



COUNCIL FOR
SCIENCE AND
TECHNOLOGY



How academia and government can work together

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Executive Summary

A healthy engagement between academics and policy makers is essential to the provision of informed, evidence based, world-class policy making.

Academics already play a key part throughout the policy making process, providing advice on a huge number of topics to recipients at all levels of Government. The diversity of the UK's world-class academic expertise means that it is a formidable resource for policy-makers in the UK. By engaging with policy makers academics become involved in answering some of the most challenging questions faced by the UK, and their ideas contribute to national policy.

Our investigation has shown that the engagement between academics and policy makers in the UK is not as strong as it might be. A great deal of goodwill exists on both sides and strides have been taken in recent years to strengthen engagement: in particular through the introduction of Departmental Chief Scientific Advisers and Scientific Advisory Councils, and clear commitments by Government to evidence-based policy. Despite this CST has identified areas on both sides where improvements clearly can and should be made.

The UK position is not unique: most countries have difficulties in balancing the relationship between academics and policy-makers. Even where parts of the engagement seem superior in other countries it is often because the political systems are different. For example, the greater flow of academics to and from Government in the US is at least in part due to the absence of a permanent civil service. There are strong parallels between the effort by academics to improve their engagement with Government and the successful transformation of academic engagement with business in recent years, and it is important that the lessons are learned.

It is clear that from the discussions we had that there are strong opinions on how to improve Government and academia engagement. The relationship is complex; rather than attempt to list every issue and potential solution we have sought to meet the challenges set by a number of those we talked to: first, to highlight the key inhibitors to good Government/academia engagement, and then to suggest a core set of sustainable actions we believe both sides need to take to improve that engagement.

We have identified the following key inhibitors to engagement:

- Less than professional working relationships
- Ignorance on both sides of what good engagement can deliver
- A degree of mistrust between academics and policy makers
- Failure to value the relationship

We recommend Government and academia take action in three areas:

1. Build relationships and communication

Core recommendation to Government and academia: Government departments, Universities, Research Councils and Learned Societies need to work collectively to identify and create a set of exchange mechanisms, including world- class internship and secondment schemes, and promulgate them widely.

2. Build capacity to ensure a more productive engagement

Core recommendation to Government: Mechanisms need to be put in place to further empower Departmental Chief Scientific Advisers (DCSAs), Scientific Advisory Councils (SA Councils) and Heads of Analysis to act as the core conduits for capacity-building between academia and Government, in particular by ensuring:

- (i) Sufficient access to Ministers
- (ii) Buy-in from Ministers to setting up SA Councils
- (iii) Wider advertising within the academic community of these bodies

Core recommendation to Academia: Universities should seek to improve and professionalise their capabilities and structures for engaging with Government so that they operate more like consultancy organisations, in particular by:

- (i) Building on their experience of working with business, including concepts such as relationship managers
- (ii) Considering whether new structures within the university itself might be needed
- (iii) Utilising appropriate funding sources

3. Rate, value and reward the engagement

Core recommendation to Government: Identify criteria to assess quality within the major categories of academic engagement with Government; and identify mechanisms to incentivise each category, in particular:

- (i) Through the RAE and its successor for publishable outputs
- (ii) By setting up peer review bodies within Government (jointly with academia) that are capable of assessing both the academic quality of the paper, and its quality and impact in terms of policy making
- (iii) by investigating whether a more flexible approach could be taken within the RAE/REF so that policy papers could be submitted and assessed both in terms of academic quality and policy value to Government, with appropriate safeguards
- (iv) By developing a 'gold standard' acknowledgement from Government for valued engagement, where this involves non-research and non-publishable outcomes, that could be sent to an academic's institution and the relevant Research Council.

Core recommendation to Academia: Recognise and reward engagement with Government through academic career development, in particular:

- (i) By rewarding quality in non-research and non-publishable engagements between academia and Government through career progression in the same ways that traditional academic research excellence is rewarded

CST also believes that Government should make greater use of bodies such as the Learned Societies, Research Councils and the independent bodies such as the CST, all of which have strong academic links and provide another valuable source of external academic capacity.

The desired outcomes of these recommendations will be:

- A culture change leading to greater clarity in the relationship, better interaction, mutual understanding and a more coherent relationship between academia, Government and professional bodies
- A more professional, innovative and effective relationship between academia and Government with agreement of where and how to build the necessary capacity
- Government-academia engagement being seen as career developing on both sides due to the mechanisms to value and reward the interaction

CST believes that by implementing these core recommendations Government and academia will have taken major steps to improve engagement. CST intends to conduct a further study in twelve to eighteen months time to investigate what progress has been made against these recommendations, and will report its findings to Government.

Introduction

CST has been commissioned to investigate ways in which the interaction between academia and public policy makers in Government can be improved. This document sets out the CST's conclusions, which are based on over fifty interviews with academics and policy makers.

Academic engagement with Government policy makers takes many different forms, each with its own opportunities, benefits and challenges. The advice provided can range from purely scientific (e.g. data analysis) through to policy formation (e.g. using judgement to advise on the choices between different options). Knowledge needed ranges from the *natural sciences* involved in for example combating disease or developing weapons systems to the *social science* required when considering pension reforms. Academics can provide input at different points in the process, from helping with policy formation (seeking evidence), through to policy evaluation (reviewing evidence) or crisis input (e.g. rapid response to a disease outbreak). Academic input can be received from a range of sources: personal contacts, heads of analytical professions, DCSAs, other in-house expertise, Research Councils, intermediary bodies such as the Learned Societies, external advisory bodies such as CST, think-tanks, consultancies, universities etc, and the academics themselves may be involved over different lengths of time. Academic advice can originate at all levels of academia – from professors to post-doctoral researchers – and be received by policy-makers from a Minister to a junior official.

Clearly with such a range of potential inputs the academic base in the UK represents a huge opportunity and resource to inform Government at all levels and drive forward evidence-based policy. Academics can provide an external view, answer questions, ask questions, challenge and defend. But the engagement must be a mutual one: there is a need for both sides to genuinely want to engage otherwise the relationship will deteriorate. Ultimately, where both partners see benefits, engagement occurs automatically and does not require special mechanisms to do so.

CST's investigation has shown that the UK is reasonably well-positioned and wholesale change is not required. A great deal of work has already been achieved through Government investing in a world-class science base, appointing DCSAs and conducting science reviews of Government departments. Government and academia now need to build on this foundation. We have encountered a real desire on both sides to engage (typified by the hours that were given up to speak to us in support of this project). With such tremendous goodwill the UK should aspire to make the best possible use of this resource and see a return on the investment made.

This paper sets out the areas CST sees as being the key inhibitors to engagement, and makes proposals for practical steps that could be taken by Government and academia to overcome them.

The inhibitors to engagement are grouped under four headings: (i) Less than professional working relationships; (ii) Ignorance on both sides of what good engagement can deliver; (iii) A degree of mistrust between academics and policy makers; and (iv) Failure to value the relationship.

Similarly the recommendations to Government and academia are divided into three categories: (i) Building relationship and communication; (ii) Building capacity to deliver a more productive engagement; (iii) Rating, valuing and rewarding the engagement. In each section we have focussed on a core recommendation for both Government and academia, and listed secondary recommendations in less detail.

The topic of encouraging academic involvement in policy making has been considered recently by both the British Academy in their report *Punching our weight: the humanities and social sciences in public policy making* and the European Commission in its report *Scientific evidence for policy-making*. CST is pleased that both these reports have strong overlaps with our own.

We also include three annexes. The first contains the terms of reference for the project, the second a consideration of the engagement between academics and policy makers in the United States and the third a list of those individuals and institutions who gave their time to be interviewed by CST.

Inhibitors of engagement

During the consultation CST heard a wide range of opinions about why engagement between academics and policy makers in the UK was not as strong as it could be. Barriers to the relationship were primarily *cultural* rather than *structural*. We should emphasise that the topics raised in this section are by no means present in every engagement, and where they are present they exist to widely varying degrees.

The central message is that both academics and policy makers need to alter their behaviour to overcome the barriers.

Less than professional working relationships

Government and academia have very different cultures. Where academics engage with policy makers efforts need to be made to ‘professionalise’ the relationship so that barriers that stem from the cultural differences can be overcome. Both sides need to better understand the constraints that the other is working under and exactly what each requires.

When Government consults academics it needs to be a more ‘intelligent customer’ by (i) being clearer about what it is asking for; (ii) providing sufficient context and background to the request; and (iii) involving the academics themselves in helping to define the question so that they can discuss with policy-makers what research can and should be carried out¹. Policy-makers also need to be aware that there are times when academics cannot conduct the research within truncated timeframes, no matter how much resource is provided or how urgent the request.

In response academics need to ensure they fully understand what officials are looking for, and seek clarification if necessary. Academics also need a greater appreciation of the time pressures policy-makers operate under, and accept that they may need to compromise on timescales and focus on delivery. The work also needs to be delivered in a format that is easily accessible by officials – this will inevitably be very different from a standard academic paper.

During any given engagement it is crucial to maintain a constant dialogue and flow of ideas; policy officials need to be prepared to do more than simply commission an academic and then ‘forget about it until the report is due’, and academics need to be easily contactable and prepared to discuss what they are doing during the project.

Finally, it is very important that genuine performance feedback is provided to both sides once the project has finished – this is an area of particular frustration. Academics need to tell policy makers what would have been useful for them to have known beforehand, and policy makers need to ensure academics understand how their work was used so that they do not get the impression that it has either been ignored or forgotten. Failure to provide such feedback builds resentment, and means that lessons are not learned for the next engagement.

¹ The European Commission report ‘Scientific Evidence for Policy-Making’ mentions the need for mechanisms and processes to be put in place to bring researchers and policy-makers together at the earliest stages of project development as a key step for supporting evidence-based policy making.

Ignorance on both sides of what good engagement can deliver

A lack of awareness of what engagement can deliver, or how to engage effectively is one of the biggest barriers between universities and policy-makers. We have identified a number of different but inter-related factors that need to be considered.

To commission, absorb and challenge academic work there need to be individuals and structures within the civil service that have sufficient understanding of academia and the academic world. Equally, there is a need for critical mass within universities to enable fruitful relationship to develop. A key problem appears to be the commissioning of academic work without academic input, meaning there is less understanding of the research, how to ask the right questions or how the response can be challenged and used. This can be especially important when addressing the big, cross-departmental questions where academics can have a vital role. The Heads of Analysis Group, the Government's Chief Scientific Adviser and DCSAs, together with departmental SA Councils and bodies such as CST, Research Councils and Learned Societies have a key role in facilitating this process.

The lack of corporate memory and knowledge management within the civil service is a real concern on both sides. Because officials tend to move posts within relatively short timeframes, knowledge of what has been commissioned in the past and who the academic experts are is often lost. Additionally academics lose valued contacts within Government which makes promoting their expertise more difficult. A more effective and professional culture of knowledge management that establishes an effective corporate memory within Government is needed.

But the burden should not fall solely on Government. Academics need to be proactive at promoting their work to Government, and make themselves aware of what Government is looking for. CST is pleased to see the number of structures that are being set up in universities so that they can engage with Government in similar ways to business consultancies². We welcome and would encourage more of these developments. Academics can deliver high quality work at a cost which is lower than many professional consultancies, even when the work is properly priced under full economic costing. Government should be made more aware of the value and potential of this resource.

Finally, Government should be aware of the value in engaging those with academic expertise who are not within the traditional environment: for example journalists, writers, science correspondents etc who may all bring important insight to policy-makers, and should be considered alongside those academics who work within the university system.

² A number of Government departments have worked with academics to create innovative models of engagement, with academics employing structures that enable them to operate more like a consultancy. For example, Defra and DfT have both set up quick response bidding structures for project work in conjunction with ESRC. Consortia of universities are expected to bid for work in which Government provides the 'practicality' pull and ESRC the 'research excellence' pull. At the same time, DH and Defra have academics on call 24/7 to deal with particular crises e.g. Foot and Mouth outbreaks. Many universities have created policy units within themselves, some of which we spoke to in detail (see Annex C).

A degree of mistrust between academics and policy makers

Over the course of the consultation we saw very little evidence of overt hostility or mistrust. But it is clear that where incidents occur which damage the trust between academics and policy makers they have a disproportionate impact and risk badly impacting the longer-term relationship. Such incidents should therefore be taken very seriously.

The prime cause of mistrust or hostility amongst academics is a sense that in some cases they are being brought in on tight timescales to support the answer that Government wants to hear – characterised as ‘policy-based evidence’. Government needs to understand the fundamental significance to an academic of how he or she is viewed by his or her peers. These are seen as the core relationships an academic needs to maintain and nurture – being seen to be too close to Government can be, rightly or wrongly, seen as a major risk to an academic reputation – for example through results being misinterpreted or misrepresented, or their work sidelined. It is essential that both Ministers and officials recognise that by seeking academic input they are in effect requesting independent advice and that the process for requesting and handling that advice must be made as open and transparent as possible. One way to promote such transparency would be for Government to ensure that unless there were security or commercial implications academics should be expected to be able to publish in a timely manner as a matter of course. This would allow their academic peers to clearly understand how the report relates to the policy ultimately decided upon.

In return academics must accept that although a piece of advice may lead to what might be seen as an ‘obvious’ outcome from a strictly academic viewpoint, other factors may mean that it may not be possible to translate that into Government policy. Policy decisions involve difficult choices that need to take account of a very wide range of factors. Academics must recognise that where a particular view does not prevail, or where decisions are taken for political reasons, this does not mean the academic input was not valued.

Failure to value the relationship

A number of individuals raised instances in which they felt Government or academia had not properly valued the relationship. This was particularly common where engagement had been seen (rightly or wrongly) as being driven by a need in Government to ‘tick the engagement box’ rather than by a real desire to interact and discuss. Whilst this is an important issue, our sense is that such behaviour is not widespread, and that the situation has improved in recent years.

Some academics had experiences of policy makers not really wanting their input largely, they felt, because they already knew what they were going to do irrespective of the academic findings. They felt that under these circumstances working with Government was a dispiriting experience, with few benefits accruing to either side.

It is important to ensure Government/academic engagement occurs at the highest levels: for example if Ministers, Permanent Secretaries and other senior officials are seen to make time to attend academic lectures and actively seek out and take on board academic advice, then officials further down will be similarly encouraged. In this respect academics spoke highly of the engagement they have with Select Committees and Parliament, which they felt in some cases were more open to, and genuinely interested in, their input than some parts of Government. The Science Reviews of Government departments have helped to identify how highly academic advice is regarded by those departments so far reviewed, and we commend their findings.

We have also detected that, in some areas, translational work – especially that conducted for Government – is seen by some academics as being less valuable than ‘pure’ academically-driven research. It will take time for such attitudes to change, but academia needs to address prejudices against working with Government in the same way it has done with its relationship with business.

Recommendations for Government and Academia to enhance the engagement

CST's recommendations on improving the engagement between academics and policy makers are a direct response to the inhibitors identified through our consultation.

Our recommendations are divided into three areas:

- *Build relationships and communication between academics and policy makers;*
- *Build capacity to ensure a more productive engagement; and*
- *Rate, value and reward the engagement.*

Whilst a huge range of potential proposals were debated in great depth, CST has focused on one core recommendation each for both Government and academia in each category³.

We believe that each core recommendation addresses the core inhibition to engagement identified by CST. The primary recommendations were also selected to be sustainable – a crucial criterion if long-term change in the engagement is to occur. We also include additional recommendations in each section that Government and academia should consider.

³ Note that for the first category, Building relationship and communication, the proposal for both Government and academia is the same ie to increase the number of internships/secondments

Area 1: Build relationships and communication

Core recommendation to both Government and academia: Government departments, Universities, Research Councils and Learned Societies need to work collectively to identify and create a set of exchange mechanisms, including world-class internship and secondment schemes, and promulgate them widely

Rationale

The importance of building formal and informal networks that promote mutual understanding and awareness between Government and academia is crucial. Regular communication is required to build trust and networks will atrophy quickly if they are not maintained⁴.

Informal interaction is very important and CST strongly encourages ministers and officials at all levels of seniority to make time to build academic contacts in their policy areas. However, formally dedicated time spent by academics in Government or policy-makers in academia through secondments and internships is a powerful way to catalyst network formation. A number of schemes operate in this way, with varying degrees of duration and seniority: from day placements of researchers to DCSAs appointed typically for a five-year period⁵.

There is a recognition that the US Government makes greater use of its Universities and National Academies than the UK does of its Universities, Learned Societies or Research Councils in terms of providing internees and secondees. Lessons need to be learned – also from emerging economies such as China – and Annex B sets out mechanisms the US has in place.

While there are difficult challenges to effective implementation and expansion of such schemes, the case study below illustrates how beneficial such programmes can be to both academics and policy makers.

Case Study: the ESRC Knowledge Transfer Placement Fellowship

These fellowships encourage social science researchers to spend three months in partner organisations – Government Departments, Devolved Administration and other public sector organisations. They also allow public sector workers to spend time in academia. Their aims are to promote knowledge transfer, the use of evidence-based policy and create networks and career development opportunities for the participants. Funding is shared between ESRC and the public sector partner organisation.

The breadth of the placements is impressive – ranging from a project at the Office for Criminal Justice Reform evaluating data from the British Crime Surveys, to one with the Prime Minister's Strategy Unit producing a guide for the private and voluntary sectors on commissioning public sector research, to writing a report for DIUS on the UK innovation system.

4 The need for the creation of flexible, collaborative networks to engage in regular dialogue about issues of importance is another of the key findings of the European Commission's report.

5 Other examples include the Royal Society pairing scheme; the Parliamentary Office of Science and Technology which has a large number of PhD students working for them on three month 'fellowships'; and the Academy of Medical Sciences policy internship programme to expose PhD students to science policy during three month secondments to the Academy.

Reverse secondments are also encouraged – for example a year long placement for a DIUS social researcher into the Centre for Research in Ethnic Minority Entrepreneurship at De Montfort University which resulted in a substantial empirically-based policy-focused research report published by DIUS.

All the participants speak highly about the scheme, particularly in learning about how the public sector operates, helping to shape future academic work so that it is more relevant to public policy issues, the opportunity to build networks, as well as widening the horizons of Government departments in terms of what the university sector can offer.

Challenges to implementation

CST believes that both Government and academia should support the focused expansion of prestigious internship and secondment schemes, taking particular account of the following points:

- Schemes need to be a genuine partnership between all the major players, and must have prestige and provide rewards. Neither Government nor academia can **unilaterally** set up the internship and secondment schemes and so Government should work alongside universities, Research Councils and Learned Societies to create cohesive schemes that are seen as genuinely prestigious. CST is also aware that many such schemes already exist⁶, but may not be as well-known as they should be. A single dedicated source is needed which provides information on all of the different schemes available to attract attention and ease management of the process.
- Positions for academics within Government should be created for all levels of **seniority**. Positions for junior staff will allow the formation of a cadre of academics who are used to a culture of interacting with Government that the UK will benefit from in the future. Positions for more senior academics will benefit the UK in the short term
- Secondments of officials into academia is a particular challenge and positions should be carefully selected to provide a **broad view** of the operations of the university that will be valuable for the official as well as for the institution. We understand there are secondments at Heads of Departmental Head or pro-Vice-Chancellor levels which are highly valued due to the degree of understanding this gives the official into the working of, and challenges faced by, the university
- We understand that it is currently very difficult for civil servants to have secondments to academia due to the **bureaucracy** involved and the risk of their being ‘out of sight, out of mind’ in career terms. Internship/secondment schemes for both academics and policy makers must be seen as **career-enhancing** – a valued step in building a career. This issue should be tackled as a matter of urgency, and the schemes developed sufficiently flexible to avoid such difficulties. For example, part-time or day release internships over several months may be more practical than full-time internships for a shorter space of time⁷.

6 See reference 5, and also for example those run by the ESRC and by some Government departments (e.g. the week in business for civil servants in what was DTI)

7 Some departments e.g. the Office of National Statistics aim to ensure officials have time to develop these relationships. There needs to be mechanisms for Government more generally to share such experiences

- On return to the civil service Government must ensure that it **recognises and leverages** the skills officials will have gained
- Universities need to ensure that they **value** academics going on such schemes, and are flexible enough to allow them to take the time to do so

Additional recommendations

1. Government should look to support a range of mechanisms that drive formal or informal contacts and networks established between academics and policy-makers.

A wide range of other mechanisms to promote such interaction were suggested to us during our consultation. Lectures and conferences offered by organisations such as the Cambridge University Government Policy Programme are specifically aimed at informing senior civil servants about key scientific issues. These events both inform policy-makers of what academics view as the critical issues, and establish valuable relationships. Officials should ensure that they are committed to attending such events, and academics be encouraged to continue providing them

2. More general training courses should be provided for both academics and policy makers in how government and academia respectively function, and how best to help them communicate

For officials with a non-science background such training would be particularly useful, providing a basis of understanding of terminology, methods and challenges. It is crucial that officials are scientifically literate in terms of research processes and scientific methods to appropriately engage with and challenge academics⁸.

⁸ For academics a brief period of training as part of either a Masters or PhD programme would give some context to how their work could be of value to Government. Alongside the Learned Societies and the Research Councils, the National School for Government, and through it the Sunningdale Institute, offers services to bring together academia and policy-makers.

Area 2: Build capacity to ensure a more productive engagement

Core recommendation to Government: Mechanisms need to be put in place to further empower Departmental Chief Scientific Advisers (DCSAs), Scientific Advisory Councils (SA Councils) and Heads of Analysis to act as the core conduits for capacity-building between academia and Government, in particular by ensuring:

- (i) sufficient access to Ministers**
- (ii) buy-in from Ministers to setting up SA Councils**
- (iii) wider advertising within the academic community of these bodies**

Rationale

To have effective knowledge transfer there must be sufficient capacity on both sides – from academia to engage and provide advice, and from Government to commission, absorb, implement and challenge the advice (thereby acting as an *intelligent customer*). While CST has not identified any lack of willingness from academics to work with Government, there is a perceived weakness in the ability of Government to commission, absorb and challenge work from academia. This lack of understanding reinforces the inhibitors of engagement described earlier in the report.

CST firmly believes that the Government Chief Scientific Adviser, Departmental Chief Scientific Advisers (DCSAs), supported by Scientific Advisory Councils (SA Councils), and the Heads of Analysis group have critical roles to play in building this capacity within Government. Further strengthening and empowering these structures is therefore essential. Independent DCSAs and Heads of Analysis, often recruited from academia, provide a focus for intelligent procurement and policy advice for ministers, commissioning, challenging and championing scientific advice within departments. They also act as central point for academics to contact and promote relevant findings to the department.

SA Councils are independent bodies that support senior departmental policy-makers by providing a broad range of expertise within one body. They are recognised as wholly independent, which inspires public confidence, accountability and increases the efficiency of the use of academic input to a department as they can potentially respond rapidly to urgent enquiries as well as identifying issues themselves that need investigation.

Best practice for officials engaging with academics has already been set out e.g. in *Professional policy-making for the 21st century* so CST has doubts whether a separate code of practice is needed; however best practice continually needs to be developed by both officials and Ministers, and DCSAs and Heads of Analysis have key roles to play in both its development and promulgation.

The case study below provides more information on the CSA and SA Council roles, and provides some information on the benefits that have been perceived from the model in Defra.

Defra Science Advisory Council (SA Council)

Defra's SA Council was set up in 2004 following recommendations in the 'Foot and Mouth Diseases: Lessons to be Learned' report, amongst others. The Council's core role is to provide Defra with expert independent advice on science policy and strategy. The SA Council is a non-departmental public body (NDPB) that comprises fifteen independent members, appointed via open competition, including a non-scientist lay member and an independent secretary. The Council also brings in other experts to provide further independent advice where necessary.

The SA Council produces advice and supports and challenges the Department's Chief Science Adviser (CSA) on many of the issues identified as critical in this CST report:

- Broad strategic issues, priorities and policies from a science perspective
- Pressing and emerging science issues facing Defra
- The strategic direction of, and priorities for, Defra science
- The balance, relevance and adequacy of science activities supporting Departmental objectives
- The design and effectiveness of procedures relating to science advice
- Horizon-scanning and long-range planning exercises to help identify emerging challenges and opportunities for Defra and develop options for responding
- Independent review of scientific activities relating to Defra's preparation for and response to emergencies in Defra's areas of responsibility
- Advising the CSA on specialist expertise available in the science community that Defra could benefit from

Since 2004, the SA Council has investigated a range of themes including: quality assurance and peer review of science in Defra; avian influenza contingency plans; the development of Defra's evidence and innovation strategy; and social science in Defra. Between September 2004 and December 2007 the Council provided over 120 recommendations to the DCSA. To date, around three-quarters of recommendations responded to by Defra have been positively received, demonstrating the considerable impact the SA Council has had.

Challenges to implementation

While CST supports the further empowerment of CSA and SA Councils along the Defra model, different Government departments will need to adapt the model to fit their own particular needs. Key factors are:

- DCSAs need **sufficient access** to Ministers and senior officials. If the DCSA is below Director General level then it may be difficult for them to have the necessary visibility and influence in the department for Government to get the full value out of the role. Having access to Ministers and Departmental Boards provides the DCSA with the opportunity to win the trust and respect of senior figures in the department, which is viewed as being as or more important than having a budget

- SA Councils need to be set up very carefully, with the full **buy-in of the department**. In this process, policy groups should be involved to ensure that the policy needs of the department are addressed. The SA Council should keep under review the balance of expertise of its membership to reflect the changing needs of the department
- DCSAs should work closely with other departmental senior analysts (e.g. the Chief Economist and Chief Statistician) to **promote joined-up evidence based policy**. The different elements should not exist in silos or be seen as being in competition with each other
- Government should raise awareness of both CSA and SA Councils more broadly as many of the academics CST met were unaware of their existence.

Core recommendation to Academia: Universities should seek to improve and professionalise their capabilities and structures for engaging with Government so that they operate more like consultancy organisations, in particular by:

- (i) **building on their experience of working with business, including concepts such as relationship managers**
- (ii) **considering whether new structures within the university itself might be needed**
- (iii) **utilising appropriate funding sources**

Rationale

Government regularly works to very tight time-frames which are largely incompatible with conventional academic working style. This is one reason why Government uses consultancies so extensively, spending £2.8 billion in 2005-2006⁹. Universities¹⁰ should combat this by developing their capacity to work in different ways. By developing structures and working patterns more reminiscent of consultancies (e.g. by working in collaborative teams) academics could compete more effectively for Government work that is currently taken on by the private sector. This would benefit academics through additional income and Government through access to new ideas and reduced costs.

Many universities already have existing structures for co-ordinating and promoting engagement with business¹¹. These bodies have helped revolutionise the relationship academia has with business, and in many cases also promote academic work to government. Such knowledge transfer bodies have often been supported at least in part by Government funding eg through HEIF¹², which specifically promotes such translational activities. One mechanism to encourage greater capacity for knowledge transfer would be to expand the HEIF funding stream with particular emphasis placed on recognising the efforts universities made to engage with Government policy makers.

9 The National Audit Office's 2006 report 'Central government's use of consultants' estimated that £2.8 billion was spent on consultants in 2005-2006, £1.8 billion by central government, £0.4 billion by local government and £0.6 billion by the National Health Service

10 Government should also make greater use of bodies such as the Learned Societies who already possess much of this capability, see Additional Recommendation 1

11 For example Technology Transfer Offices (TTOs) have been established at most research-intensive universities to provide advice and services to the university community to facilitate the protection and commercialisation of IP generated. TTOs exist to both encourage and protect staff and students developing IP and to encourage and manage commercial collaborations, bridging the gap between academic research and commercialisation. Over the last ten years a number of Government initiatives – in particular HEIF – have been developed to incentivise universities to transfer knowledge into business and society

12 The Higher Education Innovation Fund

Similarly, academia should look to use funding to establish Knowledge Transfer Networks in universities and relationship managers to interface between academia and government. While historically the focus of such networks has been the dissemination of academic expertise to business, increasingly universities are seeking to engage with Government, a development CST fully supports.

Challenges to implementation

Universities work extensively with business and there are lessons to be learned from those operations which are directly translatable to working with Government. We believe there are some 'quick wins' to be had:

- Universities need to identify ways in which the experience of working with business can be translated to working with Government; internal structures within universities to focus effort on external customers can facilitate the relationships and the degree of professionalism offered/expected. Such arrangements would require that the contracts for the work are as professional as those used when working with business.
- Not all universities will wish to engage with Government beyond the level they already do. There must be a clear desire and rationale for doing so within a university, which the academic staff buy into.
- The market for advice into Government is significant and there a real opportunity for academia to expand its role as a consultant to Government. If academia were to offer the level of professionalism in its relationships with Government as it did with business then the opportunity for universities to win business from Government could be both be significant and be achieved with relative ease.
- An additional challenge for universities seeking significant levels of work with Government is that in the time period leading up to and beyond a general election little or no such work will be commissioned.

Additional recommendations

1. Government should make greater use of bodies such as Learned Societies, CST and the Research Councils, all of which have strong academic links, as another source of external capacity, both to provide experts in a given field on short notice, and to conduct more complex projects¹³.

The *Nanotechnology Review* conducted by the Royal Society/Royal Academy of Engineering on behalf of Government, and CST's review of progress 18 months later, are recognised by all sides as high quality pieces of work; the Research Councils and Learned Societies would all welcome closer engagement with Government and mechanisms should be identified to achieve this. In comparison with the US the Learned Societies are a greatly underused resource, especially when dealing with the multifaceted interdisciplinary problems that are now regularly faced.

¹³ The use of 'Appropriate Intermediary bodies between researchers and policy makers' is detailed in section 4.2.1 of the European Commission report on Scientific Evidence for Policy Making

One of the great advantages of engaging such groups is that they are often able to achieve consensus amongst the different academic views where appropriate, or to clearly articulate the differences where this is not possible – a task which policy-makers would struggle to manage in such academically complex topics, and academics might be shy of embarking upon¹⁴.

2. Government and academia need to highlight the importance of the social sciences to Government policy

As recognised in the recent Wilson report from the British Academy, there is a wide-spread belief that social science does not currently punch its weight within Government. CST believes that Government should encourage the academic community to consider ways in which they can work together more effectively to raise the profile of social science within Government, and provide high quality advice to Government.

3. Government should place a greater focus on promoting effective knowledge management within the Civil Service

The lack of corporate memory and poor knowledge management was identified as a key issue by both Government and academia, and there is currently little incentive or pressure for civil servants to ensure effective hand-over when they move posts. This needs to be addressed urgently, and CST recommends Government draws departments' attentions to the mechanisms that some departments such as the Treasury are currently putting in place to improve knowledge management.

4. Government should play close attention to the outcomes of the Departmental Science Reviews being carried out by the Government Office for Science

They provide strong basis for understanding how well embedded into a department science is – their output should be closely monitored and recommendations acted upon.

5. The Heads of Analysis Group (HoAG) should be strengthened

HoAG has no executive powers but informally champions and oversees the professional supply of evidence and analytical advice to the Government. CST believe that Government should seek to support and strengthen this body as another means of promoting academic engagement with policy makers.

6. Where universities are setting up structures to liaise directly with policy makers – both 'schools of Government' and consultancy arms – Government itself should equally look to develop innovative mechanisms for engaging with them where appropriate to utilise the capacity available and encourage further growth of this resource

Government itself can be more innovative in encouraging engagement with universities. Both DfT and Defra have set up mechanisms jointly-funded with the ESRC to engage with academics. They operate as quick response bidding structures for project work, with universities expected to bid in consortia. The models are proving highly successful and should be advertised around Government as an alternate means of engaging academics.

¹⁴ There are well know exceptions to this, notably academic consensus on the science of climate change

Area 3: Rate, value and reward the engagement

Core recommendation to Government: Identify criteria to assess quality within the major categories of academic engagement with Government; and identify mechanisms to incentivise each category, in particular:

- (i) through the RAE and its successor for publishable outputs
- (ii) by setting up peer review bodies within Government (jointly with academia) that are capable of assessing both the academic quality of the paper, and its quality and impact in terms of policy-making
- (iii) by investigating whether a more flexible approach could be taken within the RAE/REF so that policy papers could be submitted and assessed both in terms of academic quality and policy value to Government, with appropriate safeguards
- (iv) by developing a 'gold standard' acknowledgement from Government for valued engagement, where this involves non-research and non-publishable outcomes, that could be sent to an academic's institution and the relevant Research Council.

Core recommendation to Academia: Recognise and reward engagement with Government through academic career development, in particular:

- (i) by rewarding quality in non-research and non-publishable engagements between academia and Government through career progression in the same ways that traditional academic research excellence is rewarded

Rationale

When considering how to reward academic engagement with policy makers Government must first assess the **quality** of the work, and secondly determine what mechanisms it wishes to **incentivise** the engagement. It is also important to recognise the different forms academic engagement with Government can take. The mechanisms through which quality is assessed and incentives provided need to differ for different forms of engagement.

Academics are, in general, very eager to engage with Government. However, if the engagement cannot contribute to building an academic career then it risks being crowded out by other activities. At more senior levels (at Professor and above) academics can exercise more control and engaging with Government can bring additional rewards. At more junior levels however it takes time away from teaching, publishing and other 'core' academic promotion criteria. Recognising engagement with Government as part of an academic's career development will require a change in culture amongst both the academic community and academic institutions: CST urges that efforts to do this are made¹⁵.

CST has identified three separate types of academic engagement with policy makers.

¹⁵ CST recognises that many universities have already chosen to begin broadening their promotion criteria to recognise engagement with industry, the public sector etc as valid contributions, and would encourage other institutions to follow suit.

(i) Engagement that generates output that can be reviewed by the normal academic process

Where academics are commissioned to commit significant time and resources to a Government project, high quality work generated by the project can often be translated into an academic paper. The engagement is rewarded through two mechanisms: the monetary value of the contract, and the career progression that stems from peer recognition of the work produced.

The most simplistic mechanism is the monetary value of the contract¹⁶. Additionally, if high-quality work has been produced then this can be assessed for quality and rewarded through the academic review system¹⁷.

(ii) Engagement that generates output that cannot be reviewed by the normal academic process

Nevertheless, a number of academics have expressed frustration at instances in which they have carried out detailed work for Government that is not suitable for publication in a journal¹⁸.

CST believes it is important that the value of such work to policy making is recognised, and that it can contribute to building a career. However CST's position does not imply the creation of separate funding streams. To assess the value of the work CST believes peer review bodies should be set up between Government and academia that are capable of assessing both the academic quality of the paper, and its relevance and impact on policy making. The academic quality assessment would ensure that the analysis was robust etc, while policy officials would assess how informative and relevant the work was in relation to the policy it had been commissioned to support. Some such systems have been set up e.g. for the Economic Service in BERR.

Alternatively such papers could be included within the RAE/REF; academics could submit additional 'policy' paper(s) that had been produced while working for Government. 'Policy' papers would be scrutinised through the peer review mechanism described above, with the overall rating of the paper based on both its academic and policy value, with appropriate safeguards.

(iii) Engagement in which the primary value-add is advisory

Academics regularly have high-impact engagement with policy makers through activities that are primarily advisory¹⁹. Such engagement is highly unlikely to lead to publishable work, but CST firmly believes mechanisms must be developed to value and reward this form of engagement.

16 Within this there is already inherent recognition made of both the quality of the work (there is an expectation of high quality, or the academic will not be engaged in such a role again), and of the incentive (the value which Government places on acquiring the academic to work on the project is reflected in the value of the contract). As such Government has, in one sense, already valued and rewarded the engagement.

17 Assessment of academic research is currently made through the Research Assessment Exercise (RAE) and its planned successor the REF. The RAE is primarily a measure of research quality, and CST firmly believes that this focus on the quality of research should not be compromised: it encourages the development of truly world class research which ultimately will be the most beneficial to Government.

18 For example, reviewing and summarising all the existing literature on a given topic may provide very valuable input for policy makers and require an academic to effectively conduct it, yet not result in any original conclusions. However, this does not mean that work for Government should be consigned into some lower-quality category.

19 For example sitting on Departmental Scientific Advisory Councils or through the provision of ad-hoc advice to ministers.

Measuring the quality of this type of engagement is very complex²⁰. One potential solution would be to develop a 'gold standard' acknowledgement from Government for valued engagement that could be sent to an academic's institution and the relevant Research Council. For example, using a letter from a minister or select committee which was recognised as genuinely prestigious by all sides.

A simple metrics-based input approach might be considered e.g. engaged with X Ministers and/or Y Select Committee hearings etc, but would be hard to translate into a performance measure for the academic, as it would not say anything about the **quality** of those engagements.

Challenges to implementation

- **Identifying** what constitutes a 'publishable' or 'non-publishable' piece of work may be difficult. If the system of including one such paper in the RAE/REF were adopted then one option would be to allow academics to decide for themselves how they wished to treat the paper
- **Government needs to work closely with academia** to look in depth at what forms of engagement fall into the category of advisory work; how they are currently assessed for quality, and rewarded; and how the rewards systems might work. Working with universities will be crucial, as not all mechanisms for promotion within universities are entirely within their control.
- Mechanisms for assessing the value of all forms of engagement needs to be **light-touch and easy to maintain**. They must also provide overall consistency, whilst also reflecting the diversity of work that academics do for Government and the often differing needs of different parts of Government. An overall framework is needed, but one which has the flexibility to operate case by case where appropriate – there is potential for the development of a **code of practice**.
- Any attempt to 'measure' the **impact** of a publishable piece of academic work on policy making will inevitably be a matter of judgement. There is also no corpus of information from previous RAE exercises on what constitutes quality in this area. One solution would be for Government and academia to jointly assess the value of work, which could then be fed into the review process. Such a mechanism already exists in some areas of Government, and HEFCE and Government should look at this model in depth. CST would have great concerns about any attempt to move immediately to a fully metrics-based system for this category

²⁰ For example: an academic may speak to ten Ministers or officials but the advice may not be immediately usable, or with one Minister or official where the advice is of immense value.

Additional recommendations

The topic of rating, valuing and rewarding academic work is very broad, and has clear overlaps with the previous topics of encouraging engagement and building capacity²¹. CST has identified additional factors that would help rate, value and reward the engagement:

1. Officials engaging with academia should have the skills they learn valued and rewarded in their career progression in the same way as we are proposing for academics

If government officials were expected to engage with academia as a matter of course, and rewarded for doing so, then the relationship would be greatly enhanced from both sides

2. Guidelines on remuneration should be established – where they do not already exist – for academics sitting on Government bodies or providing advice, and these should be standardised as far as possible

The payment is not to encourage academics to do the work (i.e. it would not be a large sum), but rather to prevent them from not engaging in such work because of financial pressures. The remuneration currently provided appears to vary widely across Government and in some cases fails to even cover expenses

²¹ For example, if the rewards for working with Government were higher, more academics would seek to do so as a priority (encouraging relationship) and their ability to engage would improve (building capacity).

Annex A: Terms of reference for the work

CST will investigate ways in which the interaction between academia and public policy makers in Government could be improved.

In order to achieve this CST will:

- consult with academia and within Government to review the channels through which Government currently obtains advice on policy-making from academia
- identify the tensions, successes and challenges as seen from both sides
- develop case studies as illustrations
- look more broadly at what happens in other countries

CST recognises that it cannot adequately address this issue without considering the interaction with other roles of universities. It will therefore consider these other roles to the extent necessary.

CST will report to Government by September.

Annex B: Interactions between academia and policy making in the US

As part of the evidence base CST has considered the engagement of academia and policy makers in other countries. We have been looking to identify best practice and what could be done to import this into the UK system.

In the United States there is a decentralised effort to incorporate academic input and expertise into public policy-making. The integration of academia into the making of Federal policy is supported via a variety of mechanisms. These include the temporary embedding of academics into government agencies, establishment of university institutes dedicated to addressing policy issues, independent organisations which provide academic expertise via reporting to government, and the direct incorporation of academics into the US civil service. This paper will summarise some examples of these systems and provide some commentary into their respective effectiveness.

Mechanisms within the Administration and Congress

Both the Executive (Administration) and Legislative (Congress) branches of Government are stakeholders in the formulation and execution of Federal policy in the US. The most visible mechanism by which the Administration incorporates academia into policy-making (on non-defence issues) is the Office of Science and Technology Policy (OSTP). OSTP has a broad mandate to advise the President and others within the Executive Office on the effects of science and technology on domestic and international affairs (www.ostp.gov). OSTP also leads an interagency effort to develop and implement sound science and technology policies and budgets and to work with the private sector to ensure Federal investments in science and technology contribute to economic prosperity, environmental quality, and national security. Dr. John Marburger is the current presidential appointee directing OSTP.

The President's Council of Advisors on Science and Technology (PCAST) (www.ostp.gov/PCAST/pcast.htm) was established in 1990 to enable the President to receive advice from the private sector and academic community on technology, scientific research priorities, and math and science education. PCAST currently consists of 23 members plus Dr. Marburger who serves as the Council's Co-Chair. The council members, distinguished individuals appointed by the President, are drawn from industry, education, and research institutions, and other non-governmental organisations. Although not technically civil servants, these advisors are involved in the science policy process affecting the US science base.

The Science and Technology Policy Institute (STPI) – one of three federally funded research and development centers run by the Institute for Defense Analyses – assists the Executive Branch of the US government as it formulates federal S&T policy by providing support to inform policymakers. Chartered by an act of Congress in 1991 as the Critical Technologies Institute, and later renamed the Science and Technology Policy Institute in 1998, STPI provides technical analytical support for the Office of Science and Technology Policy (OSTP) and other government users, under the sponsorship of the National Science Foundation. STPI is staffed by experts from private industry, institutions of higher education, and non-profit organisations.

In Congress, several committees in the House and Senate consistently take on academics to advise members on matters of public policy. For example, the House Science Committee currently has at least at least 6 PhDs in scientific fields in a variety of senior staff positions.

Although the staff do work at the pleasure of the Committee Chair, they represent all of the issues falling into the Committee's portfolio. The staff work with members on the provision of scientific reports from the National Academies and the Congressional Research Service for a variety of policy matters. The Committee staff are highly influential in the Congressional policy-making machine and are regularly responsible for drafting the text of legislation that may become law.

Congress also has access to the Congressional Research Service (CRS) that includes professionals from academia who are responsible for providing evidence for members and/or Committees in the House and Senate. The CRS is a division of the Library of Congress and has been in operation for nearly 100 years. Any member or staff on Capitol Hill can utilise the CRS, and all interactions and reporting are kept confidential (although there are suggestions that their reports should be made public in the future).

The National Academies

The National Academy of Sciences (NAS) acts as an advisory body to government on issues having scientific components. The Royal Society is its closest counterpart in the UK. On average, the NAS publishes over 300 reports a year on a variety of subjects. Most of their work is commissioned via government agencies. However, they do have a Foundation that allows the NAS to publish reports without an official commission.

The reports commissioned by the NAS are managed via a programme office in Washington, but are written by the leading academics in the relevant field. Academics are not only from US institutions, but are selected from abroad on many occasions where they are the expert on a given subject. Although commissioned by a specific or group of US agencies, the reports are independent in nature and may not necessarily reflect the positions of the US government. NAS reports are available to the public and have a range of impacts on policy-making in the US. The most recent example of a NAS report having significant impact on policy-making was *Rising Above the Gathering Storm*, which was directly responsible for the America Competes Act which is now law.

Embedding of Academics into Government

One of the most effective mechanisms for academics to provide input into public policy is via fellowship programmes. The following programmes are the most well known and robust of the fellowships, that have been successful in securing US scientists into crucial positions within the Administration, Congress and government agencies.

AAAS Fellowships

The American Association for the Advancement of Science sponsors a fellowship program in an effort to establish and nurture critical links between federal decision-makers and scientific professionals to support public policy (<http://fellowships.aaas.org>). The goal of the program is to educate scientists about the federal policymaking process and to increase the visibility of scientists and engineers in the public policy realm. Applicants to the program must have a PhD or equivalent education and serve within the following programmatic areas: congressional, diplomacy, defence and global security, health and human services, education, energy, environment, natural resources, and global stewardship. Fellows serve in a variety of agencies, including the U.S. Department of Homeland Security, U.S. Department of Defense, U.S. Food and Drug Administration, Department of Health and Human Services, Environmental Protection Agency, State Department, and the National Science Foundation.

National Science Foundation

The National Science Foundation employs scientists, engineers, and educators on a rotational assignment from academia, industry, or other eligible organisations to further the agency's mission of supporting the entire spectrum of science and research and education. NSF has a budget of about \$5.5 billion and is the main funding source for 20% of all federally supported research in America's universities and colleges. NSF has a workforce of 1700 people, 150 of which are scientists on temporary duty. Employees are either on a career federal appointment, temporary federal appointment, or involved in a rotational program. Rotational programs include the Visiting Scientists, Engineers, and Educators program (www.nsf.gov/about/career_opps/rotators/vsee.jsp) and the Intergovernmental Personnel Act (www.nsf.gov/about/career_opps/rotators/ipa.jsp). Visiting Scientists are paid by the NSF and are appointed for one year. Those appointed under the Intergovernmental Personnel Act (IPA) remain connected to and are paid by their home institutions, but work at NSF on a specific project. IPAs are not federal appointments.

The IPA is a widely used mechanism to facilitate temporary details of staff from academia and state and local governments into federal agencies and vice versa. However, there has been some abuse (or misuse) of the system and the Government Accountability Office (GAO) has studied and urged tightening up of arrangements to ensure IPAs do not exceed the maximum period. NSF and the Department of Homeland Security (DHS) utilise IPAs quite often. For example, DHS used IPAs when it wanted to bring aboard talented and experienced National Laboratory staff for its science and technology (S&T) directorate in the early days. More information can be found at: www.opm.gov/programs/ipa/.

Fellowships and the Science Adviser at the Department of State

There are three programmes to incorporate scientists and their expertise into the State Department. The Science Adviser to the Secretary of State (STAS) provides a hub at State for the administration of the following programmes: The Jefferson Science Fellows Programme (see below), the AAAS Diplomacy Fellows Programme which helps to establish and nurture critical links between federal decision-makers and scientific professionals to support public policy, and the William C. Foster Fellows Visiting Scholars Program which give specialists in the physical sciences and other disciplines an opportunity for active participation in the arms control, non proliferation, and disarmament activities of the Department of State. Over 60 scholars have served since the program began in 1984.

The Jefferson Science Fellows program is run through the US Department of State (www.nationalacademies.org/fellowships/html), but administered by the National Academies. It brings five to ten tenured professors each year (chosen through a competition administered by the National Academy of Sciences) from the American academic community for one-year assignments at the Department that may involve extended stays at U.S embassies, followed by a five-year consultancy after returning to their academic careers. Assignments involve providing up-to-date expertise on S&T impacts on the policy decisions encountered by the Department of State, and fellows are expected to become conversant with the functional operation of the U.S. Department of State. The Jefferson Fellows are funded by charitable contributions from the MacArthur Foundation and Carnegie Corporation.

University Schools of Government

The Harvard School of Government in the US is widely regarded as the premier policy school in the world, with more than forty years of experience and a focus on excellence. Such a school cannot be instantly set up in the UK, but analogous bodies are emerging – the Sunningdale Institute for example. Government should seek to encourage these schools to focus on excellence, and engage with them to help them develop over time into a national resource. CST does not propose that Government actively fund such institutions, but rather that where such a resource is available and can deliver quality work, Government should engage with it.

Conclusion

Most prestigious US universities have some form of public policy department that looks to offer academic expertise into policy-making, either in the Federal, State or local levels. Institutions such as Harvard and Stanford have long traditions of offering their academics the freedom to engage in public policy as this can have reciprocal benefits for the institution. Trends indicate that a much wider array of US institutions are using these partnerships between academia and policy makers to their advantage, as a promotional tool for prospective students and to raise the profile of the institution with potential benefactors.

Annex C: Organisations and Individuals contacted by CST

CST would like to thank all those individuals and organisations who gave their time in support of this project. Inevitably we cannot name every individual we spoke to in the course of the project, but we are extremely grateful for all the input we received.

Academia

Individual/Body	Position
Professor Sir John Bell	President of the Academy of Medical Sciences
Professor John Bennington	University of Warwick
Professor Richard Blundell	Director of the Institute for Fiscal Studies
Sir Leszek Borysiewicz	Chief Executive, Medical Research Council
Professor Patricia Broadfoot	Vice-Chancellor of Gloucestershire University
Professor John Brooks	Vice-Chancellor of Manchester Metropolitan University
Professor Geoffrey Crossick	Warden, Goldsmiths College
Professor Ian Diamond	Chair of Research Councils UK
Professor Malcolm Evans & colleagues	University of Bristol
Professor Luke Georghiou	Director of Manchester Institute of Innovation Research
Norman Glass	Chief Executive of the National Centre for Social Research
Philip Greenish (& colleagues)	Chief Executive, Royal Academy of Engineering
Professor David Halton (& colleagues)	Vice-Chancellor of Glamorgan University
Professor John Hills	Director, Centre for Analysis of Social Exclusion, London School of Economics
Professor Michael Hobday (& colleagues)	SPRU University of Sussex
Professor Sir Gabriel Horne	Emeritus professor of Zoology and Chair, Cambridge University Government Policy Programme
Professor Sir David King	Director of the Smith School of Enterprise and the Environment, Oxford university, and former Government Chief Scientific Adviser and CST co-Chair
Professor Julia King	Vice-Chancellor of Aston University
Lord Krebs	Principal of Jesus College Oxford and former Chair of the Food Standards Agency

Professor Sir John Lawton	Chair of the Royal Commission on Environmental Pollution
Professor Nicholas Mays	London School of Hygiene and Tropical Medicine
Mr Alfred Morris	former Vice-Chancellor of the University of the West England
Professor Chris Phillipson	Professor, University of Keele
Lord Rees (& colleagues)	President of the Royal Society
Professor Ian Shaw (& colleagues)	Chair, Research Committee of Joint Universities Council Social Work Education Committee, University of York
Professor Steve Smith (& colleagues)	Vice-Chancellor of Exeter University
Professor Peter Styles	University of Keele
Professor Nigel Thrift	Vice-Chancellor of Warwick University
Professor Sir Alan Wilson	Chair of the Arts and Humanities Research Council
Vivienne Hurley (& colleagues)	Head of Policy Development, British Academy
RCUK meeting	Input from all Research Council CEOs
UUK meeting	Input from University vice-chancellors and representatives

Government/Other

Individual/Body	Position
Sir Michael Barber	Partner, McKinsey & Company and former head of No10 Delivery Unit
Professor Brian Collins	Chief Scientific Adviser Department for Transport
Professor Sally Davies	Director General of Research and Development, Department of Health and NHS
Karen Dunnell (& colleagues)	National Statistician
Professor Chris Gaskell	Chair of Defra's Scientific Advisory Council
Professor Michael Kelly (& colleagues)	Chief Scientific Adviser, Department for Communities and Local Government
Professor Sir Peter Knight	Chair of Defence Scientific Advisory Council
Dr Patrick Macdonald	Chief Scientific Adviser Health and Safety Executive
Sir Nick Macpherson	Permanent Secretary HM Treasury
Dr Stella Mascarenhas – Keyes	Senior Social Researcher, Higher Education Directorate, DIUS
John Neilson	Director, Research Base DIUS
Sir Keith O'Nions	Former Director General, Science & Innovation DIUS

Professor Vicky Pryce (& colleagues)	Chief Economic Adviser, BERR and Joint Head of the Government Economic Service
Professor Graham Spittle	Chair of the Technology Strategy Board
Bill Stow	Director General Strategy and Evidence Group, Defra
Professor Bob Watson & colleagues	Chief Scientific Adviser Defra
Professor Paul Wiles	Chief Scientific Adviser Home Office
Government Chief Scientific Advisors Committee (CSAC)	Input from CSAC
Government Office for Science	Input from GO-Science
Government Heads of Analysis Group	Input from HoAG
British Embassy, Washington	Input from BE Washington

