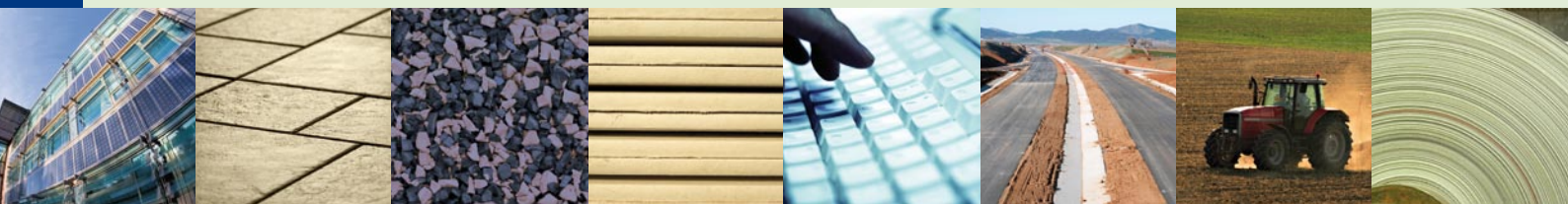




A WEALTH OF IDEAS FOR A GREENER EUROPE







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“These projects are stepping stones to a greener future for us all”

INTRODUCTION

ENVIRONMENTALLY SUSTAINABLE, ECONOMICALLY PROFITABLE

The projects set out in this brochure represent the innovative ways in which European businesses and organisations are addressing the challenge of combining environmental sustainability and economic growth.

The call for project proposals in 2008 inspired submissions from 444 participants in 32 countries, three quarters of which were from SMEs. On the pages that follow you will find the projects which are in the running to share the available €28 million.

From recycling tannery and leather waste to produce green fertilizers to using bamboo to clean up waste water, people are striving to find creative ways of dealing with the vast quantities of waste our lifestyle throws up. Eco-innovation is here to support them.

The fundamental aim of furthering “All forms of innovation which reduce environmental impacts and/or optimising the use of resources” is broken down into four strands: materials and process recycling; buildings; the food and drink sector and greening business including green purchasing and procurement. Of these, recycling was the field which generated most interest in 2008.

WHAT MAKES A GOOD PROJECT?

The projects shortlisted by Eco-innovation have certain things in common:

- ▶ *They demonstrate a high potential for transfer and replication. Results and methodology are clearly robust and by funding one, the EU seeds the evolution of many.*
- ▶ *They are innovative and help to bridge the gap between research and market uptake. The EU needs to accelerate the transformation of good ideas into business and industrial development.*





- ▶ They create clear and substantial environmental benefits such as reduced emissions, waste, hazardous substances and improved resource efficiency.
- ▶ They are economically viable and address the demands and constraints of (mainly) small and medium sized enterprises. With 23 million SMEs in the EU, representing 99% of all enterprises, this is an important target group. And there is room for environmental improvement: 60-70% of the industrial pollution produced by the EU is linked to SMEs.
- ▶ The projects benefit from being European, rather than national or regional. The way they spread their information, the effect they have, the manner in which they draw in key players from different countries all have an added value that goes beyond the impact they would have were they only national. A project that spans different climates or regions and addresses the different market barriers is better placed to show that it can be widely replicated. Finally, all projects contribute to European environmental policies and priorities.
- ▶ Although the structure of the EU facilitates the transfer of ideas, there are times when barriers arise. A project that addresses these head on and offers ways in which they can be overcome, will be favoured.

ECO-INNOVATION IN THE EU – OPPORTUNITIES AND CHALLENGES

- ECOINDUSTRIES**
- ▶ Turnover €227 billion
 - ▶ Turnover 2.2% of GDP
 - ▶ Create 3.4 million jobs
 - ▶ The EU is a strong player – 30% of world turnover and 50% of the world share of water and waste management.

- BUT**
- ▶ Greenhouse gas emissions set to see a 2.5 to 3 fold increase by 2050
 - ▶ Metals and minerals consumption are due to go up by 35-40% in 10 years
 - ▶ Plastic to landfill rose up from 21% from 1990-2002
 - ▶ Volumes of municipal waste forecast to grow by 25% from 2005-2020

By supporting new processes to clean up production, new management methods and new technologies, new services to make business greener, Eco-innovation acts to help Europe make the most of its opportunities while addressing its challenges.

THE NEXT STEP

From those reading through this brochure out of general curiosity to those hoping to get a clearer idea of what is happening in their specific field of interest, these projects are stepping stones to a greener future for us all. Ideas of your own? Then let these shortlisted projects inspire you to get your concept off the ground.

Patrick Lambert

Patrick Lambert
Director of the EACI





A NEW USE FOR OLD TYRES

USED TYRES VALORISATION AS LIGHTWEIGHT FILLER FOR EMBANKMENTS – RECTYRE

THE SITUATION AS IT STANDS

The automotive industry has recycling targets to meet, with the mandatory quotas in place since 2006 due to rise in 2015. Tyres make up a significant part of the material that needs to be re-processed and at the moment 32% are used as fuel. So a new use for old tyres is needed.

Ground tyres can be used as a filler for road embankments, resulting in a light weight, environmentally friendly alternative to soil – which frequently has to be shipped in if the earth at the construction site is not suitable. This makes for a cheaper, more sustainable alternative.

WHAT THE PROJECT AIMS TO ACHIEVE

The project intends to demonstrate the technical and market viability for ground tyres, produced by a heat and chemical free process. So far two trial runs have been carried out in Spain and the problems arising have proved to be both technical and socio-economic. The project will refine the process and iron out the glitches. Once the process is optimised, the market in western, northern, central and eastern Europe will be studied.

The final phase of the project will explore the product's market viability in a real scale test with results fed back into the production process if necessary, giving a final, optimised model, ready to be used.



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A NEW LEASE OF LIFE FOR OLD MEDIUM DENSITY FIBREBOARD

THE EFFECTIVE RECYCLING OF WASTE MEDIUM DENSITY FIBREBOARD (MDF) – MDFCYCLE

THE SITUATION AS IT STANDS

Over 100 000 SMEs in Europe work with MDF and the material fills our homes and public spaces. Yet, until now, there has been no commercially viable, recycling facility for the waste fibre board and around 11.5 million tonnes of which are produced in Europe every year.

Few options exist for its effective recycling. As a result most of the waste MDF is currently categorised as «general waste» and disposed to landfills. If the fibres were recycled and ploughed back into MDF again, primary resources will be saved – along with the energy that goes into cutting down the original wood and transporting it.

To address this, a bespoke pilot plant will be constructed to produce enough recycled fibre to allow internal process and product stability to go ahead.

WHAT THE PROJECT AIMS TO ACHIEVE

The establishment of a functional pilot plant will convert waste MDF from the EU into high value, recycled wood fibre. The project will then work with at least one MDF manufacturer to trial the fibre aiming at a commercial agreement. Trials of the finished product will also be held with at least three large end users such as Do-it-yourself (DIY) superstores, supermarket chains and furniture manufacturers.



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▶ RECYCLED RUBBER MAKING TOWNS SAFER

INNOVATIVE USED TYRES RECYCLING AND RUBBER SINTERING PROCESS FOR ECO-FRIENDLY URBAN EQUIPMENT FABRICATION – ECO-RUBBER

THE SITUATION AS IT STANDS

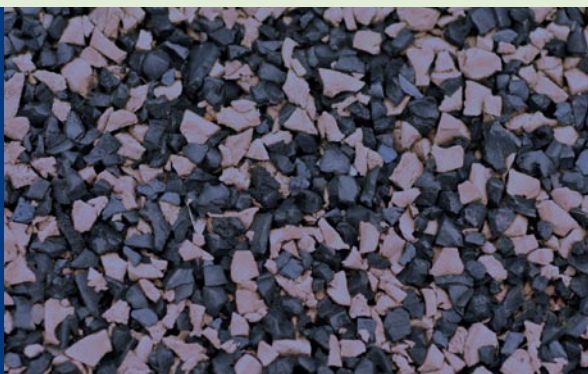
The 27 countries of the EU had to dispose of 3.4 million tonnes of tyres in 2007 alone, according to the Tyre and Rubber Manufacturer's Association. Only 38% of those were recycled while 32% were used as fuel – substituting one problem for another in the form of emissions.

A purer reclaimed rubber with zero contaminants (textiles, fiber, steel, sand etc) would broaden the scope for applications – more uses could be found for the recycled material if it was of better quality. Eco-Rubber hopes to put its high grade rubber to use on the streets of our towns and cities, in the form of bollards, jiggle bars, pavements and rubber sidewalks. Other applications, such as sports goods, are also waiting to be exploited.

WHAT THE PROJECT AIMS TO ACHIEVE

The various stages in the process of reclaiming the rubber will be optimised, including refining the grinding to reduce contaminants to zero and the blending to enhance the properties of the recycled rubber. The way in which the rubber is sintered will also be changed in both dosing and pre-heating phases and testing programmes incorporated into the design process to make certain the products made from recycled rubber will perform as they should.

To eliminate user attitude barriers to the use of urban furniture made of recycled rubber, the project will evaluate the possibility of an Ecolabel certification for its products and will involve people through a communication strategy to welcome the creative and constructive use of what is currently an environmental headache.



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► MORE SMART SENSORS FOR ELECTRONIC RECYCLING

RECOVERY OF ELECTRONIC WASTE THROUGH ADVANCED RECYCLING AND DEMONSTRATION – REWARD

THE SITUATION AS IT STANDS

Europe generates 12 million tonnes of waste electrical and electronic equipment (WEEE) a year, only slightly over 2 tonnes of which is recycled. Much of the waste is sent for processing outside Europe and disassembled under inadequate conditions, 78% is buried in landfill or incinerated. The WEEE directive tackles many of the related problems.

The loss of increasingly rare natural resources and the environmental contamination from toxic components caused by inefficient disposal can no longer continue, given the estimation of a 4% increase in the quantity of waste, year after year.

More efficient use of a combination of technologies will improve the recovery rate of precious, rare earth and base metals, prices of which are set to increase by 15% annually due to increased demand, quotas and supply shortages.

WHAT THE PROJECT AIMS TO ACHIEVE

The project demonstrates how to boost re-use, recycling and recovery rates of WEEE to 95% through better size reduction, smart sensor sorting and advanced density separation and recovery techniques.

A total of 12 major full scale technical unit processes in sequence will be set up in this project. The new plant will generate 18 fractions of high purity materials suitable for recycling, doubling the amount of high quality fractions generated by existing processes. A design of a full scale e-waste processing plant will be completed on the basis of this first application.



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▶ PAPER MILL SLUDGE TO MOP UP OIL SPILLS

CONVERSION OF PAPER MILL SLUDGE INTO ABSORBENT – CAPS

THE SITUATION AS IT STANDS

Ninety million tonnes of paper are produced in Europe's paper mills per year and the sludge that is a by product of this production, well over four million tonnes, is either processed and burned or dumped in landfill.

The production of synthetic oil spill absorbents generates around 502,840 tonnes of CO₂, according to the project's assessments. By processing paper mill sludge to create an absorbent material capable of cleaning up oil and chemical spills, the project claims that only 2.9% of emissions of CO₂ equivalent will be generated.

But there is further use for the sludge once it has soaked up a spill – depending on the calorific value of the absorbed substance, the material collected can then be used as a secondary fuel source, for power plants or cement factories.

WHAT THE PROJECT AIMS TO ACHIEVE

The production of Hydrophobic Absorbent for Water Surface Cleaning (HAWSC), is the main goal of the project. This treated paper mill sludge could be taken up by 20% of the potential market in Europe, which would include ports, marinas, petrol stations, oil refineries and even restaurants and hotels.

The project will extend the production lines that already exist in Slovenia and Finland and by setting up two new production lines a year, capable of processing 80,000 tonnes each. The goal is to be able to handle 26% of all the paper mill sludge produced in Europe.



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SORTING OF TEXTILE WASTE – GOING UP A GEAR

TEXTILES FOR TEXTILES – T4T

THE SITUATION AS IT STANDS

Textiles that have been thrown away can be sorted by systems able to identify their chemical composition, colour and other parameters such as finish and coating. The basis of this technology, Identitex, was developed in 1999–2001 but there was, at that time, no commercial rationale and it was never put into large scale practise.

But the perception of textile waste has changed with the increase in prices for raw materials, and the notion of sustainability is becoming increasingly important. The identification technology and software need to be updated and elaborated to deal with more industrial usage, which could result in the spinning and weaving of recycled fibres. Shorter fibres can also be reused to provide material for insulation and automotive applications.

WHAT THE PROJECT AIMS TO ACHIEVE

A full scale industrial sorting process, using the Identitex system, will prove that textile recycling has a lot to offer. The project will assess the ecological and economic benefits of developing a range of example products from recovered fibres, with a hope that a economically viable recycling chain can be established over two years.

The technology and equipment will be commercialised and the plan to set up at least ten sorting lines throughout Europe assessed. Project leaders believe ten new lines will help realise the economies of scale and make fibre recovery and reuse a welcome practice within the textile industry.



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RECOVERING EXTRACTED METAL IN THE SURFACE ENGINEERING SECTOR

ECOLOGICAL METAL RECYCLING

– ECOMETRE

THE SITUATION AS IT STANDS

Significant quantities of metal bearing waste is generated by the aerospace, automotive, printed circuit boards and metal finishing sectors without recovery of valuable materials from the waste streams. At the moment this is destined for landfill, squandering natural resources and having an impact on the environment in that more materials need to be extracted to replace those thrown away.

By combining existing technologies, electro-coagulation, material digestion and electrowinning, the project will help certain industrial sectors to recover metal from primarily waste sludge. As mentioned, surface engineering and related industrial sectors such as aerospace, automotive, printed circuit boards and metal finishing will be particularly affected by the results of this project.

WHAT THE PROJECT AIMS TO ACHIEVE

A plant would be set up in an SME involved in metal finishing and printed circuit board production. The complete system will be able to take a waste water stream, precipitate the heavy metals, and selectively extract them (with nickel as a focus) for future utilisation.

The efficiency of extraction and the level of purity in the resulting product will be the main indicators of success. If the plant functions as planned, the current increasing cost of metals will provide manufacturers with the motivation to take up the technology and reclaim the materials before they end up in landfill.



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RECOVERING NON-FERROUS METALS – A NEW SYSTEM FOR SORTING

SENSOR-SORTING AUTOMATED TECHNOLOGY FOR ADVANCED RECOVERY OF NON-FERROUS METALS FROM WASTE – SATURN

THE SITUATION AS IT STANDS

Industrial and commercial waste, along with electronic scrap, is frequently shipped outside EU for sorting since the high standard required for employee safety in Europe makes the job unprofitable. The alternative, flotation processes are expensive and result in environmentally damaging waste streams.

There is clearly a need for a solution to the demands of non-ferrous metal sorting. An experimental plant has been set up to treat metal and this has proved the feasibility of recycling the materials. The project believes the technology is now ready for a full scale demonstration.

WHAT THE PROJECT AIMS TO ACHIEVE

The aim of this project is the demonstration of a pilot plant for the recovery/enrichment process, based on sensor sorting automated technology, of Non-Ferrous (NF) metals from waste. The project intends to establish a large scale plant, capable of treating 25 000 tonnes a year, operating two shifts, and expects to be able to extract 98% of the non-ferrous metals present.

The project will carry out integrated impact assessment studies to assess and evaluate environmental and economic impacts as well as the suitability of the innovative technology for application within the European market



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FLEXIBLE SENSOR SORTING FOR MORE EFFICIENT RECYCLING

EFFICIENT SORTING OF SOLID WASTE BY NOVEL SENSOR TECHNOLOGY – ECOSORT

THE SITUATION AS IT STANDS

At present most batteries are sorted by humans. However, manual sorting is faulty and slow and the working conditions can be problematic. The existing automatic sorting systems do not have technology for sorting NiCd-batteries.

Similarly, the conversion efficiency from fuel to power in waste incineration plants has a limited efficiency. If the industrial waste to be incinerated was mechanically sorted and the chlorine content lowered then the power produced per tonne of waste could be increased substantially, reducing the CO₂-emissions almost proportionally.

WHAT THE PROJECT AIMS TO ACHIEVE

The project aims at establishing two full scale first generation pilot plants at industrial sites to demonstrate a sensor sorting machine for two different types of solid waste – industrial waste for production of low chlorine fuel for co-combustion at central power plants and NiCd-batteries. Information on the new process including technical, environmental, economic evaluations of the sorting system will be published and contacts will be made with potential European customers.

It is hoped the systems will show that the use of flexible sensors boosts the quality of the waste products, resulting in higher recycle rates and lower emissions. The sorting accuracy should be significantly improved, leading to greater profitability.



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▶ RECYCLING PLASTIC TO USE IN CONSTRUCTION

HIGH PERFORMANCE LIGHTWEIGHT AGGREGATE FOR CONCRETE FROM THE RECYCLING OF URBAN WASTE – NUMIX

THE SITUATION AS IT STANDS

The global demand for concrete is ever increasing and there is no doubt that the idea of a reliable, flexible, environmentally friendly alternative is very attractive. At the same time, the amount of plastic waste the EU generates, much of which is incinerated, is also significant and on the rise.

An innovative industrial process now brings the idea of supply and demand together by treating the scrap resulting from the sorting of recycled plastics and transform it into aggregate for lightened structural and non- structural concrete and mortar.

WHAT THE PROJECT AIMS TO ACHIEVE

Two types of products are being developed, expanded granules and flakes. Industrial scale tests will be carried out on the expanded granules and both products will be subjected to a better definition of parameters and assess production costs.

A new plant for the production of flakes is already up and running, using the scrap resulting from the sorting of recycled plastics. The line is unable to meet the demands coming from concrete producers and one of the key elements of the project is to improve and optimise production capacity.

Having validated the products and the production capacity, the project will also establish partnerships among industries and spread information on the two processes at European level.



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► THE BEAUTY OF REAL STONE TILES – A FRACTION OF THE ENVIRONMENTAL COST

SLUDGE FREE-PROCESS FOR THE PRODUCTION OF INNOVATIVE NATURAL STONE-LIKE OBTAINED BY MICRO-STRUCTURING OF SINTERED TILES – NATSTOCER

THE SITUATION AS IT STANDS

It is a paradox that while the fashion for natural materials in our homes shows we appreciate their beauty, the sourcing of some might not be sustainable. Whereas much has been done to ensure the wood we use on our floors and surfaces is grown with care. Stone, a very popular decorative material, is not so subjected to scrutiny.

The production of natural stone tiles depends on the exploitation involved in quarrying, an energy intensive production line and vast quantities of water. By devising an alternative which looks the same but is manufactured in a closed production cycle, the environmental impact can be reduced.

WHAT THE PROJECT AIMS TO ACHIEVE

A production process that will not only prevent solid waste creation but will also remove the need for any water, will be established, with a manufacturing capacity of 500 000 m² a year of natural stone-like tiles.

This would save 490 tonnes of water normally consumed in the creation of the same area of real stone tiles. The energy consumption would be reduced from 2.38 kWh/m² in to the expected 0.66 kWh/m² and all the solid waste will be recycled to form part of the abrasion process which give the tiles their natural stone appearance.



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► **CLEANING UP THE GLAZING PROCESS
IN THE CERAMICS INDUSTRY**

CERAMIC GLAZE CLEAN PROCESS – TREC

**THE SITUATION
AS IT STANDS**

The ceramics industry's use of glaze is inefficient at the moment, involving large amounts of water and raw materials and resulting in waste arising from defective decoration and surplus product. Large amounts of energy are also consumed.

**WHAT THE PROJECT
AIMS TO ACHIEVE**

By industrialising glazing and computerising decorating technologies, the project brings together different processes resulting in a far more efficient use of materials and energy.

New production areas, equipment and a laboratory would be set up, resulting in 6 000 tonnes of glaze a year. In comparison with traditional methods, the technology will result in a 94% reduction in glaze refuse and use 75% less energy. Consumption of raw materials would be also be reduced by around 85% and water by 75%.



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► **RISING FROM THE RUBBLE – CONSTRUCTIVE USE FOR RECYCLED CERAMIC**

FULL RECYCLING OF PLANAR CERAMIC WASTE FOR THE PRODUCTION OF INNOVATIVE ECOCER INERT MATERIALS FOR HIGH-PERFORMANCE ASPHALT CEMENT – ECOCER

THE SITUATION AS IT STANDS

Our homes, workspaces and public places frequently feature ceramic tiles, produced in a manner that is often inefficient in the waste it generates. The by-products of the industry and the amount of ceramic material found in demolition can be used as a component of high performance asphalt.

If the ceramic waste was recycled fully, it could completely substitute currently used natural stones so reducing quarrying, the resulting energy use and the construction industry’s dependence on non-renewable, natural resources.

WHAT THE PROJECT AIMS TO ACHIEVE

The complete reuse of the sintered solid waste produced by the ceramics industry is the project’s goal. Three stages of sieving would take place in the new plants, producing 400 cubic metres of inert aggregate a day from 960 tonnes of planar ceramic waste. The resulting ECOCER aggregates can then be used in high performance asphalt which would, due to its ceramic component, be more durable and reflective. It would also be more resistant to stripping.

The ECOCER paving would also have the benefit of being recyclable in turn and compatible with existing paving equipment. The production requires no water or use of natural resources and consumes 75% less energy when compared to the grinding of rocks. All these benefits for a production process which will cost the same as, or less than that used currently.



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**ROOFING FELTS
 RECYCLED**

**BIT BY BIT – MARKET UPDATE OF BITUMEN RECYCLING
 TECHNOLOGY WITHIN THE EU – ECO-PROTECTION**

**THE SITUATION
 AS IT STANDS**

In North-West Europe alone, 500 ktonnes of bituminous waste per year ends as landfill or in cement ovens – old roofing felts make up a significant proportion of this. Eco-roofing (Ecorec®), made up of recycled and virgin bitumen, can reduce the EU’s dependency on fossil oil and resulting CO₂ emissions.

**WHAT THE PROJECT
 AIMS TO ACHIEVE**

The project aims at establishing at least one bitumen recycling factory in Germany, Belgium and United Kingdom. By surveying the market, demonstrating the results and publicising benefits, the project also seeks to increase take-up. Market conditions including more expensive raw materials combined with an increasing availability of recyclable bitumen, are in the project’s favour.

Should the product take-off, there will be real environmental benefits: the reduction in CO₂ emissions of 1 square meter of Ecorec equals the CO₂ emissions of a car, driving 1 kilometre. Economic benefits will also arise from the employment generated by the plant.



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►
**SEWAGE, FROM SLUDGE
 TO CINDERS**

**ECONOMICALLY VIABLE SOLUTION FOR THE ENERGY AUTARKIC
 TREATMENT OF SEWAGE SLUDGE TO MULTI USABLE ASH
 – ECO SLUDGE**

**THE SITUATION
 AS IT STANDS**

Sewage sludge originating from rural and small municipalities or from large industrial facilities is inevitable and difficult to dispose of. Application to agriculture is hampered by decreasing demand. Burning in power plants or in the cement industry is both expensive and inefficient, frequently requiring transportation and producing high volumes of CO₂.

The Kalogeo process, a two-step solution, uses the heat given off by the process to dry the sewage sludge. This reduces the sewage to inert ashes which can then be recycled as a cement substitute or stored and sold separately for their phosphorus content.

The energy surplus from the process can be used in a district heating network or transformed into electricity.

**WHAT THE PROJECT
 AIMS TO ACHIEVE**

The Eco Sludge project proposes a full scale application at an Austrian concrete production site. Two major market players will monitor the performance, cost efficiency and quality in all phases, from installation, to full load operation. They will also test the utilisation of the end product ash.

If the system works, as the already constructed pilot plant indicates, the chance of using the Kalogeo process across the EU market will be greatly enhanced. This one projected plant alone, processing 24 000 tonnes of sewage sludge a year should reduce CO₂ production by 1 488 tonnes a year and decrease by 30% the use of raw material for cement production.



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► TANNERY WASTE AS FERTILISER

TANNERY, SLUDGE RE-USE, BIOWASTE RE-USE,
ECO-INNOVATIVE ORGANIC FERTILIZER – FERTILANDIA

THE SITUATION AS IT STANDS

The process involved in tanning result in debris such as leather trimmings from salted hides, hair, dewatered sludge and other nitrogen rich material which is, at the moment, incinerated in dedicated plants.

These waste products could be collected, treated in line with EU regulations to make leather meal. This could then be mixed in with the sludge that comes from tannery wastewater treatment to produce a fertiliser, unique on the European market in that it is both organic and involves recycling.

WHAT THE PROJECT AIMS TO ACHIEVE

Producing the leather meal is the first step in the process which then needs to be blended with the sludge and marketed as fertiliser. Exploitation of the product will be set-up in Malta and Italy and it is estimated that this will result in the commercialisation of 36 000 tonnes a year of integrated leather meal.



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▶
**A LONGER LIFE
 FOR ARTIFICIAL TURF**

IMPLEMENTATION OF AN ECO EFFICIENT AND COST EFFECTIVE EXTENDED LIFECYCLE MANAGEMENT SERVICE FOR ARTIFICIAL TURF BASED ON IMPROVED MAINTENANCE OPERATIONS AND WASTE REVALUE – ECOTURF

**THE SITUATION
 AS IT STANDS**

Artificial turf is growing in Europe and represents an important market in the USA. The loss of properties due to wear and tear can be speeded up through inadequate upkeep and, more problematic once removed, the turf is often sent to landfill sites.

By performing specific maintenance operations on surface structure, the service life of the turf can be extended by 20% and when the product does have to be removed, it can be recycled. At the moment, how to preserve artificial turf is not widely known and the costs incurred in standard recycling techniques are very high.

**WHAT THE PROJECT
 AIMS TO ACHIEVE**

Under the ECOTURF project current laboratory separation techniques will be adapted to be performed in situ by portable maintenance equipment and waste will be revalued. A service will establish an informative, web-based application to instruct maintenance managers on how to preserve their turf.

Benefits from this innovative approach will include a reuse of the rubber and sand infill, an 80% reduction in the amount of total waste currently sent to landfill, a recycling of the carpet materials and a saving of 1000 litres of fossil fuel per pitch.



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USING PLANTS TO DECONTAMINATE DREDGED SEDIMENT

AGRICULTURAL REUSE OF POLLUTED DREDGED SEDIMENTS – AGRIPORT

THE SITUATION AS IT STANDS

Clearing the way at ports, docks and coastal waterways by dredging creates excess material which has, in the past, been dumped at sea. This practice has been banned since much of the dredged material is polluted by heavy metals and hydrocarbons, so a new way of disposing of the sediment needs to be found.

Recycling seems to be an attractive solution and the project aims to facilitate this through a decontamination phase involving plants, in Italy and Israel, before then using the material as an agricultural substrate.

WHAT THE PROJECT AIMS TO ACHIEVE

Work on dredged material already carried out has resulted in saline and contaminated sediments being converted into soil like material. The project intends to further upscale and refine the technical solution, quantify the economic benefits for the ports concerned and for potential users of the recycled material.

The project intends to validate the decontamination process and identifies of plants suitable for reconditioning the sediment and estimate a potential rapid uptake by other Mediterranean and European port authorities.



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► **INNOVATIVE THERMAL CLEANING FOR SHREDDER RESIDUE**

SHREDDER RESIDUE AND TAR-CONTAINING ASPHALT RECYCLING – STAREC

THE SITUATION AS IT STANDS

Currently, a billion tonnes of tar containing asphalt (TCA) is released from public roads and five million tonnes of automotive shredder residue (SR) from cars are produced every year in the EU.

At the moment shredder residue goes into landfill and the asphalt either gets reused in road construction or is cleaned in batches, using combustion. For the first time a continual, thermal cleaning technique is available for SR and TCA. The new, pyrolysis technique improves the efficiency of the process.

WHAT THE PROJECT AIMS TO ACHIEVE

The project will run the first full scale continuous process of a commercial application for cleaning of shredder residue and asphalt, which will recover more than 300 000 tonnes of waste in the first year.

In comparison with the current situation, the process will completely eliminate the production of toxic chemicals such as mineral oil, aromatic hydrocarbons and mercury which represents almost half of the total waste treated.

The project aims at the market uptake of a process that aims to be cost effective and remarkably reduce the impact on the environment.



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▶ WATER TREATMENT PLANT

ELECTROCHEMICAL WATER TREATMENT PILOT PLANT IN THE DAIRY INDUSTRY WITH PHOSPHATE RECOVERY – REPHATER

THE SITUATION AS IT STANDS

Food and drink industries, in particular the dairy sector, generate huge amounts of wastewater which characterised by a high pH, high amount of oils and fats, phosphates, COD (Chemical Oxygen Demand), BOD (Biochemical Oxygen Demand) and suspended solids. At the moment treatment leaves room for improvement being both costly and less efficient than it could be.

A completely new approach to the treatment of wastewater using both electrocoagulation and electrooxidation in sequence is being put forward. The techniques, although both tried and tested, have not been used in combination in the way in which the project is proposing.

WHAT THE PROJECT AIMS TO ACHIEVE

The aim of the project is to build a pilot water treatment plant, to be connected to a dairy plant, including also a recovery/recycling phosphate unit in an integrated approach which has not been previously considered.

This approach will result in full wastewater decontamination, water recovery with 30% water input reduction, more than 80% phosphate recovery, elimination of chemicals input as well as lower operational costs and 70–100% waste reduction compared to conventional processes.

A life cycle assessment study will be conducted in order to quantify the potential environmental impacts of the complete life cycle of the proposed approach. Finally, a series of parallel exploitation and dissemination actions will be carried out to maximise the transferability and commercial value of the work.



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▶ **SLAG AS A SUBSTITUTE FOR NATURAL RESOURCES IN ROAD CONSTRUCTION**

**ECO-INNOVATION IN STEELMAKING:
A NEW SYSTEM FOR 100% RECYCLING
OF ELECTRIC-ARC FURNACE SLAG – SLAG-REC**

**THE SITUATION
AS IT STANDS**

Every year the electric arc furnaces of Europe produce 20 million tonnes of slag – 12 million of which is just dumped. But the development of an innovative collection system could reduce the number of unsightly, polluting slag heaps currently scattered over the EU.

With just one processing step, using dry granulation, up to 2 million tonnes a year could be recycled for use in road building, making the steelmaking industry greener and more competitive.

**WHAT THE PROJECT
AIMS TO ACHIEVE**

The project will focus on two priorities: the setting-up the first commercial plant and encourage electric-arc furnace operator to invest in the new system.

Should the project be successful, the system will be extended to the whole of the electric-arc furnace sector. If all goes well the system would result in less consumption of natural resources in road construction, a simple and low impact treatment process for the slag, less dumped slag and increase competitiveness for both the construction and steel industries.



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PRE INSULATED WALL PANELS FROM RECYCLED MATERIALS

ENHANCED INSULATION IN TIMBER-FRAME HOUSING USING RECYCLED MATERIALS – INSULATFH

THE SITUATION AS IT STANDS

Although cellulose is an effective insulation material with a low environmental impact, it is not often used in the construction industry, partly because of inefficiencies in on site application and non-standard wall panel sizes which hold up mass production.

The project will deliver a low cost process which any timber frame factory can install to produce pre insulated timber frame panels with cellulose pulp, coming from the recycling of locally sourced waste paper and wood.

WHAT THE PROJECT AIMS TO ACHIEVE

A first application process will be designed and installed for the pulp processing and the controlled panel filling process. The process will be operated under production conditions in a timber-frame manufacturer and panels will then be certified.

The innovative production process will enable timber panels to be filled with cellulose pulp in a controlled and highly productive manner, and delivery, with guaranteed U values, to construction sites. If the project is successful, the 10% of recycled material now used for insulation would leap to 80%. If exploitation proceeds as expected, the system could eventually reach an important market share of house builds, leading to a reduction of CO₂ from the construction sector.



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► **RE-DESIGNING CONCRETE FOR THE 21ST CENTURY**

REDUCING THE ENVIRONMENTAL IMPACT OF CONCRETE BY KNOWLEDGE-BASED DESIGN AND UTILISATION OF INDUSTRIAL WASTE MATERIALS – ECOCRETE

THE SITUATION AS IT STANDS

Concrete has been a popular building material for thousands of years but modern society’s ever increasing emphasis on strength and speed has made the mix more cement based.

Cement is a high environmentally challenging component – its hugely energy demanding production has been identified as being responsible for around 7% of the world’s CO₂ emissions. Demand is rising, in China alone 1 300 million tonnes is being consumed a year. With a tonne of CO₂ produced for every tonne of cement, solutions to replace cement, while guarding similar quality, need to be promoted.

WHAT THE PROJECT AIMS TO ACHIEVE

EcoCrete aims at developing a software toolset to design concrete mixes of improved environmental performance using industrial waste or recycled aggregates, and at producing a new concrete mix containing oil shale ashes from Estonian power stations.

The waste ash to replace cement in the production of quality concrete, lies close to the end users. Many of the post war, prefabricated concrete buildings, home to around 200 million people, are in very poor condition throughout eastern and central Europe. By addressing the social needs there is a market for the concrete the project will produce.



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►

DETECTING LEAKS – SAVING WATER

AUTOMATIC WATER LEAKAGE DETECTION – AUTO-LEAK

THE SITUATION AS IT STANDS

Up to 50% of the water produced by operators is not paid for. Known as 'non-revenue water', much of this is lost through leaks in the distribution network. These not only squander a precious resource, but can also be a source of economic loss.

By reducing the number of leaks, the project will make operators more competitive and the use of water in urban areas more efficient. The adoption of automatic meter readers integrated with other leakage control technologies, will identify the location of more leaks than is now possible.

WHAT THE PROJECT AIMS TO ACHIEVE

The key to this project is the way in which it brings together three advanced technologies and gets them to work in synch. District metering is a well established practice, but the software to rank district metered areas for leakage intervention based on the economic level of leakage and automatic meters that periodically record real consumptions have so far only been used experimentally within the EU. Combining these, the project hopes, will identify the leaks that are not identified by noise detection tools.

Good economic returns are expected. The initial outlay incurred by installation will be off set by decreased cost in meter reading and the amount of water saved through levels of leak detection not currently available to providers. The project hopes AUTO-LEAK technology will be taken up by the EU market, lowering bills and enhancing the innovative capacity of participating water consultants, equipment manufacturer and water utilities.



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► A COST AND ENERGY EFFICIENT SOLUTION FOR COMMERCIAL BUILDINGS

ECO²BUILDING

THE SITUATION AS IT STANDS

Buildings account for the largest share of energy use (around 40%) and produce about 35% of all greenhouse emissions. The largest cost-effective savings potential lies in the commercial buildings sector.

In order to reach the agreed climate protection targets, industrial and commercial constructions would need to be replaced by more resource and energy efficient buildings in the medium term.

Appropriate technologies are already widely applied in the residential sector of several EU countries but not as much in the industrial-commercial sector. It is however expected that the market share of highly resource efficient non-residential buildings will importantly increase in the coming years.

WHAT THE PROJECT AIMS TO ACHIEVE

The project brings together architects, timber construction engineers, building services and software engineers who have collectively developed Eco²building, a system which reaches high resource efficiency standards while still being economically priced.

Based on prefabricated timber frame modules, the buildings meet 'passive house quality' and uses renewable, CO₂ neutral materials. The project sets out to build 18 buildings penetrating the Austrian market first and then other European markets through a franchise system.



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REDUCING THE IMPACT OF WINE PRODUCTION

ENVIRONMENT SAVINGS FOR VINEYARD CULTIVATION AND WINE PRODUCTION – WINENVIRONMENT

THE SITUATION AS IT STANDS

Our much enjoyed glass of wine undergoes a series of processing phases from the vine to the table, involving vast quantities of water – five litres are used for every one litre of wine produced. Cultivators are also using pesticides and phyto sanitary products.

All over Europe, grape growers are aware of their environmental impact and methodologies are changing, innovations being developed. Companies in France, Spain and Germany have created ways to cut back on product waste while reducing the consumption of energy, water, pesticides and cleaning products.

WHAT THE PROJECT AIMS TO ACHIEVE

The project aims to bring into the market two eco-innovative technologies– new filtration and product recovery systems – and an environmental and quality management methodology.

Three demonstrations in five countries will be held and key associations in the sector will help to spread the new technologies and management system. If all goes to plan, the use of fungicides and insecticides should be reduced by 20% and water by 30%. Ten per cent of waste will be recycled and 10% more effluent treated.

Aimed mainly at SMEs the project will have a potential impact on 56 000 wine producing companies which should become more competitive as a result of the savings the techniques will help them achieve.



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► **GETTING INNOVATIONS TO MARKET**

FIRST INDUSTRIAL APPLICATION OF ECO-INNOVATIVE BIOTECHNOLOGICAL PROCESS AND PRODUCT, FOR RECYCLING AND RE-USE OF FOOD INDUSTRIAL WASTE TO ECONOMICALLY IMPORTANT AND HIGH ADDED VALUE FARMING PRODUCTS – PROTECTOR

THE SITUATION AS IT STANDS

Much has been achieved under EU funded, research and technological development programmes, but results have not always made it from the prototype to industrial application.

In the food industry this can mean that opportunities for using cutting edge biotech to recycle and re-use food waste are not exploited enough. Not only is this a waste of good work, it also has implications for efficient energy use and missed eco opportunities.

The project sets out to bring eco-innovative technology to product applications, using organic waste streams from the food industry.

WHAT THE PROJECT AIMS TO ACHIEVE

The project aims to up-scale and industrialize the integrated thermal and biotechnological process which recycles waste and by-products from food industry and agriculture. It converts it into a valuable crop nutrition and protection product to substitute energy intensive and polluting agrichemicals.

Throughout the project, an environmental, energy and economic performance evaluation of the PROTECTOR technology will be carried out and a clear product and technology-oriented dissemination, commercialisation and marketing strategy will be set up.



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►
**GREENHOUSES
 OF THE FUTURE**

**MONITORING TOOLS FOR A SUSTAINABLE
 MANAGEMENT OF IRRIGATION AND MICROCLIMATE
 IN EUROPEAN GREENHOUSES – ECOLTURE**

**THE SITUATION
 AS IT STANDS**

The need to find a way to produce the quantity of food the world needs, without impacting on the environment is an ongoing dilemma. Intensive agriculture may meet the demand for products but control measures have proved necessary to limit the resulting damage.

In order for greenhouses to play a greater role in terms of reduction of environmental impacts, capacities need to be increased and irrigation and microclimates managed sustainably. Soilless and hydroponic systems could be exploited to greater effect.

**WHAT THE PROJECT
 AIMS TO ACHIEVE**

By grouping together a range of technologies and practices, the project intends to focus on a new service for monitoring and control systems. The ultimate aim is to boost the implementation of innovative solutions to the whole production process, relating to climate and fertilisation, in European greenhouses.

Targeting European SMEs involved in horticultural production, the solution put forward involves: combining microsystems controlling recirculation; wirelessly connected sensors to optimise climate irrigation and fertilisation in real time, and remote monitoring through mobile terminals.

The project addresses the need for cleaner and more efficient production processes head on, demonstrating how competitiveness and eco efficiency can be improved in the agrifood industry.



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► **GREENER TANNING**

INNOVATIVE CLEAN PROCESS FOR THE COLORATION OF LEATHER USING NATURAL SUBSTANCES, AND TO ELIMINATE THE VOC AND THE SOLID WASTE, MINIMISING WATER USAGE AND DRASTICALLY REDUCING THE ENERGETIC CONSUMPTION – S.N.S.S.

THE SITUATION AS IT STANDS

The tanning industry currently uses organic solvents to clean the equipment for the dying of hides. The dyes themselves are frequently solvent based since the prolonged use of natural dyes can clog up the system.

As things stand now, finishing cycles are often energy intensive, dependent on large quantities of water and result in sludge which is difficult to dispose of. If the current system of carousel spraying booths is replaced with technology already piloted, the environmental impact of the tanning industry will be greatly reduced.

WHAT THE PROJECT AIMS TO ACHIEVE

The innovative finishing plant that will be developed by the project uses a series of tiny, in-line spray guns operating under low pressure. These are controlled by sensors to optimise the dye use and distribution. The bars are easily washed in liquid that is continually being recycled.

It will be possible to use water-based dyes which means the elimination of V.O.C. producing solvents by 95%. Since the plant will operate without a water bath, water consumption is also reduced by 95% and sludge from the purification process by 98%. The whole system is 75% more energy efficient.



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BAMBOO FILTER FOR FOOD INDUSTRY GREY WATER

MARKET REPLICATION OF BAMBOO REMEDIATION OF FOOD INDUSTRY EFFLUENT GREY WATER FOR RE-USE – BRITER-WATER

THE SITUATION AS IT STANDS

Bamboo – one of the fastest growing plants on earth, can grow and be harvested for 120 years and is robust enough to handle extremes of temperature and water supply. What is not so widely known is that it is a low cost way of remediating waste water with the additional benefit of being commercially harvestable.

Food and drink factories produce vast quantities of waste water, containing nitrogenous compounds and phosphates – contaminants bamboo is particularly good at removing. The project brings the two together to use the bamboo in intensive phytoremediation techniques.

WHAT THE PROJECT AIMS TO ACHIEVE

The effectiveness of the phytoremediation system proposed has already been successfully demonstrated in wineries and is now going to be applied for the first time on a large industrial scale.

The project will demonstrate that 99.5% of nitrogenous compounds and phosphates in effluent discharges can be cleaned in a cost-effective, eco friendly manner using bamboo. While the plants roots do their work absorbing the contaminants, the leaves absorb CO₂. Finally, high quality wood for many commercial applications is produced.

The novelty of the concept, the need for a solution and the lack of an eco friendly alternative means that considerable sales revenue are realistic by five years after the end of the project.



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► **REDUCING WASTE FROM THE MEAT AND DAIRY INDUSTRIES**

WASTE REDUCTION AND PROCESS OPTIMISATION IN THE EUROPEAN MEAT AND DAIRY INDUSTRY – WASTERED

THE SITUATION AS IT STANDS

Sewage sludge is an unavoidable by-product of the treatment of waste water from the food industry. Around 25 million tonnes are produced in the EU by the meat and dairy sector every year and disposing of the sludge represents 50% of the food industry’s operating costs and 65% of its environmental impact. And these figures are set to rise.

LODOred, developed by the project, is a product based on natural organic and inorganic compounds. It treats wastewater, reducing sludge and stabilising the biological treatment process.

WHAT THE PROJECT AIMS TO ACHIEVE

The market potential of LODOred will be demonstrated in three cases studies in Poland, Germany and Spain in a slaughterhouse, meat processing plant and dairy respectively.

The project hopes the production of sewage sludge will be reduced by 35%, and energy and treatment efficiency increased by 20%. The project aims to promote the uptake of LODOred product in the industry at large.



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►
**A NEW HIGH QUALITY
 ORGANIC FERTILIZER**

**INTRODUCTION IN THE MARKET OF A NEW
 HIGH QUALITY ORGANIC FERTILIZER OBTAINED
 BY THE USE OF POULTRY DEJECTION – FERPODE**

**THE SITUATION
 AS IT STANDS**

Very often the factor that limits the wider use of organic fertilizers is the difficulty to manage correctly the maturing process of the raw material, with a consequent poor agronomic quality of the final product.

Where Ferpode differs is in the manufacturing process of poultry manure based fertilizer which sees vegetable extracts being added at the beginning of the maturation process.

**WHAT THE PROJECT
 AIMS TO ACHIEVE**

A pilot plant constructed to combine fowl manure and ‘vegetable active principles’ will create an environmentally friendly and cost-effective fertiliser according to a European patent pending process.

Adding vegetable extracts at the beginning of the maturation process, in a static pile, requires low energy input and no water. This results in a sustainable process which prevents and recycles waste to produce mature, biostabilized dry poultry manure, which has no consequences in case of overdose.



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► MANAGING BIOGAS PLANT FLOWS

OPTIMISING AGRICULTURAL BIOGAS CYCLE MANAGEMENT SYSTEM – BIOCICLA

THE SITUATION AS IT STANDS

Waste is growing in Europe, part of which can be turned into renewable energy. The renewable energy objectives of the EU have given the biogas market a boost, although there are difficulties to address. The economic situation for many plants is fragile and the lack of close monitoring is leading to resources being used inefficiently. The residues left behind by fermentation have to be used on neighbouring agricultural land, sometimes leading to over fertilisation.

The flow of materials up to the use of the residues as fertilizers (through biogas plants), and the processes used to produce the gas and heat, can be streamlined using an expert management system, software application.

WHAT THE PROJECT AIMS TO ACHIEVE

BIOCICLA will put an advanced management system on the market. As a result, organic waste will be reused and recycled more efficiently, with less impact on the environment, and the European biogas sector reinforced.

The expert management system will be monitored constantly, through on-site testing at two biogas plants, and while the software is being fine tuned, market analysis will be carried out. This will target a sales potential of 100 management systems for the two years following the end of the project.



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► **BOOSTING UPTAKE OF CERTIFICATION FOR FORESTRY SERVICES AND MANAGEMENT**

FSC CERTIFICATION OF FOREST SERVICE ENTERPRISES – FSC CERTIFICATION LC

THE SITUATION AS IT STANDS

Certification of forest management and logging according to environmental criteria not only makes cultivation of forests more environmentally-friendly but also results in the production of more certified wood. Already today, the demand for this wood in Europe exceeds the supply.

Of the European forests, 50% are privately owned. This is equal to 68.5 million ha of forest. A vast majority of the private forest land are small properties, and many of them are not yet maintained according to environmental standards.

To promote and facilitate certification, Latvia and Estonia are seeing new approaches which combine certification and licensing of forestry services with forestry management. By using certified services, forestry owners know they are employing those who meet environmental standards. Meanwhile, those services currently working without certification are encouraged to take up certification in order to keep their competitive edge.

WHAT THE PROJECT AIMS TO ACHIEVE

The new certification scheme will certify forestry services, which will facilitate the selection of a green forestry service for the targeted small forest owners. A group of forest services businesses will be certified according to the new standard and four pilot applications to small forest owner groups will be conducted.

There will also be seminars on certification of small forest holdings, with the establishment of work groups, in four countries. An EU wide workshop involving key forest service providers and private forest owners will look over the results of the pilot schemes.



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► ECOLABEL ONLINE — A DEDICATED E-STORE

ELECTRONIC STORE FOR ECO-LABELLED PRODUCTS — ECOLABEL ESTORE

THE SITUATION AS IT STANDS

The European eco-label award scheme came into force in October 1992 and its distinctive flower logo now brands products and services across Europe as environmentally optimal. Both private consumers and public bodies frequently source eco-labelled products if possible, but sometimes market barriers get in the way.

The eco-label itself is still not recognised as widely as could be wished. But even if consumers do know what they are looking for, there are not always enough shops offering certified products and the market appears to be rather fragmented. Lastly, many manufacturers of eco-labelled products do not have extensive marketing capabilities to expand their markets and exploit the existing market potential.

WHAT THE PROJECT AIMS TO ACHIEVE

The project is addressing the tourism and hospitality sector and accommodation services all around German speaking countries. Access to eco-labelled cleaning products, paints and varnishes, paper products etc. will be facilitated through the new online shop.

The e-store will include more than 1 000 products from over 300 suppliers. In addition to being environmentally friendly, the shipping impact will be limited, with locally sourced products preferred. The project will contact 17 000 accommodation services in German speaking countries and get to agreements with buying syndicates and producers. This will lead to effective market penetration which the project hopes will help the business concept spread.

The final result will be a raised profile of the label and far easier choice for environmentally friendly products by the consumer.



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► SMES WORKING TOGETHER FOR SUSTAINABLE TOURISM

EMASEASY MOVE-IT! MANAGE AND COMMUNICATE A GREAT AND UNIQUE REGIONAL TOURIST “ALL INCLUSIVE PRODUCT PACKAGE” WITH EMAS

THE SITUATION AS IT STANDS

The popular themes of ‘Health and Wellbeing’ and ‘Living History and Culture’ involve diverse strands of a region’s economy, from slow food producers, to country walks and bio health care.

National and international tourists interested in these themes are also more open to a branded holiday experience that is at the same time sustainable. Certified environmental “all inclusive”, attractive tourist packages can help to increase the competitiveness of local businesses in the sector.

The EU’s Eco-Management and Audit Scheme (EMAS) provides for thorough audit mechanisms leading to trustful certification. In a local Cluster approach, SMEs operating in the same geographical or thematic area can join forces to create a full-scale environmental, healthy, cultural holiday experience.

WHAT THE PROJECT AIMS TO ACHIEVE

Two clusters at different tourist attractions in six countries will gather about 5-10 local SMEs each. The clusters are formed around attractions like a thermal spa, caves, a castle, a river/forest natural environment, a market square, a pilgrimage site or a beach resort. Different aspects of EMAS and other national and local environmental certifications will be combined in one methodology and the local clusters will receive coaching through the project.

Training and working with 30 regional development agents, backed up by an online facility, will help to further establish the methodology and to achieve a further replication by more clusters: an additional 150 SMEs will have implemented an environmental management system after the project ends and have become more eco-efficient and sustainable.



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► **CERTIFICATION SCHEME FOR RECYCLED PLASTICS**

EUROPEAN CERTIFICATION OF PLASTICS RECYCLERS – EUCERTPLAST

THE SITUATION AS IT STANDS

There are 16 000 people employed in Europe’s plastics recycling industry who, in 2006 alone, recycled 4.5 million tonnes. The sector is made up of thousands of SMEs facing difficulties accessing financing and with limited human resources.

The recycling of 4.5 million tonnes of plastics does represent an increase over recent years but is just a small fraction of the 50 million tonnes of new plastic placed on the market in 2006.

Much more needs to be done if we are to call ourselves a recycling society.

WHAT THE PROJECT AIMS TO ACHIEVE

Variations in the quality of the post-consumer plastics and of the resulting material are one of the most important obstacles which hinder the use of recycled raw materials. One step would be to have a certification scheme for post-consumer plastics recyclers, which on the one hand assesses the recycling process and ensures that a good practice is used while on the other hand guarantees the output quality of the recycled plastic.

EuCertPLast intends to set up such a scheme to increase both the rates of recycling and the uptake of recycled material. It will contribute to the targets set out in the EU’s waste framework directive.



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- EUROPEAN ASSOCIATION FOR UNORIENTED POLYESTER FILM, GERMANY
- RECOVINYL RECOVINYL, BELGIUM



► **SIMPLIFYING THE MANAGEMENT OF YOUR ENVIRONMENTAL PROFILE**

LIFE CYCLE INNOVATION & MANAGEMENT FOR SMES – LIMAS

THE SITUATION AS IT STANDS

When companies want to become greener, they have different options to start greening their business: eco-design, life cycle assessment, environmental product declarations, EMAS and ISO standards.

LIMAS will put forward a practical methodology and a web based application to help SMEs green their business. The methodology will help them rationalise different environmental topics through one, common approach. This solution will be applicable across the EU, and in principle throughout all sectors.

WHAT THE PROJECT AIMS TO ACHIEVE

Through the methodology developed by the project and made publicly available, European SMEs will optimise their time and resources.

A software tool will be commercially produced to support the methodology. This will be partially based on an existing programme (SIMPPLE LCA) which will be updated to include the wide array of eco topics confronting SMEs and redesigned to function as a back-end programme by a web application.



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Eco-innovation | 
WHEN BUSINESS MEETS THE ENVIRONMENT

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A wealth of ideas for a greener Europe

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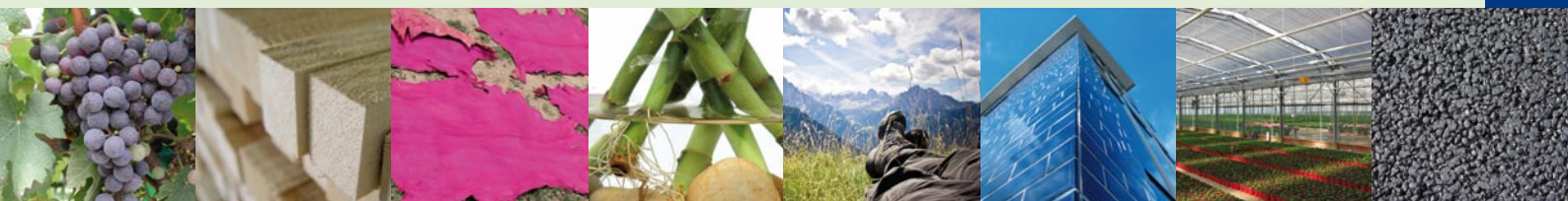
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A WEALTH OF IDEAS FOR A GREENER EUROPE

This brochure sets out the innovative and diverse projects shortlisted for funding by the European Union's CIP Eco-innovation initiative.

A must-read for those curious to know about the imaginative ideas on the environmental issues of today – recycling, construction, the food and drink industry and helping companies boost their greener side.



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