Technology Strategy Board
Driving Innovation

Sustainable Materials and Products

NOVEMBER 2008 COMPETITION FOR FUNDING

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Summary

The Technology Strategy Board has allocated an indicative amount of £10m to fund highly innovative collaborative research and development in the area of Sustainable Materials and Products. Funding is available for industry-driven projects focused on materials technologies that will enable the UK to rapidly meet urgent and difficult environmental and social challenges and to create wealth, via the development and implementation of new or improved materials, processes and products.

The focus will be on the development of technologies, across the materials sector value chain, for:

- The substitution/reduction of materials which are scarce, difficult to source, expensive or deleterious to health and the environment.
- The development of less polluting, wasteful and energy intensive processes, including for recycling.
- The design of products with extended life or which are easier to repair, reuse or recycle.

Background

The major environmental and social impacts of products, and the materials from which they are made, throughout their lifecycle, is increasingly recognised. A recent major study by DEFRA (www.defra.gov.uk/environment/consumerprod/index.htm) has emphasised the importance of product sustainability as the way forward, driven by environmental targets and increased demand and prices of energy and resources. Businesses that use resources more efficiently throughout the supply chain will benefit from cost savings and opportunities for growth, as customers increasingly demand products that save them money and reduce environmental impact.

The sustainability agenda has strong linkages to energy-related issues, such as carbon dioxide emissions and climate change, but also extends into other important aspects of materials production, usage and disposal – the reduce, reuse and recycle (3R) agenda.

This competition contributes to this agenda, focusing the application of life-cycle thinking in design in the context of materials selection for product development. It will build on the outcomes of the Autumn '05 Call on 'Design & Manufacture of Sustainable Products', be aligned with the Technology Strategy Board's Advanced Materials (www.innovateuk.org) and Environmental Sustainability strategies, and provide a timely contribution to cross-government initiatives aimed at product sustainability. It provides an exciting opportunity to bring together both multidisciplinary and multisectoral collaborations for the innovative development and exploitation of materials technologies.

Scope

This competition will address the research and development of materials technologies which offer either specific or generic solutions to the development of value-added products and processes with reduced environmental and societal impacts.

We have identified a number of high level challenges for which materials-based solutions are particularly sought:

- The substitution of materials which are scarce, difficult to source, expensive or deleterious to health and the environment.
- The development of less polluting, wasteful and energy intensive processes, including for recycling.
- The design of products with extended life or which are easier to repair, reuse or recycle.

Proposals are welcome which address these challenges in areas such as, but not limited to:

- The more effective use of existing structural and functional materials (across all material types) and processes through, for example, better design.
- The development of new materials (e.g. composite, multifunctional, smart, nanostructured, formulations, bio-based) and processes (e.g. near-net shape, additive manufacture, surface engineering, supercritical processing), including the production of materials and products with lower embodied energy and from renewable feedstocks.
- The development of new assembly and disassembly technologies to enable components and high value materials to be separated economically.
- Improved processes for the recovery and reuse of materials, especially for high value applications.
- Computational, multiscale, modelling development to support materials selection/substitution and product design.
- Integrated design for life and end-of-life approaches based around existing or new materials and processes, including design tools and life cycle assessment (LCA).
- Improved understanding, monitoring, mitigation and control of materials and product degradation.
- The development of effective metrology, property validation and standards support tools and techniques, including through-life factors such as durability.

Funding Allocation and Project Details

An indicative £10m of Technology Strategy Board funding is allocated to collaborative research and development (R&D) projects that address one or more of the areas indicated above and involve science-to-business and business-to-business interactions.

All proposers must address how their project will make a significant, step change, overall positive contribution in terms of economic, environmental and social impacts – the triple bottom line – taking into account the full product lifecycle. Projects are particularly encouraged that can demonstrate benefits across more than one business sector and all projects should include a strong supply-chain based collaboration, in order that new ideas can be developed and exploited in a timely fashion. Typical projects would have a two- to three-year duration, require Technology Strategy Board investment of around £250k-1m, and generally aim to implement significant business change in a three- to five-year timeframe.

This programme will complement and underpin other existing and potential R&D activities related to the Sustainability agenda; for example, within other Technology Strategy Board competitions, or international, e.g. Framework 7 programmes.

Additional funding from EPSRC may be available for projects where there is a significant high quality academic component and in particular for those projects that demonstrate added value to its existing portfolio, by building on or being complementary to existing research programmes.

This competition will not encompass sustainability issues associated with the low carbon agenda within the Energy Sector, directly related to the generation, supply and storage of energy, which were addressed in the Technology Strategy Board's Autumn '07 Materials for Energy call.

Proposers of potential projects which are aimed at the more sustainable manufacture and through-life use of products via non-materials-based approaches (e.g. the automation or instrumentation of manufacturing processes) are directed to a parallel competition on 'High Value Manufacturing'.

Proposals related to the construction and automotive sectors will be considered in the context of recent and planned future competitions from within the Technology Strategy Board's Low Impact Buildings and Low Carbon Vehicle Innovation Platforms. All such proposals must directly address one or more of the three high level generic challenges defined in this competition and also demonstrate the potential for cross-sector exploitation.

Projects can range from focused Basic Research, aimed at establishing technical feasibility, through to Applied Research and to Experimental Development projects. It is anticipated that most of the funding will be allocated to proposals in the Applied R&D (attracting 50% public funding) or Experimental Development (25% public funding) categories. Projects involving industry-oriented Basic Research (75% public funding) will also be considered; but a robust case must be made to support the requested level of funding. The Guidance for Applicants (via the Competitions link at www.innovateuk.org) defines these categories of research.

The Technology Strategy Board will require all projects to provide a non-commercially-confidential summary, at the start and the conclusion of the project, for dissemination.

Application Process

The process for this competition is in line with Technology Strategy Board policy which seeks to give opportunity for applicants to make an initial optional Expression of Interest (EOI) prior to their compulsory application. The optional EOI will be looked at by officials and a response given to applicants within three working days. Applicants may take advantage of this up to one week prior to the compulsory EOI deadline. The key dates for this Competition are the 10th November 2008 when the competition opens and the 18th December 2008 when the compulsory EOI must be submitted.

The Guidance for Applicants explains the process in detail. In short, applicants need to submit their EOI by 18th December 2008 and this will be reviewed and feedback given by 19th January 2009. During the period 10th November 2008 to 11th December 2008, applicants will be able to submit their outlines and receive initial comment on an optional and no commitment basis. Following the independent panel review, the Technology Strategy Board will then invite successful applicants to the full stage of the competition. For these applicants, in the week beginning 19th January 2009, there will be the opportunity to discuss the feedback with Technology Strategy Board officials by telephone; details can found via the Competitions link at www.innovateuk.org.

There will be an Information Day in Birmingham on 22nd October. This will be aimed at applicants for all Technology Strategy Board collaborative R&D Competitions; a similar day will be run in early November in Bristol. There will be an optional briefing day specifically for this competition in London on 19th November. These briefings are optional although potential applicants are strongly advised to attend one of the events if possible.

Applicants invited to submit a full proposal will need to send one representative of their consortium to the mandatory briefing on 28th January 2009 in London. They will also need to register their intention to apply by 26th February 2009 and submit their full application by 5th March 2009. Applicants will be informed of the outcome of their applications by 3rd April 2009.

More Information

For more information about this and other competitions and details of how to register and apply, please see Competitions at www.innovate.org

Helpline:
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Email:
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The Technology Strategy Board advises on the selection of priority technology areas and is a business-led executive non-departmental public body, established by the Government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve quality of life.

Key Dates

Information day	**22nd October 2008**
Competition opens	**10th November 2008**
Briefing event (optional)	**19th November 2008**
Expressions of Interest deadline	**18th December 2008**
Feedback provided by	**19th January 2009**
Feedback discussion in week beginning	**19th January 2009**
Applicants briefing (mandatory)	**28th January 2009**
Registration of intent to submit (mandatory)	**26th February 2009**
Deadline for receipt of full applications	**5th March 2009**
Decision and feedback to applicants	**3rd April 2009**

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