THE ROYAL SOCIETY

Royal Society submission to the Science and Technology Committee's inquiry on 'Climate: public understanding and its policy implications'

1 The Royal Society welcomes the opportunity to respond to the UK Science and Technology Committee's Inquiry on 'Climate: Public understanding and its policy implications'.

2 The Royal Society is the national Academy of science in the UK. It is a self-governing Fellowship of many of the world's most distinguished scientists. The Royal Society's Science Policy Centre (SPC) draws on the expertise of the Fellowship to provide independent and authoritative scientific advice to UK, European and international decision makers.

3 The Royal Society works on a wide range of issues related to climate science, with a particular emphasis on communicating accurately the most up-to-date science to non-specialist audiences.

4 The report *Climate science: A summary of the science*[1] produced in 2010 was a compact summary, which described in terms of level of certainty the current state of knowledge. Similar reports following this pattern were subsequently produced in other countries.

5 The Society is currently preparing a new report on climate science in conjunction with the US National Academy of Science. The report will addresses key questions of public interest and communicate new developments in climate science. It will articulate the key elements of current scientific understanding about how the Earth's climate system is changing and why, discuss where significant scientific uncertainties remain and highlight and discuss recent observations and results.

6 Royal Society reports have also been produced on related issues of geoengineering the climate[2] governance of research into solar radiation management[3], ground-level ozone[4], and ocean acidification[5]. The Royal Society also holds meetings on subjects relevant to public understanding of climate science, such as discussion meetings on handling uncertainty.[6] [7]

7 It is essential that the very best independent scientific advice from across all pertinent disciplines is utilised in policy-making and that scientific uncertainty is openly acknowledged and communicated in a clear and understandable way. In keeping with the government's own guidelines on scientific advice, scientific evidence and expert judgement should be given in an open and transparent manner in order to ensure both technical robustness and public credibility.

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[1] http://royalsociety.org/policy/publications/2010/climate-change-summary-science/

[2] http://royalsociety.org/policy/publications/2009/geoengineering-climate/

[3] http://royalsociety.org/policy/projects/solar-radiation-governance/

[4] http://royalsociety.org/policy/publications/2008/ground-level-ozone/

[5] http://royalsociety.org/policy/publications/2005/ocean-acidification/

[6] http://royalsociety.org/events/2010/uncertainty-science/

[7] http://royalsociety.org/events/2012/uncertainty-weather-climate/

8 Government departments, scientific advisers to Government and publicly funded scientists all have a role in communicating science and technology issues. It is essential that communications on all science and technology issues, including climate science, are aligned with the following core principles: openness and transparency; representing the best expertise across all relevant disciplines; independence; accurately reflecting the latest science, and; clarity around any scientific uncertainties.

9 Many factors besides science feed public perceptions and inform policy development, but it is essential that communication about climate science accurately reflects the latest peer-reviewed science. However, public debate about climate change is not always founded on accurate science. Poor quality science and assumptions based on poor science, are likely to cause problems. (This is also true of other, non-climate public interest issues such as MMR vaccination). Examples of poor science include excessive, exclusive or undue emphasis on certain aspects of science or data (often called 'cherry picking') and, in some cases, misrepresentation or public misinformation. The risks of misinformation or miscommunication can, to some extent, be countered by adherence to the principles set out above (see paragraph 8).

10 In his 2012 Anniversary Address[8], Royal Society President Sir Paul Nurse FRS considered the characteristics of bodies that should be trusted to give good scientific advice. He said: 'It is always useful to look at the scientific advice from different bodies because it is good to be exposed to a range of opinions. However, some types of bodies are likely to be more reliable at giving scientific advice. In general terms the characteristics to look for are as follows: they should be broadly based, be impartial, understand the methods and values of science, respect openness, and carry out proper peer review.'

11 The Government's 'Guidelines on scientific advice' recognise the importance of public dialogue on issues involving science and technology. Public and stakeholder dialogue is vital in broadening understanding of science and technology issues and in developing appropriate policy responses. Open engagement with the public on a range of subjects, including climate science, will increase awareness of scientific issues that can impact on societal well-being, enrich public debate and, ultimately, inform policy responses. Public engagement also informs expert scientists about matters which concern the public that might not occur to them. On this subject, Paul Nurse has noted: 'One anxiety I noticed was frequently expressed during public consultation exercises over GM crops was a concern at 'eating food containing genes'. This was an issue a scientist was unlikely to have considered but was a perfectly reasonable one for a member of the public to express.'[9]

12 Climate change is a global issue and as such national policy development and public understanding should also be considered in the international context. The Society has collaborated with other Academies around the world to develop interacademy statements – at both G8+5 and global levels (through the IAP global network of academies). These have set out clearly the consensus among the international scientific community on wide-ranging issues, including climate change[10], energy efficiency and climate protection[11], ocean acidification[12] and tropical forests.[13] In 2010, Sir Peter Williams FRS FREng (then Treasurer and Vice

[8] http://royalsociety.org/uploadedFiles/Royal_Society_Content/about-us/history/anniversary/2012-11-30_Anniversary%20Address.pdf

[9] Ibid.

[10] http://royalsociety.org/policy/publications/2005/global-response-climate-change/

[11] http://royalsociety.org/policy/publications/2007/sustainability-energy-climate/

[12] http://www.interacademies.net/10878/13951.aspx

[13] http://royalsociety.org/policy/reports/statement--tropical-forests/

President of the Royal Society) participated in an InterAcademy Council Committee to Review the Intergovernmental Panel on Climate Change[14].

13 These international (often collaborative) undertakings can help to shed light on public perceptions abroad. A good grasp of public perceptions in different international settings is important because there may have to be some convergence of public attitudes across the world if international agreements of any significance are to be reached.

14 That is to say that the global nature of climate change means that national policy actions (including those of the UK), if they are to have any worthwhile effect, should take account of likely actions by other nations, which can be affected by public awareness abroad. Useful lessons about public engagement on climate science (and other issues) may also be gleaned from other nations' experiences.

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[14] http://reviewipcc.interacademycouncil.net/