



AUTOPLAST-LIFE - Recycling of special plastic waste from the automotive industry

LIFE13 ENV/IT/000559



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Contact details:

Contact person: Andrea Sbicego

Tel: 390365877011

Fax: 036581268

Email: andrea.sbicego@valsir.it

Project description:

Background

One of the waste streams emerging from the treatment of end-of-life vehicles (ELVs) is the waste tanks and reservoirs from fuel and cooling systems. Most of the hydrocarbons are adsorbed during the life of the tanks and the waste treatment process further reduces the original mechanical properties. Collected material cannot thus be used for most of the specific applications it previously had.

As a result, most decommissioned tanks are currently sent to landfill or to plants that incinerate waste for the production of thermal and electrical energy. To achieve the recycling of these materials, an innovative recovery process is needed that would leave a secondary raw material with chemical and technological properties that allows it to be reused in the normal production cycles.

Objectives

The AUTOPLAST-LIFE project aims to develop a system for the recovery and recycling of special plastic waste from the automotive sector. The system will include a network for the selective collection of vehicles' waste tanks and reservoirs, as well as a pilot recycling plant to generate recyclable secondary material.

The project will design, construct and start up a large-scale industrial plant for treatment of waste tanks and reservoirs from the recovery and recycling of ELVs. The plant will granulate the special plastic waste for transformation into material with the chemical and technological properties appropriate for recycling.

Innovative techniques will include replacing commercial additives with sodium bicarbonate (NaHCO_3) to provide better hydrocarbon adsorption performance and the use of finely-ground coffee dregs – obtained from business activities – for odour neutralisation of the tanks' cleaning waters and the adsorption of a fraction of hydrocarbons. These techniques will significantly reduce processing costs for the recycled fraction.

The project will create a network responsible for the collection, selection and recovery of special plastic waste from ELVs in the Italian province of Brescia. The network will include large and small waste collection centres and the active involvement of social co-operatives in the recovery, selection and separation of the ELV wastes. The project will also explore new commercial networks for valorisation of the reusable material generated.

Expected results:

- Development and organisation of a supply chain of special plastic waste from ELVs in Brescia;
- A large-scale industrial plant for the transformation of the collected plastic waste into reusable material;
- Recovery and granulation of around 200 tonnes of plastic materials from tanks;
- Reduction of processing costs for the waste fraction by 25 times;
- Use of the regenerated granules in place of virgin raw materials generating economic benefits and a decrease of CO₂ emissions; and
- Commercial exploitation of the regenerated granules.

Results

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Environmental issues addressed:

Themes

Industry-Production - Engines - Machinery - Vehicles
Waste - End-of-Life Vehicles (ELV's) and tyres
Waste - Packaging and plastic waste
Waste - Waste recycling
Waste - Waste reduction - Raw material saving

Keywords

industrial waste, waste recycling, emission reduction, plastic waste, greenhouse gas, end-of-pipe technology, automobile industry

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator	VALSIR S.P.A.
Type of organisation	Large enterprise
Description	Valsir S.p.A. is a private plumbing and heating company, specialising in waste and water supply systems, underfloor heating and flush cisterns. It produces various types of pipe, polyethylene fittings, external flush boxes and siphon systems for rainwater drainage.
Partners	CAUTO(CAUTO Cantiere Autolimitazione cooperative sociale a r.l.), Italy CSMT(CSMT Gestione S.c.a.r.l), Italy

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Administrative data:

Project reference	LIFE13 ENV/IT/000559
Duration	01-JUN-2014 to 31-MAY -2018
Total budget	4,438,972.00 €
EU contribution	1,230,048.00 €
Project location	Lombardia(Italia)

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Read more:

Brochure	Title: Project's brochure Year: 2014 No of pages: 12
Leaflet	Title: "AP autoplast" (3.76 MB) Year: 2015 Editor: Valsir No of pages: 2

Project web site

[Project's website](#)

Publication: Guidelines-Manual

Title: "LIFE + Programme (European Commission) concerning the LIFE+ project LIFE13 ENV/IT/000559 "AUTOPLAST", Action B5, Manual for waste processing" (358 KB)
Editor: AP autoplast No of pages: 7

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