

The David King interview

■ **You are independent from government yet your office is within the Office of Science and Innovation. How does this work? And how do you carry out your responsibilities?**

Your question is a big one. My position is that I'm responsible to the Prime Minister and Cabinet for science advice and the quality of science advice. The Office of Science and Innovation (OSI) is situated in the Department of Trade and Industry but that can be misleading because my responsibility is to the Cabinet. How do I carry through this set of responsibilities? I go into each government department and review the quality of science there and how government ministers use that science. I have been busy appointing chief scientific advisors in each department so they can report directly to their own Secretary of State and give them advice, and they also report to me so I can report directly to the Prime Minister on how science is working across government departments. I also run the government's foresight programme in which we have worked with 12 different departments to date, scanning ahead 10 to 80 years into the future and giving advice on what should be done to prepare the country to best benefit from future opportunities and also to protect against risks on the horizon. It's a big operation. The OSI is now about 400 civil servants, which is quite a big support team. And of course the science and engineering research base is actually funded through us, through Keith O'Nions* to the research councils. This is a significant part of our work.

In terms of independence, my appointment came as the government was trying to resolve the BSE crisis. The first volume of the Phillips Commission report on the handling of the crisis was the first document to land on my desk so I treat that report as the basis of my operation and that is: openness, honesty and transparency. The advice I put into the government system, provided it is not advice related to security matters, also goes into the public domain and in that way I protect the independence of the science advice given.

The government's chief scientific advisor, Sir David King, plays a key role in disseminating information on scientific issues to the Prime Minister, the Cabinet and across government. **Owen Gaffney** caught up with him to discuss this work and how he communicates science across government.

■ What is your relationship with Treasury?

The relationship with Treasury is always a close one. In terms of the Spending Review I have a team that works with all government departments to ensure each department produces a science and innovation strategy, updated each year. We work with all these departments to make sure the quality of these strategies is maintained at a high level. Secondly, it means these strategies enable each department to prepare their own Spending Review application to the Treasury. The Treasury comes to us for approval on the department's application. So we give a stamp of approval and then the Treasury gives a stamp of approval and the department gets the money.

■ How well do scientists communicate with government?

The answer has got to be that the science community's communication with government is extremely varied. I think the science community is, not surprisingly, very distinctive. There are some people who are very good at lobbying and others who are very good at beavering away in their labs and producing Nobel Prize winning work. Is there enough communication? The need to communicate is critically important but the need to get on and do the work is also important. But I suppose we can always improve.

■ NERC recently commissioned a study on the economic impact of our work – the first for a research council. The study concluded that the economic contribution of NERC-funded work is considerable but a key recommendation was the need for more interaction between the NERC community and policy makers, implying we don't get our message across. What is your opinion on this?

I am very glad this analysis has taken place. One of the most difficult messages to get across at any level is where you have avoided risk or if you have significantly reduced risk – the accident doesn't happen because someone has taken precautions to make sure it doesn't happen. In this situation there is no news. It is only when these things happen that it becomes newsworthy. The whole issue around global warming is one of preparing our societies for the impacts of climate change and then reducing the impacts by reducing emissions. Now what is the economic impact of avoiding those

impacts – massive. People just take it for granted that the science is there. Take for example the Buncefield oil depot explosion last year, NERC planes* were in there measuring toxicity in the clouds – that was a vital piece of work being done but once again the value is not quite as easy as measuring value from a manufacturing industry for example. What I'm saying is that it is a difficult issue, but it is very important to get that message across.

It's also interesting because the work of the Hadley Centre is well known. How well known are the various NERC centres working on global warming? The Tyndall Centre and Reading University are both critically important parts of what the UK is doing in the area of climate change analysis. I think again it is this difficulty of measuring the value of something that is about avoiding risk. NERC centres don't have quite the same profile for several reasons – the Hadley Centre has created an international reputation in climate modelling and of course they are sitting in the Met Office and they have the full range of measurements going back to 1864, so there is a long tradition there, but the actual academic work that NERC does feeds directly into the Hadley Centre. There is an interchange of staff between universities and the Hadley Centre and NERC ensures the people with the right training are coming from the universities into the Hadley Centre. I think most of us who are close to the issues are fully aware of the full range of activities going on and the importance of the Tyndall Centre, for example, but nevertheless it is quite difficult to get the message across to a wider audience.

*The NERC/Met Office Bae 146 aircraft.

■ Lord Sainsbury, the Science Minister, said in the *Financial Times* (26 June, 2006) that in future more emphasis will be given to user-driven applied research. But a *Guardian* article five days previously said, 'the Treasury would like to see researchers being more adventurous.' Where does the balance lie?

From my office in Cambridge you can take a three-mile radius. Twenty years ago you could find three or four companies in that area, today there are 1600 companies of which about 900 are high tech. They are employing about 45,000 people so it's a whole industry developed there. Now that has developed around a university with a reputation for blue skies research. In other words, it is cutting edge, high

quality, internationally competitive research that Cambridge is well known for and its rating is still getting higher and higher on the international scene. We can no longer draw a distinction between the leading-edge research that is giving us our reputation for top quality research, and research that is producing the industries of tomorrow. The government is fully aware of it, so yes we are very, very keen to continue funding top quality research that will get us accolades such as Nobel Prizes; there is no intention to cut that back.

■ What do you think will convince the US to change its stance on climate change?

I think we will see the US taking a leadership position on this very issue in four to five years' time. I'm not just saying they'll come in to it, I'm saying they will move into a strategic leadership role. I think the impacts of global warming are the major factor. The fact is that the central European average summer temperature is now virtually the same as the hottest summer of the twentieth century – 1947 – and as we move forward in time people are becoming more and more aware of the fact that hot summers are now with us, and we are only going to see that progression continuing. The summer heatwave in central Europe in 2003 becomes the average summer by mid-century – 2050 – lifestyles are already being altered by global warming.

■ The new large facilities research council was announced in July. Do you ever envisage a single research council in the UK?

I think it would be difficult to foresee a situation where we would want to return to a single research council. I think we are learning to live with eight research councils. By this I mean we are developing interdisciplinary strategies – one of the great weaknesses of having a whole series of research councils is that you might end up with silo walls around them. But I think we are learning to create interdisciplinary opportunities across them and we are doing that rather well. So the driving force for going back to one research council is if we are not handling interdisciplinarity very well.

.....

■ This is an edited version of the full interview which is available online at www.nerc.ac.uk. Sir David King was appointed as the government's Chief Scientific Advisor and Head of the Office of Science and Technology in October 2000.