

JOINT SUBMISSION TO THE NATIONAL NANOTECHNOLOGY STRATEGY TASKFORCE: A CALL FOR BETTER PUBLIC ENGAGEMENT ON NANOTECHNOLOGY

**From: Australian Consumers Association
Biological Farmers of Australia
Friends of the Earth Australia
GeneEthics Network
Public Health Association of Australia, Inc.
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Summary

Nanotechnology will have significant impacts for the health of workers and consumers, the environment and the economy. It also raises serious ethical issues. We feel that given the extent of nano's implications for all members of the community, it is essential that meaningful public engagement takes place prior to the Nanotechnology Taskforce finalising its development of a national strategy. We therefore call on the Nanotechnology Taskforce to delay its development of Australia's nanotechnology strategy until adequate and appropriate public engagement has taken place. Key essential elements of a public engagement process are outlined below.

What the impacts and implications of nanotechnology are that society needs to consider in its development

There is a growing body of toxicological evidence that nanotechnology presents serious new risks to human and environmental health through nanotoxicity¹. Leading scientific organisations, including the United Kingdom's Royal Society, have warned that the risks of nanotoxicity are serious. The Royal Society has recommended that nanomaterials should be treated as new chemicals² and be subject to new safety assessments prior to their inclusion in consumer products³. The Royal Society has further recommended that factories and research laboratories should treat nanomaterials as if they were hazardous⁴, and until the environmental impacts of nanomaterials are better known, their release into the environment should be avoided as far as possible⁵.

Nanotechnology is also likely to have significant socio-economic impacts. New nanomaterials appear likely to replace many existing commodities (such as copper, cotton and rubber), which could result in large-scale disruptions to commodity markets with associated job losses⁶. The results may be devastating for many countries whose economies are reliant on export commodities for a significant proportion of their GDP, eg Australia.

Nanotechnology also introduces complex ethical issues, such as those associated with the attempt to improve human performance using nanotechnology, biotechnology, robotics and cognitive science⁷. Nanobiotechnology also raises serious ethical problems, in its quest to engineer structures and organisms that contain both living and non-living materials.

Community engagement and information sharing

Australian nano products already on the market include: transparent sunscreens and cosmetics; colour-fast fabrics; self-cleaning windows; long-lasting paints and furniture varnishes; fuel catalysts; and automotive and aerospace components⁸.

However the commercialisation of these products has taken place with very limited efforts to engage the public in a dialogue about nanotechnology and its implications. There has been very little information sharing from government or industry about public interest issues associated with nanotechnology. There is a very low level of awareness about nanotechnology within the general community, and even within sectors that are already immediately affected by it, for example among workers handling nanomaterials.

We believe that given the significant implications that nanotechnology has for the public, workers, and the environment, it is important that there is genuine public engagement in decision making about its introduction.

We are disappointed with the narrow terms of reference and the short duration of the Nanotechnology Taskforce's public consultation process. We are also dissatisfied with the limited attention given to public interest issues, for example the need to introduce regulations to protect the health of workers, consumers and the environment from nanotechnology's risks. Most importantly, we are concerned that given the low levels of public awareness about nanotechnology in the community, a one-off call for public submissions is unlikely to result in meaningful public input into the development of Australia's future nanotechnology strategy.

We therefore call on the Taskforce to initiate a robust, longer term, well advertised and transparent public engagement process, prior to its development of a national nanotechnology strategy. This public engagement process should underpin the development of Australia's nanotechnology strategy and guide the subsequent decision making regarding nanotechnology's commercialisation.

This engagement process should include the following elements:

- Oversight from a transparent and independent public engagement steering group, with representatives from government, business, research, unions and non-government organisations. Resources should be provided to enable all participants to play an active role

- Direct links to government decision making processes
- A wide range of participatory processes, including direct public engagement (eg via public meetings and forums), as well as processes that seek to resource, inform and support groups of “ordinary” people to grapple with the complex issues surrounding nanotechnology, for example via a series of consensus conferences as used by the Danish Board of Technology Assessment, or a series of independent “planning cells” as used in Germany. These processes should be overseen by the steering group
- The involvement of a wide range of stakeholder groups in identifying the issues and impacts that most concern them (e.g. unions, public health organisations, disability rights advocates, consumer organisations, civil liberties advocates, environmental organisations, farming and medical organisations). Resources should be provided to enable all groups to take part in a meaningful way
- A broad-based public education process. We suggest the establishment of a public education fund to which all interested bodies could apply for money to support public communication and outreach programs, and the research to underpin such outreach. The allocation of funding and the quality of communications should be overseen by the public engagement steering group

We call for the Nanotechnology Taskforce to delay its completion of Australia’s nanotechnology strategy until such meaningful public engagement processes have taken place. This public engagement model should be retained to guide future decision making on nanotechnology.

Yours sincerely,

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1 For excellent overviews of the emerging field of toxicology, see Oberdörster G, Oberdörster and Oberdörster J (2005). Nanotoxicology: an emerging discipline from studies of ultrafine particles. *Environmental Health Perspectives* 113(7):823-839 and Hoet P, Bruske-Holfeld I and Salata O (2004). "Nanoparticles – known and unknown health risks". *Journal of Nanobiotechnology* 2:12

2 P85 Recommendation 10, The Royal Society and The Royal Academy of Engineering, UK (2004). Nanoscience and nanotechnologies. Available at <http://www.royalsoc.ac.uk/>

3 P86 Recommendation 12 (i), The Royal Society and The Royal Academy of Engineering, UK (2004). Nanoscience and nanotechnologies. Available at <http://www.royalsoc.ac.uk/>

4 P85 Recommendation 5 (i), The Royal Society and The Royal Academy of Engineering, UK (2004). Nanoscience and nanotechnologies. Available at <http://www.royalsoc.ac.uk/>

5 P85 Recommendation 4, The Royal Society and The Royal Academy of Engineering, UK (2004). Nanoscience and nanotechnologies. Available at <http://www.royalsoc.ac.uk/>

6 ETC Group (2005). The potential impact of nanotechnologies on commodity markets: the implications for commodity dependent developing countries. The South Centre.

7 Roco M and Bainbridge W (Eds) (2002). *Converging Technologies for Improving Human Performance: nanotechnology, biotechnology, information technology and cognitive science*. US National Science Foundation/ Department of Commerce-sponsored report. Available at: <http://www.wtec.org/ConvergingTechnologies/>

8 Commonwealth of Australia, Invest Australia (2005). *Australian Nanotechnology: Capability & Commercial Potential*, 2nd Edition. Available at <http://investaustralia.hyperlink.net.au>