

PROJECT

REVOLUTION

Supporting the Electric Vehicle REVOLUTION through maximising EV Range and End-of-Life Vehicle Recovery through optimisation of recycled plastics and advanced light materials

Funding: European (Horizon 2020)

Duration: Jan 2021 - Dec 2023

Status: Ongoing

Total project cost: €5,927,475

EU contribution: €4,997,913



Call for proposal: H2020-LC-GV-2020

[CORDIS RCN : 232247](#)

Objectives:

REVOLUTION focuses on overcoming the challenges hindering the use of recycled materials, but more broadly, restricting the widespread adoption of circular economy principles in the automotive industry. Forthcoming ELV directives are expected to recognise the potential for plastics to enable a circular flow of materials in the automotive sector. Implementing minimum post-consumer recyclate (PCR) targets in any new plastic components in vehicles are currently being discussed. These targets will disrupt the automotive industry.

Currently PCR (closed-loop recycling) forms ~2% of the total plastics demanded across the automotive sector, and are not used in high-value or high-performing areas. REVOLUTION is proposing a disruptive innovation that will bring open-loop recycling to the forefront of automotive injection moulding. The variability of PCR causes a big problem for an industry where failure rates on 1 per million are accepted. REVOLUTION will use machine learning and artificial intelligence to optimise the input of recycled materials and injection moulding process to deliver high-quality parts. The AI-Platform will use data from three areas of the production process to predict part quality when using recycled materials. REVOLUTION will develop this platform, and develop a range of recycled formulations, including self-reinforced materials to deliver innovative components that offer light weighing, superior performance and distinctive end of life advantages for future EVs.

REVOLUTION brings together leading organisations from European strong-hold industries such as automotive, chemicals and plastics. The automotive industry is represented by Fiat Chrysler Automobiles through Tofas, CRF and Tier 1s Farplas and MAIER. LyondellBasell, Clariant and Altuglas provide strong representation of the European excellence in plastics and chemicals. These are joined by leading research organisations and SMEs to bring a solution to market that addresses the entire value chain.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Other programmes: LC-GV-06-2020 Advanced light materials and their production processes for automotive applications

Lead Organisation:

Farplas Otomotiv Anonim Sirketi

Address:

3.CAD
41420 KOCAELI
Turkey

EU Contribution: €568,269

Partner Organisations:**Altuglas International Sas****Address:**

420 RUE D'ESTIENNE D'ORVES
92700 COLOMBES
France

EU Contribution: €107,625

Norner Research As**Address:**

ASDALSTRAND 291
3960 STATHELLE
Norway

EU Contribution: €542,275

Iconiq Innovation Limited**Address:**

COMMERCIAL HOUSE MILLBANK BUSINESS PARK LUCAN
K78X5W6
DUBLIN
Ireland

EU Contribution: €117,084

Basell Polyolefine GmbH**Address:**

BRUHLER STRASSE 60
50389 WESSELING
Germany

Organisation Website:

<http://www.lyondellbasell.com>

EU Contribution: €166,206

Heathland Bv**Address:**

ARKANSASDREEF 8
3565 AR UTRECHT
Netherlands

EU Contribution: €289,188

Centro Ricerche Fiat - Societa Consortile Per Azioni**Address:**

Strada Torino, 50
10043 ORBASSANO (TO)

Italy

Organisation Website:

<http://www.crf.it>

EU Contribution: €276,500

Teknologian Tutkimuskeskus Vtt Oy

Address:

Tekniikantie
2044 Espoo
Finland

EU Contribution: €531,245

Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.v.

Address:

HANSASTRASSE 27C
80686 MUNCHEN
Germany

Organisation Website:

<http://www.fraunhofer.de>

EU Contribution: €433,920

Interuniversitair Micro-Electronica Centrum

Address:

Gaston Crommenlaan 8/102
9050 Gent
Belgium

Organisation Website:

<http://www.imec.be>

EU Contribution: €395,525

Idener Research & Development Agrupacion De Interes Economico

Address:

CALLE EARLY OVINGTON 24-8
41300 LA RINCONADA SEVILLA
Spain

EU Contribution: €499,219

Clariant Plastics & Coatings (Deutschland) Gmbh

Address:

BRUNINGSTR. 50
65929 FRANKFURT AM MAIN
Germany

EU Contribution: €236,171

Maier Scoop

Address:

POLIGONO INDUSTRIAL ARABIETA S/N
48320 AJANGIZ

Spain

Organisation Website:

<http://www.maier.es>

EU Contribution: €317,725

Tofas Turk Otomobil Fabrikasi Anonim Sirketi

Address:

Buyukdere Cad Tofas Han 145 Kat 4-5 Zincirlikuyu
34394 Sisli Istanbul
Turkey

EU Contribution: €516,961

Technologies:

Life cycle analysis
End of life recycling technologies

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Environmental/Emissions aspects

Geo-spatial type: Other