



# Environment Policy & Governance

Projects 2008

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Location	Project number	Title of project
FRANCE	LIFE08 ENV/F/000490 OVADE-Plus	Prototype process for additional sorting of heavy refuse from an MBT household waste facility
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GERMANY	LIFE08 ENV/D/000017 REECH-500	Renewable energy production at high altitude - 500 meters
	LIFE08 ENV/D/000021 MAFPlan	Management plan to prevent threats from point sources on the good chemical status of groundwater in urban areas
	LIFE08 ENV/D/000026 Sus Treat	Use of immanent energy for sludge treatment - a central step towards self-sustaining sewage flow management
	LIFE08 ENV/D/000027 SUBSPORT	Substitution portal: moving towards safer alternatives
	LIFE08 ENV/D/000029 EcoBrick	Manufacturing Sand-Limestone Bricks, Recycling Energy and Organics from Sewage Sludge
GREECE	LIFE08 ENV/GR/000551 PURE	From Treated Wastewater to Alternative Water Resources in Semi-Arid Regions
	LIFE08 ENV/GR/000552 ClimaBiz	Financial Institutions: Preparing the Market for adapting to Climate Change
	LIFE08 ENV/GR/000553 Forest Cities	Local Authorities Alliance for Forest Fire Prevention
	LIFE08 ENV/GR/000554 AdaptFor	Adaptation of forest management to climate change in Greece
	LIFE08 ENV/GR/000558 Calchas	Development of an integrated analysis system for the effective fire conservancy of forests
	LIFE08 ENV/GR/000566 DRYWASTE	Development and demonstration of an innovative household dryer for the treatment of organic waste
	LIFE08 ENV/GR/000569 BIOFUELS-2G	Demonstration of a Sustainable & Effective 2nd Generation Biofuels Application in an Urban Environment
	LIFE08 ENV/GR/000570 HydroSense	Innovative Precision Technologies for Optimized Irrigation and Integrated Crop Management in a Water-limited Agrosystem
	LIFE08 ENV/GR/000574 INFORM	Building a structured, indicator based knowledge system for sustainable forest policy and management
	LIFE08 ENV/GR/000576 SMART-CHP	Demonstration of a Small scale Mobile Agricultural Residue gasification unit for decentralized Combined Heat and Power production
	LIFE08 ENV/GR/000578 INTEGRASTE	Development of integrated agroindustrial waste management politics maximizing materials recovery and energy exploitation
HUNGARY	LIFE08 ENV/H/000291 ISIM-TCC	Industrial Symbiosis as an Innovative Method in Tackling Climate Change
	LIFE08 ENV/H/000292 MEDAPHON	Monitoring Soil Biological Activity by using a novel tool: EDAPHOLOG-System - system building and field testing
ITALY	LIFE08 ENV/IT/000386 H.U.S.H.	Harmonization of Urban noise reduction Strategies for Homogeneous action plans

Location	Project number	Title of project
ITALY	LIFE08 ENV/IT/000388 RELS	Innovative chain for energy recovery from waste in natural parks
	LIFE08 ENV/IT/000390 ECOMAWARU	Eco-sustainable management of water and wastewater in rural communities
	LIFE08 ENV/IT/000393 RePlaCe	Prototyping of Recycled Plastic Conveyor Belt Machine and Demonstration of Recycled Plastics Structural Applications
	LIFE08 ENV/IT/000399 EnvEurope	Environmental quality and pressures assessment across Europe: the LTER network as an integrated and shared system for ecosystem monitoring
	LIFE08 ENV/IT/000404 ECORUTOUR	Environmentally COmpatible RUral TOURism in protected areas for a sustainable development at low emission of greenhouse gases
	LIFE08 ENV/IT/00040 6REWETLAND	Widespread introduction of constructed wetlands for a wastewater treatment of Agro Pontino
	LIFE08 ENV/IT/000408 SOILCONS-WEB	Multifunctional Soil Conservation and Land Management through the Development of a Web Based Spatial Decision Supporting System
	LIFE08 ENV/IT/ 000411ENERG-ICE	New PU Foaming Technology for the Cold Appliance Industry Assuring a Cost-Efficient Ecodesign with Augmented Energy Saving
	LIFE08 ENV/IT/000412 Enersludge	Energy valorisation in sewage sludge combustion by a flexible furnace allowing discontinuous operation
	LIFE08 ENV/IT/000413 INHABIT	Local hydro-morphology, habitat and RBMPs: new measures to improve ecological quality in South European rivers and lakes
	LIFE08 ENV/IT/000421 VALIRE	Valorisation of incineration residues
	LIFE08 ENV/IT/000422 H-REII	Policy and governance actions to reduce CO <sub>2</sub> emissions by energy valorization of process effluents in Energy Intensive Industries
	LIFE08 ENV/IT/000423 WOMENBIOPOP	Linking Environment and Health: a Country-based Human Biomonitoring Study on Persistent Organic Pollutants in Women of Reproductive Age
	LIFE08 ENV/IT/000425 ETRUSCAN	Under the Etruscan sun - Environmental friendly transport to RedUce Severe Climate change Anthropropic factors
	LIFE08 ENV/IT/000426 COAST-BEST	CO-ordinated Approach for Sediment Treatment and BENeficial reuse in Small harbours neTworks
	LIFE08 ENV/IT/000428 SOILPRO	Monitoring for soil protection
LIFE08 ENV/IT/000429 UPGAS-LOWCO25	UP-grading of landfillgas for lowering CO <sub>2</sub> emissions	
LIFE08 ENV/IT/000430 FACTOR 20	Forwarding ACTIONs On a Regional and local scale to reach UE targets of the European Climate Action Plan "20-20 by 2020"	
LIFE08 ENV/IT/000432 SustUse Fumigants	Sustainable use of chemical fumigants for the control of soil-borne pathogens in the horticultural sector	
LIFE08 ENV/IT/000434 COSMOS	COLloidal Silica Medium to Obtain Safe inert: the case of incinerator fly ash	

Location	Project number	Title of project
ITALY	LIFE08 ENV/IT/000435 ANTARES	Alternative Non-Testing methods Assessed for REACH Substances
	LIFE08 ENV/IT/000436 ACT	Adapting to climate change in Time
	LIFE08 ENV/IT/000437 Mo.re. & Mo.re	More Reusing & More Recycling
LATVIA	LIFE08 ENV/LV/000451 HydroClimateStrategyRiga	Integrated Strategy for Riga City to Adapt to the Hydrological Processes Intensified by Climate Change Phenomena
POLAND	LIFE08 ENV/PL/000517 EH-REK	Ecohydrologic rehabilitation of recreational reservoirs "Arturówek" in Łódź as a model approach to rehabilitation of urban reservoirs
POLAND	LIFE08 ENV/PL/000519 EKOROB	ECOtones for Reducing Diffusion Pollution
PORTUGAL	LIFE08 ENV/P/000237 WW4ENVIRONMENT	Integrated approach to energy and climate changes changing
SLOVAK REPUBLIC	LIFE08 ENV/SK/000240 CHEFUB	Creative high efficient and effective use of bio-mass
SPAIN	LIFE08 ENV/E/000097 JEREZ + natural	Innovative management model of urban trees in the city of Jerez de la Frontera
	LIFE08 ENV/E/000099 AQUAVAL	Sustainable Urban Water Management Plans, promoting SUDS and considering Climate Change, in the Province of Valencia
	LIFE08 ENV/E/000101 Las Rozas por el clima	Local Action Plan for Fighting Climate Change in Las Rozas de Madrid: Application and Evaluation of Municipal Management Methods
	LIFE08 ENV/E/000107 RESCATAME	Pervasive Air-quality Sensors Network for an Environmental Friendly Urban Traffic Management
	LIFE08 ENV/E/000109 ALICCIA	Integrated Management System: an innovative strategy at the municipal level for the policy and governance of climate change
	LIFE08 ENV/E/000110 P.A.A.S.A. CUENCA	Cuenca Municipal Action Plan for Sustainable Environmental Acoustics
	LIFE08 ENV/E/000113 METABIORESOR	Integrated Pilot Plant for complete energy recovery of different municipal and livestock waste materials and by-products
	LIFE08 ENV/E/000114 POWER	Project for Optimisation of Water and Emissions Reduction
	LIFE08 ENV/E/000117 ENSAT	Enhancement of Soil Aquifer Treatment to Improve the Quality of Recharge Water in the Lobregat River Delta Aquifer
	LIFE08 ENV/E/000118 GREENLYSIS	Hydrogen and oxygen production via electrolysis powered by renewable energies to reduce environmental footprint of a WWTP
	LIFE08 ENV/E/000119 FAROS	Integral networking of fishing actors to organize a responsible optimal and sustainable exploitation of marine resources
	LIFE08 ENV/E/000123 PARK RENOVA	Renewable energy production park in the landfills of Huesca
	LIFE08 ENV/E/000124 LIFE+Ecoedición	Ecopublishing, sustainable management of publications in the public administration
LIFE08 ENV/E/000126 ECO-STONE	Sustainable system implementation for natural stone production and use	

Location	Project number	Title of project
SPAIN	LIFE08 ENV/E/000129 LIFE+AGRICARBON	Sustainable agriculture in Carbon arithmetics
	LIFE08 ENV/E/000132 Waste Joint Management	Development and operation of an integrated model for managing Industrial Waste in the Zona Franca Industrial Estate, Barcelona
	LIFE08 ENV/E/000133 RESALTTECH	Concentrated saline rejection treatment: Environmental Techno-logy using a non profitable solid waste as energy source
	LIFE08 ENV/E/000135 FENIX	Finding regional environmental life cycle information on packaging waste management through flexible software tools and databases
	LIFE08 ENV/E/000136 ZERO-HYTECHPARK	Zero emissions using renewable energies and hydrogen technologies in building and sustainable mobility in Technology Parks
	LIFE08 ENV/E/000138 GREEN COMMERCE	Compromise for a reduction of the environmental impact of the retail sector
	LIFE08 ENV/E/000140O XATAN	Environmentally friendly oxazolidine-tanned leather
	LIFE08 ENV/E/000143 HAProWINE	Integrated waste management and life cycle assessment in the wine industry: From waste to high-value products
	LIFE08 ENV/E/000147 SHOELAW	Promotion of Environmental Legislation among European Footwear Industries
	LIFE08 ENV/E/000148 ECO-VITRUM-TRC	Integral management model of cathode rays glass: closing the circle of recovery, recycling and reuse of WEEE'S
	LIFE08 ENV/E/000158 BOATCYCLE	Management, recycling and reco-very of wastes of recreational boat scrapping
LIFE08 ENV/E/000167 ICEJET	Ice jet environmental technology pilot plant for drastically reducing waste produced by abrasive water jet cutting techniques	
SWEDEN	LIFE08 ENV/S/000269 CLEANTRUCK	CLEAN and energy efficient TRUCKs for urban goods distribution
	LIFE08 ENV/S/000271 WEBAP	Wave Energized Baltic Aeration Pump
	LIFE08 ENV/S/000272 ITEST	Increased total efficiency in sewage treatment
UNITED KINGDOM	LIFE08 ENV/UK/000205 REACH for Polymers	Innovative instruments and metho-dologies to provide the European polymer industry with a solid technical background in support of REACH
	LIFE08 ENV/UK/000208 EPOW	European Pathway to Zero Waste: demonstrating the route to zero waste to landfill via end of waste protocols and building a recycling society

# LIFE+ Environment Policy & Governance 2008: Commission funds 99 innovation projects in 19 countries with €90 million

The European Commission has approved funding for 99 new environmental innovation projects in 19 countries under the LIFE+ programme's Environment Policy & Governance component for 2008. These projects will demonstrate new methods and techniques for dealing with a wide diversity of Europe's environmental problems. The projects are led by 'beneficiaries', or project promoters, based in Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Poland, Portugal, Slovakia, Spain, Sweden and the United Kingdom. They represent a total investment of €211 million, of which the EU will provide some €90 million.

### LIFE+ Environment Policy & Governance in 2008

The Environment Policy & Governance strand of LIFE+ supports pilot projects that contribute to the development of innovative policy ideas, technologies, methods and instruments. Of the 288 proposals received, the Commission selected 99 projects for funding from a wide range of public and private sector organisations.

The winning projects, situated in 19 Member States, represent a total investment of €211 million, of which the EU will provide €90 million.

Projects targeting waste and natural resources (28 projects) account for the largest share of EU funding (some €26 million). Climate change is the second most targeted priority area with 24 projects (some €25 million), followed by water (17 projects). The remaining 30 projects deal with various issues, including air; chemicals; environment and health; forests; innovation; noise; soil; strategic approaches; and the urban environment.

### Background

LIFE is the EU's financial instrument supporting environmental and nature conservation projects throughout the EU and in certain non-EU countries.

Since 1992, LIFE has co-financed some 3104 projects, contributing approximately €2.2 billion to the protection of the environment. LIFE+ is the new European financial instrument for the environment with a total budget of €2.143 billion for the period 2007-2013. During this period, the Commission will launch one call for LIFE+ project proposals per year.

LIFE+ Environment Policy & Governance is one of three thematic components under the LIFE programme. The other two components, LIFE+ Nature & Biodiversity and LIFE+ Information & Communications, focus respectively on improving the conservation status of endangered species and habitats and on disseminating information and raising the profile of environmental issues or providing training and awareness-raising for the prevention of forest fires.

More information on each LIFE+ project is available at: <http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.home&cfid=656029&cftoken=cab1cf8091752717-4430206A-E1CB-E45B-8C0A15178EBFFE27>

It is also possible to contact the relevant national authorities:

<http://ec.europa.eu/environment/life/contact/nationalcontact/index.htm>

# RENEW BUILDING - Demonstration and Dissemination of Climate and Environmental Friendly Renovation and Building with Renewable Resources and Ecological Materials

## Project background

Renovation using standard methods and materials based on fossil fuels and concrete binders encounters a number of problems that demand new and better solutions. Such materials hinder diffusion and often lead to dampness and mould, which results in long-term damage to a building. These factors are responsible for the bad quality and short lifespan of many renovated buildings. Higher quality can be achieved with improved knowledge transfer. Large gaps in knowledge, especially outside academia, are responsible for the poor performance of the renovation sector. Existing innovative solutions in the construction business are mainly suitable for new buildings and often do not comply with the requirements of older buildings. Moreover, knowledge of the use of renewable building materials is limited, and only a very few skilled professionals are able to carry out restoration work on historic buildings without causing long-term damage to the structures.

## Project objectives

The overall project objective is to reduce CO<sub>2</sub> emissions caused by the construction industry, one of the most resource intensive sectors. These emissions can be reduced by increasing the energy efficiency by an order of magnitude or more, and by using building materials with low-embodied energy. The project will focus on improving the environmental impact of the renovation sector by promoting knowledge transfer of construction methods that use renewable resources and natural materials; by gaining practical knowledge from demonstration sites; and by involving stakeholders across the building sector. It will examine both the best technologies derived from the latest research projects and traditional know-how on the use of renewable and locally available resources with a very low carbon footprint.

The project has been designed to benefit target groups that are difficult to reach, such as craftsmen and building professionals. Its approach links practice and theory and fosters cross disciplinary information exchange. Training will take the form of a

LIFE08 ENV/A/000216  
RENEW BUILDING



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Gruppe Angepasste Technologie

### Postal Address

Wiedner Hauptstraße 8-10

A – 1040 WIEN

AUSTRIA

Phone +43 1 5880149523

Fax +43 1 5880149523

Email rw@grat.at

### Name of contact person

Robert Wimmer

## Duration of project:

36 months (01/01/2010 - 31/12/2012)

## Total budget in euro:

657,866.00

## EC contribution in euro with %:

323,076.00 (49.11%)

## Generic Theme:

Eco-friendly products – Eco-design – Green financial products

series of training modules and hands-on experience at real building sites. The training programme will be continued after the end of the project.

# Energy recovery system from landfill waste as a contribution to the fight against climate change

## Project background

In the European Union, 1.8 billion tonnes of waste is disposed of each year, amounting to some 3.5 tonnes of solid waste per person. A significant proportion of that waste is landfilled. The landfilling of waste leads to the release of greenhouse gas emissions. In fact, under anaerobic conditions, the waste continues to degrade, producing landfill gas, which is made up roughly of 50% methane and 50% carbon dioxide. A number of landfills are already valorising, or putting a price on, the biogas that emanates from waste. However, not only are valorising systems (usually piston-engine powered electricity production systems) unnecessarily generating greenhouse gas emissions, but they are also under-using the energy potential of landfills because they are unable to use the waste heat produced during the valorisation process. By doing so, these systems only reach a global electrical efficiency of 30%, generating lost waste heat.

## Project objectives

The objective of this project is to demonstrate the benefits that can be obtained in terms of maximising energy efficiency of biogas valorisation systems. The project will install a pilot system integrating a gas turbine and an organic vapour turbine. The integration of an Organic Rankine Cycle (ORC) allows the valorisation of formerly wasted heat generated by a gas turbine system. The proposed combined cycle will increase the electrical efficiency of state-of-the-art technologies by some 10%, leading to a global electrical efficiency of 40%. The ultimate objective of the project is to use this new combined cycle system more widely elsewhere, initially in similar conditions but then expanding it to other conditions on multiple industrial sites.

### Expected results:

The combination of microturbines and ORC will allow a 100% reduction of methane emissions and a 100% transformation of methane emissions into CO<sub>2</sub> emissions. Methane has a greenhouse effect 21 times higher than CO<sub>2</sub>. Furthermore, the combination of Microturbine + ORC can generate 240kW for 8 000h which represents 1 920 MWh/yr, saving 400 tonnes/yr of CO<sub>2</sub>. Thus 1 200 tonnes of CO<sub>2</sub> will be saved over the duration of the project.

LIFE08 ENV/B/000040  
CLIM-WASTENER



### Beneficiary:

#### Type of beneficiary

Large enterprise

#### Name of beneficiary

VERDESIS S.A.

#### Postal Address

Rue du Manège 18  
B – 1301 BIERGES  
BELGIUM  
Phone +32 10 43 46 68  
Fax +32 10 43 46 60  
Email Xavier.lombard@verdesis.com

#### Name of contact person

Xavier Lombard

### Duration of project:

36 months (01/01/2010 - 31/12/2012)

### Total budget in euro:

2,422,025.00

### EC contribution in euro with %:

1,211,012.00 (50.00%)

### Generic Theme:

General: Waste management

# The Water Emissions Inventory, a planning Support System aimed at reducing the pollution of water bodies

## Project background

Despite major investments made during recent decades in treating wastewater from industrial plants and households, the European goal of good water quality remains elusive. As the most discernible sources of pollution have been tackled, there is a need for a more detailed analysis to determine the remaining bottlenecks, and to find out which measures could minimise pollution loads discharged into rivers, and thus significantly improve water quality and ecological status. Good operational tools are required for the quantification of point and diffuse sources of pollution, as well as the design and assessment of mitigation measures, especially in relation to priority substances. European, national and regional policymakers will need more powerful analytical instruments to do this.

## Project objectives

The aim of the project is to construct an innovative Water Emissions Inventory Planning Support System (WEISS), to support competent authorities across Europe as they implement the EU Water Framework Directive. The tool will be used to:

- Determine the significant emission sources, and their contribution to the pollution load of water bodies, in order to formulate mitigation measures; and
- Control and monitor compliance with the objectives to stop or decrease pollution.

WEISS will above all be developed as a tool to generate a transparent inventory of all significant emissions and discharges into, and losses of, water bodies as a result of human activities.

LIFE08 ENV/B/000042  
WEISS



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Vlaamse Milieumaatschappij

#### Postal Address

Alfons van de Maelestraat 96

B – 9320 Erembodegem

BELGIUM

Phone +32 15 45 14 27

Fax +32 15 42 37 07

Email g.vos@vmm.be

#### Name of contact person

Greet Vos

### Duration of project:

36 months (01/01/2010 - 31/12/2012)

### Total budget in euro:

984,428.00

### EC contribution in euro with %:

468,517.00 (47.59%)

### Generic Theme:

Diffuse and dispersed sources of pollution

# Using hydrogeobiocells (HGBcells) for the in-situ biological treatment of CAH contaminated groundwater in areas with low hydraulic gradients

## Project background

European soils contain many legacies from a less-sustainable industrial past; soils, sediments and groundwater are sinks for many pollutants. The European Environment Agency (EEA) estimates that there are between 300 000 and 1.5 million contaminated sites in the EU that can be cleaned up (where the source of contamination is no longer present). In many other sites, the pollution is still present. Some of the major pollutants present in soils are heavy metals, petroleum hydrocarbons and chlorinated aliphatic hydrocarbons (CAHs). Since CAHs are heavier than water they can easily sink to great depths. Furthermore, because they are very soluble in water and degrade slowly they also form large groundwater plumes that are very difficult to remediate. Consequently, traditional remediation techniques are often inadequate, time-consuming and expensive. Remediation using soil organisms is a promising approach for CAHs if conditions are favourable, or can be engineered to become favourable.

## Project objectives

The project's objective is to demonstrate the applicability of an innovative, cost-efficient and energy-efficient remediation technique for groundwater contaminated by CAHs. This will be applied at a site characterised by low natural groundwater flow velocities.

The project aims to demonstrate:

- The applicability of hydrogeobiocells (HGBcells) using biostimulation and bioaugmentation, for the remediation of CAH-contaminated groundwater in areas where groundwater velocity is very low because of low hydraulic gradients;
- The successful scaling-up of production of the dechlorinating microbial culture to be used in the HGBcell for bioaugmentation;
- The cost efficiency and energy efficiency of the remediation technique (HGBcell using biostimulation and HGBcell using bioaugmentation) for the remediation of CAH-contaminated groundwater; and
- The applicability of the groundwater remediation model.

In addition, an anaerobic bioreactor will be developed for the large-scale growth of bacteria (of the same bacterial population of the HGBcells) on large scale. Project results and know-how will be disseminated to stakeholders.

LIFE08 ENV/B/000046  
LVM-BIOcells



## Beneficiary:

### Type of beneficiary

International enterprise

### Name of beneficiary

Limburgse Vinyl Maatschappij NV

### Postal Address

Heilig Hartlaan 21  
B – 3980 Tessenderlo  
BELGIUM  
Phone +32 13 612211  
Fax +32 13 668140  
Email jules.houtmeyers@tessenderlo.com

### Name of contact person

Jules Houtmeyers

## Duration of project:

60 months (01/01/2010 - 31/12/2014)

## Total budget in euro:

1,850,858.00

## EC contribution in euro with %:

845,954.00 (45.71%)

## Generic Theme:

Site rehabilitation - Decontamination

## Expected results:

- The implementation of the dechlorinating microbial culture, the HGBcell and the anaerobic bioreactor;
- A decrease in the volume of the groundwater contamination in areas with lower concentrations (CAH < 20 mg/l);
- A decrease of contaminant concentrations in areas where CAH are present in concentrations that exceed 50 mg/l;
- A reduction of c. 40% in the remediation cost and c. 30% in the energy cost;
- Improved water balance and c. 60% lower water emissions.

# Demonstration of Recycling System for Waste Electrical and Electronic Equipment in Republic of Bulgaria

## Project background

Waste electrical and electronic equipment (WEEE) is made up of a complex mixture of materials and components that contain dangerous substances such as mercury, lead, cadmium, chromium, asbestos and arsenic.

These hazardous components create significant environmental risks if not properly dealt with. Furthermore, both technological innovation and market expansion continue to increase the dangers posed.

Current WEEE management practices in Bulgaria are insufficient to meet its targets for recovery and recycling of WEEE. They do not yet comply with national waste policy and waste management requirements or with the European acquis in the area of waste management.

The major problem in Bulgaria is the lack of adequate infrastructure for collection and treatment of WEEE. In particular, separated collection and treatment systems are needed for waste from computers and televisions.

## Project objectives

This LIFE project seeks to demonstrate effective separation, collection, treatment and recycling of WEEE in Bulgaria. It will introduce a comprehensive and integrated system of WEEE management in a selected municipality. The approach will be based on: improved systems for the separate collection of waste streams; and modern recycling technologies.

The project will select, purchase and install a specific waste-treatment facility for WEEE in the chosen municipality. It will also introduce an appropriate system for separation and collection of the WEEE.

A key aspect of increasing the collection rates of WEEE will be the engagement of the general public in separating specific waste streams for collection. A campaign involving the municipality will seek to raise public awareness on appropriate separation, collection and treatment of WEEE – and its importance - through a web-site, brochures, leaflets, press conferences and the media.

LIFE08 ENV/BG/000286  
RECYCLING DEMONSTRATION



## Beneficiary:

### Type of beneficiary

Professional association

### Name of beneficiary

MAKMETAL Holding Jsc.

### Postal Address

40, Vladimir Vazov blvd.- Floor 2

BG - 1517 Sofia

BULGARIA

Phone +359 888 222700

Fax +359 29 453190

Email i.zlatinov@makmetal.eu

### Name of contact person

Ivan Zlatinov

## Duration of project:

42 months (01/01/2010 - 30/06/2013)

## Total budget in euro:

1,757,970.00

## EC contribution in euro with %:

503,985.00 (28.67%)

## Generic Theme:

Waste from Electrical and Electronic Equipment

Finally, the project will organise one national and one international conference to share and disseminate the experiences gathered from the implementation of the system for collection, separation and recycling of WEEE. The main participants will be representatives of national and local governments, experts from European countries, experts from the Bulgarian Association of the Municipal Environmental Experts (BAMEE) and the project team.

Overall, the project aims to ensure the full and effective implementation of all relevant European and national legislation on the collection and treatment of waste electrical and electronic equipment (WEEE) at a demonstration scale in Bulgaria.

# Advanced systems for the enhancement of the environmental performance of WINeries in Cyprus

## Project background

Cypriot wine production has been growing, along with wine tourism for the purpose of tasting, consumption or purchase of wine at or near the source.

During wine production, large volumes of both liquid and solid waste are produced, the quantity and quality of which depend on the wine type and the production techniques. Wastewater originates from various washing steps during the crushing and pressing of grapes, and the rinsing of fermentation tanks, barrels and other items of equipment. Wastewater quantity and quality shows seasonal variations, with the peak wastewater generation occurring when grapes are actively being processed into juice for fermentation. Total wastewater production of a winery is estimated to be 1.2 times greater than the production of wine. Solid waste, including skins, stems, pips, lees and sludge, is also produced. Both winery wastewater and solid waste need to be managed appropriately prior to their final disposal in fields or receiving water bodies.

Most Cypriot wineries do not have biological treatment plants in place. Even though the relevant legislation exists, a large number of wineries still spread their effluents in fields without any treatment, therefore polluting groundwater resources.

## Project objectives

The project will identify the environmental impacts associated with wine production, and will set up an environmental management system (EMS) for the Tsiakkas Winery in western Cyprus.

Specifically the project shall:

- Conduct an analysis of the European and Cypriot wine industries, as well as of EU and local statutory provisions relating to the operation of wineries, and identify good practice examples;
- Conduct an environmental analysis for wineries in Cyprus;
- Conduct a detailed environmental review for the Tsiakkas Winery;
- Set up an environmental policy for the Tsiakkas Winery and establish an EMS;
- Design, develop and construct a pilot Winery Wastewater Treatment (WWWT) plant;

LIFE08 ENV/CY/000455  
WINEC



## Beneficiary:

### Type of beneficiary

University

### Name of beneficiary

University of Cyprus

### Postal Address

Kallipoleos 75  
PO Box 20537  
CY - 1678 Nicosia  
CYPRUS  
Phone +357 22 892275  
Fax +357 22 892295  
Email dfatta@ucy.ac.cy

### Name of contact person

Despo Kassinos

## Duration of project:

33 months (01/02/2010 - 31/10/2012)

## Total budget in euro:

1,371,357.00

## EC contribution in euro with %:

682,954.00 (49.80%)

## Generic Theme:

Industrial waste (including manufacturing)

- Develop mechanisms for frequent internal control and reporting of the winery's environmental performance, including the operation of the WWWT;
- Suggest solutions to overcome any constraints identified during the establishment of the EMS and WWWT;
- Develop a good practice guide for the improvement of the environmental performance of wineries, and specifications for WWWT plants, to be disseminated to a number of stakeholders, including wineries, wastewater engineering companies, environmental consultants and public authorities. The project's results will also be publicised through a newsletter, relevant publications, guided tours, workshops and technical conferences

# Demonstration of an integrated waste-to-energy system for energy generation from biodegradable organic waste and wastewater

## Project background

Finding alternatives to fossil fuels is a fundamental challenge as the world faces up to the climate change threat. At the same time, agricultural and municipal solid biomass waste also poses an environmental challenge. Use of biomass wastes as fuel-stock for energy generation could reduce environmental impacts, while maintaining viable energy supplies. Such an approach could offer particular benefits to Cyprus, because the island's soils have low nutrient values, and treated sludge from processing of biodegradable organic waste (BOW) could raise the land's organic content, while reducing the need for synthetic soil improvers. Reducing the volume of BOW that goes to landfill will also cut greenhouse gas emissions, while use of BOW for energy generation will reduce dependence on external energy supplies.

## Project objectives

The project will demonstrate a sustainable conversion technology for energy generation, and sustainable processes for waste and wastewater handling. This will be done through the construction of an innovative integrated system based on anaerobic processes with a Membrane Bioreactor System (MBR). This technology can be used to treat urban wastewater, as well as other BOW (household organic waste, agricultural waste and manure). The outputs from this system will be biogas and a stabilised solid product, with the simultaneous production of high quality effluent that can be safely reused in agriculture. The biogas product is expected to be used in gas turbines for conversion to electricity. The solid product will be suitable for agricultural applications or for use as a fuel. Finally, the processed wastewater will be used for irrigation.

The innovative, integrated technology developed and demonstrated through this project will be used as a demonstration unit for further applications at medium-to-large-scale. In particular, the technology and processes will be relevant for communities with similar characteristics to Cypriot communities, and facing similar problems of energy generation and waste disposal. This integrated system aims at the production of 'zero' waste through the effective reuse of all organic waste streams (including sludge).

LIFE08 ENV/CY/000457  
INTER-WASTE



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Cyprus University of Technology

#### Postal Address

Arch. Kyprianou 31  
CY - 3036 Limassol  
CYPRUS  
Phone +357 2 5002607  
Fax +357 2 5002767  
Email loannis.papadopoulos@cut.ac.cy

#### Name of contact person

Ioannis Papadopoulos

### Duration of project:

33 months (01/01/2010 - 30/09/2012)

### Total budget in euro:

1,471,838.00

### EC contribution in euro with %:

735,330.00 (49.96%)

### Generic Theme:

Waste management

Other expected results will include development of know-how for the efficient management of sludge and other BOW; development of instruments for competent authorities so that they can establish sustainable energy production schemes, and sustainable solid waste management plans; and generation of data on energy gain for different types of feedstock, the environmental impacts of the processes under study, and the scope for reducing the use of chemical fertilisers.

# Strengthening the scientific foundation of water quality programs

## Project background

Water systems in Cyprus are facing increasing pressure both from human activity and changing weather patterns and hydrological conditions. Water availability has in recent years been the most pressing issue, because of the ongoing drought, while urban non-point pollution has been one of the main sources of pressure.

The project area (Kalo Horio catchment) drains into the two Larnaca salt lakes, a Natura 2000 site. The lakes are the second largest in size and importance in Cyprus after the Akrotiri salt lake in Limassol. Despite its ecological importance, the site is under severe pressure from human activities, such as industrial pollution from the Aradipou industrial zone, non-point pollution from agricultural and farming activities, the Larnaca airport and the Larnaca Sewage Treatment Plant.

## Project objectives

The overall goal of the project is to strengthen the scientific foundation of water management programmes, including criteria development for pollutants with high potential impact on environmental quality and biodiversity. As such, the project will establish and demonstrate an innovative set of methods and tools for the design and implementation of programmes for the preservation of the high environmental quality and good ecological status of water bodies.

The major technical objective of the project is to establish and implement detailed, distributed dynamic simulation models in terms of a dynamic water budget (based on the natural climate-driven hydrological cycle, anthropogenic demand, and allocations), resulting in water availability and quality criteria.

### Expected results:

- Catchment-scale water-resources modelling and decision-support tools (computer hardware and software) will be established at the premises of the Cyprus Environment Service;
- A Water Management Tools System Guide will be produced;
- Water quality and environmental assessment indicators (20-30 indicators) will be developed for the Kalo Horio Basin;

LIFE08 ENV/CY/000460  
WATER



### Beneficiary:

#### Type of beneficiary

National authority

#### Name of beneficiary

Environment Service - Ministry of Agriculture, Natural Resources and the Environment

#### Postal Address

28 Octovriou Avenue 20-22

CY - 2414 Nicosia

CYPRUS

Phone +357 22 408927

Fax +357 22 781156

Email [chajipakkos@environment.moa.gov.cy](mailto:chajipakkos@environment.moa.gov.cy)

#### Name of contact person

Charambalos Chajipakkos

### Duration of project:

42 months (01/02/2010 - 31/07/2013)

### Total budget in euro:

829,775.00

### EC contribution in euro with %:

407,920.00 (49.16%)

### Generic Theme:

Water management at the scale of the river basin

- A geospatial pollutant sources database will be developed, with some 1 000 pollutant sites built into it, using satellite imagery or orthophotography as needed;
- A set of Total Maximum Daily Loads (TMDLs) for the Kalo Horio/Larnaca salt lake basin will be developed for five pollutants; and
- Environment Service personnel, and personnel from other government departments competent in water management will be given training and hands-on experience in using the new tools.

# Impact assessment for the adoption of CO<sub>2</sub> emission trading for maritime transport

## Project background

The likely implementation of a carbon dioxide (CO<sub>2</sub>) emission allowance trading scheme for the merchant shipping industry will have a significant impact on the financial, social and physical environment, at a global, European and national level. EU countries will experience varying impacts depending on a number of variables, such as country size, location (coastal or not), economic structure, and size of shipping fleet.

## Project objectives

The project will assess the environmental, social and financial impacts that are likely to arise from the adoption of a carbon dioxide allowance trading scheme for the shipping industry in three countries: Cyprus, Greece and Denmark. These countries are representative of the majority of country 'types' found in the EU, in shipping terms. Specifically, Cyprus is a small country with a large shipping fleet; Greece is a large country with a large shipping fleet; and Denmark is an average EU country with an average-sized shipping fleet. Greece and Cyprus account for more than 40% of the EU-registered fleet, and thus provide a good basis for scaling-up the results of the project to the whole EU.

Expected results:

The project will demonstrate:

- The feasibility of an Emission Trading System (ETS) for shipping;
- The special conditions that may need to apply to different EU countries, for example: island states compared to continental states, or ship-owner compared to flag-ship countries;
- The general impact that a shipping ETS will have for individual countries. The project will have a transnational demonstration value: it can demonstrate to politicians and administrators, governmental bodies, EU bodies and the shipping industry the applicability of a shipping ETS, and will thus allow them to make better informed decisions about the form such an ETS should take.

LIFE08 ENV/CY/000461  
MARITIMECO2



### Beneficiary:

#### Type of beneficiary

National authority

#### Name of beneficiary

Department of Merchant Shipping

#### Postal Address

Kylinis Str.  
Mesa Geitonia 56193  
CY – 4007 Limassol  
CYPRUS  
Phone +357 25 848100  
Fax +357 25 848200  
Email sserghiou@dms.mcw.gov.cy

#### Name of contact person

Sergio Serghiou

### Duration of project:

30 months (20/01/2010 - 20/07/2012)

### Total budget in euro:

830,946.00

### EC contribution in euro with %:

411,723.00 (49.55%)

### Generic Theme:

Air quality management and noise abatement

# Clean Enterprises of the 21st Century

## Project background

The main challenge that economies face today is integrating environmental sustainability with economic growth and welfare, which requires a move towards an energy and resource efficient economy. Sustainable production and consumption maximise business potential to transform environmental challenges into economic opportunities and provide a greener choices for consumers. The challenge is to improve the overall environmental performance of products throughout their life-cycle, to boost the demand for more environmentally friendly products and production technologies and to help consumers to make informed choices. A range of policies at EU and national level are already fostering resource efficient and eco-friendly products and raising consumer awareness.

## Project objectives

This LIFE project aims to support wider implementation of sustainable consumption and production tools and methodologies in Danish industries. The overall objective is to ensure that Danish enterprises – and especially small and medium sized enterprises (SMEs) - expand their voluntary environmental efforts in accordance with the European Sustainable Development Strategy and the IPP approach. The project will promote identification, demonstration and dissemination of innovative technologies and practices complementary to those of the EU Competitiveness & Innovation Framework Programme. Specific objectives of the project include:

- Development of a new integrated digital toolbox for voluntary environmental improvements;
- Capacity building and training of people in organisations that are designed to facilitate and support industry;
- Establishment of a new national, cross-sectoral coordination group for IPP adoption in industry; and
- Demonstration of the effectiveness of the new concepts and tools through pilot projects in selected companies.

The expected impact of the project is an increase in IPP implementation in Danish businesses. The specific output and results will be

- A new digital IPP toolbox, including at least 10 tools, which have been tested and demonstrated in

LIFE08 ENV/DK/000468  
CleEn - 21



### Beneficiary:

#### Type of beneficiary

Professional association

#### Name of beneficiary

Confederation of Danish Industries

#### Postal Address

H.C. Andersens Blvd. 18  
DK - 1787 Copenhagen V  
DENMARK  
Phone +45 33 773033  
Fax +45 33 773300  
Email bp@di.dk

#### Name of contact person

Bjarne Palstrøm

### Duration of project:

36 months (01/01/2010 - 30/06/2012)

### Total budget in euro:

1,170,741.00

### EC contribution in euro with %:

585,370.00 (50.00%)

### Generic Theme:

Clean technologies

- at least 10 enterprises, and adjusted and promoted according to demonstration project monitoring (at enterprise level);
- At least 100 individuals from relevant organisations and consultancies trained in the different IPP tools and approaches;
- IPP tools and approaches incorporated into the curricula of Aalborg University, Department of Development and Planning; and
- The establishment of a national IPP working group, which will hold four meetings while the project is running.

# Elaboration of novel metagenomic method for environmental monitoring

## Project background

The degradation of soil, which is vital for human activities and the survival of ecosystems, is a serious problem in Europe. Soil degradation is driven by inadequate agricultural and forestry practices, industrial activities, tourism, urban and industrial sprawl and construction works. In Europe, these factors result in erosion, decline in organic matter, contamination, salinisation, compaction, decline in biodiversity, sealing, floods and landslides. Soil degradation impacts directly on water and air quality, biodiversity and climate change. Furthermore, it can have a negative effect on human health and threaten food and feed safety. Soil loss and declining fertility have been highlighted in the EU Strategy for Sustainable Development as one of the main threats to sustainable development and one of the main causes of the decrease of the viability of agricultural land. Microorganism communities are responsive to environmental conditions and therefore good indicators of environmental status. However, the application of metagenomic approaches has been limited as a result of high costs and lack of access to highly specialised technical infrastructure.

## Project objectives

The overall objective of the project is to develop and demonstrate a novel approach to environmental monitoring, based on metagenomic data and using modern biotechnology and IT technologies.

The specific objectives of the project are as follows:

- To elaborate an innovative methodology for environmental monitoring that uses quantitative and qualitative evaluation of the microorganism communities;
- To present the new methodology to stakeholders who could use it in their everyday work; and
- To promote the possible application of the method internationally.

Over the course of the project, 300 samples of soil will be collected from Estonia, Latvia, Lithuania, Finland, Sweden, Poland and Germany. From the samples, DNA will be extracted, amplified, sequenced and analysed. Based on the genomic data, markers will be determined that describe the environment. These markers will allow an evaluation of the influence of different human activities (industrial, recreation, agriculture, climate changes etc) on ecosystems.

LIFE08 ENV/EE/000258  
BIOTAGENE



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Tallinn University of Technology

#### Postal Address

Ehitajate str 5

EE - 19086 Tallinn

ESTONIA

Phone +372 534 11616

Fax +372 620 4401

Email madis.metsis@ttu.ee

#### Name of contact person

Madis Metsis

### Duration of project:

30 months (01/01/2010 – 30/06/2012)

### Total budget in euro:

1,614,331.00

### EC contribution in euro with %:

792,165.00 (49.07%)

### Generic Theme:

Other area – Impact of economic activities

# Reducing environmental risks in use of plant protection products in Northern Europe

## Project background

European Union policy aims to minimise the use of pesticides. Pesticide use is particularly linked to climate, land use and technological changes in the northern crop production areas. The EU pesticides legislation, which is currently undergoing reform, requires Member States to adopt National Action Plans (NAPs) by 2014 on the sustainable use of pesticides. Reversing the increasing pesticide-use trend by this date will be challenging.

Significant economic and social benefits are associated with the use of pesticides; the European pesticide industry has a turnover of €6 billion, and the yield losses associated with pesticide-free agricultural production are estimated to be on average 45% (based on a Danish study). Nevertheless, in adopting the 6th Environment Action Programme, the EU recognised that the impact of pesticides on human health and the environment must be reduced.

## Project objectives

The main aim of the project is to specify actions that will contribute to the adoption of a NAP for pesticides, thus supporting the implementation of the EU Directive on Sustainable Use of Pesticides, which was finalised in early 2009. In particular, the project aims to ensure that NAPs can take account of the continuously warming climate, and changes in land use and agricultural techniques.

The project will specifically concentrate on the construction and testing of an integrated pest management (IPM) model, including new technologies in field monitoring, and discussing different options for ecological risk mitigation of plant protection products, as central elements of the NAPs.

The project will focus on cereals as a demonstrative model crop, and also on a representative insecticide (alpha-cypermethrine), a fungicide (prothioconazole as a triazole compound) and a herbicide (glyphosate). The project will extrapolate the models from the regional area and will upscale it to the Nordic-Baltic growing areas. Work will also be done to build up the wide involvement of stakeholders in the NAP development process, to ensure transparency and wide acceptance of the process.

LIFE08 ENV/FIN/000604  
PesticideLife



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

MTT Agrifood Research Finland

#### Postal Address

FIN - 31600 Jokioinen

FINLAND

Phone +358 3 41881

Fax +358 3 41882584

Email sannii.junnila@mtt.fi

#### Name of contact person

Sanni Junnila

### Duration of project:

48 months (01/01/2010 – 31/12/2013)

### Total budget in euro:

1,021,932.00

### EC contribution in euro with %:

510,965.00 (50.00%)

### Generic Theme:

Risk assessment – Pollution control

### Expected results:

- The definition of an implementation framework for the forthcoming NAP;
- The demonstration of a partnership-building approach with farmers and professional stakeholders (from the whole food chain), to increase their role in, and responsibility for, the NAP-development and implementation process; and
- The creation of public reference networks, which will lead to greater transparency; and improved pest scenarios, monitoring systems and control thresholds results as part of an IPM model.

# Climate Change Adaptation Tools for Environmental Risk Mitigation of Acid Sulphate Soils

## Project background

From an environmental point of view, acid sulphate soils (AS-soils) are regarded as the most problematic soil types in the world. Finland has Europe's largest areas of AS-soils (c. 1 000-2 000 km<sup>2</sup>). Land uplift has caused these sulphide-bearing sediments to emerge above the current sea-level. Through reclamation, burning of the peat cover and heavy liming, they constitute today some of the most productive farm lands in Finland. To a lesser extent, sulphide bearing sediments have been reclaimed for forestry, construction works and infrastructure. Unfortunately, as a result of the measures outlined above, the groundwater level is considerably lowered during dry spells, enabling oxygen to penetrate the soil. When exposed to oxygen, sulphides oxidize and produce sulphuric acid and make the soil extremely acid (pH 2.5-4), which in turn mobilizes enormous quantities of metals (including Al, Cd, Co, Ni and Zn) stored in the soil. Together with acidity, these metals are flushed from the soils into drains and recipient estuaries during wet spells. Metal discharges from AS-soils are estimated to significantly exceed the corresponding industrial discharges from all Finnish industry. This is also the case for cadmium, one of the priority substance metals regulated by the EU Environmental Quality Standard (EG-EQS) Directive (2008/105/EC). Moreover, cadmium concentrations also exceed the environmental quality standards in many waterbodies affected by AS-soils. The extensive pool of toxic metals in these soils with high risk of mobilisation has not been adequately understood until very recently. The chemical composition and drainage water quality of AS-soils resembles those of sulphur rich metal ores, which cause similar acidity problems in Europe and worldwide

## Project objectives

The project aims to develop climate change adaptation tools for the Finnish river basin districts to mitigate the impacts of increased leaching of acidity and metals from acid sulphate soils drained for agriculture and forestry. Climate change is likely to increase environmental damage if no targeted mitigation measures are developed. Therefore the overall objective is to promote wide application of techniques and actions to reduce acidity and metal concentrations in drainage waters, thus enhancing achievement of EU environmental objectives according to the Wa-

LIFE08 ENV/FIN/000609  
CATERMASS



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

Suomen ympäristökeskus (Finnish Environment Institute)

#### Postal Address

Mechelininkatu 34a140

FIN - 00251 Helsinki

FINLAND

Phone +358 40 5432227

Fax +358 20 4902985

Email Kari-Matti.Vuori@environment.fi

#### Name of contact person

Kari-Mati Vuori

### Duration of project:

48 months (01/01/2010 – 31/12/2013)

### Total budget in euro:

2,829,423.00

### EC contribution in euro with %:

1,192,652.00 (42.15%)

### Generic Theme:

Risk assessment – Pollution control

ter Framework (2000/60/EC), Flood (2007/60/EC), Habitats (92/43/EEC) and EG-EQS (priority substances) Directives. In particular, the project aims to consolidate the knowledge base for adapting pollution control methods to the changing precipitation, runoff and temperature conditions. Specifically, the project will develop effective mapping, identification and risk classification methods of AS-soils. By constructing prototype testing fields with infrastructure and equipment (subsurface controlled drainage systems, pumping systems, tailored cropping and cultivation schemes) it will be able to demonstrate climate change adaptation tools under practical field conditions. In addition, the project team will develop educational opportunities and organise forums to encourage the participation of farmers, forest owners, authorities and specialists in decision making concerning adaptation of land use to climate change.

# Cleaning Industry Sustainable Development Programme

## Project background

Each EU citizen consumes an average of 11 kg/yr of cleaning products - 7 kg of household products and 4 kg of industrial products. The manufacture of these products requires substantial amounts of water and energy as well as producing water, air and noise pollution. Cleaning activities also produce a substantial amount of wastewater. Furthermore, the products used tend to present particular risks of water pollution because 70-75% of them are made using petrochemistry and biodegrade very slowly in comparison with products of plant origin. For many years, the cleaning sector has made specific commitments to address environmental issues and reduce its impact, notably around waste reduction, waste treatment and the use of recyclable products. In 2008, the French Federation of Cleaning Industries developed a sustainable development programme for all cleaning companies. It contains 51 concrete actions designed to achieve four main objectives related to: health and life quality; social involvement; natural resource conservation and environmental preservation; and participation in local issues.

## Project objectives

This LIFE project aims to promote the implementation of the Cleaning Industries' Sustainable Development Programme. This in turn aims to achieve the conservation of natural resources and the preservation of the environment through reduced water consumption and pollution, less waste and improved recycling of waste.

The project will develop self-diagnosis software for cleaning companies that it will test with a sample of companies. It will also promote a leverage effect on suppliers and subcontractors by fostering the inclusion of waste-management objectives in 75% of client contracts by 2012. The beneficiary will develop and put into place an environmental and social reporting system and involve and train all categories of cleaning company employees in sustainable development issues. The link with local jobs and economic activity will be promoted throughout the project. Finally, the project will work with the associated cleaning federations and their companies in other EU countries and provide all documents, and methodological and pedagogical tools to them.

LIFE08 ENV/F/000481  
CISDP



### Beneficiary:

#### Type of beneficiary

Professional organisation

#### Name of beneficiary

Fédération des Entreprises de Propreté et Services Associés

#### Postal Address

34 boulevard Maxime Gorki

F - 94808 Villejuif

FRANCE

Phone +33 1 46 77 68 00

Fax +33 1 47 26 90 85

Email [shirtz@federation-proprete.com](mailto:shirtz@federation-proprete.com)

#### Name of contact person

Stéphanie Hirtz

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,176,067.00

### EC contribution in euro with %:

563,034.00 (47.87%)

### Generic Theme:

Clean technologies

### Expected results:

By 2012, the project aims to have achieved the following targets:

- Reduced energy consumption by 20%;
- 75% of packaging in the cleaning sector to be made from recyclable materials;
- 50% of cleaning products to have obtained the EU eco-label;
- 50% of employees to be trained in best environmental practices; and
- 150 individual sustainable development action plans to be implemented within individual cleaning companies in France.

# Implementation of an air quality modelling and forecast system in Romania

## Project background

Atmospheric pollution can be harmful to humans, corrode various materials and have a detrimental effect on agricultural and forestry production. It is particularly challenging since it is a complex and diffuse problem, generated by many activities, such as rising industrial and energy production, burning fossil fuels, increasing traffic, heating, and so on.

Measures in the European Commission's Thematic Strategy on Air pollution, the Ambient Air Quality directive (96/62/EC) and a series of 'daughter' directives have fixed target values per pollutant to be achieved by 2020. The overall aim is to achieve "levels of air quality that do not give rise to significant negative impacts on, and risks to human health and the environment."

The EU's directives have been integrated into Romanian legislation. The necessary administrative structure has been established and has begun its work. The Romanian Government also adopted a national climate change strategy in July 2005.

However, Romania has not yet achieved compliance with the European PM10 limit values in force since 01 January 2005. It reported excesses to the European Commission in 2008 and had to be reminded of its obligation to comply with the standards. It was asked to submit a time-extension notification for its excess zones in early 2009.

## Project objectives

Through the ROMAIR LIFE+ project, the beneficiary aims to provide a comprehensive air-quality modelling and forecasting system that will enable the Romanian authorities to actively fight air pollution. It will thus serve to improve public health and quality of life, and limit climate change impacts.

This system will provide authorities with the tools they need to reach a higher control of air quality and more efficient and deeper strategic planning. Moreover, it will also bring about changes in citizens' behaviour as far as air quality and the environment are concerned, through the dissemination of best practices.

LIFE08 ENV/F/000485  
ROMAIR



### Beneficiary:

#### Type of beneficiary

Small and medium-sized enterprise

#### Name of beneficiary

ARIA Technologies

#### Postal Address

8-10 rue de la Ferme  
F - 92100 Boulogne Billancourt  
FRANCE  
Phone +33 1 46 08 68 69  
Fax +33 1 41 41 93 17  
Email [jmoussafir@aria.fr](mailto:jmoussafir@aria.fr)

#### Name of contact person

Jacques Moussafir

### Duration of project:

30 months (01/01/2010 – 30/06/2012)

### Total budget in euro:

1,437,099.00

### EC contribution in euro with %:

708,813.00 (49.32%)

### Generic Theme:

Air quality management and noise abatement

ROMAIR will provide tools to national, regional and local environment protection agencies that will enable the following:

- Identification of the most important areas and pollutants that need to be targeted;
- Implementation of Romanian law derived from the European directives on Air Quality, including setting up the required action plans;
- Evaluation of the efficiency of proposed actions on ambient air quality before their implementation;
- Assessment of the interaction between actions oriented towards pollution reduction and greenhouse gas (GHG) emissions;
- Future GHG reduction plans to be based on initial inventories; and
- The impact of climate change on public health to be explored via the evolution of meteorological conditions in Romania.

# Design, implement and assess an innovative and sustainable plan to minimise municipal organic waste in EU States

## Project background

The increasing generation of waste and the limited capacity of waste-treatment installations make prevention a principal priority of waste management for European cities. Organic waste is a particular target, as it constitutes a very poor source of energy and can easily be diverted from incineration.

Between 300 and 600kg of municipal solid waste (MSW) are generated per inhabitant per year in Europe. Around 100kg is organic waste, 10% of which can be avoided by limiting food waste through increasing eco-behaviour on issues such as shopping and cooking. Some 30-70% can be composted.

The benefits of separate collection of organic waste within households include: diverting biodegradable waste from landfills, enhancing the calorific value of the remaining MSW and generating a cleaner bio-waste fraction that produces higher quality compost.

After setting up a waste-sorting scheme, Rennes Metropole launched an ambitious waste prevention policy in 2005 with the goal of bringing down the production of residual MSW from 240 kg/person/yr in 2005 to 200 kg/person/yr by 2011.

## Project objectives

This project aims to demonstrate, in accordance with the new Waste Framework Directive 2008/98/EC, that it is possible to significantly reduce the amount of organic waste from households in a manageable and sustainable way.

The project will work to engage households in limiting food waste and favouring the practice of collective or individual composting of food and green waste in three partner urban areas. It will be implemented at full scale in Rennes Metropole (France) and Lipor (Portugal), and at pilot scale in Brno (Czech Republic).

In Rennes Metropole the project hopes to involve more than 50% of the population living in detached houses and about 25% of those living in collective buildings within eight years. It is expected that this will lead to a reduction of more than 80% in organic waste.

LIFE08 ENV/F/000486  
MINIWASTE



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Communauté d'Agglomération Rennes Métropole

#### Postal Address

4 avenue Henri Freville

CS 20723

F - 35207 Rennes Cedex

FRANCE

Phone +33 2 99 86 65 30

Fax +33 2 99 86 65 31

Email s.segal@agglo-rennesmetropole.fr

#### Name of contact person

Emilie Floch

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

2,289,402.00

### EC contribution in euro with %:

1,126,626.00 (50.00%)

### Generic Theme:

Municipal waste (including household and commercial)

The project will set up appropriate measurement protocols and control systems to verify that targets are reached and to inform continuous technical progress. A specific set of monitoring protocols will be developed and implemented to ensure the quantity and quality of the compost produced is in compliance with EU standards and to compare the efficiency of different kinds of composter bins.

The project will seek to show that the costs needed for implementation and monitoring of the waste-reduction actions can be offset within a few years by savings associated with the quantity of waste diverted from processing.

Finally, it will carry out awareness raising campaigns and disseminate recommendations and guidance notes to other European cities.

# Demonstration of Photocatalytic Remediation Processes on Air Quality

## Project background

National and EU action and international conventions have recognised the need to provide cleaner air. However, European Commission analysis has shown that there are technical limitations to projected emission reductions leading to a levelling-off of reduction scenarios already in 2010. Therefore, there is a real need for other further methods for reducing air pollution and attaining the 6th Environment Action Programme (EAP) air quality objectives by 2020. The ultimate aim is for "levels of air quality that do not give rise to significant negative impacts on, and risks to human health and the environment." In very recent years, photo-catalytic self-cleaning and "de-polluting" materials have been suggested as a remediation technology, mainly for nitrogen oxides (NO<sub>x</sub>) and aromatic volatile organic compounds (VOCs) in the polluted urban environment. Associated technologies have been launched on the European market based on the photo-catalytic properties of a thin layer of titanium dioxide (TiO<sub>2</sub>) deposited at the surface of urban materials - glass, pavements, etc. - or embedded in paints or concrete. However, take-up has been slow.

## Project objectives

This LIFE Environment project aims to demonstrate the usefulness of photocatalytic materials for air pollution reduction in the urban environment. It hopes to increase the acceptance and take-up of technologies that are already available, but still little known or trusted. This project aims to evaluate the feasibility of using TiO<sub>2</sub> based products to alleviate the air pollution problems under real atmospheric conditions.

The project foresees:

- Development of a testing methodology for photocatalytic removal/production of NO<sub>x</sub>, HONO, radicals, large numbers of VOCs and particles, with all tests being performed under atmospherically relevant conditions;
- Testing of the photocatalytic activities of the commercially available TiO<sub>2</sub>-based products in order to examine the pollutant removal effectiveness;
- Design of better environmental indicators and methods to assess the impact of this new technology in European cities;
- Recommendations and a "demonstration tool" for European authorities on the practical application of this technique for air treatment.

LIFE08 ENV/F/000487

PhotoPaq



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Centre National de la Recherche Scientifique

### Postal Address

3 rue Michel-Ange

F - 75794 Paris

FRANCE

Phone +33 4 72 43 14 89

Fax +33 4 72 44 84 38

Email christian.george@ircelyon.univ-lyon1.fr

### Name of contact person

Christian George

## Duration of project:

48 months (01/01/2010 – 31/12/2013)

## Total budget in euro:

4,018,190.00

## EC contribution in euro with %:

1,984,573.00 (49.88%)

## Generic Theme:

Air quality management and noise abatement

These objectives will be achieved by combining tests in simulation chambers and in the field (in a number of European cities) with numerical modelling.

# Control of noxious or vector mosquitoes: implementation of integrated management consistent with sustainable development

## Project background

The control of noxious or vector mosquitoes (*Diptera-Culicidae*) is an activity for which the socio-economic, health and environmental stakes are high. In France, given the large area concerned, this public health mission was entrusted to specialised public operators.

Recent mosquito-related events have increased awareness among national and European authorities of the need to evaluate the pertinence, efficacy, and health and environmental risks linked to mosquito control strategies. These events have included the historic chikungunya epidemic in Réunion and the spread of introduced tropical vectors (*Aedes albopictus*) in Europe, causing the first Chikungunya epidemic in Italy. Such events are thought likely to increase with global warming.

Mosquito-control tools need to prevent the emergence of resistance phenomenon and to be able to adapt to the diversity of field situations encountered. However, there is a tension between this and the increased need to control the polluting effects of biocides used. The EU Biocidal Product Directive 98/8/EC has already drastically reduced the number of biocides that can be used.

## Project objectives

This LIFE Environment project aims to provide effective and environmentally sound control and decision-making tools to public bodies tackling mosquitoes.

The beneficiary plans to use its R&D laboratory and experience in studying biocides, the biology of target species and unintentional environmental impacts to provide precise and up-to-date knowledge of target species' presence, biology and colonised habitats, and to develop control methods appropriate to the health and environmental risks faced for the successive phases of the control strategy.

The project will develop clear rules and a *modus operandi* for the mosquito-control strategy, reached by consensus and consistent with sustainable development goals. These methods will be validated by setting up trapping networks, measuring their biological efficacy and monitoring the non-intentional effects

LIFE08 ENV/F/000488  
IMCM



## Beneficiary:

### Type of beneficiary

Regional authority

### Name of beneficiary

Entente interdépartementale de démos-tication du littoral méditerranéen

### Postal Address

165, avenue Paul Rimbaud  
F - 34184 Montpellier Cedex 4  
FRANCE  
Phone +33 4 67 63 67 68  
Fax +33 4 67 63 54 05  
Email clagneau@eid-med.org

### Name of contact person

Christophe Lagneau

## Duration of project:

42 months (01/01/2010 – 30/06/2013)

## Total budget in euro:

4,338,652.00

## EC contribution in euro with %:

2,118,076.00 (48.82%)

## Generic Theme:

Sensitive area management (coastal, protected)

on non-target arthropod species with tools such as biomarkers.

Nuisance thresholds will be calculated to inform the control strategy based on knowledge of social demands. Sociological surveys will be carried out to optimise the communication strategy. The traceability of operations will be ensured by means of analysis before and after.

# New process for the heat treatment and the energy valorisation of the sludge coming from wastewater treatment plant

## Project background

Since the implementation of the 91/27<sup>3</sup>/EEC Directive on Urban Waste Water Treatment, the amount of sludge generated in the EU has increased dramatically. This trend is expected to continue, with sludge output rising from 7 million tonnes/yr to 20 million tonnes/yr in the next decade. The general principles for the management of sewage sludge are stated in many national and European laws. These principles are based on the privileging, as far as possible, of actions of treatment, valorisation and recovery. Furthermore, these should not present a threat to human health or the environment. This is in line with sustainable development policy. Current processes of elimination or treatment of sewage sludge – which include incineration, burial and spreading – are no longer adequate to deal with the constantly increasing volumes.

## Project objectives

Research into matter cycles and matter re-use needs to develop a new, environmentally friendly industrial process for elimination, treatment and valorisation of sewage sludge. To this end, FINAXO has developed a new process for heat treatment and energy recovery of organic waste by pyrogasification - Pyrobio. This LIFE project aims to develop the patented Pyrobio process at an industrial scale. It seeks to build on laboratory work and previous tests with the residual liquors resulting from the distillation of beets to demonstrate its adaptability and transferability to other organic waste - sewage sludge. The project hopes to show that the Pyrobio system fulfils the requirements of sustainable development and integrated management of resources. Part of this will be the re-use of gas produced from the heating process as energy in a closed circuit.

The main objectives of the project are:

- A 20% reduction in the cost of the treatment, elimination or valorisation of sludge coming from wastewater treatment plants (WWTP);
- A reduction in polluting emissions from treatment processes and the total elimination of CO<sub>2</sub> emissions through the complete digestion of treated organic materials;
- A 20% reduction in residual waste from coke;
- A 10% reduction in residual waste from tar; and
- To achieve energy self-sufficiency for the process – an estimated increase in energy production of 20-30%.

Finally, the project will work to increase the awareness

LIFE08 ENV/F/000489

PYROBIO



## Beneficiary:

### Type of beneficiary

Small and medium-sized enterprise

### Name of beneficiary

FINAXO Environnement

### Postal Address

12 Allée des Missions

F - 51170 Fismes

FRANCE

Phone +33 326 480 147

Fax +33 326 831 134

Email pascalcolignon@finaxo.fr

### Name of contact person

Pascal Colignon

## Duration of project:

22 months (01/01/2010 – 31/10/2011)

## Total budget in euro:

1,696,245.00

## EC contribution in euro with %:

845,409.00 (49.84%)

## Generic Theme:

Waste water treatment

of citizens on the treatment and valorisation of sludge from WWTP so that there is better acceptance of these plants. Similarly, work will be undertaken with WWTP managers to increase their knowledge of this new process.

# Prototype process for additional sorting of heavy refuse from an MBT household waste facility

## Project background

Levels of waste, and particularly household waste, generated in Europe are increasing. It is therefore a matter of urgency to introduce processes that make maximum use of waste and avoid it being sent to landfill. The 6th EU Environment Action Programme (EAP) identified sustainable waste management as one of its four priorities and waste recycling as one of its seven key strategies. ORGANOM decided to build a methanisation plant to handle 90 000 tonnes/yr of household waste. The plant aims to use mechanical-biological treatment units to make the maximum use of organic matter as both a soil improver and a source of energy. Projects for the organic processing of household waste - composting or methanisation - have always come up against the technical problem of the efficiency with which the waste can be sorted, in view of the diversity of the waste and the wide variations in composition. Neither mechanical sorting of household waste, nor systems relying on separation by householders produce satisfactory results.

## Project objectives

The LIFE project OVADE-Plus sets out to demonstrate a prototype system for the sorting of waste that can lead to the recycling of nearly 60% of all household waste. By sorting non-separated waste, it aims to minimise the amount of waste sent to landfill and maximise the amount that can be reused. The project involves the advanced sorting of heavy waste. It seeks to separate the degradable organic matter ('DOM'), destined for biological treatment by composting or methanisation from the non-organic degradable matter. It will use a combination of the latest technologies, including: a vibrating screen, juice extractors, a centrifuge, an inert material separator/cleaner, a curved sieve, a dehydrator and a rotating screen. The project will build on the work already undertaken to build the beneficiary's tri-composting facility. The project will perfect the industrial-scale prototype equipment at this plant, testing and adjusting it to produce an optimised system for separation of household waste.

### Expected results:

Through improved separation the project will:

- Treat 750 tonnes/yr of polluted organic matter through the methanisation plant to produce more biogas, clean inert material and compost;

LIFE08 ENV/F/000490  
OVADE-Plus



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Syndicat Mixte de traitement des déchets

#### Postal Address

Norélan 231  
Avenue de Parme 60127  
F - 01004 Bourg-en-Bresse Cedex  
FRANCE  
Phone +33 4 74451470  
Fax +33 4 74450603  
Email organom@organom.fr

#### Name of contact person

Gérard Peau

### Duration of project:

24 months (01/01/2010 – 31/12/2011)

### Total budget in euro:

2,382,354.00

### EC contribution in euro with %:

1,191,177.00 (50.00%)

### Generic Theme:

Municipal waste (including household and commercial)

- Divert 2 450 tonnes/yr of inert material - such as rubble, sediment, stones and glass - away from landfill, towards re-use or storage centres for non-dangerous waste;
- Reduce the amount of waste sent to landfill by 10%; and
- Increase the tonnage of reusable waste by 8%.

# Implementation of a collaborative Eco-Design tool dedicated to SME and fitted to helicopter network's issues

## Project background

European companies operating in the aerospace, electric, electronic or automotive sectors are facing increasing regulatory pressures to improve their environmental performance. Environmental impact is evaluated in terms of the lifetime of a product or the process used to conceive it. This means companies have to verify the environmental performance of their suppliers and the environmental characteristics of the parts they use. Most companies, and particularly SMEs, currently lack the knowledge and resources to do this. A number of methods and eco-design software tools have been developed to evaluate the overall environmental impact of a final product. However, their wider application is impeded by the fact that they are often unsuitable for specific industrial procedures or practices.

It is particularly difficult to evaluate the environmental impact of metallic parts and composites or their associated processes, such as surface treatment, painting and assembly-pasting. The typically large number of very heterogeneous subcontracting SMEs only serves to amplify these difficulties. Eurocopter has been working for the past 15 years to prepare alternative technologies to replace chromium and other dangerous chemical products present in aircraft components and reduce the associated fuel consumption.

## Project objectives

The LIFE Environment project CORINE aims to provide SMEs with an innovative eco-design tool, which will act as a regulatory data bank and a tool to facilitate the identification of "greener" substitution processes. It specifically seeks to develop a Product Oriented Environmental Management System (POEMS) as an appropriate methodology for specific products and manufacturing processes involved in the helicopter industry. The system should be interactive and easy to implement.

The project has built a consortium including a major European manufacturer and a strong core group of SMEs, which will work in collaboration with experienced and highly qualified research and development partners. Together, they will work to exploit, adapt and add value to existing national and international eco-design systems. The processes will privilege powder technologies in the treatment of new surfaces and thus reduce the release of VOCs from organic solvents and minimise waste in

LIFE08 ENV/F/000492

Corine project



### Beneficiary:

#### Type of beneficiary

International enterprise

#### Name of beneficiary

EUROCOPTER

#### Postal Address

Aéroport Marseille-Provence

F - 13725 Marignane Cedex

FRANCE

Phone +33 4 42 85 83 96

Fax +33 4 42 85 86 05

Email Jacques.le-sauce@eurocopter.com

#### Name of contact person

Jacques Le Sauce

### Duration of project:

36 months (11/01/2010 – 30/12/2011)

### Total budget in euro:

3,576,266.00

### EC contribution in euro with %:

1,624,588.00 (45.43%)

### Generic Theme:

Eco-friendly products – Eco-design – Green financial products

manufacturing processes. Improved raw material selection and recycling solutions will also be favoured.

### Expected results:

At the end of the project, the following reductions are expected:

- 15% of solvents released;
- 5% of hazardous waste production (through improved raw material selection and use, and recycling solutions associated with new materials);
- 1 % of energy consumption (certainly one of the most difficult parameters to improve due to the need of high performance materials at high temperatures);
- 2 % of carbon emission (by reducing the weight of the raw materials).

## Renewable energy production at high altitude - 500 meters

### Project background

At high altitudes, above ground winds are stronger and more consistent than those close to the surface. In the past, several attempts to utilise these strong winds for energy generation have failed while more recent experiments have severe disadvantages.

The project consortium for the REECH-500 project, however, brings together the latest developments in different technologies to overcome the obstacles and yield the energy from high altitudes (500m) with an environmentally and economically sound approach. The new system connects several automatically steered kites via cable to a monorail system mounted on masts. The individual kites are interconnected and move in a circle around the monorail oval. Those kites facing an opposite wind (weak side of the oval) will be manoeuvred with low resistance to the wind. The other kites situated in favourable winds (strong side of the oval) are fully exposed to the wind and not only drag the first mentioned kites back to the strong side but also generate usable energy. A generator converts the kinetic energy of the ground cable into electrical energy.

### Project objectives

The project aims to:

- Set up and operate an energy generator prototype that uses the strong winds at 500m altitude;
- Identify the optimal operation (wind forces, altitudes, technical constitution, type, shape and size of the kites);
- Demonstrate the advantages over conventional wind energy: lower investment costs, better efficiency and profitability, base load capability (80-90% wind availability compared to 20-30% of conventional wind generators); and
- Yield three-dimensional data of wind characteristics for the first time for wind turbulences at this altitude, in this dimension and over such a large area.

LIFE08 ENV/D/000017  
REECH-500



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.

#### Postal Address

Hansastraße 27C

D - 80686 München

GERMANY

Phone +49 711 970 37 12

Fax +49 711 970 39 96

Email joachim.montnacher@teg.fraunhofer.de

#### Name of contact person

Joachim Montnacher

### Duration of project:

36 months (01/04/2010 - 31/03/2013)

### Total budget in euro:

11,138,727.00

### EC contribution in euro with %:

5,555,890.00 (49.88%)

### Generic Theme:

Eco-friendly products – Eco-design – Green financial products

# Management plan to prevent threats from point sources on the good chemical status of groundwater in urban areas

## Project background

Some 75% of Europe's drinking water supplies come from groundwater. In Stuttgart the local mineral water resources and springs, which are the second largest in Europe, are extensively used in spas for medicinal and leisure purposes. Chlorinated solvents are listed in Annex II of the Groundwater Directive (GWD) as a significant groundwater pollutant because of their previously widespread use as solvents and degreasing agents. These solvents produce pollution plumes in groundwater extending up to several kilometres from the source. This is a common feature of industrialised and urban areas throughout the world. The "prevent or limit" objective in the Water Framework Directive (WFD, Article 4) and Article 6 of the GWD are both aimed at protecting all groundwater from pollutants. The assessment of good chemical status is carried out on a large scale for the defined groundwater bodies. However, for the protection of groundwater quality at local scale, merely a first outline is given by the Common Implementation Strategy for the WFD, Guidance-Document No. 17. The compliance-point-strategy includes monitoring point source pressures with respect to their influence on receptors (i.e. the mineral springs of Stuttgart). In order to predict groundwater quality trends and developments and to design remediation measures, contaminant plumes and large-scale pollution up to the scale of entire city districts must be identified and described.

## Project objectives

The overall goal of the project is to develop and implement an optimal strategy for integral groundwater investigation and efficient remediation of the key causes of pollution. A municipal groundwater management plan will be drawn up to further substantiate the framework of recommendations given by the guidance document of the WFD. The plan will aim to achieve a quantitative overview of contaminant mass flow rates for the whole area under consideration; to localise hot spots in a second step and then subsequently identify the main sources of pollution and related liable causers. Finally risk management strategies and remedial action plans are to be defined.

The specific goals of the project are to:

- Verify innovative characterisation technologies according to the upcoming EU-ETV (environmental technological verification) scheme;

LIFE08 ENV/D/000021

MAFPlan



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Landeshauptstadt Stuttgart, Amt für Umweltschutz

#### Postal Address

Gaisburgstraße 4

D - 70182 Stuttgart

GERMANY

Phone +49 711 216 71 59

Fax +49 711 216 25 25

Email Hermann.Josef.Kirchholtes@stuttgart.de

#### Name of contact person

Hermann Josef Kirchholtes

### Duration of project:

60 months (01/01/2010 - 31/12/2014)

### Total budget in euro:

3,445,250.00

### EC contribution in euro with %:

1,722,625.00 (50.00%)

### Generic Theme:

Water management at the scale of the river basin

- Demonstrate software application for 3-D visualisation of complex underground characteristics;
- Test and evaluate a model-based methodology to define and assess appropriate sets of information for a well-defined decision basis in order to minimise the need for technical investigation measures;
- Assess contaminant mass flow rates and identify key sources of pollution and related liable polluters in the project area;
- Compile EU-wide applicable recommendations for action for groundwater risk management in urban areas; and
- Increase awareness among the general public and the commercial sector for groundwater protection issues. Three public workshops on dedicated technical aspects and an international conference on the GWD implementation process are planned. The vitreous aquifer will also become a public exhibition in Stuttgart.

# Use of immanent energy for sludge treatment - a central step towards self-sustaining sewage flow management

## Project background

Recycling of sludge consists mainly of spreading it on agricultural areas. In 2003 nearly 51% of sludge in Europe was distributed on cropland. However, sludge contains some substances that have partly unknown effects on the environment and people. As a result, restrictions on the distribution of sludge on cropland are being intensively discussed across Europe. The European Sewage Sludge Directive has already restricted the spreading of sludge, especially untreated sludge, on cropland. Traditional disposal methods for sludge are falling out of use. One way forward is thermal recycling, but the sludge must be previously dried in a wastewater treatment plant. Such drying, however, remains costly, and the energy required for drying before incineration is distinctly higher than the energy resulting from the incineration process. Options for thermal recycling include mono-incineration in exclusive sludge incineration plants and co-incineration in other industrial incinerators, such as lignite-fired power plants, industrial combustion plants and cement works.

## Project objectives

The objective the SusTreat project is to implement the first complete energy self-sufficient sludge treatment system (digestion, drying and gasification). Using a wastewater treatment plant in Koblenz, the project will demonstrate an 85% treatment of the amount of sludge without additional energy consumption. It will also demonstrate that the system can deliver additional energy to other operating units. The following technological modules are planned for integration into the existing wastewater treatment technology at SEK:

- Sludge gasification to obtain an optimal energetic yield and to reduce the sludge to its inorganic components;
- Use of thermal energy obtained from the final effluent by means of a heat pump and thus reduction of the thermal stress in the recipient;
- Electricity generation by integration of a turbine into the wastewater stream;
- A process control system that intelligently and independently controls the interaction of the modules with the aim of an optimal exploitation and distribution of energy;
- Increase of the yield of digester gas by optimised digestion tower technology; and Accumulation of a phosphorus depot which offers distinctly improved conditions for recovery.

LIFE08 ENV/D/000026

Sus Treat



### Beneficiary:

#### Type of beneficiary

Public enterprise

#### Name of beneficiary

Stadtentwässerung - Eigenbetrieb der Stadt Koblenz

#### Postal Address

Bahnhofstraße 47  
PO Box 201551  
D - 56068 Koblenz  
GERMANY  
Phone +49 261 129 40 01  
Fax +49 261 129 40 00  
Email klaerwerk-koblenz@t-online.de

#### Name of contact person

Thomas Kesselheim

### Duration of project:

60 months (01/01/2010 - 31/12/2014)

### Total budget in euro:

10,385,236.00

### EC contribution in euro with %:

2,085,118.00 (20.08%)

### Generic Theme:

Waste water treatment

### Expected results:

- Reduction of externally sourced electricity by 25%;
- Complete independence from external heat supply;
- Interim storage of the remaining ash in a mono-landfill;
- Reduction of CO<sub>2</sub> output over the whole cleaning and treatment process by more than 25%.

## Substitution portal: moving towards safer alternatives

### Project background

According to a study on REACH, some 100 000 different chemical substances are currently on the market among which 30,000 are believed to be used in amounts exceeding 1 tonne/yr. Of these substances, an estimated 60% have properties rendering them dangerous in the meaning of Directive 67/548/EEC and a substantial share of these are believed to cause serious harm, including cancer, gene defects, reproductive effects, and nervous or behavioural changes. Bio-accumulative substances build up in the food chain, and their effects may occur long after exposure and be irreversible in terms of threats to biodiversity, the functioning of ecosystems and human health. Although improvements related to the control of substances have been achieved, substitution is at the top of the hierarchy of measures for risk management under the Chemical Agents Directive.

### Project objectives

The goal of the project is to develop a web portal on safer alternatives to hazardous chemicals. It will provide information on alternative substances and technologies as well as tools and guidance for substance evaluation and substitution management. The portal should support companies in fulfilling substitution requirements of EU legislation, such as under the REACH authorisation procedure, the Water Framework Directive or the CAD. The portal will provide different levels of access to information for different stakeholders (scientists, NGOs, local authorities, etc.). In addition, the project aims to create a network of stakeholders active in substitution. The network should assist in the content development and promotion of the portal with regard to future users, information and tool providers as well as ensuring that the portal is updated and maintained.

The project also plans to:

- Develop a training guide and carry out training in selected Member States;
- Raise and measure awareness of substitution needs and encountered difficulties;
- Set up a network of at least 50 stakeholders, exchanging information and experience on substitution during and after the project duration; and
- Organise workshops and expert forums.

LIFE08 ENV/D/000027  
SUBSPORT



#### Beneficiary:

##### Type of beneficiary

Local authority

##### Name of beneficiary

Freie und Hansestadt Hamburg, Behörde für Wissenschaft und Forschung, Kooperationsstelle Hamburg

##### Postal Address

Hamburger Straße 37

D - 20097 Hamburg

GERMANY

Phone +49 40 28 58 640

Fax +49 40 28 58 641

Email l.lissner@kooperationsstelle-hh.de

##### Name of contact person

Lothar Lissner

#### Duration of project:

36 months (01/01/2010 - 31/12/2012)

#### Total budget in euro:

1,275,700.00

#### EC contribution in euro with %:

635,459.00 (49.81%)

#### Generic Theme:

Other area – Impact of economic activities

# Manufacturing Sand-Limestone Bricks, Recycling Energy and Organics from Sewage Sludge

## Project background

House bricks are often burned from natural clay, a process that consumes large quantities of energy and causes environmental pollution, especially in rural areas, where small brick factories use ovens fuelled by cheap coal, wood, etc. Sand-limestone bricks need only 30% of the energy used to make bricks from clay. Sand-limestone bricks are usually the most economic stone, especially for small industrial buildings, cellar constructions and low-cost family housing. Heating is expensive, and various technologies have been developed to improve the thermal insulation capacity of bricks. One way is to add Styrofoam, polystyrene and other plastics, which are vaporised during the process of clay burning (> 1 800 °C). The most energy efficient alternative is the sand-limestone brick because it needs a temperature of only 150°C for baking.

## Project objectives

The project aims to improve the thermal insulation capacity of sand-limestone bricks. It will do this by replacing the added plastics with sewage sludge, containing water, sand, minerals and organics. Biogas reactors will be used to produce fuel gas from sewage sludge for manufacturing limestone bricks and the surplus energy generated will be used for sludge drying. The primary objective of the project is to implement, test and verify a combined process of limestone manufacturing and sewage sludge treatment, which will result in reduced energy consumption and zero waste production. Although this combined process may be more complicated than operating two separate processes, the integration of the two processes into one single system offers significant advantages:

- Better thermal insulation capacity of the sand-limestone bricks;
- Very low energy consumption;
- Zero waste during the manufacturing process; and
- Use of sewage sludge instead of sludge disposal.

### Expected results:

The main output of this LIFE Environment project will be the implementation of a new manufacturing process for sand-limestone bricks ("EcoBricks"). The new process will:

- Achieve around 0.12 W/mk thermal conductivity, i.e. 60 % better thermal insulation capacity than conventional sand-limestone bricks and 95 % better than conventional bricks burnt from clay;

LIFE08 ENV/D/000029

EcoBrick



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Institute of Environmental Engineering and Management at the private University of Witten/Herdecke GmbH

#### Postal Address

Alfred-Herrhausen-Straße 44  
D - 58455 Witten  
GERMANY  
Phone +49 2302 91 40 10  
Fax +49 2302 91 40 111  
Email mail@uni-wh-utm.de

#### Name of contact person

Karl-Ulrich Rudolph

### Duration of project:

42 months (01/01/2010 - 30/06/2013)

### Total budget in euro:

3,228,032.00

### EC contribution in euro with %:

1,520,391.00 (50.00%)

### Generic Theme:

Industrial waste (including manufacturing)

- Save 0.5 m<sup>3</sup> styrofoam/polystyrene per tonne of bricks by replacing plastics with organics from sludge;
- Substitute freshwater with liquid in the sewage sludge for the production process;
- Replace 10% of sand with sewage sludge.

# From Treated Wastewater to Alternative Water Resources in Semi-Arid Regions

## Project background

MEWWC's wastewater treatment unit (WTU) is the only one in Greece that has been given a license for reusing 100% of its effluent. This practice is currently allowed only for tree-irrigation. The WTU has a capacity of 40 000 people-equivalent, but is only fully used during the tourist season (June-August). In winter, the WTU serves 2 000 local residents. The system needs upgrading for a number of reasons:

- There is no monitoring of the quality of the treated wastewater, or of its effects on soil, plants and people;
- Existing poor infrastructure means that the treated wastewater is not fairly or equally distributed. It is estimated that a 30-35% increase in the area irrigated could be achieved through enhanced controls;
- There is no information about how to safely use the treated wastewater;
- There is no pricing for this alternative water resource, resulting in a lack of funds for maintenance of the distribution system.

## Project objectives

The project will transform an existing network of pipelines that is currently distributing treated wastewater for irrigation in an uncontrolled way into an upgraded system that provides high quality alternative water resources for irrigation in accordance with the principles of the Water Framework Directive. The new system will be a state-of-the-art wastewater distribution system with 35 000m of pipelines, at least three advanced wastewater treatment units, and a complete online monitoring system. This will give the highest possible effluent quality, with everything monitored and controlled with a minimum human effort and with the greatest possible efficiency. The system will be a socially-fair – especially in economic terms – means of distributing an important alternative water resource. The project will also produce detailed planning, financial and management information for the future implementation of similar systems elsewhere. Overall, the project will produce and disseminate a prototype approach and management plan for a sustainable, environmentally-significant, safe, publicly-accepted wastewater reuse and utilisation system that could be applied in all semi-arid areas.

LIFE08 ENV/GR/000551  
PURE



### Beneficiary:

#### Type of beneficiary

Public enterprise

#### Name of beneficiary

Municipal Enterprise for Water & Wastewater of Chersonissos

#### Postal Address

Yiaboudaki 7  
GR - 70014 Chersonissos  
GREECE  
Phone +30 28970 23005  
Fax +30 28970 23002  
Email deyahers@otenet.gr

#### Name of contact person

Dimitris Yiakoumakis

### Duration of project:

42 months (01/01/2010 – 30/06/2013)

### Total budget in euro:

2,404,277.00

### EC contribution in euro with %:

1,039,638.00 (43.24%)

### Generic Theme:

Waste water management

# Financial Institutions: Preparing the Market for adapting to Climate Change

## Project background

Climate change will have an adverse impact on many economic sectors (such as energy, food, construction, tourism, insurance), but will also create new market opportunities. In the banking sector, it is acknowledged that risks faced by clients also create risks for banks. Risk management activities should therefore aim at the management of risk for the benefit of the clients, the financial institutions and the business community alike.

## Project objectives

The project's main goal is to trigger the adaptation of the market to the risks and financial impacts of climate change. The project will focus in particular on Greece, Bulgaria, Romania and Cyprus. As a result of these activities, the south-eastern Europe business sector will become acquainted with the economic impact of climate change, and will be better able to quantify climate risks for business sectors and sub-sectors. Knowledge will also be generated on prioritising approaches and methodologies concerning climate risks and opportunities for financial institutions.

Specifically, the project aims to:

- Identify the physical, regulatory and other risks in south-eastern Europe arising from climate change, and prioritise risks and opportunities to be managed by Piraeus Bank;
- Quantify climate change risks and opportunities, and put a price on climate adaptation solutions for companies;
- Develop climate risk and climate-adaptation management mechanisms and integrate them into the Credit Risk and Business Planning banking systems, i.e. integrate the climate factor into Piraeus Bank's client evaluation procedure. Risk quantification will be carried out for 70% of the bank's SME clients that are affected by climate change;
- Develop an intensive training programme, covering 5 000 Piraeus Bank employees, on how to identify climate risks and opportunities for clients, and how to assist businesses to adapt to climate change;
- Spread know-how on climate risks, opportunities and adaptation solutions. This will be done via Piraeus Bank branches in Greece, and subsidiaries in Bulgaria, Cyprus and Romania;

LIFE08 ENV/GR/000552  
ClimaBiz



## Beneficiary:

### Type of beneficiary

Large enterprise

### Name of beneficiary

Piraeus Bank SA

### Postal Address

4 Amerikis Str.

GR - 10564 Athens

GREECE

Phone +30 210 3335760

Fax +30 210 3335705

Email [greenbanking@piraeusbank.gr](mailto:greenbanking@piraeusbank.gr)

### Name of contact person

Vrasidas Zavras

## Duration of project:

36 months (11/01/2010 – 31/12/2012)

## Total budget in euro:

1,854,140.00

## EC contribution in euro with %:

924,445.00 (49.86%)

## Generic Theme:

Eco-friendly products – Eco-design – Green financial products

- Run a Climate Adaptation Centre to support the dissemination of climate-adaptation strategies to the Piraeus Bank branch network;
- Monitor the clients' progress and promote good climate-adaptation business practices through an Internet portal;
- Develop a climate change media campaign;
- Promote the project's results through six 'road-shows', each attended by 100 clients.

As a result of these activities, the south-eastern Europe business sector will become acquainted with the economic impact of climate change, and will be better able to quantify climate risks for business sectors and sub-sectors. Knowledge will also be generated on prioritising approaches and methodologies concerning climate risks and opportunities for financial institutions.

# Local Authorities Alliance for Forest Fire Prevention

## Project background

Forest fires are a common problem in the Mediterranean region. Most forest fires are directly or indirectly caused by human activities. The resulting loss and degradation of forested land can be devastating to communities and forest ecosystems alike. Fires can alter the structure and composition of forests, opening up areas to invasion by fast-colonising alien species, and threatening biological diversity. Buildings, crops and plantations are destroyed and lives can be lost. For companies, fire can mean the destruction of assets. For communities, fire can also lead to environmental degradation through impacts on water cycles, soil fertility and biodiversity. For farmers, fire may mean the loss of crops or even livelihoods. Local governments often have limited capacity to prevent forest fires. Communities are thus becoming increasingly involved in forest management and conservation, to the extent that many governments now expect communities to participate in managing fires.

## Project objectives

The project's main objectives are to develop a network of Greek local authorities (LAs), to analyse existing forest fire prevention measures, and to develop a local action plan and a guide for forest fire prevention.

To achieve these objectives, the project will:

- Create a national network of LAs for forest fire prevention, involving at least 50 Greek municipalities;
- Establish a Greek National Working Group on forest fire prevention, with the participation of 12-15 organisations;
- Evaluate the most cost-effective measures for forest fire prevention, with a focus on Greek cities, and produce guidance that can be applied by LAs;
- Develop local action plans for six participating LAs, which will also implement an Information System for the Dynamic Assessment of Forest Fire Risk;
- Develop a simplified information system that can be operated by cash-strapped LAs; and
- Give 20 staff the necessary skills to implement local action plans for forest fire prevention, and to operate the information system.

The knowledge gained will be widely promoted, with a view to expanding the pilot projects from six municipalities to more than 50 Greek cities. Awareness-

LIFE08 ENV/GR/000553  
Forest Cities



## Beneficiary:

### Type of beneficiary

Intergovernmental body

### Name of beneficiary

Local Union of Municipalities and Town-councils of Attica

### Postal Address

Kotsika 4 Str.  
GR - 10434 Athens  
GREECE  
Phone +30 210 3646756  
Fax +30 210 3646306  
Email tedkna@gmail.com

### Name of contact person

Spyridon Arvanitakis

## Duration of project:

36 months (01/01/2010 – 31/12/2012)

## Total budget in euro:

698,323.00

## EC contribution in euro with %:

341,419.00 (48.89%)

## Generic Theme:

Forest management – Soil and landscape protection – Desertification prevention

raising activities will aim to cover more than 100 Greek LAs, and the project will also involve central government authorities in planning for forest fire prevention by LAs.

# Adaptation of forest management to climate change in Greece

## Project background

The development of scientific knowledge has resulted in greater certainty that climate change is an inevitable consequence of past and present human activities. Forests interact with climate systems, acting as carbon dioxide sinks when growing, and as a source of carbon dioxide when being destroyed by natural or by human-driven processes. Climate change is also expected to result in major shifts in the geographic distribution of forest vegetation, and die-back and decline are expected.

The Mediterranean region seems to be more prone than other regions to serious changes in its ecosystems, flora and fauna, in favour of more drought-tolerant species. The implications of these changes for forest management and conservation are profound. Adaptive forest management strategies are urgently needed to enable the planning and management of healthy, productive forests, capable of additional carbon storage in forest ecosystems, combined with sustainable provision of forest goods and services.

## Project objectives

The project aims to demonstrate that forest management can be adapted to climate change, while enhancing the capacity of forest services. To achieve this, the project has carefully selected four pilot sites, where changes in vegetation have already been observed (e.g. dying out of firs; invasion of conifers in evergreen broadleaved forests). The project will demonstrate this approach at these four sites, working at local level, and will then integrate the findings to give guidance and training at regional and national level.

The project will also disseminate to all stakeholders and to the general public the reasons why the adaptation of forest management to climate change is needed.

The project expects to achieve the following results:

- Assessment of the effects of climate change on selected forest ecosystems in Greece;
- Incorporation in selected forest management plans of climate change considerations;
- Creation of guidelines on the adaptation of forest management to climate change in Greece;

LIFE08 ENV/GR/000554  
AdaptFor



### Beneficiary:

#### Type of beneficiary

NGO-Foundation

#### Name of beneficiary

The Goulandris Natural History Museum/ Greek Biotope Wetland Centre

#### Postal Address

14th Thessaloniki - Mihaniona  
GR - 57001 Thermi/Thessaloniki  
GREECE

Phone +30 2310 473320

Fax +30 2310 471795

Email ekby@ekby.gr

#### Name of contact person

Vasiliki Tsiaousi

### Duration of project:

42 months (01/01/2010 – 30/06/2013)

### Total budget in euro:

1,719,112.00

### EC contribution in euro with %:

833,356.00 (48.48%)

### Generic Theme:

Forest management – Soil and landscape protection – Desertification prevention

- Wide dissemination of information on the need to adapt forest management to climate change, and methodologies for achieving this; and
- Training of forest service personnel to incorporate climate change considerations into their forest management practices.

# Development of an integrated analysis system for the effective fire conservancy of forests

## Project background

Fire is the most important natural threat to forests and wooded areas in the Mediterranean basin. It destroys more trees than parasite attacks, insects, tornadoes, frost and other natural calamities. The average annual number of forest fires in the Mediterranean basin, particularly in southern Europe, is now close to 50 000 - twice as many as during the 1970s. The natural plant ecosystem of the Mediterranean basin is rich in shrubs and coniferous forests and, thus, particularly susceptible to fire. Meanwhile, climate change has resulted in warmer, drier and longer summer periods, and this is expected to increase the frequency and severity of forest fires. Some 400 000 ha of forest go up in smoke each year in the region, notably in Portugal, Spain, Italy and Greece. A disaster risk arises when a hazard meets vulnerability. A key factor increasing vulnerability is the inadequacy of disaster-management planning. Recent forest fire catastrophes have revealed serious gaps in co-ordination, chain of command problems, and inadequate resource management and allocation. Often, information was not updated or was inadequate, leading to inefficient decision making.

## Project objectives

An important step in disaster management is the preparedness stage, which is directly connected with the reduction of risks. The CALCHAS project will use a forest-fire simulation tool that is capable of estimating the evolution of a wild forest fire. The tool does this by using as inputs data on ignition points, real environmental conditions, the vegetation of the area and spatial information (isocontours and ground elevation). The CALCHAS consortium will develop the system in accordance with national and EU policies. Operational trials will be carried out over a two-year pilot period in two case study areas: the Grammos mountains of northern Greece, and the Troodos mountains in Cyprus. In each area, 10 meteorological stations will be installed to provide data for the system. Through the pilots, the project will:

- Improve the knowledge and skills of civil protection professionals/services on effective temporal and spatial planning of resources;
- Improve the knowledge and skills of decision-makers on evacuation planning; and
- Increase the effectiveness and readiness of fire brigades, civil protection, local communities and any other stakeholders to deal with forest fire threats.

LIFE08 ENV/GR/000558  
Calchas



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Agricultural University of Athens - Chemistry Laboratory

#### Postal Address

Iera Odos 75  
GR - 11855 Athens  
GREECE  
Phone +30 210 5294247  
Fax +30 210 5294265  
Email sehar@aua.gr

#### Name of contact person

Serkos Haroutounian

### Duration of project:

42 months (01/03/2010 – 31/08/2013)

### Total budget in euro:

2,340,839.00

### EC contribution in euro with %:

1,158,803.00 (49.50%)

### Generic Theme:

Forest management – Soil and landscape protection –  
Desertification prevention

# Development and demonstration of an innovative household dryer for the treatment of organic waste

## Project background

Municipal Solid Waste (MSW) management in Greece remains a challenge. Most MSW still goes to landfills. In Attica, with more than four million inhabitants, MSW disposal poses a serious environmental challenge. In the region of Athens, some 2.7 million tonnes of mixed household waste is generated annually, 94% of which is transferred to the central sanitary landfill in Athens. The remainder goes to smaller landfills, including semi-controlled landfill sites. Biodegradable organics, mainly kitchen waste, comprise the major waste fraction generated by households worldwide and in Greece (47% of MSW in 2000). In order to ensure proper management of this waste stream, efficient practices and schemes promoting sustainability are necessary. These practices should be based on the provisions and the principles of EU environmental policy and legislation. Under the Landfill Directive (1999/31/EC) Greece must, compared with 2000 levels, reduce the quantity of biodegradable waste going to final disposal by 20% by 2010 and by 50% by 2050; it is currently far from these targets. One promising option for the management of domestic organic household waste is to encourage householders to separate and dry the organic waste at home in order to significantly reduce its volume.

## Project objectives

The project will design, develop, and demonstrate an innovative, flexible, compact and convenient home drying system for the drying out of organics, in order to reduce their volume at source, without an increase of emissions to air, water and soil. This will lead to the generation of a 'final dry organic waste product', the alternative uses of which will be investigated. In general however, dried biowaste is a constant carbon source which can be used for green energy production. The dried biowaste material is very light since most of the water has been removed and at the same time its volume has been reduced by 90% compared with the initial waste volume, this means that the transportation costs of the dried end products are very low. In addition, as this material is odourless it can be stored in households for long periods, thus reducing the collection rate of waste, and consequently reducing the truck emissions and the collection cost.

LIFE08 ENV/GR/000566  
DRYWASTE



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

National Technical University of Athens

#### Postal Address

42 Patission Str.  
GR - 106 82 Athens  
GREECE  
Phone +30 210 7723106  
Fax +30 210 7723285  
Email mloiz@orfeas.chemeng.ntua.gr

#### Name of contact person

Maria Loizidou

### Duration of project:

30 months (01/01/2010 – 30/06/2012)

### Total budget in euro:

923,142.00

### EC contribution in euro with %:

453,262.00 (49.10%)

### Generic Theme:

Municipal waste (including household and commercial)

The project will also generate information on implementation of the prototype household dryer across a wider area, and the potential environmental, social and economic benefits of the prototype. Project findings will be disseminated to local authorities and other target groups via a website, meetings, conferences, organised demonstration activities and other channels. Other project deliverables will include maintenance manuals and engineering designs. The project will thus produce tangible results, including data and guidelines, which will contribute to the implementation of EU environmental policy on waste management.

# Demonstration of a Sustainable & Effective 2nd Generation Biofuels Application in an Urban Environment

## Project background

Biofuels, as a substitute for fossil fuels, have the potential to reduce greenhouse gas emissions under certain conditions. However, the amount of carbon dioxide generated in the production of the biofuel should not cancel out any relative savings that might result from its use. So-called second generation biofuels are seen as a solution in this respect, as they are produced from waste products generated from other processes.

## Project objectives

The BIOFUELS-2G LIFE project aims to produce second generation biofuels by recycling used cooking oil from restaurants and homes instead of disposing of it in the sewerage system.

A hydrotreating technology will be used to produce biofuel from the used cooking oil feedstock. The technology will run on renewable hydrogen, which is a new innovation that will enable hydrotreatment of used vegetable oil as part of a sustainable and economically-feasible biofuels production pathway.

The second generation biofuels will be used in a garbage truck in the municipality of Thessaloniki. The project will, therefore, demonstrate both the benefits of using biofuels for transportation, and of recycling used cooking oil.

Expected results:

- An effective logistical management scheme for waste (such as used oil) that can be used for biofuels production. This scheme will be implemented in practice in the municipality of Thessaloniki, under the supervision of the local authority;
- Design and implementation of a production unit for second generation biofuels, based on used oils as a primary feedstock. The unit will also employ renewable energy sources (solar energy) in order to cover a significant part of its electrical energy needs;
- Demonstration of the environmental benefits of second generation biofuels through their use in a garbage truck;
- Assessment of a public-private partnership scheme in order to promote the proposed approach, maximise the environmental benefits, and guarantee the continuation of the scheme after the end of the project.

LIFE08 ENV/GR/000569  
BIOFUELS-2G



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Centre for Research & Technology Hellas (CERTH)

### Postal Address

6th km Harilaou-Thermi Rd  
GR - 57001 Thermi, Thessaloniki  
GREECE  
Phone +30 2310 498317  
Fax +30 2310 498380  
Email paris@cperi.certh.gr

### Name of contact person

Spyros Voutetakis

## Duration of project:

36 months (01/01/2010 – 31/12/2012)

## Total budget in euro:

1,416,350.00

## EC contribution in euro with %:

654,837.00 (46.23%)

## Generic Theme:

Municipal waste (including household and commercial)

# Innovative Precision Technologies for Optimized Irrigation and Integrated Crop Management in a Water-limited Agrosystem

## Project background

In Greece and adjacent Mediterranean countries, conventional agricultural practices are affected by water scarcity because of water over-consumption for irrigation of agricultural crops, the intensive use of pesticides and chemical fertilisers and, ultimately, the depletion and contamination of groundwater. Consequently, there is an increased interest in crop production systems that optimise yields while conserving soil, water and energy and protecting the environment. The Thessaly Plain is one of Greece's main agricultural production areas. The Pinios river drainage basin occupies most of the Thessaly Plain region, and the proposed demonstration area, the Gonni-Sikourion-Platikambos basin, is part of the Pinios watershed. Significant water-bearing geologic formations are few and are located close to the alluvial deposits of the Pinios river and its tributaries. The water resources (surface and groundwater) are minimal, and support irrigation of limited acreage. Irrigation is mainly based on pumping water from groundwater aquifers using private boreholes and pumping units, which has resulted in continuously declining aquifer depths. Water pricing could help tackle this major environmental problem. Intensive agriculture has also led to excessive fertiliser and pesticide inputs, resulting in soil and water nitrate concentrations often exceeding EU limits. Over-use of water for irrigation accelerates the leaching of agrichemicals into groundwater.

## Project objectives

The project aims to improve the water, fertiliser and pesticide-use efficiency of a major Mediterranean agricultural crop (cotton) by employing site-specific management and advanced technologies in proximal remote sensing, such as the employment of advanced canopy sensors. The project will also produce data and tools to evaluate its economic effectiveness, and its potential for scaling-up to the regional level, or transfer to other regions and other agricultural crops. Training and dissemination activities will also be of aid to reach these objectives.

### Expected results:

The project will develop and implement a site-specific management system for reducing irrigation and chemical inputs. In particular, variable-rate irrigation is expected to reduce water consumption by 20% in

LIFE08 ENV/GR/000570  
HydroSense



### Beneficiary:

#### Type of beneficiary

NGO-Foundation

#### Name of beneficiary

The Goulandris Natural History Museum

#### Postal Address

13 Levidou Str  
GR - 14562 Kifissia  
GREECE  
Phone +30 210 8087084  
Fax +30 210 8087084  
Email stam@gnhm.gr

#### Name of contact person

Stamatis Stamatiadis

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,756,563.00

### EC contribution in euro with %:

851,156.00 (48.46%)

### Generic Theme:

Water supply – Water quality – Ground water protection

comparison with uniform irrigation. Variable-rate fertilisation is expected to reduce nitrate pollution by 20% and pesticide/herbicide inputs by 50%. Furthermore, GIS technology will be used to manage the variable-rate inputs.

# Building a structured, indicator based knowledge system for sustainable forest policy and management

## Project background

Forests are under very significant pressure worldwide and in the Mediterranean region. The loss and degradation of forested land has wide-reaching consequences for biodiversity, health and the economy. Currently, several planning and evaluation tools, particularly in the form of criteria and indicators, have been developed to address the assessment of sustainable forest management. In the EU, the best tools have been translated by the Ministerial Conference on the Protection of Forests in Europe (MCPFE) into criteria and indicators. EU Member States are committed to use these to assess, monitor and certify sustainable forest management. However, in many Member States (including Greece) problems persist with the estimation processes for the MCPFE criteria and indicators. These are related to the lack of clarity in the linkages between the spatial and aggregation scales and the decision-making levels, lack of data, lack of integration, lack of consensus between stakeholders and lack of comparability between areas.

## Project objectives

The project's general objective is to establish a knowledge base for national forest policy development and implementation, based on MCPFE criteria and indicator estimates, including impact assessments on forests related to climate change. The knowledge base will be compatible with EU initiatives and legislation on Sustainable Forest Management (SFM) assessment and implementation monitoring. The project will use the MEDMONT impact-evaluation system, previously developed by project team members through past EU projects, as a basis. This system will allow the following:

- Collection, analysis and dissemination of information required to estimate the MCPFE criteria and indicators at national, regional and local level, particularly the information required on forest impacts from climate change, biodiversity and protective functions of forests (soil, water and infrastructure);
- Integration of SFM assessment and implementation monitoring processes at different spatial scales and levels of aggregation; and
- Updating of forest management plans by incorporating social participation tools and impact-evaluation tools for SFM assessments and implementation monitoring.

LIFE08 ENV/GR/000574  
INFORM



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Technological Education Institute of Kavala

#### Postal Address

Ag. Loukas  
GR - 65404 Kavala  
GREECE  
Phone +30 252 1060435  
Fax +30 252 1060411  
Email vkazana@gmail.com

#### Name of contact person

Vassiliki Kazana

### Duration of project:

48 months (01/01/2010 – 31/12/2013)

### Total budget in euro:

1,139,495.00

### EC contribution in euro with %:

567,247.00 (49.78%)

### Generic Theme:

Forest management – Soil and landscape protection –  
Desertification prevention

The project will produce the following outputs: a forest policy handbook for SFM assessments and implementation monitoring; policy guidelines for mitigating the impacts of climate change on forests; a good practice handbook for social participation in SFM; a pilot SFM plan; and a number of training events, workshops and seminars.

# Demonstration of a Small scale Mobile Agricultural Residue gasifi- cation unit for decentralized Com- bined Heat and Power production

## Project background

Bioenergy can play an important role in addressing climate change, and in improving the security of Europe's energy supply. Small-scale heat and power generation from biomass is, in principle, able to deliver significant energy and emissions savings by replacing substantial quantities of fossil fuels. Biomass waste use can contribute to the integrated organisation of agricultural activities, leading to positive environmental impacts. Besides providing energy benefits, the replacement of fossil fuels can contribute to the minimisation of environmental impacts resulting from fossil fuel consumption, particularly in decentralised areas where there are high costs (both fiscal and environmental) of fossil fuel use.

## Project objectives

The project will demonstrate an innovative small-scale mobile power-production unit, which will use agricultural residues generated in rural areas, where large amounts of biomass waste are available. The unit will operate close to the place of feedstock origin, minimising transportation and logistical costs. The unit consists of a gasification reactor combined with an internal combustion engine, adjusted to convert gas produced into electrical power and heat, and achieving high energy and environmental performance.

### Expected results:

- An estimate of bioenergy potential and its wide use across the Greek region of Western Macedonia;
- Promotion of the potential of residual biomass utilisation for decentralized combined heat and power (CHP) production to stakeholders and target groups;
- Technical and strategic knowledge transfer between beneficiaries, target groups and key players;
- Involvement and training of personnel working in both the private (agricultural business) and the public sector (local authorities), on issues and methods of biomass utilisation for renewable CHP production, thus securing the continuity of the project results after the end of the project; and
- Initiation of a SMART-CHP debate at national and European level.

LIFE08 ENV/GR/000576  
SMART-CHP



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

Research Committee Aristotle University of Thessaloniki

#### Postal Address

Aristotle University of Thessaloniki Campus  
PO Box 458  
GR - 54124 Thessaloniki  
GREECE  
Phone +30 2310 996014  
Fax +30 2310 996019  
Email zisis@auth.gr

#### Name of contact person

Zisis Samaras

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

947,287.00

### EC contribution in euro with %:

450,143.00 (47.52%)

### Generic Theme:

Agricultural waste

# Development of integrated agroindustrial waste management politics maximizing materials recovery and energy exploitation

## Project background

Agro-industries are major sources of industrial pollution. Technological development has meant that agro-industry wastes have become more complex, and agro-industries more than other industrial sectors require a dynamic and comprehensive approach if appropriate waste management is to be achieved. Some agro-industrial sectors, such as olive oil mills, cheese factories and dairy farms, represent a considerable share of the Mediterranean economies. In Achaia, agro-industry is at the heart of the economy. Industries processing agricultural raw materials such as fruits, vegetables, meat and milk, generate millions of tonnes of waste and by-products. These are generally unexploited, while having significant impacts on the environment. The production facilities are scattered throughout the countryside and the wastes are produced seasonally, varying significantly both in quantity and content. Over the last 10 years, anaerobic digestion for producing electrical and thermal energy, and composting for material recovery from wastes, have become widespread in many European countries.

## Project objectives

The overall objective of the project is to use agro-wastes (agricultural plant residues) and agro-industrial wastes (e.g. from olive mills, piggeries, etc.) as a sustainable fuel source. This fuel source can be integrated into the existing energy infrastructure in the medium term, while in the longer term, it will provide a safe and economical means of supplying the needs of a developing hydrogen and biogas fuel economy. The project will demonstrate a prototype plant for the integrated management of agro-industrial wastes. The plant will aim to maximise energy exploitation from the wastes, and will employ optimum processes for aerobic composting or vermicomposting of digested material along with other available agro-wastes. The project will produce experimental data for the production of water suitable for irrigation, using either membranes or electrolysis of anaerobically-digested wastes. The project will generate a wide-range of other relevant data including:

- Accurate energy balances for selected types and mixtures of agro-wastes based on their seasonal and spatial availability;

LIFE08 ENV/GR/000578  
INTEGRASTE



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Prefecture of Achaia

#### Postal Address

Panepistimiou 254, Building B'

GR - 26443 Patras

GREECE

Phone +30 261 3613351

Fax +30 261 3613301

Email nomarxis@achaia.gr

#### Name of contact person

Dimitrios Katsikopoulos

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,156,325.00

### EC contribution in euro with %:

543,662.00 (47.02%)

### Generic Theme:

Agricultural waste

- Anaerobic degradation rates and ultimate hydrogen/methane yields of selected types of agro-wastes and mixtures thereof; and
- Forecasts of biogas and hydrogen energy production per unit of agro-waste mixture.

The project will also carry out a cost-benefit analysis and an Environmental Impact Assessment Study as a basis for dissemination of its results, and will seek to increase the awareness of the public, local stakeholders, students and potential investors in integrated agro-industrial waste management.

# Industrial Symbiosis as an Innovative Method in Tackling Climate Change

## Project background

Member States today face a key climate change challenge in reducing CO<sub>2</sub> emissions and encouraging more environmentally friendly practices, especially among the heavy industries. In Hungary, local communities and social structures with the necessary decision-making powers can help to provide adequate resources to encourage more sustainable practices. The project starts from the hypothesis that no matter how complex a business operation is, it can be split into elements, similar to unit operations in engineering. Combining these elements will vary from one project to another, but nevertheless a basis, or universally accepted reference, can be realised. The project suggests structuring socio-economic systems into a "unit operations" type approach (industrial symbiosis) in order to tackle climate change.

## Project objectives

The primary purpose of the project is to assist the EU in reaching targets – set out in the Kyoto Protocol and the Bali climate change meetings – in tackling climate change, through the application of industrial symbiosis (IS) principles in the regions of central Hungary. General objectives are to demonstrate industrial symbiosis as an innovative tool for tackling climate change; to foster prudent management of natural resources; and to identify the potential for sustainable development of the Hungarian economy. Specific objectives are to tackle climate change by:

- A reduction in the of consumption of natural resources;
- A significant reduction in the environmental impact of businesses;
- Integrated pollution prevention;
- Improving the public image of the project participants; and
- Implementing awareness-raising activities.

LIFE08 ENV/H/000291  
ISIM-TCC



### Beneficiary:

#### Type of beneficiary

NGO-Foundation

#### Name of beneficiary

Iparfejlesztési Közalapítvány (Public Foundation for the Progress of the Industry)

#### Postal Address

16 Munkácsy M. u.1387 Pf. 17  
H - 1063 Budapest  
HUNGARY  
Phone +36 1 3122213  
Fax +36 1 3320787  
Email vadovics@ifka.hu

#### Name of contact person

Kristóf Vadovics

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

793,485.00

### EC contribution in euro with %:

396,742.00 (50.00%)

### Generic Theme:

Reduction of emission of greenhouse gases

# Monitoring Soil Biological Activity by using a novel tool: EDAPHOLOG-System - system building and field testing

## Project background

Soil degradation is a serious threat for EU Member States. In addition, the level of threat is increasing because of global warming, inappropriate land use (overgrazing, over-exploitation, over-irrigation, etc.) and river regulations. Soil organisms provide a number of critically important ecosystem services – such as soil formation, decomposition of organic matter, soil fertility and plant growth, water infiltration, and retention and degradation of pollutants. In order to preserve good soil quality, technicians and experts need to know when, where and how they should intervene to reverse negative processes. To do this, up-to-date, high quality data is required, ideally on a large-scale. However, knowledge of the functions performed by soil biota is still very limited. Time and cost constraints have meant that, as yet, there is no reliable and cost-effective methodology for the large-scale assessment of soil quality.

## Project objectives

The project's aim is to build and test a prototype for a new environmental monitoring tool for soil – the EDAPHOLOG system. The system will measure parameters of the soil biota to assess biological and microbiological activity, ecological degradation and biodiversity from a field to landscape level. The technology will enable the monitoring and spatial delineation of soil biological degradation and contamination, the ecological control of agricultural practices, and the detection of soil biodiversity 'hot spots'. The aim is to provide detailed, large-scale mapping of soil quality in a rapid and cost-efficient manner. To date, according to the project, this requirement has not yet been met elsewhere in the world. The system consists of the following: the prototype; soil 'pin traps' (200 units); a central GSM receiver (two units); a GIS-based sampling design tool; data analysis and an internet-based publication. Soil biological activity and diversity is important for all habitat types and soil types. Therefore, the prototype will be tested on all the main soil types that occur in Hungary and those that are of relevance to other European countries. The key innovation is that the system allows sampling in a spatially and temporally sequential manner, with very high sample sizes. As a result costs can be significantly reduced.

LIFE08 ENV/H/000292  
MEDAPHON



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

Research Institute for Soil Science and Agricultural Chemistry of the Hungarian Academy of Sciences

#### Postal Address

Herman Ottó út 15  
PO Box 35  
H - 1022 Budapest  
HUNGARY  
Phone +36 1 2243640  
Fax +36 1 3541440  
Email dombos@rissac.hu

#### Name of contact person

Miklós Dombos

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

2,062,600.00

### EC contribution in euro with %:

1,021,393.00 (49.52%)

### Generic Theme:

Other area – Impact of economic activities

# Harmonization of Urban noise reduction Strategies for Homogeneous action plans

## Project background

In many respects, the European Union can be seen as a Union of cities. According to the European Urban Audit published by the Directorate General for Regional Policy (European Commission) in June 2007, almost three quarters of European citizens live in urban areas. Urban dwellers are expected to represent 80% of the total population by 2020.

Noise in large urban agglomerations is now seen as a factor that greatly impairs quality of life, similarly to air or water pollution. According to the European Commission's Green Paper on Future Noise Policy, more than 250 million people are exposed to outdoor noise levels above 55 dB.

The European Environmental Noise Directive (END) 2002/49/EC was adopted to define a common approach to avoid, prevent or reduce harmful effects due to exposure to noise. To that end, the European Commission has requested Member States to produce noise maps for the main sources of noise pollution and describe the indicators to be used - namely Lden and Lnight.

The major sources of noise pollution tend to be road traffic, railways, aeroplanes and factories. In later documents, countries are expected to suggest algorithms for modelling noise emissions from these sources and the methodologies for combating them.

## Project objectives

The project aims to harmonise national noise management standards with the European Environmental Noise Directive 49/2002 to obtain homogeneous Noise Action Plans. This in turn will contribute to the transposition, implementation and enforcement of common or harmonised environmental legislation in EU countries.

Specific objectives of the project are to:

- Analyse and compare available data platforms needed to address the requirements set out by noise pollution regulations;
- Highlight unresolved conflicts between current standards at regional, national and European levels;

LIFE08 ENV/IT/000386

H.U.S.H.



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Comune di Firenze

#### Postal Address

Palazzo Vecchio  
Piazza Signoria 1  
I - 50122 Firenze  
ITALY

Phone +39 055 2616792

Fax +39 055 2616795

Email [europedirect@comune.fi.it](mailto:europedirect@comune.fi.it)

#### Name of contact person

Natale SEREMIA

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,827,154.00

### EC contribution in euro with %:

756,815.00 (41.42%)

### Generic Theme:

Air quality management and noise abatement

- Identify possible solutions to noise in urban areas;
- Define common methods for designing strategic and specific solutions to noise pollution;
- Define the procedures and a database for a new development system for action planning;
- Test this system and noise-pollution-reduction measures in a pilot project in Florence;
- Design guidelines for devising and implementing an action plan in other urban areas.

# Innovative chain for energy recovery from waste in natural parks

## Project background

The effects of badly managed waste is a key concern for our society. If not properly managed, waste can cause a variety of impacts, especially on human health and climate change.

Improperly managed waste produces carbon dioxide and methane, both greenhouse gases (GHGs), which when emitted will enhance the natural greenhouse effect. Protecting the environment over the long term is the major challenge for waste management. Techniques must guarantee an environmentally sound and economically efficient treatment.

In a global perspective, the EU is a major player concerning strategies for mitigating and adapting to climate change, in coherence with the UNFCCC and the IPCC. In this context, efficient waste management may play a major role in reducing GHGs by following the 3 Rs: reduce, re-use and recycle.

Differentiated waste collection is a mandatory requirement in order to achieve sustainable use of natural resources. Currently in Italy, recycling and energy recovery are not widespread mainly because of a lack of suitable collection systems, not enough industrial recycling facilities and inadequate social awareness.

## Project objectives

The overall goal of the project is to contribute to the achievement of EU targets on waste management through awareness policies, training, demonstration and innovative actions. The project will use state-of-the-art energy-recovery systems to improve financial aspects and to foster the acceptance of recycling policies and investments.

The project will monitor current collection systems within natural parks and identify critical issues. Building from this, it will design and demonstrate a sustainable, integrated cycle for waste management with particular focus on energy recovery. It will adapt and demonstrate an energy-recovery plant using state-of-the-art technologies for converting waste into power.

Best practices for waste management will be promoted and disseminated through the project. Training will be provided to relevant stakeholders along with public

LIFE08 ENV/IT/000388  
RELS



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Università di Modena e Reggio

#### Postal Address

Via dell'Università 4

I - 42100 Modena

ITALY

Phone +39 0522 522617

Fax +39 0522 522609

Email Ivan.montanari@unimore.it

#### Name of contact person

Ivan Montanari

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,699,000.00

### EC contribution in euro with %:

847,121.00 (49.86%)

### Generic Theme:

Sensitive area management (coastal, protected)

events in natural parks and publications. The demonstration potential will be enhanced by the availability of dissemination material through the existing R21 network and natural parks.

The beneficiary will also seek to raise general awareness of recycling and energy-recovery issues and promote sustainable tourism and the social importance of natural parks.

# Eco-sustainable management of water and wastewater in rural communities

## Project background

The municipality of Varese Ligure is a large, but sparsely populated territory; there are only about 2 400 inhabitants distributed over more than 20 hamlets. The main settlements are the villages of Varese Ligure and San Pietro Vara. The large number of hamlets and related economic costs have meant that the area is not completely served by a public sewer system. Varese Ligure has two activated sludge-treatment plants, neither of which covers the disinfection stage. There are some Imhoff septic tanks and some private plants; there are also old houses whose sewers do not comply with modern standards. Water sources in rural areas receive effluents deriving from human activities as well as acting as a drinking-water resource. It is therefore essential that the exploitation of water resources and the impact of human settlements on natural water bodies are dealt with in a very careful, eco-compatible way.

## Project objectives

This project intends to achieve the requalification of the water bodies in the Varese Ligure region in compliance with the "good ecological status" objective foreseen by the Water Framework Directive (2000/60/CE). The project will develop and implement a water/wastewater management model in rural areas based on the adoption of the phyto-depuration technique, which uses micro algae as a tertiary treatment system. Two treatment plants of different sizes will be built.

In the urban catchment area, a photobioreactor with micro algae designed to treat only a portion of the entire wastewater flow will be installed at the outlet section of the primary or secondary settler. The expected abatement is between 40-60% of the total nutrient load in the photobioreactor effluent.

For the rural areas, a pond with micro algae will be installed at the outlet section of the Imhoff tank, thus treating the entire wastewater flow. The expected abatement is between 40-50% of the total nutrient load in the pond effluent.

The project will analyse and test the success of this model according to its feasibility, reliability and efficiency. It will develop a comprehensive database that includes the biomass characteristics, the quality

LIFE08 ENV/IT/000390  
ECOMAWARU



## Beneficiary:

### Type of beneficiary

Local authority

### Name of beneficiary

Comune di Varese Ligure

### Postal Address

Via Municipio, 26

I – 19028 Varese Ligure

ITALY

Phone +39 0187 842930

Fax +39 0187 842352

Email sindaco.vareseligure@liguriainrete.it

### Name of contact person

Michela Marcone

## Duration of project:

36 months (01/03/2010 – 28/02/2013)

## Total budget in euro:

960,122.00

## EC contribution in euro with %:

471 186.00 (49.08%)

## Generic Theme:

Waste water treatment

(chemical physical parameters) of storm water and wastewater influent and effluent in the area of Varese Ligure. It will thus provide a base of knowledge that can be integrated within the local municipal regulation and which will support the spreading of green technologies based on a sustainable approach to integrated water-cycle management.

The design, installation, maintenance, management and control procedures of the phyto-depuration system using micro algae should be readily transferable to other rural areas. The project will promote the dissemination of its results and these techniques to different target audiences, including local authorities, practitioners, technicians and end-users.

# Prototyping of Recycled Plastic Conveyor Belt Machine and Demonstration of Recycled Plastics Structural Applications

## Project background

Currently, the mechanical characteristics of aluminium components, especially their rigidity and resilience to breakage, are much superior to those made from recycled plastic. This means that although recycled plastic is used for auxiliary or accessory parts, it is not used for main structural features. The car and construction industries are increasing their use of non-recycled plastic for structural applications. This demand for new plastic or metal comes at a heavy price, both in economic and environmental terms. In theory, however, pre- or post-consumer recycled plastic could be a readily available alternative to metals and other materials for many structural applications, reducing costs and environmental impact. In 2007, the Research and Development Office of Plastic Metal S.p.A. designed and constructed a prototype pilot plant capable of transforming the heterogeneous mixture received from the differentiated collection of waste plastics into manufactured items using technologies normally used for the treatment of thermo-plastic materials.

## Project objectives

This LIFE Environment project aims to demonstrate that it is possible to use recycled plastic, not only for the production of accessory or auxiliary elements, but also for structural features. The project will construct a prototype conveyor belt using components made from recycled plastic. It will use mainly pre-consumer-post-industrial recyclate and will produce a final product with key structural elements, such as side bars, made from the recycled plastic rather than the usual aluminium.

The project will seek to overcome the existing weaknesses of recycled plastic. A standardised component assembly process will be worked out to compensate for the different degrees of post-moulding shrinkage encountered with the different types of plastic. This should improve the rigidity and resilience of the final recycled-plastic material. The new approach will involve the large-scale re-introduction of plastic waste into the production process. As well as replacing alternative 'virgin' raw materials, this will also encourage the replacement of metals more generally, since the virgin plastics used will be increasingly recyclable because of the existence of new applications.

LIFE08 ENV/IT/000393  
RePlaCe



## Beneficiary:

### Type of beneficiary

International enterprise

### Name of beneficiary

Plastic Metal S.p.A.

### Postal Address

Via Canova  
I – 36053 Gambellara (VI)  
ITALY  
Phone +39 049 8666708  
Fax +39 049 8638063  
Email [replace@plasticmetal.it](mailto:replace@plasticmetal.it)

### Name of contact person

Valerio Canetti

## Duration of project:

30 months (01/01/2010 – 30/06/2012)

## Total budget in euro:

1,510,200.00

## EC contribution in euro with %:

666,350.00 (44.12%)

## Generic Theme:

Packaging and plastic waste

In addition to the environmental benefits - mainly from the reduced use of new metals - preliminary studies suggest that the total production cost for the conveyor belt should be reduced by around 10%. The project will work to disseminate the results obtained from the project to encourage wider use of recycled plastics.

# Environmental quality and pressures assessment across Europe: the LTER network as an integrated and shared system for ecosystem monitoring

## Project background

A vast range of environmental data is currently collected across Europe, both at national and international level, generating valuable information for policy-makers and citizens. However, much of this data is incomparable, constituting a major obstacle to the development of well informed environmental policies and strategies at European level. Scientifically sound, reliable, accessible and timely data, gathered with harmonized methods and protocols is required. This should provide comparable, spatially detailed ecological information at the level of ecosystems. The Shared Environmental Information System (SEIS) seeks to meet this challenge. Developed by the European Commission, together with the EEA and Member States, the system works to interconnect local, national and international databases to maximise the efficient use of the available information. The European Long-Term Ecosystem Research Network (LTER-Europe) was recently established under the FP6 Network of Excellence, ALTER-Net. It builds on the existing infrastructure of 11 countries to make combined use of the available data.

## Project objectives

The project aims to build on the work of the LTER to provide an analysis of long-term ecological data and its comparison across eco-domains. It will supply relevant scientific support to EU environmental policy and conservation plans in an integrated ecosystem approach. The project will provide an integrated management system for ecological data on the status and long-term trends of terrestrial, freshwater and marine ecosystem quality at European, as well as lower levels. It will provide data by habitat types - including Natura 2000 network sites - and environmental gradients. The project will work to ensure that there are semantically consistent data architectures, enabling seamless drill down from metadata to data, and accessible not only to the scientific community, but also to policy-makers and stakeholders.

Access to information and resources will be further expanded beyond the current LTER approach. The project team will set-up an integrated and permanent

LIFE08 ENV/IT/000399

EnvEurope



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Consiglio Nazionale delle Ricerche (CNR)  
Istituto di Scienze Marine (ISMAR)

### Postal Address

Castello 1364/A  
I – 30122 Venezia  
ITALY  
Phone +39 041 2404711/+39 041 2404712  
Fax +39 041 5204126  
Email [alessandra.pugnetti@ismar.cnr.it](mailto:alessandra.pugnetti@ismar.cnr.it)

### Name of contact person

Alessandra Pugnetti

## Duration of project:

48 months (01/01/2010 – 31/12/2013)

## Total budget in euro:

6,067,876.00

## EC contribution in euro with %:

3,003,938.00 (50.00%)

## Generic Theme:

Sensitive area management (coastal, protected)

system to detect and evaluate changes in environmental quality across Europe. To do this, it will develop harmonised methods, proposed and shared by the whole LTER scientific and technical community. The work of the project will enable the team to develop a set of key environmental quality indicators, based on an exchange between stakeholders - particularly researchers and policymakers. This will help ensure both indicator quality and acceptance. Experiences from this project will be invaluable to the ongoing development of the technical components of the Shared Environmental System for Europe (SEIS).

# Environmentally COmpatible RUral TOURism in protected areas for a sustainable development at low emission of greenhouse gases

## Project background

Efforts to improve the environmental performance of tourism businesses in north-east Italy remain largely embryonic, and initiatives are required to help increase awareness in the tourist sector about options for reducing green house gas emissions. Examples of good practice that offer opportunities include 'zero miles' and CO<sub>2</sub> labelling.

## Project objectives

The main objective of this project is to improve the environmental footprint of tourism businesses located in the rural territories of two nature protected areas of Italy: the Parco del Delta del Po (within Emilia-Romagna), and the Parco Nazionale del Gran Sasso e Monti della Laga (within Lazio). The project will target transport systems and tourist services. Actions will specifically aim to demonstrate the cost effectiveness and technical feasibility of climate-friendly approaches for rural tourism businesses, including accommodation providers and restaurants. This will involve monitoring and assessing greenhouse gas emissions linked to food production. Transport inputs and impacts will be carefully monitored to verify 'food miles' and help clarify the scope for introducing eco-branding methods for tourism services as an incentive to enhance the environmental performance of tourism businesses located in nature protected areas.

### Expected results:

- Increase tourist numbers in nature protected areas. By diversifying tourist flows away from traditional seaside and ski resort destinations environmental pollution in those areas will be reduced;
- Increased awareness about CO<sub>2</sub> emissions linked to tourism among 50 service suppliers and 1 000 visitors;
- Development of tool kits for suppliers of tourist services operating inside nature protected areas;
- Development of models of 'best practices' for sustainable rural tourism in each of the two project areas;
- Dissemination of the suggested rural tourist models at local, national and European level through the project partners' networks.

LIFE08 ENV/IT/000404  
ECORUTOUR



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Regione Emilia-Romagna  
Direzione Generale Attività Produttive, Commercio,  
Turismo

#### Postal Address

Viale Aldo Moro, 64  
I – 40127 Bologna  
ITALY

Phone +39 051 527 39 89

Fax +39 051 527 41 69

Email [mumingoizzi@regione.emilia-romagna.it](mailto:mumingoizzi@regione.emilia-romagna.it)

#### Name of contact person

Maura Mingozzi

### Duration of project:

36 months (01/02/2010 – 31/01/2013)

### Total budget in euro:

1,157,816.00

### EC contribution in euro with %:

577,658.00 (49.89%)

### Generic Theme:

Eco-friendly products – Eco-design – Green financial products

# Widespread introduction of constructed wetlands for a wastewater treatment of Agro Pontino

## Project background

The Pontine marshes (l'Agro Pontino) is a unique example of 'reclaimed' land, coupled with badly planned urban development and intensive agriculture. This environmental situation is particularly severe in terms of water pollution. The Province's analysis of the local point and diffuse discharges has consistently highlighted the critical situation of the hydrological resources in the marshes as well as in areas which are ecologically sensitive, such as the Pontine coastal lakes and the Circeo National Park.

## Project objectives

The project aims to contribute to the adoption of integrated strategies for a more sustainable use of water resources in the district of the Pontina plain. It plans to launch a vast water management initiative that creates synergies between institutions and enhances shared decision making. The project also aims to set up an integrated environmental enhancement programme for the implementation of constructed wetlands (CW) and widespread biofiltering techniques along the reclaimed canals network. The CW pilots will test the system's ability to reduce water pollution and increase biodiversity in the Agro Pontino.

An overall aim is to integrate specific objectives of sustainable water management with more general objectives of environmental enhancement. This aim will be achieved by:

- Introducing a biofiltering system, through the reconstruction of the vegetation along the ditches;
- Increasing vegetation along the ditches to improve soil protection against hydraulic risks;
- Carrying out an environmental enhancement programme;
- Disseminating results and involving stakeholders.

LIFE08 ENV/IT/000406  
REWETLAND



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Provincia di Latina

#### Postal Address

Via Costa n°1  
I – 04100 Latina  
ITALY

Phone +39 0773 401667

Fax +39 0773 401622

Email nicolettavalle@provincia.latina.it

#### Name of contact person

Nicoletta Valle

### Duration of project:

42 months (01/01/2010 – 30/06/2013)

### Total budget in euro:

3,706,632.00

### EC contribution in euro with %:

1,450,566.00 (39.13%)

### Generic Theme:

Waste water treatment

# Multifunctional Soil Conservation and Land Management through the Development of a Web Based Spatial Decision Supporting System

## Project background

The multiple functions of soil are under increasing threat from a wide range of human activities. These threats are often complex, typically inter-linked and can occur simultaneously. Threats considered to be of major concern for implementing the EU Soil Thematic Strategy include: soil erosion; decline in organic matter; soil sealing; soil compaction; decline in soil biodiversity; and landslides. In the test area all of the above mentioned threats to soil occur.

## Project objectives

The aim of this project is to develop, test and implement a tool to support decision making on soil and landscape conservation issues. The Decision Supporting System will be designed to enable the introduction of the best soil conservation and land management measures and will ease the implementation of important but complex environment-related EU directives, regulations and national allocation plans. The tool must include many different high quality layers of information in order to be successfully applied. It will be developed in the framework of a "Web-based Spatial Decision Supporting System" (WS-DSS) and will consider both soil and landscape.

The WS-DSS tool will, through a web server system, provide advice and enable users to produce detailed spatial documents, reports and maps on a series of issues such as agriculture, the environment and climate change. The ultimate goal is to facilitate an easy implementation and an innovative spatial based adoption of relevant EU and national legislation. WS-DSS will be adopted in a test area (and further expanded, after the project) by the agricultural division of the Region of Campania, an associate partner. Moreover, during the lifetime of the project, the tool will be provided for testing in four other European regions that have already expressed an interest. The tool will be made available to individuals, public bodies and other interested parties. It will integrate classical top-down decision-making with bottom-up contributions to landscape planning and management.

LIFE08 ENV/IT/000408  
SOILCONS-WEB



## Beneficiary:

### Type of beneficiary

University

### Name of beneficiary

Università di Napoli Federico II  
Dipartimento di Scienza del Suolo, della Pianta,  
dell'Ambiente e delle Produzioni Animali (DISSPAPA)

### Postal Address

Via Università 100  
I – 80055 Portici (NA)  
ITALY  
Phone +39 081 2539174  
Fax +39 081 2539186  
Email fabio.terribile@unina.it

### Name of contact person

Fabio Terribile

## Duration of project:

60 months (01/01/2010 – 31/12/2014)

## Total budget in euro:

3,328,777.00

## EC contribution in euro with %:

1,630,800.00 (48.99%)

## Generic Theme:

Risk assessment – Pollution control

# New PU Foaming Technology for the Cold Appliance Industry

## Assuring a Cost-Efficient Ecodesign with Augmented Energy Saving

### Project background

The household sector is one of the largest users of electrical energy in the European Economic Area, consuming 29% of total electrical energy. Cold appliances (refrigerators and freezers) account for 9-25% of household energy consumption. The Directive 2006/32/EC on Energy End-use Efficiency and Energy Services acknowledges the considerable potential for energy reduction and requires Member States to draw up National Action Plans (NAPs) to achieve a minimum of 9% final (end-use) energy savings from 2008-2016. This applies to almost all energy use, including domestic use. The cold appliance sector also has potential for additional carbon footprint reduction. Many blowing agents commonly used in the manufacturing of PU foams used for the insulating structure of cold appliances still have an ozone depletion potential and a significant global warming potential.

### Project objectives

The ENER-ICE project focuses on reducing the environmental impact of energy-using products, such as cold appliances, by taking action at the design stage, where the pollution caused throughout the product's life cycle can be best addressed. The project will showcase an innovative PU foaming technology for manufacturing the insulation filling in cold appliances (refrigerators and freezers) using cyclopentane as a blowing agent.

The overall objectives of the project are to demonstrate that:

- A new technology employing a hydrocarbon blowing agent can be used in Europe to improve the insulation properties of PU foams for cold appliances in a more cost-efficient way;
- The manufacture of cold appliances, including the impact of end-use disposal on the environment, can be much more environmentally friendly and sustainable than standard processes;
- There is scope for defining new standards for hydrocarbon blown foams with improved insulation properties, superior to those currently achieving an A/A+/A++ labelling; and
- Energy consumption of cold appliances in Europe can be reduced by 10% with respect to the best-available appliances produced today, with an associated positive impact on the European and worldwide market.

LIFE08 ENV/IT/000411  
ENERG-ICE



### Beneficiary:

#### Type of beneficiary

Large enterprise

#### Name of beneficiary

DOW Italia S.r.l

#### Postal Address

Via Patroclo, 21

I – 20151 Milano

ITALY

Phone +39 0586 414 318

Fax +39 0586 414 328

Email gvairo@DOW.com

#### Name of contact person

Mr Giuseppe VAIRO

### Duration of project:

39 months (01/01/2010 – 31/03/2013)

### Total budget in euro:

2,870,107.00

### EC contribution in euro with %:

1,372,554.00 (47.82%)

### Generic Theme:

Reduction of emission of greenhouse gases

# Energy valorisation in sewage sludge combustion by a flexible furnace allowing discontinuous operation

## Project background

Mounting difficulties in relation to the use of sludge in agriculture and to its disposal in landfill, has made incineration an attractive solution. In April 2000, the Commission published a working document on sludge, which included new proposed limits for organic contaminants in the use of sludge in agriculture. The implementation in Italy of the Landfill Directive has also meant that it is no longer possible to dispose of biodegradable waste in landfill. The Directive requires Member States to reduce by 35% (compared with 1995 figures) the amount of biodegradable waste disposed of in landfill within 15 years. Alternative solutions, especially for those types of sludge that are not suitable for agricultural use, are urgently needed. Sewage sludge is a poor material in terms of calorific value, thus limiting the potential for electric energy recovery when it is finally disposed of by incineration. Sludge incineration plants also have lower incineration capacities than equivalent municipal solid waste (MSW) plants. Furthermore, since sludge incineration plants need to use a continuous rather than batch process to avoid refractory stress, this results in high operating costs.

## Project objectives

The main objective of the project is to overcome the specific problems and costs associated with the incineration of sludge from the textile industry. It aims to develop a new technology that uses a high-tech furnace that can withstand the thermal shocks that are induced by the frequent shutdown at night and start-up during the day.

The project also aims to:

- Demonstrate that the electrical energy produced by this system is feasible and convenient for plants of medium capacity;
- Demonstrate that ashes produced from sludge incineration are suitable for CO<sub>2</sub> sequestration at the end of the process, when the exhaust gases are cool;
- Provide wastewater treatment plant operators, public authorities and other stakeholders with extensive information on a full-scale plant equipped with innovative technological solutions for sludge incineration;
- Demonstrate that sludge incineration is both environmentally friendly and cost effective in compari-

LIFE08 ENV/IT/000412

Enersludge



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Consiglio Nazionale delle Ricerche  
Istituto di Ricerca sulle Acque - Area ricerca RM1

### Postal Address

Via Salaria km 29,3 Montelibretti  
I – 00016 Monterotondo  
ITALY  
Phone +39 06 8841451  
Fax +39 06 8417861  
Email mininni@irsa.cnr.it

### Name of contact person

Giuseppe Mininni

## Duration of project:

60 months (01/01/2010 – 31/12/2014)

## Total budget in euro:

15,069,194.00

## EC contribution in euro with %:

1,031,859.00 (6.85%)

## Generic Theme:

Waste water treatment

son with other available solutions;

- Produce a study on diffusion of airborne pollutants;
- Produce a lifecycle assessment (LCA) of sludge incineration. This will compare the new process with both a conventional process, in which sludge is disposed in a landfill site, and with the current incineration system, presently carried out with a multiple hearth furnace.

# Local hydro-morphology, habitat and RBMPs: new measures to improve ecological quality in South European rivers and lakes

## Project background

One central aim of the Water Framework Directive (WFD) is to achieve good environmental status for surface water bodies by 2015. The WFD requires a River Basin Management Plan (RBMP) to be drawn up for each river basin district, which must be reviewed every six years. An RBMP sets out environmental objectives for all water bodies in the district and presents a summary of the measures that are being used to achieve these objectives. Habitat conditions and local hydromorphology in rivers and lakes have a significant impact on the functioning of aquatic ecosystems and will, therefore, affect any methods applied for monitoring and classification, unless their influence on biota and processes is explicitly addressed and quantified by the RBMPs.

## Project objectives

The project aims to integrate information on local hydromorphological features into practical measures to improve the reliability of implementation of RBMPs in southern Europe. The focus is on rivers and lakes in two areas in Italy, covering a wide range of environmental features and water body types. The outcome of the project will serve as a basis for the implementation of RBMPs over larger areas in Italy and, possibly, the whole of Europe. More specifically, the project has the following objectives:

- To improve RBMPs covering a number of water body types, which are representative of Italian water courses and lakes, through the introduction of innovative measures that account for hydromorphological and habitat information;
- To quantify the natural variability in undisturbed conditions of selected hydromorphological, habitat and physico-chemical features, which are known to have a significant effect on biological communities i.e. BQEs. Biological attributes for selected BQEs will be assessed accordingly;
- To quantify factors that affect ecological status classification;
- To put into practice the latest approaches and methods for the collection of WFD-compliant data, classification of ecological status and technical implementation of management plans in the study catchments;
- To update existing management plans to include measures related to hydro-morphological and habitat condition.

LIFE08 ENV/IT/000413  
INHABIT



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Consiglio Nazionale delle Ricerche  
Istituto di Ricerca sulle Acque

### Postal Address

Via Salaria km 29,3 Montelibretti  
I – 00016 Monterotondo  
ITALY  
Phone +39 06 2169428-4  
Fax +39 06 2004692  
Email buffagni@irsa.cnr.it

### Name of contact person

Andrea Buffagni

## Duration of project:

36 months (01/04/2010 – 31/03/2013)

## Total budget in euro:

2,264,341.00

## EC contribution in euro with %:

1,118,493.00 (49.40%)

## Generic Theme:

Water management at the scale of the river basin

## Valorisation of incineration residues

### Project background

Some 250 million tonnes/yr of municipal solid waste is produced in Europe. About 20% of this waste is burned in incinerators, creating large volumes of slag and fly ash. Slag is classified as a special waste and fly ash is classified as hazardous waste. While some recycling options exist for slag, these are generally low value and no satisfactory technologies are in place to reuse the often toxic fly ash. Similar problems exist for treating battery waste because of the difficulties in recycling battery acids. Slag and fly ash could however be used as raw materials in the manufacture of certain building materials, while battery acid could be reused to help further reduce waste volumes from EU incinerators.

### Project objectives

The VALIRE project's principle objective is to reduce the environmental impacts from modern waste incinerators by demonstrating alternative uses for glassy combustion residues (slag and fly ash) as raw materials for high value building materials, namely glass wool and glass foams. This will also reduce consumption rates of the current raw materials used in glass product manufacturing, and so help to improve the environmental footprint of Italy's glass sector. Additional efforts will be applied to reuse sulphuric acid from battery waste stores as a novel agent for neutralising calcium oxide content in slag. The overall project results are expected to reduce environmental impacts from modern waste incinerators to virtually zero. These technological developments will be enhanced by project work aimed at raising awareness among incinerator stakeholders on the new low impact opportunities. Project results will also be disseminated to producers of construction materials, especially insulators, to highlight the potential availability of lower cost and more ecological production methods.

Expected results:

- A treatment process for recycling of slag into high value products for the construction and insulation industries (equivalent to the consumption of more than 20 000 tonnes of slag during the project duration);
- A treatment process for recycling hazardous fly ash into high value products (glass frit) for the construction and insulation industries (equivalent to

LIFE08 ENV/IT/000421

VALIRE



#### Beneficiary:

##### Type of beneficiary

Small and medium sized enterprise

##### Name of beneficiary

Sasil SpA

##### Postal Address

Via Libertà N. 8  
I – 13862 Brusnengo (BI)  
ITALY  
Phone +39 015 985166  
Fax +39 015 985327  
Email l.ramon@sasil-life.com

##### Name of contact person

Lodovico Ramon

#### Duration of project:

48 months (01/01/2010 – 31/12/2013)

#### Total budget in euro:

3,508,580.00

#### EC contribution in euro with %:

1,738,239.00 (49.54%)

#### Generic Theme:

Hazardous waste

the consumption of 1 250 tonnes of fly ash during the project duration);

- 5 000 tonnes of sulphuric acid substances will be recycled by the pilot and industrial plants for slag treatment;
- Increased awareness among producers of construction materials of opportunities for reducing their primary raw material use.

# Policy and governance actions to reduce CO<sub>2</sub> emissions by energy valorization of process effluents in Energy Intensive Industries

## Project background

A survey of Italian businesses operating energy-intensive systems noted that many industrial processes are still wasting heat. The energy content of this heat could be recovered through a small number of high power applications. Such approaches offer opportunities to contribute knowledge towards finding BAT and BREF for industries with high CO<sub>2</sub> emission levels.

## Project objectives

The main objective of the project is to establish a Local Pilot Observatory that will carry out work to help improve energy conservation in Energy Intensive Industries (EII) in order to reduce CO<sub>2</sub> emissions. The observatory's work will include mapping energy conservation opportunities in EII, and also developing options for new policies or governance actions capable of promoting energy conservation and reducing CO<sub>2</sub> emissions in these industries.

Expected results:

- Start up of a local pilot observatory for CO<sub>2</sub> reduction in EIIs through heat recovery applications;
- Quantification of the potential of EIIs to contribute towards achieving greenhouse gas (GHG) reduction objectives up to 2020 using heat recovery;
- Reduced GHG emissions; and
- Energy audits to be conducted in selected EIIs.

LIFE08 ENV/IT/000422  
H-REII



## Beneficiary:

### Type of beneficiary

Small and medium sized enterprise

### Name of beneficiary

TURBODEN SRL

### Postal Address

Via Cernaia 10

I – 25124 Brescia

ITALY

Phone +39 030 3552001

Fax +39 030 3552011

Email marco.baresi@turboden.it

### Name of contact person

Marco Baresi

## Duration of project:

36 months (01/01/2010 – 31/12/2012)

## Total budget in euro:

882,411.20

## EC contribution in euro with %:

436,205.60 (49.43%)

## Generic Theme:

Reduction of emission of greenhouse gases

# Linking Environment and Health: a Country-based Human Biomonitoring Study on Persistent Organic Pollutants in Women of Reproductive Age

## Project background

Studies carried out by national and regional authorities have shown high levels of certain pollutants – above limits set by EU regulation - near industrial plants and landfills in Italy. In some of these areas, where the consumption of locally grown foodstuffs is common, there is a real risk of exposure to persistent organic pollutants (POPs). Human biomonitoring (HBM) represents the most straightforward and effective approach to assess the extent of exposure of the general population, population groups and individuals to environmental toxins, as it bypasses exposure data gaps and uncertainties by providing an integrated measure of the internal dose of pollutants resulting from all exposure routes and sources over time. In spite of this advantage, HBM data is scarce due to ethical and practical problems and the analysis of POPs in biological samples is costly, time-consuming and requires highly sensitive and specific techniques. Moreover, available data is generally of poor comparability because it is obtained by the application of different study designs and expressed in different concentration units. Gathering HBM data will help create a powerful tool to assess whether 'overexposure' is ongoing or has occurred in the past.

## Project objectives

The project aims to respond to the increasing demand for information on the level of exposure to POPs of environmental origin. It will focus on the sub-population of women of reproductive age (20-40 years), whose exposure to POPs will be assessed through biomonitoring – determining the 'internal dose' of selected contaminants resulting from all exposures sources and routes, by analysing their concentration in blood samples.

Areas at different exposure zones will be identified in nine regions and different monitoring plans will be drawn up, according to the level of industrial activity. At least 50 women, including young mothers, will be enrolled in each area. A network of local sanitary units and environmental units will be established, under the coordination of the ISS and the Italian department of environment. The study will be selected on the basis

LIFE08 ENV/IT/000423  
WOMENBIOPOP



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Istituto Superiore di Sanità  
Reperto di Chimica Tossicologica, Dipartimento  
Ambiente e Connessa Prevenzione Primaria

### Postal Address

Viale Regina Elena, 299

I – 00161 Roma

ITALY

Phone +39 06 49902904

Fax +39 06 49902836

Email defelip@iss.it

### Name of contact person

Elena De Felip

## Duration of project:

30 months (01/04/2010 – 01/10/2012)

## Total budget in euro:

803,913.00

## EC contribution in euro with %:

381,957.00 (47.51%)

## Generic Theme:

Risk assessment – Pollution control

of available data on POPs concentrations and carried out in co-operation with sanitary units in charge of enrolment and blood testing. Prior to blood drawing, each participant will sign an informed consent form and complete a questionnaire on exposure and medical history. Answers will be analysed by epidemiologists.

Analytical work will be carried out in line with approaches used at EU level to allow comparability with studies carried out in other Member States. Since diet accounts for more than 90% of human exposure to POPs, analysis of blood concentration data will take into account dietary habits documented in the questionnaires. Results will be communicated to the local population through local sanitary units.

# Under the Etruscan sun - Environmental friendly transport to RedUce Severe Climate change ANthropic factors

## Project background

Rapid and efficient transportation of people is essential in modern society. However, greenhouse gas emissions from transport have continued to increase in recent years, in contrast to the emission reductions achieved in other sectors. This is largely down to the fact that transport is heavily dependant on oil and other non-renewable sources. In parallel, there is increasing evidence that the growth in biofuels, as a potential alternative and renewable transport fuel, is having a negative impact on the availability of food and on the price of commodities. The origin of commodities for biofuel production is, therefore, an important issue which needs to be taken into account when considering the changeover to alternative transport fuels.

## Project objectives

The ETRUSCAN LIFE project aims to contribute to achieving EU climate change mitigation objectives by promoting greater use of public transport, increased use of renewable energies in public transport, improving the efficiency of energy use in transport, and promoting sustainable tourism. The project will also demonstrate that it is possible to produce energy with local resources close to the place where they are intended for use, by developing short (sub-provincial) energy supply chains.

Specific objectives of the project include:

- To contribute to the reduction of the carbon footprint of the Province of Viterbo;
- To demonstrate that local and renewable sources of energy can be successfully used to power transport vehicles; and
- To increase local awareness of the local and global implications of the use of fossil fuels and promote behavioural change in relation to mobility and transport.

Expected results:

- Creation of two extra-urban bus prototypes with parallel hybrid drive and set-up with 18/22 seats - to go into service in January 2011;
- Creation of two photovoltaic electric recharging sub-stations (to recharge the bus batteries), each producing 10 KW/hr per hour - operational from January 2011;

LIFE08 ENV/IT/000425  
ETRUSCAN



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Provincia di Viterbo

#### Postal Address

Via Aurelio Saffi 49  
I – 01100 Viterbo  
ITALY  
Phone +39 0761 345116  
Fax +39 0761 342924  
Email a.pozzi@provincia.vt.it

#### Name of contact person

Tolmino Piazzai

### Duration of project:

36 months (01/01/2010 – 01/01/2013)

### Total budget in euro:

2,847,422.00

### EC contribution in euro with %:

1,380,640.00 (48.49%)

### Generic Theme:

Reduction of emission of greenhouse gases

- Two plants to convert used vegetable oil into bio-fuel to be in operation from January 2011, each producing approximately 1 500 l/yr: sufficient to refuel two extra-urban hybrid buses;
- Achievement of the shortest possible chain between the place of energy production and the place of energy supply (producing all the energy necessary to feed the batteries from local sources);
- The hybrid buses to be in daily use for at least 230 days/yr for two years over different distances. In total, some 20 000 passengers/yr will use the buses.

# CO-ordinated Approach for Sediment Treatment and BEneficial reuse in Small harbours neTworks

## Project background

The presence of contaminated sediment in coastal environments may lead to significant alteration of marine and coastal ecosystems. Since marine disposal is forbidden by national and international regulations, an alternative solution needs to be found to prevent the disposal of dredged sediment as landfill. Furthermore, the identification of proper treatment processes for sediment is required to promote the reuse of materials as a substitute for natural raw materials, thus allowing for reduced consumption of natural resources. Dredged sediment can represent a valuable material in some areas. However, reuse must have an acceptable cost/benefit ratio, which requires finding markets for the recovered materials. This can only be attained if potential end-users are actively involved in the definition of targets and requirements for sediment use and if sediment supply and demand are properly balanced.

## Project objectives

The main objective of the project is to preserve the quality of coastal zones through integrated management of sediment from dredging activities in small harbours. The integrated management approach is expected to lead to the implementation of a network-based system involving nine small harbours located in the Emilia-Romagna region. This network of harbours will carry out all the sediment related activities (i.e., dredging, separation/treatment, reuse, and disposal). After analysing the available options for the final destination of the separated and treated dredged sediment, the project will focus on actions to promote the environmentally friendly use of this sediment in an integrated system, involving beach nourishment applications, reconstruction of morphological profiles and industrial applications. This approach will help to reduce the final disposal of sediment as landfill, as well as the consumption of natural primary resources. Communication of the network principles to all the interested stakeholders will promote sediment management, while demonstrating sediment characteristics will stimulate ideas for its use as a substitute for raw materials and for environmental applications.

Expected results:

**Environmental:** the development of an integrated sediment management system and the implementa-

LIFE08 ENV/IT/000426  
COAST-BEST



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Università degli Studi di Roma "La Sapienza"  
Dipartimento di Idraulica, Trasporti e Strade

#### Postal Address

Via Eudossiana, 18  
I – 00184 Roma  
ITALY  
Phone +39 06 44585037  
Fax +39 06 44585037  
Email [alessandra.poletti@uniroma1.it](mailto:alessandra.poletti@uniroma1.it)

#### Name of contact person

Alessandra Poletti

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,730,501.00

### EC contribution in euro with %:

812,465.00 (48.72%)

### Generic Theme:

Risk assessment – Pollution control

tion of appropriate treatment techniques will prevent some 50 000 m<sup>3</sup> of sediment ending up as landfill. Further implementation of both the network-based systems and the treatment plans may increase this further. Another important environmental benefit expected is the removal of polluted materials from harbour sites, which will reduce the exposure of coastal ecosystems to hazardous waste.

**Social:** by involving at least two main harbour authorities in Italy and six regional and provincial authorities, it is expected that some 1 million citizens will benefit from the improved environmental quality of the coastal areas.

**Economic:** It is expected that the identification of a beneficial use for treated sediment will result in savings of some € 60-100/tonne of sediment, which is the cost for landfill disposal.

## Monitoring for soil protection

### Project background

Recognising the extent of soil degradation and the associated environmental and social risks, the European Commission has proposed a Thematic Strategy for Soil Protection. Human activities, such as inappropriate agricultural and forestry practices, tourism, urban and industrial sprawl and construction are identified as the main threats in the strategy. Moreover, soil is vulnerable to natural processes and challenged by climate change impacts such as drought and floods. Local authorities lack the necessary know-how and expertise to understand the magnitude of the problem and fulfil the requirements of forthcoming EU legislation in this area. The fact that soil degradation is a slow process and affects large areas makes it even more difficult for Member States to identify areas at risk. However, a system based on historical data and using cutting-edge technology such as GIS and remote sensing could help local authorities to better understand the extent of the problem. Co-operation between local authorities and research institutes in a transnational context could also promote the development of spatial methodologies for monitoring and management of soil degradation.

### Project objectives

The SOILPRO project has the overall objective of halting soil degradation in EU Member States in line with the Thematic Strategy for Soil Protection. It will do this by encouraging co-operation between local authorities and research institutes within a transnational environment, as this can promote the development of spatial methodologies for monitoring and managing soil degradation.

Other objectives of the project are targeted towards:

- Developing a web-based application tool (Soil Monitoring Software) that can support local and regional authorities and Member States in their efforts to effectively monitor, identify and assess areas at risk;
- The application of the Soil Monitoring Software in two EU Regions: Sicily and Peloponnese;
- Demonstrating a soil monitoring system to potential users in local and regional authorities and other stakeholders;
- Building the capacity of stakeholders in soil monitoring and protection;

LIFE08 ENV/IT/000428  
SOILPRO



#### Beneficiary:

##### Type of beneficiary

Research institution

##### Name of beneficiary

Consiglio per la Ricerca e Sperimentazione in Agricoltura

##### Postal Address

Via Nazionale, 82

I – 00184 Roma

ITALY

Phone +39 055 2491222

Fax +39 055 241485

Email costantini@issds.it

##### Name of contact person

Edoardo Costantini

#### Duration of project:

48 months (01/01/2010 – 31/12/2013)

#### Total budget in euro:

1,450,192.00

#### EC contribution in euro with %:

722,583.00 (50.00%)

#### Generic Theme:

Risk assessment – Pollution control

- Showing examples of soil protection actions in risk areas identified by the use of a soil monitoring system;
- Improving the effectiveness of soil protection measures; and
- Raising public awareness on soil degradation.

## UP-grading of landfillgas for lowering CO<sub>2</sub> emissions

### Project background

Greenhouse gas emissions from the waste management sector account for some 3% of total emissions in the EU (2006 data). Methane from landfills, caused by the anaerobic breakdown of biodegradable materials, accounts for most of the emissions in this sector. However, methane emissions from the waste management sector fell by 39% between 1990 and 2006 and total greenhouse gas emissions from this sector are projected to decrease further, to approximately 44% of 1990 levels by 2010. The decrease is mainly a result of the implementation of the EU Landfill Directive and similar national legislation, which reduces the amount of untreated biodegradable waste disposed of in landfills and installs landfill gas recovery systems at all new sites. However, a reduction in CO<sub>2</sub> emissions from landfill sites could contribute to a further reduction in greenhouse gas emissions. The CO<sub>2</sub> contained in landfill gas/biogas is of biogenic origin, and its emission does not effectively contribute to the greenhouse effect balance. If CO<sub>2</sub> is captured from the landfill gas/biogas and stored, it is possible to obtain an additional subtraction (negative emissions) of CO<sub>2</sub> from the atmosphere, reducing the overall greenhouse effect balance.

### Project objectives

The overall objective of the UPGAS-LOWCO25 LIFE project is to reduce the contribution of landfill gas emission to the greenhouse effect. This will be achieved through the implementation of two methods:

- The first proposed method is based on the chemical absorption of CO<sub>2</sub> with an alkaline aqueous solution, which produces carbonate-rich solutions. This spent solution is fed to a regeneration step, where it is mixed with alkaline industrial residues (such as fly or bottom ashes, steel slag and cement wastes), producing a sludge rich in calcium or magnesium carbonate and a regenerated alkaline solution, that is recycled to the absorption column.
- The second method is based on the chemical reaction between the gas containing carbon dioxide and bottom ashes. This kind of process accelerates carbonation of the solid residues and CO<sub>2</sub> up-take.

LIFE08 ENV/IT/000429  
UPGAS-LOWCO25



#### Beneficiary:

##### Type of beneficiary

University

##### Name of beneficiary

Università degli Studi di Firenze  
Dipartimento di Energetica "Sergio Stecco"

##### Postal Address

Via Santa Marta, 3  
I – 50139 Firenze  
ITALY  
Phone +39 055 4795349  
Fax +39 055 4796342  
Email ennio.carnevale@unifi.it

##### Name of contact person

Enio Carnevale

#### Duration of project:

30 months (01/01/2010 – 30/06/2012)

#### Total budget in euro:

678,542.00

#### EC contribution in euro with %:

339,196.00 (50.00%)

#### Generic Theme:

General: Waste management

# Forwarding ACTions On a Regional and local scale to reach UE targets of the European Climate Action Plan “20-20 by 2020”

## Project background

Reducing greenhouse gas (GHG) emissions is a major aim of efforts to mitigate climate change and its effects at EU level. Italy has already seen some interesting innovative actions to define models and tools for GHG-emission accounting. In general, these initiatives have been aimed at raising stakeholders' awareness of the need to reduce emissions at a local level.

Strategies have focused on clarifying the need to adopt a systematic and strategic approach in defining institutional action plans, including sectors not bound by the Emissions Trading Scheme (ETS). However, in general, the potential of non-ETS sectors to reach the national GHG reduction targets is still underestimated.

Initiatives implemented until now have already shown the need to link GHG-emission accounting systems with planning for energy and environmental policies. To increase the effectiveness of the strategies adopted, planning should also involve all the relevant institutional levels, both regional and local, and should be intertwined with a strategic evaluation phase.

## Project objectives

The project aims to promote an integrated management approach to build on and improve existing approaches to GHG-reduction strategies at local, non-ETS levels. It seeks to define a technically sound tool for promoting local actions towards the contribution of the non-ETS sector to climate change objectives.

The project will work to harmonise regional databases on local electrical energy systems covering energy consumption, generation and network infrastructure and particularly monitoring the impacts of energy activity on GHG emissions. This will provide the baseline data for regional information systems and policies.

The data will be fed into a “burden-sharing” tool - Sirena-Factor 20 – in order to define regional sectoral targets on GHG reduction, use of renewable energy sources and energy saving. The regional targets will form a basis for the local targets for sectors outside the Emissions Trading Scheme, such as the construction industry and transport sector.

LIFE08 ENV/IT/000430  
FACTOR 20



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Regione Lombardia  
Direzione Generale Reti, Servizi di Pubblica Utilità e Sviluppo Sostenibile

#### Postal Address

Via Pola 12  
I – 20124 Milano  
ITALY  
Phone +39 02 67658690  
Fax +39 02 67654468  
Email [valentina\\_sachero@regione.lombardia.it](mailto:valentina_sachero@regione.lombardia.it)

#### Name of contact person

Valentina Sachero

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

2,512,600.00

### EC contribution in euro with %:

1,206,300.00 (48.01%)

### Generic Theme:

Reduction of emission of greenhouse gases

Sirena-Factor 20 will be implemented and demonstrated in two local areas within each of three regions. Each local authority will identify a 'leading action' to be implemented during the project. The feasibility and effectiveness of this action will be monitored. The project will also assess the coherence of the local action plans developed with the regional strategies.

The project will promote the adoption of its integrated tool for defining Local Action Plans and raise stakeholders' awareness at local and regional level on adopting CO<sub>2</sub> quantities as core indicators to define the effectiveness of energy policies and actions.

# Sustainable use of chemical fumigants for the control of soil-borne pathogens in the horticultural sector

## Project background

The management of soil-borne pests in intensive horticultural systems was based for years on the use of methyl bromide. However, this chemical reacts in the atmosphere to release elemental bromine, which is severely damaging to the ozone layer. It was the subject of phase-out requirements under international agreements in the 1980s. Phasing out of methyl bromide was enabled by the availability of alternatives that could replace it in pest and pathogen control. The best chemical alternatives have been 1,3-Dichloropropene, Chloropicrin, and MITC (methyl isothiocyanate) generators. However, use of these chemicals is still a source of environmental pollution. More sustainable use of fumigants in horticultural cropping systems requires a reduced application rate and diminished environmental dispersion.

## Project objectives

The project aims to demonstrate the environmentally sustainable use of chemical fumigants for the control of soil-borne pathogens in the horticultural sector. It ultimately hopes to reduce fumigant use across Europe and thus contribute to sustainable development objectives. The project will analyse pest constraints in target agro-ecosystems within nine project areas: four in Italy; three in Greece; and two in Poland. A common monitoring plan of soil-borne diseases will enable comparisons between the sites.

A series of 24 demonstration tests of pest-management techniques will be carried out. These will test different levels and combinations of fumigants and non-chemical alternatives, application methods and doses. Non-chemical practices to be tested include soil solarisation, grafting, bio-control agents, compost use and steam. The project will evaluate the qualitative and quantitative effects on crop production of different alternatives and establish guidelines on the most sustainable use of fumigants. This should provide know-how on using reduced dosages and lowering environmental impact and risk of worker exposure to fumigants without jeopardising output.

A technical-economic assessment will be conducted to indicate which environmentally sustainable approaches are also the most economically sustainable. Exchange visits and dissemination materials will be used to raise awareness of the best available practices.

LIFE08 ENV/IT/000432  
SustUse Fumigants



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Università di Torino  
Centro di Competenza per l'Innovazione in Campo agro-ambientale

#### Postal Address

Via Leonardo da Vinci, 44  
I – 10095 Grugliasco (TO)  
ITALY  
Phone +39 011 6708539  
Fax +39 011 6709307  
Email marialodovica.gullino@unito.it

#### Name of contact person

Maria Lodovica Gullino

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

2,628,355.91

### EC contribution in euro with %:

1,174,652.96 (44.69%)

### Generic Theme:

Risk assessment – Pollution control

# COLloidal Silica Medium to Obtain Safe inert: the case of incinerator fly ash

## Project background

Some 20-25 % of the municipal solid waste produced in the EU15 is now treated by incineration at over 400 installations. One of the important by-products of this process is fly ash. Recent projects have looked at ways of treating and reusing this ash. At the University of Brescia, a new fly-ash-treatment process, based on a colloidal silica medium, has been developed and optimised. The resultant inert product, called COSMOS, shows good mechanical properties for use as a filler in products such as cement, plastics and rubber.

## Project objectives

The overall objective of the project is to transfer laboratory know-how on treatment of fly ash coming from solid-waste incineration to practical application on an industrial scale. It will demonstrate almost complete re-use of all stabilised material in a way that achieves functional and economic objectives. The COSMOS protocol will be transferred to industrial partners who will then construct a prototype system capable of generating 100 kg/day of the COSMOS filler from fly ash. The university will participate in the optimisation of this protocol to ensure that the practical application achieves at least the same performance as the laboratory system.

The project will carry out a lifecycle assessment (LCA) of the processes commonly used in incinerator fly ash management and these will be compared with the LCA of the proposed process. This will inform the evaluation of the best applications of the COSMOS filler from a financial and environmental perspective. The prototype process will provide enough material to test its application in at least five matrices. The functional and mechanical performance of the new materials will be compared with the commercial application to inform the choice of three products to be delivered for demonstration and dissemination purposes. Depending on the success and social acceptance of these products, the project will consider the possibility of a business plan for their commercialisation. New potential markets will also be explored.

LIFE08 ENV/IT/000434

COSMOS



## Beneficiary:

### Type of beneficiary

Mixt enterprise

### Name of beneficiary

Centro Servizi Multisetoriale e Tecnologico

### Postal Address

Via Branze 45

I – 25123 Brescia

ITALY

Phone +39 030 6595111

Fax +39 030 6595000

Email f.tamburini@csmt.it

### Name of contact person

Francesco Tamburini

## Duration of project:

36 months (01/01/2010 – 01/01/2013)

## Total budget in euro:

2,007,907.00

## EC contribution in euro with %:

995,354.00 (49.57%)

## Generic Theme:

Hazardous waste

# Alternative Non-Testing methods Assessed for REACH Substances

## Project background

REACH has introduced stricter European legislation on the handling, use and disposal of new chemicals. This aims to address the problem of chemical compounds ending up in the environment, but it also increases the cost to producers, who must demonstrate that a chemical is safe for the environment and human health. It has been estimated that at least 30 000 new chemicals will be introduced in the coming years in Europe.

It is questionable if there are sufficient laboratories to cope, in a reasonable timeframe, with the demand for toxicity data. Animal testing is also likely to increase, as companies seek to demonstrate compliance. Some 10 million animals are used every year for laboratory experiments in Europe: about 50% by drug companies and 13% by the chemicals industry. Initial estimates suggest that REACH will increase animal use by 39%, but this could be even higher when considering the high number of pre-registered compounds. To avoid these problems, REACH promotes the use of non-testing methods. However, this requires more information on how and when these methods can be used.

## Project objectives

This project aims to show which non-testing methods (NTM) can be used to demonstrate compliance with REACH legislation and under what conditions. It seeks to bridge the gap of knowledge on which methods can be used in practice to avoid animal testing. The project will carry out a preparatory survey of all current methods for assessing compliance with the REACH legislation. This will help identify the exact criteria that the NTMs must meet. It will also evaluate the available experimental data for the eco-toxicological, toxicological and environmental endpoints for REACH.

Possible NTMs will be identified via a detailed search of paper and electronic information sources. At least 25 of these will be assessed using the identified data and quality criteria. Assessment will use modern, advanced chemiometric tools developed by one of the partners. The best identified NTMs will be validated through a control of the toxicity, ecotoxicity and environmental values they predict. This will provide a proof-of-principle of the performance of the methods.

LIFE08 ENV/IT/000435  
ANTARES



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

Istituto di Ricerche Farmacologiche Mario Negri

#### Postal Address

Via Giuseppe La Masa 19

I – 20156 Milan

ITALY

Phone +39 02 39014420

Fax +39 02 39014735

Email benfenati@marionegri.it

#### Name of contact person

Emilio Benefati

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,077,024.00

### EC contribution in euro with %:

538,512.00 (50.00%)

### Generic Theme:

Risk assessment – Pollution control

Their domain of applicability and any required safety factors will also be checked by thorough examination of key variables.

On the basis of the amount of experimental and methodological data collected, the project will define a unified and organised strategy on how to use the multiple NTMs, taking account of the strengths of each method and any conflicts or contradictions emerging from the results. To increase the use of the recommended NTMs, targeted communication and awareness-raising activities will be carried out and dissemination materials will be produced.

# Adapting to climate change in Time

## Project background

Local authorities can play a crucial role in shaping climate change adaptation actions because they connect households to local resources and promote collective action; they determine the extent of external support to different social groups; and they link local populations to national interventions. As such, local public sector bodies can play a major role in implementing Italy's national climate change adaptation action plan.

## Project objectives

The main objectives of the project focus on the development of a process capable of resulting in an effective municipal strategy for local climate change adaptation. This will be achieved by involving (and increasing awareness among) local stakeholders (businesses, citizens, health system, civil protection, etc) in a consultation process to help determine proportionate, appropriate and cost-effective measures to be included in the adaptation strategy.

Expected results:

- Enhanced competence of local authorities in understanding the effects of climate change, and hence in planning and implementing adaptation policies and actions;
- Development of synergies between existing adaptation and mitigation policies;
- Assessment of the most vulnerable sectors that require priority actions in the local adaptation plan, and identification, via risk assessment work, areas or sectors where specific plans are required to deal with/prevent potential emergencies.

The overall conclusions will lead to a methodological model that will be promoted to other Mediterranean areas as a tool to help increase the number of local climate change adaptation strategies.

LIFE08 ENV/IT/000436  
ACT



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Comune di Ancona

#### Postal Address

P.zza XXIV Maggio, 1

I – 60123 Ancona

ITALY

Phone +39 071 2222673

Fax +39 071 2222676

Email marco.cardinaletti@comune.ancona.it

#### Name of contact person

Marco Cardinelatti

### Duration of project:

30 months (01/01/2010 – 30/06/2012)

### Total budget in euro:

1,752,258.00

### EC contribution in euro with %:

876,129.00 (50.00%)

### Generic Theme:

Urban design – Quality of life – Transport planning

## More Reusing & More Recycling

### Project background

Achieving the sustainable management of waste represents a key challenge for Italy's Lazio Region. The region includes urban territory around Rome as well as a mix of much smaller rural communities. Lazio also contains Europe's largest landfill site. Modern waste management systems are now needed to help develop appropriate approaches for the future, which minimise waste streams and facilitate increased recycling, recovery or reuse of products and materials. Solutions are required that fit the needs of both rural and urban areas.

### Project objectives

The main objective of this project is to maximise the share of waste recovery, reuse and recycling in both urban and rural areas of the Lazio region. Project actions will focus on two pilot areas that are representative of the larger regional territory: Castelli Romani, a metropolitan area located close to Rome; and the Province of Rieti, a small rural community. Between them they include heavy industrial districts, different types of residential developments, a thriving local crafts sector, as well as a highly valued built and natural heritage. The two areas will achieve a substantial reduction in the environmental burden generated by waste production as the project aims to intervene across the whole waste cycle (industrial processes, commercial activities, agricultural sector, etc.) and direct relevant second life materials to neighbouring industries through an online stock exchange.

Expected results:

- A 15% reduction in CO<sub>2</sub> emissions;
- A 10% reduction in the ecological footprint;
- A 20% decrease in waste production;
- A 30% reduction in waste disposal.

LIFE08 ENV/IT/000437

Mo.re. & Mo.re



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Regione Lazio

#### Postal Address

Via Cristoforo Colombo, 212

I – 00147 Roma

ITALY

Phone +39 06 5168 4602

Fax +39 06 5168 40270

Email rdefilippis@regione.lazio.it

#### Name of contact person

Raniero De Filippis

### Duration of project:

30 months (02/01/2010 – 02/07/2012)

### Total budget in euro:

725,203.00

### EC contribution in euro with %:

725,203.00 (47.67%)

### Generic Theme:

General: Waste management

# Integrated Strategy for Riga City to Adapt to the Hydrological Processes Intensified by Climate Change Phenomena

## Project background

The Daugava River, which flows through Riga, is some 500–700 m wide and around 6–7 m deep. The water regime of the river is largely dependent on the operations of the Riga Hydropower plant. This is located some 30 km upstream from the mouth in the Riga Gulf, which itself impacts on water levels. Increased frequency and severity of flash floods is becoming a major problem for the city of Riga. Such floods have caused widespread damage to built-up areas, infrastructure and the natural environment, including Natura 2000 areas. In 2008, Riga County Council (RCC) commissioned a hydro-dynamic modelling system to calculate flood risks and trends under different scenarios. The growing incidence of flooding is linked to climate change phenomena. In particular, storms are increasingly pushing water from the Riga Gulf into the River Daugava. To address both the floods and their causes according to the provisions of international, EU and national legislation in Latvia, there is a need for more integrated management planning. There is also greater need for awareness of the relevant issues amongst the general public, specialists from municipalities and politicians.

## Project objectives

The main objective of the project is to ensure that hydrological processes intensified by climate change phenomena in Riga are adequately investigated and incorporated to the city's planning system. This will help to mitigate their current and future impact on Riga's economy and society, nature and biodiversity, water resources and human health.

The project plans to carry out detailed studies of the hydrological processes affecting Riga and their current and potential impacts. Workshops involving specialists and local stakeholders will feed into these studies, leading to a report. The beneficiary will also learn about best practices in identification, planning and management of flood risk zones in three European cities facing similar challenges: Rotterdam (the Netherlands); Antwerp (Belgium); and Hamburg (Germany). It will also share the results of the work in Riga.

The project will define flood-protection priorities for six flood-risk zones around the city and for the city as a whole. Possible measures and activities will be

LIFE08 ENV/LV/000451  
HydroClimateStrategyRiga



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Riga City Council

#### Postal Address

Ratslaukums 1

LV - 1539 Riga

LATVIA

Phone +371 670 12843

Fax +371 670 12922

Email gvido.princis@riga.lv

#### Name of contact person

Gvido Princis

### Duration of project:

34 months (01/02/2010 – 30/11/2012)

### Total budget in euro:

662,240.00

### EC contribution in euro with %:

329,270.00 (49.52%)

### Generic Theme:

Urban design – Quality of life – Transport planning

evaluated, and their cost-effectiveness assessed. The work will lead to a Flood Risk Management Plan for Riga City, which will recommend protection measures and also necessary changes in the city's planning documents.

Publicity and awareness-raising measures around flood risks and management will include a website, printed publications, events and media work.

# Ecohydrologic rehabilitation of recreational reservoirs “Arturówek” in Łódź as a model approach to rehabilitation of urban reservoirs

## Project background

Important priorities of Polish environmental policy are related to the requirements set out by the Water Framework Directive (2000/60/EC). Special attention is paid to urban water ecosystems because of their importance for quality of life. The project area comprises a section of the Bzura river and the system of Arturówek reservoirs, which are primarily used for recreational activities by the citizens of Łódź in central Poland.

## Project objectives

The main goal of the project is to use the concept of ecohydrology to restore the Arturówek reservoirs, which are primarily used for recreational activities by citizens of Łódź. The reservoirs are located in the northern part of the city and comprise three interconnected reservoirs. The bowl of the upper reservoir is currently used as a settling pond. The project foresees the conversion of the upper reservoir into a sedimentation-biofiltration system, whereas the lower and middle reservoirs will be used for recreational purposes. The project aims to introduce an innovative approach to: (1) consolidate knowledge on the functioning of urban water ecosystems; (2) explore planning and decision-making methods used in the management of urban water ecosystems; (3) develop and use eco-hydrological technologies to comply with the requirements of the WFD; and (4) implement a system for training, dissemination, and multi-stakeholder co-operation.

Expected results include:

- Enhancement of the aesthetic, health and recreational aspects of the reservoirs;
- Better knowledge of the opportunities for applying hydro-ecological methods to sustainable water management in urban areas; and
- Establishment of a basis for the restoration of key water systems in Łódź.

LIFE08 ENV/PL/000517  
EH-REK



## Beneficiary:

### Type of beneficiary

University

### Name of beneficiary

Uniwersytet Łódzki  
Department of Applied Ecology

### Postal Address

12/16 Banacha Street  
PL - 90-237 Łódź  
POLAND

Phone +48 42 635 44 38

Fax +48 42 665 58 19

Email mzal@biol.uni.lodz.pl

### Name of contact person

Maciej Zalewski

## Duration of project:

60 months (01/01/2010 – 31/12/2014)

## Total budget in euro:

1,244,319.00

## EC contribution in euro with %:

489,157.00 (39.31%)

## Generic Theme:

Water management at the scale of the river basin

# ECOTones for Reducing Diffusion Pollution

## Project background

The main causes of eutrophication of water bodies are discharges of polluting substances, mainly nutrients: nitrogen and phosphorus, from both point sources (e.g. sewage treatment plants) and diffuse sources. The diffuse sources of pollution are estimated to account for 50% of the runoff of nutrient compounds in Poland. Therefore, reduction in the point sources of pollution, however indispensable and significant, does not suffice. One of the tools to protect water ecosystems from diffuse pollution is to make use of the potential of ecotones (transitional areas between two ecosystems).

## Project objectives

The project's main objective is to set up a number of activities for reducing diffuse pollution in the Pilica river basin in central Poland, by means of cost-effective ecohydrological methods that will help achieve the good ecological status of water in the Sulejowski reservoir – a large reservoir built in the 1960s to supply fresh drinking water to the cities of Łódź and Tomaszów Mazowiecki. Another aim is to prepare a manual for optimum ecotone formation, with special focus on the effectiveness of diffuse pollution removal and enhancement of biodiversity. In order to improve the water quality of the reservoir, ecotones will be constructed using vegetation derived from the surrounding habitats in the region. An innovative aspect are the use of so-called “de-nitrification walls” that act as a barrier to protect against the inflow of nitrates from agricultural drainage areas, and also from areas without sewage systems. The project will also create a pilot site to demonstrate the possibilities of introducing the proposed measures in other areas.

LIFE08 ENV/PL/000519  
EKOROB



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Regionalny Zarząd Gospodarki Wodnej w Warszawie

#### Postal Address

Ul. Zarzecze 13 B  
PL - 03-194 Warszawa  
POLAND  
Phone +48 22 58 70 318  
Fax +48 22 58 70 311  
Email monitoring@rzgw.warszawa.pl

#### Name of contact person

Tomasz Surowieki

### Duration of project:

60 months (01/01/2010 – 31/12/2014)

### Total budget in euro:

1,316,987.00

### EC contribution in euro with %:

624,368.00 (47.41%)

### Generic Theme:

Water management at the scale of the river basin

# Integrated approach to energy and climate changes changing

## Project background

A wide variety of industrial sectors, in particular transport, construction and heating, need to undertake special efforts and develop long-term policies around their energy consumption and climate change impact. Particular issues are: energy management and sustainable sources of renewable energy; management of greenhouse gas emissions; and reduction of other negative environmental impacts. Strongly related to social development, wastewater-treatment processes are known for their high energy consumption. Both the aerobic treatment processes and agricultural applications of sludge from wastewater treatment are significant sources of greenhouse gas (GHG) emissions. Calculations of the carbon footprint of wastewater-treatment facilities would show a strongly negative impact. Furthermore, the number of wastewater-treatment facilities in Europe is growing to meet population growth and wastewater quality standards. This means there is an ever-stronger need for management tools, technological solutions and operational innovations that encompass both the energy balance and the associated carbon footprint of these facilities.

## Project objectives

This project aims to implement an optimising tool for the management of wastewater treatment facilities, using operational data to determine and minimise energy consumption and carbon footprint. It hopes to achieve EU-defined objectives on energy efficiency and the reduction of the environmental impact of wastewater treatment facilities. The project will gather operational information from a wastewater treatment facility and logistical information on organic waste in the region. This data will then be fed into a management system.

Laboratory analysis of co-digestion techniques will be carried out assessing chemical and eco-toxicological aspects. Modelling tasks will be based upon the analytical results, including the design of the co-digestion regime and model to be implemented at the wastewater treatment facility. Based on this work, the project will develop a full-scale demonstration facility with a partner wastewater treatment plant in the Lisbon-Loures industrial area. The model will be tested and optimised to maximise biogas production and minimise its carbon footprint and production of residual sludge.

LIFE08 ENV/P/000237  
WW4ENVIRONMENT



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Instituto Superior Técnico

#### Postal Address

Av. Rovisco Pais  
P - 1049-001 Lisboa  
PORTUGAL  
Phone +351 218 417731  
Fax +351 218 478619  
Email natep@ist.utl.pt

#### Name of contact person

Carlos Matos Ferreira

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

784,442.00

### EC contribution in euro with %:

382,221.00 (50.00%)

### Generic Theme:

Waste water treatment

The project team will produce: a management tool for wastewater treatment facility operation; a handbook comprising the methodology for assessing the carbon-footprint of wastewater-treatment facilities; guidelines for eco-toxicological survey methodologies; and a handbook of methodologies and procedures for the implementation of a co-digestion regime in anaerobic digesters of a wastewater treatment facility.

## Creative high efficient and effective use of biomass

### Project background

Central Slovakia is responsible for a large amount of greenhouse gas (GHG) emissions, mostly the result of the combustion of coal, coke and sludge. There are more than 2 000 sawmills, forestry companies and wood processing firms in the region, producing over 200 000 tonnes/yr of biomass residuals. In north-west Slovakia, there are a lot of sawdust suppliers, but few deliver high-quality sawdust. The raw material often contains foreign matter (such as stones, metals, plastics, big pieces of wood and bark) and, moreover, has a high moisture content (above 45%).

### Project objectives

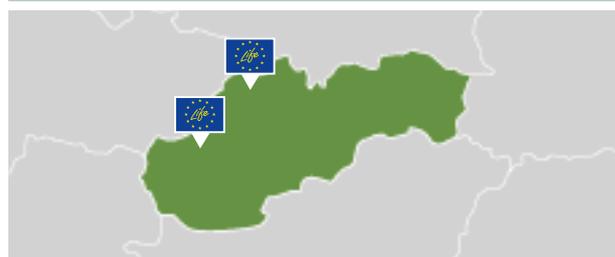
The main project objective is to reduce GHG emissions through the creation and introduction of innovative elements in biomass processing and heat production. The CHEFUB project will explore new opportunities to obtain high quality sawdust for the production of pellets that meet strict EU standards. Good quality pellets in heating systems produce lower CO<sub>2</sub> emissions. CHEFUB believes that its proposed process will increase production of pellets from wood waste by some 2 000 tonnes/yr (equating to a cut in CO<sub>2</sub> emissions of some of some 3 500 tonnes/yr). Another project objective is the development and introduction of a creative financing programme for boiler rooms of up to 50 kW, especially in public buildings, and the subsequent conversion of boiler rooms from fossil fuel to biomass for 20 participating public bodies.

A fundamental step to make the operation of boiler rooms more effective is the use of high-quality pellets. The superior quality fuel will improve the boiler room efficiency and durability, as well as its overall operation. The project will also provide an opportunity to change public perceptions on the use of renewable energy sources.

#### Expected results:

The beneficiary foresees an increase in the production of biomass from 10 000 to 12 000 tonnes/yr, which will result in an annual CO<sub>2</sub> emission reduction of 3 500 tonnes. An additional 4 000 tonnes/yr of CO<sub>2</sub> will be saved through the implementation of a remote control system for the boiler rooms, the reconstruction of old boiler rooms and the construction of 20 new

LIFE08 ENV/SK/000240  
CHEFUB



#### Beneficiary:

##### Type of beneficiary

NGO-Foundation

##### Name of beneficiary

BIOMASA

##### Postal Address

No. 743  
SK - 02334 Kysucky Lieskovec  
SLOVAK REPUBLIC  
Phone +421 41 4231500  
Fax +421 41 4231505  
Email project@biomasa.sk

##### Name of contact person

Lenka Kopunova

#### Duration of project:

36 months (01/01/2010 – 31/12/2012)

#### Total budget in euro:

1,358,109.00

#### EC contribution in euro with %:

491,773.00 (36.21%)

#### Generic Theme:

Reduction of emission of greenhouse gases

boiler rooms for heating with biomass.

Another indirect benefit in terms of CO<sub>2</sub> reduction will be an increased awareness of biomass use for heating. The project has also planned an extensive awareness raising campaign using a special demonstration vehicle.

# Innovative management model of urban trees in the city of Jerez de la Frontera

## Project background

The importance of vegetation in the fight against climate change deserves attention, since plants, including trees, can absorb the CO<sub>2</sub> emitted daily by thousands of vehicles. It is estimated that in one year a 20-year-old tree absorbs the CO<sub>2</sub> emitted by a vehicle travelling 10 000-20 000 km. However, in most cities urban growth, expansion and construction of new infrastructure, or changes in urban land management have not always respected the need for green areas, especially trees. Some trees have suffered excessive pruning, while others have simply been cut down. On the other hand, the life cycle of trees can also contribute negatively by producing environmental impacts (e.g. pressure on water resources, disease and pest infestation). It is increasingly important for a high-quality urban life to preserve our green heritage from harmful pressures exerted by both man and nature.

## Project objectives

The project's main objective is to create a new management model of urban green areas that will integrate: (1) management and maintenance processes and tools; (2) the use of environmentally-friendly treatments and tree regeneration techniques for endangered species; and (3) participation and information processes to raise awareness of the importance of urban green areas as part of a city's heritage. The management model will promote in particular, the environmental benefits such as temperature moderation, noise abatement and improved air quality.

Specifically, the project will seek to: Define a new management model for urban green areas and integrate their management into urban planning processes (this model will include planning, maintenance, monitoring and follow-up assessment procedures) develop an IT tool to simplify the task of carrying out inventories of urban tree species and specimens; apply innovative pest control methods; carry out demonstration activities with regards to urban green area management; standardise management and communication processes with regards to urban green areas and environmental information; hold activities to raise awareness of Jerez de la Frontera's green heritage.

The main expected result will be a significant improvement in the green areas, notably the city's trees, through the use of environmentally friendly methods.

LIFE08 ENV/E/000097  
JEREZ + natural



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Ayuntamiento de Jerez de la Frontera

#### Postal Address

Consistorio 15

E - 11403 Jerez de la Frontera

SPAIN

Phone +34 956 149570

Fax +34 956 149573

Email [coordinador.medioambiente@aytojerez.es](mailto:coordinador.medioambiente@aytojerez.es)

#### Name of contact person

África Becerra

### Duration of project:

24 months (01/01/2010 - 31/12/2011)

### Total budget in euro:

656,938.00

### EC contribution in euro with %:

317,554.00 (48.34%)

### Generic Theme:

Urban design – Quality of life – Transport Planning

The project will also target a general improvement in air quality in the city and an overall reduction of CO<sub>2</sub> emissions and other pollutants (e.g. CO, NOx). The number of bird species in the project area as a result of the project actions will also be monitored.

# Sustainable Urban Water Management Plans, promoting SUDS and considering Climate Change, in the Province of Valencia

## Project background

Wastewater from the city of Xativa overflows practically every year from the municipality's combined sewer system. The problem occurs because the local water treatment plant cannot cope with the large volume of water generated in periods of heavy rainfall. The combined sewer overflow discharges directly into the Albaida river, thus deteriorating water quality and threatening the river's ecological status. A similar problem occurs in the municipality of Benaguasil, in Valencia, with combined sewer overflow discharging in periods of flooding, into the Turia river. Both rivers are very important in the region for agri-tourism, thus environmental protection is high on the municipalities' agendas. A 2007 study of the water quality of the two rivers found that although they complied with the current environmental regulations, their status was not ideal, with deficiencies in dissolved oxygen and some negative environmental impacts on river vegetation detected. Moreover, the presence of high concentrations of certain chemicals regulated by the EU Water Framework Directive (2000/60/EC) was also noted.

## Project objectives

The principal aim of the AQUAVAL project is to introduce the use of sustainable urban drainage systems (SUDS) to the municipalities of Xativa and Benaguasil. Specifically, the project will aim to:

- Avoid combined sewer overflow in order to improve the water quality of the receiving water courses;
- Avoid flooding within the urban areas during less heavy periods of rainfall, while taking into account the effect of climate change;
- Reduce energy consumption;
- Reduce 'hot spot' impacts in the two cities caused by large impermeable surfaces;
- Exploit natural water resources (i.e. rainwater) by using it for example in irrigation, street cleaning, etc.;
- Develop community environmental policy through the integration of environmental concerns into urban water policies, thereby contributing to sustainable development.

Two demonstration sites are planned (one per municipality) to promote the use of SUDS regionally, nationally and in other areas of southern Europe. Sustainable urban water management plans will also be drawn up in both Xativa and Benaguasil.

LIFE08 ENV/E/000099  
AQUAVAL



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Ayuntamiento de Xàtiva

#### Postal Address

Alameda Jaume I, 35

E - 46800 Xàtiva

SPAIN

Phone +34 962 289801

Fax +34 962 289809

Email vicesecretario@ayto-xativa.es

#### Name of contact person

Eduardo Balaguer Pallás

### Duration of project:

42 months (01/01/2010 - 30/06/2013)

### Total budget in euro:

1,228,618.00

### EC contribution in euro with %:

499,458.00 (40.65%)

### Generic Theme:

Waste water treatment

# Local Action Plan for Fighting Climate Change in Las Rozas de Madrid: Application and Evaluation of Municipal Management Methods

## Project background

Cities occupy 2% of the earth's surface, but they use 75% of the world's natural resources. In Spain, municipalities have become increasingly aware and committed to actions supporting sustainability. They can play an important role in promoting sustainability at a local level, provided the necessary political will and resources are made available. Spain is considered 'especially vulnerable' to climate change pressures. Therefore cutting CO<sub>2</sub> emissions should be a priority for the regulating authorities. Municipalities are ideally placed to adopt specific actions plans on climate change, as they are the closest administrations to citizens. The municipality of Las Rozas has implemented a specific monitoring system of climate trends through a network of meteorological stations and has already launched several initiatives for sustainable development including: a plan for sustainable mobility; Agenda 21; and a future plan on water saving. Moreover, in September 2008 it joined the Spanish Network of Cities for the Climate. This network is targeting a reduction of 15% of greenhouse gas emissions by 2012.

## Project objectives

The project will aim to apply and evaluate methods for municipal management of climate change, assessing their cost-effectiveness in meeting the goals for reducing greenhouse gases (GHG). This will include both adaptation and mitigation measures. An action plan to combat climate change will be adopted and new regulations for protecting the atmosphere and municipal planning of green spaces, parks and public gardens will be endorsed. The plan will be closely monitored by a municipal 'technical commission on climate change' and regularly advised by an expert panel. A set of incentives and methods to encourage the involvement of businesses and commercial sectors in combating climate change will also be developed. The project will calculate initial emissions at the beginning of the project in order to help assess the results achieved at the end. In this way the project hopes to provide a model for other municipalities of similar size and/or socio-economic characteristics (i.e., a growing suburb). In parallel, a strong awareness-raising campaign about climate change will target the general public, schools and main business sectors. The project will also promote its successful results at relevant forums.

As well as meeting the above overall objectives, some quantifiable results expected to be obtained from specific

LIFE08 ENV/E/000101  
Las Rozas por el clima



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Ayuntamiento de Las Rozas de Madrid

#### Postal Address

Plaza Mayor, 1  
E - 28231 Las Rozas de Madrid  
SPAIN  
Phone +34 916 402900  
Fax +34 916 402930  
Email [jvicente@lasrozasmadrid.es](mailto:jvicente@lasrozasmadrid.es)

#### Name of contact person

Juan Vicente Sánchez

### Duration of project:

48 months (01/01/2010 - 31/12/2013)

### Total budget in euro:

2,440,738.00

### EC contribution in euro with %:

1 048 809.00 (42.97%)

### Generic Theme:

Reduction of emission of greenhouse gases

project actions will include:

- Capacity-building amongst the 130-plus staff responsible for actions to fight climate change from the various council departments and offices. In addition, more than 800 staff will be informed about the project's municipal climate change strategy;
- The creation of carbon dioxide sinks through the re-naturalisation of approximately 26 ha of green public areas that will fix an estimated 1 200 tonnes of CO<sub>2</sub> over the three years of the project;
- The reduction of water consumption in parks and gardens by 10-20% through a centralized watering management system, with further savings of 21 000 m<sup>3</sup> of drinking water through pilot groundwater collection measures; and
- The reduction of energy, water and waste consumption in the commercial and business sector by transferring the municipal strategy on climate change to these sectors. At least 25% of companies (387) will be certified.

# Pervasive Air-quality Sensors Network for an Environmental Friendly Urban Traffic Management

## Project background

Air pollution remains a serious cause for concern in Europe. This is a particular problem in urban areas, largely caused by traffic emissions. A recent study on air quality in cities developed by the Observatory of Sustainability in Spain (OSE) shows that living in cities with high levels of pollution reduces life expectancy by between a few months to two years, as well as increasing the risk of respiratory diseases. The air quality in Spanish cities is far from satisfactory. The design of cities is also a consideration (e.g., the width and orientation of streets), as this can have a major impact on the dispersion of pollutants, especially during the hours when traffic densities are highest. In some cities, vehicle traffic is the largest source of air pollution. Concerns about air quality have resulted in the ratification of legislation that covers more and more types of pollutants and reduces allowable emissions limits.

## Project objectives

Salamanca is a city in western Spain with a population of more than 150 000. The project's main objective is to promote the sustainable management of traffic in the city using air-quality sensors, together with prediction models. The objective will be met through the technological development and practical application of an "instrumented city" concept (a transport-related database facility used for various real-time applications) that has already been developed at a pilot level in the United Kingdom. Applying this concept, the project will help to design a new Urban Traffic Management and Control (UTMC) strategy focusing on the prevention of regular periods of high pollution from urban traffic.

The implementation of the "instrumented city" concept in Salamanca (i.e., integrating management needs of mobility and air quality into a single urban traffic management model) is required in order to reduce pollution levels to meet the limits set out by European legislation. The urban traffic management model is also necessary for the organisation of city traffic in a rational way without creating undue disruption to people's mobility. The "instrumented city" concept will enable traffic and pollution data to be collected in a cost-effective way. The aim is to produce pollution predictions in real time; to calculate the effects of various traffic regulation scenarios; and to compare their

LIFE08 ENV/E/000107  
RESCATAME



### Beneficiary:

#### Type of beneficiary

NGO-Foundation

#### Name of beneficiary

Fundación CARTIF

#### Postal Address

Parque Tecnológico de Boecillo, Parcela 205

E - 47151 Valladolid

SPAIN

Phone +34 983 546504

Fax +34 983 546521

Email dolhid@diana.cartif.es

#### Name of contact person

M. Dolores Hidalgo

### Duration of project:

36 months (01/10/2010 - 31/12/2012)

### Total budget in euro:

2,508,075.00

### EC contribution in euro with %:

1,201,537.00 (47.91%)

### Generic Theme:

Urban design – Quality of life – Transport planning

impact at pollution "hotspots" with new data collected by the same measurement instruments. This will generate a feedback loop into the regulatory system – thus helping to fine-tune the pollution results and traffic control measures taken in real time.

## Integrated Management System: an innovative strategy at the municipal level for the policy and governance of climate change

### Project background

Active policies are required in order to meet the new Kyoto Protocol targets (i.e., as of January 2009, EU countries have agreed to reduce their collective greenhouse gas (GHG) emissions by 8% from 1990 levels). In Spain, while there is overall consensus on the global need for action to combat climate change, there is less evidence yet that it has become a priority for action at a local level. This is set to change, following the creation of a Spanish 'strategy against climate change'. City councils will play a leading role in changing priorities by implementing targeted measures to mitigate and adapt to climate change locally, and by raising awareness among citizens of the need for concerted action.

### Project objectives

The project's overall aim is to help comply with the Kyoto Protocol targets by easing the management of all related climate change policies at a local level. Specifically, the project team will design and implement a provincial strategy for climate change. A control centre for climate change will be created. The centre will be responsible for capacity-building among relevant technicians and decision makers. It will be supported by an advisory board providing consultancy and assessment services throughout the project. A series of action plans to reduce greenhouse gases will also be implemented in four pilot municipalities, where a warning system (SAK) will be developed as a tool to control and manage the different variables that influence climate change locally. Data will be collected through fixed and mobile stations analysing air quality (including CO<sub>2</sub> emissions). In parallel, public meetings, workshops and various awareness-raising activities will be organised. The project results will be disseminated to relevant organisations and administrators.

LIFE08 ENV/E/000109  
ALICCIA



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Diputación Provincial de Sevilla

#### Postal Address

Menéndez Pelayo, 32

E - 41071 Sevilla

SPAIN

Phone +34 954 552446

Fax +34 954 550611

Email [esperanzasierarruiz@dipusevilla.es](mailto:esperanzasierarruiz@dipusevilla.es)

#### Name of contact person

Agustín Cosano Prieto

### Duration of project:

36 months (01/01/2010 - 31/12/2012)

### Total budget in euro:

2,325,160.00

### EC contribution in euro with %:

1,021,080.00 (43.91%)

### Generic Theme:

Reduction of emission of greenhouse gases

# Cuenca Municipal Action Plan for Sustainable Environmental Acoustics

## Project background

Spanish cities are known for their noise levels. In fact, Spain is recognised as one of the “noisiest countries in Europe”. According to World Health Organization (WHO) statistics (2008) Spain has the highest level of noise pollution after Japan. This, however, is set to change as concepts such as noise pollution are making their way into society. The EU's Environmental Noise Directive (2002/49/EC) addresses this issue. However, the directive's requirement for Member States to draw up “strategic noise maps” for agglomerations, only applies to those with more than 250 000 inhabitants. Cuenca, a town with a population of 54 600 in the autonomous community of Castilla-La Mancha in central Spain, is not covered by this legislation.

## Project objectives

The problem of noise in Cuenca (the project location) is no different to that suffered by other, larger cities in Spain. Thus, the project's main objectives are:

- to draw up a strategic noise map for its citizens;
- to provide an analysis of the acoustic quality; and
- to implement a plan of action for tackling the problem of noise pollution in line with the requirements for larger cities as identified by the EU's noise pollution directive.

In order to meet the above objectives, all departments of the city council will use 'LOCALGIS' (a land information software tool). LOCALGIS will be linked to the city's noise map, which will enable the municipal units to adopt noise management plans. The project team will organise special courses to teach council staff how to use the new software and to complete the noise pollution questionnaire. LOCALGIS will also be used to monitor noise complaints, the results of which will be quantified. The project results will be widely disseminated to ensure that other European citizens, corporations and municipalities can benefit from the advantages, technology, innovation and results of the project. In particular, the project will provide a point of reference on the issue for other European municipalities of similar size and characteristics.

LIFE08 ENV/E/000110  
P.A.A.S.A. CUENCA



## Beneficiary:

### Type of beneficiary

Local authority

### Name of beneficiary

Ayuntamiento de Cuenca

### Postal Address

Plaza Mayor

E – 16001 Cuenca

SPAIN

Phone +34 969 241303

Fax +34 969 232722

Email jrpulido@cuenca.es

### Name of contact person

José Ramón Pulido Morillo

## Duration of project:

24 months (01/01/2010 - 31/12/2011)

## Total budget in euro:

566,387.00

## EC contribution in euro with %:

265,193.00 (46.82%)

## Generic Theme:

Air quality management and noise abatement

# Integrated Pilot Plant for complete energy recovery of different municipal and livestock waste materials and by-products

## Project background

Waste management and treatment of organic by-products and waste (such as pig manure, wastewater, waste from abattoirs, gardening/ pruning and other municipal by-products) is becoming an environmental, social and political priority in many countries and is increasingly problematic because of the high volumes of production and low re-use/recovery rates. In many areas this waste is still disposed of without any pre-treatment, causing significant negative environmental impacts on soil and water sources, as well as high management costs. Although notable improvements have been carried out in this area in recent decades, there are still many opportunities for more efficient and more integrated management of this waste by increasing its re-use and by producing economically valuable goods or energy.

## Project objectives

The project will implement innovative technologies/ methods for the treatment of waste materials and by-products generated by municipalities and livestock activities.

Specifically the project will:

- Test/evaluate different combinations of waste materials used for biomethanation (municipal waste materials and by-product and livestock waste) at a pilot plant - biogas production, methane content and energy values will be assessed;
- Examine the physical and chemical properties of the "digestates" generated by the biomethanation process to find the optimum process from an environmental and health point of view;
- Determine the best possible process for generating energy from the digestates, by assessing a pellet-making process to optimise heat production;
- Seek the best uses for the final residues (ashes), from an agronomic and/or industrial point of view;
- Produce a study of costs and economic benefits of energy recovery, focusing on different scales and applicability in Europe;
- Disseminate and transfer the project experience and knowledge.

LIFE08 ENV/E/000113  
METABIORESOR



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Instituto Murciano de Investigación y Desarrollo Agrario y Alimentario

### Postal Address

Calle Mayor, s/n  
E - 30150 La Alberca (Murcia)  
SPAIN  
Phone +34 968 366799  
Fax +34 968 366792  
Email [juanb.lobera@carm.es](mailto:juanb.lobera@carm.es)

### Name of contact person

Juan Bautista Lobera Lössel

## Duration of project:

48 months (01/01/2010 - 31/12/2013)

## Total budget in euro:

2,645,308.00

## EC contribution in euro with %:

1,231,913.00 (46.57%)

## Generic Theme:

Municipal waste (including household and commercial)

## Expected results include:

- Reduction in waste quantities of almost 99% – i.e., from 36.4 tonnes of initial waste, an estimated 403 kg/yr of ashes will be produced (and this final residue could have an agricultural or industrial use);
- A 30% reduction in water requirements;
- Reductions in CO<sub>2</sub> emissions;
- A alternative sources of income for local councils and other stakeholders such as farmers.

# Project for Optimisation of Water and Emissions Reduction

## Project background

The European IRENA programme, co-ordinated by the European Environment Agency, identifies the agriculture sector as having the highest water consumption (50%) in Southern European countries. Spain has the biggest irrigation area in the EU and 68% of available water is consumed by the agricultural sector. The high energy required to move water for irrigation is an additional environmental problem. According to the National Irrigation Plan, electricity use for primary agriculture and irrigation in Spain increased by 759 GWh between 1995 and 2008. The LIFE OPTIMIZAGUA project ("<http://www.life-optimizagua.org>") has already looked at to how to save irrigation water by introducing PLCs, programmable devices and working logics that have allowed the validation of a model for water conservation and an effective transfer of information to other sectors and territories. This project seeks to build on the work of the LIFE OPTIMIZAGUA project, which was mainly concerned with efficient water management, by taking into account the energy used when moving water as well as the "water-energy binomial".

## Project objectives

The POWER project aims to implement additional monitoring devices to improve the hydric/water savings demonstrated by OPTIMIZAGUA. It will achieve this by applying leak detectors with probes at various soil depths as well as by using new methods to calculate hydric needs according to phenological cycles and real climate conditions. The project will also demonstrate and quantify the potential energy savings derived from the use of efficient water management models and the use of renewable energy-based devices applied to water pumping systems.

Other specific objectives of the project are:

- To reduce greenhouse gas emissions derived from energy used in moving water;
- To design and measure models with a high rate of transfer potential for irrigation by combining efficient water management principles and technologies and by using renewable energy;
- To implement and validate two models of "good water governance" that will enable the use of oil-based fuels and electric energy;

LIFE08 ENV/E/000114  
POWER



### Beneficiary:

#### Type of beneficiary

NGO-Foundation

#### Name of beneficiary

Fundación San Valero

#### Postal Address

C/Violeta Parra, 9  
E - 50015 Zaragoza  
SPAIN  
Phone +34 976 466599  
Fax +34 976 466590  
Email [nzubalez@svalero.es](mailto:nzubalez@svalero.es)

#### Name of contact person

María Nieves Zubalez Marco

### Duration of project:

36 months (01/01/2010 - 31/12/2012)

### Total budget in euro:

1,421,327.00

### EC contribution in euro with %:

651,213.00 (45.82%)

### Generic Theme:

Water supply – Water quality – Ground water protection

- To map 100 strategic locations with a high transfer potential within the European Union; and
- To promote adherence to models of "good water governance", based on the results of the project, through the use of environment authority networks, in 10 irrigation communities, 10 regions and 10 European cities (as specific measure included in Local Agenda 21).

# Enhancement of Soil Aquifer Treatment to Improve the Quality of Recharge Water in the Llobregat River Delta Aquifer

## Project background

According to climate change predictions, Spain faces increased water shortages, pollution and loss of water-dependent ecosystems in the near future. The Llobregat river delta aquifers - at the south-western corner of the Barcelona metropolitan area - are an important component of the system of local water resources, supplying water to the city. Overexploited in the past, they face serious ecological problems: the river undergoes severe droughts in the summertime, riparian (river bank) vegetation has disappeared, and seawater intrusion in freshwater aquifers is constant. Solutions to water stress problems are urgently needed. Yet these solutions must be sustainable, economical and safe. Managed aquifer recharge (MAR) is increasingly receiving attention, because it offers the following benefits: (1) storage capacity to buffer seasonal variations of water supply and demand; (2) protection of coastal aquifers from saltwater intrusion; (3) mitigation of the depletion of groundwater levels; and (4) additional natural treatment when low quality water is recharged.

## Project objectives

The project's overall aim is to demonstrate the application of a well-established technologies for aquifer remediation, such as the use of reactive barriers to enhance the degradation of recalcitrant compounds, but in an innovative way: for 'soil aquifer treatment (SAT)' during aquifer recharge episodes with reclaimed water, or low quality river water. Specifically, the project aims to:

- Improve the quality of groundwater at the Sant Vicenç dels Horts aquifer recharge site;
- Develop a modelling tool for the prediction at the field scale of the impact of an organic substrate in terms of hydraulics and geochemistry during infiltration;
- Adapt and transfer results (hydrogeochemical model and methodology for the selection, implementation and validation of the technology) to other aquifer recharge sites in Europe.

LIFE08 ENV/E/000117  
ENSAT



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

CETaqua - Centro Tecnológico del Agua

### Postal Address

Avinguda Diagonal, 211

E - 08018 Barcelona

SPAIN

Phone +34 933 414789

Fax +34 933 414751

Email [jguimera@cetaqua.com](mailto:jguimera@cetaqua.com)

### Name of contact person

Jordi Guimera

## Duration of project:

24 months (01/01/2010 - 31/12/2011)

## Total budget in euro:

1,240,358.00

## EC contribution in euro with %:

597,372.00 (48.16%)

## Generic Theme:

Water supply – Water quality – Ground water protection

# Hydrogen and oxygen production via electrolysis powered by renewable energies to reduce environmental footprint of a WWTP

## Project background

Wastewater treatment plants (WWTP) often rely on carbon-based fuels to power the aeration systems involved in purifying the water. Opportunities have been identified to improve the effectiveness and efficiency of both these processes (water purification and WWTP power supply).

## Project objectives

The project will build a pilot WWTP plant to demonstrate a new technology that involves separating water into hydrogen and oxygen using electrolysis. The full-scale pilot plant will consist of: wastewater pre-treatment; water purification; an electrolysis unit; oxygen storage; hydrogen storage; a pilot biological reactor fed with oxygen from the electrolysis stage; a photovoltaic, wind and thermal solar energy system and an energy management system. Oxygen released from the water during electrolysis will be pressurised and used to purify the waste stream. Hydrogen produced by the electrolysis will be collected and used to power the treatment plant. Key goals involve reducing WWTP energy inputs and identifying a viable alternative to carbon-fuelled WWTP systems. Benefits from the project will include reduced greenhouse gases from WWTPs and the technology's environmental footprint will be further reduced by using solar and wind power during its development phases. Additional environmental gains will be achieved by sourcing water for the electrolysis from the WWTP outflows and thus the technology will operate on the basis of a closed loop approach to reduce water consumption. De-ionised water necessary for the electrolysis process will be obtained via reverse osmosis from the outflow and will be cleaned prior to electrolysis. Findings from the applied research project will define operational parameters and guidelines for the technology.

LIFE08 ENV/E/000118  
GREENLYSIS



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

CETaqua - Centro Tecnológico del Agua

### Postal Address

Avinguda Diagonal, 211

E - 08018 Barcelona

SPAIN

Phone +34 933 414789

Fax +34 933 414751

Email elarrotcha@agbar.es

### Name of contact person

Enric Larrotcha

## Duration of project:

36 months (01/01/2010 - 31/12/2012)

## Total budget in euro:

1,594,833.00

## EC contribution in euro with %:

797,416.00 (50.00%)

## Generic Theme:

Waste water treatment

# Integral networking of fishing actors to organize a responsible optimal and sustainable exploitation of marine resources

## Project background

The EU is prioritising a reduction in the amount of discarded fish and by-catch that is thrown overboard as waste by Europe's fishing industry. Current discard practices cause environmental and economic impacts. A progressive reduction is being encouraged with the aim of ensuring that all fish and crustaceans caught are brought back to port. New systems will be required to make best use of the full catch and some recycling/valorisation techniques have already been explored, such as the production of protein and oil.

## Project objectives

The project seeks to develop and implement an efficient network for managing discards and by-catch. The network will integrate key stakeholders from Spain's fishing industry (fleets, ports, auctions, industries, etc.) with the core objectives of:

- Maximising the amount of discards/by-catch that reach port; and
- Using the discards/by-catch to produce chemicals of interest for the food and pharmaceuticals industries.

This work will build on results from a previous LIFE project.

In keeping with this objective, several goals will be pursued:

- Reduce unwanted by-catch by better understanding fish behaviour;
- Analyse target fisheries in order to understand their spatial-temporal behaviour, which could be used as a basis to forecast their catch supply during the year;
- Develop a complete characterisation of discards on the selected fisheries (based on proposed automated classification, analysis and data collection tools); and
- Conduct studies to clarify valorisation opportunities for different types of marine species that are currently treated as waste by the Spanish fisheries sector.

Expected results:

- A reduction in the amount of discards/by-catch brought about by improving knowledge about fish behaviour and identifying options to help the

LIFE08 ENV/E/000119  
FAROS



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Consejo Superior de Investigaciones Científicas

### Postal Address

Serrano, 117

E - 28006 Madrid

SPAIN

Phone +34 986 231930

Fax +34 986 292762

Email antonio@iim.csic.es

### Name of contact person

Antonio Álvarez Alonso

## Duration of project:

36 months (15/01/2010 - 14/01/2013)

## Total budget in euro:

2,182,906.00

## EC contribution in euro with %:

1,063,357.00 (48.71%)

## Generic Theme:

Other area – Impact of economic activities

- fisheries sector better target its catches;
- Adoption of a spatial and temporal map based on a GIS model for analysing the activity of the selected fleets (considering species distribution), giving fishermen the opportunity to avoid areas where fish are abundant and thus reduce the risk of unwanted by-catch. The GIS model will also indicate to fisherman catches that are more ecological and that will involve less fuel consumption;
- Development and implementation of new on-board technologies for real time data capture and ship-to-shore (and vice versa) data transmitting equipment.

# Renewable energy production park in the landfills of Huesca

## Project background

Spain's National Allocation Plan for Emissions Allowances covers the period from 2008 to 2012 and includes an emphasis on efforts to reduce climate change impacts by improving energy saving and energy efficiency measures. Contributions to the national targets can be achieved by harnessing methane (CH<sub>4</sub>) produced by landfills as an alternative energy supply.

## Project objectives

The ultimate aim of this project is to make the Huesca solid urban waste landfill facility energy self-sufficient. This goal will be achieved by introducing new technology to capture and convert the methane produced within the municipal landfill into power for the landfill's operations (administration, dumping, classification and compacting plant, etc.). Additional alternative energy sources (wind and solar) will be adopted and further environmental gains will be secured by replanting closed landfill sections with trees. The works will act as a demonstration project for other local authorities and lessons learned will be widely disseminated. The energy efficiency efforts will also be used to raise awareness among the general public about tangible options for tackling climate change concerns, and the project results are expected to provide useful environmental education information resources.

### Expected results:

- A Biogas plant: generating at least 500 KW of nominal power;
- A solar plant: generating at least 100 KW of nominal power;
- A wind installation: generating at least 100 KW of nominal power;
- New vegetation covering some 10 ha; and
- An average of 200 people per month at the Visitor Centre.

LIFE08 ENV/E/000123  
PARK RENOVA



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

Ayuntamiento de Huesca

#### Postal Address

Plaza de la Catedral, 1

E - 22002 Huesca

SPAIN

Phone +34 974 292100

Fax +34 974 292179

Email [gsanroman@huesca.es](mailto:gsanroman@huesca.es)

#### Name of contact person

German Sanroman

### Duration of project:

42 months (01/01/2010 – 30/06/2013)

### Total budget in euro:

2,690,940.00

### EC contribution in euro with %:

569,842.00 (21.18%)

### Generic Theme:

Municipal waste (including household and commercial)

# Ecopublishing, sustainable management of publications in the public administration

## Project background

The environmental impacts of publications cover their entire lifecycle, from pre- to post-production. From the first moment when raw materials are extracted to when product waste is managed and removed, a product passes through different stages: design, production, packaging and distribution. At each stage resources are consumed (water, energy, materials), and there are discharges, emissions and waste contaminants that can enter water, air and soil.

## Project objectives

The project will promote sustainable management in the Junta de Andalucía's public administration editorial services. It will also promote the inclusion of sustainability requirements in the publishing market; increase efficiency in the management of financial and material resources by adjusting the number of publications to actual needs; and play an exemplary role for citizens to increase demand for publications that are produced sustainably. Other objectives are:

- Diagnosis and assessment of the Junta de Andalucía's editorial production and distribution;
- Definition of environmental requirements applicable to publications, and drafting of an ecopublishing manual; and
- Creation of an on-line, interactive, educational, and informative ecopublishing tool for management of accessions to this project and environmental certificates.

Expected results:

- Reduction in the consumption of raw material by reusing or using recycled materials;
- Promotion of the use of raw materials with environmental or sustainable forestry certification;
- Reduction in waste volumes and more recycling;
- Extension of the useful lives of publications, thus reducing raw material and energy consumption, while maximising return on investment;
- Reduction in water and energy consumption;
- Reduction in stocks without affecting profitability;
- Promotion of the use of new media, where possible, to reduce paper consumption;
- Establishment of an ecodesign standard for publications;
- Promotion of sustainable environmental manage-

LIFE08 ENV/E/000124  
LIFE+Ecoedición



## Beneficiary:

### Type of beneficiary

Regional authority

### Name of beneficiary

Consejería de Medio Ambiente de la Junta de Andalucía

### Postal Address

Avda Manuel Siurot, 50

E - 41071 Sevilla

SPAIN

Phone +34 955 003430

Fax +34 955 003777

Email maria.briones@juntadeandalucia.es

### Name of contact person

Esperanza Reyes Perea Acosta

## Duration of project:

42 months (01/01/2010 – 30/06/2013)

## Total budget in euro:

1,405,808.00

## EC contribution in euro with %:

702,904.00 (50.00%)

## Generic Theme:

Eco-labelling – Eco-market – Consumer awareness – Green public procurement

ment in the publishing industry, and by printing and publishing services within public administrations;

- Creation of a sustainability model transferable to other public administrations.

# Sustainable system implementation for natural stone production and use

## Project background

Natural stone production has many related environmental problems, including very low energy efficiency and productivity, generation of huge amounts of waste and non-optimised use of natural resources. The impact and significance of these problems become apparent when one considers that to produce 190 m<sup>2</sup> (seven tonnes) of stone tiles, corresponding to the average floor area of a modern house, it is necessary to quarry 100 tonnes of natural stone. Overall production efficiency, therefore, is only 7%. The main reasons for this are:

- The high proportion of blocks and slabs that are unsuitable or destroyed during saving and cutting, because of internal defects, fractures and cracks;
- The low speed of drilling and cutting equipment, meaning that final stone product production is a long process with high energy consumption; and
- Loss of useful stone during cutting, because of the increased thickness of the cutting tools.

## Project objectives

The project will implement a sustainable system for production and use of natural stone, by using the best available techniques and products. The project is focused on three areas: optimisation of use of natural resources and raw materials; optimisation of energy consumption in the production chain; and use of new multifunctional natural stone-based materials, with energy and environmental efficiency in architectural use.

The project will introduce environmentally friendly organic and inorganic consolidating materials and develop automated impregnation techniques to reinforce natural stone. This will prevent breakage during processing thus cutting the amount of by-products. It will also use a water-based resin during treatment, rather than products with volatile organic content. A fast and low-dust drilling system, and a fast cutting system, will optimise productivity in the production chain and reduce the amount of residues generated during stone production. This will also lead to lower energy consumption during cutting, and an increase in the yield production of natural stone.

By introducing new technologies and processes, the project will also show how new multifunctional pro-

LIFE08 ENV/E/000126  
ECO-STONE



### Beneficiary:

#### Type of beneficiary

Professional organisation

#### Name of beneficiary

Asociación de Investigación de Industrias de la Construcción

#### Postal Address

Av. Benjamín Franklin 17  
E - 46980 Paterna (Valencia)  
SPAIN  
Phone +34 961 318278  
Fax +34 961 318033  
Email margarita.lecha@aidico.es

#### Name of contact person

Margarita Lecha Taitot

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,670,169.00

### EC contribution in euro with %:

835,082.00 (50.00%)

### Generic Theme:

Clean technologies

ducts can be obtained from natural stone. These will be stone products with high added value, because they will have energy-storage and self-cleaning properties, and will be durable. Self-cleaning natural stone is more resistant to graffiti, dust, air pollution and bacteria. Stone with energy-storage capacity will reduce the need to use heating and cooling systems in buildings and thus energy demands.

# Sustainable agriculture in Carbon arithmetics

## Project background

Emissions of atmospheric greenhouse gas concentrations from agriculture account for 10% of the GHGs at a global level. Carbon dioxide (CO<sub>2</sub>) emissions in farming come mainly from ploughing, which causes soil carbon loss. Conservation Agriculture (CA) can play a significant role here, as a provider of carbon sinks to counteract emissions. Precision Agriculture (PA) can also help mitigate the negative impacts of climate change by determining optimum use of work, fertilisation and inputs for specific areas. These sustainable agricultural techniques however, are still very much in the minority in Spain because of lack of knowledge among farmers.

## Project objectives

This project aims to encourage the progressive establishment of sustainable agricultural techniques (CA and PA) – contributing to GHGs emission decreases and the adaptation of farming techniques – to new climatic conditions resulting from global warming. Also, the project aims to provide European and national authorities with the necessary knowledge and information of these techniques to encourage the adoption of environment policies in this area. Project actions will be carried out on three pilot farms, to gather data to support the techniques and to act as demonstration sites. The research will assess CO<sub>2</sub> emissions and energy consumption on farms based on: climatic characteristics, type of crops, and type of farming. In parallel, actions to promote and disseminate the CA and PA techniques will be carried out.

### Expected results:

- The sink effect of CA will enable fixation of an additional 0.60-1.50 tonnes/yr of CO<sub>2</sub>/ha on farms using sustainable agricultural techniques and an improvement in soil quality (quantified by an increase in organic matter percentage and its humidity);
- The reduction in energy consumption with CA will lead to a 20% reduction in CO<sub>2</sub> emissions;
- New legislation for measures supporting the implementation of CA and PA techniques and their inclusion in the Spanish Survey of Surfaces and Crop Yields (ESYRCE); and
- Transfer of knowledge and technologies to local farmers (targeting some 300 000 individual farmers and more than 700 agricultural co-operatives).

LIFE08 ENV/E/000129  
LIFE+AGRICARBON



### Beneficiary:

#### Type of beneficiary

Professional association

#### Name of beneficiary

Asociación Española Agricultura de Conservación / Suelos Vivos

#### Postal Address

CIFA Alameda del Obispo  
Avda Menéndez Pidal, s/n  
E - 14004 Córdoba  
SPAIN

Phone +34 957 422099

Fax +34 957 422168

Email egonzalez@aeac-sv.org

#### Name of contact person

Emilio Jesús González Sánchez

### Duration of project:

48 months (01/01/2010 – 31/12/2013)

### Total budget in euro:

2,674,653.00

### EC contribution in euro with %:

1,237,262.00 (46.26%)

### Generic Theme:

Reduction of emission of greenhouse gases

# Development and operation of an integrated model for managing Industrial Waste in the Zona Franca Industrial Estate, Barcelona

## Project background

The current waste collection system used by the industrial sector requires that a business producing waste must deal directly with a business that manages waste. To ensure that the waste is correctly managed, this system requires that the waste producer is aware of the relevant regulatory framework and the correct ways to separate and manage waste. They must also be aware of the issues involved and be resolute in looking for better ways to separate and manage waste. Even so, how the waste is managed will depend on the quantity produced, the frequency of collection, the business's waste storage capacity, and, above all, the costs incurred in collection, transportation and management.

A clear example of the type of problem that can arise is often encountered in the management of small quantities of hazardous waste or of separable general waste. These are frequently generated in small quantities or have to be removed within six months (in the case of hazardous waste), making it very difficult for the organisations that generate them to optimise the management of such wastes. Two of the main difficulties faced are the need to generate minimum quantities of waste, so that waste managers will agree to collect it, and the high costs involved, especially the collection and transportation costs. These problems mean that these types of waste are often disposed of incorrectly.

## Project objectives

This project focuses on minimising the environmental impact of waste that is inappropriately or inadequately treated. It envisages a reduction in the environmental impact associated with the following:

- Soil and subterranean water contamination from uncontrolled or improper waste disposal, especially in the case of toxic and hazardous waste;
- Landfill sites - by encouraging selective disposal and recycling;
- The impact of waste treatment - by increasing the number of tonnes used to replace raw materials in industrial processes (sub-products); and
- The volume of waste generated by companies through increased training and greater awareness.

LIFE08 ENV/E/000132  
Waste Joint Management



### Beneficiary:

#### Type of beneficiary

Public enterprise

#### Name of beneficiary

Consorci de la Zona Franca de Barcelona

#### Postal Address

Av. Parc Logístic, 2-10

E - 08040 Barcelona

SPAIN

Phone +34 932 638111

Fax +34 932 638153

Email rodrigor@el-consorci.com

#### Name of contact person

Rosa Rodrigo Sanz

### Duration of project:

36 months (02/01/2010 – 31/12/2012)

### Total budget in euro:

555,879.00

### EC contribution in euro with %:

277,940.00 (50.00%)

### Generic Theme:

Industrial waste (including manufacturing)

The project plans to encourage good practices and the use of best available techniques. The co-ordination of collection and the sourcing of local waste managers should also result in a substantial reduction in CO<sub>2</sub> emissions associated with the collection and transport of waste.

The project is targeting the following quantifiable gains:

- A 10-20% increase in the number of tonnes recycled;
- A 10-20% decrease in the number of tonnes sent to landfill;
- A 20-30% reduction in the number of lorries, kilometres and CO<sub>2</sub> emissions involved in collection and transport of waste.

# Concentrated saline rejection treatment: Environmental Technology using a non profitable solid waste as energy source

## Project background

The paper industry generates solid waste and residual effluents that have a significant impact on the environment. It is also the second biggest water consumer in Spain, representing 16.3% of total industrial water consumption. Recycling of water is difficult because of the salinity of the outgoing water effluents, which affect the quality of the paper. Technologies and tertiary treatments can remove these salts from the effluents and provide regenerated water that can be recycled into the process. Difficulties arise, however, in managing the concentrated saline effluent, which presents high costs of disposal.

## Project objectives

The project will design and construct a new closed-loop water system prototype for the paper industry, with the following objectives:

- Conversion of the residual flow (brine), into a by-product. As a recovered product, the salt could be reused in other applications such as tanneries;
- Energy production: This technology uses solid waste generated by the process as an energy source. A gas treatment system will supply energy to the equipment of the prototype, and is expected to generate 5-7 MW;
- Reduction of water consumption through reuse of water in the paper production process; and
- Demonstration of a new technology that is transferable to other industrial sectors.

LIFE08 ENV/E/000133  
RESALTTECH



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Asociación de Investigación de las Industrias del Curtido y Anexas

### Postal Address

Avda. Pla de la Massa, s/n

E - 08700 Igualada

SPAIN

Phone +34 938 055388

Fax +34 938 050618

Email jccastell@aiica.com

### Name of contact person

Joan Carles Castell

## Duration of project:

36 months (01/01/2010 – 31/12/2012)

## Total budget in euro:

2,028,302.00

## EC contribution in euro with %:

993,614.00 (48.99%)

## Generic Theme:

Clean technologies

# Finding regional environmental life cycle information on packaging waste management through flexible software tools and databases

## Project background

Some 35% of municipal waste in terms of weight is packaging waste. Since 1994, in accordance with article 7 of the EU Waste Directive (94/62/CE), every Member State is obliged to create systems for the recovery of waste packaging with the aim of addressing them to the best waste treatment options.

From an environmental perspective, raw material use, energy consumption and emissions during packaging production are quantitatively comparable to the amounts consumed and emitted during the recycling of waste packaging materials. To obtain raw materials from waste recycling, it is necessary to collect, transport, classify and finally process them, which requires the consumption of water, energy and additional materials. Thus environmental benefits of selective collection and recycling must be weighed against resource consumption and pollution.

## Project objectives

The main objective of the LIFE Environment FENIX project is to create a user-friendly and flexible tool for easily obtaining environmental lifecycle assessment (LCA) results on packaging waste management. The tool will also take into account economic and social factors and will be adaptable to different European situations. The software tool will be specially designed to assist local and regional waste managers from Spain and Portugal to look for more eco-efficient and sustainable solutions for packaging waste management.

The project also aims to:

- Show the usefulness of LCA in helping public authorities in tackling waste management issues;
- Transfer knowledge to other Spanish and Portuguese institutions in order to facilitate the establishment of an Iberian network of experts on LCA and waste management;
- Compile updated data about waste treatment and recycling technologies, and create parameterised models for each one. Data gathered within the project will be compiled in a database format compatible with the European Life Cycle Database (ELCD) and/or the International Life Cycle Database (ILCD) and available for free to LCA practitioners. These data will also be included in the new software; Take into account the real needs of users by

LIFE08 ENV/E/000135  
FENIX



### Beneficiary:

#### Type of beneficiary

University

#### Name of beneficiary

Escola Superior de Comerç Internacional

#### Postal Address

Passeig Pujades, 1  
E - 08003 Barcelona  
SPAIN  
Phone +34 932 954710  
Fax +34 932 954720  
Email Pere.fullana@admi.esci.es

#### Name of contact person

Pere Fullana

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

2,357,790.00

### EC contribution in euro with %:

1,174,395.00 (49.81%)

### Generic Theme:

Packaging and plastic waste

answering daily work questions about waste management and sustainability issues while developing the software; and

- Disseminate its results via publications and conference presentations or posters.

# Zero emissions using renewable energies and hydrogen technologies in building and sustainable mobility in Technology Parks

## Project background

Hydrogen offers a clean alternative to fossil fuels. The energy efficiency of hydrogen-based systems is 50-60% for fuel cell applications and up to 80% for co-generation systems based on fuel cells, affording considerable energy savings. Fuel cells are noiseless, they do not produce pollutant emissions (only steam) and can be designed to scale. In part, buildings can approach self-sufficiency by using renewable energies and hydrogen technologies, depending on the power installed.

The key to this new business opportunity lies in technological innovation. Fuel cells and hydrogen-related technologies can give companies a competitive advantage. Technology parks have a high potential for implementation of new sustainable technologies, training and dissemination activities because of the large number of companies that promote sustainable development.

Within the European Hydrogen and Fuel Cell Technology Platform (HFP) an Implementation Panel (IP) was established in 2006 to implement the HFP strategy for RTD and demonstrate hydrogen and fuel cell technologies. One of the four Innovation and Development Actions (IDA) of the programme is called Sustainable Hydrogen Production and Supply. The overall objective of this IDA is to develop a portfolio of sustainable hydrogen production, storage and distribution processes. A medium-term quantitative target for this programme is to supply 10–20% of the hydrogen energy demand with CO<sub>2</sub> lean or CO<sub>2</sub> free hydrogen by 2015.

## Project objectives

The aim of the project is to design a complete energy accumulation system that uses renewable hydrogen (through water electrolysis and subsequent storage of the hydrogen produced). Such a system will be installed in the beneficiary's building located in the Walqa Technology Park. Guides for implementation in other buildings will also be developed.

Other objectives include:

- The creation of hydrogen-fuelled vehicles to demonstrate sustainable mobility with zero emissions in Walqa Technology Park;

LIFE08 ENV/E/000136  
ZERO-HYTECHPARK



## Beneficiary:

### Type of beneficiary

Professional organisation

### Name of beneficiary

Fundación para el Desarrollo de Nuevas Tecnologías del Hidrógeno en Aragón

### Postal Address

Parque Tecnológico WALQA  
Ctra. Zaragoza N-330A, km 566  
E - 22197 Cuarte (Huesca)  
SPAIN  
Phone +34 974 215258  
Fax +34 974 215261  
Email director@hidrogenoaragon.org

### Name of contact person

Luis Correas

## Duration of project:

48 months (01/01/2010 – 31/12/2013)

## Total budget in euro:

1,408,110.00

## EC contribution in euro with %:

678,080.00 (48.16%)

## Generic Theme:

Reduction of emission of greenhouse gases

- The implementation of a heating system based on hydrogen cogeneration;
- The development of an optimal photovoltaic-hydrogen system; and
- The dissemination of results nationally and internationally.

# Compromise for a reduction of the environmental impact of the retail sector

## Project background

The retail sector accounts for 24.5% of all jobs in Europe. It is also responsible, however, for between 2% and 3.5% of CO<sub>2</sub> emissions. Distribution and supply generate a significant environmental impact.

The retail sector is also a significant source of waste, both direct and indirect (i.e. household waste). Some 10-15% of local waste is directly generated by the commercial sector. Plastics used in packaging, bags and bottles represent almost 40% of European consumption. Small retail companies can play an important role in achieving a more sustainable society and helping consumers make informed choices.

## Project objectives

The main objective of the LIFE 'Green Commerce' project is to provide the retail sector with information, access to knowledge and research and technology on new environmental management systems. The ultimate goal is for the 3.5 million firms in this sector to have their own methodology to enable them to voluntarily start a "green policy".

The project will develop a recognition methodology that could be managed at European level. It will also allow for new research on techniques and technologies that the sector could use to comply with EU environmental policy.

Expected results:

- The creation of a new green trademark and methodology;
- The development of new tools for environmental evaluation adapted to small retailers' needs and business size;
- 100 environmental audits to be carried out on retail companies with the implied introduction of environmental measures (i.e. energy savings, recycling of packing, responsible use of plastic bags and boxes, and water saving);
- A 20% reduction in energy consumption and trade waste;
- A 10% reduction of water consumption in the featured shops;
- Deliveries of goods to the shops to be optimised to reduce travel by 5%;

LIFE08 ENV/E/000138  
GREEN COMMERCE



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Conselleria de Industria, Comercio e Innovación

#### Postal Address

Colón, 32  
E - 46004 Valencia  
SPAIN  
Phone +34 963 869602  
Fax +34 963 869642  
Email valea\_jua@gva.es

#### Name of contact person

Juan Valea López

### Duration of project:

33 months (01/01/2010 – 30/09/2012)

### Total budget in euro:

933,113.00

### EC contribution in euro with %:

466,556.50 (50.00%)

### Generic Theme:

Ec-labelling – Eco-market – Consumer awareness – Green public procurement

- The development of two demonstration initiatives at a local level (Torrevieja and San Sebastian) and environmental awareness actions at regional level (Valencia); and
- Dissemination of project actions and results through European partners.

## Environmentally friendly oxazolidine-tanned leather

### Project background

Chrome tannage is currently the most commonly used technology for the production of tanned leathers. It is used in more than 90% of leather goods tanned worldwide. Chrome tannage involves the use of trivalent chromium, a substance that under specific conditions may oxidise to hexavalent chromium, a proven carcinogenic compound. The main environmental impacts from tanneries come from solid waste and wastewater. In a European tannery, in order to obtain one tonne of leather some 50 m<sup>3</sup> of wastewater and 700 kg of various solid wastes (both polluted with chromium) are produced. Studies carried out by INESCOP have demonstrated that using an oxazolidine tanning agent combined with other vegetable or synthetic agents is a viable alternative to chrome tannage.

### Project objectives

The main objective of the project is to demonstrate, promote and disseminate the innovative oxazolidine (chrome-free) tanning technology, as well as the tanning procedures associated with the use of this new technology. The project aims to:

- Promote the use of environmentally friendly leathers in the footwear and upholstery industries;
- Improve the environmental impact of the tanning, footwear and upholstery industries;
- Reduce the environmental impact of leathers at the end of their useful life;
- Help the footwear and upholstery sectors to meet compulsory and voluntary environmental requirements, as regards the content of substances that are harmful to health and the environment.

Expected results:

- Demonstration of the technical-financial feasibility of chrome-free leather tannage using oxazolidine;
- Wide dissemination of the chrome-free technique in the tanning industry (mainly in Italy and Spain, where 95% of EU tanneries are located);
- Wide dissemination of oxazolidine-tanned leathers in the European footwear and upholstery industries;
- Enhanced fulfilment of compulsory and voluntary environmental requirements applicable to footwear and upholstery, as regards the content of chrome-free substances.

LIFE08 ENV/E/000140  
OXATAN



### Beneficiary:

#### Type of beneficiary

Professional association

#### Name of beneficiary

Asociación de Investigación para la Industria del Calzado (INESCOP)

#### Postal Address

Polígono Industrial Campo Alto  
E - 03600 Elda  
SPAIN  
Phone +34 965 395213  
Fax +34 965 381045  
Email [jferrer@inescop.es](mailto:jferrer@inescop.es)

#### Name of contact person

Joaquín Ferrer Palacios

### Duration of project:

30 months (01/01/2010 – 30/06/2012)

### Total budget in euro:

690,431.00

### EC contribution in euro with %:

345,215.00 (50.00%)

### Generic Theme:

Clean technologies

# Integrated waste management and life cycle assessment in the wine industry: From waste to high-value products

## Project background

Spain is one of the most important EU countries for winemaking, in terms of area cultivated, the quantity of wine produced and the economic significance of the sector.

In spite of significant efforts over the past decade, the environmental impact of the overall wine production process is still notable and further work towards greater sustainability of the entire wine sector is necessary. While waste management systems have improved, there is still a need to do more in the treatment and disposal of the waste produced during the winemaking process at all levels (farmers, wineries, waste managers, etc.). Reuse and recycling of residues and other by-products into valuable goods is gaining greater interest.

## Project objectives

The overall purpose of the project is to reduce the environmental impact of the wine sector, integrating waste management and lifecycle assessment tools into the wine industry.

The project aims to:

- Encourage the supply and demand of greener goods, promoting products with reduced environmental impacts and providing consumers with accurate and scientifically-based information;
- Promote the recovery and recycling of winery wastes, and encourage the rational and sustainable use of natural resources through the lifecycle approach;
- Identify the best by-products that can be obtained from wine waste based on their added value and their technical feasibility by carrying out tests in a pilot plant;
- Identify technologies and best available techniques in the winemaking sector, and propose solutions for overcoming barriers;
- Provide valuable scientific information to Castilla y León's local government on the environmental impact of the wine sector, in order to establish action plans and future implementation programmes;
- Create a certification scheme to help consumers make more environmentally friendly choices;
- Facilitate the application and monitoring of the environmental legislation within a local and regional framework;

LIFE08 ENV/E/000143  
HAproWINE



## Beneficiary:

### Type of beneficiary

NGO-Foundation

### Name of beneficiary

Fundación Patrimonio Natural de Castilla y León

### Postal Address

c/ Juan II de Castilla nº 4 - bajo

E - 47014 Valladolid

SPAIN

Phone +34 983 345850

Fax +34 983 345844

Email [jesus@patrimonionatural.org](mailto:jesus@patrimonionatural.org)

### Name of contact person

Jesús Ángel Díez Vásquez

## Duration of project:

48 months (01/01/2010 – 31/12/2013)

## Total budget in euro:

1,508,636.00

## EC contribution in euro with %:

660,611.00 (43.79%)

## Generic Theme:

Integrated environmental management

- Establish a general framework for developing future legislation concerning the wine sector for Castilla y León.

The main expected results are the transfer of knowledge on the environmental impacts associated with the wine lifecycle to prevent waste generation and promote recycling and recovery. The project will benefit all the wine lifecycle stakeholders.

# Promotion of Environmental Legislation among European Footwear Industries

## Project background

Many small and medium-sized companies in Europe operate within a business culture that does not consider the environment as a strategic variable for their medium- and long-term development. Incorporating environmental factors into these industries invariably arises as a result of pressure from relevant authorities. There is also a general perception that environmental legislation is not well applied in the footwear sector.

Within this context, it is not feasible to assume that there will be sudden compliance with environmental legislation in the production process.

Medium-term modification of the prevailing culture requires dynamic action. The application of different awareness strategies and of initiatives to facilitate compliance and to make businesses aware of the consequences of non-compliance with environmental legislation are also necessary.

## Project objectives

The SHOELAW project's main objective is to develop an e-platform for environmental self-diagnosis aimed at footwear companies in five European countries: Spain, Italy, Portugal, Greece and Slovenia. These countries jointly represent 90% of European footwear industries. The e-platform will eventually be extended to other EU countries.

The creation of the above-mentioned e-platform will involve the achievement of the following objectives:

1. Promoting compliance with environmental legislation among European footwear companies;
2. Improving the environmental standards of European footwear companies; and
3. Disseminating the use of the e-platform among European footwear companies.

Expected results:

- Widespread use of the self-diagnosis e-platform among European footwear companies;
- Effective implementation of the self-diagnosis e-platform in 50 footwear companies in five EU Member States;
- Promotion of compliance with environmental legislation among European footwear companies;

LIFE08 ENV/E/000147  
SHOELAW



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Asociación de Investigación para la Industria del Calzado (INESCOP)

### Postal Address

Polígono Industrial Campo Alto  
E - 03600 Elda  
SPAIN  
Phone +34 965 395213  
Fax +34 965 381045  
Email jferrer@inescop.es

### Name of contact person

Joaquín Ferrer Palacios

## Duration of project:

30 months (01/01/2010 – 30/06/2012)

## Total budget in euro:

874,010.00

## EC contribution in euro with %:

437,005.00 (50.00%)

## Generic Theme:

Integrated environmental management

- Improvement of environmental standards in European footwear companies;
- Reduction of the environmental impact of European footwear companies; and
- Improved availability of information on environmental legislation specific to other EU countries as an instrument to facilitate intra-community exports of footwear articles.

# Integral management model of cathode rays glass: closing the circle of recovery, recycling and reuse of WEEE'S

## Project background

The increase in the use of electrical and electronic equipment (EEE) all over the world has occurred without the development of safe disposal strategies. These products are characterised by fast technological changes (e.g. from cathode ray tube - CRT - technology to LCD or plasma) which means they often have a short lifespan and therefore present a significant challenge in terms of waste disposal. According to the Spanish Institute of Statistics, 99% of Spanish households have television sets and 54% own a computer, representing 10 000 tonnes/yr of waste in Spain alone. The number of televisions and computer monitors being discarded is likely to increase at both national and European level because of the so-called 'analogue switch-off', which is the cessation of analogue radio and television broadcasting. This switch-off will involve the withdrawal of televisions with CRT technology, which cannot incorporate digital technology. In the case of CRT glass, which includes contaminants such as lead, barium and phosphorus, it has no real alternative use and, therefore, must be safely stored or landfilled. The Directive on Waste Electrical and Electronic Equipment (WEEE), aims to promote recycling, reuse and recovery of waste generated when EEE is obsolete and /or beyond use, in order to reduce pollution. In line with the "polluter pays" principle, the producers are responsible for associated waste management costs.

## Project objectives

The main objective of the project is to demonstrate the possibility of applying a new integrated management model for CRT televisions and computer monitors that enables their reuse as raw material for the development of new products.

Specific objectives include:

- Providing support for municipalities involved in WEEE management;
- Recovering waste to avoid landfill use;
- Studying the various initiatives undertaken in Europe for the management of CRT glass;
- Developing a new technology for the characterisation of glass allowing its subsequent recycling;
- Exchanging good practices on the environmental management of WEEE in the EU;
- Promoting employment in the municipalities

LIFE08 ENV/E/000148  
ECO-VITRUM-TRC



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

Diputación Provincial de Valencia

#### Postal Address

Avda Peset Aleixandre 63

E - 46009 Valencia

SPAIN

Phone +34 963 883974

Fax +34 963 883076

Email javier.ferrer@dival.es

#### Name of contact person

Ernesto Sanjuán Martínez

### Duration of project:

36 months (01/01/2010 – 30/12/2012)

### Total budget in euro:

2,397,711.00

### EC contribution in euro with %:

1,136,139.00 (47.38%)

### Generic Theme:

Waste from Electrical and Electronic Equipment (WEEE)

through the establishment of control services in the ecoparks in Valencia; and

- Implementing a public awareness campaign to improve environmental performance and facilitate the recycling of televisions and computer monitors at the end of their life.

# Management, recycling and recovery of wastes of recreational boat scrapping

## Project background

In Mediterranean countries, leisure sailing has been a strong growth sector in recent years, with 11 667 new boats registered in Spain in 2007 (2 432 in Catalonia), adding to the 43 774 boats already registered there. These boats can have an important environmental impact at the end of their operational lifetime. Abandoning old boats in fields and forests, or sinking them in ports is common practice in certain parts of the Mediterranean. This practice gives rise to two environmental issues: (1) the risk of pollution if boats are not properly decontaminated; and (2) the inappropriate management and recycling of waste.

## Project objectives

The main objective of the project is to reduce the impact of the boat industry on the environment through the development of ways to treat boats as waste, both at management and waste recovery level. Sustainable production of boats based on an LCA approach and eco-design will be tested and promoted.

Specific objectives include:

- To collect, select and manage all the different waste material resulting from the scrapping process of the three most common-type of recreational boats: an inflatable dinghy, a sailing boat and a yacht;
- To develop a system for recycling and exploiting four of the most relevant residues from boat scrapping: fibreglass, neoprene, wood and PVC;
- To implement best practices in the recycling and exploitation of the four waste materials through demonstrative pilot initiatives;
- To develop a comprehensive guide for sustainable production and eco-design of both fibreglass/wood and neoprene/PVC inflatable boats;
- To develop policy and technical recommendations for waste management and revalorisation of end-of-life boats;
- To disseminate and raise awareness among all actors in the lifecycle of boats, starting from eco-design and sustainable production, through to use and waste management.

Expected results:

- Separation and collection of 80% of the compounds resulting from the scrapping of sailing boats, inflatable boats and yachts;

LIFE08 ENV/E/000158  
BOATCYCLE



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

Acondicionamiento Terrasense

#### Postal Address

Passeig 22 de Júliol 218  
E - 08221 Terrassa (Barcelona)  
SPAIN  
Phone +34 937 892300  
Fax +34 937 891906  
Email cavolio@leitat.org

#### Name of contact person

Avolio Ciro

### Duration of project:

36 months (01/01/2010 – 01/01/2013)

### Total budget in euro:

925,458.00

### EC contribution in euro with %:

358,601.00 (38.75%)

### Generic Theme:

Waste management

- Management of 100% of the waste obtained during the scrapping process;
- Treatment of 40% of the collected waste through recycling or recovery;
- Establishment and testing of at least two eco-efficient recycling technologies at lab level for U-PVC and flexible PVC;
- Demonstration of 20 valorised PVC waste prototype panels and of 20 prototype sheets;
- Scaling-up of the pilot plant of the most efficient recycling technology for fibreglass/wood/neoprene/PVC; and
- Eco-design study for the sustainable production of boats (three real lifecycle assessments, as well as in-market product assessment reports).

# Ice jet environmental technology pilot plant for drastically reducing waste produced by abrasive water jet cutting techniques

## Project background

The Abrasive Water Jetting (AWJ) process produces wastewater composed of a mixture of residue from the materials that are being cut and the abrasive material used for cutting. The quantity of abrasive material produced in the waste is high in comparison with the quantity of residue but, while the abrasive material is non-toxic, the residue can be hazardous. Some WJ cutting machine manufacturers have carried out trials for recycling and re-using the abrasive material but, because of the complicated process for managing the waste produced, waste management costs are very high. Ice Jet technology uses ice particles made from running water or freshwater to cut material. When the ice particles cut the material they melt and go into the water tank of the machine. By filtering this water and re-entering it into the pump, the pressurised water can be used again.

## Project objectives

The main objective of ICEJET project is to develop a pilot plant that will demonstrate the technical feasibility of the Ice Jet technology.

Expected results:

- Development of a demonstration pilot plant and methodology for the implementation of the Ice Jet technology and the management of the waste;
- Guidelines on the use of the technology and a life-cycle analysis of the Ice Jet technology versus Abrasive Water Jet technology;
- Reduction of waste in WJ cutting companies, and therefore a solution to the environmental problem of current WJ technology; and
- To contribute to the development of the EU System for Environmental Technology Verification through the definition of the requirements within the potential thematic area "clean technologies including waste and resource recycling".

LIFE08 ENV/E/000167  
ICEJET



## Beneficiary:

### Type of beneficiary

Research institution

### Name of beneficiary

Fundación Fatronik

### Postal Address

Paseo Mikeletegi, 7  
E - 20009 Donostia-San Sebastián  
SPAIN  
Phone +34 943 005500  
Fax +34 943 005511  
Email munceta@fatronik.com

### Name of contact person

Miren Unceta

## Duration of project:

36 months (01/01/2010 – 31/12/2012)

## Total budget in euro:

1,614,125.00

## EC contribution in euro with %:

763,962.00 (47.33%)

## Generic Theme:

Industrial waste (including manufacturing)

# CLEAN and energy efficient TRUCKs for urban goods distribution

## Project background

The EU targets a 20% reduction in greenhouse gas (GHG) emissions by 2020. Emissions have been reduced in all main sectors except transport, which produces some 20% of EU-15 emissions. More than 90% of total EU domestic transport emissions come from road transport. In Stockholm, urban goods distribution accounts for almost half of the environmental impact of road traffic, despite comprising only 10% of the total traffic movements. This pattern is similar in all EU cities, where urban goods distribution tends to take place using running on fossil fuels. Urban goods distribution lorries also affects public health and quality of life for the majority of EU citizens in urban area through noise pollution and production of particulate matter.

## Project objectives

The primary objective of the CLEANTRUCK project is to demonstrate the commercial and technical viability of alternative fuels and new technologies for goods distribution vehicles. It thus aims to reduce the overall impact of this sector on GHG emissions and other forms of pollution. CLEANTRUCK will construct: filling pumps for the alternative fuels ethanol ED95 and biomethane; filling stations for CO<sub>2</sub> for use as a refrigerant which will reduce the use of hydrofluorocarbons (HFCs) that are 1 300 times more potent as a greenhouse gas; and mobile stations for N<sub>2</sub> to inflate tyres. These will be installed at existing stations based in industrial areas used by clusters of interested companies. The project will also facilitate the procurement of 30 ethanol ED95 lorries, 30 dual-fuel lorries and 20 electric-hybrid lorries by private distribution companies. It will use a tested funding model offering a rebate of up to 50% for each vehicle purchased. The project will further support these innovations by training around 100 drivers in 'Heavy Eco-Driving.' Monitoring and evaluation of data will occur throughout the project. Providing these economically viable solutions to transporters is expected to achieve annual reductions of:

- CO<sub>2</sub> emissions by 1 500 tonnes;
- NO<sub>x</sub> production by 17 tonnes;
- Noise pollution;
- The breathable fraction of fine particles (up to 2.5 µm) by 240 kg.

LIFE08 ENV/S/000269  
CLEANTRUCK



### Beneficiary:

#### Type of beneficiary

Local authority

#### Name of beneficiary

City of Stockholm - Environment and Health Administration (Miljöförvaltningen)

#### Postal Address

Fleminggatan 4  
PO Box 81 36  
S - 104 20 Stockholm  
SWEDEN

Phone +46 8 50828913

Fax +46 8 50827475

Email [eva.sunnerstedt@miljo.stockholm.se](mailto:eva.sunnerstedt@miljo.stockholm.se)

#### Name of contact person

Eva Sunnerstedt

### Duration of project:

48 months (01/01/2010 – 31/12/2013)

### Total budget in euro:

3,509,314.00

### EC contribution in euro with %:

1,280,195.00 (36.48%)

### Generic Theme:

Air quality management and noise abatement

The project will provide inspiration for other cities to implement similar programmes and innovations and these will be targeted by dissemination actions. This should further reduce the climate impact of urban goods distribution and stimulate the market for alternative fuels.

# Wave Energized Baltic Aeration Pump

## Project background

Recent studies show that coastal regions suffering from oxygen depletion - hypoxia - have increased dramatically since the 1960s. Such a situation has serious consequences for ecosystem functioning. Oxygen-depleted areas are known as 'dead zones' and exist in more than 400 aquatic systems worldwide - of which one is the Baltic Sea - affecting a total area of more than 245 000 km<sup>2</sup>. Hypoxia is a direct consequence of nutrient pollution and eutrophication. It is therefore essential to reduce the amount of nutrient loads to marine environments. Upstream nutrient reductions, however, are difficult and not sufficient as it takes a very long time before effects in marine environments are observed. Moreover, global warming phenomena are expected to increase hypoxia, which in turn will exacerbate global warming. Mitigation measures that lead to direct improvements in dead zones are required. Recent research by the project partners and other independent organisations suggests that a new technology called the Wave Energized Baltic Aeration Pump (WEBAP) could be a technically-, economically- and ecologically-suitable solution.

## Project objectives

This project aims to demonstrate the technical feasibility of using a wave-powered device - WEBAP - for the aeration of coastal zones and open seas suffering oxygen depletion. The pump exclusively uses the natural resources of oxygen-rich surface water and wave energy to improve the oxygen situation in hypoxic bottom water layers by enhanced ventilation and mixing.

The project will prepare and assemble a WEBAP prototype, including fine-tuning of the system to the local conditions. The system will be demonstrated through tests at two complementary sites in the Baltic Sea: one to show its effects on hypoxic bottom water layers; and another in the real environment. The beneficiary expects to prepare a future full-scale implementation of the aeration pump and demonstrate its transferability to other hypoxic marine environments.

### Expected results:

The implementation of these pumps is expected to improve the ecological status in coastal areas and open seas significantly,

LIFE08 ENV/S/000271  
WEBAP



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

IVL Swedish Environmental Research Institute Ltd

#### Postal Address

Valhallavägen 81  
PO Box 21060  
S - 10031 Stockholm  
SWEDEN  
Phone +46 8 598 564 06  
Fax +46 8 598 563 90  
Email christian.baresel@ivl.se

#### Name of contact person

Christian Baresel

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

1,178,605.00

### EC contribution in euro with %:

562,553.00 (47.73%)

### Generic Theme:

Sensitive area management (coastal, protected)

- An increase in oxygen levels in hypoxic deep-water layers to at least 2 mg/l;
- The restoration of self-purifying bio-geochemical processes;
- A 50% decrease in phosphorus leakage from bottom sediment in anoxic waters and an eventual decrease in phosphorus binding when more aerobic conditions occur.

Secondary effects hoped for include improved marine habitats, the recovery of benthic animals and deep-water living fish, and reduced algal bloom. The project will monitor and check its environmental impact and present and disseminate results and technical information to people dealing with similar problems of oxygen depletion in marine environments in other regions.

## Increased total efficiency in sewage treatment

### Project background

The Baltic States and other nations with a cold winter climate have problems meeting the requirements on treatment of nitrogen from sewage treatment plants set out in the Urban Wastewater Treatment Directive 98/15/EEC. The main reason for the observed difficulty is that the temperature of the sewage water during the winter season is typically below 10° C. This is too cold for the effective biological conversion of different nitrogen species to elemental nitrogen, N<sub>2</sub>. Raising the temperature of sewage water entering treatment facilities will help many EU countries comply with legislation and reduce the threat of nitrogen-based pollution of European lakes and seas. To raise the temperature of the sewage water to about 20° C has so far been too costly. However, new information on heat exchange between untreated and treated sewage water has raised the possibility of a practical, environmentally-friendly and cost-effective solution.

### Project objectives

The project aims to demonstrate an innovative technical solution for sewage treatment, based on heat exchange, which will significantly improve efficiency and effectiveness in regions with a cold winter climate. The project will design, purchase and set-up a pilot plant at Sjöstadsverket, Stockholm, based on heat exchange with untreated sewage waste - either from back flow to a combined heat and power plant or warm flue gases from sludge digesters. The design of the demonstration plant will be based on pre-studies carried out within the project and earlier tests of the Swedish Environmental Research Institute, IVL. To allow the biological system to stabilise, the demonstration phase is planned for one year, after which results will be evaluated. A control system will maintain water temperature at 19-20 °C throughout the process regardless of flow and temperature fluctuations at the inflow.

The process should ensure that the nitrogen concentration of wastewater will not exceed 10 mg/l during any season. This would reduce the outflow of nitrogen from Swedish sewage treatment plants by 35%. Electricity consumption for the blowers and mixers should also be reduced by 25-30% compared with traditional plants - only 50% of this saving will be used for additional pumping requirements. The process should be

LIFE08 ENV/S/000272  
ITEST



#### Beneficiary:

##### Type of beneficiary

Local authority

##### Name of beneficiary

Municipality of Oskarshamn

##### Postal Address

Oskarshamns kommun

Varvsgatan 8706

S - 57228 Oskarshamn

SWEDEN

Phone +46 491 764292

Fax +46 491 88294

Email Eva.hjalmered@oskarshamn.se

##### Name of contact person

Eva Hjalmered

#### Duration of project:

36 months (01/01/2010 – 31/12/2012)

#### Total budget in euro:

1,226,800.00

#### EC contribution in euro with %:

613,400.00 (50.00%)

#### Generic Theme:

General: Waste management

easy to install and implement in both existing and new sewage treatment plants and should result in overall cost savings. Dissemination - especially to municipalities in the Baltic region - will start early through the Internet and with activities such as site visits, press releases and seminars.

# Innovative instruments and methodologies to provide the European polymer industry with a solid technical background in support of REACH

## Project background

REACH (Registration, Evaluation, Authorisation and restriction of Chemicals) is a European Union regulation, which entered into force in 2007, with the aim of protecting human health and the environment from the risks arising from the use of chemicals. The new regulation promises to bring about improvements in innovation and competitiveness in the EU chemicals' industry: pledging a more simplified and ordered regulatory system, reduced dependence on fossil fuels, and cost savings in raw materials and law suits. It reverses the burden of proof and places the responsibility on the producer and importer to show substances are safe before they can be placed on the market. If conducted properly, REACH will restore consumer trust in chemicals used in consumer products, which will have a knock-on effect throughout the whole chemicals' supply chain. The regulation initially exempts polymers from registration and evaluation. Instead a fairly complex procedure is established that requires polymer manufacturers and importers to pre-register all monomers and other reactants.

## Project objectives

The LIFE 'REACH for Polymers' project aims to increase the knowledge base of the European polymer industry, in particular of small and medium-sized enterprises, by applying new techniques, technologies, instruments and methods that offer environmental as well as economic advantages to the industry when complying with the REACH regulation. The main objective is to create a REACH toolkit for the European polymer industry, and to disseminate this widely.

Other objectives are to:

- Assess the applicability to the polymer industry of testing techniques and methods and from this develop a guide to the best available testing techniques and methods;
- Produce a REACH best practice manual for the polymer industry and associated supply chain;
- Monitor and evaluate REACH in order to assess its impact on the European polymer industries; and
- Benchmark current awareness and readiness of the European polymer industry and its supply chains to the new REACH regulations.

LIFE08 ENV/UK/000205  
REACH for Polymers



### Beneficiary:

#### Type of beneficiary

Research institution

#### Name of beneficiary

Rapra Limited

#### Postal Address

Shawbury  
UK - SY4 4NR Shrewsbury, Shropshire  
UNITED KINGDOM  
Phone +44 1939 252463  
Fax N/A  
Email [rwalton@rapralimited.org](mailto:rwalton@rapralimited.org)

#### Name of contact person

Richard Walton

### Duration of project:

30 months (01/01/2010 – 30/06/2012)

### Total budget in euro:

893,260.00

### EC contribution in euro with %:

446,130.00 (49.94%)

### Generic Theme:

Risk assessment – Pollution control

# European Pathway to Zero Waste: demonstrating the route to zero waste to landfill via end of waste protocols and building a recycling society

## Project background

The EU landfill directive sets targets for reducing the amount of biodegradable waste to landfill, and the revised Waste Framework Directive (WFD) sets new targets for recycling construction and demolition (C&D) waste (70% by 2020) and household waste (50% by 2020). The Sixth Community EAP calls for measures aimed at ensuring the source separation, collection and recycling of priority waste streams. And the WFD recognises this by laying out the five-step waste hierarchy with waste prevention as the preferred option. A significant amount of waste in the EU is still landfilled, with a high degree of variation between countries. The UK has one of the highest rates of landfill. Methane emissions from UK landfill account for 40% of all the country's methane emissions and 3% of all its greenhouse gas emissions. The South-East of England landfills more waste than any other region of England.

## Project objectives

The overall purpose of the EPOW project is to demonstrate how EU regions can develop and introduce successful programmes that lead to zero waste to landfill in their region. As targeted in the revised WFD, the project aims to encourage recycling with a high level of resource efficiency in the South-East of England. Through cross-border working with other Member State regions, the project will exchange best practices, ensure project outcomes are relevant and replicable in other EU regions, and disseminate the results of the programme to other Member States.

Specifically, the project aims to demonstrate:

- European value of end-of-waste quality protocols through the development of three new protocols and embedding existing protocols throughout a region;
- Novel public sector-led approaches to reducing 'waste crime' i.e., ignoring recycling requirements that will support emerging new business markets for the reuse of recovered materials;
- Demand for products and services with lower waste impacts can be stimulated through green public procurement in a region, and that this can be expanded to the private sector;
- Markets for end-of-waste materials can be developed by establishing a pilot commodity market with EU trading links;

LIFE08 ENV/UK/000208  
EPOW



### Beneficiary:

#### Type of beneficiary

Regional authority

#### Name of beneficiary

The Environment Agency of England and Wales

#### Postal Address

Block 1&2 Government Buildings  
Burghill Road - Westbury on Trym  
UK - BS10 6BF Bristol  
UNITED KINGDOM  
Phone +44 117 9142686  
Fax +44 117 9156840  
Email martin.brocklehurst@environment-agency.gov.uk

#### Name of contact person

Martin Brocklehurst

### Duration of project:

36 months (01/01/2010 – 31/12/2012)

### Total budget in euro:

3,832,835.00

### EC contribution in euro with %:

1,916,418.00 (50.00%)

### Generic Theme:

General: Waste management

- Development of regional waste infrastructure can be supported through partnership working, and that this can address the EU's new Raw Materials Initiative;
- That innovative electronic tools and means of communications can be used to help businesses reduce their waste impacts;
- That voluntary sectoral agreements supported by one-to-one business advice can disseminate best practice and help businesses contribute to the goal of zero waste in a region; and
- That new methods of collecting, converting and presenting data and information on waste can stimulate progress towards a recycling society.



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