Eco-innovative solutions

Specific challenge:The growing waste produced in Europe, particularly in urban areas, where the vast majority of the world population are expected to live by 2050, represents a cost for society and a burden on the environment and, at the same time, a valuable stock of resources that can be exploited.

Boosting eco-innovative solutions to prevent waste generation and promote the use of waste as a resource, in line with the objectives of the EU Resource Efficiency Roadmap[1] and the Waste Framework Directive[2], can enhance the natural and living environment in urban and peri-urban areas. Developing and demonstrating such solutions in real-life environments will enhance their market uptake and contribute to sustainable urbanisation worldwide.

Cities are more than spatially extended material artefacts; they are complex systems similar to living organisms that use energy, air, water and nutrients and need to dispose waste in a sustainable way. Adopting an urban metabolism perspective opens the way for innovative, systemic approaches, involving the analysis of resource flows within cities. Integrating in this way economic, social and environmental dynamics, it is possible to understand the socio-economically and gender nuanced patterns of resource use and consumption, and pinpoint drivers of waste-avoiding behaviour, manufacturing and business and public governance models.

Scope:Proposals should adopt an integrated urban metabolism approach and inter-disciplinary research and innovation and take into account the gender dimension where relevant. Proposals should involve active engagement of local authorities, citizens and other relevant stakeholders, using innovative concepts such as mobilisation and mutual learning[3].

Proposals shall address the following issue:

Eco-innovative solutions: Demonstration, at an appropriate pilot scale, and market replication, of integrated eco-innovative cost- and energy-efficient technologies,

processes and/or services for waste prevention, treatment, enhanced collection, recycling and recovery of high-grade valuable materials from waste. Approaches should integrate technological and non-technological solutions, including, where appropriate, the use of economic instruments, such as incentives for more sustainable production and consumption patterns, and awareness raising initiatives. Proposals should include the participation of industry, including SMEs as far as possible.

The Commission considers that proposals requesting a contribution from the EU of between EUR 8 and 10 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact: Significant measurable improvements in the state of the art in waste management in urban and peri-urban areas, and in the operationalisation of the urban metabolism approach for sustainable urban development and reduction of negative environmental impacts (e.g. health)in cities. Contribution, over the long term, to the establishment of European research and innovation leadership in urban waste management and prevention.

In addition, the following specific impacts are expected:

Significant improvement in cost, material and, where appropriate, energy recovery efficiency in waste recycling and prevention in the short term. Identification of potential markets for the proposed waste collection strategies, treatment technologies and recycled products, as well as potential for replicability of solutions, based on a return-on-investment study on the short term. Creation, in the short/medium term, of green jobs and/or new SMEs due to effective market uptake of innovative technologies, processes and services, ensuring equality of access to women and men, and social inclusion. Contribution to development of standards, validated by key industrial players, and identifying best available and emerging techniques under the Industrial Emissions Directive.

Type of action: a) Innovation actions

[1] COM(2011) 571

[2] Directive 2008/98/EC

[3] http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=1226

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