

Nanosciences and nanotechnologies: An Action Plan for Europe 2005-2009

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A decorative graphic consisting of several sets of concentric circles, resembling ripples in water, located in the bottom right corner of the slide.

Setting the scene....

- Breakthrough in science - ability to control matter at the atomic level
- Widespread industrial applications for materials and devices with new properties due to the small size
- Developed and introduced into the market with high speed all over the world.
- Huge benefits, but uncertainties about health, safety and environment aspects....

Huge potential benefits.....

- Economic development, boost for R&D and industrial innovation – Lisbon agenda
- Technical innovations to increase social welfare – medicinal applications, electronics, durable materials etc.
- Sustainable development through less energy and material input, and environment remediation

.....but also concern about potential impacts.....

- Free nanoparticles potentially harmful to health and environment (reactivity, penetration into body, brain and cells, PBT properties?)
- Unknown exposures (workplaces, consumers, via environment or food-chain?)
- Long term concerns for non-ethical applications

The European Approach.....

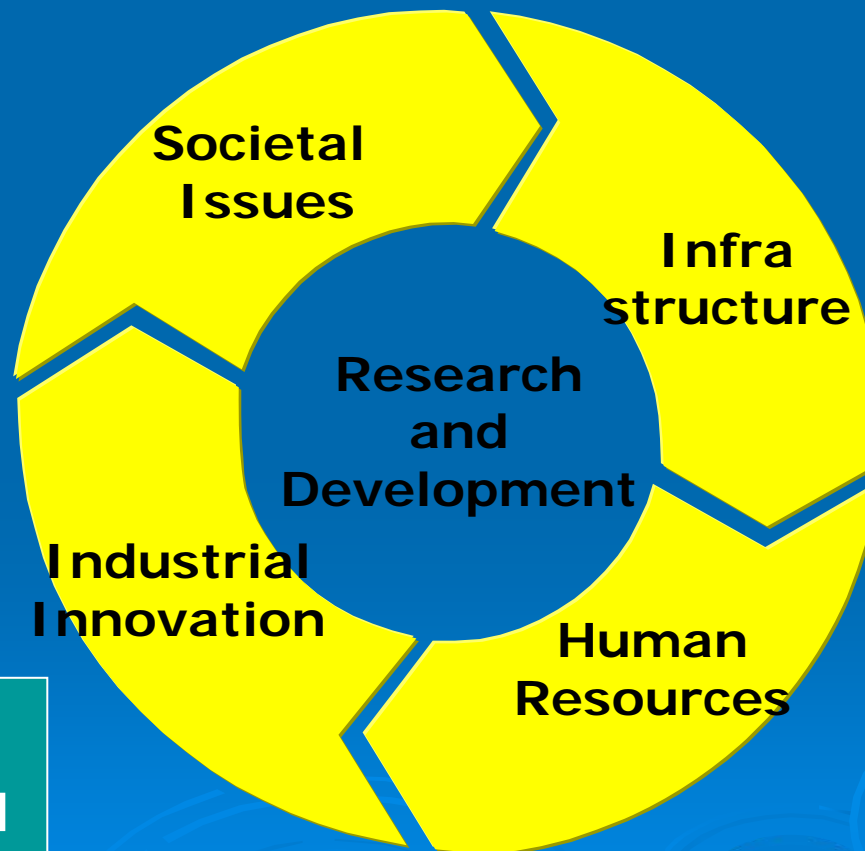
..... *a safe, integrated and responsible strategy for N&N.....*

- Towards a European Strategy for Nanotechnology adopted in May 2004
- Implementing activities proposed in the **Action Plan for Europe 2005-2009** adopted in June 2005

Nanotechnology in a broader policy context

Lisbon agenda

International collaboration



Health, safety, environmental and consumer protection

Sustainable Development

Eight groups of actions divided into

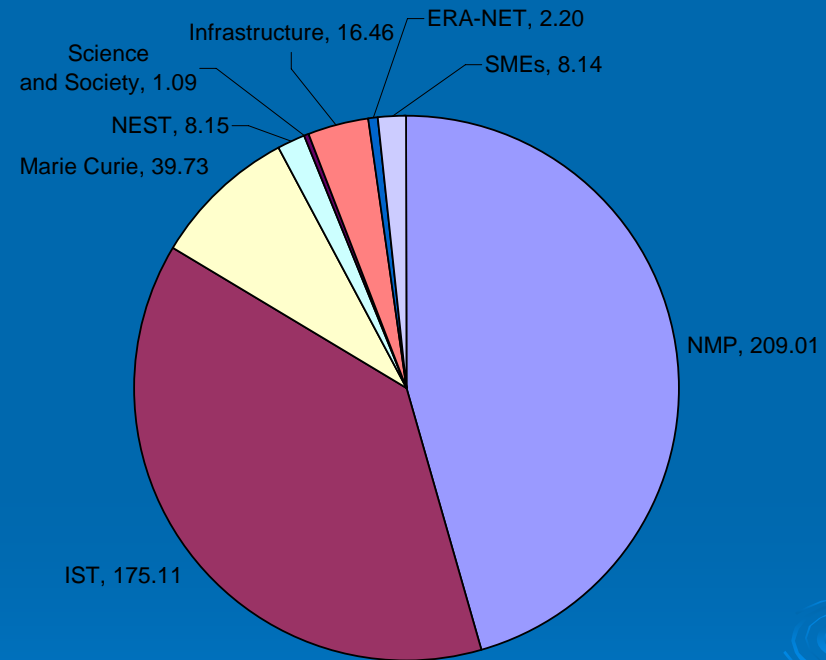
1. Research, Development and Innovation
2. Infrastructure and European Poles of Excellence
3. Interdisciplinary Human Resources: Europe needs Creativity
4. Industrial Innovation: From Knowledge to the Market
5. Integrating the Societal Dimension: Expectations and Concerns
6. Public Health, Safety, Environment and Consumer Protection
7. International Cooperation
8. Implementing a Coherent Approach at European Level

What has COM done so far?

- R&D investments under 4-6th FP – supporting innovation, education, centres of excellence, SMEs; including health and safety aspects
- Addressing environment and health concerns (chapter 6)
- Promoting and participating in international collaboration

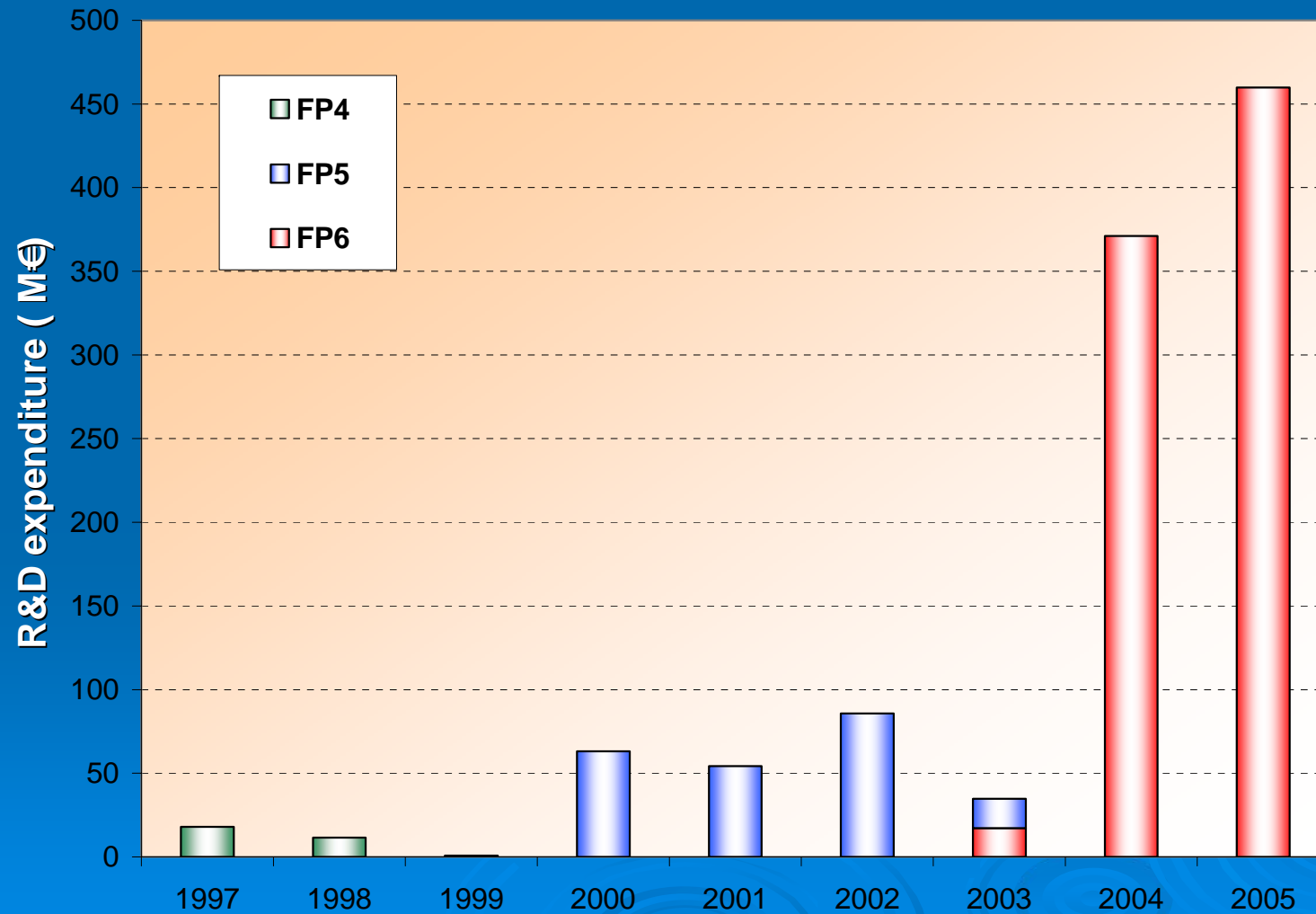
R&D investments under the Framework Programmes

- FP4 1994-1998
120 M€
- FP5 1998-2002
280 M€
- FP6 2002-2006
1300 M€



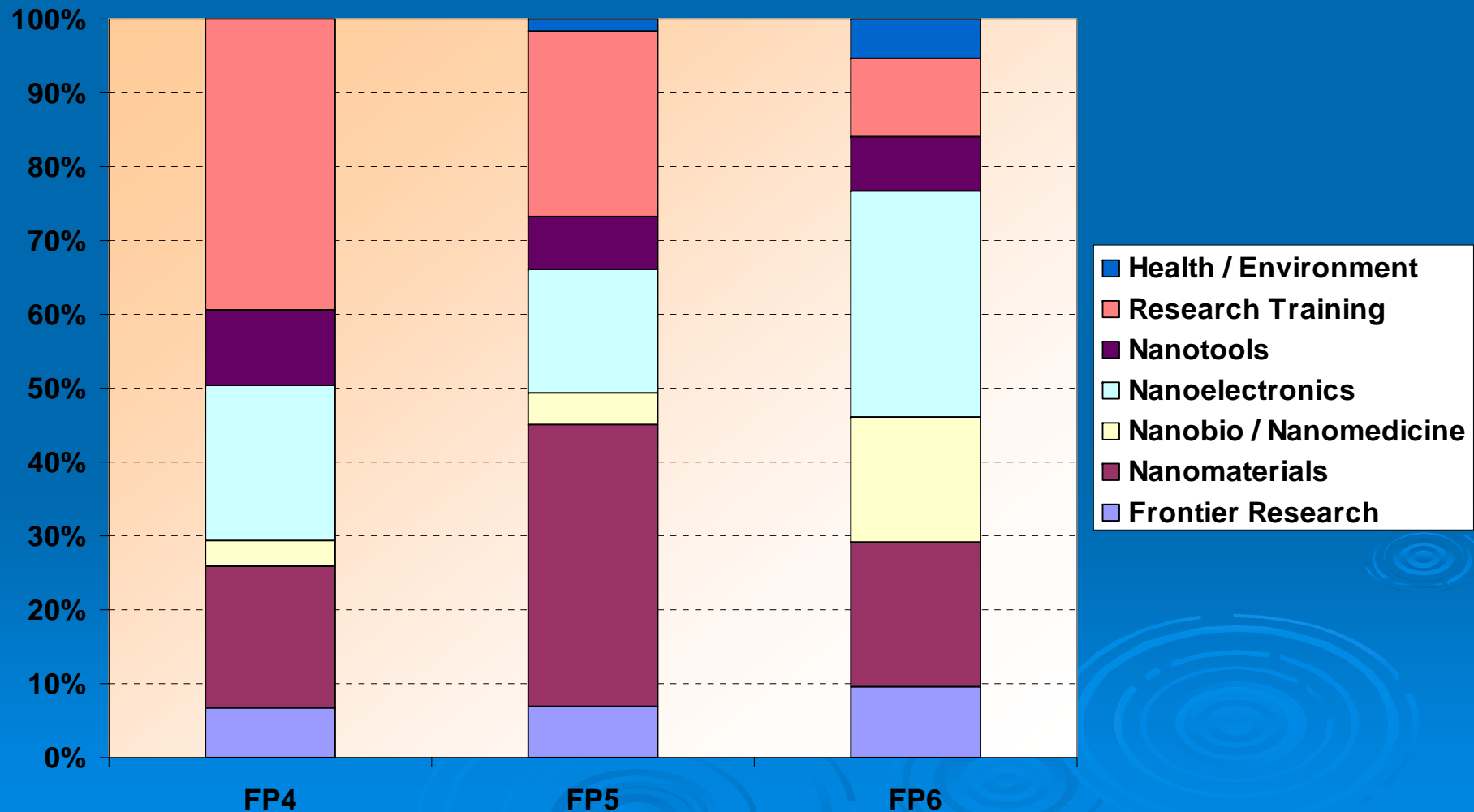
2005
~460 € million
estimated

Growth of Support for Nanotech at EU Level

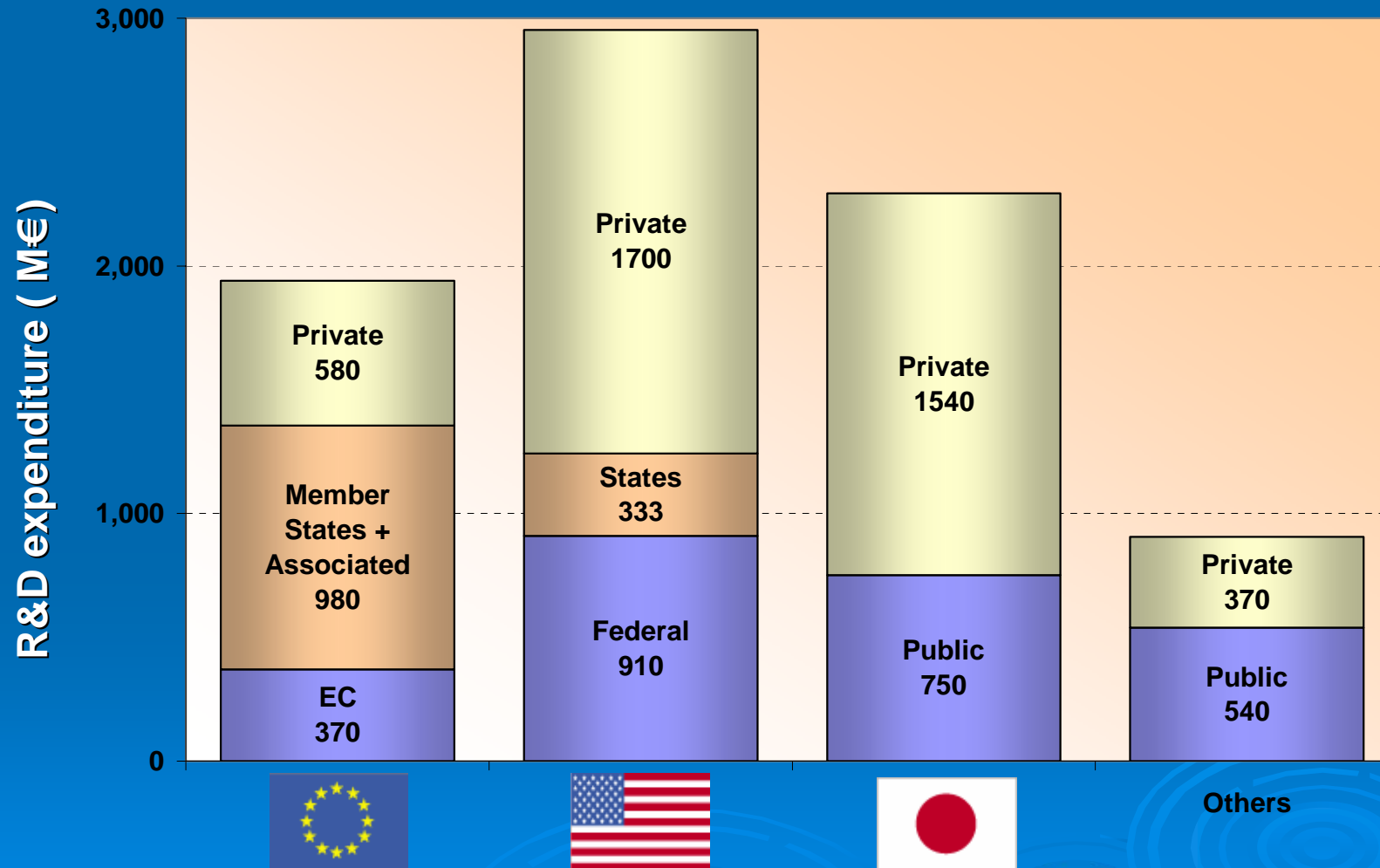


Source: European Commission (2005)

Areas Supported by the FPs



As comparison - R&D expenditures world-wide 2004



Source: European Commission (2005)

Action Plan on Environment and Health Safety issues Chapter 6

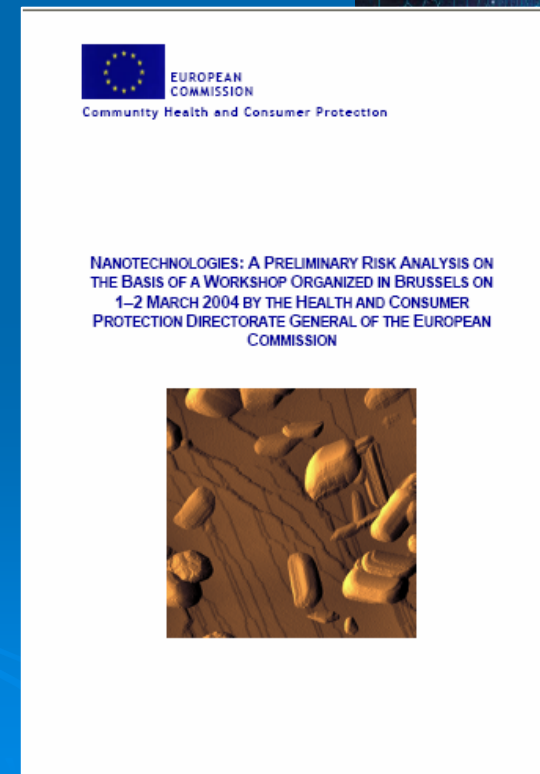
- Improve **knowledge base** - definitions, measurements, toxicological and ecotoxicological test methods, exposures, risk assessment
- **Regulatory aspects** – inventory of existing legislation

Environment and Health - filling knowledge gaps

Workshops:

- *A Preliminary Risk Analysis (March 2004)*
- *Research Needs for Nanoparticles (Jan 2005)*

Expected Opinion from the Scientific Committee (SCENIHR) in October 2005 on assessment of risks and methodologies



E&H in Research Programmes

- NANOSAFE
- NANODERM
- NANOPATHOLOGY
- MAAPHRI
- NANOFORUM
- NANOTOX
- IMPART
- NANOSAFE2



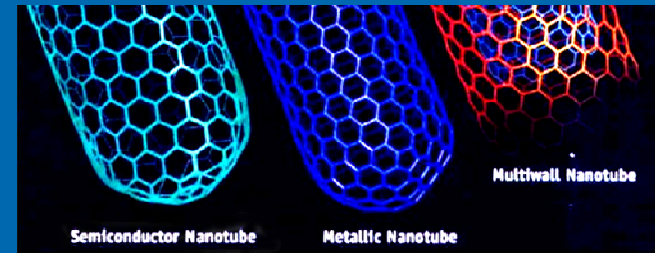
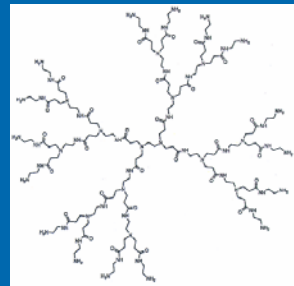
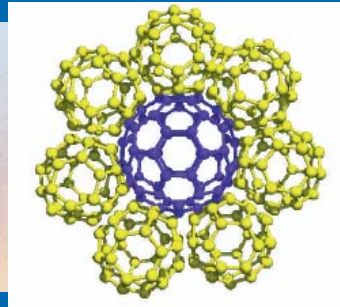
~2.5M€



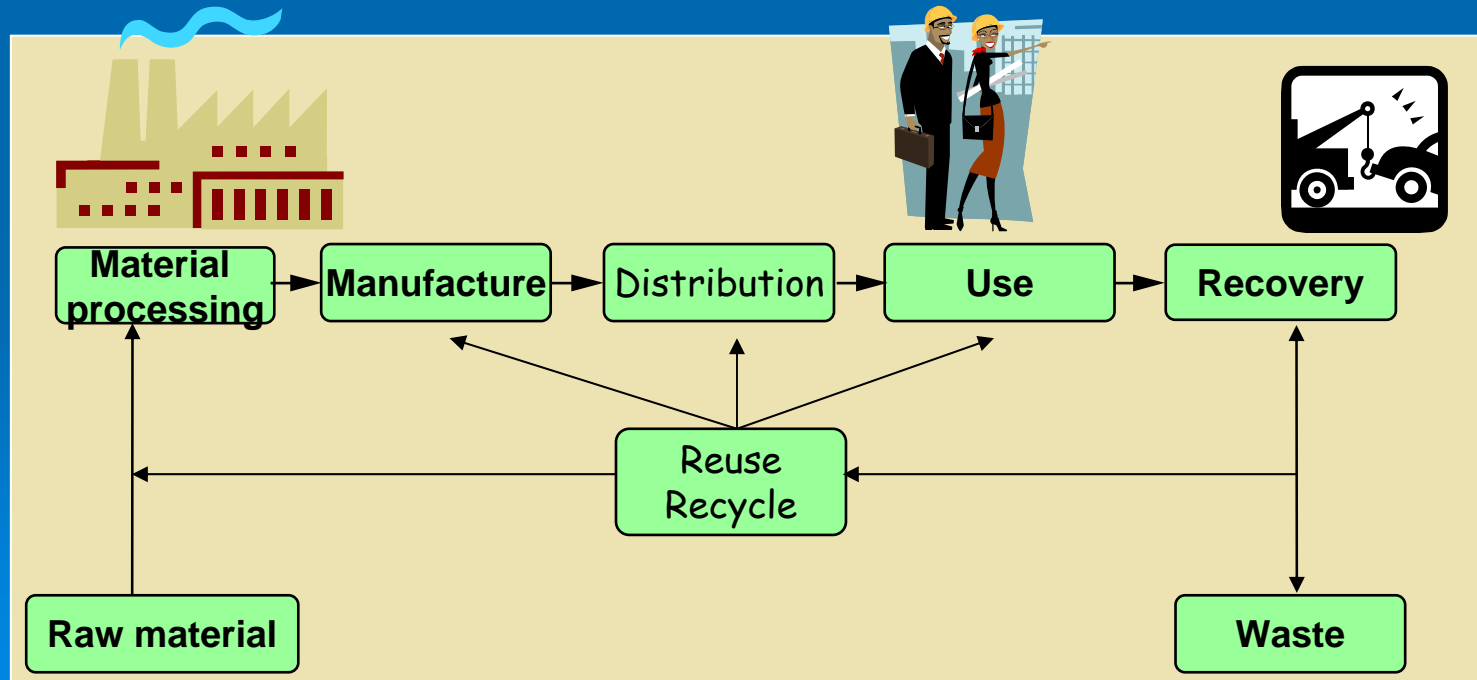
>8M€

**7th Framework Programme
Technological Platforms**

New structures form completely new classes of materials




That will be used in many industrial sectors - lifecycle perspective



Inventory of current legislation

- **Chemicals legislation: New and existing substances legislation** to generate data, safety measures, like classification and labelling, and risk management. Will likely be replaced by REACH and GHS.
- **Pharmaceuticals, Pesticides, Biocides – authorisation schemes**
- **Medical devices, cosmetics, food additives and packages**
- **Worker protection**
- **Air, Water, IPPC, Seveso, Waste, Environment Liability, Product liability, Product safety**

Identifying knowledge gaps from an E&H perspective

- nomenclature, definitions,
 - hazard characterisation;
 - exposure and effects assessment;
 - fate, transport, persistence etc. in environmental media;
 - measurement, sampling and monitoring;
- 

Some events in 2005

- Febr** UK Government: National Agenda
- June** OECD Chemicals Committee: Special Session on potential implications of nanomaterials.
- June** EU Commission: An Action Plan for EU 2005-09
- June** US EPA: Proposal for a voluntary notification scheme under the chemicals legislation (TCSA)
- July** International dialogue in Brussels on collaboration in R&D (25 countries)
- Oct** Germany: Stakeholders conference in Bonn
- Oct** UK presidency workshop
- Dec** 2nd OECD workshop in Washington

Challenges for policy makers

To strike the right balance between

- Creating a good climate and conditions for innovation and development of applications, contributing to economic growth, welfare and sustainable development
- Ensuring that potential risks to environment and human health, as well as public and ethical concerns, are looked into and dealt with at an early stage

**We need to work together....
International collaboration:
Industry, regulators, scientists,
NGOs, other stakeholders!**

Thank you!