



# Summary

In the last decade, Labour repaired the damage done to science under the Tories. In the 1980s arguments were made about how to save British science. It is a mark of progress that debate now focuses on how to improve and develop science further.

Over a decade of sustained investment has rescued science and research in the UK. Investment in science and research has doubled since 1997. Our research base ranks as among the best in the world. We have more scientists than ever before conducting curiosity driven research. We are a magnet for scientists from all over the world.

Our future prosperity will demand excellent science. It is critical in securing the recovery and delivering strong economic growth. We are clear: science will be placed at the heart of Labour's economic growth strategy.

We have a record we are proud of. Since 1997 Labour has worked in partnership with scientists to bring the UK many benefits. Renewing and further strengthening this partnership will make sure that science in this country continues to flourish.

# Strengthening UK science

We recognise the importance of science which is why we have taken the decision to make sustained investment in science since 1997. By 2010-11, Labour investment in science and research will have doubled from its 1997 level, to over £6 billion. We will continue to support curiosity driven research which has underpinned the breadth and excellence of UK science over the last ten years.

- In setting research priorities, we continue to respect the Haldane principle. Peer review, the judgements of the science community and the independence of the Research Councils are all key.
- The success of UK science has also been underpinned by a ring-fenced science budget and the ten year framework. Together they have provided a useful structure between Government and the science community.

We recognise the concerns over the Science and Technology Facilities Council. We will learn the lessons from the structural difficulties faced by the STFC.

- Grants will remain with the STFC to deliver investment continuity. We will remove the risk of foreign exchange impacts and put the STFC on a sound footing.

# Science education

We must maintain our reputation as one of the best science nations in the world. We cannot afford to be complacent in an increasingly competitive global economy which will be heavily reliant on Science, Technology, Engineering and Maths (STEM) skills.

We have a good record. More and more young people are taking science qualifications, there is record investment in science teachers and we are putting more stretch and challenge into exams. First degree graduates from STEM subjects have increased overall and the total number of PhD graduates in STEM subjects has also increased. We now have 19,000 science and engineering ambassadors who go into schools to inspire schoolchildren about the value of their work. Nevertheless, we need to do more to attract people from all backgrounds, especially women, into STEM subjects.

Across the board - from school children through to university lab to business and industry - we must redouble our efforts to strengthen STEM skills. Good teachers have a lasting effect on children so we will continue to take action to recruit bright, qualified science teachers. Maintaining world leading research at our universities is a priority. And increasing take up of STEM subjects and incentivising those students to work in STEM related careers is critical following the global downturn.

- More young people will be able to study single science subjects and modern foreign languages.
- We will provide greater maths content in GCSE science and require science A levels to have greater stretch and challenge.
- We will apply the principle of publication of publicly funded research if it passes peer review.
- Fund more STEM-subject students in higher education, with an additional 20,000 places at university and college this year, bringing the total to around 410,000 new undergraduate entrants to HE in 2010/11.
- 27,000 science and engineering ambassadors by 2011.
- We will move to fund "excellent individuals" alongside "excellent research" in long-term fellowships via the Research Councils.
- We will ensure sandwich courses are available at universities so that science and engineering graduates get the necessary work experience - especially with businesses benefiting from R&D tax credits - to make the transition into STEM related careers following their studies.
- Set a new ambition that 75 per cent of young people go into higher education or complete an advanced apprenticeship or equivalent technician training by the age of 30. This will help create a new 'technician class' equipped with the advanced (level 3) skills needed in many businesses. We will fund up to 70,000 new advanced apprenticeships in the next two years.

- We will develop a registration system for engineers and proposals to introduce a parallel scheme for science technicians that will make this new technician status a reality.
- We will work with industry to identify STEM skill gaps in sectors which we expect to grow in the next twenty years.

# Collaborative excellence

We must increase the opportunities for the translation of research into commercial ventures so that good ideas are turned into successful businesses and jobs. Stimulating higher levels of private investment in R&D and complementing this with a framework of investment opportunities will allow high tech businesses to flourish.

It is clear that a business led recovery, underpinned by excellent science and ground-breaking technologies, will enable the UK to secure strong economic growth. University and business interaction has been transformed, delivering record performance but if we are to compete in the global economy we must strengthen this relationship further.

We have good foundations. We have more university spin-out companies commercialising their scientific research than our European counterparts, with over £1 billion of external investment raised last year alone. In 2007-08, university spin-out companies employed nearly 14,000 people and had a combined turnover of over £1.1 billion.

The process of transforming knowledge developed in the UK into economic benefits for the UK must be a key focus of policy in the years ahead. We must increase the opportunities for the translation of research into commercial ventures.

- Through changes in the new Research Excellence Framework we will do more to incentivise universities to broaden and deepen their links with business and users of research and to think further about the impact they generate.
- We will improve early stage commercialisation of promising innovations from universities through a £35 million University Enterprise Capital Fund. This will provide crucial early stage funding for the commercialisation of some of the most promising university innovations.
- We will establish a new model of Technology and Innovation Centres to research, prove and develop technologies where the UK has world leading strength.

The relationship between Government and the charitable sector has been strengthened over the last ten years and has resulted in important collaborations. You only have to look at the recently announced £250 million investment for a world-class medical research centre at St Pancras in London which will bring together research teams to tackle major medical challenges. We remain committed to these relationships which will continue to bring about lasting benefits for the UK.

# Supporting innovation

The UK has one of the most effective systems of tax credits for research and development in the world. The number of businesses claiming Research and Development tax credits has continued to rise. Since their introduction, over 40,000 claims have been made, providing firms with over £3.8 billion worth of relief and in turn supporting over £40 billion of research and development activity. We need to stimulate higher levels of private investment and higher levels of departmental expenditure in R&D to complement a ring fenced science budget.

- We have no plans to remove the eligibility criteria from larger firms for R&D tax credits as we want as many businesses as possible to benefit.

To secure our future prosperity and jobs we need a wave of new high tech businesses to join our world class companies in the life sciences and high tech sectors. To do this we will provide a competitive tax regime which rewards innovation and those who invest in their businesses.

- We will introduce a 'Patent Box' to attract and retain investment and exploitation of innovation by the pharmaceutical sector and other innovative industries where the UK has a comparative advantage.
- From April 2013, the Patent Box will apply a 10 per cent rate of corporation tax to income received from UK patents to ensure the UK remains an attractive location for innovation and the manufacture of patented products here in this country. We will consult with business in the coming months on the precise design of the patent box.

Addressing major challenges we face as a society will drive innovation. We have, through the Technology Strategy Board (TSB), increased business investment in R&D by addressing the following societal challenges: low impact buildings, assisted living, network security, intelligent transport systems and services, low carbon vehicles, detection and identification of infectious agents and sustainable agriculture and food.

The TSB has provided support to 1,500 unique businesses, of which approximately 60 per cent are SMEs. We have now expanded its 15 Knowledge Transfer Networks (KTNs) membership to over 43,000 business members and 14,000 non-business members.

- We will deliver a £1 billion programme of investment in innovation by April next year through the Technology Strategy Board working in partnership with others, to develop and commercialise key technologies.
- We will review the remit of the TSB and building on the success of the TSB's innovation platforms we will align science and innovation with global challenge programmes by defining further societal challenges which we know we must overcome as a nation.

We must boost venture capital opportunities if we are to compete in the global economy. The UK continues to be the second largest venture capital market after the USA and remains the first choice for European venture capital investors, across a range of sectors. We have taken action to address the equity gap that exists between investors and potential businesses.

- The UK Innovation Investment Fund is up and running with £325 million to drive economic growth by backing the next generation of technology based entrepreneurs.

We will now work with our European partners to maximise the opportunities to secure a vibrant venture capital market to invest in technology-based venture capital and growth capital funds.

- We will use our influence in Europe to raise up to three billion euros of venture capital and loans for SMEs through mobilising the European Investment Bank and the European Investment Fund.

# Science at the heart of government and society

Our commitment to science is not solely based on investment. We see science very much at the heart of government and society.

We have Chief Scientific Advisers in almost all government departments. And for the first time the Science Minister sits at the Cabinet table and chairs the newly formed Cabinet Sub-committee for Science and Innovation. This has been a welcome and productive step in fostering better cross-departmental working across Whitehall.

- We will appoint a Chief Technology Officer to the Department of Business, Innovation and Skills.

Increasing public awareness of science will bring wider benefits for society as a whole. This can only happen if we continue to develop scientific literacy, confidence in science and improved science media reporting.

- To encourage freedom of speech and access to information, we will bring forward new legislation on libel to protect the right of defendants to speak freely.
- We will consult with Science and Society expert groups on what steps we need to take to improve public awareness of science including options to strengthen science reporting.
- We value independent scientific advice which is why we have recently published the Principles of Scientific Advice to Government to govern the relationship between Government and its advisors.

