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Engineering the future is supported by:



IOP Institute of Physics



Engineering the future – a vision for UK engineering

Engineering the future is a broad alliance of professional engineering institutions and associated bodies which represents the UK's 450,000 professional engineers. We have produced a vision for engineering which identifies five key priorities for a thriving UK economy, based on engineering innovation that builds on our national strengths and addresses the grand challenges of the 21st century.

Our five key priorities are:

1 Sustaining and encouraging investment in the skills for the future

The UK needs world class engineering and technology skills to compete internationally and create the high-value, technology-based industries of the future. Engineering at all levels is underpinned by the science, technology, engineering and maths (STEM) taught at school. We call for a greater focus on STEM subjects with young people taught by subject specialists and given access to focused careers advice.

The wide range of pathways to professional engineering qualifications, including 14-19 Diplomas, vocational qualifications and degree courses must be supported. Industry needs encouragement to provide apprenticeships and graduate training. The right level of investment in university engineering departments must ensure that the UK retains its status as a world leader in engineering and science higher education.

2 Making the UK a leader in low carbon technology

The UK's long tradition of engineering and scientific innovation should be harnessed to meet the challenges of climate change. We must seize the opportunities offered by low carbon energy technologies and green innovation to become a world leader in these new industries.

Investing in low carbon innovation is risky and risk adds to costs. A stable, unambiguous and well-communicated policy and regulatory framework is needed to incentivise private investment in low carbon energy technologies. There is also an urgent need to reduce barriers to market entry and the costs of doing business.

3 Capitalising on the value of the UK science and engineering research base

The UK generates a wealth of new ideas and technologies from its vibrant world class engineering and science research base. Greater interaction between business and universities is needed to realise the full potential of this store of knowledge and unlock innovation for the benefit of society. Government should encourage more collaboration and people exchange between businesses and universities to increase knowledge transfer into commercial applications.

It is vital that the government investment fund for innovative new companies is maintained and the R&D tax credit scheme developed to position the UK ahead of our competitors.

4 Harnessing the power of public spending to encourage innovation

UK public procurement is currently worth around £220 billion a year. With the right processes in place, public procurement could be used more effectively to foster innovation, improve public services and provide better value for money. Government must take advantage of emerging technologies to improve procurement. There must also be a better balance struck between the short term drive for low cost and risk and the long term national benefits of fostering novel solutions.

5 Making greater use of engineering advice in government policy making

The delivery of much public policy has an engineering dimension that needs to be considered at the start of the policy making process. Policy making can benefit from the contribution of engineers, who can bring systems thinking to bear on policy challenges. Government should draw more on the expertise of the professional engineering community and encourage the professional registration of engineers within the civil service. Where appropriate, Chief Engineering Advisers must be recruited to government departments in addition to, or instead of Chief Scientific Advisers.