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CaSE
Campaign for Science and Engineering

Can the Chancellor promote the UK to the scientific premier league?

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"The spending review is about making choices, and for me science is a personal priority."

Chancellor George Osborne at last week's 'topping out' ceremony at the Francis Crick Institute

"I am up for the challenge… of making Britain the best place in the world to do science."

Chancellor George Osborne in speech to the Royal Society 9 November 2012

CaSE welcomes the positive signals from the Chancellor of the Exchequer about his personal commitment to science in advance of the spending review.

However, CaSE remains concerned about the UK's slide down the rankings of global science economies. We therefore urge the Chancellor to manifest his commitment as a significant real terms increase in the science budget and not to satisfy himself with 'protecting' the science budget with a continued freeze.

Membership of the 'premier league' of scientific nations has disproportionate benefits to the economic success of members through the benefits of reputation, scale, catalysis of ideas, flow of skilled people into business and absorptive capacity of companies – much like promotion to the Premier League brings financial as well as reputational reward.

The UK is historically a 'premier league' nation. But its position has been sliding. Compared to the OECD group of developed nations, Britain's science spend is only 7th in absolute terms, falling to 25th in percentage terms.

The UK currently spends 1.7% of Gross Domestic Product (GDP) on research and development (R&D). However, when looking at just at public funding for R&D, this figure drops to 0.57% of GDP.

Our competitor and collaborator countries are ramping up their expenditure on R&D whilst the UK's investment remains static, dipping slightly (see graph below). The leaders of these countries are signaling their intent clearly. The quotes below illustrate their belief in science and research to grow their economies and their determination to put real money behind that effort.

The Chancellor's words of the last week are welcome. Will he show the same determination to invest in science and engineering for our economic growth and keep Britain in the scientific premier league?

The UK's Gross Expenditure on R&D (GERD) as a percentage of GDP from 1995 - 2010

Source: OECD Main Science and Technology Indicators

Notes: The UK is the only country which sees a decrease in GERD as a percentage of GDP over this period: -0.12%.

The international context:

South Korea

"At the very heart of a creative economy lie science, technology and the IT industry, areas that I have earmarked as key priorities. I will raise the quality of our science and technology to world-class levels."

President Park, Republic of Korea, Presidential Inauguration Speech, February 2013

President Park plans to increase the total expenditure on research and development to 5% of GDP by 2017, up from 4% in 2011. The government's investment in basic science will rise from 35.2% of that total to 40% by 2017. She also aims to set up a new overarching 'ministry of future innovative science'.

China

"China's innovation capability has been greatly boosted in the past five years, with scientific progress contributing 51.7 percent to the nation's economic growth in 2011, compared with 48.8 percent in 2008."

Wan Gang, Minister of Science and Technology

China spent over 1 trillion yuan (£106.3 billion) on research and development in 2012, representing 2% of the country's GDP.

Germany

"For Germany, as well as for Canada, ensuring growth and prosperity depends largely on the nature of our efforts and successes in science, research, and innovation."

Chancellor Merkel, speech at Dalhousie University, August 2012

The Federal Ministry of Education and Research's 2013 budget has increased by 6.2% compared to last year – placing it at a total of 13.7 billion euros (£11.6 billion).

Brazil

"With this Plan (Inova Empresa Plan), federal government funding for technological innovation will reach an unprecedented level. We are taking a big step toward consolidating science, technology and innovation as a sustained pillar of the Brazilian economy."

Marco Antonio Raupp - Minister of Science, Technology and Innovation at the launch of the Inova Empresa Plan, March 2013

Brazil's total R&D spending is expected to increase this year to $31.9 billion (£20.3 billion), an 8.1% increase over the $29.5 billion it spent in 2012.

United States

"Now is the time to reach a level of research and development not seen since the height of the space race."

President Barack Obama, 2013 State of the Union address.

The 2014 Science and Technology R&D Budget proposes $142.8 billion (£91 billion) for federal R&D, an increase of $1.9 billion or 1.3 percent over the 2012 enacted level.

Singapore

"Singapore's journey in R&D is relatively young but one pursued with strong support and commitment from the government and the research community."

Mr Lim Chuan Poh, Chairman, Agency for Science, Technology and Research, May 2013

The Singaporean government plans to continue increasing investment through its Research, Innovation and Enterprise 2015 plan which allocates S$16.1 billion (£8.2 billion) for 2011-15. This is an overall increase of 19% over the previous 5-year period and a commitment of 1% of expected GDP to public sector research and innovation.

The UK's Challenge

Taken in the international context, the Chancellor's signals seem to pale somewhat in comparison to the stated intentions of the leaders of our competitor and collaborator nations.

Lord Krebs, the Chairman of the House of Lords Science and Technology Committee, recently wrote to the Chancellor setting out his concerns about the UK's long-term prospects on the international stage.

"We are concerned that, unless investment in science in the UK keeps pace with that elsewhere in the world, the UK could lose its competitive edge in science and innovation, with consequential impacts on the economy."

CaSE reiterates its call for the Government to establish a long-term framework for investment in science and engineering and to signal its commitment by setting an upward trajectory for investment. We call on the Chancellor to:

- Set a positive trajectory for increased investment in science and research
- Articulate a long-term (ten year) strategic plan and investment framework for UK science and research
- Demonstrate commitment to the ring fence around the science budget and broaden the scope of the science budget to encompass elements such as capital that were excluded in SR2010
- Ensure the UK remains globally competitive and able to benefit from adoptive technology

CaSE urges the Chancellor to propel the UK back to the top of the scientific premier league and re-establish the UK's prominence in the global race as the best place in the world to do science.