

## Scottish Labour respond to CaSE

*Below is the response from Iain Gray, Leader of the Scottish Labour Party, to the CaSE letter to the leaders, 16th April 2011.*

Thank you for your letter of 21 March. I absolutely agree that science and engineering are crucial to Scotland's future and I value the commitment of the Campaign for Science and Engineering in keeping these vital issues high in the political agenda.

Science and engineering are key to Scotland's future success. I have set out ambitious but realistic plans to create 250,000 jobs in Scotland over the next decade, and emerging technologies in low-carbon industries are critical to its success.

As a former physics teacher, I saw first-hand the wonder that science can bring at an early age and want to ensure that a love of science at school is carried on throughout life and contributes to Scotland's common successes.

In answer to your specific questions:

1. I am determined that evidence is at the heart of all government decision-making. With regards to the green energy sector, I have set out Labour's plans to create a single body, Energy Scotland, to streamline and provide strategic leadership for developing our potential in that area. If elected First minister I will ensure that there is clarity in responsibility and strategic direction for science policy, and will look carefully at the arguments for a Chief Scientific Adviser, noting the important role that the chief medical adviser plays.
2. Over the last 4 years, the SNP government has cut 3,000 teachers from our schools. I will offer up to 1,000 of them places as literacy teachers to help our schools focus on the basics. Almost one in five pupils leave primary school unable to read, write or count properly and tackling this scandal is my top educational priority. I am also determined to ensure that teachers are suitably qualified in the subjects they are teaching, and want to work closely with teachers to encourage greater take-up of science subjects, particularly amongst young women. I will refuse to withdraw public funding from universities as has been the case in England, and will not charge our students tuition fees.
3. Scotland has significant advantages in areas ripe for growth. We are world leaders in life sciences, digital media, and the energy industry. Government cannot pick winners, but can work with universities and researchers and to ensure our universities are among the best in the world. That ambition for excellence will be at the core of Labour's approach to higher education.
4. I want to see the Green Investment bank headquartered in Scotland, and have set a target of securing £1.5bn of investment from it. A highly trained workforce is essential to achieving growth in all sectors, but we need to improve Scotland's transport infrastructure to ensure Scottish companies can export to emerging markets – particularly Brazil, China, India and Russia. But in all those endeavours, I want to ensure that supply chain jobs are based here in Scotland. When the oil industry in the North east started to grow, almost 70% of supply chain jobs were based in Scotland. The figure for green

energy jobs is estimated to be as low as 10%. That must change, and change urgently, if all of Scotland is to share in our scientific and engineering success.

If elected, I will look forward to working closely with you. Thank you for the copy of Securing the Economic Future with Science and Engineering. I will read it with interest.

## **Scottish Conservative response to CaSE**

*Below is the response from Annabel Goldie, the leader of the Scottish Conservatives, to the CaSE letter to the leaders, 24th March 2011.*

Scotland has a long and proud tradition in both science and engineering having contributed much in both fields: think James Watt, Alexander Fleming, Alexander Bain, John Mallard and Sir Robert Watson-Watt, to name but a few. Scotland is also in the vanguard of so much current research whether that is the inspirational work of distinguished senior academics such as Sir Philip Cohen and Professors David Lane and Roland Wolfe in biosciences in the city of Dundee, ground breaking work in the emerging industries such as renewable energy which now has such a strong basis at Strathclyde, or the seminal work being undertaken at the James Watt Institute for High Value Manufacturing which has such impressive links to industry.

These are important contributions not just in terms of the end product but also with regards to the contribution they make to the Scottish economy. Indeed against this backdrop of ingenuity and entrepreneurial flair, the Scottish economy paints a much less rosy picture. Since devolution, Scotland's economic growth has been consistently lower than the UK as a whole, whilst it has also failed to keep up with other small OECD countries. Scotland's productivity rate is also 5% lower than the UK average. To put that in perspective, a 1 percent increase in productivity equates to a growth in the economy of almost £1 billion.

It is therefore vital not just for the advancement of science and engineering but also for the Scottish economy that we equip pupils and students with the right knowledge and the right skills for the 21st century. It is why we are determined to continue the battle – and it is a battle – to get other parties to agree to do more about the teaching of basic skills and more rigorous testing of these skills. We cannot accept a situation where individuals are leaving formal education not equipped with a fundamental grasp of literacy and numeracy and we most certainly cannot promote science and engineering without a more robust education in the 3R's.

It is also vitally important that we ensure that our world class universities – the cradles of science and engineering research – are properly and sustainably funded. It is clear to us and it is clear to those in the sector, failure to invest more money in our universities now will compromise the academic futures of our students, the ability of our universities to maintain their world class research and will do great damage to the Scottish economy. That is why Scottish Conservatives believe it is essential to have a graduate contribution in Scotland so that additional funds can complement state spending on universities and ensure there is no squeeze on research; because if we lose our top class research then we would lose so much that is precious within our university system.

To that end, we fully support HM Government's commitment to protect research spending and why we welcomed the announcement from the Chancellor of the Exchequer that there will be the creation of High Value Manufacturing Technology and Innovation Centres to integrate the activities of a number of existing high performing centres, including the Advanced Forming Research Centre at the University of Strathclyde.

## **Scottish Green Party respond to CaSE**

*Below is the response from Patrick Harvie, Co-convenor of the Scottish Green Party, to the CaSE letter to the leaders, 18th April 2011.*

Thank you for your letter asking the Scottish Green Party to set out its science and engineering policies ahead of the 2011 Election.

The Scottish Green Party believes that science and technology have huge potential to bring benefits to society in a sustainable and environmentally sensitive way. It is vital to encourage and promote scientific research, development and application. We can certainly commit to the continuation of the role of Chief Scientific Advisor. This role has been important in challenging the assumptions which underpin government policy, such as the decision to approve a new coal-fired power station before carbon capture and storage has been developed.

We also agree strongly with your emphasis on the need to ensure that children can expect a stimulating and engaging education in science. An understanding of the scientific method and the ability to critically question information which is presented is an increasingly necessary skill in life, not only for people who pursue a scientific career.

Many aspects of Scotland's science and engineering potential will sadly come to nothing without public investment. We believe that the cuts to public spending which originate with the UK Government and which the other political parties in Scotland seem determined to hand on will not only undermine social justice, but also put at risk the low-carbon industries and our ability to successfully transition to a post-peak oil world.

I hope that you will find commitments to welcome in our manifesto, which is being launched on Tuesday 19th April. In particular, we would like to highlight the following:

Scotland's strong research base and research institutions must be supported, and our educational institutions must not see important courses reduced or lost during this period of unnecessary cuts to public services. Scotland is a rich country and to see our educational and research institutions being made to cut their budgets un-necessarily, and its impact on researchers, students and staff, is unacceptable.

The Scottish Green Party opposes the cuts to public services, and commits to funding universities and colleges properly and fairly from general taxation, rather than turning education into a market commodity. We must also protect public funding for research and development.

It is essential we offer young people an education that prepares them for life, which must include an understanding of scientific inquiry. The Scottish Green Party believes it is necessary to tackle the problem of recruiting science specialists into school teaching, and the declining interest in some science areas at university entry. Education is of course valuable for its own sake, but it is also essential that Scotland has the skills and knowledge it needs to make the transition to a low carbon economy. It is impossible for Scotland to build its own low carbon industries if we do not properly support and develop our scientific community and pave the way for the engineers of the future and so on.

## **SNP respond to CaSE**

*Below is the response from Alex Salmond, Leader of the Scottish National Party, to the CaSE letter to the leaders, 18th April 2011.*

Science, Engineering and Policy-making – What commitments will your party make to ensure that science and engineering advice is at the heart of evidence-based policy making within government? What are your plans for setting out a long-term strategy for science and engineering in Scotland? Will you commit to appointing a dedicated Science Minister, and recommit to a Chief Scientific Advisor?

Our manifesto commits us to developing a long-term strategy for science and engineering in Scotland, led by the Chief Scientific Adviser, and this will be taken forward after the election.

Science and Engineering are highlighted within our manifesto as a key strategic sector. This will be reflected in our actions to deliver higher levels of sustainable economic growth and, across portfolios, our action to encourage the take up of science and engineering courses and support innovation and research.

Education - How will your party make sure that all children in Scotland have access to a stimulating education in science and mathematics taught by appropriately qualified teachers? How will you sustainably fund science and engineering courses in Scottish universities?

We have already taken forward plans for a Science Baccalaureate. We want to see greater integration between science and engineering studies in school, colleges and university with opportunities for entry into second year studies following the successful completion of the Science Baccalaureate.

And the Curriculum for Excellence will provide the framework for the development of the skills young Scots need to flourish in maths and science.

Among other measures we propose a new Science and Engineering bursary to encourage more young Scots to take up these courses at university. We are also taking forward new Graduate Apprenticeships and Technical Apprenticeships to enable students to gain vital work experience while they are undertaking higher or further education courses. This will be of particular value in science and engineering.

Science and Engineering Research – What will your party do to ensure that excellent researchers from around the world see Scottish universities and research institutes as the most attractive place to base their work?

Our manifesto contains a series of proposals to build on and expand research in Scotland. For example, for life sciences, we are working within the NHS to incentivise research, building on the work of NHS Research Scotland, to bring together the public sector, our universities and the private sector in new projects. And in our energy sector we are also actively supporting initiatives including the International Technology and Renewable Energy Zone in Glasgow and the development of our world-leading research in areas such as smart-grids.

Our plans also include ongoing support for the Centre for Climate Change Research and the international activity of research institutes, for example, Moredun on the vitally important issue of food technology.

Higher education also forms a central part of our overseas engagement strategies in North America, South Asia and China. SNP ministers will continue to actively support Scottish universities and companies develop commercial and research links internationally.

Innovation and Growth – What will your party do to provide an environment that encourages industries based on science and engineering to locate in Scotland, and that encourages higher levels of private-sector investment in research and development?

Growth sectors – including life-sciences, energy, food and drink and digital – are at the heart of our economic strategy. We are directing Scottish Enterprise and public sector bodies including the NHS to engage fully with our universities and potential investors to attract new research and development facilities in Scotland.

Already this year we have seen 3 of the 6 major global energy companies announce the establishment of research and development bases in Scotland for offshore wind technology and we are also funding world-leading wave and tidal research and research facilities.

And we are promoting collaboration between Scotland’s universities across a range of other areas. This will allow us to maximise the skills and research advantages we have here in Scotland and draw in new investment.

We are also taking forward plans for Low Carbon Enterprise Zones specifically designed to attract low-carbon industries to Scotland and propose a new Future Transport Fund that will support initiatives designed to deliver modal shift in Scotland, supporting, for example, Scottish companies and researchers at the cutting edge of battery technology.

We will also work through our Government-Industry Life-Sciences Advisory Board (LiSAB) to draw in new venture capital support and take forward the strategy that is being developed in conjunction with the sector. And we will be working with digital gaming companies in Scotland to press the UK government to deliver a more attractive tax regime to encourage the growth of this sector.

We also highlight the importance of building Scotland's manufacturing base, and our plans include an extension of training opportunities and a series of initiatives to ensure Scotland has the right skills mix in key industries for the future.

## **Scottish Liberal Democrats respond to CaSE**

Below is the response from Tavish Scott, Leader of the Scottish Lib Dems, to the CaSE letter to the leaders, 18th April 2011.

One of the genuine success stories in the last generation has been the growth in the reputation of Scotland's research and science capacity. Life sciences alone contribute £3 billion to the Scottish economy. In proportion to the size of our country, Scottish scientific research is cited more often than any other in the world.

Scotland can be immensely proud of this achievement.

Now we should aspire to go further still. Publicly funded science and research has been a massive success in recent times, but Scotland's private industrial research investment is only about one third of the UK level at only 0.6 per cent of GDP.

The evidence is overwhelming that, if we get the environment right, scientific research is a key driver of economic growth. As a party the Liberal Democrats have long argued that the UK has become over-reliant on the financial services as a foundation for growth; that a knowledge-intensive economy is not only more reliable, but also more rewarding and a better strategic base in the long-term.

It is the scientist and the engineer who will ultimately develop and build the supply of clean energy we will need, the artificial organisms key to future biotech, or the robotics crucial to our growing strength in the space sector.

In making our nation more prosperous, more competitive, in meeting the challenges of global competition, in harnessing our collective resources – science will be a cornerstone of Scotland's future.

Our ambitious Science Nation Action Plan details our proposals to realise the full potential of science in Scotland's economic recovery. It lays out plans for sustained action on the many interlinked issues that affect our growth as a science nation.

A Minister for Science, Innovation and Digital Economy will be responsible for driving our ambitious goals.

We know that Scotland's future depends on a vibrant research base and the ability of innovators to exploit the country's intellectual capital to generate new home-grown, high tech industries. That's why our plan is supported by £250 million of investment from our Investing in Scotland's Future Fund. Part of this will be used as a challenge fund for universities to demonstrate joint working with the private sector on global level research, science and commercialisation. Complementary to the excellence

achieved through the UK-wide Research Assessment Exercise, our additional support will allow Scottish universities to gain and maintain a global lead.

We also propose to establish an annual Scottish Enlightenment Prize for Science to recognise world leading examples of science research or industrial development taking place in Scotland, and a Life Science Venture Fund to help develop and secure a world-beating industry from Scotland's leading position in life sciences research.

We will continue to fund research and development into renewable energy technology, particularly wave and tidal power, in addition to the Saltire Prize, and we'll continue successful programmes to help small and medium sized businesses get help and collaboration from expert scientists and researchers at Scotland's universities.

The human medicines and vaccines sector alone is worth £1.3 billion to Scotland and supports over 11,000 jobs. We'll develop further the links between the Scottish life sciences industries and NHS Scotland to ensure that there are appropriate opportunities for the development and introduction of new products in Scotland, supported and informed by the clinical and service needs of the NHS.

We currently have a woeful gender imbalance in the sector, and that's not just a problem for the women involved, but a loss to the economy and to public life. We'll take determined action to increase the number of women pursuing careers in science, establishing a Ministerial Task Group on Women in Science and supporting the work of the Scottish Resource Centre for Women in Science, Engineering and Technology. And we'll create a special programme for young women potentially interested in a career in science using inspiring women scientists from around the world. We will establish bursaries to pay for them to make visits abroad.

High quality science education is a key contributor to our future economic prosperity, inspiring young people and giving them new career opportunities. Curriculum for Excellence is uniquely placed to develop an appreciation of science in our young people. We'll work with schools, colleges and universities to supply a workforce with the 21st century skills needed in a knowledge based economy.

Beyond its economic growth potential, scientific enquiry, like the arts, has its own intrinsic merit. It is a public good. It helps to define the quality of our civilisation, and embeds logical scientific thinking into the decision-making of Government, businesses and households.

And it's about Scotland's place in the world. We want Scotland to be an open society, an attractive destination for the brightest scientists, researchers and engineers from all over the world. This sharing of ideas and information and working together to influence science policy as part of a global network is key both to the advancement of science and to Scotland's international identity.

Scottish Liberal Democrats will work with others to make science work for the people of Scotland, increasing prosperity and safeguarding the environment. We will communicate its potential to improve the quality of life for this and future generations. We will develop our international reputation for the quality of our science and of our skills.

By the end of the decade we want Scotland to be the most innovative and entrepreneurial economy in the world. Science is central to our manifesto and our vision for Scotland's future.