

Putting science and engineering at the heart of government policy

Campaign for Science & Engineering

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Introduction

1. The Campaign for Science & Engineering in the UK (CaSE) welcomes the opportunity to provide written evidence to the Innovation, Universities, Science and Skills Committee inquiry into *putting science and engineering at the heart of government policy*. CaSE has been influencing UK science and engineering policy since its inception in 1986 as Save British Science.

Summary

2. CaSE believes that science and engineering should be put at the heart of government policy through:
 - political commitment to science and engineering
 - having science and engineering as a cabinet-level issue
 - cross-government and departmental focus on science and engineering
 - moving the Government Chief Scientific Adviser and Government Office for Science to the Cabinet Office
 - significantly strengthening the Council for Science and Technology
 - a cross-government science and engineering policy
 - greater transparency regarding the guidance given from the government to research councils
 - continued pressure from the science and engineering community
 - re-establishing the House of Commons Science and Technology Committee

Political commitment

3. Without strong political support science and engineering will never be at the heart of government policy. For this reason CaSE works with all political parties across the UK to ensure that they understand the importance of science and engineering and the important roles that government and parliament can play in its success.
4. There are two general types of government science and engineering policies: those that influence science and engineering and those that are influenced by science and engineering. High-level political commitment is needed to develop both types. The first requires farsighted investment in people and infrastructure. The second is dependent on having the first in place and also the advisory mechanisms and openness to integrate evidence into policy decisions.
5. Although this inquiry is mainly focused on organisational issues and processes it is important to note that the success or otherwise of putting science and engineering at the heart of government policy is dependent on the personal commitment of high-level individuals within government and other relevant bodies.

Machinery of government and science and engineering policy

6. The machinery of government is a critical factor in ensuring that science and engineering are at the heart of policymaking. The Prime Minister has made a

number of significant changes to the organisation of science and engineering policy within government.

Cabinet

7. The appointment of Lord Drayson to the Cabinet and the National Economic Council is a significant upgrading of the position of minister for science and innovation. It is a prerogative power of the prime minister to determine his or her cabinet, but CaSE will advocate that future prime ministers make science and engineering a Cabinet-level issue as we have done in the past.
8. The creation of the science and innovation cabinet sub-committee is a welcome development. It is critical that the committee meets frequently enough to develop a cross-government perspective on science and innovation. The composition of the science committee should be expanded to include a minister from the Department for Culture, Media and Sport and the Foreign and Commonwealth Office. As cabinet committee discussions are not made public it is difficult to make an external assessment of its workings.

Departmental responsibility for science and engineering

9. Science and engineering will always need to be a cross-government priority. One department can never be wholly responsible for science and engineering. Each department needs to be responsible for their own science and engineering research needs and internal advice. Also, lines will always have to be drawn between departmental portfolios with an impact on science and engineering as varied as education, business, immigration and culture.
10. Although science and engineering policies are spread across government it also needs to be a prominent part of a single department. A Department for Science and Engineering would have a number of obvious benefits. First, there would automatically be someone at the Cabinet speaking for science and engineering. It could also foster better integration of certain science and engineering policies and regulations. An assessment would have to be made about what functions from other departments would be integrated into such a Department, one possibility would be the Home Office's regulation of animal research. It would also be necessary to guard against departments downgrading the importance of science and engineering in their own portfolios, as the Foreign and Commonwealth Office recently did.
11. The Department for Innovation, Universities and Skills (DIUS) incorporates many of the elements that should be within a Department for Science and Engineering. Science should have been included within the name of the department to reflect its prominence. One critical area that DIUS needs to strengthen is its collaboration with other departments. Particularly, the Department for Business, Enterprise and Regulatory Reform on business research and innovation and the Department for Children, Schools and Families on science and mathematics education in schools.

Government Chief Scientific Adviser and Government Office for Science

12. The Government Chief Scientific Adviser (GCSA) has a critical role in putting science and engineering at the heart of government. However, it would be appropriate for the GCSA and the Government Office for Science (GO-Science) to be moved from the DIUS to the Cabinet Office, because both are meant to support the Prime Minister and Cabinet and strengthen the Civil Service. It would also mean that all departments would be engaged with equally as it is of critical importance that scientific, engineering and technological advice is at the highest levels of government and across it.
13. Government departmental funding of research needs to be given a higher profile. The GCSA and GO-Science need to keep challenging departments about how they are utilising science and engineering to meet their departmental objectives. The Committee of Chief Scientific Advisers should consider developing a cross-government strategy on departmental funding on R&D.

Council for Science and Technology

14. The Council for Science and Technology (CST) is an important body that has been under-utilised. Its primary role is to advise the Prime Minister and leaders of the devolved administrations on science and technology policy. The CST has an extremely important role in challenging government and devolved administration science policies and providing advice on high-level issues. It is also well placed to look at the linkages between UK-wide and devolved science policies.
15. The CST needs to be strengthened in order to have a greater impact on science and engineering policy. One organisational model that could be learned from is the Sustainable Development Commission, which is the government and devolved administrations independent adviser and watchdog on sustainable development. A revamped CST could produce authoritative policy reports, statistical analysis and comment upon progress across against government and devolved administrations commitments. Council members would need to give more of their time and the secretariat would need to be strengthened, including offices in the devolved administrations. A revamped CST would help to ensure that science and engineering is put at the heart of government policy and that the government delivers upon its ambitions.

Formulation of science and engineering policy

16. There are various science and engineering policies across the UK government, devolved administrations and agencies. It is critical that there are appropriate strategies, policy initiatives and funding to deliver the political ambition to make the UK a world leader in science and innovation.
17. DIUS has the lead responsibility, but other departments also make significant contributions to science and engineering policy. HM Treasury plays a critical role in the UK's science and engineering policy. It was central to the development of the Ten-Year Science and Innovation Investment Framework 2004-2014, which remains the most important science policy document in the UK. The outcomes of

Comprehensive Spending Reviews and Budgets are critical to achieving the goals set out in the Framework.

18. The UK has many science and engineering policies. In addition to the Ten-Year Framework there are a number of other key science policies. Although *Innovation Nation* was billed as a science and innovation white paper, its focus was mainly on innovation. The Sainsbury Review is another part of the UK's science policy framework. A Science and Society Strategy is also under-development. The Government should develop a cross-government science white paper in due course to put science and engineering at the heart of government policy. This could also be one way of responding to the proposals that will inevitably develop from this inquiry.
19. In addition, other departments should pay more attention to how their policies affect the Government's ambition for science and engineering. One recent example was highlighted in CaSE's policy report *International Excellence: Valuing International Scientists and Engineers*. The report found that the Home Office's Points-Based System for immigration was not fully in-line with making the UK a world leader in science and innovation as it had negative impacts on the UK's ability to attract scientific talent from around the world.

Regional versus national science and engineering policy

20. It is critical that UK-wide science policy decisions, especially the funding distributed by research councils, are made on the basis of merit. There are relevant reasons for taking geographic distribution of research council facilities into account when there is scientific justification (e.g., the long-term monitoring of environmental change).
21. The UK does have devolved science policies. The Scottish Government published its strategy *Science for Scotland* in November 2008 and the Welsh Assembly Government published its *Science Policy for Wales* in 2006. Northern Ireland does not yet have a science strategy. It is important for devolved administrations to have science policies as they have responsibility over key areas of research funding, education and enterprise.

Haldane principle

22. As the Committee noted in its inquiry into the Science Budget Allocations the Haldane principle needs to be refreshed if it is to be a meaningful part of UK science policy. As there is currently no agreed definition of the Haldane principle there is much scope for interpretation about what it means and how it should be applied.
23. The Haldane report made the distinction between research funding for general use, that should be free from political direction, and research for specific policy use, that should be administered by a department. The growth of the science budget at the same time as most departmental budgets have stagnated, has meant that the government has looked towards research councils and universities to deliver more of their evidence needs. Departments should recognise the need for investment in policy-oriented research as part of their responsibility and legitimate call upon their budget.

24. The Secretary of State, John Denham, gave his definition of the Haldane principle as:
- Researchers are best-placed to determine detailed priorities
 - Government's role is to set over-arching strategy
 - Research Councils are the 'guardians of the independence of science'
25. This definition is a good starting point for discussion. However, it cannot be the final word as there is a large grey area of decisions that are between a detailed priority and an over-arching strategy, which makes the definition virtually meaningless. What needs to be clarified is the level of autonomy that the research councils have in setting their strategic direction.
26. Because of the lack of transparency in the science budget allocation process it is difficult to determine if a decision was made by a research council or the government. A useful step would be for the government to publish any guidance it gives to research councils. CaSE has lodged a Freedom of Information request to make the Allocation Letters from DIUS to each research council public. This was done to find out what level of formal guidance was given to research councils regarding how they should allocate their funds and to ensure that subsequent guidance was made a matter of public record. This would better enable the science and engineering community and parliamentarians to scrutinize the allocation of science budgets. DIUS is still considering the request.

Stakeholder involvement in science and engineering policy

27. The scientific and engineering community, including universities, industry, research charities and learned societies, should be central to the formulation of government policy. They should be engaged in the formulation of both policies that affect science and engineering and policies where science and engineering evidence and advice should be brought to bear on their development.
28. CaSE plays an important role in terms of science and engineering policy. Our membership brings together individuals and organisations from across the broad science and engineering community. Our work focuses on influencing high-level science and engineering policies across the UK. We do this by producing policy documents, organising discussion meetings and engaging politicians, civil servants and the media on key science and engineering policies.
29. CaSE has a unique history. We were founded in 1986 as *Save British Science* (SBS) by scientists, engineering and mathematicians to secure greater political support and funding for research and education. SBS/CaSE has contributed to raising the political profile of science and engineering and shaping the science policy agenda, such as the recent sustained increase in the science budget, expansion of Chief Scientifics Advisers, and highlighting deficiencies in science and mathematics education. Outside pressure is critical to keeping science and engineering up the political agenda.

30. Since SBS/CaSE's formation there are more stakeholders with an active interest in science and engineering policy. The government should take a more active and imaginative approach to bringing together the science and engineering community to discuss and agree shared priorities. The CST could develop as a useful facilitator in making this happen.

Scrutiny of government science and engineering policy

31. CaSE believes that a Science and Technology Committee should be re-established in the House of Commons. Parliamentary scrutiny benefited from having a Science and Technology Committee that was able to look at both the department with responsibility for the science budget, related organisations and science and technology issues within other departments and across them.
32. The addition of "science" to the Innovation, Universities and Skills Committee was a welcome development. The IUSS Committee to-date has covered a number of important science and technology issues. The Committee's coverage of science and technology has benefited by its membership being made up of many members of the former Science and Technology Committee.
33. The IUSS Committee's remit is to scrutinize the work of DIUS. Although the Committee could use its powers to investigate the Government Office of Science to examine science and engineering issues in other departments its workload has greatly increased making it harder to cover science and engineering policy across government. The Science and Technology Committee was often very effective in investigating those sort of issues (e.g., research within the Department for International Development).
34. The IUSS Committee should follow the recommendation within the Science and Technology Committee's Last Report to have a periodic Science Question Time to ensure that the work of the Science and Innovation Minister is properly scrutinized. This is particularly important when the Minister is appointed from the Lords.