ADVANCED ENGINEERING

Overview

The UK is renowned globally for the strength of its advanced engineering sector, with world-leading capabilities in technologies such as plastic electronics, materials and sensors and their application in a multitude of industry sectors including automotive manufacturing, space and aerospace. It has been a period of ground-breaking success for the UK, with the securing of innovative engineering investment projects that will provide significant long-term economic benefits and will, crucially, accelerate the UK's transition towards a low carbon economy.

Next-generation automotive manufacturing

The announcement by Nissan in March 2010 that it had selected the UK to produce Europe's first mass-produced electric car was a clear testament to the strength of the UK's engineering skills base. The £420 million project at Nissan's Sunderland plant will revolutionise the automotive industry and confirm the UK as a leading location globally for next-generation automotive manufacturing.

Alongside this success, the Government has been keen to maintain the strength of the UK's wider automotive sector by building on its international reputation for automotive design, research and development (R&D) and innovation. Indeed, in response to a report by the "New Automotive Innovation and Growth Team" at the Department for Business, Innovation and Skills (BIS), the Automotive Council was established in January 2010 to develop, guide and implement a long-term strategic framework for the industry.

Space technology

The "Space Innovation and Growth Strategy", a joint Government, industry and academia initiative, was launched in February 2010. This set out a 20-year plan to ensure that the UK builds on its existing strengths and achievements in space technology and remains at the forefront of the evolving space sector. As a first move, in March 2010, the UK Space Agency was established to co-ordinate the UK's space sector as it builds towards becoming a £40 billion industry by 2030 that will provide employment for 100,000 people.

Composite materials

The composite materials finished parts market is conservatively forecast to grow to over £20 billion by 2020, up from a current value of £1 billion, due to significant forecast growth in sectors such as aerospace and offshore wind. In November 2009, BIS launched the "UK Composites Strategy" to provide investment and co-ordinated support, ensuring that the UK continues to develop a sustainable and commercially-focused composites industry.

Offshore wind

In October 2009, the Department of Energy and Climate Change announced a significant expansion to the UK's offshore wind capacity to reach 32 gigawatts of offshore wind energy by 2020. This will result in major opportunities in the manufacture of offshore wind turbines – indeed, the manufacture of blades alone is expected to be worth £10 billion by 2020, creating up to 70,000 jobs in the UK.

Forward look

The UK is well placed to retain its position as a leading advanced engineering economy – in addition to world-class skills and expertise within each company, the sector is supported by globally recognised research excellence from the UK's universities which comprise four of the top six universities in Europe for engineering and ICT (specifically Cambridge, Oxford, Imperial College and Manchester) and the collaborative potential of leading research organisations such as the Advanced Manufacturing Research Centre. Of particular importance to the long-term success of the UK advanced engineering sector is the strategic support provided for the deployment of technologies to overcome specific challenges, as demonstrated, for example, by the National Aerospace Technology Strategy and the Automotive Council Technology Group. This support will ensure that the UK continues to remain the global location of choice for international companies keen to develop and exploit engineering technologies that tackle the world's industrial and societal challenges.

NISSAN

Sector: Advanced Engineering
Location: Sunderland
Country of origin: Japan

In March 2010, Japanese motor giant Nissan announced that it is to build its new electric car in Sunderland from 2013.

Combined with the company's decision to also build a battery plant in Sunderland, production of the Nissan Leaf, which aims to be the world's most affordable mass-produced zero-emission car, represents a £420 million investment in the UK by Nissan. Around 50,000 Leaf cars a year will be produced at the Wearside plant.

Andy Palmer, Senior Vice President at Nissan, said: "Thanks to the UK's firm commitment to a low-carbon future in terms of infrastructure, customer incentives and educational programmes, the Nissan Leaf will be built in Sunderland, making the UK the third country in the world to produce this revolutionary car."

www.nissan.co.uk

IFR AUTOMOTIVE

Sector: Advanced Engineering
Location: Coventry
Country of origin: Spain

Spanish company IFR Automotive recently established a new electronics arm, called Unidrive Technologies, at the University of Warwick Science Park.

IFR, which produces the Aspid, an acclaimed supercar that can reach speeds of 60mph in 2.8 seconds, plans to employ a small local team of 10-15 technology specialists to staff its West Midlands operation.

Ignacio Fernandez Rodriguez, founder of IFR, stated: "The region has a fantastic reputation for automotive manufacturing and much of its workforce cannot stop thinking about cars.

"The local universities, as well as those across the UK, are brimming with talent and new ideas, and the proximity of Birmingham Airport is great for us, as we want to be as easily and quickly connected as possible with Spain and the rest of Europe."

www.ifrautomotive.com

£130 BILLION

Manufacturing and engineering contributes over £130 billion a year to the UK economy and generates 53 per cent of UK exports