AIMPLAS
PLASTICS TECHNOLOGY
CENTRE

AIMPLAS
EXCELLENCE IN PLASTIC

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PLASTICS TECHNOLOGY CENTRE

Contents

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What is AIMPLAS?

AIMPLAS is a **Technology Centre** with more than 27 years of experience in the plastic sector

Our mission

Adding value to **companies** to generate **wealth and employment.**

Adding value to the society to improve the **quality of life** and ensure **environmental sustainability**.

Staff

A team of more than 127 highly qualified professionals

64% women · **36%** men · **39 years** average age · **16** PhD

Resources

Our greatest asset: **your confidence**

€ 8.4M
revenues

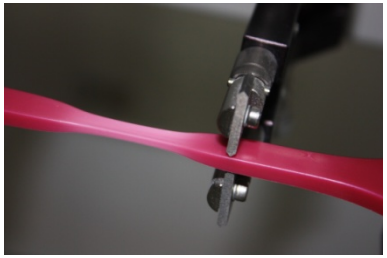
+2,300
customers

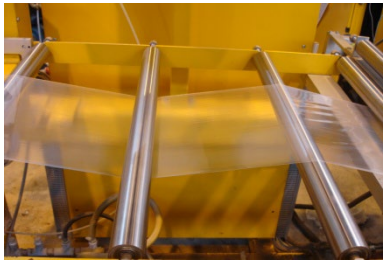
+574
associated companies

2016 DATA

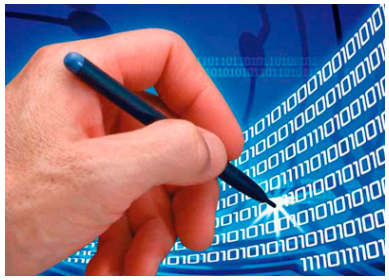
Market oriented

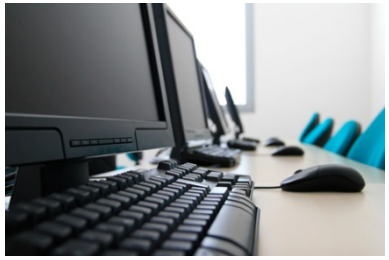
Solutions for Plastics





- R&D&Innovation projects
- Analysis and testing
- Technical assessment
- Competitive intelligence
- Training





What does circular economy involve?

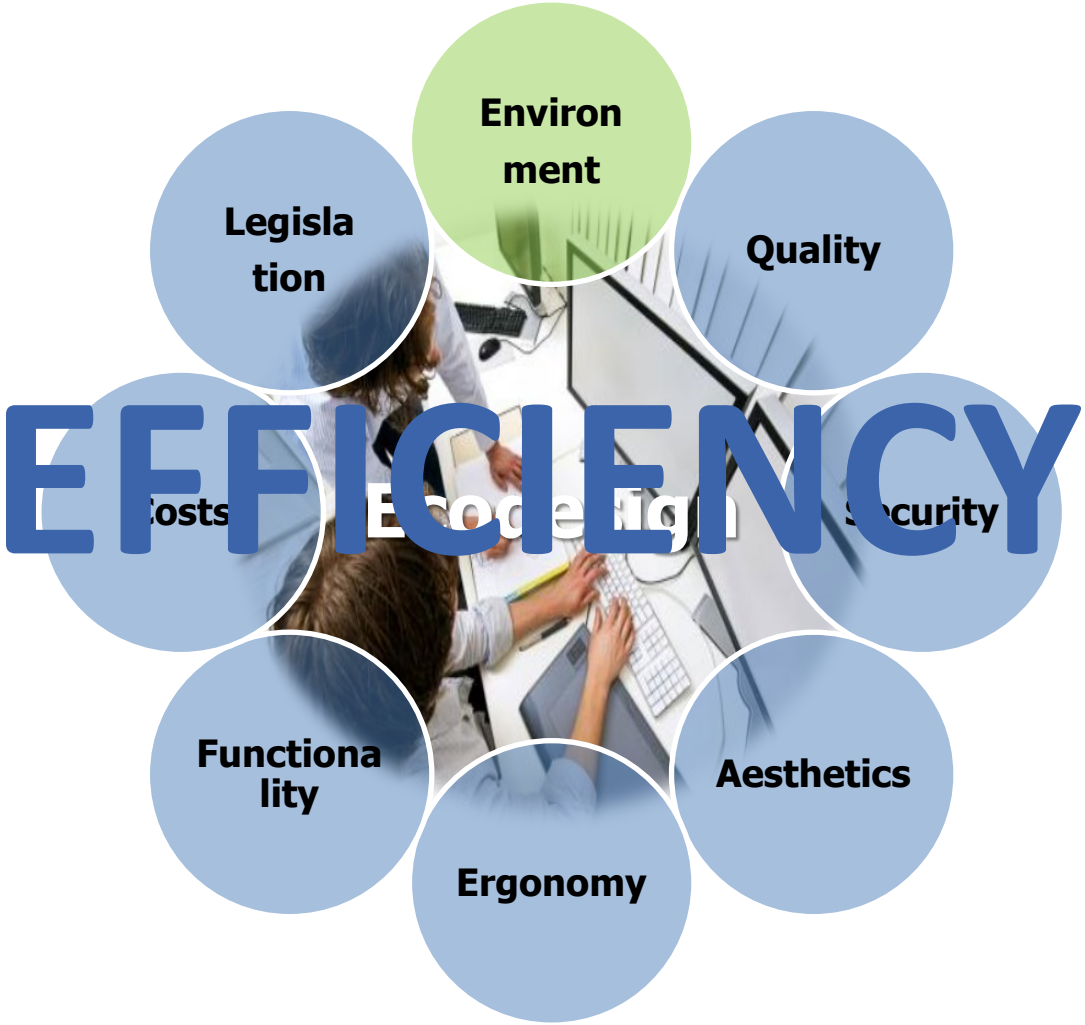
Reduce	1	Changing our behaviour
Reuse	2	Reusing material
Recycle	3	Recycling and reprocessing materials
Recover	4	Recovering energy
Landfill	5	Targeting **Zero landill**

Source: Albany Waste Management

Source: Ecowise Waste Management Pvt. Ltd.

Source: Raisie Bay - A Family and Lifestyle Blog

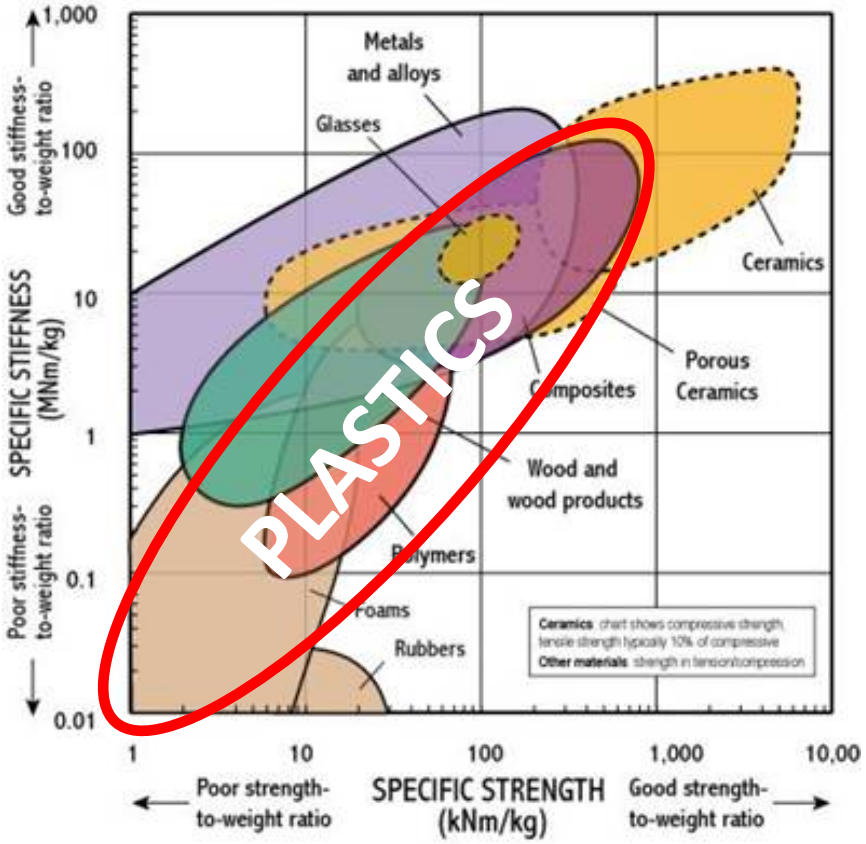
What does circular economy involve?

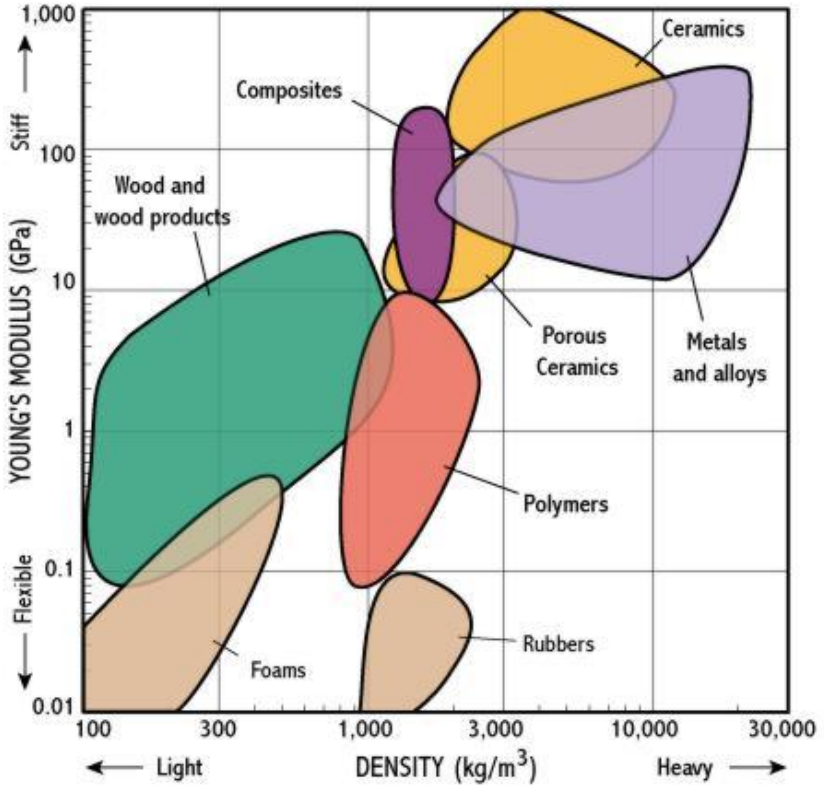


WHAT CAN PLASTICS DO FOR THE CIRCULAR ECONOMY?

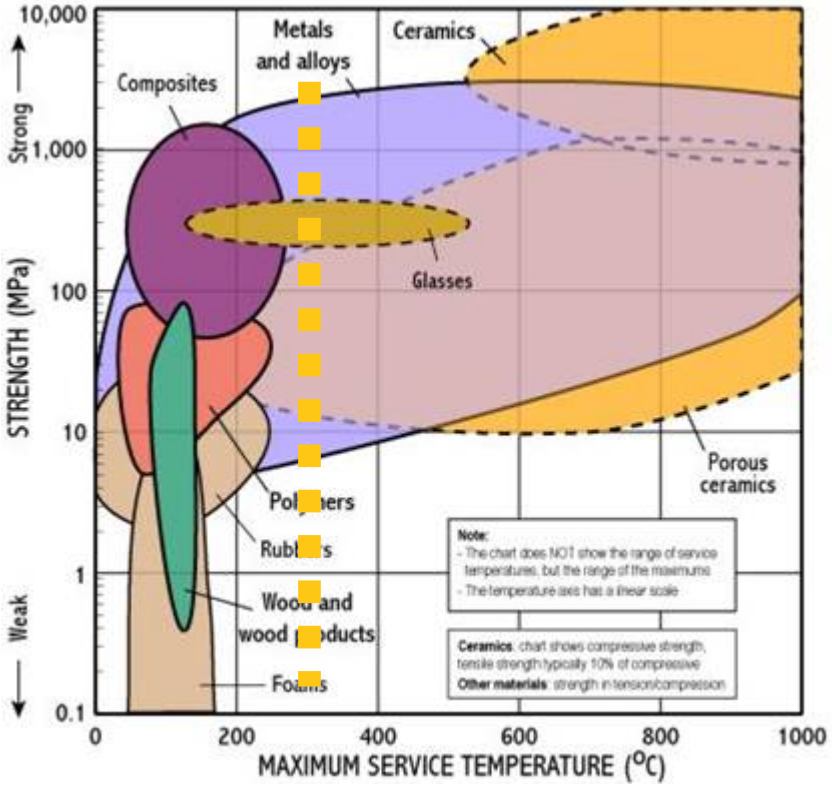
What can plastics do for the circular economy?

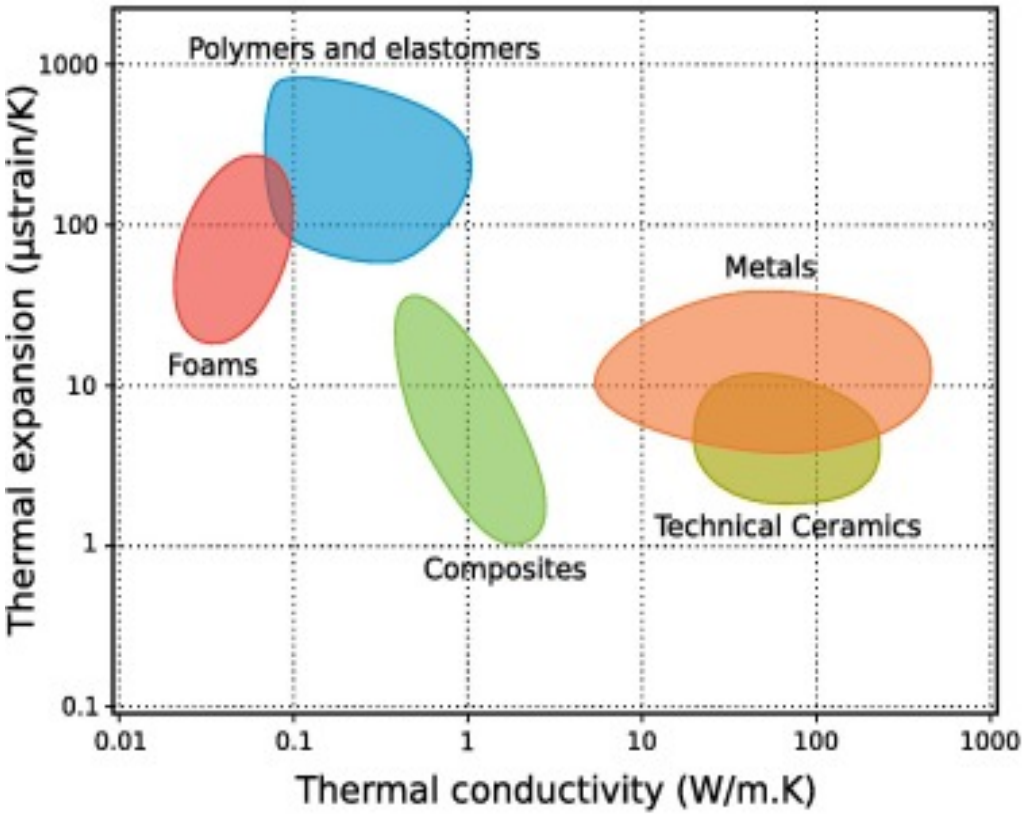
Properties





What can plastics do for the circular economy?
Properties



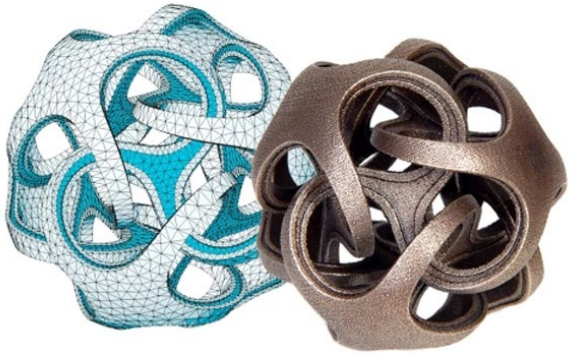


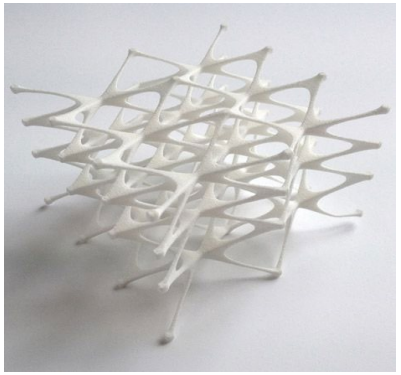
What can plastics do for the circular economy?
Freedom of Design

Plastics provide lightness, versatility, and further design possibilities

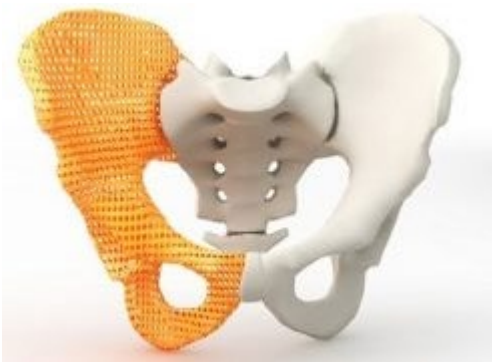
What can plastics do for the circular economy?
Freedom of Design

Impossible shapes and geometries are now possible

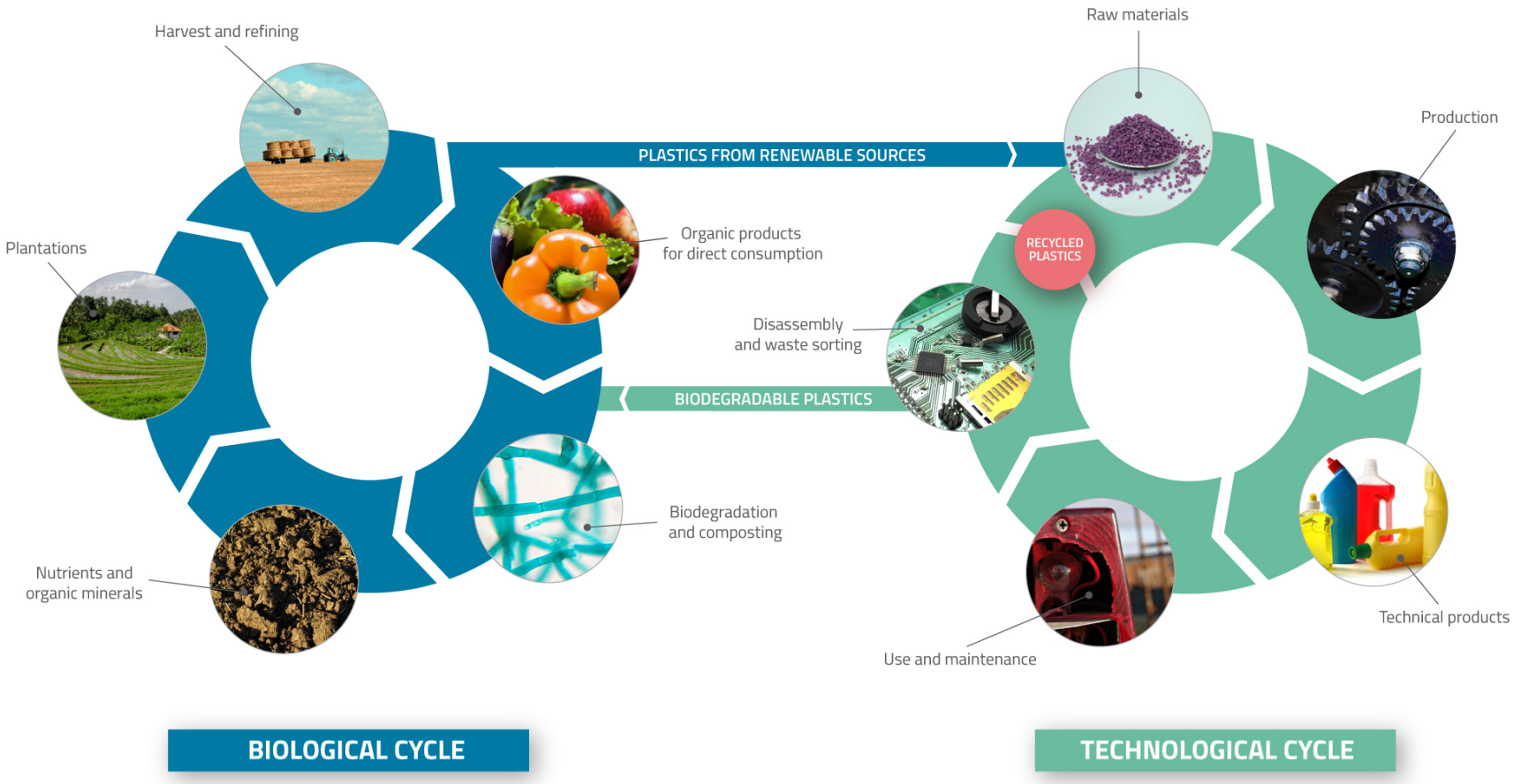




And switable for any product or application technology



What can plastics do for the circular economy?
End of Life



What can plastics do for the circular economy?

What can plastics do for the circular economy?

SOME EXAMPLES OF ECOINNOVATION…

DAFIA

Biomacromolecules from municipal solid bio-waste fractions and fish waste for high added value applications

http://www.dafia-project.eu/

Funded by

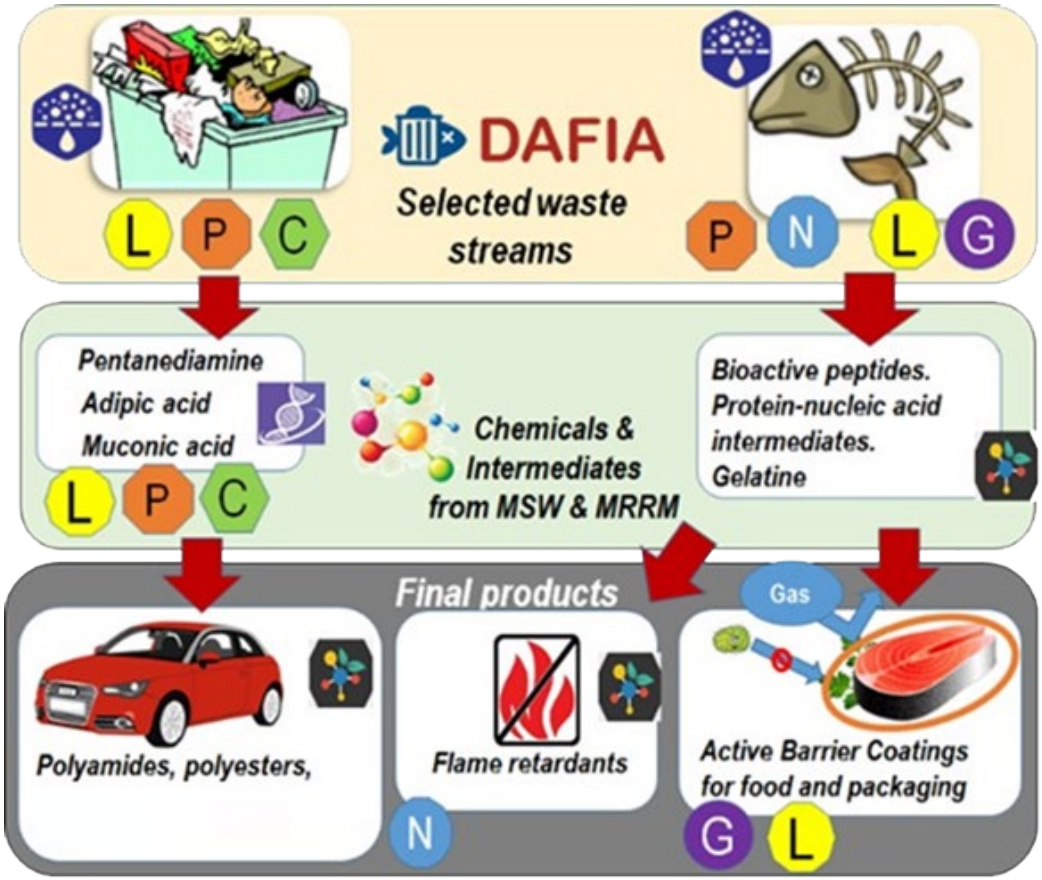
Associated beneficiaries

AIMPLAS - POLITO - SINTEF MC - SINTEF O - DTU
IRCELYON - NUTRIMAR - IRIS - MINE - DLABS
BIOTREND - NNFCC - BBEU - BIOPOLIS - ARKEMA

- Municipal solids waste (MSW) represents more than 500 kg/capita EU
- Approximately 50% of this volume is landfilled
- More than 1.3 million tonnes of Marine rest raw material (MRRM) from the fish processing industries are generated in Europe each year
- DAFIA will exploit MSW and MRRM as feedstocks for high value products

DAFIA | PROBLEM | SOLUTION

DAFIA explores conversion routes of municipal solid waste (MSW), and marine rest raw-materials (MRRM), to obtain high added value products



N Nucleic acid
G Gelatine.
L Lipids
P Proteins.
C Carbohydrates.

Biotechnology routes
Green Chemistry routes.
Separation and purification.

Main target DAFIA industrial sectors:

- Fireproof polyamide parts for Automotive and Electric-electronic sectors.
- Compostable, edible and active food Packaging.
- High performance polyamide based coatings (Healthcare, automotive, sport goods, rollers, fluid transport ….).

BREAD4PLA

Demonstration Plan Project to produce Poly-lactic acid (PLA) Biopolymer from waste products of bakery industry

http://www.bread4pla-life.eu

Funded by

Associated beneficiaries

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ATB
Leibniz-Institut für Agrartechnik Potsdam-Bornim e.V.

cetece
CENTRO TECNOLÓGICO

- Replace human food raw material to produce PLA by a residual one
- The European bakery sector produces 3.5 million tonnes of retrodegradated starch waste with minimal nutritional value every year
- At least 5% of this waste is disposed of in landfill because there is currently no alternative use

BREAD4PLA | PROBLEM | SOLUTION

Developing the pre-industrial process for obtaining lactic acid from bakery waste:

- Selection and characterisation of bakery waste
- Enzymatic fermentation
- PLA polymerisation, including the use of thermal stabilisers to avoid PLA molecular degradation
- Production of sheets of packaging material

The final packaging obtained had the same performance than those manufactured with PLA obtained from cereals

LIFE ExtruClean

Removal of hazardous substances in polyethylene packages using supercritical carbon dioxide (sc-CO2) in recycling process

http://www.life-extruclean.eu

Funded by

Associated beneficiaries

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Enplast s.a.

AIDIMA
FURNITURE, WOOD AND PACKAGING TECHNOLOGY INSTITUTE

acteco

ARVET
AGRUPACIÓN DE EXPORTADORES DE TRANSFORMADOS

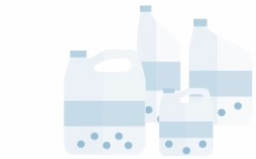
Eliminating hazardous substances from polyethylene (PE) waste from packaging for solvents or phytosanitary products requires:

- Large amounts of water
- Cleaning agents
- Energy

It produces large volumes of wastewater and the recycled plastic obtained is used in applications with low added value

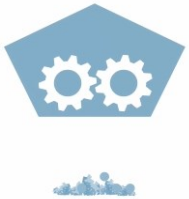
Original Process

New Process

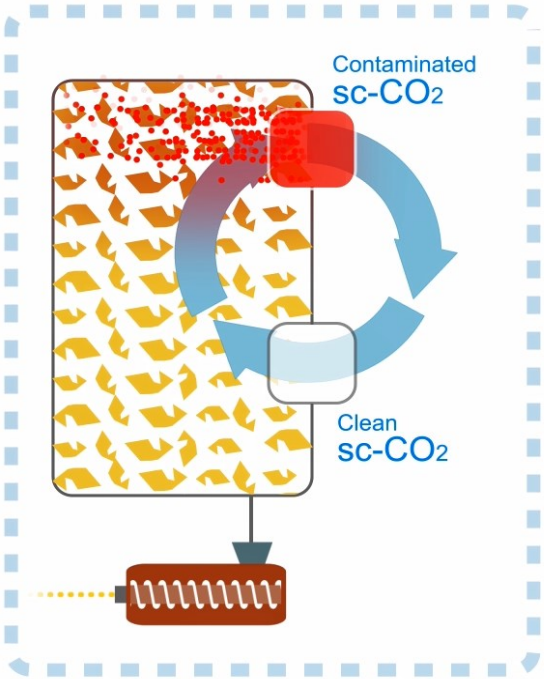


Contaminated Packaging

1st Washing and Drying



Ground Material



Extrusion

New Packaging

Decontaminated Plastic Recycled Pellets

RESIPET

Development of Thermosetting Resins from Polyethylene Terephthalate (PET) Waste

Funded by

GOBIERNO DE ESPAÑA · MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD

UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional

Una manera de hacer Europa

Cofinanciado por el Ministerio de Economía y Competitividad dentro de Retos-Colaboración del Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad. RTC-2015-3855-5 y Fondos FEDER.

Associated beneficiaries

Barpimo
BARNICES PINTURAS

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- Complex PET packaging is introduced in the market
- PET multilayer packaging and colored ones generates problems, resulting in low quality products or even rejected, being deposited in landfill

RESIPET | PROBLEM | SOLUTION

- Industrial development of thermoset resins, from chemical recycling of multilayer or color wastes from PET
- At a competitive cost and low environmental impact
- Poliol obtained for the synthesis of alkyd resins, as well as for the production of unsaturated polyester resins.

Life ECO METHY LAL

High quality methylal from non-recyclable plastic waste by an improved Catalytic Hydro-Gasification Plasma(CHGP) process

http://www.life-ecomethylal.eu

Funded by

Associated beneficiaries

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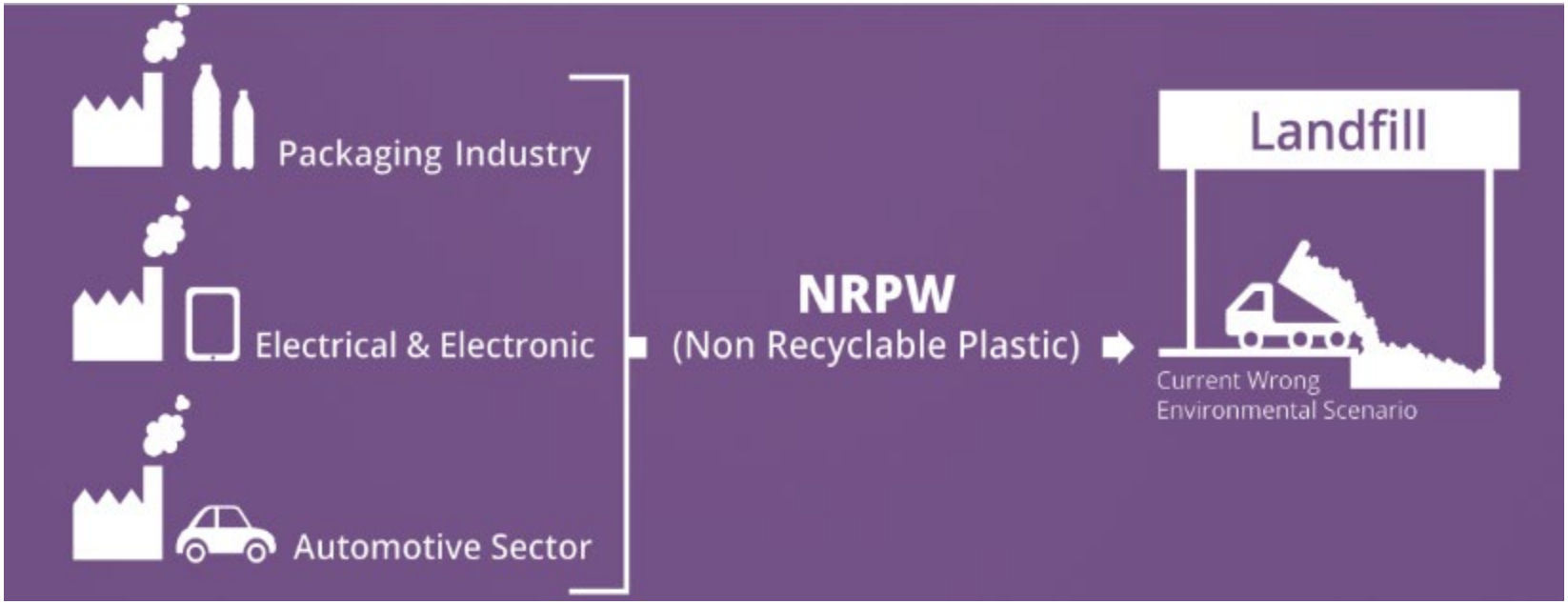
AIRESA

mi-plast bio-company

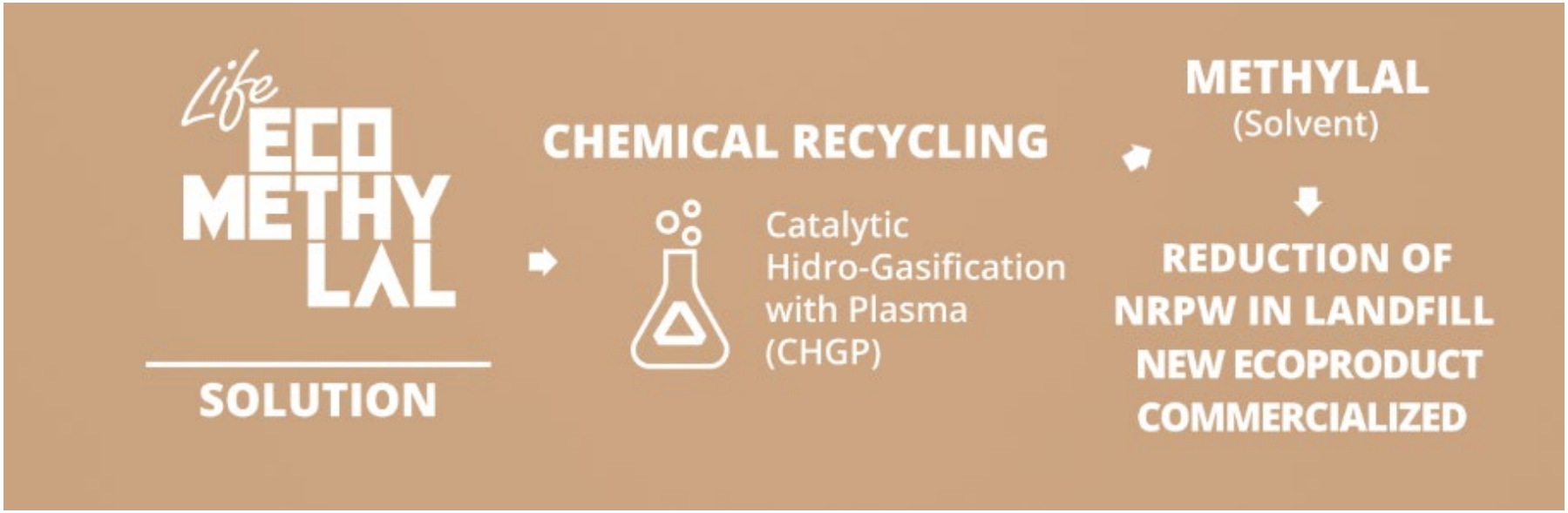
acteco

BPP BLUEPLASMA POWER

- Complex mixtures of different plastics from packaging, automotive and electric and electronic plastic waste, that are very diffucult to be recovered
- Actually, in 2014, a total of 7.8 million tonnes of these wastes were thrown out in landfills



- Chemical recycling to obtain a new industrial quality solvent preserving natural resources.
- Reduction of plastic waste sent to landfill.
- Treatment of 144,000 tonnes of plastics each year and obtain 91,200 tonnes of methylal from them



URBAN REC BULKY WASTE MANAGEMENT

New approaches for the valorisation of URBAN bulky waste into high added value RECycled products

www.urbanrec-project.eu

Associated beneficiaries

Funded by

- Large amounts of bulky waste: furniture, mattresses, apliances, textiles, large fixtures and fittings
- Representing a European generation of 19 Mt/year
- More than 60% of bulky waste is currently landfilled in EU

Develop and implement an eco-innovative and integral bulky waste management system, enhancing: prevention, improving logistics and allowing new waste treatments to obtain high added value recycled products

The waste treatments considered in the project include:

- Rebonding and chemical glycolysis for the PUR materials, to prepare renewable adhesives
- Needle felt to obtain isolation panels from textiles
- Fibre reinforced composites from textiles
- Wood Plastic composites (WPC)
- Catalytic hydro-gasification with plasma for mixed hard plastics to obtain chemicals or fuel

URBANREC | PROBLEM | SOLUTION

URBANREC

Needlefelts

Recycled foam core

Adhesives

Mixed textile

PU foam

BULKY WASTE

Fibre reinforced composites

WPC

Hard Plastics + Wood

Methylal

SPAIN

BELGIUM

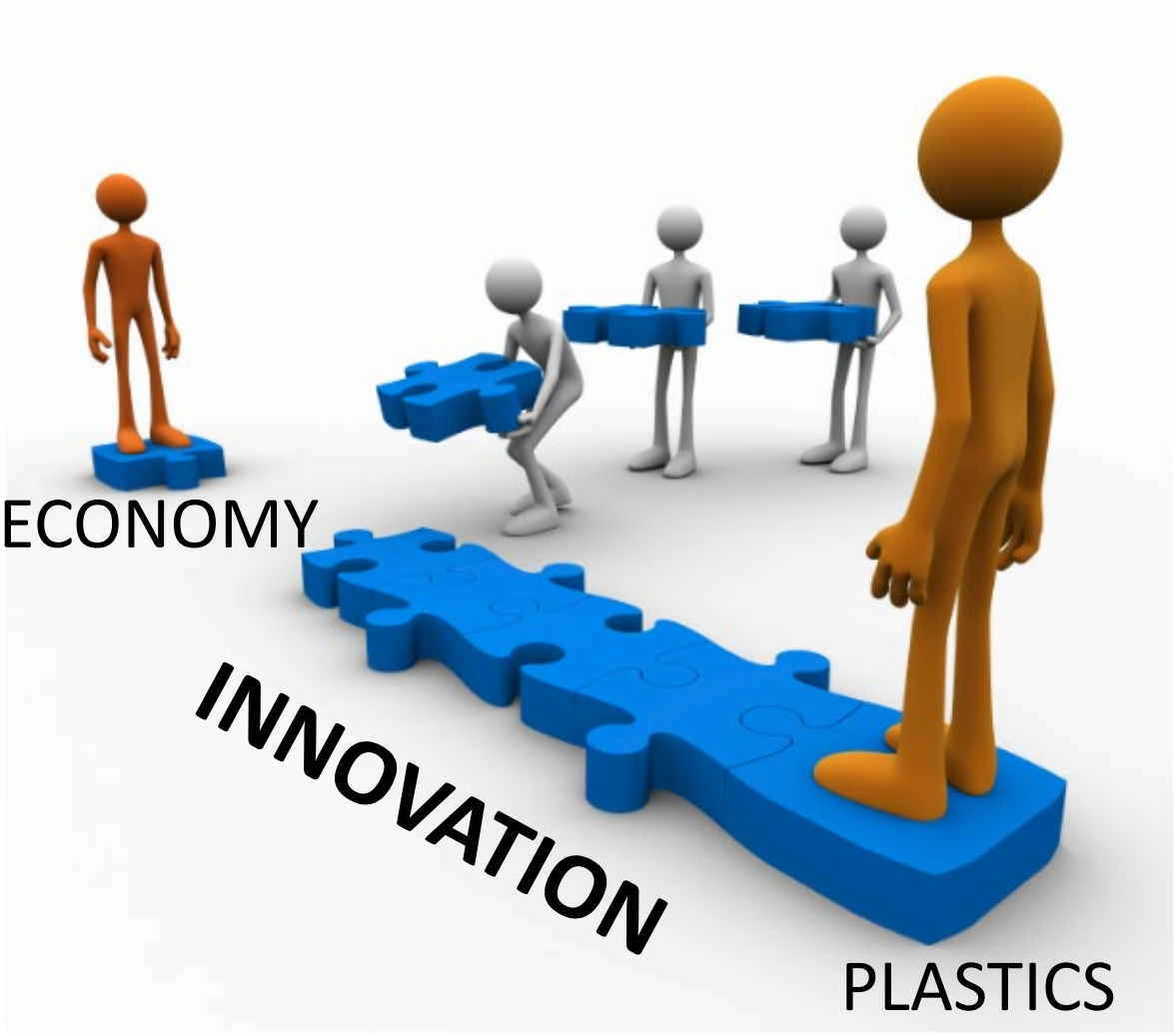
POLAND

TURKEY

ECO-INNOVATIVE INTEGRAL SYSTEM OF SOLID WASTE MANAGEMENT

Conclusions

CIRCULAR ECONOMY



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Thank you

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