This is why EngineeringUK, together with a number of engineering and STEM organisations, are currently undertaking research to better understand schools and colleges' capacity to provide effective STEM careers provision and what more needs to be done to ensure that all young people access it. Recent EngineeringUK research highlighted that over three quarters of young people (76%) surveyed for our *Young People and Covid-19*<sup>7</sup> report had not received any careers advice or guidance since March 2020 when lockdown began (aside from talking to parents about careers or searching online), which is concerning.

The findings from this research will be published in spring and will look to inform government thinking on this issue.

## 2. [Ensure there are apprenticeship and other training opportunities for young people in the engineering sector](#)

Since the start of the pandemic youth unemployment has increased by 88,000<sup>8</sup> with the youth unemployment rate rising from 12.3% between April-June 2020 to 14.6% between July and September 2020. The pandemic is also affecting apprenticeships with research published by the Sutton Trust in May 2020<sup>9</sup> finding that from early April 2020 on average just 39% of apprenticeships were continuing as normal, with 36% having been furloughed and 8% made redundant. They also conclude that the crisis is hitting young apprentices the hardest. This comes on top of already declining apprenticeship numbers in the engineering and manufacturing technologies sector since 2017/2018<sup>10</sup>.

In response the government brought forward the *Plan for Jobs*, which includes incentives to employers to take on young apprentices. EngineeringUK has welcomed this investment and the Kickstart programme, as well as the recent announcement in the Comprehensive Spending Review that these measures will be extended. Ahead of the spending review we urged government to continue funding incentives for employers to take on apprentices and look to expand the offer.

The government must now continue to assess how well the incentives are working and not shy away from expanding the offer to employers over a longer period of time so as to support engineering employers to take on young people and think long-term in a time when the focus is so much on the here and now.

Government must be open to the idea of increasing the amount paid to employers to take on apprentices, reducing co-investment in training costs, giving employers greater flexibility on spending in the

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<sup>6</sup> Education and Employers, '*Motivated to achieve*', June 2019.

<sup>7</sup> <https://www.engineeringuk.com/media/232314/young-people-and-covid-19.pdf>

<sup>8</sup> <https://commonslibrary.parliament.uk/research-briefings/sn05871/>

<sup>9</sup> Sutton Trust. '*COVID-19 Impacts: Apprenticeships*', June 2020.

<sup>10</sup> <https://explore-education-statistics.service.gov.uk/find-statistics/apprenticeships-and-traineeships/2019-20>

Apprenticeship Levy for 'off the job' costs, and pre-apprenticeships programmes to encourage disadvantaged groups into apprenticeships.

### 3. Focus on increasing diversity

Diversity within apprenticeships continues to be a persistent challenge as touched on earlier in this paper. and there are signs of deepening gender differences in careers aspirations as a result of the pandemic.<sup>11</sup> Addressing the diversity gap in engineering with measures that open up access for a wider range of young people is vital not only to overcome the persistent and continuing skills gap in engineering, but also to create opportunities for young people in a post-pandemic, post-Brexit world. Getting this right is in many ways a 'win-win' situation. Not doing so will mean that large numbers of young people in the UK will be denied the opportunity to participate and drive the economic recovery of this country. Government must work with young people, employers, training providers and schools to better understand and address the barriers that stand in the way of for example more women entering the engineering workforce.

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For more information on our research, go to our website [here](#).

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<sup>11</sup> Results from our survey with young people (Covid 19 and young people) also suggest that the pandemic is deepening already existing gender differences in career aspirations. Girls surveyed were far more likely to consider a career in healthcare (43% c.f. 28%) than their male peers compared with engineering (24% c.f. 44%) generally. And the pandemic has exacerbated these differences, with a higher proportion of girls than boys reporting being more likely to pursue a career in healthcare as a result of the pandemic (29% c.f. 18%), versus engineering (17% c.f.12%).