



## Independent expertise to assess risk and scientific evidence

Response to the House of Commons Science & Technology Committee's Inquiry into Government handling of scientific advice and risk

1. The Campaign for Science & Engineering is pleased to submit this response to the Committee's inquiry into scientific advice to Government. CaSE is a voluntary organisation campaigning for the health of science and technology throughout UK society, and is supported by over 1,500 individual members, and some 70 institutional members, including universities, learned societies, venture capitalists, financiers, industrial companies and publishers.

2. CaSE does not profess to have specific expertise on the details of the three case studies that the Committee will be addressing, and our comments are intended to contribute to a more general critique of some aspects of the way in which central Government obtains, interprets and uses scientific advice.

### ***The Chief Scientific Adviser's Guidelines***

3. CaSE believes that the *Guidelines on Scientific Advice*, first issued during the tenure of Sir Robert (now Lord) May as Chief Scientist and revised under Sir David King, form an excellent basis for Government handling of scientific information. The *Guidelines* are admirably succinct and clear, and if properly followed in all cases, would greatly strengthen the Government's policy-making. There can be no question that their implementation has improved matters since the days of BSE, one of the worst-handled scientific issues in modern times, which was a catalyst for specifying many of the principles embodied in the *Guidelines*.

4. CaSE's concerns surround two areas. First, it is only possible for Government to handle risk and science appropriately if it has a sufficiently expert and critical in-house capability to allow it to formulate the questions it needs to ask of external experts. Second, it is necessary to identify accurately the subjects on which research evidence is needed, as distinct from those that demand 'common sense' or political judgement. We develop these two points further below.

### ***Independent expertise within Government***

5. One of the ways in which Government can draw on a wide range of expertise is to bring into its ranks experts from industry, academia or

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elsewhere, to provide an extra, independent view to policy-making. The role of Chief Scientific Adviser is the obvious example, and CaSE has certainly supported much of what recent incumbents have said and done.

6. The practice extends further down the Civil Service, supposedly including (since 2002) a Chief Scientific Adviser in every Department that undertakes an appreciable amount of science<sup>1</sup>. But as members of the Committee know, it was only after one of the Committee's inquiries pressed very hard that the Department for International Development appointed a Chief Scientist. When asked in the spring of 2004 whether they had Chief Scientific Advisers, the Department for Education & Skills said it "does not have a designated chief scientific adviser"<sup>2</sup> and the Department of Culture said that its "has not appointed a chief scientific adviser"<sup>3</sup>. While the DfES at least made the case that its Director of Higher Education held some responsibility in this area, the DCMS made it plain that it had no intention of actually implementing official Government policy in this area, even though it invests about £18 million of taxpayers' money in science annually<sup>4</sup>. It is responsible for institutions of major scientific importance, such as the Natural History Museum, the Science Museum and the British Library, as well as for policy in areas such as sport, where science is clearly important (the UK will not maximize its haul of Olympic medals at the 2012 London games if the people who run sport do not take science seriously).

7. In 1999, the Council for Science & Technology (CST) suggested that "Departments should also consider making more proactive use of inward and outward secondments of scientific and technical staff at all levels"<sup>5</sup>.

8. In the autumn of 2003, some four years later, Dr Brian Iddon MP tabled a series of Parliamentary Questions to ask Secretaries of State "how many people from science and technology backgrounds have been seconded into the Civil Service in his/her Department in each of the last five years for which data are available?"<sup>6</sup>.

9. The answers showed a truly astonishing range of attitudes towards science. The Department of Environment, Food and Rural Affairs produced figures showing an overall average of 18 secondments per year, the majority from science and technology sectors, while the Home Office gave accurate figures for overall secondments but was unable to count those with a science background. Neither the Culture Department nor the Department of Trade & Industry had any idea how many scientific secondees they had employed. This was particularly surprising in the case of the DTI, which has responsibility for science policy, and which services the organization that recommended the secondments in the first place (the CST). Most shocking of all, the then Secretary of State for Education reported that his Department had not seconded a single person with a science or technology background in the previous five years. The DfES is responsible not just for all aspects of science education but for the universities, which carry out billions of pounds worth of scientific research a year.

10. We accept that these figures are now two and half years old, but they suggest that Departments have been at best slow to wake up to the need for external scientific expertise. We do not purport to list individual examples of bad policy decisions that would have been improved by specific civil service appointments, but believe the general point to be important.

11. The system of handling scientific advice within Government will not really be fit for purpose until Departments build into their structures a constant flow of scientifically-trained individuals, who bring the eyes of independence to the overall handling of information and uncertainty relating to science and engineering.

***Identifying questions on which science is necessary.***

12. During the recent furore over the rules surrounding who may or may not work in schools, it has been revealed that some people known to have admitted to sexual offences have been permitted to work with children, even though the public is manifestly and rightly extremely risk-averse on this subject.

13. What is rarely expressed clearly is that the ministerial decisions involved in many policy arenas (of which this happens to be a current example) break down into two distinct remits. First, a single decision must be taken as to what constitutes an acceptable level of risk. This is an issue of political judgement, attempting to read the democratic will of the nation. It is the sort of decision that, under our system of Government, is clearly a matter for the personal decision of ministers. Different ministers of different parties, at different times and under different circumstances, are constitutionally entitled to take different views on issues of this general kind.

14. Second, individual decisions must be taken about the actual level of risk posed in particular cases. Although there may be a degree of uncertainty surrounding such cases, the uncertainty should be dealt with in the context of evidence. In the current example, although ministers have sought to claim that particular individuals in particular circumstances pose a low level of risk to children, they have not (to our knowledge) cited any research evidence to support whatever criteria they might be employing.

15. A leading journalist has been called "brave" for pointing out that "I see a world of difference between looking at dirty pictures and doing something dirty"<sup>7</sup>, arguing that ministers may have been justified not to ban someone from teaching on the basis of his history of internet usage. But others observe that it is perfectly possible that people who access inappropriate electronic material have a higher likelihood of committing other offences.

16. The point is that disagreements of this kind cannot be decided by a minister's judgement or a journalist's whim; they can only be settled by serious quantitative research.

17. CaSE clearly makes no comment about the individual case or the specific policy and has no expertise to judge whether appropriate research evidence exists. But it is plain that ministerial judgements have been made, purporting to quantify risk without any attempt to cite the generic evidence base by which criteria may be assessed.

18. In the present case, the point may well turn out to be irrelevant in the long run, because it seems that ministers are adjusting the level of risk considered acceptable to such a low level that there would be no room for ministerial discretion in such cases. But it remains that case that ministers have quantified risk on the public's behalf, and have done so at worst without any research base or at best on unspecified (and hence unchallengeable) research.

19. If this attitude pervades a large range of Government decision-making, then the admirable principles expressed in the *Guidelines on Scientific Advice* cannot be implemented. It is crucial that ministers and civil servants adequately differentiate between decisions about the general level of risk considered acceptable in particular areas and estimates of the actual level of risk posed in specific cases.

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#### Notes and References

<sup>1</sup> *Investing in Innovation*, H M Treasury and other departments, 2002.

<sup>2</sup> *Hansard* [House of Commons] 19 April 2004.

<sup>3</sup> *Hansard* [House of Commons] 22 March 2004.

<sup>4</sup> [http://www.ost.gov.uk/setstats/2/t2\\_1.htm](http://www.ost.gov.uk/setstats/2/t2_1.htm)

<sup>5</sup> *Review of Science & Technology Across Government*, Council for Science & Technology, CST, 1999.

<sup>6</sup> *Hansard* [House of Commons] 19 and 20 November 2003, and associated letters in the House of Commons Library.

<sup>7</sup> *Daily Telegraph* 13 January 2006 and 14 January 2006.