

# THE GOVERNMENT'S RESPONSE TO THE QUINQUENNIAL REVIEW OF THE COUNCIL FOR SCIENCE AND TECHNOLOGY

## 1. CST's quinquennial review

1.1 CST's quinquennial review was carried out by an independent reviewer at the end of 2002. The main conclusions of the review were that:

- Government continues to need independent external advice on policy for science, engineering and technology;
- in principle, such advice could be more efficiently and effectively obtained from a standing body rather than ad hoc groups; and
- whilst CST did important and influential work it had not been as useful to Government as it might have been given the quality of its members and their willingness to serve:
  - *Government did not make sufficiently clear what it wanted from CST;*
  - *CST did not have the crosscutting links to Government that it needed in order to carry out effectively the function for which it was set up. It had no means of engaging with Ministers and officials across Departments to develop its work programme, nor to develop its advice. It had no reliable means of ensuring that its advice got a good hearing from those who could decide whether or not to follow it up, and if so how;*
  - *CST did not work as well as it should internally. Members did not enough sense of its continuous existence outside meetings and found it difficult to engage at meetings;*
  - *CST needed more secretariat support and financial resources in order to deliver to its full capacity as well as it might.*

1.2 A list of the recommendations contained in the final report of the review is at Annex A. The full report can be downloaded from the website of the Office of Science and Technology ([www.ost.gov.uk](http://www.ost.gov.uk)). Hard copies can be obtained from OST: Bay 428, 1 Victoria Street, London SW1h 0ET, telephone 020 7215 6518.

## 2. The Government's needs

2.1 The Council for Science and Technology's role is to provide the Prime Minister with advice on medium to long-term issues related to science, engineering and technology of that are of strategic importance to UK policy. Within the last five years it has provided valuable advice on technology in the UK and on science teachers and other matters, which has been taken up in policies now being implemented.

2.2 CST's role is more important than ever as the Government moves to make the UK a world leader in the knowledge based economy and in the development and delivery of public services.

2.3 Science, engineering and technology are key to these aims. The 2002 spending review and the strategy set out in "Investing in Innovation" set out Government's priorities. The science budget in the UK is now rising by 10% per annum in real

terms in order to enhance the research base, and strengthen the links in the innovation cycle.

2.4 The Government is also developing new ways of engaging the public with science in order to develop a confident relationship between science and UK society. A confident relationship is important because science and technology can offer many benefits to society and to the economy, which can only be obtained with full public support. Since science can also raise uncomfortable questions, people need to be able to join in full and open discussion about the values, benefits and risks of scientific developments as policy develops.

2.5 The review that has just been completed has provided an excellent opportunity to reshape CST's terms of reference, organisation and ways of working to ensure that they are well-tuned to the UK's current needs.

**2.6 The Government broadly accepts the recommendations of the review.**

**2.7 The remainder of this document:**

- **sets out revised terms of reference for CST;**
- **explains how CST will be linked to Government in its future work;**
- **explains how CST will be organised;**
- **explains in outline how CST will work. Much of the detail will however be for CST itself to decide.**

### 3. CST's terms of reference

**3.1 The Government has revised CST's terms of reference to make clearer the broad cross-cutting nature of the advice Government needs from CST. They are:**

*To advise the Prime Minister<sup>1</sup> on the strategic policies and framework for:*

- *sustaining and developing science, engineering and technology (SET) in the UK, and promoting international co-operation in SET;*
- *fostering the practice and perception of science, engineering and technology as an integral part of the culture of the UK;*
- *promoting excellence in SET education;*
- *making more effective use of research and scientific advice in the development and delivery of policy and public services across Government; and*
- *promoting SET-based innovation in business and the public services to promote the sustainable development of the UK economy, the health and quality of life of UK citizens, and global sustainable development.*

*The Council will work on cross-cutting issues of strategic importance, taking a medium to longer term approach. In developing its advice it will take into account the cultural, economic, environmental, ethical and social context of developments in SET.*

### 4. CST's work programme

4.1 The review recommends that the Council should not normally carry out detailed investigation and analysis itself. It would raise questions for others to answer and then comment on the answers.

4.2. Discussions with current CST members have shown that whilst they do wish to identify gaps and raise questions as the review suggests, this is only worthwhile within a framework which makes clear what Government's interests are.

4.3 As a consequence, whilst CST's work programme must be decided by the Council, Government will take the initiative in periodically agreeing a framework of questions on which it would like advice and ensuring that the Council has the information it needs to develop this advice. CST will always respond to requests for advice from Government (though its response could be that in its view there was little to be gained from in-depth work on an issue). The Council will also be able to suggest topics and to consult Government on whether it would be interested in the answers – one of the questions that Government will put to CST is: "Are we missing

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<sup>1</sup> depending on the outcome of discussions with the Devolved Administrations this may be extended to include the First Ministers of the Devolved Administrations

something?" Room will be left in the work programme for CST to respond to urgent requests from Government as necessary.

4.4 Government will set up a rolling programme of putting to CST information that is already collected or that could be collected fairly easily and ask the Council whether the data raise issues that members think need to be addressed. If so, is further information and/or analysis needed, and when enough information is available, what would CST advise? The question of whether how CST's role might

4.5 CST will be asked to organise its work around five broad thematic themes that match its redrafted terms of reference, i.e.:

- sustaining and developing SET in the UK and promoting international co-operation
- SET and society
- SET education
- SET in Government
- SET and innovation

4.6 It will not be possible for CST to take on too many tasks at one time and it need not be active in all five thematic subprogrammes at the same time. Government will develop this year a first list of priority questions that it wishes to put to CST. Government would welcome suggestions from external stakeholders to help inform thinking in drawing up the list.<sup>2</sup>

4.7. CST itself will agree in early 2004 the questions it will tackle first and how, and will publish its work programme. It will not consult formally but it will ask for comments and suggestions from stakeholders on how to address the priority questions in its work programme, and on issues that it might look at in future.

4.8 Government will periodically review the issues on which it wants advice from CST.

## **5. CST's reporting lines**

5.1. The review recommends that CST would continue to report to the Prime Minister, would sever the existing relationship with the Secretary of State for Trade and Industry because of its transdepartmental remit, but would continue to maintain a close link with the Minister for Science, who would however no longer chair the Council. The review also recommends that CST's reports should be sent to SCI for discussion and decision on any follow-up.

### **5.2 Government accepts these recommendations**

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<sup>2</sup> Stakeholder should email [cstinfo@dti.gsi.gov.uk](mailto:cstinfo@dti.gsi.gov.uk) or write to Maurice Potts, Office of Science and Technology, Bay 482, 1 Victoria Street, London SW1H 0ET with ideas before 31 August 2003.

## 6. CST's internal organisation

6.1 The review suggested two possible models for CST's future; an internal advisory Committee chaired by the CSA and responsible to him, or an external Committee with an independent chair chosen from amongst the members themselves.

6.2 However, as the report of the review makes clear, whilst each model has its advantages, each also has shortcomings. Asking the Chief Scientific Advisor to chair CST would make it easier to link CST into Government's cross-cutting concerns in relation to SET, having an independent chair could make it easier to CST to develop and sustain a strong sense of identity. Having looked at advisory systems in other OECD countries, **Government has decided to combine the best features of both models by appointing two chairs:** the first will be the CSA and the second will be chosen by the independent members from amongst themselves, as the review recommends. This is similar in some ways to the model that has been in place under successive Presidents in the US since the 1950s (the President's Committee of Advisors on Science and Technology) though PCAST does not choose its own independent co-chair.

6.3 CST's two chairs will have distinct roles. The independent chair will take charge of meetings at which CST's independent members met less formally to develop views. The CSA will chair meetings at which advice is reported to Government.

## 7. How CST will work with the Government

7.1 CST will have regular, though not necessarily frequent meetings with the Prime Ministers, and will communicate with him more frequently in writing.

7.2 The Minister for Science and Innovation, will be responsible to SCI for CST's overall work programme and effectiveness. He will always be invited to meetings at which CST presents its considered advice to Government.

7.3 The Government will also adopt a system of sponsor Ministers, similar to the system of sponsor Ministers for *FOREsight* for tasks in CST's work programme. They too will be invited to CST's reporting meetings.

7.4 As explained above, discussions are still ongoing about links with the Devolved Administrations.

7.5 The Chief Scientific Advisors Committee, which includes representatives from the Devolved Administrations, will ensure co-ordination at official level.

## 8. CST's membership

8.1 The review suggests that members of CST should continue to be senior individuals, who may need to be drawn from an even wider range of backgrounds than at present.

### 8.2 The Government agrees with this recommendation.

8.3 CST's members will largely continue to be respected scientists, engineers and technologists operating at the highest levels in research, industry, education and

possibly public service. But they will be identified from as wide a range of SET disciplines and relevant practices as possible. At present there is for example, no medical scientist on CST.

8.4 The Council's work will be centred on science, engineering and technology. But the Council is being asked to take into account the cultural, economic, environmental, ethical and social context of developments in SET in all its work. CST's will need assistance from appropriate social scientists to help it do this and should therefore include social scientists within its membership.

8.5 The Government will also strive to attain a better gender and ethnic balance: only two of CST's twelve current members are women and there is only one ethnic minority member.

8.6 The Government will shortly announce a public appointments round to review the balance of CST's membership and to bring it back to its full strength of 16 members. This public appointments round will be conducted to a very tight timescale, since the current terms of all CST's present 12 members are due to finish at or shortly after the end of the year.

**8.7 The Government agrees with the recommendation of the review that the Council should not be larger.** It will not therefore be possible include experts from all relevant disciplines and user communities. However, CST will need to be supported in its work by a set of subcommittees which could include non-members. This could enable the Council to develop and benefit from the expertise of a wider range of people, including younger people who might not yet have the breadth of experience for full Council membership.

## **9. CST's resources**

**9.1 The Government agrees with the recommendation of the review that CST should have more resources to support it in its work.**

9.2 CST will have an expanded Secretariat and money with which to commission research and analysis where there are gaps in the information that Government can provide to help the Council in its work.

9.3 CST's Secretariat will remain in the Office of Science and Technology, with a larger team devoted to it. Government will consider with CST itself how best to ensure that the Secretariat has the expertise it needs. This might include involving staff from other Government Departments, either in the long-term, or for particular pieces of work and secondments from outside Government.

Office of Science and Technology

July 2003

## RECOMMENDATIONS OF THE QUINQUENNIAL REVIEW OF THE COUNCIL FOR SCIENCE AND TECHNOLOGY

The overall conclusions of the review are:

1. That government continues to need independent external advice on policy for science, engineering and technology. This seems universally agreed both within the UK and within other OECD countries;

2. In principle, such advice could be more efficiently and effectively obtained from a standing body rather than ad hoc groups. The stage 1 report explains:

- *“A standing body should be in a position to flag up issues to which it believes that the Government is not giving sufficient attention, where by definition an ad hoc group would not have been convened;*
- *“Members of a continuous body gain insight into how the Government machine works, and come to interact more productively with their colleagues. (CST members confirm that this has been the case for them.) Both these factors should increase the value of their advice;*
- *“The membership of ad hoc bodies can be more expert in a particular subject. But the purpose of a body like CST is not to give a specialist view, though it can if it wishes co-opt experts in specific areas on to its sub-groups: it should be focused on the big picture.”*

3. The review suggested two possible models for CST’s future: an internal advisory Committee chaired by the CSA and responsible to him, or an external Committee with a independent chair chosen from amongst the members by themselves. The Committee would continue to report to the Prime Minister, and its reports would be sent to SCI for discussion and decision on any follow up.

4. “CST would:

- *“have regular (though not necessarily frequent) meetings with the Prime Minister;*
- *“sever the existing relationship with the Secretary of State for Trade and Industry, which is inappropriate because of its transdepartmental remit;*
- *“continue to maintain a close link with the Minister for Science, which should be even more valuable because he would participate fully in appropriate meetings without being obliged to act as chair;*
- *“continue to work closely with the Chief Scientific Adviser, though with the nature of the relationship depending on the model chosen;*
- *“have its advice brought before the Ministerial Committee on Science Policy (SCI), though with the process depending on the model chosen;*
- *“be able to invite other Government Ministers to attend meetings as appropriate in order for them to raise issues, to discuss advice previously formulated by CST members or to participate in open discussions;*
- *“be kept closely in touch with Government thinking so that its work would be useful;*
- *“be allocated the necessary resources to carry out its work effectively.*

- *“The style of CST’s work should change to some extent: the Council should spend less time writing long reports itself, but should raise questions and ask for work to be done by others for it to consider and develop recommendations; Ministers might ask CST for confidential advice in some cases; CST should be draw less into providing one input among many into Government enquiries;*
- *“CST’s terms of reference could usefully make explicit reference to innovation. CST should be required to consider the cultural, social, economic and ethical context in which science and technology must be understood. Work should be undertaken urgently to clarify the present relevance of UK-wide science and technology policy to the devolved administrations, and to consider how it affects policy in the English regions, in order to determine what CST’s role might be in both these respects.*
- *“If CST is to do its job properly, members need to be kept in touch with the big picture on science and technology, both outside Government and within (including the levels and distribution of Government funding). This will enable them to identify gaps and to raise questions. They can also contribute significantly to other government activities. The questions which CST raises should normally be for answer by others, which suggests that in-depth work on individual topics should assume less importance in CST’s work. Lower priority should be given to the other possible activities identified (responses to consultation documents, contributions to reviews etc; contributions on immediate issues; and public communication on scientific issues in general).*
- *“Members of CST should continue to be senior individuals, and may need to be drawn from an even wider range of backgrounds than at present. Despite the difficulty of achieving this within the present membership limit of sixteen, I recommend that this limit should not be raised, at least for the time being. Increasing the size of CST at this point would jeopardise the chances of cohesion and of productive discussion in plenary meetings, at a time when both will be needed to launch the body on its new track. To reduce problems of discontinuity in future, attention should be given to the length of appointments offered to new members, and to achieving a shared understanding about what CST is.*
- *“CST should vary its style of meetings, including one-off workshops and brainstorming sessions as well as sub-group discussions and formal plenary meetings, and should hold them in settings conducive to a free exchange of views. It should also vary its style of output, with fewer formal reports and more short notes or face to face discussions with the Prime Minister or other Ministers. Although CST should continue to be as open as possible about its work, it should deliver its advice in confidence if and when this will enable it to be more useful. CST needs to raise its profile in the science and technology community, by promoting a two-way exchange of information and views.*
- *“Links to CST’s website should be improved, and the site itself could be redesigned to be more appealing.*

*“Once the Government has decided what it wants of CST, it should provide the tools to do the job, with an appropriate secretariat and appropriate funding for outside work.”*