



**WS-REC**

**DESIGN AND CONSTRUCTION OF A  
ELV-WINDSCREEN RECYCLING LINE**

**ECO/09/256180**



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**ECO-innovation**   
WATER BUSINESS WITH THE ENVIRONMENT

## OBJECTIVES

The general objective of the project is to construct at pre-competitive scale a windscreen recycling line which enables the recovery of the main materials from which it is composed, glass and PVB. By the utilisation of the recycling process of this project, both the glass and the PVB will be recovered, reducing the contaminant effects caused by the PVB. Furthermore, the car windshield recycling could be profitable as a whole (cost between 7-8€ per kg PVB recycle).

Some of other partial objectives that will be accomplished during the different stages of the project are:

- To optimise a glass-PVB separation system and the removal of the glass through a redesign and construction of the machine in charge of the fragmentation of the glass.

- To construct a PVB purification system, based on the patent developed at Lurederra (WO2009/118426A1). This system is characterised for being the most innovative objective of the project.

## PROCESS DESCRIPTION

The design of an innovative recycling line for ELV-windcreens, through the most advanced equipment and recycling method, developed at the technological Centre Lurederra. This is constituted of the following modules:

Module I-Glass-PVB separation: The main activity of this phase is to separate the maximum quantity of glass from the windscreen, to obtain PVB with as low as possible glass impurities optimizing the rolling equipment.

Module II-PVB purification: This phase is where the most innovative treatment occurs. First, a reaction of acetylation will be carried out on the impure PVB eliminating the others contaminants. Then, a neutralisation reaction will restore the PVB with its original characteristics.

Module III-Purified-PVB processing: This module consists in the processing and purification of the PVB obtained, with the aim of get PVB pellets. The compounding of the PVB will also include the addition of antioxidants, plasticizers, dyes, etc.

## PARTICIPANTS

**Technological Centre Lurederra:** Lurederra will actively participate in the specifications of the glass/PVB separation, in PVB purification procedure and in PVB processing module as coordinator and manager.  
www.lurederra.es



**ingeniería Navarra Mecánica, SL.** is a company dedicated to the production of specialized machinery and process automation devices. They will participate in the construction and optimisation of module II and the assembly of the prototype line.



**Glassdrive,** devoted to repair and replacement of glass in vehicles. They will participate in the definition of the logistic pattern and will collaborate in the design of the modules from the wastes point of view.  
www.glassdrive.es/



**Dr. Zaber Sp. Z.o.o:** It specializes in energy engineering and production automation. Zaber will be in charge of the design and fabrication of the heat-energy systems of the line.  
www.zaber.com



**Plastic Herverwerking Brabant BV:** Is a specialist in the area of plastics recycling: PP, HDPE, PS and PET. PHB will contribute in the design of the PVB/Glass separation line (module I).  
www.phb-recycling.com



**Machinefabriek Otto Schouten B.V.** The business core of the company is to produce specialist machines. MOS will take part in the design and construction of the separation system, specially, improving the crusher roll.  
www.ottoschouten.nl



## BUDGET

The WS-REC project, supported by the European Commission under contract number ECO/09/256180 WS-REC has a total budget of 1.362.337 €. The project will have a whole duration of three years (April 2011-March 2014) and the EC contribution amounts to 681.168 €.

