

**GUIDELINES ON SCIENTIFIC ANALYSIS IN POLICY MAKING:
A CONSULTATION BY THE GOVERNMENT CHIEF SCIENTIFIC
ADVISER**



This is a consultation by the Government Chief Scientific Adviser which seeks views on the update of the Government Chief Scientific Adviser's Guidelines.

The Guidelines were last revised in July 2000 and need to reflect the developments in policy making best practice in the intervening years (such as improvements to risk management and public engagement). The Guidelines also seek to further highlight the need for analysts and policy makers to be explicit about the level of uncertainty surrounding the evidence they intend to present to policy makers.

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Respond by 12th August 2005

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Foreword by the Government Chief Scientific Adviser

The environment in which Ministers must make decisions is continually changing. In recent years we have seen the level of public interest in evidence based issues increase, and in some cases the level of public confidence in the government's ability to make sound decisions based on that evidence decrease. It is therefore essential that an effective advisory process exists which allows decision-makers access to a high-quality and wide-ranging evidence base enabling them to make informed decisions, to effectively deal with crises and to ensure that all opportunities are explored to their full potential.

The Chief Scientific Adviser's Guidelines support the evidence based policy approach that the Government currently adopts. The Guidelines were last revised in July 2000. I have therefore decided to update them to reflect the developments in policy making best practice in the intervening years (such as improvements to risk management and public engagement). The update also seeks to further highlight the need for analysts and policy makers to be explicit about the level of uncertainty surrounding the evidence they intend to present to policy makers.

This consultation document forms the first draft of the updated Guidelines. I would be grateful for any thoughts you have upon them. There are two specific questions (please see page 7) on which I would be particularly keen to hear your views.

David King

Executive Summary

The Guidelines on Scientific Analysis in Policy Making is a high-level document addressing the way in which Government departments obtain and use analysis and advice in policy-making.

This draft retains the principle-based approach of the current guidelines and puts more emphasis on the use of all forms of evidence. It also emphasises the need for departments:

- to think ahead and identify early the issues on which they need scientific advice and early public engagement
- get a wide range of advice from the best sources, particularly when there is uncertainty
- to publish the evidence and analysis as well as all relevant papers.

This draft is divided into four sections:

- identification of issues needing specialist advice (Horizon Scanning)
- robust evidence and robust advice
- openness and transparency
- implementation and evaluation

The questions asked are listed at page 7 of this consultation document.

How to respond

The closing date for this consultation, by which all responses must be submitted, is 12 August 2005.

When responding please state whether you are responding as an individual (and in what capacity - e.g. policy maker, consultant, professional etc) or representing the views of an organisation. If responding on behalf of an organisation, please make it clear whom the organisation represents and, where applicable, how the views of members were assembled.

Responses should be submitted to:

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Additional copies :

You may make copies of this document without seeking permission. An electronic version of this consultation document can be found at <http://www.ost.gov.uk/policy/sapm/index.htm>. This document is also available on request in Braille or on audio cassette.

Confidentiality

Your response may be made public by the Department of Trade and Industry (DTI). If you do not want all or part of your response or name made public, please state this clearly in the response. Any confidentiality disclaimer that may be generated by your organisation's IT system or included as a general statement in your fax cover sheet will be taken to apply only to information in your response for which confidentiality has been specifically requested.

Access to information held by or on behalf of DTI is governed by the Freedom of Information Act 2000. Any requests for information received by DTI in relation to this Consultation will be administered accordingly.

We will handle appropriately any personal data you provide in accordance with the Data Protection Act 1998.

Help with Queries

Questions about the policy issues raised in the document can be addressed to:

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If you have comments or complaints about the way this consultation has been conducted, these should be sent to:

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A copy of the Code of Practice on Consultation is at Annex B.

Summary of questions

In this consultation document the Government invites responses to the following questions:

Consultation Question 1

Peer review and publication can be important factors in the robustness of the evidence used by government departments in policy making decisions, so:

- What should the CSA guidelines say about this? Should we say that best practice is for each department being responsible for ensuring all research/evidence is peer reviewed unless there are very exceptional circumstances? What might those circumstances be?
- How should we deal with 'breaking news' where the new evidence might be radically different?
- How should policy makers mitigate the impact of radical evidential change on existing bodies of evidence?
- Should we suggest they attempt a fast track peer review in parallel and share with key experts who can seek to replicate?

Consultation Question 2

Departmental use of the guidelines will be difficult to measure. The guidelines are principle based and in most cases will be woven into departmental guidance on better policy making. It is also important to recognise that departments are subject to a considerable amount of evaluation already, so:

- How should we evaluate? Do we simply say here that OST will work with senior policy makers in each department to ensure that the principles of the guidelines are fully embedded in departmental policy procedures?
- Do we say this will be followed up in greater detail under Science and Innovation Strategy Assessments?
- Should we suggest we will sample significant policy documents/publications to see what they tell us?

Draft update of Guidelines 2000

Introduction by the Government Chief Scientific Adviser

The context

The environment in which Ministers must make decisions is continually changing. In recent years we have seen the level of public interest in evidence based issues increase, and in some cases the level of public confidence in the government's ability to make sound decisions based on that evidence has decreased.

It is therefore essential that an effective advisory process exists which allows decision-makers access to a high-quality and wide-ranging evidence base. This will enable them to make informed decisions, to deal effectively with crises and to ensure that all opportunities are explored to their full potential. In short, we must ensure that:

- key decision makers can be confident that evidence is robust and stands up to challenges of credibility, reliability and objectivity
- key decision makers can be confident that the advice derived from the analysis of the evidence also stands up to these challenges
- the public are aware, and are in turn confident, that such steps are being taken

The principles laid out within these guidelines are consistent with the current better policy making guidelines to which policy makers adhere. They aim to further highlight the importance of the role of evidence in policy making, and to increase the awareness of policy makers on how best to seek good quality evidence from the most credible sources at the most appropriate time. They also aim to support the Professional Skills in Government (PSG) agenda by facilitating the understanding of the analytical environment for non-specialists involved in policy delivery.

The guidelines

The guidelines address how evidence should be sought and applied to enhance the ability of government decision makers to make better informed decisions. The key messages are that departments, and the individual policy makers within them, should:

- think ahead and identify early the issues on which they need scientific advice and early public engagement
- get a wide range of advice from the best sources, particularly when there is uncertainty
- publish the evidence and analysis and all relevant papers

Which areas of evidence do the guidelines cover?

The Guidelines cover all specialist disciplines from whom policy makers may need to seek advice when formulating long-term policy objectives or when reacting to another piece of established or emerging evidence.

These include natural and physical sciences, social sciences, economics and statistics and the arts and humanities¹. The balance of disciplines required will obviously depend on the issue in question, but the potential for advice to be strengthened by harnessing evidence from all disciplines should not be discounted, particularly in areas of public concern. This is covered in more depth later.

¹ Further disciplines covered include medicine, dentistry and all allied subjects; engineering and technology; agriculture, fisheries, forestry and veterinary science; biological, environmental, mathematical and physical sciences; psychology, geography, economics and social studies; and humanities

Identification of issues needing specialist advice (Horizon Scanning)

Early identification

Individual departments should ensure that adequate Horizon Scanning procedures are in place, sourcing data across all evidential areas, to provide early indications of trends, issues, or other emerging phenomena that may create significant impacts (either on aspirations or public concerns, or both) that departments need to take account of. Departments should ensure that their Horizon Scanning evidence is appropriately considered and where necessary, acted upon. Departments should be able to draw on the information included in their Science and Innovation Strategies.

Cross-departmental issues

Departments should also ensure they have the mechanisms in place for early identification of issues which affect more than one department or agency or have an international dimension. Adequate procedures should also be in place for early provision and exchange of information.

Robust evidence and robust advice

Once issues have been identified on which scientific advice is needed, departments should ensure their procedures for obtaining advice are consistent with the steps outlined below. The various stages in the process are not concurrent, and may have to be applied iteratively.

Obtaining specialist advice

Departments should draw on a sufficiently wide range of the best expert sources, both within and outside government, ensuring that existing evidence is drawn upon. There is an extensive list of external sources that departments can engage. These include eminent individuals, learned societies, advisory committees, consultants, professional bodies, public sector research establishments (including the Research Councils), lay members of advisory groups, consumer groups and other stakeholder bodies. Where appropriate, consideration should also be given to inviting experts from outside the UK, for example those from European or international advisory mechanisms, particularly in cases where the other countries have experience of, or are likely to be affected by, the issue under consideration.

Which experts?

Departments should ensure that their selection of advisors matches the nature of the issue and the breadth of judgment required and is sufficiently balanced to reflect the diversity of opinion amongst experts. When deciding which external sources to seek advice from, departments should encourage

those responsible for individual issues to cast their net wider than their traditional contacts in order to capture the full diversity of specialist schools of thought and opinion. The potential networks of organisations such as learned societies should not be underestimated. Many professional bodies have access to a wide range of specialists whose experience could usefully be brought to bear on relevant issues.

Departments should ask prospective experts to follow the seven principles of public life as set out by the Committee on Standards in Public Life, which include the obligation to declare any private interests relating to their public duties. Departments should judge whether these interests could undermine the credibility or independence of the advice.

Where departments conclude that the potential conflicts of interest are not likely to undermine the credibility or independence of the advice, the relevant declarations of interest should, as a minimum, be made available to anyone who might rely on that advice. Departments will also need to consider whether it is appropriate to make the declarations more widely available.

When?

While advice from external and international sources should be sought regularly, departments should absolutely ensure that such advice is sought when:

- the issue raises questions that exceed the expertise of in-house staff
- responsibility for a particular issue cuts across government departments (e.g. sustainable development)
- uncertainty and a range of expert opinion exist
- there are potentially significant implications for sensitive areas of public policy
- independent analyses could potentially strengthen public confidence in scientific advice from government

Where the issue falls within European Community competence, or is likely to affect intra-community trade, particular attention should be paid to encouraging an evidence-based approach for Community decision-making. This may involve contributing to Community level scientific committees, briefing the Commission on developing expert opinion, and exchange visits by scientific experts from other Member States.

Asking the right questions and involving the right people

Departments should consider how best to frame the particular questions which the experts will be asked to address. Making the question too narrow may prejudice the result. Where issues may be sensitive, departments must ensure that questions are framed to cover the concerns of all relevant stakeholder groups, including consumers and the general public. On these occasions, public dialogue should begin as early as possible. Ideally, the public should be involved in framing the questions that experts and policy makers need to address in order to make Ministers aware of the most important issues before taking a decision. The Council for Science and Technology's recent report on public [dialogue](#)² listed a helpful set of criteria for consideration in selecting priorities for public dialogue. Although specifically aimed at science and technology, the criteria are relevant for all policy areas:

Proposed criteria for consideration in selecting priorities for public dialogue in science and technology.

Core criteria

- The envisaged development in science or technology is feasible OR there is a significant societal issue that could be addressed using potentially controversial existing technology.
- Potentially controversial ethical issues arise around the conduct of the scientific research, the use of the technology and/or the wider impacts on society. For example: the benefits and risks to different parties (e.g. individuals, society, government, industry) are inequitable; the benefits to individuals are unclear; individuals may have limited or no choice over their use of the technology; risks fall to particularly vulnerable groups.
- The timetable for the development of policy allows for a dialogue process to inform developments.

Additional criteria

- There is significant uncertainty over the risks to human health or the environment.
- Interested parties from science, industry and civil society hold polarised, and apparently fixed, views in the area.
- New regulatory or governance procedures may be needed.
- There are questions over the desirability of the new technology.

The way in which public dialogue will affect policy and decision-making will be specific to each department involved in the dialogue process and each issue under consideration. It is therefore essential that departments involved in dialogue look at their own consultative arrangements and working practices to ensure public engagement is effective. For example,

² 'Policy through dialogue: informing policies based on science and technology' by the Council for Science and Technology can be found at <http://www2.cst.gov.uk/cst/reports/#8>

links into departmental horizon scanning processes are essential to ensure early identification of and preparation for issues that may be priorities for public [dialogue](#)³.

Risk

When assessing the levels of risk or establishing risk management strategies in relation to a specific policy, the use of evidence is essential. Analysts and policy makers must ensure that they include evidence of the perception of risk as well as evidence of the actual risk as part of any decision making process. Early public engagement is vital to ensure this happens.

Evidence in public policy making contains varying levels of uncertainty that must be assessed, communicated and managed. Departments should not require experts to come to firm conclusions that cannot be justified by the evidence available. Where the science or evidence are uncertain, departments should ensure the uncertainty is explicitly identified and is communicated directly in plain language to decision makers. They should also be made aware of the degree to which they are critical to the analysis, and what new and emerging information might cause them to revisit their advice. There will inevitably be occasions where advice is required within a few days, or even within hours. Decision makers should therefore also be made aware of the period of notice which policy makers and specialists have had to prepare advice, and that appropriate guidance and confidence caveats are given where quality of evidence, analysis and advice is deemed to have been time limited.

When asking experts to identify policy options or to comment on policy options prepared by others, departments should respect the line between the responsibility of experts to provide advice, and the responsibility of departments for any subsequent policy decisions based on that advice.

Handling the advice

The effective and efficient handling of advice is essential, particularly in a crisis. Each responsible department should have clear guidelines on how scientific advice is provided in a crisis. These should include clear designation of responsibility, the processes to be employed and the sources of advice.

In public presentation, departments should wherever possible consider giving experts (internal or external) a leading role in explaining their advice on a particular issue, with Ministers or policy officials describing how the government's policies have been framed in the light of advice received. Early communication with key interest groups may be considered. Consideration should also be given to providing early warning of significant policy announcements to other government departments and international

³ Public engagement in SET guidelines is at annex b of Government response to nanotechnology report. This can be found at http://www.ost.gov.uk/policy/issues/nanotech_final.pdf

organizations, where there are likely to be implications for other countries. Where possible, experts from such countries or organizations should be involved in the process of [consultation and advice](#)⁴.

Openness and transparency

In line with the Freedom of Information Act, there should be a presumption at every stage towards openness and transparency in the publication of expert advice⁵. Departments should also ensure their procedures for obtaining advice are open and transparent. It is good practice to publish the underpinning evidence for a new policy decision, particularly as part of an accompanying press release. When publishing the evidence, the analysis and judgment that went into it, and any important omissions in the data, should be clearly documented and identified as such. This should be done in a way that is meaningful to the non-expert.

Timing of publication

Departments should ensure that data relating to an issue, particularly in the case of the natural and physical sciences, is made available as early as possible to the scientific community, and more widely to enable a wide range of research groups to provide a check on the advice going to government. This will be particularly important, for example, where the advice will rely on research that has not been peer reviewed, or which has not been previously published.

Implementation and evaluation

To be completed after consultation.

⁴ Please see <http://www.policyhub.gov.uk>

⁵ This is covered in Section 35/6 of the Act. Full guidance on the Act can be found at: <http://www.dca.gov.uk/foi/guidance/index.htm>

ANNEX A - Glossary of key terms

CRAG	Coordination of Research and Analysis Group
CSA	Chief Scientific Adviser
FOI	Freedom of Information
PSG	Professional Skills in Government
OST	Office of Science and Technology

ANNEX B - The consultation code of practice criteria

1. Consult widely throughout the process, allowing a minimum of 12 weeks for written consultation at least once during the development of the policy.
2. Be clear about what your proposals are, who may be affected, what questions are being asked and the timescale for responses.
3. Ensure that your consultation is clear, concise and widely accessible.
4. Give feedback regarding the responses received and how the consultation process influenced the policy.
5. Monitor your department's effectiveness at consultation, including through the use of a designated consultation co-ordinator.
6. Ensure your consultation follows better regulation best practice, including carrying out a Regulatory Impact Assessment if appropriate.

The complete code is available on the Cabinet Office's web site, address:

www.cabinet-office.gov.uk/servicefirst/index/consultation.htm