ETC Group
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26 Governments Tiptoe Toward Global Nano Governance

Grey-Goo*vernance?*

On June 17-18, a first intergovernmental dialogue on "Responsible Research and Development of Nanotechnology" convened in Washington with representatives from 26 countries. In his introductory remarks, Mike Roco of the US government's National Science Foundation explained that the meeting was dedicated to the examination of broad societal issues that cannot be addressed by any single country. Roco asked: "How can we prepare our world for the emergence of nanotechnology?"[1]

"The reality is that it's too late for governments to suggest they're being pro-active. Hundreds of nanotech products are commercially available, countless more are in the pipeline, and there are no regulations explicitly targeting nanotechnology anywhere in the world," said Pat Mooney, Executive Director of ETC Group." The US National Science Foundation now predicts that the global 'nano' market will tip $1 trillion in seven years. Why is it that governments can look only 3-5 years ahead when they're talking about regulations and social impacts, but when those same governments talk about potential revenues they have a 10-20 year horizon? Remember, it takes at least 8 years to negotiate multilateral agreements. At this point, diplomats are already way behind."

The government representatives who met earlier this month are planning to convene again, possibly before the end of 2004. Before they do they must consider the political realities. Future intergovernmental discussions must be inclusive, transparent and take place under the auspices of the United Nations. A meeting of technical experts from 26 countries is not adequate to address the interests of all countries – whether engaged in or affected by nanotech activities. Although governments in Washington did place the problem/potential for the global South on their agenda, only the 'Big South' (Argentina, Brazil, China, India, Korea, Mexico and South Africa) attended.

"By the time governments get around to recognizing the need for a broad societal discussion, it means they're already in the position of playing catch-up, clean-up – or worse, cover-up," insists Silvia Ribeiro of ETC Group's Mexico office. "Of course we can't leave it up to governments – civil society and people's movements must first be

fully engaged in debates about the role of science and technology in society," said Ribeiro.

According to the meeting's agenda,[2] attendees tackled issues associated with nanotech R&D in four parallel breakout groups: "the environment," "human health and safety," "socio-economic and ethical issues" and "nanotechnology in developing countries."

"That's an impressive scope for a session lasting only an hour and forty-five minutes," notes Kathy Jo Wetter, ETC Group researcher. "But it's an important first step for national governments to recognize that nanotech's global socio-economic, health and environmental impacts must be addressed."

While the June meeting included discussion of broad societal issues, many critical areas urgently require more thorough examination and specific action. These include:

- **Convergence and technology cartels:** Nanotechnology refers to a spectrum of new technologies involving the manipulation of matter at the scale of atoms and molecules – the nano-scale (a nanometer is one-billionth of a meter). The real power of nano-scale science is the convergence of technologies that can be integrated on the molecular playing field – including biotechnology, cognitive sciences, informatics, robotics, etc. Control and manipulation of matter at the nano-scale is poised to become the operative platform for corporate control of industrial manufacturing, food, agriculture and health in the 21st century. The world's largest companies across *all* industry sectors are investing in nanotech R&D – from military, mining and manufacturing to energy and electronics, to pharmaceuticals, food processing and chemicals. Society and governments must be prepared to address the implications of corporate technology cartels that could gain unprecedented control over converging technologies and their products.

- **The privatization of the fundamental building blocks of matter:** In the US and many OECD nations, intellectual property laws evolved rapidly over the past quarter century to allow for the patenting of all life forms – plants, animals, microorganisms and human DNA. With the rise of nano-scale technologies, will we see the same kinds of sweeping patent claims on products and processes related to molecular level manufacturing? Nanotechnology offers new opportunities for monopoly control – not just over life forms – but over the building blocks of the entire natural world. A recent front-page article in the *Wall St. Journal* reports on the "intensifying race" to file nanotech patent applications, citing one patent attorney who's experiencing déjà vu: "It's like biotech on steroids," Charles Wieland told the *Wall St. Journal*.[3] In the US alone, nanotech patents awarded annually have tripled since 1996.[4] Companies like California-based NanoSys have neither products nor profits, but with a portfolio of over 200 nanotech patents, the company expects its initial public offering to fetch over $500 million in stock sales.[5] The meeting in Washington focused primarily on the need to facilitate intellectual property as a means of promoting nanotech, rather than on preventing abuses of exclusive monopoly patents or protecting the interests of developing nations. Governments must monitor current trends in nanotech patents and take steps to prevent technology "platform" monopolies.

- **Human Rights:** Even allowing for hyperbole, nanotech's impact on the global economy will be no less than profound. Whatever the long-term potential benefits, nanotech will bring economic turbulence – as every technology wave does – destabilizing labour and society. Nano-scale technologies will change the way we manufacture goods, produce food, energy and medicine. Commodity markets will be turned upside down, threatening the poorest and most vulnerable workers who do not have the economic flexibility to respond to a sudden demand for new technical skills and/or different raw materials. As nanotechnology converges with other powerful technologies such as biotechnology and information technologies to "improve human performance" – in the words of the US government – society must grasp what it means to be human, practically, legally and ethically. At the same time, society will have to address an ever-widening gulf between those "improved" through technological convergence and those who remain "unimproved," either by choice or lack of choice. As convergence helps shift our concept of what is "normal," we'll all be playing catch-up or we'll be left behind. Whatever benefits convergence could bring, they will be neither cheap nor equitably distributed. What will happen to the unimproved?

- **War and defense in the age of nanotech:** Experts predict that nanotechnology will change the way wars are fought more than the invention of gunpowder.[6] Precise and sophisticated molecular-level manipulations will produce stronger, lighter materials, more precise and pervasive sensors and faster, smaller and more energy-efficient computers. These products are being developed simultaneously for civilian and military uses. DuPont, a founding partner of the Institute for Soldier Nanotechnologies in the US, predicts that some of the materials being developed for soldiers will be available on the commercial market first.[7] In addition to these dual-purpose products, nanotech, and its convergence with biotech, will lead to the development of chemical and biological weapons that are more invasive, harder to detect and virtually impossible to combat. Convergence with cognitive sciences will produce soldiers with "enhanced" bodies and brains. Governments must act quickly and cooperatively to address the new realities of nano-age warfare.

Moving Nano-Governance Forward: Separately and collectively, governments need to evaluate, monitor and regulate the impact of nano-scale technologies on health and the environment; socio-economic infrastructure; human rights (especially marginalized people, including the disabled); defense and trade. Governments must act *now* or they risk losing all credibility in their capacity to oversee the introduction of new technologies.

ETC Group believes that governments should look beyond the pageant of individual new technologies marching forward and establish a United Nations mechanism to monitor all new technologies – an International Convention for the Evaluation of New Technologies (ICENT).

For further information:

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The Action Group on Erosion, Technology and Concentration, formerly RAFI, is an international civil society organization headquartered in Canada. The ETC Group is dedicated to the advancement of cultural and ecological diversity and human rights. www.etcgroup.org. The ETC Group is also a member of the Community Biodiversity Development and Conservation Programme (CBDC). The CBDC is a collaborative experimental initiative involving civil society organizations and public research institutions in 14 countries. The CBDC is dedicated to the exploration of community-directed programmes to strengthen the conservation and enhancement of agricultural biodiversity. The CBDC website is www.cbdcprogram.org

Note: Over the next 12 months, ETC Group will release a series of *Communiqués* on the socio-economic impacts of nanotech. Our next *Communiqué* will provide an update on the growing recognition for the need to regulate the technology and the major health and safety issues.

ETC Group headquarters is moving to Ottawa as of July 7, 2004:

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[1] Documents related to the meeting are available on the Internet at http://www.nsf.gov/home/crssprgm/nano/dialog.htm. ETC Group did not attend the June 17-18 meeting.
[2] In addition to the breakout sessions, participants completed questionnaires regarding nanotechnology policy in their countries (only the US's answers to the questionnaire have been made available to the public as of June 29.)
[3] Antonio Regalado, "Nanotechnology Patents Surge as Companies Vie to Stake Claim," *Wall Street Journal*, June 18, 2004; Page A1
[4] Ibid.
[5] Barnaby Feder, "Going Public Without Profits or a Product? Yes, in 2004," *New York Times*, May 24, 2004. See also, Antonio Regalado, "Nanotechnology Patents Surge as Companies Vie to Stake Claim," *Wall Street Journal*, June 18, 2004; Page A1
[6] Clifford Lau of the US Defense Department to Barnaby Feder, "Frontier of Military Technology is the Size of a Molecule," *New York Times*, April 8, 2003, p. C2.
[7] On the Internet: http://www1.dupont.com/NASApp/dupontglobal/corp/index.jsp?page=/content/US/en_US/news/releases/2003/nr05_22_03a.html