

# Enterprise Innovation and Networks Committee

**EIN(2) 11-06(p.4)**

**Date: Thursday 7 December 2006**

**Venue: Committee Room 2, Senedd, Cardiff Bay**

**Title: Consideration of the Welsh Assembly Government's Response to the Review of Science Policy in Wales**

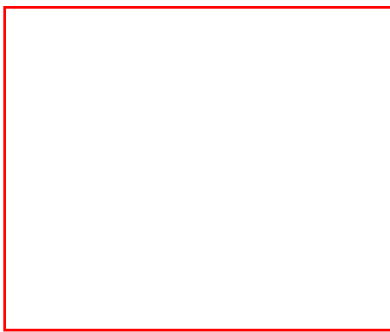
The Enterprise, Innovation and Networks Committee published the Review of Science Policy in Wales which we are discussing today on Tuesday 19 September. There was then a debate on the report in the plenary session later that day.

On 18 October the Welsh Assembly Government published its response, addressing each of the seventeen recommendations made in the Review. That response forms annex A to this paper. It set out reasons for rejecting a minority of the recommendations. An oral statement and questions then followed on Tuesday 24 October. The First Minister elected to make both these statements, in his capacity as Minister for Science.

On Thursday 23 November he was able to launch the Welsh Assembly Government's own strategic document A Science Policy for Wales 2006. The document can be accessed at present on the Business and Economy pages at: <http://new.wales.gov.uk/docrepos/40382/4038231141/403821124158/science-policy-welsh?lang=en> in Welsh or at <http://new.wales.gov.uk/docrepos/40382/4038231141/403821124158/science-policy-eng?lang=en> in English. Hard copies are now in production, and will be issued to you, as for all AMs, on receipt. This Science Policy document addresses a great many of the Committee's recommendations and is designed to be an overarching, high-level document.

Further planning will be undertaken by myself and Ministerial colleagues, with our officials and stakeholders in the various aspects of science policy to develop actions that continue to promote and support science, engineering and technology, the provision and retention of sufficient skilled people in these fields and the successful commercial exploitation of knowledge produced by these people and others elsewhere, to benefit the economy and society of Wales.

**Annex A to EIN(2) 11-06(p.4)**



Cabinet Written Statement

**Title: The Welsh Assembly Government's Response to the Enterprise, Innovation and Networks Committee's Recommendations Made in it's 'Review of Science Policy in Wales'**

**Date: 17 October 2006**

**BY: Rhodri Morgan, The First Minister**

1. The Welsh Assembly Government should develop a science policy for Wales, to build the knowledge-based economy, to cover strategies for: supporting the generation of new science and the development of new scientists, as well as exploiting the outcomes of science; identifying thematic priorities; ensuring the Welsh Assembly Government uses science to inform its decision-making across all departments; thereby increasing the international profile and esteem of science and technology in Wales. [4.75]

**Accept**

Such a policy is written, has been approved by Cabinet, and will be published in the autumn. It covers all the areas identified in recommendation 1.

2. The science policy should be set within the strategic policy framework of 'Wales: A Vibrant Economy' and 'The Wales Spatial Plan' and also 'The Sustainable Development Action Plan' - to promote excellence in science and technology in Wales and to develop three of the key drivers to business growth; innovation, entrepreneurship and skills.[4.76]

## Accept

The proposed Science Policy has been drafted in the context of these and other strategic documents, such as the higher education strategy 'Reaching Higher'. As a high-level strategic document itself more detailed linkage into economic development, spatial planning and sustainability will come out in the action planning under the various aspects of the science policy document.

3. The Welsh Assembly Government should establish a full-time post of Chief Scientist, in charge of an Office of Science and Technology; to develop and coordinate policy development in these fields, across all departments. [4.82]

## Reject

It is premature to consider staffing issues of this nature, as such issues do not necessarily relate to the formulation of a Science Policy as such, and may be considered an easy substitute to consideration of actual policy questions. The Welsh Assembly Government already has a considerable capacity for scientific advice in a number of fields. Examples include posts of Chief Medical Officer and Chief Scientific Advisor in Health; Chief Environmental Scientific Advisor; Director-Energy Wales and a Chief Social Research Officer. There is a close working relationship with equivalent advisors in the UK Government within Ministries such as DEFRA and DH where additional or more specialised advice from a particular field can be sourced. There also exist a considerable numbers of committees which provide advice of a scientific nature, when appropriate, such as the Welsh Scientific Advisory Committee, which advises on health matters. What is under consideration is a mechanism to ensure co-ordination at a high level between these advisors.

Sir David King, in his function as Chief Scientific Advisor to the UK Government, is equally available to the First Ministers of Wales and Scotland, as is the Council for Science and Technology (CST) whose members, both business figures and academics, are extremely distinguished in their fields.

We have recently appointed Ministerial Advisory Groups, among whose members are several with distinguished records in science and others with considerable experience in the business of commercialising scientific and technological research.

Likewise, there are many officials who work in roles related to science – be it in the economic exploitation of science and technology research, the provision of services supportive of this, or in higher education policy including science research and teaching. Some of these hold post-graduate scientific qualifications, where this is a useful or necessary for the role. The Higher Education Funding Council for Wales (HEFCW) also plays a role in the strategic delivery of science research and teaching in and for Wales. The Welsh Assembly Government does not believe there is a compelling case for changing these arrangements.

4. The Welsh Assembly Government should establish an industry-led Science and Technology Advisory Council; to include the Chief Scientist, business leaders from inside and outside Wales, senior scientists and engineers from the higher education sector and relevant institutions. [4.85]

### **Reject**

This request again is a substitute for a science policy, not a science policy. It is a structural device related to the status of science, not a policy on science. The Welsh Assembly Government has recently put in place Ministerial Advisory Groups to advise Andrew Davies AM and Jane Davidson AM. These have representation from industry and people with a background in research and academic achievement in science and technology. Higher Education Wales, its institutions and HEFCW can all provide informed advice on science-related policy in the academic world.

5. The Advisory Council should identify areas in which to concentrate investment in science and technology; its work should be shaped by a remit, issued annually by the Assembly Minister for Enterprise, Innovation and Networks. [4.86]

### **Partially Reject**

The Science Policy for Wales will specify areas on which science and technology activity should be focussed to the greatest benefit of the economy and society in Wales. The Ministerial Advisory Groups and other ad hoc groups will play a role advising Ministers on these issues also, and the areas will be kept under review, as science and technological imperatives can change rapidly. The Science Minister is the First Minister. The Ministerial Advisory Groups advise their respective Ministers on those aspects of science and technology relevant to their portfolios. The First Minister has the portfolio responsibility in science and has the co-ordinating role.

6. The Assembly Minister should instruct the Advisory Council to establish the strategic objectives for a science policy in Wales; a programme for achieving these objectives; and a process for monitoring progress. [4.87]

### **Reject**

The reasons for rejection are a consequence of the rejection of Recommendations 4 and 5. These matters will be taken forward by the Welsh Assembly Government's Science Policy document, and action consequential on it. This will include aspects of planning for the effective use of Convergence and Regional Competitiveness Funding in the next round of EU Structural Funds.

7. The Assembly Minister should instruct the Advisory Council to establish current strengths in research and technology in Wales; and to report within a year. The purpose would be to obtain baseline data, to facilitate the monitoring of progress in future years, by quantifying:

- Research of international quality in Welsh universities;
- Business investment in research and development and other innovation-related activities in Wales;
- The relationship between such investment and the financial performance of companies; and
- The extent of cross-border and international collaboration; including the sharing of ideas, equipment and staff. [4.88]

## **Reject**

The mechanism for assessing the international quality of research is the Research Assessment Exercise (RAE) and a UK wide consultation on its modus operandi is currently underway. There is no need for duplication.

Current Welsh Assembly Government investment in higher education research, most importantly QR, (missing from the Report's statistical table) is the largest single source of funding underpinning Welsh research at some ?60 million for 2006/07.

Research Council funding also offers significant opportunities for Welsh higher education institutions. 'Reaching Higher' funding is supporting collaborative research proposals, such as the Institute for Cognitive Neuroscience and the Research and Enterprise Partnership between University of Wales Aberystwyth and University of Wales, Bangor which will support our institutions in leveraging in increased amounts of Research Council funding.

Improvements in data on private R&D investment and its relationship with performance will take its place among other statistical priorities and in priorities for Economic Research Advisory Panel research.

8. The Higher Education Funding Council for Wales, in pursuing the Welsh Assembly Government's higher education strategy 'Reaching Higher', should facilitate collaboration between Welsh universities in the fields of science and technology; for example, in bidding for research funding, sharing staff and joint working. [4.25]

## **Accept**

This is no different from what is already being taken forward with several flagship collaborations already underway through 'Reaching Higher' funding e.g. Institute for Cognitive Neuroscience; Institute for Mathematical and Computational Science and the Research and Enterprise Partnership between Aberystwyth and Bangor.

9. The Welsh Assembly Government should identify priority areas in which to support research and development in science and technology in the higher education and business sectors, following analysis of its science policy consultation exercise. [4.26]

## **Accept**

This was precisely the thrust of the Welsh Assembly Government's Science Policy consultation draft and the Science Policy final document will set out broad areas for focussing support.

10. In addition to instituting the activities necessary to support collaboration and prioritisation, the Welsh Assembly Government should also provide significantly increased funding to develop research infrastructure and increase the total volume of world class science performed in Wales. The Advisory Council should be charged with clarifying objectives for science base infrastructure, funding level and method of distribution. The short-term objective should be to close the current funding gap in support for public sector research relative to comparator nations and regions. [4.27]

## **Reject**

Funding decisions on science as in all other areas will form part of budget planning rounds. Getting the Science Policy right should precede any issues that might arise on funding. Calls for increased funding can be seen as a substitute for not addressing the shape of an actual science policy. The Assembly Government has set out ambitious targets for the capture of Research Council grants by HE in Wales and 'Reaching Higher' funding for collaborations intended to strengthen the Sector's ability to do so as well as to compete and deliver in other ways. In addition to the merger of Cardiff University and the University of Wales College of Medicine, institutions have secured funding for significant research collaborations including those set out at the response to recommendation 8. Science Research Infrastructure Funding (SRIF) funding is currently being provided to the higher education sector specifically to invest in research infrastructure combined with HEFCW funding this amounts to over ?46m for the period 2006-07/2007-08. It is the role of HEFCW to advise on and deliver a support mechanism for science and other research in higher education institutions.

11. The Welsh Assembly Government should support Welsh universities and businesses in attracting external funding for research and development in priority areas. This support should include access to impartial expert advice, in addition to focused financial support; for example, by covering costs incurred in applying for funding from the European Union's framework programme (FP7) for funding research and development. [4.47]

**Accept**

This is being taken forward in the developing science strategy, with a strong focus on identifying how Welsh higher education institutions can be incentivised to use best practice in applying for Research Council and Framework Programme EU funding. New private public partnerships such as the Institute of Life Sciences show creative use of EU Objective One funding in developing intellectual property in Wales.

12. The Welsh Assembly Government should review current policies for supporting research and innovation in the private sector, to promote long-term scientific development within the identified priority areas.[4.48]

**Accept**

SMART funding and Regional Selective Assistance (RSA) via the job creation grant scheme covering part of R&D salary costs rather than capital expenditure is already being used to this effect, although not all of this R&D enhanced spend will necessarily fall within priority areas, as it depends on private sector initiatives.

13. Complementary to current support schemes, the Welsh Assembly Government should create a new science fund, accessible by industry and academic researchers working in partnership. Smaller companies should be particularly encouraged to become involved in this new research and development support mechanism. [4.49]

**Partially Reject**

Funding proposals are subject to the same criticism as being consequential on a successful science policy, not as part of the science policy. Building on the success of schemes such as KEF and SMARTCymru, the Welsh Assembly Government is seeking a simpler and more flexible fund to support innovation, technology and research-related activity in business and encourage collaborative projects with higher and further education. The UK-wide funding deployed by the Technology Strategy Board through its competitive calls in particular scientific and technological areas is also relevant.

14. The Welsh Assembly Government should aim to attract new research-based industries, particularly multi-national companies, into Wales; for example, by facilitating and participating in overseas missions, and other events, with Welsh universities and businesses. [4.50]

### **Accept**

This has already been happening over the past 5 years with International Business Wales and its predecessors taking academics on appropriate and targeted missions and events overseas, on an increasing basis. Financial assistance such as RSA has been repositioned to favour attracting higher-added value, knowledge-based jobs for some time now, with R&D led schemes considered pari passu with capital expenditure led schemes.

15. The Welsh Assembly Government should encourage the development of local partnerships to share ideas and to exploit the fruits of research; these partnerships should include central and local government, industry and academia. The Welsh Assembly Government should promote strong links between these local partnerships, the Advisory Council and scientific institutions. Policies to encourage such partnerships should be responsive to the needs of industry. [4.51]

### **Partially Accept**

Structures such as are recommended already exist in the form of the Regional Innovation Network Partnerships and the Knowledge Economy elements of the Spatial Planning Fora, which include in most cases representatives of the suggested stakeholders working on just this area. The reference to the Advisory Council is rejected for reasons set out at 4. above.

16. The Higher Education Funding Council for Wales should promote academic capacity to analyse and facilitate good practice in knowledge transfer in Wales. [4.52]

### **Accept**

The HEFCW is already heavily engaged in the promotion of knowledge transfer via its Third Mission Fund. HEFCW is also contributing to a UK-wide research programme led by the Economic and Social Research Council (ESRC), on the regional impact of higher education. HEFCW, in partnership with the higher education sector, will need to consider how to increase academic capacity to analyse and facilitate knowledge transfer in Wales.



17. The Welsh Assembly Government, in consultation with relevant bodies such as the General Teaching Council for Wales, Estyn and the teachers' unions, should review current policies on the recruitment, retention and professional development of science teachers; and also the content and development of the science curriculum in schools, to make it more relevant to the needs of industry. [4.63]

## **Partially Reject**

The Assembly Government's Department for Education Life-long Learning and Skills (DELLS) is already reviewing the curriculum, from age 3–16, including science, and there will be national consultation in spring 2007. It will have greater emphasis on the skills young people need for life and work, and include greater emphasis on contemporary issues, and environment. At GCSE, we have already introduced (from Sept 2006) a range of new GCSEs in Sciences, offering different pathways to suit young people with different aptitudes and abilities.

These will provide greater opportunity for young people to apply their science knowledge in society and industry in a way which maximises contemporary relevance. The Applied Science GCSE requires young people to study the way in which scientists work, for example in the local community, industry, business etc.

The review of the recruitment and retention of science teachers requested is rejected because action has already been taken to improve the attraction of science initial teacher training (ITT) courses and the number of new teachers needed over the next few years will decline, but with our aim of an increasing percentage of science specialists within the overall declining number of students training to become teachers up to 2010-11.

Recruitment and retention by schools of science teachers is outside the direct control of the Welsh Assembly Government.

DfES is currently developing a pilot CPD programme to give existing science teachers without a physics and chemistry specialism the subject knowledge and pedagogy to teach these subjects effectively. We would wish to see the outcomes of this pilot work in England before considering whether any similar programme was desirable in Wales.

In terms of professional development we reject on the grounds:

Opportunities already exist to support the professional development needs of science teachers.

The General Teaching Council for Wales (GTCW)'s continuing professional development (or CPD) programme provides a mechanism for teachers across Wales to identify their own professional development needs, within the context of performance management.

Teachers can apply to the GTCW for funding to support a wide range of CPD activities that will influence an individuals' practice in the classroom or school. This can include work shadowing a

person employed in another area such as industry to extend their skills/knowledge or a CPD activity relating to curriculum or syllabus development within a specific subject or phase.

Teachers can also apply to the Council for a sabbatical whereby teachers undertake a significant period of professional development which will bring benefits to their practice on their return to the school or classroom. This can include a placement in business.

18. Welsh universities, scientific institutions and professional bodies should develop stronger links with schools to promote an interest by pupils in science; both for its own sake and as a possible career. Relevant bodies should build on existing programmes to spread the message that science is interesting, has a profound effect on our everyday lives and could prove crucial in determining the future of our planet. [4.64]

### **Accept**

Welsh higher education institutions already have strong links with schools through their work on widening access, and much of this relates to work to show the attractions of studying science, engineering and mathematical subjects. We endorse the Committee's call to professional bodies and scientific institutions to continue to promote interest in science.