Draft Note of the 13th Meeting of the Nanotechnologies Stakeholder Forum

http://www.defra.gov.uk/environment/nanotech/index.htm

Attendees:

Victor Higgs	Applied Nanodetectors
Alexander Pogány	Austrian Federal Ministry for Transport, Innovation and Technology
Wayne Smith	British Coatings Federation Ltd
Nisma Patel	Chemical Industry Association
Geraint Roberts	Chemical Watch
Kenton Thompson	Department for Business, Enterprise & Regulatory Reform
David Southerland	Department for Business, Enterprise & Regulatory Reform
David Lovell – Secretary	Department for Environment, Food and Rural Affairs
Peter Trowe	Department for Environment, Food and Rural Affairs
Helen Compton	Department for Environment, Food and Rural Affairs
Ian Dalton – Chairman	Department for Environment, Food and Rural Affairs
Joanna Rodin	Department for Innovation, Universities & Skills
Sue Bolton	Department for Innovation, Universities & Skills
Donald Bruce	Edinethics
John Wand	Engineering and Physical Sciences Research Council
Rob Sleat	EnviroGene Ltd
Daniel Merckel	Environment Agency
Simon Evans	Environmental Data Services (ENDS)
Manisha Upadhyay	Food Standards Agency
Mark Morrison	Institute of Nanotechnology

Peter Hatto	Ionbond
Marion Schulte zu Berge	Liverpool University
Alec Reader	Nano KTN
Tony Klepping	Oxford University
Barry Park	Oxonica
Andrew Auty	Re: Liability (Oxford) Ltd
Matthew Harvey	Royal Society
Elizabeth Thompson	Royal Society of Chemistry
Steffi Friedrichs	The Nanotechnology Industries Association
Hugh Robertson	Trades Union Congress
John Punter	Which?

The 13th Meeting of the Nanotechnologies Stakeholder Forum (NSF) was held on the 20th May 2009. The meeting was hosted and chaired by Defra, with participants from government, industry, academia and civil society groups.

Welcome and introductions, Chair (Ian Dalton, Defra)

Ian Dalton introduced himself as the Chairman of the Nanotechnologies Stakeholder Forum (NSF). This was followed by an introduction around the table of all the attending members.

Austrian approach to nanotechnology research (Alexander Pogany, Austrian Federal Ministry for Transport, Innovation and Technology)

Alexander made a presentation of the Austrian approach to nanotechnology research detailing risk governance, the Nano Trust project and an action plan for nanoscale sciences and nanotechnologies. The Nano Trust project is funded with a budget of 35 million Euros up to around 2008. It is based on research funding, networking, education and training. It overarches various support measures at national and regional level. Various ministries and funding programmes are involved in the nano initiative being strategically co-ordinated by the Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT) and on the operative level by the Austrian Research Promotion Agency (FFG). Although the current focus is on research it is hoped to be able to shift this to product development. A detailed description was provided for of the funding programme for nanoscale sciences and nanotechnologies, looking at the Austrian funding landscape, it's strategic objectives and program action lines (See all presentations at: http://www.defra.gov.uk/environment/nanotech/research/meetings/index.htm). Risk Governance and the reasoning for it were also considered. A main function of Risk Governance is to provide early warning for the detection and analyses of potential risks, it also deals with uncertainty and the precautionary principle.

The Nano Trust was described as being the Austrian Clearing House that will deal with potential health and environmental risks of nanotechnologies, it will be accessible by the public, research communities and governments sectors. A roadmap for a programme of nanotechnology research within Austria will be co-ordinated with all ministerial groups. Although there is little feedback from the public concerning its attitude to nanotechnology and because public perception of nanotechnology in Austria is limited, to raise awareness might potentially cause unwarranted alarm. The issue of a consultation to determine the public attitude to nanotechnology at this stage is therefore not being considered. The Austrian position on a call for a monotorium on nanotechnology was discussed, noting that it's position would require a ministerial decision.

Update on research and OECD activities (Helen Compton, Defra)

Helen noted developments that had been made since the last update she had provided. The EMERGNANO report had been published both on the Defra website and the contractors website (IOM). The Environmental Nanoscience Initiative (ENI) had entered phase two and a brochure for it published on the Defra website as well as on the NERC website. The second phase of the ENI is much larger and will incorporate a US/UK consortium to improve the understanding of bioavailability and fate of nanoparticles in environmental compartments.

The re-structure of the NRCG and the revision of its research priorities in light of the EMERGNANO report were also considered. Once the research priorities are identified a consideration of where and how the research can be delivered can be made. Plans to refine research priorities and identify collaborations between various bodies will be undertaken over the coming months. This will help in directing research on a strategic basis. All these considerations will help in producing a road map for nanotechnology research which is hoped can be produced by early next year.

Helen noted that the OECD database for EHS research initiatives was now live on line. A link to the database is available on the Defra website. Rights to enter data into the database can be requested from the OECD direct and they will come to the UK representative for authorisation. In the UK this is Defra (Helen Compton). Other OECD matters were noted including the second management meeting for PROSPEcT which is the UK contribution to the OECD sponsorship programme SG6 is also holding a workshop on risk assessments of nanomaterials, which could cover handling of CNTs in an occupational setting and waste disposal. Concern was raised that appropriate conclusions and analysis of data should be made from the research undertaken and that intelligent conclusions made in consultation with appropriate experts. Helen noted that in the UK the NRCG Task Forces are represented by both policy experts and scientists which are able to draw conclusions from the research and provide an overview. There is an acknowledged need for research to be analysed collectively and driven in a strategic direction and on a European level there are meetings to bring together thinking on nanotechnology research.

Members are welcome to attend the OECD organised conference – 'The Potential Environmental Benefits of Nanotechnology: Fostering Safe Innovation-Led Growth' from the 15th – 17th June 2009, Paris, France:
http://webdomino1.oecd.org/comnet/env/chemcomm.nsf

ObservatoryNANO (Mark Morrison, Institute of Nanotechnology) –

The project is funded under FP7 and represented by 10 European states. The object of the ObservatoryNANO project is to provide decision and policy makers with reliable information regarding the development of nanotechnology and its potential impacts on society. ObservatoryNANO integrates all the available information and presents it in small discrete packages which is more suitable for policy makers. The project captures as many viewpoints as possible starting from desk research - journal publications, the identification of experts and reports. The information can be captured by interviews, questionnaires or round table discussions. Analysis, discussion and debate can further enhance the information at workshops or plenary sessions which encourages further sharing of information between industrialists, academics, economists, government agencies and NGOs. Full reports are produced from the activity of the various working parties within about a year. The project makes a comparison of the EU with other global markets. The majority of work is focused on science and technology considered within sectors such as agirifood, construction, energy, chemistry & materials, aerospace automotive and technology as well as environment, information & communication, textiles, health medicine & nanobio, security. Each sector has various sub-sectors to which various nanomaterials/technology contribute.

Mark considered the changing trends in nanotechnology publications which have more than doubled (100, 000 as of 2007) since 1997. The Chinese share of the market was notably increasing with the EU accounting for a third of all nano publications. The most prolific institutions dealing with nanotechnology publications were noted as being from the US while in the UK Manchester, Cambridge and Imperial College represented the majority.

132,000 nano patents have so far been noted the bulk of which are represented by chemical products. A comparison of the shares in patents in the various sectors between the US, Japan and Europe and others was presented.

A comparison of funding for nanotechnology made by various countries was presented. The EU emerged as a leader in terms of public funding although accounting for only a tiney share in total venture capital investment. Within France a new initiative linking private and public funding has been introduced. There has been a worldwide decline in venture capital for nanotechnology partly attributable to the current economic climate and possibly also owing to the natural funding cycle in which sufficient capital for the near term may of already been raised. However Index Ventures raising of a €350 million fund in early 2009 indicates that there is still more funding available.

The conclusions drawn from this economic analysis indicate that although nanotechnology is playing an ever more increasing role within the global market investors will consider business and industry fundamentals first and only consider how nano can fit into this. There is little nano inside most industrial markets. However investment opportunities for nano still exist and may rise.

Societal and ethical implications were also considered as well as issues of environmental health and safety. An annual report covering the precautionary principle and risk governance was also produced. Views on nanotechnology from prominent figures were

also sought. An ethics toolkit to aid researchers is also being developed. An annual report on the developments in regulations and standards is also being produced. Means of communicating issues of nanotechnology to the wider community and for business - corporate social responsibility (CSR) are being developed. A non technical review analysing existing knowledge and identifying gaps in nanotechnology research will also be available. Further details regarding ObservatoryNano can be found at http://www.observatory-nano.eu/project/

Nanotechnology and Cosmetics (David Southerland BERR)

Manufacturers using nanotechnology in cosmetics can self declare the safety standards of the products they produce. There is no third party verification to ensure that safety has been met. The regulations established from a 1976 Council Directive (the Cosmetics Directive) allows the inclusion of any ingredient unless banned. Amendments in annexes to the regulation do contain 'positive lists' of allowed substances (50 amendments) although no major revision to the Directive has been made. There is no specific mention of nanotechnology within the Directive. Hence manufacturers have freely introduced products containing nanoscale zinc and titanium dioxide such as UV filtering sun-creams under self regulation. Although products like sun-creams do include nanotechnology, the banner of nanotechnology is often used as a publicity grabbing headline to enhance a product's profile even when there is no nanotechnology used in the product. The EU Scientific Committee on Consumer Products (SCCP) is responsible for advising the European Commission on cosmetic safety. To ban a cosmetic product an opinion from the SCCP is needed which in turn is based on various submitted advice from its members. In the UK the market surveillance of cosmetics is based mainly on customer complaint and a small amount of positive proactive work. Because of the cumbersome nature of the Cosmetics Directive which is required to change every time an amendment to the Directive is made, it was decided to review the Directive. A decision to turn the Directive into a directly applicable EU regulation was made and will be published on the EU Commission website once done. This will mean that amendments will not be necessary every time a substance is added to the positive list. The new regulation will include a change of designation from nanosubstance to nanomaterial. To speed negotiations a definition for nanomaterials which will be updated with time has been provided. A manufacturer intending to market and sell a new cosmetic product will be required to notify the Commission. Included within the notification submitted by the manufacturer will be a toxicological profile. It is unclear at the moment whether the Directorate General for Enterprise (DG Enterprise) or Directorate General for Health and Consumer Affairs (DG Sanco) will deal with this. Any concern raised with the submitted data will be referred to the SCCP. The outcome of the regulations was considered satisfactory and will be published in the Official Journal later in the year.

Discussion regarding the presentation concerned the Commission's wish that manufacturers provide an environmental consideration within their notification as well as a toxicological profile too. In line with REACH there will be a six month phase in period for products that are already on the market. During this period industry will need to obtain and submit all information not already provided. It was noted that the regulation does not address nanomaterials that are not deliberately manufactured as nanomaterials. The

animal testing of cosmetic products and stem cell testing is banned and this will also be the case where nanomaterials are involved. It was also noted that the Cosmetics regulation will be product based such that each individual material that makes up the product will not be tested although each individual ingredient will need to be listed.

Plans for developing a UK Strategy on Nanotechnologies (Sue Bolton DIUS)

The Ministerial Group on Nanotechnologies was established to provide a strategic and coherent direction to the full range of Government activities on nanotechnologies. This had led to the UK Statement on nanotechnologies in 2008, outlining the activities across Government. To produce a strategy, giving a wider view of nanotechnology including the views of other groups as well as that of the Government's was now the aim. It is hoped to be able to produce a high level piece of work which would not duplicate other work done and would be useful to a wide spectrum of stakeholders. It was envisaged that the strategy would be developed by evidence gathering. The aim is for each individual sector involved to consider their position and direction they wished to see being taken with nanotechnologies and feed this back to inform the development of a strategy. A central website will provide the main means of feeding in information, although Government departments and agencies will all be encouraged to engage directly with their stakeholders as well. As well as an overarching view (of research, regulation, etc.) the website will contain an analysis of individual sectors and where the strengths, weaknesses, opportunities and threats lie. The aim is to test that information and use it to check whether the high-level priorities are correct.

Although no boundaries for the scope of the strategy have been set a ten year timescale would seem appropriate. It was hoped that potential opportunities to better use nanotechnology could be identified and more done to exploit this potential. There was concern that similar previous work might be replicated or that lessons learned from previous work might not be built upon, however it was not intended that there would be an analysis of work that had already been published. Rather there would be links through to relevant websites. There was concern as to whether there would be workshops or collective groups organised to synthesise the resulting information into a more coherent and cohesive form. Consideration to this matter would be given by DIUS and it was suggested that this Stakeholder Forum could be used to help with this. It is expected that Ministers would be able to agree the proposed strategy in early June.

Grand Challenge in Healthcare – public dialogue exercise (John Wand EPSRC)

This presentation focused on an Engineering and Physical Sciences Research Council (EPSRC) project which aimed to understand society's feelings and attitude and inform plans for nanotechnology research for healthcare - creating a space through which citizens, scientists and stakeholders can engage in an informed debate on the public value, ethics and applications at an early stage. It forms part of a range of consultation activities to inform the EPSRC in developing a Grand Challenge call for proposals under the cross Research Council programme Nanoscience through Engineering to Application. This is for large-scale, integrated research projects to exploit nanotechnology in the healthcare domain. It was conducted by the authors BMRB and evaluated by People Science and Policy Ltd (PSP). The report is available from EPSRC at:

http://www.epsrc.ac.uk/ResearchFunding/Programmes/Nano/RC/ReportPublicDialogueNanotechHealthcare.htm

The projects objectives are:

i. To identify public concerns and priorities in relation to the development of nanotechnology for healthcare;
ii. To identify public priorities for nanotechnology for healthcare research given (i);
iii. To inform researchers undertaking projects subsequent to the call;
iv. To inform decisions in the call;
v. To use as an example for EPSRC to learn about public dialogue and how to use it.

The project also provides input to EPSRC's decision making process regarding the scope of the nanotechnology for healthcare Grand Challenges call. It also provides an ongoing point of reference for researchers funded under the Grand Challenge call as to public interests in nanotechnology for healthcare.

Four focus groups were studied in workshops based at London, Glasgow, Swansea and Sheffield using members of the public with no special knowledge of nanotechnology. The groups were chosen to reflect a true representative cross section of the public. Workshop 1 looked at Trust, Governance, Control, and Public value. Workshop 2 looked at Early diagnostics, Infection control, Drug discovery, Regenerative Medicine, Drug delivery, and Theranostics.

The views of the public taking part in the project were gathered using a voting system. The results detailed the public's desires that healthcare applications should be a priority and relative to other areas. The need for early detection of disease and treatments with fewer side effects was also desired as was treatments for 'big diseases' including cancers, alzheimer's / dementia, stroke, mental illness, infection and diabetes. There was also public concern as to whether there would be benefits to the public and who would be the beneficiary of any resulting technology.

The outcome of the project Influenced the choice of research areas which was a first for UK Research Councils and perhaps internationally. It was considered as an excellent example of public engagement. The PSP evaluation will be available on request.

Any other matters

The Government response to the Royal Commission on Environmental Pollution report 'Novel Materials in the Environment: the case of Nanotechnology' will be published early in June.

Date of next meeting

The next Nanotechnologies Stakeholder Forum meeting will take place at Defra in London on the 7th September.