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The road to an URBAN Bioeconomy:
Barriers and Solutions to Closing the Loop of Bio-Resources

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**URBAN BIOREFINERY: ADVANCED BIOETHANOL,
BIOPRODUCTS AND BIOENERGY FROM ORGANIC
MUNICIPAL SOLID WASTE**

INDUSTRIAS MECÁNICAS ALCUDIA S.A.



- Metal mechanical company funded in 1979.
- High technological capacity.
- Experience in petrochemical and refinery sectors.
- 25.000 m² of facilities. 180 employees.
- Semi-industrial plant PERSEO Bioethanol®.



The background of the slide is a close-up photograph of organic urban waste, including food scraps like orange peels, vegetable peels, and various pieces of plastic and paper trash.

About 100 Mt of municipal biowaste is generated every year in Europe.

Only about a third (30 Mt) of this was separately collected and composted and/or digested ([European Compost Network \(ECN\)](#))

Waste Framework Directive

Demand of sustainable and competitive biowaste treatment processes

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BIO
ENERGY

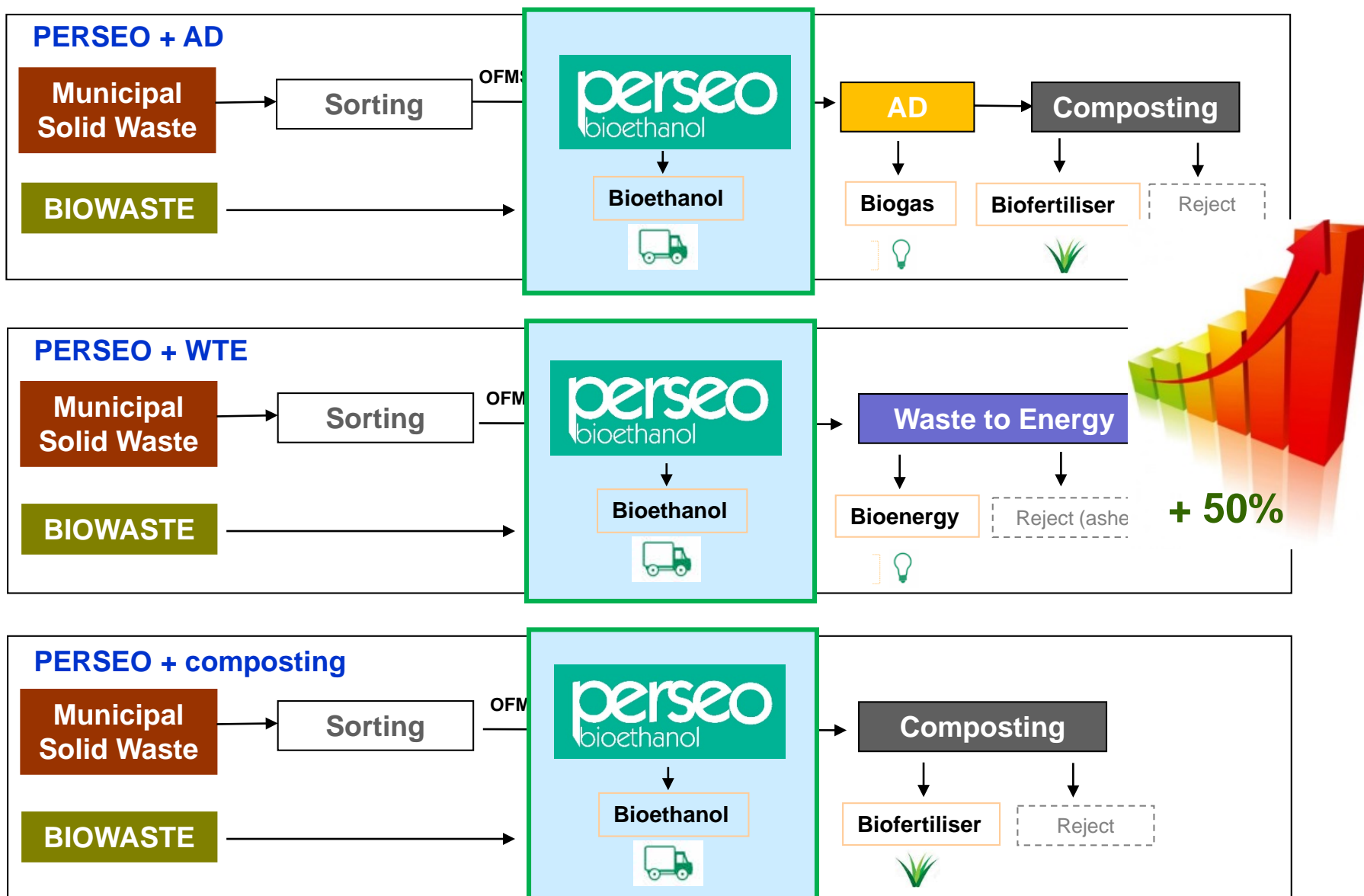


Biotechnological process:
Transform the organic fraction of municipal waste into
advanced bioethanol, bioproducts and bioenergy.



PERSEO Bioethanol® Process

*From sorted OFMSW



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✓ **The Process is Real, Feasible, Replicable and Profitable.**

✓ **Proven Pre-industrial process.**

Pilot plant 25 t/d from 2007.

Technology:

- **Simple biotechnological process.**
- **Compatible with the existing MSW treatment facilities.**
- **Better economical results than current MSWT**

International projects:





Demonstration of an integrated innovative biorefinery for the transformation of Municipal Solid Waste (MSW) into new BioBased products (GA 745785).

- ✓ **16 partners covering the value chain of MSW treatment to bioproducts**

**Project Budget: 15 M€ (Grant 10.9 M€).
4 years project (6/2017 – 5/2021)**

Follow us on:



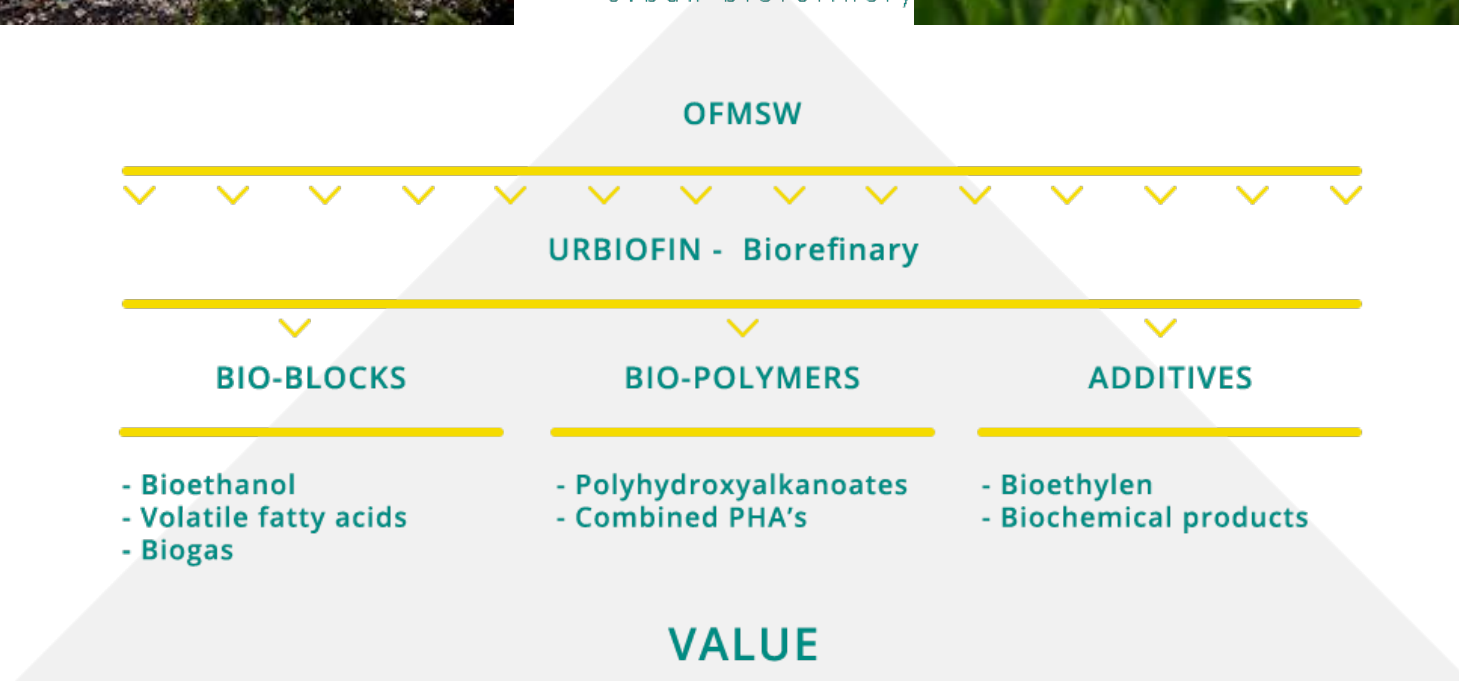
Landfill
Composting
Anaerobic Digestion

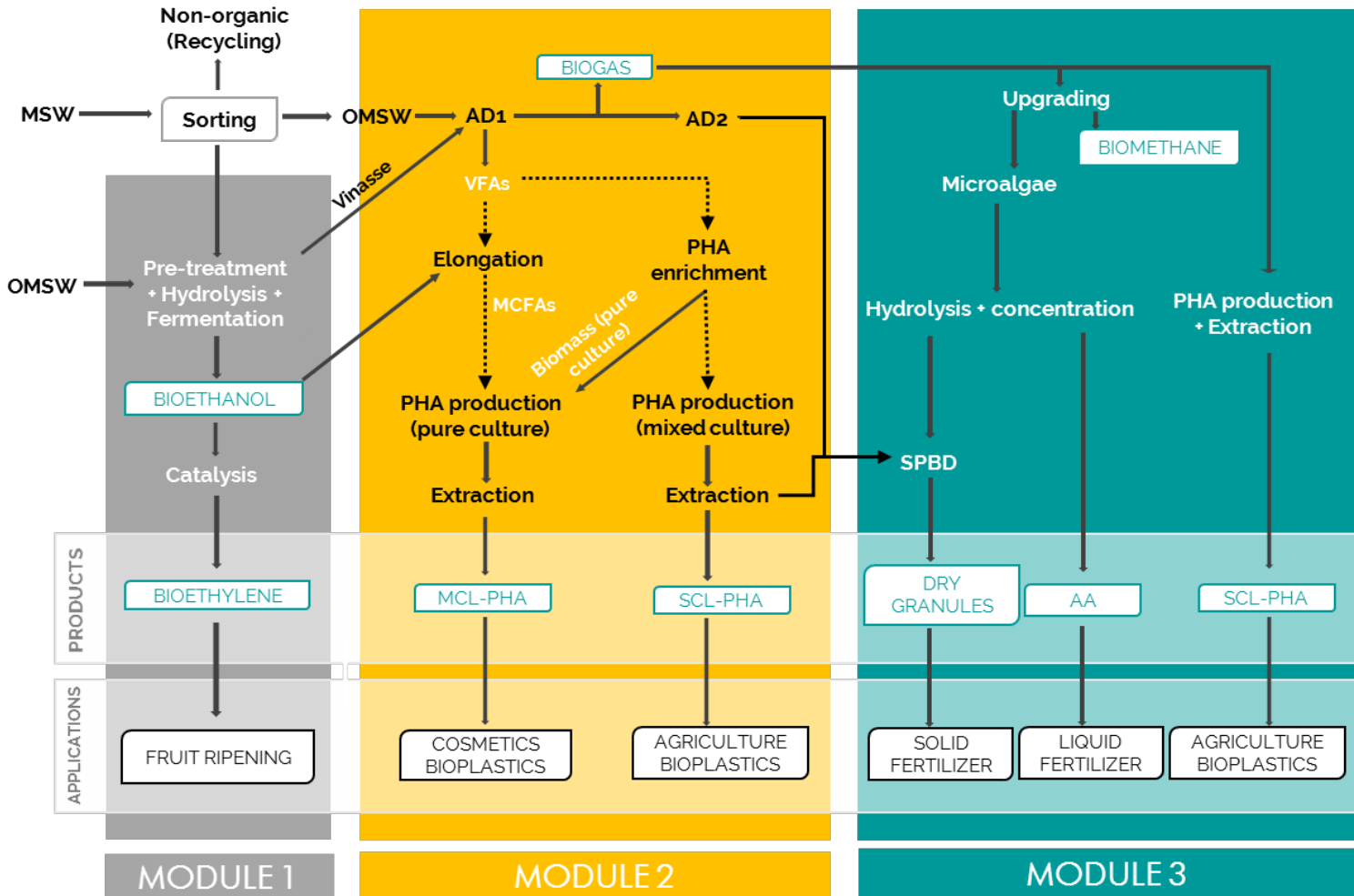


**NEW MODEL OF
OFMSW
TREATMENT**



Biorefinery





Benefits of an urban biorefinery:



Profitability

Higher annual benefits, when compared to current MSW technologies



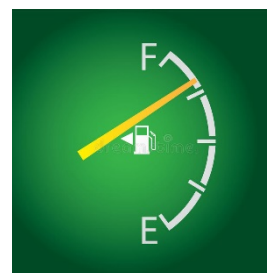
Versatility

Versatility to treat different fractions of waste to obtain maximum added value and profitability



ZEROWASTE

Improvement of the performance through the **use of by-products generated** in their own processes – **landfill diversion**



Bioresources

Reduction of fossil resources dependence in energy and products.



Circular Economy

Evolution towards the path of the bioeconomy defined by the EU.

Waste is a resource: Circular economy.



Sustainability

Boost competitiveness, foster sustainable economic growth and generate new jobs

Barriers:

- Waste legislation.
- Necessity of standards for bioproducts.
- Consumer acceptance of bioproducts coming from waste.
- Barriers to entry of new and feasible technologies in waste management.

Thank you for your attention!!



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