Request for Proposal (project code LRI-S2)

Title:

Foresight study on introduction of new technologies; the case of nanotechnology

Background

Current technological developments and associated technological innovation represent an important driver of international economic and industrial competitiveness, as well as an important approach to resolving Europe's societal challenges (e.g. healthy ageing, sustainable production, the need to improve European competitiveness). One consequence is that there is considerable economic and political pressure to develop effective strategies to ensure that novel technologies deliver innovations in line with societal priorities and requirements. Failure to take account of societal preferences for implementation has resulted in barriers in innovation associated with new technologies that has fueled skepticism on the part of the European public towards new technologies. and their applications. A case in point is genetic modification, where societal rejection has resulted in delayed or failed commercialization of many applications.

In parallel, the last decade has seen significant research efforts in the area of risk analysis, including risk (benefit) assessment. This has delivered new scientific knowledge which is salient to risk governance and decision-making. The increasing sophistication of risk analysis practices has enabled the identification, assessment, management of and communication associated with a variety of (new) factors of risk which may also be simultaneously associated with societal benefits.

At present, risk assessment applied within governance is more formally represented than benefit assessment across the range of impact domains (health, environment, socio-economic impact, and ethical issues). New scientific developments along with new technological developments are therefore challenging the (political, economic and civil) decision-making practices associated with traditional approaches towards assessment and management of risks and benefits when they are simultaneously associated with technological innovation. Multiple factors, risks, benefits and health outcomes need to be examined through integrated methods of assessment which also consider societal perceptions, concerns and "other legitimate factors" such as societal preferences for specific benefits.

Thus, there is now a need to identify novel approaches focused on the optimal governance of European technological innovation.

Objectives

The primary objective of this project is to identify the drivers of effective policy in the area of strategic development of novel technologies.

Specific objectives include the following:

1. To strengthen the link between technical expressions of risk resulting from health and environmental assessments, which at present may only tenuously link to health and environmental policy objectives and to public perceptions.
2. To identify methodologies and institutional practices which can facilitate assessment of both the risks and benefits of an event or activity as an input into decision–making associated with technological innovation processes.
3. To develop improved risk-benefit metrics in order to make decision-making explicit, rather than implicit as is the case at present. As part of this, it may be relevant to examine how and if social and economic issues can be included as part of the assessment process in order to increase transparency in decision–making.
4. To develop methods to ensure that input from all stakeholders, including the general public, is formally taken into account in the development, governance and commercialization of emerging technologies.

Scope

In order to address these questions, a **foresight study** is proposed, using nanotechnologies, as a case study, which has been selected as it is associated with potentially (new) risks and (new) benefits.

In order to meet the objectives described above, it may be necessary to develop an appropriate governance model which will contribute to the societally acceptable development and commercialization of nanotechnology used as an example. From this, the extraction of generic principals could help manage the introduction of new technologies in general. This would entail identifying the trigger points that would lead to policy questions and societal concerns, the data / information needed to allow robust evaluation, analysis of the weight of evidence and the relevance criteria, allowing prioritisation in terms of risks *versus* benefits and timing of the methodological steps needed to reach policy decision / objective.

The steps envisaged are the following:

- a scoping expert and/or stakeholder workshop (~ 15 people) to identify and formalise the questions to be used in the foresight exercise and to identify the variables affecting the system
- To conduct a foresight exercise including analysis of expert uncertainties and ambiguity issues among stakeholders, where this is appropriate
- Report detailing recommendations for new / adapted governance practices associated with technological innovation, and potential research and knowledge needs required if this is to be operationalised.

An Advisory Board will be established (EC, academia, industry, third sector organisations).

The final report shall contain an executive summary (2 pages max), a main part (max. 50 pages) and a detailed bibliography.

It is expected that the findings will be developed into a peer reviewed publication, following presentation at a suitable scientific conference.

Cost and Timing
Start late 2012, duration 1 year
Budget in the order of €150.000

Partnering/Co-funding
Applicants should provide an indication of additional partners and funding opportunities that can be appropriately leveraged as part of their proposal. Partners can include, but are not limited to industry, government/regulatory organizations, research institutes, etc. Statements from potential partners should be included in the proposal package.

DEADLINE FOR SUBMISSIONS: August 31, 2012

Please see www.cefic-lri.org for the project proposal form and further guidance for grant applications.