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CaSE
Campaign for Science and Engineering

# Welsh Conservatives respond to CaSE

*Nicholas Bourne, Leader of the Welsh Conservatives,Below is the response from Nicholas Bourne, Leader of the Welsh Conservative Party, to the CaSE letter to the leaders, 18th April 2011.*

1. [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 Wales? Will you commit to appointing a dedicated Science Minister, and recommit to a Chief Scientific Advisor?]

Welsh Conservatives highly value science and engineering. We are committed to improving STEM subject teaching through our Teach Wales programme, and value thorough consultation with industry sectors when making important policy decisions that could impact science and engineering sectors.

We are committed to publishing a manufacturing and technical innovation strategy, and encouraging international partnerships. This demonstrates how committed we are to improving and cultivating science and engineering in Wales.

Science and engineering should always be at the heart of evidence based policy and we are committed to ensuring that it is under a Welsh Conservative Assembly Government.

2. [How will your party make sure that all children in Wales 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 Welsh universities?]

STEM in schools:

Welsh Conservatives will improve science and mathematics education by introducing 'Teach Wales', a two year programme encouraging highly talented people into STEM subject teaching.

Teach Wales will encourage excellent candidates into the classroom. Teach Wales will address educational disadvantage by transforming exceptional graduates into inspirational teachers and leaders. The existing Teach First scheme targets graduates who would not normally consider a career in teaching and places them, for two years, in challenging schools across England. Many teachers stay for longer. Teach First has resulted in improved results. GCSE exam results of schools in England that use Teach First teachers have risen by a third in every subject after two years of the teacher having started at the school

More young people in Wales should be encouraged to pursue a science career. Wales has the lowest take up of 16-19 year olds for science, and Estyn's inspections of secondary schools have also revealed 'significantly lower' standards in science and mathematics than in other subjects. Our Teach Wales scheme will aim to increase the number of inspirational teachers in STEM subjects, increase the profile of STEM subjects in schools, and inspire the next generation of Welsh scientists and engineers.

STEM in universities:

Welsh Conservatives will implement a fair and sustainable fees system for Higher Education in Wales. HEIs will be permitted to raise fees to a maximum of £9,000 subject to WAG approval.

Funding is significantly less for Welsh universities and students. Welsh universities have lost out by an estimated £78m in 2008-2009 compared to their English counterparts. Analysis from Higher Education Funding Council for Wales shows that in 2007/8 government funding per student was almost £900 (£862) less than in England, and over £2200 less than Scotland. To raise standards in higher education, we must begin to properly fund Welsh universities and students. Through this policy, we will be able to sustainably fund science and engineering courses in Welsh universities.

3. [What will your party do to ensure that excellent researchers from around the world see Welsh universities and research institutes as the most attractive place to base their work?]

Welsh Conservatives will establish world class HE institutions in Wales. We will set a target of Cardiff University to be within the Top 50 universities in the world by 2020, and world class specialist departments in other institutions.

Wales does not have a higher education institution in the World Top 50 ranking, and we are facing growing international competition in knowledge and skills from the emergence of Brazil, Russia, India and China.

To be high achievers, we must have high aspirations, and we already have growing international expertise in specialist departments. We will encourage partnership between commercial companies, industry experts and the universities to increase targeted applied research output. Furthermore, as Welsh universities grow in prominence this will only act to attract researchers.

4. [What will your party do to provide an environment that encourages industries based on science and engineering to locate in Wales, and that encourages higher levels of private-sector investment in research and development?]

Government has a role to play in promoting science and engineering, facilitating partnerships and ensuring Wales is an attractive location for innovation. Ensuring infrastructure and skills are up to scratch is important.

A Welsh Conservative Assembly Government would work with private sector, EU and UK Governments to deliver universal broadband coverage and 85 per cent high speed coverage. The Welsh Conservative manifesto, A New Voice for Wales, announced measures to raise educational standards by giving teachers and heads more flexibility to decide how best to teach our children.

Wales does not take advantage of international opportunities at present.

Welsh Conservatives have pledged to publish a manufacturing and technical innovation strategy and to promote Wales in an integrated way overseas. We have much to offer the world and a Welsh Conservative Assembly Government would ensure Wales reaches its full potential.

# Welsh Labour respond to CaSE

*Below is the response from Carwyn Jones, Leader of the Welsh Labour Party, to the CaSE letter to the leaders, 18th April 2011.*

Welsh Labour is clear about the importance of science and engineering in our lives and to our ambitions for the future of Wales, and we have demonstrated this through our policies in government.

One of my first actions on becoming First Minister was to appoint Lesley Griffiths as a Deputy Minister with specific responsibility for science.

We have subsequently taken a number of positive steps to promote science and engineering, which Welsh Labour are committed to building on in the next Assembly term.

Last year, for example I appointed Professor John Harries as Wales' first Chief Scientific Adviser (CSA). Through his expert advice the CSA is informing policy decisions across government, as well as promoting science, technology, engineering and mathematics, and the role of science within the wider knowledge economy. He is assisted by a panel of distinguished individuals on the new Science Advisory Council for Wales, which had its inaugural meeting last December.

Working with the CSA and the Advisory Council, a new science policy for Wales is being developed to supersede the one published in 2006. If elected, we will consult on these new proposals later this year, setting out the strategic direction needed to build and develop a sustainable knowledge-based economy in Wales.

The Labour-led Assembly Government has also established a National Science Academy for Wales.

Through the Academy, we will promote the take-up of science, technology, engineering and mathematics at all levels to ensure Wales has a continuous pipeline of people graduating from colleges and universities with the appropriate qualifications and skills to support the industries and technologies of tomorrow, to drive forward innovation in business, to stimulate research and development in universities and attract investment to Wales. The Academy will have 5 hubs in different parts of Wales.

We are committed to taking forward the recommendations of the Research & Development Review panel, established by the Labour-led Assembly Government, which set out ways to help Wales perform better in attracting R&D external funding.

Strong collaboration will be key to our success, raising the profile across the Research Councils of our key areas of research excellence. This will help create the critical mass of research experience in Wales necessary to successfully compete for national and international research work.

We want and need more young people to follow in the footsteps of our eminent scientists and engineers who are playing a leading role in so many fields. We will continue to celebrate and showcase their achievements as well as those of young learners in Wales.

We will encourage the increased study of STEM subjects through innovative projects such as STEM Cymru and Technocamps. We will aim to ensure that young people are able to get a real taste of the value of science subjects and the rewarding career options they present. We will also enhance the links between schools and STEM employers.

As well as encouraging the take-up of these subjects we will help young people overcome any barriers – perceived or real – that discourage learners from studying them. We will continue to support the growth of after-school science clubs in Wales, which do a tremendous job in this area.

Teachers have an increasingly important role in encouraging students to take up STEM subjects. We will continue to invest in improving professional development opportunities for teachers in Wales.

We recognise the importance of innovation in assisting economic growth. The National Science Academy has a key role in ensuring that we have the appropriate skills to support the development of a vibrant and sustainable knowledge-based economy. High-level skills are going to play an increasingly important part in the renewal of the Welsh economy and none more so than in science and technology- based subjects.

The Labour-led Assembly Government has encouraged close collaboration between industry and academia, and facilitated knowledge transfer through the Academic Expertise for Business programme. It has supported the establishment of a number of highly specialised centres to support research excellence in Wales, and invested in sophisticated equipment to drive forward R&D.

We will work to ensure that businesses in Wales benefit from these investments and can maximise opportuni-ties to increase innovation and commercially exploit ideas.

We will continue to build strong links and develop strategic relationships with our anchor companies, embedding them in the Welsh economy through developing close links with further and higher educational institutions and maximising supply chain opportunities.

We will continue to build the innovation capacity of businesses and provide financial support through Innovation Vouchers, which enable small and medium-sized enterprises in Wales to access specialist support and expertise from universities and colleges, or the private sector.

I believe that it is vitally important that we continue to encourage the knowledge, skills and enterprise needed to strengthen businesses in Wales, and the promotion of science and engineering is key to this goal.

# Plaid Cymru respond to CaSE

*Below is the response from Ieuan Wyn Jones, Leader of Plaid Cymru Leader, to the CaSE letter to the leaders, 31st March.*

Plaid believes science and engineering holds a key role in our economic recovery. The development of the prosperity and economy of Wales will rely heavily on our science and engineering capabilities.

Developing a talented base of scientists and engineers will not only make Wales a world player in research and development. It will also make Wales a greener nation with the development of green technologies, it will save money by lessening our dependence on imported materials, it will generate revenue by exporting our goods and perhaps most importantly, it will create jobs throughout Wales, thus lowering unemployment levels and in turn lowering dependence on the state for benefits and allowances.

We believe that building our science economy starts with education. It was a key policy in Plaid's 2007 election campaign which made establishing the National Science Academy a key commitment in the One Wales programme of government. The National Science Academy has now established itself as a central hub for STEM research students whilst working with a number of linked organisations to increase the number of prospective students. Whilst in government, Plaid has also worked with Cassidian and Cardiff University to establish the research and development initiative, Foundation Wales, which not only strengthens regional industry and academic capabilities in Wales, but also provides an important basis for policy-making, and ensures future science and engineering policy benefits the economy, through its commitment to working with industry and academia.

The Plaid-driven Welsh government has also established the £3 million project STEM Cymru, to encourage young people to study STEM subjects, and to improve qualifications, skills and career prospects. Led by the Engineering Education Scheme in Wales (EESW), the project gives youngsters from 12-19 years the chance to participate in industry linked technological and engineering activities such as hands-on activities and career related programmes. STEM Cymru will be re-establishing the Year in Industry programme, placing youngsters in quality, paid work experience, and the F1 in Schools Challenge, giving pupils the opportunity to design F1 cars using the industry standard CAD (Computer Aided Design) software, to make real working models to compete against teams from different schools.

The next Plaid government will continue to fund these successful initiatives and go much further. We will establish an Expert Group on Future Skills Needs, which will work with the Welsh Government and the already established Science Advisory Council for Wales, bringing together internationally acclaimed scientists, academics and experts, to develop new science policy for Wales. Since we believe education is at the heart of further advancement in our science economy, we will review the National Curriculum to ensure that it meets our aims of raising attainment in basic skills and improving Wales' performance

in STEM subjects. To help link young students with further and higher education, we will work in partnership with the education sector and industry to develop new and innovative apprenticeships and Learning Pathways courses. We will also support 30,000 apprenticeships and we will extend the Young Recruits programme, which provides a wage subsidy to employers taking on additional young apprentices. At the heart of our education campaign is also to make IT a core subject at GCSE level to give young people a solid base upon which to advance their careers in an increasingly digitalised world.

Apart from in education, Plaid is committed to ensuring the development of the industry in Wales as a whole. A Plaid government would strive to ensure that the figure for public expenditure on research and development in Wales is increased from 2% of the total UK spend to 5% over the next Assembly term with a greater focus on the digital economy, low carbon technologies, health and biosciences and advanced engineering and manufacturing.

Plaid believes the green sector holds valuable potential for the science and engineering industry in Wales. We will support micro generation and other small-scale sustainable power generation schemes, including tidal, wave power, onshore and offshore wind, hydro and biomass. We will develop and fund a coherent approach to alternative energy research in Wales, appointing professionally competent consultants to evaluate the economic and environmental implications of tidal and estuarial energy sources and make the results available for public examination and debate. We will press for the devolution of the Crown Estate so that our research into alternative energy directly pays dividend to the Welsh economy, thus providing an incentive for any future government to maintain our focus on science and engineering in Wales.

# Welsh Liberal Democrats respond to CaSE

*Below is the response from Kirsty Williams, Leader of the Welsh Liberal Democrats, to the CaSE letter to the leaders, 2nd April 2011.*

Liberals have always aspired for the pursuit of knowledge, believing that education, knowledge and scientific thought have a role to play in developing society. Supporting science and engineering in Wales is more crucial now than ever, because it is only with successful scientists and engineers that we will be able to use economic growth to finally reverse the decades of relative economic decline in Wales.

Science, engineering and policy-making

An advanced and modern science policy means that Government has to be in touch with scientists and academics. Most politicians do not have a thorough understanding of science, so it is crucial that the Government, and the National Assembly, need to forge links with people who are spearheading science. So we would continue to employ a Chief Scientific Advisor. However, we also want to ensure that any science that is commissioned by the Welsh government is of the highest standard. So we will create a single, pooled budget for science so that Government departments, especially the health and environment departments, will have to prove that their scientific research is commissioned from

leading institutions and has real scientific merit. In difficult economic times, that is the best mechanism for ensuring that the Welsh government commissions quality research.

Education

The biggest problem facing Wales is the spending gap with England in our schools. Our schools receive £604 less per person per year than over the border. It is inevitable that teaching across all subjects, but particularly more expensive subjects such as science will suffer. Our number one priority for education is to tackle the spending gap, providing more money for schools by targeting additional money at pupils who need it the most so that schools can afford to invest in the things that really matter, such as smaller class sizes or one-on-one teaching. This will support all subjects in Welsh schools, including science.

We also want to invest in the quality of teaching. Our proposals to scrap the General Teaching Council for Wales to pay for more appropriate professional development and training – ensuring that science teachers are able to keep up with the latest developments. We have also proposed changing the curriculum to make sure that teachers have the freedom to teach in the way that best suits them.

Science and engineering research

Universities in Wales are among the best in the world and we are committed to ensuring that, and working with universities so that Wales continues to produce world-leading research in the sciences. We are adamant that proposed university governance reforms must not erode the academic independence of institutions – only academics themselves should be deciding where research should be directed. We are also concerned about relatively lower levels of UK Research Council funding that comes to Wales. With some support from the Welsh Government, we hope to increase this percentage and ensure that Welsh-based scientists have access to a fair amount of funding.

Innovation and Growth

The source of Wales' economic problems continues to be low skill levels and a lack of investment in and by private business. Welsh Liberal Democrats will focus on tackling the skills gap and making sure that Wales is a good place to do business. We can reshape the economy of Wales and our work and investment will start immediately.

At the heart of this must be a programme to modernise the Welsh economy in order to develop new businesses in hi-tech sectors so that Wales can compete in the 21st century. We will commit £20 million a year in a fund to create jobs by stimulating innovation in the economy. This money will be used to make sure that we have the resources to develop hi-tech businesses, funding a programme of developing projects such as match-funding university funding for developing intellectual property, knowledge exploitation and additional post doctoral positions. Our plans for training grants to encourage employers to take unemployed young people will help build skills in Wales as well.