

4th August 2009

Mr Vern Lim
Assistant Manager
Enabling Technologies Policy Section
Pharmaceuticals, Health Industries and Enabling Technologies Branch
Department of Innovation, Industry, Science and Research
GPO Box 9839, Canberra ACT 2601

Dear Mr Lim,

NATIONAL ENABLING TECHNOLOGIES STRATEGY CALL FOR COMMENTS ON ISSUES PAPER

Thankyou for the opportunity to comment on the issues paper relating to the development and implementation of a National Enabling Technologies Strategy for Australia.

In regard to the specific questions in the issues paper I am pleased to provide the following responses prepared by Associate Professor Paul Wright, who is Coordinator of NanoSafe Australia. At RMIT Associate Professor Wright is the Unit Leader (Toxicology) in the Toxicology Key Centre in our School of Medical Sciences.

Questions for consultation:

1. What are the key issues and challenges that need to be addressed by the National Enabling Technologies Strategy?

A key issue and challenge for enabling technologies, such as nano-enabled technologies, continues to be ensuring that the developers and producers act to minimise the potential adverse impacts of their products on health, safety and the environment.

This is an important challenge that needs to be addressed if we are to avoid a public backlash against emerging technologies and fully harness the potential benefits of these enabling technologies, such as: the breakthroughs promised by nanomedicines and nanodiagnostic devices; and maintaining a greener lifestyle with more efficient energy and water use that protects the environment, and can also help to remediate previous damage to the environment.

2. How should these issues and challenges be addressed? What is your organisation doing to address those issues and challenges?

Smart development of nano-enabled technologies is by using the "safety-by-design" approach, where the potential hazard is assessed for the **whole** life-cycle of nanomaterial products, and potential hotspots are identified for the exposure of people (as workers or consumers) and the environment. Industry has a legal duty of care to their employees and must employ appropriate control measures in the workplace to reduce the potential exposure to engineered nanomaterials. If there is a definite need for developing a particular nanomaterial that is potentially hazardous, then we should build the capacity to re-engineer such nanomaterials to reduce their hazard potential – by understanding how they are toxic and how this can be modified. We should also be looking at safe disposal procedures for engineered nanomaterials and building in recycling options where possible.

RMIT University hosts NanoSafe Australia (www.rmit.edu.au/nanosafe), the nationwide network supporting government, industry and NGOs in their efforts to understand the occupational and environmental issues surrounding nano-enabled products and their manufactured processes. NanoSafe Australia also provides quality data for the appropriate risk assessment of nanomaterials. The NanoSafe Australia Co-ordinator is a recognised expert in nanotoxicology and nanosafety in Australia, being the “go to” person in these new fields for federal and state governments, CSIRO, and industry. This activity is urgently needed and is crucial for the continuing development of nano-enabled technologies in Australia – by providing balanced risk/benefit appraisals. NanoSafe Australia members at RMIT are also conducting nanotoxicology/nanosafety research in collaboration with CSIRO’s Nanosafety Theme and Monash University.

Of direct relevance to the health, safety and workplace environment issues, members of NanoSafe Australia (Paul Wright & Neale Jackson) have also recently completed a major government report about to be released by Safe Work Australia on the “Evidence of the effectiveness of workplace controls to prevent exposure to engineered nanomaterials”, and are currently completing another Safe Work Australia report on the “Substitution and modification options to reduce potential hazards associated with engineered nanomaterials”.

3. What would you like to see as the main outcomes for the National Enabling Technologies Strategy?

One of the main outcomes of NETS should be the recognition that the responsible and smart development of enabling technologies (and nanomaterials in particular) is by adopting the “safety-by-design” approach and assessing the whole life-cycle of such products. We urgently need to build the capacity to re-engineer products that are being developed from emerging technologies, in order to reduce their potential hazards and health impacts. This is an effective value-adding process that would make such products safer to develop and use, as well as providing a marketing edge on competitors by gaining greater consumer acceptance.

This activity requires strategic support of safety initiatives, such as nanosafety research and toxicity profiling of priority nanomaterials of concern. Other countries are actively supporting nanosafety investigations of their own products and making major contributions to the OECD program on the safety testing of engineered nanomaterials, whereas Australian contributions in this area have been mainly from a small number of researchers gaining independent funding. Australia is a developer and producer of nano-enabled technologies and there should be strategic support of nanosafety investigations into the Australian nano-enabled products and developments.

4. How do you think your organisation could work with the Enabling Technologies Policy and Public Awareness Sections and others to address those issues and challenges?

The NanoSafe Australia network is coordinated from RMIT, and is already involved in the activities of several government departments in the nanosafety arena, as well as participating in industry and academic fora. NanoSafe Australia and its RMIT-based members look forward to actively participating in the current round of consultation meetings and working in partnership with the Enabling Technologies Policy and Public Awareness Sections to help address the nanosafety issues surrounding nano-enabled technologies.

On the broader issues of strategies and policies relating to implementation and monitoring of application downstream of research and technological innovation we make the general observation that “downstream of research” strategies like this should not inhibit the research that is undertaken in these areas, and they should facilitate and promote the uptake of the outputs of the research. Clearly, we do not want to be in a position of funding research in a particular area only to see its development and application stymied because it is outside the national strategies for implementation.

I also wish to confirm that RMIT University would be pleased to participate in further discussions about the development and implementation of strategies and policies that support the take up of the wide range of innovations such as those identified as enabling technologies in this issues paper. To arrange this, could you please contact me and Professor Leigh Peterson (contact ph: 03 9925 7550, email: lfpeterson@rmit.edu.au) directly, and we will ensure that the opportunities to participate are circulated widely within RMIT. Associate Professor Wright would also be pleased to expand on his responses as appropriate. His can be contacted by 'phone on 03 9925 6512, and email: paul.wright@rmit.edu.au .

Kind regards,



Professor Daine Alcorn
Pro Vice-Chancellor (Research and Innovation)