

**THE GOVERNMENT'S OUTLINE PROGRAMME FOR PUBLIC
ENGAGEMENT ON NANOTECHNOLOGIES**

August 2005

**HM Government in consultation
with the Devolved Administrations**

THE GOVERNMENT'S OUTLINE PROGRAMME FOR PUBLIC ENGAGEMENT ON NANOTECHNOLOGIES

1. The Government's approach to Public Engagement on Nanotechnologies

1. In February 2005, we published our response¹ to the report from the Royal Society (RS) and Royal Academy of Engineering (RAEng) entitled '*Nanoscience and nanotechnologies: opportunities and uncertainties*'². In our response, we made it clear that we wish to make substantial and sustained progress towards building a society that is confident about the governance, regulation and use of science and technology. In particular, we wish to ensure that debate takes place at an early stage, as new areas emerge in the scientific and technological development process. The Government's principles for public dialogue on science and technology were published in the response but are reiterated here in Annex 1. In this document we set out an outline programme on public engagement on nanotechnologies and a more comprehensive one will be published later this year.

2. The RS/RAEng recommended that the Government initiate adequately funded public dialogue around the development of nanotechnologies and also recognised that a number of bodies could be appropriate in taking the dialogue forward. Our response made clear our commitment to promoting constructive dialogue on nanotechnologies, and we drew attention to our Sciencewise³ public engagement programme as one of the main vehicles for delivering this. This programme aims to enable the science community and public to explore their aspirations and concerns about the development of nanotechnologies. Dialogue will inform rather than determine policy or decisions. The outcomes of such dialogue will help decision and policy makers in relation to their role in setting the direction of research and the regulation of nanotechnologies where this is needed.

3. This document concerns the Government's outline programme on public engagement, but stakeholders are also involved in shaping the Government's research programme to underpin good regulation (described in Annex 2).

1.1 Purpose of public engagement on nanotechnologies

4. Overall, in the context of nanotechnologies, we see six main purposes for public engagement, to:

¹ HM Government (2005) *Government Response to Royal Society and Royal Academy of Engineering Report 'Nanosciences and nanotechnologies: opportunities and uncertainties'*. London: DTI.

² The Royal Society and Royal Academy of Engineering (2004) *Nanoscience and Nanotechnologies: Opportunities and Uncertainties*. London: The Royal Society.

³ See: www.sciencewise.org.uk.

- Enable citizens to understand and reflect on issues related to nanoscience and nanotechnologies, both personally and through inclusive processes involving citizens, policy-makers and researchers.
- Enable the science community and the public to explore together both aspirations and concerns around the development of nanotechnologies.
- Enable institutions working in the area of nanotechnologies to understand, reflect on and respond to such public aspirations and concerns.
- Establish and maintain public confidence in the development of technologies by understanding the public's concerns and showing their impact on Government regulation.
- Contribute to wider Government initiatives to improve the general trustworthiness of science and technology-related institutions.
- Support wider government initiatives to support citizen participation in public policy and service delivery.

2. The Government's current programme of engagement on nanotechnologies

5. Following an open competition in 2004, we awarded Sciencewise grants to two projects to take forward work in the area of nanotechnologies: Nanodialogues⁴ and the Nanotechnologies Engagement Group (NEG). At the time, we recognised that work funded through Sciencewise could not, and should not, be the sole vehicle for fostering wider public discussions around nanotechnologies, and that other groups were commissioning their own activities in this area (see some of the activities listed in Annex 2).

2.1 Nanodialogues

6. The Government's approach to public dialogue is to "learn by doing". The Nanodialogues project aims to explore a number of themes and to look at the issues from a mixture of public and private sector perspectives.

7. Nanodialogues is supported by a grant of £120,000 from the DTI's Sciencewise programme, with matched funding from other partners and building on work funded by the Economic and Social Research Council (ESRC). It is led by Demos, Lancaster University, the Environment Agency, the Biotechnology and Biological Sciences Research Council (BBSRC) and the Engineering and Physical Sciences Research Council (EPSRC). It also includes Practical Action (an international development-based NGO) and we hope a company will join the group later this year. The Government's Nanotechnologies Issues Dialogue Group (NIDG)⁵ is represented on

⁴ See: <http://www.demos.co.uk/projects/currentprojects/nanodialogues>.

the oversight panel, to ensure that the commitments outlined in the Government's response to the RS/RAEng report are linked to these processes and the outcomes feed into the machinery of government to inform policy development and decision taking.

8. Nanodialogues will use a variety of 'upstream' engagement methods that involve stakeholder, representative and randomly selected participants. These processes will investigate the practicalities of public engagement, so that dialogue events will be useful in informing policy development and decision-making. This project will ensure that nanoscientists take a front seat role in constructive dialogue with the public to inform four areas:

- Risk and regulation in the use of nanoparticles and nanotubes and focussing on land remediation (led by the Environment Agency). In the context of the Government's regulatory gaps review and the work of the research co-ordination group, this work will inform the development of regulation on remediation.
- The role of public engagement in shaping research goals (led by BBSRC and EPSRC).
- Public engagement and the corporate innovation cycle (led by an industry partner – yet to be recruited).
- Potential opportunities, barriers and benefits to the global diffusion of nanotechnologies (led by an NGO – Practical Action).

9. The final report, including the results of the dialogue processes, will be published in September 2006. Reports from the project will be available from the Sciencewise website⁶.

2.2 Small Talk

10. Government is also funding Small Talk. This project aims to bring coherence to the wide range of activities around the UK that are focused on discussing nanotechnologies with the public and scientists. Small Talk is a £50,000 Copus⁷ project delivered by a collaboration of The British Association for the Advancement of Science, Ecsite-UK, the Royal Institution, the Cheltenham Science Festival, and is

⁵ The Nanotechnology Issues Dialogue Group, chaired by the Office of Science and Technology (OST), is enabling the responsible development of nanotechnologies and co-ordinating the activities described in the Government's response to the RS/RAEng report across departments, agencies and Research Councils. See: <http://www.ost.gov.uk/policy/issues/index.htm>.

⁶ See: <http://www.sciencewise.org.uk/>.

⁷ Since 1987, the Copus Grant Schemes, which have now closed, have supported and encouraged ways of making science accessible to public audiences in the UK, with funding from the Office of Science and Technology and the Royal Society. See: <http://www.copus.org.uk/>.

managed by Think Lab. The project website⁸ provides a vast array of resources, data, and advice, to help science communicators plan and deliver successful dialogue events. Small Talk has already supported a number of events on various topics from the impact of nanotechnologies on healthcare professionals to the ethical and social questions raised by public dialogue. Small Talk is also linked with policymakers so that information on the public's and scientists' attitudes coming from dialogue events towards nanotechnologies can reach the right people to inform the course of action for future research (Research Councils) and regulation (Government). Locations for events in 2005 include the BA Festival of Science in September and the Manchester Museum of Science and Industry in October.

2.3 The Nanotechnologies Engagement Group

11. Recognising the need for Government to have a coherent view of the public debate on nanotechnologies, we commissioned the Involve group to establish the Nanotechnologies Engagement Group (NEG). Funded through the Sciencewise programme, the NEG will consist of a core research team comprising Involve, the Cambridge Nanoscience Centre, the University East Anglia, the Policy Studies Institute, and a forum of approximately 20 people plus a wider network of those interested in and affected by its work. The NEG will provide a platform to ensure that as many groups, individuals and organisations as possible are able to help shape the Government's public engagement programmes. It has two main roles:

- **Supporting the various public engagement initiatives.**
The initial work of the NEG will be focussed on mapping the current practice of public engagement on nanotechnologies and understanding stakeholders' expectations of public engagement with nanotechnologies. The NEG will produce (as a minimum) bi-annual reports. The NEG will not deliver any public engagement activities as such, but will seek to support those who are undertaking public engagement on nanotechnologies. The NEG will explicitly support the Government in developing its public engagement programmes. The NEG is therefore an explicit programme of outreach, involvement and research, which aims to ensure that the Government's programme builds upon best practice in public engagement, supports the development of that practice and ensures that public engagement feeds into policy and decision-making.
- **Providing strategic views on 'upstream engagement'.**
Through its work focussed on public engagement on nanotechnologies, the NEG will develop a deep understanding of the principles and practice of 'upstream' public engagement related to an emerging area of science and technology. The NEG will reflect on the lessons being learned in relation to nanotechnologies, and by drawing on other examples will provide strategic views on the development of upstream engagement.

12. The core team of the NEG is now in place, and its wider membership is currently being established. It will be fully operational by Autumn 2005. Through July

⁸ See: <http://www.smalltalk.org.uk/>.

and August 2005 the NEG will commence initial mapping work to identify a comprehensive range of activities and gaps in theory and practice.

Box 1: Planned outputs from the Nanotechnologies Engagement Group

1. Research on different stakeholders' expectations of public engagement with nanotechnologies. In order to understand the role of different engagement activities it is important to understand the different assumptions made about the purposes of public engagement. This research will then facilitate the communication of lessons from the various engagement activities to different audiences.
2. Mapping of current public engagement activities related to nanotechnologies. This will identify the range of activities in the UK and internationally.
3. Lessons from other engagement activities. This will involve workshops to bring together the different public engagement teams to discuss the lessons learned. These may differ between projects, or common lessons may emerge.
4. Analysis of how the lessons learned relate back to the range of interested audiences and the spectrum of engagement activities undertaken. The NEG will then develop its strategic views on communicating the learning and areas of work that might need to be developed.
5. Communication of the learning to Government, other stakeholders, nanoscience researchers and the wider public.

3. The Principles of the Programme

3.1 Ensuring linkage to policy

13. There are many issues raised in the RS/RAEng report and we have made commitments in our response to address these in an inclusive way, including through public dialogue. For example, we have made a start on explicitly addressing the issues surrounding nanoremediation through the Nanodialogues programme. To comply with good practice in processes of participative dialogue, we will ensure that they connect to the machinery of government through linkage with the NIDG. Officials on the NIDG already actively participate on the Nanodialogues oversight panel and the Citizens Jury oversight panel (not funded by Government – see Annex 2) to ensure that policy outputs inform policy and decision-making.

3.2 Flexibility and adaptive learning

14. The RS/RAEng report suggested that engagement might have to take place on specific applications as they arise. We recognise that this may be the case, and in the early phase of the programme, we will explore the scope of issues that could be tackled in the next few years. One role of the OST Horizon Scanning Centre is to identify such applications. The Nanodialogues project, for instance, is looking at risk and regulation issues in relation to nanoparticles and nanotubes. The NEG will elicit

topics and themes for further exploration from across the range of other activities and public engagement initiatives that are taking place, and that arise over the next few years. The NEG will then feed these ideas to the NIDG, which will consider what actions need to be taken in response to the issues raised, commissioning further public engagement where necessary.

3.3 Working in partnership

15. As discussed earlier, Government does not see itself as the sole arbiter of public debate on nanotechnologies. The debate is already live, and is occurring in many fora for which Government does not have, nor seeks, any direct control (see Annex 2 which includes some examples of participatory public engagement programmes). Rather, we wish to work in partnership with those other initiatives (and any that may arise in the coming years) in order to gain a fully rounded view of the extent, scope and depth of public aspirations and concerns around issues emerging during the development of nanotechnologies. The NEG will support such partnership working through face-to-face meetings and workshops, as well as providing an online platform.

Scientists

16. To be effective in informing policy and decision-making, public engagement on nanotechnologies must itself be informed. To this end, scientists and other specialists working in the area are involved in the programme (see our public dialogue principles at Annex 1). In addition to scientists being on hand to provide information to the debate, we expect them to engage fully with other participants, to reflect and deliberate with them in the issues involved, and to learn as much about people's aspirations and concerns as others learn from them. The aim is mutual understanding and learning, with scientists being responsive to public attitudes.

Media

17. The media also have a particular contribution to make. Media organisations are major conduits and arbitrators of information and opinion. Media groups have a critical role both in generating the enthusiasm necessary for people to want to be engaged and as a conduit for the range of views necessary for any constructive and open dialogue.

18. It is worth noting that major media partners are already involved with activities in this area. For example, The Guardian newspaper is a partner in the NanoJury UK project (see Annex 2), and Channel 4 News is involved with the Nanodialogues project. We would encourage these projects and others to seek further involvement of media organisations, and to explore how these projects could be used as a test bed for constructive treatment of science-based issues.

Annex 1

Government's Principles for Public Dialogue on Science and Technology

Based on theoretical understandings and practical experience, the essential elements of public dialogue on science and technology are set out below. The Government intends to adopt the approach set out in this document, but recognises that this guidance will continue to be refined as experience grows.

The key principles for public dialogue seek to ensure that:

- the conditions leading to the dialogue process are conducive to the best outcomes (**Context**⁹);
- the range of issues covered in the dialogue are relevant to participants' interests (**Scope**);
- the dialogue process itself represent best practice in design and execution (**Delivery**);
- the outputs of dialogue can deliver the desired outcomes (**Impact**); and
- the process is shown to be robust and contributes to learning (**Evaluation**).

In fulfilling these principles, it is recognised that the specific context of each issue will determine the relative importance of each of the following principles. However as far as practicable, public dialogue on science and technology aims to:

Context¹⁰

- (a) Be clear in its purposes and objectives from the outset.
- (b) Be well-timed in relation to public and political concerns. It will commence as early as possible in the policy/decision process.
- (c) Feed into public policy – with commitment and buy-in from policy actors.
- (d) Take place within a culture of openness, transparency and participation.
- (e) Have sufficient resources in terms of time, skills and funding.

⁹ The means by which dialogue can impact upon policy and decision-making will be specific to each organisation involved in the dialogue process and each issue under consideration. It is important, therefore, that organisations involved in dialogue address their own institutional arrangements and working practices to ensure effective application of dialogue processes.

¹⁰ It may not be advisable to embark upon a dialogue process, where these requirements cannot be met.

- (f) Be governed in a way appropriate to the context and objectives.

Scope

- (a) Cover both the aspirations and concerns held by the public, scientists in the public and private sector, and policy-makers.
- (b) Be focussed on specific issues, with clarity about its the scope of the dialogue. Where appropriate we will work with participants to agree framings that focus on broad questions to encourage more in-depth discussion. For example, we might start by asking, “How do we provide for our energy needs in the future?” rather than starting by asking “should we build new nuclear power stations?”
- (c) Be clear about the extent to which participants will be able to influence outcomes. Dialogue will be focussed on informing, rather than determining policy and decisions.

Delivery

- (a) Ensure that policy-makers and experts promoting and/or participating in the dialogue process are competent in their own areas of specialisation and in the techniques and requirements of dialogue. Measures may need to be put in place to build the capacity of the public, experts and policy makers to enable effective participation.
- (b) Employ techniques and processes appropriate to the objectives. Multiple techniques and methods may be used within a dialogue process, where the objectives require it.
- (c) Be organised and delivered by competent bodies.
- (d) Include specific aims and objectives for each element of the process.
- (e) Take place between the general public and scientists (including publicly and privately funded experts) and other specialists as necessary. Policy-makers will also be involved where necessary.
- (f) Be accessible to all who wish to take part - with special measures to access hard to reach groups. Where the objectives require it, media partners may be needed to ensure that the process reaches the wider population.
- (g) Be conducted fairly - with no in-built bias; non-confrontational, with no faction allowed to dominate; all participants treated respectfully; and all participants enabled to understand and question experts claims and knowledge.
- (h) Be informed - This will include providing participants with information and views from a range of perspectives, and access information from other sources. The basis on which knowledge claims are made will be open,

transparent and subject to challenge (following the scientific principles of peer review).

- (i) Be deliberative - allowing time for participants to become informed in the area; be able to reflect on their own and others' views; and explore issues in depth with other participants. The context and objectives for the process will determine whether it is desirable to seek consensus, or to map out the range of views.
- (j) Be 'representative' - the range of participants will reflect the range of relevant interests, and pertinent socio-demographic characteristics (including geographical coverage) of the general public. At times, there may be a need to enable participants to be self-selecting. In these circumstances, there will be measures in place to take account of potential any bias this may cause.

Impact

- (a) Ensure that participants, the scientific community and policy-makers and the wider public can easily understand the outputs across the full range of issues considered.
- (b) Ensure that participants' views are taken into account, with clear and transparent mechanisms to show how these views have been taken into account in policy and decision-making.
- (c) Influence the knowledge and attitudes of the public, policy-makers and the scientific community towards the issue at hand.
- (d) Influence the knowledge and attitudes of the public, policy-makers and the scientific community towards the use of public dialogue in informing policy and decision-making.
- (e) Encourage collaboration, networking, broader participation and co-operation in relation to public engagement in science and technology.
- (f) Be directed towards those best placed to act upon its outputs.

Evaluation

- (a) Be evaluated in terms of process and outcome, so that experience and learning gained can contribute to good practice.
- (b) Ensure that evaluation commences as early as possible, and continues throughout the process.
- (c) Ensure that evaluation addresses the objectives and expectations of all participants in the process.
- (d) Be evaluated by independent parties (where appropriate).

Nanotechnology Public and Stakeholder Engagement Activities

1. Stakeholder Participatory projects funded by Government

Nanotechnology Research Co-ordination Group stakeholder meetings

These stakeholder meetings, organised by the Department for Environment, Food and Rural Affairs, are designed to inform the decisions of the Nanotechnologies Research Co-ordination Group (NRCG)¹¹. Two stakeholder meetings have been organised this year. Specific aims of the meetings are to:

- make certain that stakeholder/expert views feed into the early deliberations of NRCG when considering what research is needed to set in place appropriate regulation;
- bring greater transparency to the regulatory development process;
- inform government policy making activities in the area of nanotechnologies more generally;
- begin the process of dialogue on nanotechnologies regulation between Government and key stakeholders/experts and between different stakeholders/ experts;
- clarify and challenge different stakeholder/expert perspectives and concerns; and
- add value to the Government's longer-term plans for public engagement.

The first meeting was on 18 July 2005 and the participants were:

Oxonica
BASF
Shell
Smith & Nephew
The Institute of Nanotechnology
Erosion, Technology and Concentration (ETC) group
Greenpeace
Practical Action
Demos
University of Birmingham
University of Edinburgh

¹¹ The NRCG is made up of key Government Departments, regulatory agencies, the National Physical Laboratory, and the Research Councils. Its specific mandate is to develop and oversee the implementation of a cross-Government research programme into the potential human health and environmental risks posed by free manufactured nanoparticles and nanotubes. It reports to the NIDG. See: <http://www.ost.gov.uk/policy/issues/index.htm>.

University of East Anglia.

2. Participatory projects not funded by Government

*Democs*¹²

Purpose: Democs is a conversation card game, designed for 6 – 8 people to play at a time, which helps people to informally discuss complex topics. The approach is rooted in deliberative democratic theory, and helps participants understand the various perspectives on the issue in question.

Process: The game has been played on nanotechnologies 6 times since February 2005, 5 of those times with the Dana Centre and once at the new economics foundation (nef) offices, involving 36- 48 people in total. There are plans to promote and use the game at science festivals. The team has found it can be difficult to attract people to engage with nanotechnologies as a topic. Other issues such as animal experimentation and vaccinations are seen as more 'accessible', as they have a more obvious and immediate impact on people's lives.

While the Democs game is primarily designed to enable people to have their say on a policy issue, the main outputs in regards to nanotechnologies have been increased information and awareness amongst those who have played the game. This is thought to be mainly due to the low awareness of nanotechnologies at present. Besides allowing people to have their say and increasing their knowledge about a subject, other outcomes of using the game are increased social capital, due to people meeting and sharing their experience as part of playing it.

Timescale: Democs will run until January 2006.

Vital statistics: Democs was developed by nef with support from the Wellcome Trust.

*NanoJury UK*¹³

Purpose: NanoJury UK brings together 20 people from a range of backgrounds to constitute a citizen's jury. It aims to:

- Be a vehicle for enabling peoples' informed views to influence policy.
- Be a mutually educative dialogue.
- Create potential for deliberative processes to broaden the issues discussed in nanotechnologies research and the diversity of people involved in them.

¹² See: <http://www.neweconomics.org/gen/democs.aspx>.

¹³ See: <http://www.nanojury.org>.

Process: The jury will hear evidence about a range of possible futures and the role which nanotechnologies may play in them. Witnesses, who have been selected to provide a balanced view of the issue, as well as any additional ones which the jurors request, will provide this evidence. The jury will then draw on the evidence and produce recommendations on how research policy should develop.

The jurors are randomly selected from the electoral role, as well as by using processes to ensure that diverse groups are represented. In addition to the involvement of jurors and witnesses, there are also facilitators, to ensure that everyone has a say, and a science advisory panel. The panel provides advice on the technical aspects of the future scenarios being explored and the witness submissions.

All evidence provided by witnesses will be posted on the NanoJury website and following their recommendations, there is a commitment from the NIDG to provide a written response. The NIDG is represented on the oversight panel to ensure there is tight linkage between the outcome of the project and the machinery of government.

Timescale:

April – May 2005: The jury met to discuss a process which they chose
 June 2005: Over 5 weeks the jurors discuss potential new technologies arising from nanotechnologies
 21 September 2005: The jury launches their recommendations at a public event

Vital statistics: Greenpeace, the Interdisciplinary Research Collaboration (IRC) in Nanotechnology at Cambridge, the Guardian and the City of Newcastle are partners in this process.

Global Dialogue on Nanotechnology and the Poor (GDNP)¹⁴

Purpose: This project is a multi-stakeholder dialogue, which aims to:

- Raise awareness about the implications of nanotechnologies for the poor.
- Close the gaps within and between sectors of society to develop an action plan that addresses opportunities and risks.
- Identify ways that science and technology can play an appropriate role in the development process.

Process: The dialogue has been running since January 2005 when the Meridian Institute published a paper called '*Nanotechnology and the Poor: Opportunities and Risks*'. This paper was intended to raise interest and awareness about the impacts of nanotechnologies on the poor and served as a starting point for the GDNP. Between January and March 2005 an online consultation process took place to enable people to respond to the paper. Meridian Institute staff also attended various workshops and had discussions with individual stakeholders.

¹⁴ See: <http://www.nanoandthepoor.org/>

Based on the complexity of feedback they received through these different means, the Institute decided to convene a steering group for the GDNP in order to decide on the best way forward for the dialogue. The steering group met in June 2005 and are working on developing the dialogue's next steps.

A Nanotechnology and Development News Service is also in development. This will provide daily emails with one-paragraph summaries of the 2-4 most important nanotechnology developments in the previous 24 hours, which are relevant to developing countries.

Timescale: The steering group had its first meeting in June 2005 and the date of future meetings and next steps in the dialogue are not yet set. The news service will be running by September 2005.

Vital statistics: The Meridian Institute is leading this project, which is funded by the Rockefeller Foundation. The Institute has also received funding from DFID to run the Nanotechnology and Development News Service. Dialogue by Design ran the online consultation process.

3. Other activities

*Nanotechnologies, risk and sustainability*¹⁵

Purpose: This project investigates how dialogue between the public, scientists and regulators could shape the innovation and regulation of nanotechnologies.

Process: The research explores how expert and public perceptions are formed around the social, cultural and environmental implications of nanotechnologies, including benefits, risks, and uncertainties. It also asks whether the public debate around new technologies can be moved upstream, closer to the heart of nanotechnologies R&D processes.

By looking at the development of nanotechnologies applications in healthcare, computing, energy, new materials and cosmetics, the research aims to develop techniques for incorporating sustainability considerations early in the development of the technologies and associated regulatory processes.

Timescale: The project culminates in a report in January 2006 on how the benefits and sustainability of nanotechnologies can be maximised.

Vital statistics: Lancaster University and Demos partner on this Economic and Social Research Council funded project, which includes input from scientists, journalists, industrialists, administrators, and the public.

¹⁵ See: <http://www.demos.co.uk/projects/currentprojects/ESRCnanotech>.

Nanologue¹⁶

Purpose: This project is bringing together leading researchers from across Europe to facilitate an international dialogue on the social, ethical and legal benefits and potential impacts of nanoscience and nanotechnologies.

Process: The project has three main stages:

- mapping;
- engagement; and
- communication.

The mapping exercise is underway and will identify the benefits and potential impacts of nanotechnologies, based on current literature. These findings will be used to prompt discussion during the project's engagement phase. Through stakeholder interviews and workshops and an expert panel, three future scenarios will be developed. These will help to rationalise the information to assist with communication to the wider public and to help develop policy ideas.

The key output of the project, and specifically of the mapping and engagement exercises, will be a comprehensive communication to a variety of audiences, including the media and civil society, of the benefits and potential ethical, legal and social issues of the nanotechnology applications that are likely to be widely available by 2010. The intention is that this communication can be used to prompt wider dialogue.

In addition, the project will provide educators with material for nanotechnologies courses at schools and universities, as well as developing an interactive internet tool to allow swift assessment of ethical, legal and societal aspects of nanotechnologies research during early-stage development.

Timescale (The project is running over 18 months):

February – summer 2005:	Mapping exercise
Summer 2005 – early 2006:	Engagement stage, including scenario development
Early – August 2006:	Communication phase

Vital statistics: Nanologue is a European Commission-funded project. Its partners are Forum for the Future, the Wuppertal Institute, EMPA (the Swiss Federal Laboratories for Materials Testing and Research) and triple innova.

Institute of Nanotechnology¹⁷

Purpose: The Institute of Nanotechnology is a unique organization that was established in 1994 to develop and promote all aspects of nanotechnologies.

¹⁶ See: <http://www.nanologue.net>.

¹⁷ See: www.nano.org.uk.

Activities: The Institute works closely with industry, Government, universities and researchers worldwide, and provides information to the general public through its website. It organises international scientific events, conferences, and educational courses designed to encourage nanotechnologies take up by industry, as well as stimulating interest in less developed countries.

The Institute runs Nanoforum, an EU-funded information network. It also runs a club for nanostart-ups called the NanoMicroClub, which has over 150 members, and is in the process of launching the European Nanotechnology Trade Alliance (ENTA). This will involve the promotion of engagement between nanoindustries and the public.

The Institute is running the flagship nanotechnology conference of the UK presidency of the EU: '*Nanotechnology and the Health of the EU Citizen in 2020*' from 6-9 September 2005. Events at the conference include:

- A public discussion on nanotechnologies and its applications in healthcare (on the evening of the 5th September).
- The launch of the Vision Paper for the EU's Nanomedicine Platform.
- A half-day event on 'What is nanotechnology?' for schools.
- An evening debate on nanotechnology and ethics.

Additionally, the Institute is a joint partner in AZoNano¹⁸, which is an unrivalled source of information relevant to the nanotechnology industry.

Timescale: '*Nanotechnology and the Health of the EU Citizen in 2020*' is taking place from the 6-9 September 2005. From November 8-10 2005, the Institute is organizing a 3-day conference in Cologne as part of Europe's biggest nanotechnologies exhibition 'Nanosolutions'. At this event, three new nanoroadmaps will be launched – for medicine, materials and energy.

Vital statistics: The Institute is funded by the projects it undertakes.

Nanoforum¹⁹

Purpose: Nanoforum aims to provide information on all areas of Nanotechnologies to the business, the scientific and social communities and to provide a linking framework for all nanotechnologies activity within the European Community.

Activites: In 2004, Nanoforum ran an online survey to assess attitudes towards nanotechnologies within the European Union and to gather opinions on the need for

¹⁸ See: www.azonano.com.

¹⁹ See: www.nanoforum.org.

an integrated and responsible approach to nanotechnologies research and technology development.

The survey was a response to the EC Communication '*Towards a European Strategy for Nanotechnology*²⁰' and some of its key findings were:

- 60% of respondents noted the lack of infrastructure around nanotechnologies in Europe.
- 75% wanted to see health, safety and environmental risks integrated early on in research.
- 75% wanted to see the societal impact of nanotechnologies taken into account early on.
- 87% would welcome an international code of conduct.

Timescale: The survey ran from August to October 2004.

Vital statistics: Nanoforum is run by the Institute for Nanotechnology and is a European-sponsored body.

²⁰ EC (2004) *Towards a European Strategy for Nanotechnology*. Brussels, 12 May 2004, COM(2004) 338 Final.

Government's Current Outline Programme**Table 1: Outline of anticipated activities, Q1 2005 to Q2 2007**

Year	Quarter	Activities
2005	Q1	DTI funded Nanotechnologies exhibition at the Science Museum
	Q2	Commission NEG and Nanodialogues under the Sciencewise programme
	Q3	Outline programme of public engagement published
		Establish membership of NEG
		First output from Nanodialogues project
		Small Talk at the BA Festival
	Q4	NEG submit first review of the public engagement programmes to NIDG, informed by NEG gap analysis
		Nanodialogues phase 2 begins – first dialogue process (risk and regulation of nanoparticles and nanotubes)
		Comprehensive programme of public engagement published
	2006	Q1
NIDG observations on outputs from projects in previous quarter		
Q2		NEG second review of the public engagement programme submitted to NIDG
		NEG first year review
		NIDG observations on outputs from Nanodialogues first two dialogue processes
		Nanodialogues third dialogue process (global technology diffusion)
Q3		Nanodialogues fourth dialogue process (corporate R&D trajectories)
		Nanodialogues close-out report
Q4		NEG submit third review of the public engagement programme, incorporating observations on outputs from Nanodialogues 3 and 4 and overall Nanodialogues project to NIDG

Year	Quarter	Activities
2007	Q1	NEG strategic review of upstream engagement
		Council for Science and Technology 2-year review of progress in implementing the commitments from the Government's response to the RS/RAEng report
	Q2	NEG submit fourth review of the public engagement programme incorporating observations on NEG strategic review to NIDG