The engineering sector is essential to the UK economy

Our revised long-term recommendations based upon new analysis from this year's Engineering UK 2016 report show that we need:

- **A doubling of the number of engineering and technology and other related STEM and non-STEM graduates who are known to enter engineering occupations.** This is vital to meet the demand for future engineering graduates and to meet the additional shortfall in physics teachers and engineering lecturers needed to inspire future generations of talented engineers.
- **A doubling of the number of young people studying GCSE physics as part of triple sciences or further additional science or equivalent** and a growth in the number of students studying physics A level (or equivalent) to equal that of maths. This must have a particular focus on increasing the take-up and progression by girls.
- **A two-fold increase in the number of Advanced Apprenticeship achievements** in engineering and manufacturing technology, construction planning and the built environment, and information and communications technologies – with particular emphasis on 18- to 24-year-olds.
- **Provision of high quality, engineering engagement interventions and careers inspiration for all 11- to 14-year-olds.** This should include opportunities for every child between 11 and 14 years old to have at least one engineering experience with an employer. This inspiration must highlight the value placed on STEM skills, promote the diversity of engineering careers available and provide real life engineering context.
- **Support for teachers and careers advisors delivering careers information** so that they understand the range of modern scientific, technological and engineering career paths, including vocational/technician roles. It is vital that our education system recognises the employer value placed on STEM subjects and that young people have the opportunity to experience a 21st century engineering workplace for themselves.

The Engineering UK report was produced with the support of the members and fellows of the following Professional Engineering Institutions:

BCS The Chartered Institute for IT

British Institute of Non-Destructive Testing

Chartered Institute of Plumbing & Heating Engineering

Chartered Institution of Water & Environmental Management

Energy Institute

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Institute of Highway Engineers

Institute of Marine Engineering, Science and Technology

Institute of Materials, Minerals & Mining

Institute of Measurement & Control

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Institution of Civil Engineers

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Institution of Fire Engineers

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Institution of Lighting Professionals

Institution of Mechanical Engineers

Institution of Railway Signal Engineers

Institution of Royal Engineers

Nuclear Institute

Royal Aeronautical Society

Society of Environmental Engineers

The Chartered Institution of Building Services Engineers

The Chartered Institution of Highways & Transportation

The Institute of Healthcare Engineering and Estate Management

The Institution of Engineering and Technology

The Institution of Structural Engineers

The Royal Academy of Engineering

The Royal Institution of Naval Architects

The Society of Operations Engineers

The Welding Institute

EngineeringUK partners with business and industry, Government and the wider science and engineering community: producing and sharing evidence on the state of engineering, inspiring young people to choose a career in engineering and matching employers' demand for skills. EngineeringUK leads two programmes: The Big Bang and Tomorrow's Engineers.

www.EngineeringUK.com

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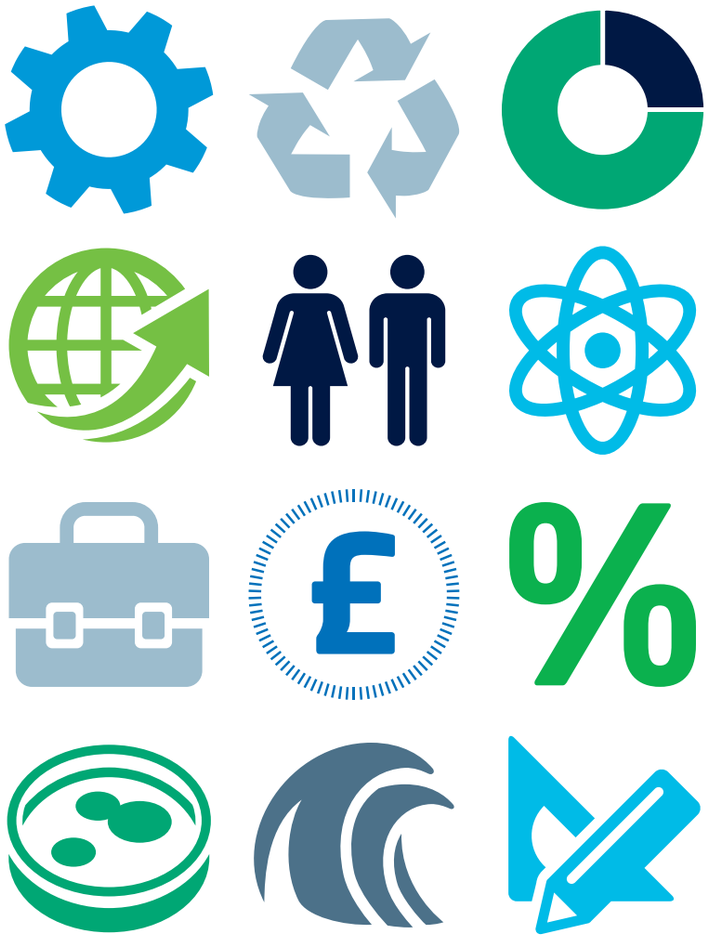
The state of engineering **Key facts 2016**



EngineeringUK

Engineering drives productivity

Engineering generated **£455.6 billion** GDP for the UK

That's **27.1%** of the total UK GDP

Engineering is **68%** more productive than retail

Employment has grown by **1.8%** to over **5.5 million**

Engineering supports **14.5 million jobs** – 55% of UK employment

The number of registered engineering enterprises **grew by 5.6%** in the UK to 608,920

Every time **a new job** is created in engineering, **two more jobs** are created elsewhere

...but we need many more engineers

Engineering companies are projected to need **182,000 people** with engineering skills each year to 2022

We need to **double the number of graduates and apprentices** entering the engineering industry

Filling the demand for NEW engineering jobs will generate an **additional £27 billion** per year from 2022 to the UK economy – equivalent to **building 1,800 schools or 110 hospitals**

We need more young people studying STEM subjects

Of a cohort of 1,000 11-year-olds:

111 boys and **101 girls** will achieve a physics GCSE A*-C or equivalent

44 boys and **13 girls** will achieve a physics A level or equivalent

21 males and **3 females** will obtain an E&T degree

33 people will achieve engineering-related **advanced apprenticeships**

From 2011 to 2015 the proportion of 11-14s who believe that **a career in engineering is desirable** has increased from **27%** to **43%**

Almost **3 in 4** parents believe that a career in engineering is desirable for their children

...and the proportion that **know what engineers do** has increased from **11%** to **30%**

But there is more to do...

2 in 5 STEM teachers feel confident giving careers advice about engineering, including **47% of men** and just **28% of women**

1 in 4 parents knows what people working in engineering do

17- to 19-year-olds **underestimate** the average starting salary of a graduate engineer **by 27%**

Great prospects

The average graduate starting salary for engineering and technology is **£27,079** – over a **fifth more** than for all graduates

Nearly two thirds of employed engineering and technology graduates work for an engineering and technology employer

Just **one in fifty** go into the financial and insurance sector