Engineering and technology are of vital importance to the UK.

Engineering is a critical industry and employs 6.1 million people in UK (=19% of all jobs)

Engineering and technology jobs predicted to grow in all UK regions between now and 2030 – faster than other occupations

Net zero ambitions and growth of green jobs increasing demand further in the last 5 years:

- +55% job adverts for ‘green engineering jobs’
- +48% job adverts mentioning ‘green skills’

Around 500k new jobs needed to support the green economy by 2050

But we have significant skills shortages and workforce challenges

1 in 5 jobs in the UK are in engineering (19%), yet engineering vacancies account for 1 in 4 of all job adverts in UK (25%)

Diversity in the workplace benefits everyone, but current workforce is not representative:

- Women: 16.5%
- People from minority ethnic groups: 11%
- Disabled people: 11%
- People from lower socio-economic backgrounds: 24%
- Engineering & technology workforce
- UK workforce

Spotlight on gender gap

- Women / girls are the most underrepresented group

<table>
<thead>
<tr>
<th>% of women / girls</th>
<th>Engineering &amp; technology workforce</th>
<th>Engineering T Levels</th>
<th>Engineering apprenticeships</th>
<th>Engineering degrees (undergraduates)</th>
<th>Physics A level</th>
<th>Maths A level</th>
<th>Maths &amp; physics GCSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16.5%</td>
<td>9%</td>
<td>14%</td>
<td>18%</td>
<td>23%</td>
<td>38%</td>
<td>50%</td>
</tr>
</tbody>
</table>
WE NEED TO ATTRACT MORE YOUNG PEOPLE FROM ALL BACKGROUNDS TO CREATE THE DIVERSE WORKFORCE NEEDED FOR ENGINEERING AND TECHNOLOGY TO THRIVE

STEM subjects are popular in schools, but engineering barely features on the curriculum and take up of design & technology has declined

GCSE uptake over the past 5 years:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>+30%</td>
</tr>
<tr>
<td>Physics</td>
<td>+25%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>+25%</td>
</tr>
<tr>
<td>Design &amp; Technology</td>
<td>-48%</td>
</tr>
</tbody>
</table>

Maths, biology, chemistry, physics remain in top 10 most popular A levels

Girls make up half of those taking GCSE maths and physics, but this drops at A level: 38% maths, 23% physics

There is also a shortage of STEM teachers in schools, particularly in deprived areas

INCREASING AWARENESS OF THE VARIED ROUTES INTO ENGINEERING AND TECHNOLOGY

APPRENTICESHIPS

Not yet reached pre-pandemic levels, despite positive uptick in 2021:

- Nearly 98k engineering apprenticeships started in 2021/22
- Down 12% since 2016/17, down 5% since 2018/19

Representation in apprenticeships:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>14%</td>
</tr>
<tr>
<td>All subjects</td>
<td>51%</td>
</tr>
<tr>
<td>Women</td>
<td>12%</td>
</tr>
<tr>
<td>Minority Ethn</td>
<td>14%</td>
</tr>
</tbody>
</table>

T LEVELS

- Only 37% of young people know what T Levels are
- Only 28% of employers know what T Levels are and understand what they involve

Estimated shortfall of 43,500 industry placements

HIGHER EDUCATION

- Most popular subject in UK: 6% of all undergraduate entries
- 38,615 engineering and tech undergraduates
OUTREACH HELPS TO DRIVE CHANGE BY INFORMING AND INSPIRING MORE YOUNG PEOPLE TO CONSIDER PROGRESSING INTO ENGINEERING AND TECHNOLOGY

**KNOWLEDGE AND PERCEPTIONS AMONG SCHOOL STUDENTS**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>55%</td>
<td>say they know what engineers do - 64% for tech</td>
</tr>
<tr>
<td>51%</td>
<td>say they were interested in an engineering career - 59% for tech</td>
</tr>
<tr>
<td>60%</td>
<td>say they do not know what subjects / qualifications they need to become an engineer</td>
</tr>
</tbody>
</table>

Those who make the link between engineering roles and environmental sustainability are 7 times more likely to be interested in engineering careers.

**STEM ENGAGEMENT ACTIVITIES IMPROVE YOUNG PEOPLE’S UNDERSTANDING OF ENGINEERING CAREERS AND INTEREST IN THEM**

Only 12% of young people attended a careers event with an employer in past 12 months, but those who did were:

- Twice as likely to know what engineers and scientists do at work
- Almost 3 times as likely to be interested in an engineering career

School students who attended one or more STEM careers activity are:

- x3.5 times more likely to know what people working in engineering do
- x3.4 times more likely more likely to consider a career in engineering

References: [www.engineeringuk.com/references](http://www.engineeringuk.com/references)