

THE TECHNOLOGY PROGRAMME:
NOVEMBER 2004 COMPETITION FOR FUNDING

Waste Management and Minimisation

Summary

The Landfill Directive is driving companies to seek new ways of diverting waste away from landfill by using more sustainable options such as minimisation, re-use, recycling, recovery and treatment. Likewise, businesses need to increase resource efficiency in order to reduce waste and improve energy efficiency.

To support business meet these aims, an indicative amount of £10 million has been allocated in this competition to support Collaborative R&D projects in areas that include:

- Development of new technologies and processes to reduce or eliminate the creation of wastes
- Finding new ways to re-use and recover waste products or wastes from processes
- New physical or chemical treatment to enhance recycling or energy recovery
- Treatment of hazardous wastes to render them stable and non-reactive and/or less hazardous
- New alternatives to landfill such as thermal, catalytic or biological digestion systems

Funding for this area of the competition is in conjunction with Defra.

Businesses will have to pay more to landfill waste as a result of reduced landfill capacity, particularly for hazardous wastes, and increases in the landfill tax. As a result, the Chancellor has agreed to return the revenue from landfill tax increases to business to incentivise the search for innovative solutions to its waste management and resource problems.



Background

Businesses increasingly have to focus not only on the economic value they add, but also on improving environmental and social performance. One way to achieve this is by seeking new and innovative solutions. This part of the competition is to assist businesses to develop technology to meet new requirements in waste resource management driven by the Landfill Directive. The greatest priority is to minimise the creation of waste followed by the re-use of products. Efforts should then be made to recycle and recover the remaining waste. Disposal of waste should be a last resort for society and when this happens it must be done in a sustainable way.

The main beneficiaries of the research will be businesses that produce waste for which landfill is currently the main option, for example the chemicals, metals, construction and food/retailing/catering sectors.

Scope for Applications

The objective of DTI and Defra is to promote collaborative R&D by business in more sustainable waste management options as alternatives to landfill, encompassing minimisation, re-use, recycling, recovery and treatment. The issues to be addressed by research supported through this call will not necessarily be purely technological. This should be reflected in the range of approaches adopted for delivery of solutions, and in the composition and scale of the collaborative partnerships established.

Applications are encouraged in the following areas:

Minimisation/re-use/recycling/recovery

Research is required to find new and innovative ways to minimise the creation of waste at source and not just the point of use. The source may be the: material extraction or reaping site, product manufacturing plant, product distribution and transport method, construction site or demolition site. Not producing waste in the first place not only provides environmental benefit, but can also reduce raw material costs and waste treatment and disposal costs for companies. Research is also required on the re-use of materials and new uses for wastes in other processes. Through physical or chemical modification, waste from one industry can be used as a raw material for another. Another problem area is in finding uses of by-products or finding sustainable ways of recovering energy and disposing of the waste material. Research is also required into new markets/uses for existing industrial wastes that are currently landfilled but do not form part of WRAP's priority waste streams.

Waste treatment

There are hazardous wastes, particularly in the metals, chemicals and construction sectors, where there are currently no cost effective technical treatment methods available either to further reduce the remaining waste or render them stable and non-reactive. New methods for effective handling of these types of waste are required. Also included are contaminated land remediation processes, which can demonstrate they provide commercially promising alternatives to landfill disposal. Nuclear waste is not included.

Alternatives to landfill

There is a need to develop new ways to minimise the landfilled content of wastes such as sludges and dusts using thermal, catalytic or biological digestion systems and to maximise the overall energy or resource recovery of the system. Additionally there is a need to address the residual wastes arising from these systems.

Strategic Approaches to Waste Management

Successful commercialisation and implementation of innovative waste management technologies depends on the successful resolution of a number of strategic, commercial and societal issues. R&D has a vital role to play in helping industry and government overcome these issues.

Criteria for research in this area includes:

- Absolute tonnage diversion from landfill
- Relative importance of waste costs to the industry
- Technological need
- High environmental and/or social impact

Please note that design, modelling and simulation of manufacturing processes to minimise waste and improve recyclability is included within the Design, Modelling and Simulation section of the Competition.

Project Details

Industry-led proposals that address the above technology application areas are sought for Collaborative R&D projects that involve science-to-business and business-to-business interactions. Projects can range from small, highly focused basic research projects, aimed at establishing technical feasibility, though to applied research, and then to experimental development projects configured to produce technology demonstrators. In particular we seek projects that can demonstrate benefits to a number of business sectors and address strategic approaches to waste management. Projects must have strong waste producer representation and a clear exploitation route for the technologies.

Typically a project would have a 1-3 year duration and require Government support of £1-2m, although no project will be rejected on the grounds of size alone. Projects will generally aim to implement significant business change in a 5-7 year time frame, rather than offer immediate payback.

Other Funding Opportunities

EPSRC are interested in co-funding applied research projects in this technology area where there is a significant high quality academic component. Applicants who wish to seek EPSRC funding should read the additional guidance provided at www.dti.gov.uk/technologyprogramme

Contact

If you have any queries about this technology area, please contact David Golding at the DTI.

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For general enquiries on the application process please contact the helpline on **01355 272155** or e-mail **info@technologyprogramme.org.uk**

Deadline for registering your intention to submit an application:
31st January 2005

Outline application submission
deadline: 7th February 2005

For details on how to register and apply go to
www.dti.gov.uk/technologyprogramme

