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CaSE
Campaign for Science and Engineering

Voting for Science in Wales - 2007

In advance of the 2007 election to the Welsh Assembly, we asked the Party Leaders in Wales three questions about their science policies. Their answers are given below:

Conservative Leader Nick Bourne AM

1. Science education
How will your party ensure that children in Wales continue to have access to qualified teachers in all of the core sciences?
• Welsh Conservatives are committed to establishing the post of Chief Scientific Officer to the Welsh Assembly Government. The first task of the Chief Scientific Officer would be to review the teaching of science in Welsh schools, colleges and universities with the aim producing a comprehensive strategy for the Welsh Assembly Government. Clearly, a critical aspect of this will be looking at ways of ensuring our young people have access to qualified science specialists in the core science subjects.
• Our teachers need our support. If we are to attract new science professionals to teaching mathematics and sciences then we must be willing to invest in the professional development of teachers.
2. Science research
What mechanisms will your party put in place to ensure that policies on science education and research are coordinated so that the social and economic benefits of science can be optimized?
• The Labour Assembly Government has failed to realise the important role to be played by having a Chief Scientific Officer and the benefits it will bring for a wholly more coordinated approach to science policy. The Welsh Conservative commitment to the appointment of the Chief Scientific Officer for Wales and the publication of a comprehensive science strategy for the Assembly Government will do much to ensure that the social and economic benefits of science and research are made to work for Wales.
3. Benefits of scientific research to the economy
What will your party do to invest in research to ensure than science-based and engineering businesses find Wales a more attractive place to do business?
• Welsh Conservatives recognise the valuable role of the research and development sector to the Welsh economy. If we are to encourage the growth of this sector, the Assembly Government must invest. In particular, Welsh Conservatives seek to encourage the development of higher education – private sector partnerships. We are committed to establishing a grant scheme, financed by our investment fund, to encourage the development of further and higher education partnerships with private sector companies.

Labour leader Rhodri Morgan AM

1. How will your party ensure that children in Wales continue to have access to qualified teachers in all of the core subjects?

The figure quoted by the Campaign is taken from the annual teacher vacancies figure contained in *Schools in Wales: General Statistics 2006* which shows teacher vacancies in maintained secondary schools, by subject. However this figure needs to be considered in context:-

• These teacher vacancies figures only show the advertised vacancies on 17 January 2006 for full-time permanent appointments for at least one term's duration.
• Teacher vacancies in maintained secondary schools on that day in mathematics, chemistry, physics, biology and other science vacancies only totalled 18 altogether
• Total subject vacancies (i.e. excluding head and deputy vacancies were 58, which would mean that the maths and science vacancies were 31% of that figure
• The total secondary vacancy rate is only 0.5%

Perhaps a more rounded view of the situation is shown in the vacancies in secondary schools between 1 January and 31 December 2005 (table 6.13 of the same publication). These figures show that:

• Of 907 posts advertised in the year 218 were for mathematics, Chemistry, Physics, Biology and Other Science posts – 24% of the total
• For each post a total of approximately 10 applications were received.

Against this background, action has been taken to improve the attractiveness of mathematics, science and design and technology subjects. The Welsh Assembly Government offers incentives for eligible persons to undergo a postgraduate (PGCE) initial teacher training course (training grants) and for eligible persons to take up particular teaching posts (teaching grants) in these subjects. The aim is not simply to respond to difficulties which exist already but to anticipate potential problem areas.

For mathematics and science PGCE courses, a £7,200 training grant is available; and those who qualify and go on to teach in their subjects may be entitled to a £5,000 teaching grant following the successful completion of their induction period. For design and technology PGCE courses, the figures for eligible students are £7,200 (training grant) and £2,500 (teaching grant).

The incentives are also designed to attract the best quality, highly committed students to train and teach in Wales. Incentives in Wales match those in England so that Welsh students deciding where to train as teachers can make that choice knowing that if they study in Wales they can have the same level of incentives as those in England, and so that teacher training providers in Wales can compete effectively of the most talented applicants.

For tuition fees in Wales in 2007– 08 there is a flexible fee of up to £3,000. However students domiciled in Wales who study at a higher education institution in Wales will also be entitled to a non-means tested tuition fee grant of £1,800 which does not have to be repaid. This will leave the effective tuition fee at £1,200. There is also a means-tested non-repayable maintenance grant, incorporating the Assembly Learning Grant (ALG), of up to £2,700.

The first £1,200 of the maintenance grant will be available to Welsh domiciled PGCE students on a non-means tested basis. Students may choose to use some or all of this to help pay tuition fees, rather than taking out a student fee loan for that purpose. For Welsh domiciled students, even those not eligible for means-tested benefits exercising this option would mean that tuition fees would add nothing to the cost of training to become a teacher on a PGCE course.

In addition to out initial teacher training incentives, designed to attract more people into teaching particular subjects, schools are able to offer recruitment and retention incentives and benefits. Old style recruitment and retention allowances were replaced with new flexibilities introduced ion 2004. Relevant bodies may award whatever payments, financial assistance, support or benefits they think appropriate to recruit and retain teachers.

These awards may be made for a fixed period of up to three years, for recruitment purposes, but may be extended if the relevant body considers these are exceptional circumstances. Such awards may include the provision of housing, relocation expenses, travel expenses and child care.

Teachers' pay and conditions of service have not been devolved to the National Assembly for Wales, and remain the responsibility of the Department for Education and Skills for Wales as well as for England.

2. What mechanisms will your party put in place to ensure that policies on science education and research are co-ordinated so that the social and economic benefits of science can be optimised?

I launched *A Science Policy for Wales* in November 2006, setting out the Assembly Government's ambition for science in Wales and outlining headline action.

I have not said that we could not have a Chief Scientific Advisor – I have said that form must follow function. We now have *A Science Policy for Wales* in place.

I have now convened a regular set of meetings with the Senior Science Advisors in the Welsh Assembly Government, to which some of the key external science resources from around Wales have aready been invited to input.

Funding has been set aside for a scientific secondee, to look at the best methods of co-ordinating the use of science and provision of science advice within Government, which can include any question of further Science resource, such as a Chief Scientific Advisor or similar role.

Further developments from the initial Science Policy document include the establishment of Assembly Government committees to take forward the three key priority areas by action planning and involvement of external stakeholders and the bringing together of a Senior Science Advisors Group, which I chair, as Minister of Science, and which has embarked on a regular series of meetings.

3 What will your party do to invest in research to ensure that science-based and engineering businesses find Wales a more attractive place to do business?

While it is true that investment by business enterprise as a percentage of GVA is relatively low when compared to other regions of the UK, including the South West, it is not, as the Campaign implies, the lowest across the UK.

In 2005, spending by business enterprise as a percentage of GVA in Wales was 0.6%, a little less than the figure for Scotland but on a par with the figure for Northern Ireland and above the figures for London (0.3%), the North East and Yorkshire and the Humber (each 0.4%).

Since the series of data for UK countries and English regions began in 1993, business enterprise R&D in Wales has been on a steady upward trend, with an average annual increase of 4% per year in real terms.

As to Government investment, the latest figures (2004) show total government spending on R&D in Wales of £49m, or around £17 per head of population. This figure is not the lowest amongst the UK countries and English regions (ranked 7 of 12), higher than Northern Ireland and the regions of Northern England.

Beyond our own walls, the Assembly Government has provided substantial investment in specific scientific projects which will benefit the wider Welsh economy. To cite just three examples, £20m investment in the Cardiff PET scanner, while the Defence Academy at St Athan will see rapid R&D growth around it in several fields such as encryption.

Specifically within the field of higher education we have supported a series of initiatives which combine the strengths of different institutions in Wales. The University of Wales, Bangor is a partner together with Cardiff University and the University of Wales, Swansea in the **Wales Institute of Cognitive Neuroscience**. The Institute has been allocated funding of £5.173m from the Research Higher fund. It will research key areas with resulting health benefits for examples in the treatment of stroke victims, brain injuries and Alzheimer sufferers. The Institute has set targets of levering in additional research grant income.

Cardiff University is actively involved in the **rationalisation of Chemistry provision** with University of Wales, Swansea. This is to strengthen key areas at both institutions and is being supported up to a levels of £1.205m by the Reaching Higher fund.

University of Swansea together with Cardiff University, University of Wales, Aberystwyth and University of Wales, Bangor are developing **a Wales Institute for Mathematical and Computational Science**. This is being supported by the Reaching Higher fund up to a level of £5.021m. The Institute will strengthen research provision in these key areas and is projected to lever in additional research grant income.

University of Wales, Bangor, is a partner institution in the **Research and Enterprise Partnership Initiative**. In partnership with University of Wales, Aberystwyth, the initiative is developing four major research centres, three of which are a Centre for Catchment to Coast Research, a Centre of Integrated Rural Environment Research and a Centre for Advanced Functional Materials and Devices Research. The initiative is being supported to the tune of £10.949m from the Reaching Higher fund.

In addition to the above, £8m of the Reaching Higher fund has been utilised over the last two years to provide additional support to the sector for its RAE 2008 preparations. This is in addition to the £64m provided this financial year for research funding – a large proportion of which will be directed at supporting science research.

Taken together, all these measures amount to a strong, investment-led approach, designed to create a science-led economy here in Wales.

Lib Dem leader Mike German AM

1 Science education

How will your party ensure that children in Wales continue to have access to qualified teachers in all of the core sciences?

The Welsh Liberal Democrats believe that to increase the pool of science teachers, we need a long term plan to increase participation in science from the earliest possible age. We also need to ensure that greater numbers of students continue with science beyond compulsory education, and that we can reverse the trend that has seen university science departments across the UK close.

We will invest in science teaching at all levels of education. To help get pupils interested in science at a younger age, we will support the provision of specialist secondary teachers and peripatetic teachers who will work within each secondary school's primary 'cluster' teaching the core sciences and mathematics. We believe that this will have the added benefit of aiding the transition between primary and secondary school.

To attract science teachers to those areas where the recruitment of staff is difficult, we will introduce a key workers housing initiative based on the successful Homebuy scheme.

2. Science research

What mechanisms will your party put in place to ensure that policies on science education and research are co-ordinated so that the social and economic benefits of science can be optimised?

We will work, year-on-year to ensure that the research budgets in Wales are brought in line with those in other comparable regions of the UK.

But it is not just a case of more money. We need to target research funding, and prioritise funding for those departments that have a proven track record of delivering excellent research so that we can ensure that money is being used to produce world class research.

We will develop 'trigger' funding for university departments to enable more success in drawing down Research Council grants. We will encourage the more strategic use of reconfiguration and collaboration funds to support broader cooperation between higher education institutions and the branding of multi-institutions networks of excellence, such as a Welsh Institute of Design.

3. Benefits of scientific research to the economy.

What will your party do to invest in research to ensure that science-based and engineering businesses find Wales a more attractive place to do business?

By making Wales an attractive place for businesses to settle, we hope to be able to set the right conditions to stimulate research and development investment. We have seen this work in the Republic

of Ireland, where a mix of European funding, business-friendly policies and shrewd investment has strengthened the Irish economy tremendously and seen R&D investment increase five-fold since 2000.

For example, the Welsh Liberal Democrats will use European Convergence Funding to generate Economic Opportunity Areas, focusing on those towns that have been blighted by industrial decline. Using this funding, and the current powers available to the Assembly (and by pushing for more) we will give financial incentives to businesses to settle in these areas through start-up tax credits, capital allowance on commercial buildings, deferred property payments, wireless internet connections and employment cost reductions. By encouraging same-sector clusters in these areas, we will expect to see greater collaboration between businesses, especially where research and development is concerned.

More generally, we will push for the powers to be able to vary corporation tax, or to keep it at a fixed level for a specified period of time. If necessary, we will target a particular region of Wales to stimulate investment there.

We want to see Wales lead the way in developing eco-technology and research. The Liberal Democrats see the climate change challenge as an opportunity for researchers and businesses to work side by side in developing and marketing the necessary technology to enable the country to 'go green', for example by improving the efficiency of micro-generators in the home. We will encourage businesses not to regard climate change as an obstacle, but to seize the opportunity to create jobs and wealth, and to expand the Welsh economy.

Plaid Cymru Leader Ieuan Wyn Jones MP

1. Science Education

How will your party ensure that children in Wales continue to have access to qualified teachers in all of the core sciences?

Plaid response:

Good science teaching in schools provides the essential underpinning for a strong research and innovation base for the economy. Our aim when in Government will be to attract and retain good graduates to the teaching profession by providing teachers with the support and training to give them a genuinely professional status. We will guarantee a year's teaching experience to all teachers who are newly qualified in Wales to ensure they can complete their Induction Year and become Qualified Registered Teachers.

A Plaid Government will support students who graduate from Welsh Universities and Colleges and work in Wales for five years by paying their student loan repayments during that period. This will encourage graduates from all disciplines to study and work in Wales.

2. Science research

What mechanisms will your party put in place to ensure that policies on science education and research are coordinated so that the social and economic benefits of science can be optimized?

Plaid response:

We support the appointment of a Chief Scientific Adviser, a proposal unfortunately rejected by the Labour WAG. As part of our strategy to strengthen the science base in Wales, a Plaid Government will create a science academy to spur hard scientific research, invention and innovation, and would act as a

publicly funded catalyst for private investment and business innovation. Measures such as these would provide a focused, coordinated approach to maximising the contribution of science to Welsh society and our economic progress.

3. Benefits of scientific research to the economy

What will your party do to invest in research to ensure that science-based and engineering businesses find Wales a more attractive place to do business?

Plaid response:

We desperately need a Welsh science policy which meets the EU target of spending 3% of GDP on science every year by 2010.

Welsh scientists are doubly disadvantaged by the low level of investment by WAG and a low percentage of UK research funding. Plaid's aim will be to win a much higher share for Wales of the UK's research funding pot. We would also seek to ensure that research in Wales meets Welsh social needs as well as supporting economic progress. For example, Wales gets just 1.6% of UK health research funding, an area which is of particular relevance given the high sickness rates in certain areas of Wales. Our government would create a National Institute of Health Research in conjunction with the Welsh Medical Schools to accelerate breakthrough research in chronic diseases. Together with our planned national science academy, this would signal a serious new approach to science and make Wales a more attractive place for science-based businesses.