



Theme 6. Environment (including Climate Change)



Activity 6.3 Environmental Technologies

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Activity 6.3

Environmental Technologies



❖ Sub-Activity 6.3.1

Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment – 13 project topics

❖ Sub-Activity 6.3.2

Protection, conservation and enhancement of cultural heritage, including human habitat – 2 project topics

❖ Sub-Activity 6.3.3

Technology assessment, verification and testing – 2 project topics



Sub-Activity 6.3.1 Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment



Sub-Activity 6.3.1 application areas:

- Protection and rehabilitation of water, soil, air and marine resources
- Waste treatment and management
- The built environment and cleaner technologies



ENV.2010.3.1.1-1 Technologies and systems for urban water cycle services



Overall objective

Development of new techniques in the area of reliability and risk assessment of urban water system

Objectives

- enhance leakage control
- improve technologies for advanced asset management
- increase energy efficiency of water utilities
- facilitate the appraisal of climate change adaptation and mitigation options
- improve water use efficiency and water demand/supply management
- assess the sustainability of alternative water resources in cities



ENV.2010.3.1.1-1 Technologies and systems for urban water cycle services



Requirements

- solutions supported by life cycle assessments
- attention paid to socio-economic dimensions
- participation of industrial partners (SME)

Expected impact

- assistance to water authorities in formulation and implementation of policies
- increase understanding of urban water-energy relationship
- development of tools and techniques for integrated resource management implementation



ENV.2010.3.1.1-1 Technologies and systems for urban water cycle services



Funding scheme

Collaborative project (large scale integrating project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 1 project with maximum Community contribution EUR 4 - 7 mln



ENV.2010.3.1.1-2 Innovative system solutions for municipal sludge treatment and management



Overall objectives

Improvement of current sludge treatment technologies and sludge management practices

and

Development of more integrated approaches for sustainable sludge management



ENV.2010.3.1.1-2 Innovative system solutions for municipal sludge treatment and management



Requirements

- emphasis on innovative system solutions extended to overall sewerage-wastewater treatment system
- solutions should be based on life-cycle assessment and management of risks and benefits of sludge disposal
- participation of industrial partners (SMEs)

Expected impact

- fostering eco-innovation in the European water industry
- support related EU policies, strategies, plans
- reduce the overall environmental impact of the wastewater treatment systems



ENV.2010.3.1.1-2 Innovative system solutions for municipal sludge treatment and management



Funding scheme

Collaborative project (small or medium-scale focused research project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 2 projects with maximum Community contribution EUR 3,5 mln



ENV.2010.3.1.1-3 Decentralised water supply and sanitation technologies and systems for small communities and peri-urban areas



Overall objective:

Assessment of the potential of decentralised low cost drinking water, wastewater treatment, water reuse, recycling and conservation technologies for a wide range of African countries.

Objectives

- development of innovative decentralised water supply and sanitation systems
- assessment of various technical and socio-economic constraints which prevent sustainable water and sanitation services



ENV.2010.3.1.1-3 Decentralised water supply and sanitation technologies and systems for small communities and peri-urban areas



Requirements

- involvement of local participants
- fair level of participation for African countries in collaboration with their European partners
- participation of industrial partners (SMEs)

Expected impact

- development of criteria with regard to the adoption of particular technological approaches/solutions
- bridge the water and sanitation gaps
- tailor water resources management to local conditions, capacities and institutional settings
- help African countries to cope with water adaptation to climate changes



ENV.2010.3.1.1-3 Decentralised water supply and sanitation technologies and systems for small communities and peri-urban areas



Funding scheme

Collaborative project (small or medium-scale focused research project) for specific cooperation actions (SICA) dedicated to international cooperation partner countries (ICPC)

Minimum conditions

At least 4 independent legal entities, each of which is established in a MS or AC, and 2 of which are established in different MS or AC, and the other 2 must be established in different ICPC (African ACP, African MPC)

Up to 2 projects with maximum Community contribution EUR 2 mln



ENV.2010.3.1.1-4 Water harvesting technologies in Africa



Overall objective

Development of appropriate water harvesting techniques aiming to ensure food and water security

Objectives

- improvement of systems design, synergies with appropriate farming systems
- study of upstream/downstream interactions between water harvesting and large scale irrigation
- sustainability aspects and assessment of environmental services/impacts



ENV.2010.3.1.1-4 Water harvesting technologies in Africa



Requirements

- fair level of participation for African countries in collaboration with their European partners

Expected impact

- strengthened potential and sustainability of rainfed agriculture in Africa
- increased food production and security
- improved livelihoods of rural communities



ENV.2010.3.1.1-4 Water harvesting technologies in Africa



Funding scheme

Collaborative project (small or medium-scale focused research project) for specific cooperation actions (SICA) dedicated to international cooperation partner countries (ICPC)

Minimum conditions

At least 4 independent legal entities, each of which is established in a MS or AC, and 2 of which are established in different MS or AC, and the other 2 must be established in different ICPC (African ACP, African MPC)

Up to 2 projects with maximum Community contribution EUR 2 mln



ENV.2010.3.1.3-1 Innovative technologies and eco design recommendations for reuse and recycling of Construction and Demolition (C&D) waste, with a special focus on technologies for onsite solutions



Overall objective

Development and promotion of innovative technologies and system solutions for high grade construction materials manufactured from high-volume C&D waste



ENV.2010.3.1.3-1 Innovative technologies and eco design recommendations for reuse and recycling of Construction and Demolition (C&D) waste, with a special focus on technologies for onsite solutions



Requirements

- demonstration of the economic and environmental efficiency of the proposed approach
- participation of industrial partners (SMEs)

Expected impact

- increased recycling/reuse rate of high-volume C&D waste streams
- developed policy recommendations at European, national and local level



ENV.2010.3.1.3-1 Innovative technologies and eco design recommendations for reuse and recycling of Construction and Demolition (C&D) waste, with a special focus on technologies for onsite solutions



Funding scheme

Collaborative project (small or medium-scale focused research project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 2 projects with maximum Community contribution EUR 3,5 mln



ENV.2010.3.1.3-2 Innovative technologies and system solutions for municipal solid waste management in densely populated cities



Overall objective

Development of innovative technologies and system solutions tailored for municipal waste treatment and management in densely populated cities



ENV.2010.3.1.3-2 Innovative technologies and system solutions for municipal solid waste management in densely populated cities



Requirements

- considerations of cost and safety issues
- proof of concept in terms of product and/or process
- life cycle assessment studies according to the International Reference Life Cycle Data System Handbook
- participation of a high share of industrial participants (SMEs), and of at least one densely populated municipality

Expected impact

- developed break-through solutions compared to current state-of-the-art municipal solid waste treatment
- contribution to the achievements of the environmental and economic objectives set up in some relevant EU policies



ENV.2010.3.1.3-2 Innovative technologies and system solutions for municipal solid waste management in densely populated cities



Funding scheme

Collaborative project (small or medium-scale focused research project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 3 projects of maximum Community contribution

EUR 2,5 mln



GC.ENV.2010.3.1.3-3 Materials, technologies and processes for sustainable automotive electrochemical storage applications



Overall objective

Development of innovative materials and technologies for battery components, material architectures and systems for automotive electrochemical storage



GC.ENV.2010.3.1.3-3 Materials, technologies and processes for sustainable automotive electrochemical storage applications



Requirements

- considerations of cost, recyclability and safety issues
- proof of concept in terms of product and/or process
- life cycle assessment studies according to the International Reference Life Cycle Data System (ILCD) Handbook
- participation of the manufacturing industrial sector

Expected impact

- for lithium-based energy storage technologies: cost reduction $< 150 \text{ €/kWh}$, and improvement of safety and energy density $> 200 \text{ Wh/kg}$
- for electrochemical capacitors: a cost reduction $< 10 \text{ €/kW}$ and a specific power $> 25 \text{ kW/kg}$, with an energy density $> 10 \text{ Wh/kg}$
- for advanced chemistries: energy densities $> 300 \text{ Wh/kg}$



GC.ENV.2010.3.1.3-3 Materials, technologies and processes for sustainable automotive electrochemical storage applications



Funding scheme

Collaborative project

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Maximum Community contribution - EUR 4 mln



ENV.2010.3.1.4-1 Integrated Pollution Prevention and Control of industrial emissions in the Mediterranean region



Overall objective

Assessment of the possibility and of the impact of diffusing the EU Integrated Pollution Prevention and Control approach to other Mediterranean partner countries in order to ensure a higher level of environmental protection

Objectives

- assessment of the scope for preventive and abatement technologies based on best available techniques
- adaptation of the relevant information of the European Best Available (BAT) reference documents to document and support the implementation of the techniques
- production of communication material to disseminate information on those techniques among public authorities and industrial operators



ENV.2010.3.1.4-1 Integrated Pollution Prevention and Control of industrial emissions in the Mediterranean region



Requirements

- minimum two participants from the Mediterranean partner countries

Expected impact

- prepare the ground for the implementation of BAT techniques to respond to particular health and environmental impacts from industrial emissions in the Mediterranean region



ENV.2010.3.1.4-1 Integrated Pollution Prevention and Control of industrial emissions in the Mediterranean region



Funding scheme

Coordination and Support Action (coordinating action)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Maximum Community contribution - EUR 1 mln



ENV.2010.3.1.4-2 ERA-net on Eco-innovation



Overall objective

To bring together Europe's most relevant research and innovation programmes on eco-innovation in order to reduce the fragmentation of the European research landscape in this field

Objectives

- strengthen the development and adoption of eco-innovations
- systematic exchange of information and best practice with creation of the discussion forum
- identify the interfaces of existing research lines and better synchronize the national programmes
- define, prepare, implement and evaluate the joint activities and funding of joint trans-national research



ENV.2010.3.1.4-2 ERA-net on Eco-innovation



Requirements

- development of common metrics for eco-innovation performance measurement
- definition of appropriate research funding schemes for incremental and radical eco-innovation
- different approaches towards eco-innovation in emerging economies
- eco-innovation sustainability impact assessment
- proposals should be strategically planned, carried out at national or regional level, either financed or managed directly by national or regional public bodies

Expected impact

- contribution to meeting the Lisbon objective
- help in implementation of the European Technologies Action Plan, the European Economic Recovery Plan and of the Lead Market Initiative



ENV.2010.3.1.4-2 ERA-net on Eco-innovation



Funding scheme

Coordination and Support Action (coordinating action)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Maximum Community contribution EUR 2 mln



ENV.2010.3.1.5-1 Resource efficient and urban friendly construction sites



Overall objective

Development of new or improved technologies, tools and concepts to reduce these negative impacts of the construction and renovation processes

Objectives

- assess the whole life cycle from design to construction, refurbishments dismantling and recycling at the end of life
- identify the solutions that have the potential to deliver the most substantial improvement both economically and environmentally



ENV.2010.3.1.5-1 Resource efficient and urban friendly construction sites



Requirements

- involvement of industry (SMEs)
- participation of local authorities

Expected impact

- reduced resource consumption, external costs and environmental disruption of construction activities
- improvements in tackling adaptation to new technologies
- help in achievement of better cooperation and coordination between different departments of local authorities
- support of the European Economic Recovery Plan, of the Lead Market Initiative and of the SRA of the Construction Technology Platform



ENV.2010.3.1.5-1 Resource efficient and urban friendly construction sites



Funding scheme

Collaborative project (small or medium-scale focused research project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 2 projects with maximum Community contribution EUR 3,5 mln



ENV.2010.3.1.5-2 Environmental technologies for brownfield regeneration



Overall objective

Development of more integrated, cost effective and rational processes and decision making tools that consider environmental, economic and social costs and benefits of the brownfield regeneration

Objectives

- assess the whole life cycle from design to construction, refurbishments dismantling and recycling at the end of life
- identify the solutions that have the potential to deliver the most substantial improvement both economically and environmentally



ENV.2010.3.1.5-2 Environmental technologies for brownfield regeneration



Requirements

- development of on-site and in situ soil remediation technologies and solutions
- development of strategies that consider innovative reuse of existing structures and bulk materials
- participation of problem owners, public authorities, industrial construction companies and SMEs

Expected impact

- reduced costs and short and long-term risks of brownfield reuse
- enhanced energy and resource efficiency
- reduced off-site impacts through prevention of external landfilling practices
- support of the European Economic Recovery Plan, Thematic Strategy on the Urban Environment, Landfill directive; Liability directive; Soil Thematic strategy, Water framework directive; Groundwater daughter directive



ENV.2010.3.1.5-2 Environmental technologies for brownfield regeneration



Funding scheme

Collaborative project (small or medium-scale focused research project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 2 projects with maximum Community contribution EUR 3,5 mln



ENV.2010.3.1.7-1 Technologies for automated monitoring of air pollution in cities



Overall objective:

Review of the state-of-the-art and assessment of opportunities and limitations in-situ technologies for urban air pollution monitoring

Objectives:

- investigate the equipment evaluation and selection, operation, maintenance and calibration, data quality, protocols, and processing
- establish strong links to relevant national and international programmes and networks
- deliver a technological research roadmap and consolidated recommendations for the development or implementation of Community environmental legislation



ENV.2010.3.1.7-1 Technologies for automated monitoring of air pollution in cities



Requirements

- collaboration of researchers and technology providers together with the stakeholders involved in routine monitoring of urban air pollution

Expected impact

- harmonised air pollution monitoring in Europe
- improved implementation of EU environmental policies and strategies on ambient air quality and cleaner air for Europe
- better coordination of relevant national research activities



ENV.2010.3.1.7-1 Technologies for automated monitoring of air pollution in cities



Funding scheme

Coordination and Support Action (supporting action)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Maximum Community contribution EUR 1 mln



ENV.2010.3.1.8-1 Development of technologies for long-term carbon sequestration



Overall objective

Development and demonstration of technologies that will contribute effectively and on a large-scale to remove greenhouse gases from the atmosphere in a long-term perspective

Objectives

- develop the technologies of biomass transformation into long-term carbon storage, avoiding any shift of burdens



ENV.2010.3.1.8-1 Development of technologies for long-term carbon sequestration



Requirements

- life cycle assessment studies according to the International Reference Life Cycle Data System (ILCD) Handbook

http://lca.jrc.ec.europa.eu/EPLCA/Deliverables/ILCD_handbook.htm

Expected impact

- contribution to the achievement of EU 2020 and 2050 targets for greenhouse gases reduction



ENV.2010.3.1.8-1 Development of technologies for long-term carbon sequestration



Funding scheme

Collaborative project (small or medium-scale focused research project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 3 projects with maximum Community contribution EUR 2,5 mln



Sub-Activity 6.3.2 Protection, conservation and enhancement of cultural heritage, including human habitat



Sub-Activity 6.3.2 application areas:

- protection and rehabilitation of historic buildings in urban areas
- development of assessment tools for the safe conservation and sustainable management of movable assets



ENV.2010.3.2.1-1 Non-destructive diagnosis technologies for the safe conservation of movable cultural assets



Overall objective

Development and validation of innovative methods and non-destructive diagnosis technologies to assess and monitor the state of preservation and the impact of environmental changes on a wide range of movable cultural heritage objects



ENV.2010.3.2.1-1 Non-destructive diagnosis technologies for the safe conservation of movable cultural assets



Requirements

- significant participation of SMEs
- demonstration of the market potential of new technologies
- presentation of credible business plans towards commercial exploitation

Expected impact

- contribution to an overall preventive strategy to maintain and secure the conservation and management of movable assets
- support policy recommendations at international and EU level for non destructive diagnosis
- contribution to easier mobility of collections in Europe



ENV.2010.3.2.1-1 Non-destructive diagnosis technologies for the safe conservation of movable cultural assets



Funding scheme

Collaborative project (small or medium-scale focused research project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 2 projects with maximum Community contribution EUR 3,5 mln



EeB.ENV.2010.3.2.4-1 Compatible solutions for improving the energy efficiency of historic buildings in urban areas



Overall objective

Development of new technologies and systems as well as compatible materials for improved energy efficiency of historic buildings in urban areas

Objectives

- improve architectural components
- improve thermal insulation, air conditioning, ventilation, heating, lighting
- promote innovative methods and materials for the monitoring and control of energy consumption and of indoor climate



EeB.ENV.2010.3.2.4-1 Compatible solutions for improving the energy efficiency of historic buildings in urban areas



Requirements

- respect of the integrity, authenticity and compatibility between the old and new materials and techniques
- prove of the economical viability
- adaptation of protocols and tools for the planning and implementation of heritage rehabilitation works
- participation of industrial partners (SME) and local authorities (agencies)

Expected impact

- improvement of energy saving in historic buildings and of living conditions within historic urban areas
- contribution to the European Economic Recovery Plan
- help in implementation of the EU Environmental Impact Assessment Directives, and of the Strategic Research Agenda of the European Construction Technology Platform and its Focus Area in Cultural heritage



EeB.ENV.2010.3.2.4-1 Compatible solutions for improving the energy efficiency of historic buildings in urban areas



Funding scheme

Collaborative project (large scale integrating project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Up to 1 project with maximum Community contribution EUR 5 mln



Sub-Activity 6.3.3 Technology assessment, verification and testing



Sub-Activity 6.3.3 application areas:

- acceleration of the validation of new eco-toxicological testing methods in order to reduce the use of animals for testing
- development of simplified Life Cycle Assessment (LCA) methodologies and tools for different industrial sectors
- development of methodologies for expressing the results of LCA studies into easily understandable terms



ENV.2010.3.3.1-1 Reduction of the use of animals in eco-toxicological safety testing



Overall objective

Reduction of the use of animals in eco-toxicological safety testing

Objectives

- creation of a network of the main European stakeholders developing testing methods
- share knowledge and data gained with alternative methods that could reduce/replace the use of animals in eco-toxicological testing
- identification and validation of promising alternative methods



ENV.2010.3.3.1-1 Reduction of the use of animals in eco-toxicological safety testing



Requirements

- consider on-going networking activities in other relevant European (OSIRIS, ORCHESTRA) and OECD projects

Expected impact

- accelerated validation of new eco-toxicological testing methods for the implementation of EU and national regulations which comply with the need to reduce the use of animals for testing



ENV.2010.3.3.1-1 Reduction of the use of animals in eco-toxicological safety testing



Funding scheme

Coordination and Support Action (supporting action)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

Maximum Community contribution EUR 1 mln



ENV.2010.3.3.2-1 Boosting Life Cycle Assessment use in SMEs: development of sectoral methods and tools



Overall objective

Contribution to overcoming the barriers of Life Cycle Assessment use through the development of simplified operative methods and tools to be used by SMEs

Objectives

- develop a computer open source tool with a simple interface to facilitate cheap and quick LCAs
- use of the International Reference Life Cycle Data System (ILCD) Handbook to build the methods and tools



ENV.2010.3.3.2-1 Boosting Life Cycle Assessment use in SMEs: development of sectoral methods and tools



Requirements

- demonstration of real case studies involving SMEs acting at different levels of the value chain
- availability for free of the Life Cycle Inventory (LCI) data sets, obtained within the funded project(s)

Expected impact

- developed easy to use and cost-efficient yet precise LCA instruments for European SMEs in-house use
- contribution to the Recovery Package, the Sustainable and Consumption Action Plan, the Lead Market Initiative, the Waste Framework Directive, the Climate and Energy package



ENV.2010.3.3.2-1 Boosting Life Cycle Assessment use in SMEs: development of sectoral methods and tools



Funding scheme

Collaborative project (small or medium-scale focused research project)

Minimum conditions

At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC

**Up to 2 projects with maximum Community contribution EUR
3,5 mln**



Thank you very much for your attention!

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