Guidelines on Scientific Analysis in Policy Making

Institute of Physics response to a consultation by the Government Chief Scientific Adviser

A full list of the Institute’s submissions to consultations and inquiries can be viewed at www.iop.org

8 February 2010
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Dr Rhona McDonald
Government Office for Science
1 Victoria Street
London
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Dear Dr McDonald

Guidelines on Scientific Analysis in Policy Making

The Institute of Physics is a scientific charity devoted to increasing the practice, understanding and application of physics. It has a worldwide membership of over 36,000 and is a leading communicator of physics-related science to all audiences, from specialists through to government and the general public. Its publishing company, IOP Publishing, is a world leader in scientific publishing and the electronic dissemination of physics.

The Institute welcomes the opportunity to respond to the Government Chief Scientific Adviser’s consultation, ‘Guidelines on Scientific Analysis in Policy Making’.

The attached annex details our response to the questions listed in consultation document. The response was prepared with input from the Institute’s Science Board, which formally reports to Council.

If you need any further information on the points raised, please do not hesitate to contact me.

Yours sincerely

Professor Peter Main
Director, Education and Science
Guidelines on Scientific Analysis in Policy Making

Are the Guidelines still necessary or relevant to the current context of science and engineering advice?

Yes, the Guidelines still have a very important role to play in ensuring that the government receives the most accurate, up-to-date and impartial advice and information on a wide-range of issues covering many scientific disciplines. Solutions for much debated and controversial issues such as energy security, climate change and stem cells are dependent upon advances in science and innovation, which in turn can help influence government policy.

In revising these Guidelines, are there additional issues that could be usefully covered?

The additional issue is the adoption of the 'Principles on scientific advice to Government', which we hope will foster a stronger working relationship between the government and its network of scientific advisers where peer-reviewed expert advice can effectively influence policy-making processes.

Are there other methods for identifying issues that require specialist advice that could usefully be highlighted in this section?

The Institute is pleased to note that the Guidelines encourage government departments to engage with a wide variety of scientific learned societies and professional bodies when seeking specialist advice. This is most welcome (but rarely happens) as the learned societies, such as the Institute, have access to a significant number of members who have a wealth of experience on a variety of scientific issues. Their input will undoubtedly supplement advice received from other, more traditional sources. An obvious benefit in using ‘independent’ scientific learned societies to offer opinions on important issues is that the general public may be more inclined to believe them than the government or privately funded think tanks.

How might individual advisory structures determine whether a lay member/consumer representative/ethicist would add value to its working?

No comment.

How might government better draw upon established sources of expert advice (Science Advisory Councils and Scientific Advisory Committees, for example)?

By appointing scientific advisers that are genuinely independent and authoritative. Such advisers will often provide uncomfortable advice (which nonetheless must be well founded, relevant advice within the remit and scope of their role), rather than those who will simply ‘toe the line’.
How should policy-makers manage a situation where public opinion ran contrary to expert evidence-based advice?

By openly publishing all the evidence they have on an issue and maintaining a firm stance so long as it is based on robust, peer-reviewed, evidence-based policy.

The role of scientific advisers is to advise on science-based issues whereas political decisions may require consideration of a wider range of issues and concerns. It is important for the reasons behind political decisions to be transparent.

What, if any additional items on public dialogue should be included in the guidelines?

An issue with regards to public dialogue is what level of engagement can the government expect from the general public and how many members of the public as a minimum are needed to satisfy consultation criteria?

Academics and other external sources of research-based evidence can provide input at different times in the process of policy development, including policy formation and evaluation. How can the Government identify at what stages input would be most effective?

It is wholly dependent on the issue. In times of a crisis, all relevant information needs to be gathered without delay. One way of ensuring this would be to appoint scientific advisers who are strongly linked to networks of expert scientists. No adviser, no matter how well educated/versed in his/her specialised area of science, will be able to cover an entire field.

For issues of a more long-term nature, a standing committee could be set up, but the judgement of when to consult more widely must be central to the role of the chief scientific adviser.

When in the policy making process should the Government publish the evidence base for a given policy decision?

At the same time as announcing a policy. However, there may be instances where an advisory committee may not want to publish its advice, and then await the minister’s decision, with published reasons for accepting/rejecting that advice.

On what occasions, if any, might it be appropriate for the Government or advisers to withhold advice provided/the evidence base for a policy?

Perhaps when following exemptions under the Freedom of Information Act.
Should further distinction, if there is one to make, be made between advice in a crisis and advice delivery where the timescales are longer?

The principles should be the same no matter what the timescale is. It is clear that deciding where to put nuclear waste does not need to be dealt with on a timescale less than a year, while how to deal with swine flu requires action in weeks. However, in scientific terms, the method should be equivalent.

How might departments identify when peer-review of the evidence-base is warranted?

As far as the Institute is concerned, unless the issue at hand relates to an urgent crisis, the principle should be that all information should be subject to peer-review. Peer-review engenders trust and provides a more secure basis for more contentious decision making.

What kind of quality assurance is needed in different circumstances and at different stages of the policy-making process?

The most obvious, respected, quality assurance tool available is peer review. In addition, one could envisage a code of practice, which would include the need for an evidence base, publishing criteria, etc. Furthermore, there could be a role here for the House of Commons Science and Technology Select Committee, and/or an independent committee of scientists.

What other quality assurance processes might usefully be highlighted in the updated Guidelines?

No comment.

How should policy makers deal with a situation where experts disagree on the interpretation of a body of evidence?

On the most important scientific issues (e.g. climate change, energy security, pandemics), there will be a vocal minority of scientists who dissent from the majority opinion, with a variety of arguments, some reasonable, others less so. This is sometimes translated into meaning that there is no unanimity in the scientific community, which is then used to justify delaying/tackling important issues. Whilst in no way wishing to suppress minority views, it is important that scientific advice provided to the government is balanced and the reasons why such views are only held by the minority be fully explained.

How should policy makers respond to changes in the balance of evidence?

No comment.
How might public opinion be taken into account in a context of rapid evidential change?

Public opinion is an important input to decision making which requires government to balance the benefits and costs to society of different technical outcomes. There are well-established techniques for engaging the public in such instances, from stakeholder panels to full public consultation (but rapid change may preclude consultation, but not the provision of information). However, we believe that the scientific and technical evidence itself should be based on the best expert advice, and independent of public opinion.

How do we ensure the ability or competence of policy advisers and decision makers to interpret advice and reach sound decisions, particularly when given conflicting advice?

Sound decisions are more likely to be made if the information supporting a certain piece of advice is evidence-based and peer-reviewed. In the face of conflicting advice, making a decision will not be easy, but if a decision must be made, it is essential that decision makers have access to a pool of respected and knowledgeable scientific advisers.
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