

CLAYGLASS
ECOSANDFILL
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LIFE PROJECTS

JOINT NEWSLETTER

JULY 2018

SUMMARY

This document is a newsletter that includes several European projects framed in the LIFE call. The five projects presented below correspond to the ceramic sector or the foundry sector. In all the cases, projects foster the concept of circular economy, key factor for sustainable development, which contributes to the achievement of the objectives of the European Union roadmap for the gradual reduction of greenhouse emissions gases.



CLAYGLASS



LifeClayGlass

www.lifeclayglass.es

ADAPTATION OF STRUCTURAL CERAMICS INDUSTRY TO CLIMATE CHANGE BY APPLYING RECYCLED GLASS AS FLUX

LIFE ClayGlass (LIFE 12/ENV/ES/000156) has proved the feasibility of an innovative process that mitigates the environmental impact of the structural ceramic industry, whose activity requires high energy consumption which results in high rates of greenhouse gas emissions. Thus, LIFE ClayGlass innovation has focused on reducing cooking temperatures and, consequently, reducing CO2 emissions in the structural ceramic industry. This result has been achieved by adding to the ceramic both CRT recycled glass – Cathode Ray Tube (panel and funnel of televisions and computers) and glass from urban solid waste treatment plants, both of which had no real chances of a profitable valorization up until now.

LIFE ClayGlass has proposed to use this recycled glass for the first time as replacements for part of the clay in the ceramic mass, taking advantage of its melting properties. Additionally contributes to the reduction of the ecological footprint, by reducing the consumption of a natural raw material such as clay.



ECOSANDFILL

ecosandfill

www.life-ecosandfill.eu

SPEND FOUNDRY SAND VALORISATION IN CONSTRUCTION SECTOR THROUGH THE VALIDATION OF HIGH-PERFORMANCE APPLICATIONS

Landfill of foundry sand remains a severe environmental problem in Europe due to its significant quantity. LIFE ECO-SANDFILL project, co-financed by the LIFE Programme of the European Union (GA No. LIFE15 ENV/ES/000612), aims at demonstrating the technical, economic and environmental feasibility of using Spent Foundry Sand (SFS), adequately processed, as fine aggregate in three construction applications, specifically for embankments, Controlled Low Strength Material (CLSM) and flowable mortars. It also explores high quality reutilisation of reclaimed SFS in foundry sector for core and mould making, as a substitute for new sand. The ultimate goal of the project is to reduce the annual volume of SFS disposed of in landfills, cutting down costs of waste management and raw materials, whilst decreasing the associated environmental impacts.



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IK4 research alliance

IK4
AZTERLAN
Research Alliance



Projects cofinanced by the LIFE program of the European Union



LIFECERAM

LIFECERAM

www.lifeceram.eu

The main objective of LIFECERAM (LIFE12 ENV/ES/000230) has been to achieve the situation of zero waste in the manufacture of ceramic tiles. For this, a strategy has been followed consisting of: on the one hand, the development of a ceramic tile suitable for outdoor use that incorporates a high content of waste (more than 95%) and on the other, the design of a highly sustainable manufacturing process based on technologies dry milling and granulation, capable of recycling all types of ceramic waste.

Other significant achievements of the project have been to quantify and characterize the totality of the ceramic waste generated in the manufacture of ceramic tiles, develop the new product considering its Life Cycle Analysis (LCA), determine the new variables of the manufacturing process and demonstrate the technical and economic feasibility of the project through the manufacture of the new tiles in the industry.



LIFEGREENZO



life+greenzo www.lifegreenzo.eu

VALORIZED ZINC OXIDE FROM NON-FERROUS METAL WASTE AND VALIDATION IN INDUSTRIAL CATALYTIC APPLICATIONS

The work developed in the project LIFE+ GREENZO (LIFE13 ENV/ES/000173), aims to obtain a new source supply of zinc oxide (ZnO) from industrial waste. With this aim, a pre-industrial pilot plant has been developed using plasma technology to obtain ZnO from non-ferrous metal waste (zamak). The ZnO obtain meets all requirements (physical and chemical properties) to ensure its validation into two industrial sectors: the manufacture of rubber/EVA and chemical catalysts.

In fact, the validation carried out allowed to test a significant improvement in its properties on regard its commercial homologous.



FOUNDRYTILE



www.foundrytile.eu

VALORIZATION OF IRON FOUNDRY SANDS AND DUST IN CERAMIC TILE PRODUCTION PROCESS

The main objective of the FOUNDRYTILE (LIFE14 ENV/ES/000252) project has been to demonstrate the valorization of iron foundry sands and dust in the ceramic tile production process. The innovative character has been provided by the utilization of green and chemically bonded foundry dust and sand in tile production replacing natural raw materials, red clay (for red firing ceramic products) and white clay (for white firing ceramic products). This way, the project contributes to the implementation of Waste Framework Directive (Directive 2008/98/EC) following the objectives and goals of the Roadmap for a Resource-Efficient Europe. In addition, there has been an industrial symbiosis between the ceramic sector and the foundry sector.

The new applications have the following benefits:

- 1- Preservation of natural resources.
- 2- Increase foundry waste valorization.
- 3- Environmental footprint reduction.
- 4- Increase the competitiveness of companies from the foundry and ceramic sectors.



Projects cofinanced by the LIFE program of the European Union

