

**NOTE OF THIRD MEETING OF THE NANOTECHNOLOGIES STRATEGY FORUM,
TUESDAY 25TH JUNE 2013**

Attendees:

David Willetts	Joint Chair (BIS)
Lord de Mauley	Joint Chair (Defra)
Darren Budd	Managing Director of BTC UK (BASF)
Victor Christou	Wellington Partners Venture Capital
Linda Crane	Sustainability Policy Adviser, British Retail Consortium
Peter Dobson	Director Begbroke Science Park
Andrew Gooda	Manufacturing Director, NanoCo
Andrew Goodwin	Commercial Director of Advanced Materials, Thomas Swan
Nicole Grobert	Professor of Nanomaterials, University of Oxford
Simon Holland	Director of Process Understanding, Glaxo Smith Kline
Gary Hutchinson	Director of the Centre for Nano Safety, Napier University (representing the Hazardous Substances Advisory Committee)
John Knowles	Chair, NanoSight Ltd and NanoKTN Advisory Board
Joanne Lloyd	Director of Chemicals Policy, Chemicals Industry Association
Zoe Webster	Head of Technology, Technology Strategy Board
Terry Wilkins	CEO NanoManufacturing Institute, Leeds University

Defra and BIS Officials also attending:

Stuart Barthropp	BIS
Karen Folkes	BIS
Keith Hodgkinson	BIS
Lee Vousden	BIS
Maggie Charnley	Defra
Steve Morgan	Defra
Caryl Williams	Defra
Kay Williams	Defra

Apologies:

Sue Davies	Which?
Stephen Elliott	Chemical Industries Association
Steffi Friedrichs	Nanotechnologies Industries Association

Item 1: Welcome, Introductions and Matters Arising

1.1 The joint Chairs welcomed attendees.

1.2 The Chair noted that two papers had been made available: an update on recent actions taken by the Government on growth, and; a reminder of the recommendations made in the Innovation and Growth paper considered by the previous meeting of the NSF in December 2012.

Item 2: The role of the Technology Strategy Board in stimulating nanotechnology innovation and growth

2.1 Zoe Webster presented an overview of the Technology Strategy Board (TSB) and its role in supporting nanotechnologies. It was explained that the TSB is the UK's innovation agency and aims to accelerate economic growth through stimulating and supporting business-led innovation. The TSB has a range of programmes which it can target to types of company (size, maturity). Major programmes include:

- £200 million investment to establish a network of Catapult Centres, to commercialise emerging technologies in areas with global market opportunities
- Jointly providing £180 million with the Medical Research Council for the Biomedical Catalyst in 2012-13, explicitly to support the commercialisation of research
- A further £75 million package to directly fund research-intensive and innovative SMEs since October 2012.

2.2 The TSB's work is focused on a number of market and technology application themes. Nanotechnology is no longer considered a homogenous industry or a single sector, instead nanotechnologies cut across all TSB sectors and programmes and many programmes include significant opportunities for nanotechnology innovators. The TSB is currently investing at least £16.8m of grant on live and new (about to be live) projects involving nanotechnology; this figure is likely to be an underestimate.

2.3 There was discussion of the 'valley of death' in funding the commercialisation of technologies. It was put forward that venture capitalists are not inclined to invest in marginal scale businesses, and that nanotechnology tends to have a low marginal return in capital relative to some other sectors such as digital media. It was suggested that this was because nanotechnology businesses, in common with many engineering technologies, tend to be capital intensive (high investment in equipment for characterising, manufacturing and understanding materials), with a long time taken to get to market. Long procurement and long review processes are highly damaging for technology businesses and means to accelerate procurement in the public sector are welcomed. Pooled resources could help to address the capital intensity, for example catapults, or Qudos in Harwell, which provide access to costly capital equipment to early stage businesses. In addition, greater and more systemic access to the equipment in universities and educational facilities, which is often not fully utilised, would be helpful.

2.4 It was noted that SMEs would value more support in understanding the market place and value chain. Partnering with a larger firm with existing routes to market was seen as an important way to get additional support. However, there can be concerns about who ends up with the Intellectual Property Rights. Help could also be provided through the TSB

Smart¹ programme, potentially using it to work with someone else to get more insight, or as part of a Collaborative R&D call.

2.5 The need to build stronger relationships between industry and academia was discussed. It was suggested that an issue for successful collaboration between academia and industry is the gap in expectations – what is required for the publications necessary to a researcher’s career, can be different from the needs of a business. This was not just an issue for nanotechnology, but for all technologies moving towards marketability, although scalability is a particular issue for nano. It was suggested that an increase in the number of collaborative laboratories would help improve technology transfer, rolling out the model of university technology centres successfully undertaken by Rolls Royce which did not typically require new buildings. This had also been done with a cluster of companies in Yorkshire, with a specific focus on nanotechnology. The energy technology institute was proposed as a market driven model which would merit further exploration. Embedding a researcher in industry, or someone from business in a university, can also provide joint benefits.

2.6 It was noted that the TSB match funding requirement can provide an additional hurdle for applications that are already peer reviewed. While it is important to retain match funding, state aid issues would need to be taken into account. TSB agreed to consider a Launchpad for Nanotechnology, where companies are given a year to find the private sector match funding.

2.7 It was suggested that Government might have a role in helping companies to complete the proof of market, which is often a poorly completed part of funding applications.

2.8 It was broadly agreed that regulatory uncertainty was a barrier to innovation. It was confirmed that a 12-week consultation had just commenced on the amendment of the REACH annexes to improve their applicability to nanomaterials. It was suggested that not much is known about environment and hazard assessment, and that the injudicious application of the precautionary principle could be a barrier to investment. It was noted that the TSB work on a Responsible Innovation Framework might inform this discussion.

Item 3: Nanotechnologies research and innovation funding: EU opportunities

3.1 A paper was presented which analysed UK performance across the EU Framework Programme for Research and Innovation (FP7) funds, and looked at the direction of travel by the EU in assessing hazard and risk of nanomaterials. It was presented that UK organisations are getting about 10% of the total budget and are involved in almost half of all projects. The Russell Group of Universities has been particularly successful, not just in the expected areas but also in innovation projects, and that without this income stream there would potentially be both a major drop in research capacity for these institutions and fewer

¹ Smart (previously known as Grant for Research and Development) is a Technology Strategy Board scheme offering funding to small and medium-sized enterprises (SMEs) to engage in R&D projects in the strategically important areas of science, engineering and technology, from which successful new products, processes and services could emerge.

technology and science options for industry. Moreover, many of these Universities are at the centre of smart regional specialisation manufacturing innovation networks. In this role, universities can act as local engines and can help SMEs particularly to access EU funding. But UK large industry is less involved than industry in other major EU countries. In discussion, it was noted that this was not just true for nanotechnology but across other sectors too.

3.2 In summing up, the following points were made in the presentation: The funding available in Horizon 2020 will be similar to that of FP7 (€3.5 Bn) for nanotechnology; The UK should and could aim to win greater than the 10% of the new programme's funds than it did in FP7; An important new set of Cohesion funds of €3.8 Bn is provided for Key Enabling Technologies pilot plants and demonstrators in Horizon 2020, and nanotechnology is likely to figure in 20-60% of these projects.

3.3 It was proposed that research on nano safety was reaching something of a tipping point with a great deal going on, and money was available so the UK should be positioning itself to play a leading role.

3.4 It was noted that the application process for Framework Programme funding required a lot of work, and that guidance can currently be provided by the Knowledge Transfer Network. It was also noted that Horizon 2020 was firmly fixed on nanotechnology as a Key Enabling Technology (KET), but there was a concern that this had not been reflected in the new TSB Delivery Plan which potentially meant that the UK would lose out in competition to other countries. In response it was explained that the Technology Strategy Board had run a small competition in the photonics area to stimulate potential collaborations between UK and EU companies which could respond to large Framework Programme calls. TSB agreed to explore the scope for something similar in nanotechnology to help companies focus on EU funding opportunities, and to get themselves in the right position with the right partners to enable them to get grants.

Item 4: Any other business

4.1 **Chemical industry's growth strategy:** The chemicals industry, supported by the Chemical Industries Association, has produced a growth strategy for their industry, which demonstrates how chemistry underpins many other growth sectors. The scope was to look at the big sectors, such as energy and climate change, and how the UK chemicals industry can support those sectors. The Strategy has chapters on: innovation; rebuilding the UK supply chain; trade; financing. The Strategy proposes the setting up of a Government and industry partnership council. The Strategy is still being developed but the findings will be presented to Michael Fallon (BIS Minister) on 10th July. A copy will be circulated to NSF members.

4.2 **Regulatory update:** The European Commission has just published a twelve week consultation on its proposals for ensuring further clarity is provided on how nanomaterials should be treated on REACH registration dossiers. One response per organisation is invited

by 13th September. Defra agreed to circulate a link to the NSF membership and would welcome being copied in on any responses.

4.3 The NANoREG project is gathering momentum. The UK launch will be held on 26th June, with representatives from industry, academia and Government, in order to identify what the UK wants to get out of initiative.

4.4 **Public engagement:** A brief discussion was held, in which it was noted that there was still uncertainty about how the public will react to nano in products once labelling increases and that caution against a potential backlash is slowing demand. It was agreed that the Chemical Industries Association's Nanotechnology Supply Chain Forum would take forward an interim discussion on public engagement and provide recommendations to the next NSF meeting.

4.5 The Chair closed the meeting, saying it had been a useful and helpful discussion. A note summarising actions will be produced, with actions identified. The NSF will meet again in six months time (December 2013).