This project has received funding from the LIFE financial instrument of the European Union under grant agreement No LIFE15 ENV/ES/000208

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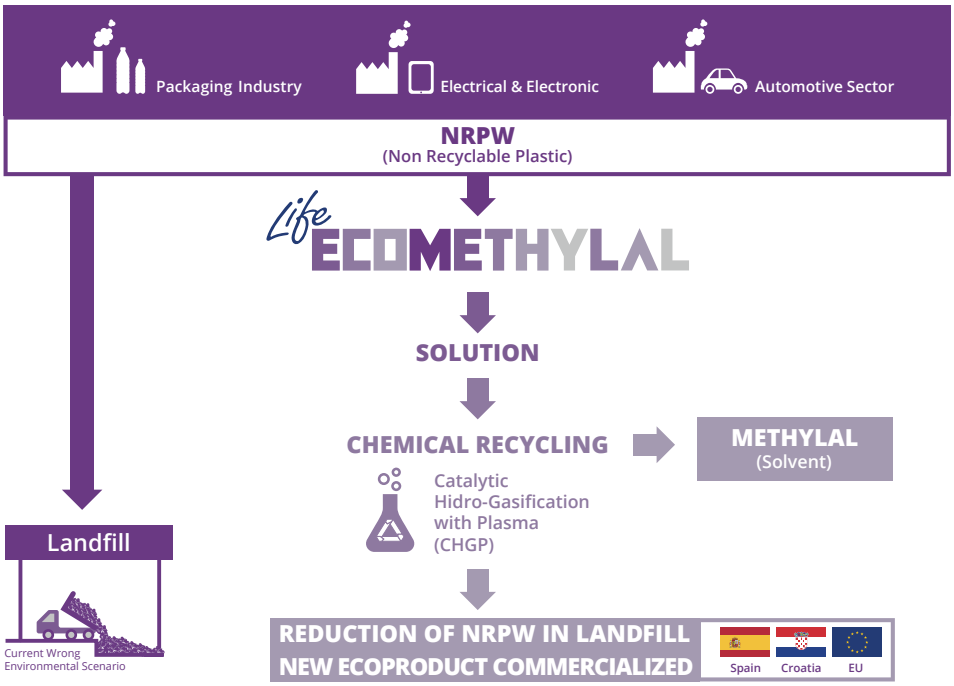
HIGH QUALITY METHYLAL FROM NON-RECYCLABLE PLASTIC WASTE BY AN IMPROVED CATALYTIC HYDRO-GASIFICATION PLASMA(CHGP) PROCESS

LIFE ECOMETHYLAL will test the valorisation of NRPW that is currently landfilled –especially heterogeneous plastic waste– using Catalytic Hydro-Gasification with Plasma (CHGP), a more environmentally friendly technology than the ones currently used. The project will recycle NRPW from the automotive, electric-electronic and packaging sectors to produce a valuable chemical agent called methylal.

The market for methylal is estimated to be worth about €5.2 billion/year. It is used in various industries due to its low toxicity, low viscosity and especially its high solvent power making it a sustainable alternative to petrol-based solvents. Therefore, the project addresses two major problems: the recovery of "difficult" plastic waste and the dependency on fossil fuel-derived materials.

The proposed technology, which has not previously been used for treating NRPW, will be demonstrated at a pilot plant initially installed in Spain. The plant will operate continuously, increasing efficiency and reducing energy consumption. This plant will then be delivered and implemented in Croatia to test its replicability potential, which should be high due to its compact and modular configuration.

The methylal produced will be marketed as an eco-material in various sectors (e.g. plastics, chemicals and automotive). life ecomethylal will contribute to the implementation of the Roadmap for a Resource-Efficient Europe, the Action Plan for the Circular Economy and the European directives: Packaging and Packaging Waste; Waste Electrical & Electronic Equipment; End-of-Life Vehicles; Waste Framework; and Landfill of Waste.



EXPECTED RESULTS

- Reduction of around 3.6 tonnes plastic waste sent to landfill (accounting for 0.28 tonnes CO_2 eq. or more than 304 MJ eq. per pilot plant) during the project period;
- Production of 2.88 tonnes methylal through waste resources (thus saving virgin fossil resources), leading to a reduction of 2.07 tonnes CO_2 eq., more than 107 300 MJ eq. per pilot plant;
- Implementation of a cleaning process for plastic recovery;
- Improved economic and environmental efficiency of the recycling companies in order to achieve EU zero waste targets (thereby improving competitiveness);
- Job creation: an average of 15 jobs per industrial plant; and
- A replicable strategy for recovery of plastic waste in other EU countries.

AUTHOR
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PROJECT REFERENCE LIFE15 ENV/ES/000208 **DURATION** 01-SEP-2016 to 31-AUG -2019 **TOTAL BUDGET** 2,039,142.00 € **EU CONTRIBUTION** 1,031,678.00 €

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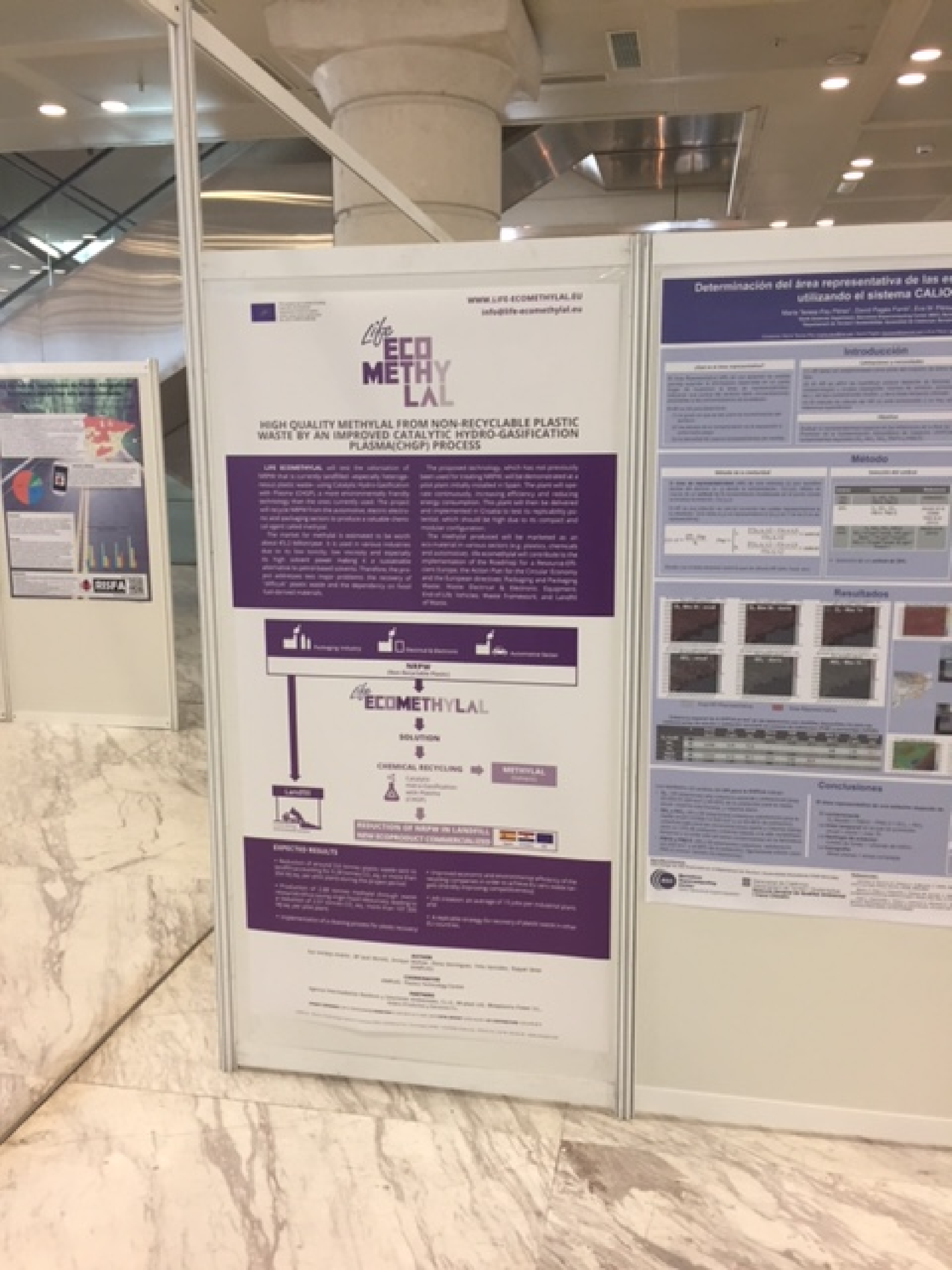
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EXPECTED RESULTS

- Reduction of around 3.6 tonnes plastic waste sent to landfill (accounting for 0.28 tonnes CO_2 eq. or more than 554 MJ eq. per pilot plant) during the project period.
- Production of 2.88 tonnes methylal through waste resources (thus saving virgin fossil resources), leading to a reduction of 2.07 tonnes CO_2 eq., more than 107 000 MJ eq. per pilot plant.
- Implementation of a cleaning process for plastic recovery.
- Improved economic and environmental efficiency of the recycling companies in order to achieve EU zero-waste targets (thereby improving competitiveness).
- Job creation: an average of 15 jobs per industrial plant; and
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