

Note of fourth meeting of the Nanotechnologies Strategy Forum, Monday 10th March 2014

Attendees:

David Willetts	Joint Chair (BIS)
Lord de Mauley	Joint Chair (Defra)
Darren Budd	Managing Director of BTC UK (BASF)
Linda Crane	Sustainability Policy Adviser, British Retail Consortium
Peter Dobson	Director Begbroke Science Park
Steve Elliott	Chief Executive, Chemical Industries Association
Steffi Friedrichs	Nanotechnologies Industries Association
Andrew Gooda	Manufacturing Director, NanoCo
Gary Hutchison	Hazardous Substances Advisory Committee
Alec Reader	Director, NanoKTN
Zoe Webster	Head of Technology, Technology Strategy Board
Terry Wilkins	CEO NanoManufacturing Institute, Leeds University

Defra and BIS Officials also attending:

Stuart Barthropp	BIS
Lee Vousden	BIS
Maggie Charnley	Defra
Richard Vincent	Defra

Apologies:

Sue Davies	Which?
Andrew Goodwin	Commercial Director of Advanced Materials, Thomas Swan
Nicole Grobert	Professor of Nanomaterials, University of Oxford
Simon Holland	ISO/TC 229 Nanotechnologies Chair
Thomas Keller	Director of Open Innovation, GlaxoSmithKline (GSK)
John Knowles	Chair, NanoSight Ltd and NanoKTN Advisory Board
Joanne Lloyd	Director of Chemicals Policy, Chemicals Industry Association

Item 1: Welcome, Introductions and Matters Arising

1.1 The joint Chairs welcomed attendees. David Willetts introduced the agenda, explaining that the meeting would hear from the Knowledge Transfer Network (KTN) about their new structure, and that a discussion would be had on the future of the Nanotechnology Strategy Forum. A background paper prepared by Defra and BIS had been circulated prior to the meeting to inform discussions.

1.2 Lord de Mauley thanked the Chemical Industries Association (CIA) for considering opportunities for specific public engagement activities through their Nanotechnology Supply Chain Forum. The Supply Chain Forum is chaired by the CIA and its membership comprises trade bodies representing users of chemicals. The Forum has agreed to sample the public for views through a public dialogue research project, working with BIS, Defra and ScienceWise. A specification for the work is currently being drafted. Steve Elliot explained that further data will be available from a biennial CIA survey on chemicals including specific questions about awareness, understanding and public engagement.

Item 2: Revised structure of the Knowledge Transfer Network

2.1 Alec Reader provided an overview of the new structure for nanotechnology in the Knowledge Transfer Network (KTN). He circulated two supporting documents to the meeting, one outlining what the NanoKTN has achieved, and one summarising the new KTN structure and objectives. A further information paper on global investment in nanotechnology had been circulated prior to the meeting.

2.2 Alec Reader explained that in six years, the NanoKTN has secured about £82million for UK industry, mainly focussed on SMEs, providing a good return investment on the initial input of £3million. The UK SME sector is doing well, and many are being acquired by bigger companies which can provide strong sales and marketing channels. An important role for the KTN is making the links between start-up companies and bigger companies.

2.3 The current KTN network has fifteen KTNs. These are mainly industrial sector focussed but a few, including Nano, have a cross-cutting remit and work in collaboration with the vertical KTNs. From 1st April 2014, these fifteen KTNs will be merged into a single company, KTN Ltd. The financial services KTN will not continue, but all the others will be combined into the new structure, which will consist of five domain areas. The Materials Domain is where nanotechnology work will be carried out, together with chemistry, resource efficiency, and High Value Manufacturing (a new area for KTN).

2.4 Within the Materials Domain, there will be perhaps one or two nano-specific people but they will call on other people in that domain to support their activities as necessary. The new structure will be more dynamic, more adaptive and better able to respond to new needs. Networking and connecting of communities will continue. Users should not notice any difference from the outside, as requests will be handled and distributed as necessary through a single 'front door'.

2.5 In discussion, it was noted that there is a need for the KTN to support SMEs to get earlier funding in order to deliver critical demonstrator projects and small scale pilot plants, thereby making them more attractive further down the road. Alec Reader explained that KTN has been running 'nano entrepreneur' events, which bring together experienced CEOs with people who want to start up a company. Participants expressed support for the vertical structure in the KTN, particularly because existing innovation hot-housing is often chemical company to chemical company (horizontal).

2.6 It was discussed that lots of SMEs are not able to expand beyond pilot scale production and, if they do, they often go overseas to find available capital. A key function of the Technology Strategy Board (TSB) is around scale up: Zoe Webster explained that the TSB is working with EPSRC¹ on a proposal for a Catalyst² to provide support from university development to scale-up in advanced materials. Many TSB competitions have nano within their scope, and can support companies to take risks.

2.7 A wide ranging discussion was held on the absence of infrastructure to keep both large corporates and SMEs in the UK. It was recognised that the UK is a leader in university research, but there is concern about a lack of infrastructure to keep the

¹ Engineering and Physical Sciences Research Council

² Catalysts are run jointly by the Technology Strategy Board and the Research Councils. A Catalyst is a form of research and development funding which focuses on a specific priority area and aims to help take projects from research to as close to commercial viability as possible.

outputs in the country. It was also emphasised that there is a danger of other sectors like electronics disappearing from the UK. Particular gaps were identified as financing for capital, maintenance of strategic skills sectors including for High Value Manufacturing, in particular process engineering expertise, and management. It was noted that Leeds University is turning applicants away due to insufficient room for them, and that Cambridge and UCL are probably in a similar position. Centres for Doctoral Training (CDTs) were identified as important avenues, and Leeds University has applied for a micro-processing CDT. There is also a science-industry bid for £32million for an Employer Ownership of Skills Pilot (EOP), aimed at ensuring the UK has the scientists of the future, the results for which are due to be announced soon. Terry Wilkins provided the Ministers with a ManETEI³ publication, *Management of emerging technologies for Economic Impact*.

2.8 It was noted that BIS have 11 industrial strategies, and that all industries are likely to have similar problems at an early technology stage. **It was agreed that BIS and TSB should consider how best to disseminate an overview of what is available in terms of financing and all the different strands of support.** This would include catalyst funds. David Willetts also referred to a forthcoming meeting he had with a business bank which has the potential to help.

2.9 The meeting broadly welcomed the changes to the Knowledge Transfer Network, and noted that there would need to be some process in place to monitor that it works.

Item 3: Regulatory update

3.1 A background paper provided by Defra had been circulated prior to the meeting. Steffi Friedrichs was asked to provide an update on regulation. She explained that Belgium has now added to the list of reporting schemes, and it will be even stricter than the French scheme as it will also bring in in formulations and articles, as well as capturing small quantities of nanomaterials sent for laboratory analysis. Denmark are also considering introducing a registration scheme, although there are ongoing discussions on costs to industry. It seems likely that if another large Member State creates a further national registration scheme, then the European Commission will have to move in to harmonise.

3.2 In discussion it was noted that nano reporting is likely to be costly for industry, with no clear way to say definitively what is and what is not a nanomaterial. In addition, the inclusion of articles in the Belgian scheme means that users of nanomaterials, such as the automotive industry, may start to prefer non-nano alternatives. The European Commission is looking at changing the REACH⁴ annexes which, if agreed, could help to take the steam out of a call for registration but these proposals have been significantly delayed. There will be an EU expert workshop on 19th March to discuss the European Commission's proposed nanomaterial definition. Initial views suggest the current definition is not usable as there are no testing methods to test reliably against it. It was also suggested that putting nanomaterials into a high risk category, even though all reviews say that nano as a whole poses no more risk than any other material, is a major disincentive for potential business to business sales.

³ Management of Emerging Technologies for Economic Impact, EU Framework Programme 7 (FP7) Marie Curie Research Training Network

⁴ REACH is the EU chemicals legislation, *Registration, Evaluation, Authorisation and restriction of Chemicals*

3.3 There was a discussion on the need to pull the EU back onto a precautionary rather than hazard based approach, with the forthcoming EU elections and change of Commissioners seen as providing a potential opportunity. The Ministers confirmed that the view taken by the UK Government is that nanotechnology should be addressed under an existing framework (REACH) rather than a nano-specific one. Several forthcoming EU Council formations have regulation on agenda, and **Defra and BIS officials will consider how best to influence the direction in the EU, including potential approaches to relevant Commissioners. Defra and BIS officials will provide briefing to senior Government ministers** so that this is included on the list of regulatory threats from the EU. There is also an existing 'red tape' commitment to ensuring the REACH regulations are as practical as possible for SMEs. It was recognised that additional regulation would cause a headache but would be surmountable for larger companies, but that SMEs and innovation would be restricted, and secondary users would be put off.

Item 4: Future of the Nanotechnology Strategy Forum

4.1 In introducing the discussion, David Willetts stated that the same issues arise for all emerging technologies – skills, regulation, capital – but that there are public policy issues that cannot be fully discharged under the KTN, for example updates on the skills agenda, and on regulation. Lord de Mauley noted that he agreed with the call from the CIA's Supply Chain Forum for continued Ministerial engagement, which had been proposed in a letter received the previous week by the Ministers. **It was proposed that the NSF would continue, with Ministerial involvement, but that the Chemical Industries Association (CIA) would take on the role of Secretariat, with support from Defra and BIS officials.** This was welcomed by participants. Continuation would be subject to review after the General Election in 2015. The Ministers thanked Steve Elliot, and will formally respond to the CIA letter following the meeting. Peter Dobson suggested that a particular area for future focus would be nano in healthcare and medicine, an expanding area creating lots of innovation and business. **It was agreed that the Medicine and Healthcare products Regulatory Agency (MHRA), as regulators for this sector, should be invited to attend the next NSF meeting.**

4.2 Gary Hutchison provided an update from the Hazardous Substances Advisory Committee (HSAC), which would look at the environmental and societal impacts of nanomaterials and give further clarity to science outputs. HSAC would discuss its role with regard to nanotechnology at its meeting on 25th March.

Item 5: Any Other Business

5.1 Lee Vousden provided a short update on the OECD⁵ Working Party on Nanotechnology (WPN), which is reviewing its work programme and budget for 2015 and considering how to address the convergence of biotechnology and nanotechnology. **On the latter issue, Lee agreed to circulate the OECD proposal for comment.**

5.2 In summarising, David Willetts noted that the NSF endorsed the new KTN and wished it well, and that the discussion had highlighted three broad areas in particular for future focus for the Forum. These were: skills issues; SMEs and support for scale up; the EU regulatory environment.

⁵ Organisation for Economic Cooperation and Development

5.3 The joint Chairs closed the meeting, saying it had been a useful and helpful discussion. The NSF would meet again later in the year.