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bioethanol



IMECAL



Working for a circular bioeconomy
at local and regional level

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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®.



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

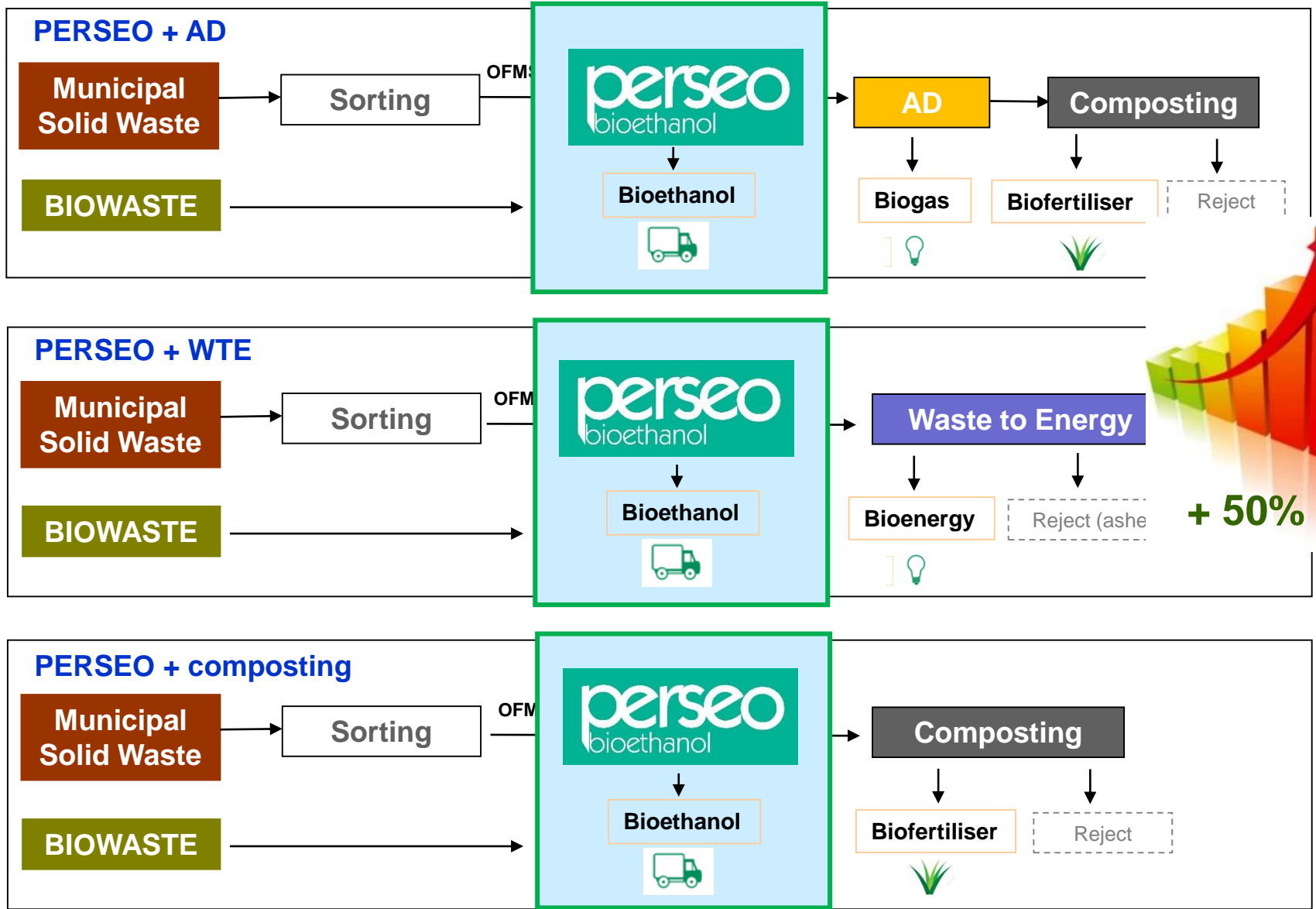


**Biotechnological process:
Transform the organic fraction of municipal waste into
advanced bioethanol, bioproducts and bioenergy.**



PERSEO Bioethanol® Process

*From sorted OFMSW





✓ **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: Horizon 2020 European Union Funding for Research & Innovation





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

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



www.imecal.com/perseo
(Coordinator)



Universidad de Valladolid

www.uva.es



www.wur.nl/en.htm



clamber.castillalamancha.es



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Engineering that inspires

www.exergy.uk.com



www.ciemat.es



www.bioeconomy.de



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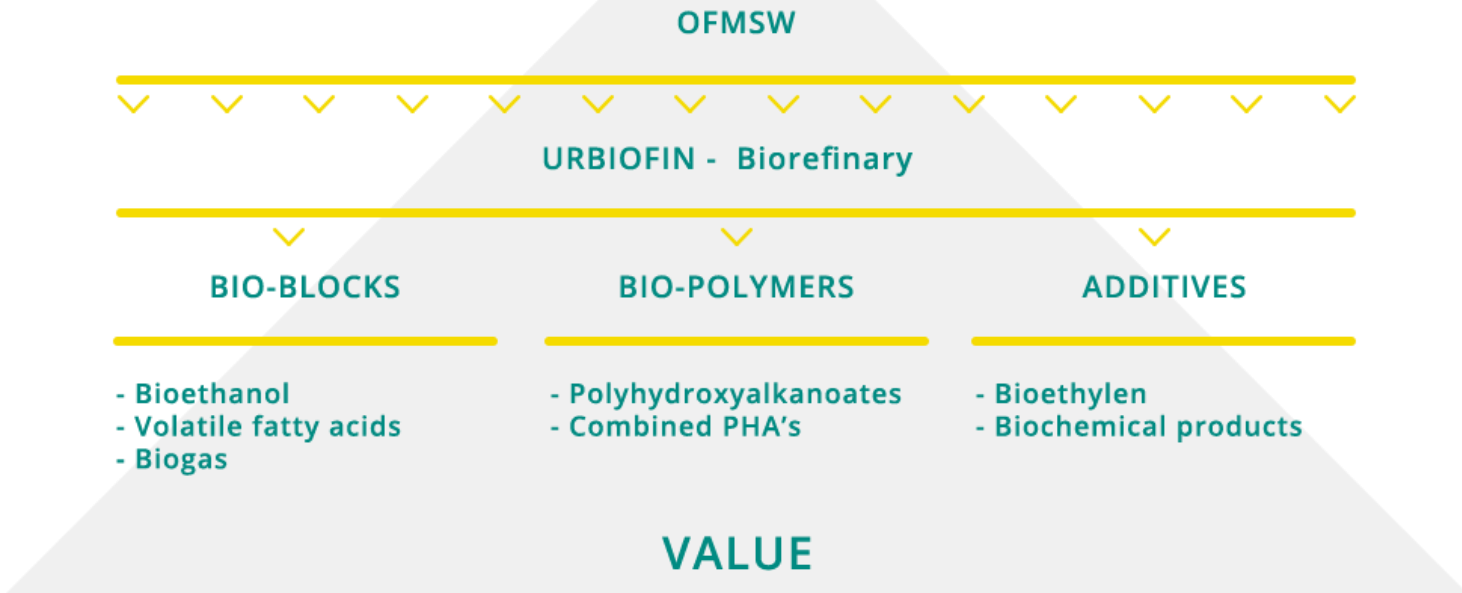
Landfill
Composting
Anaerobic Digestion

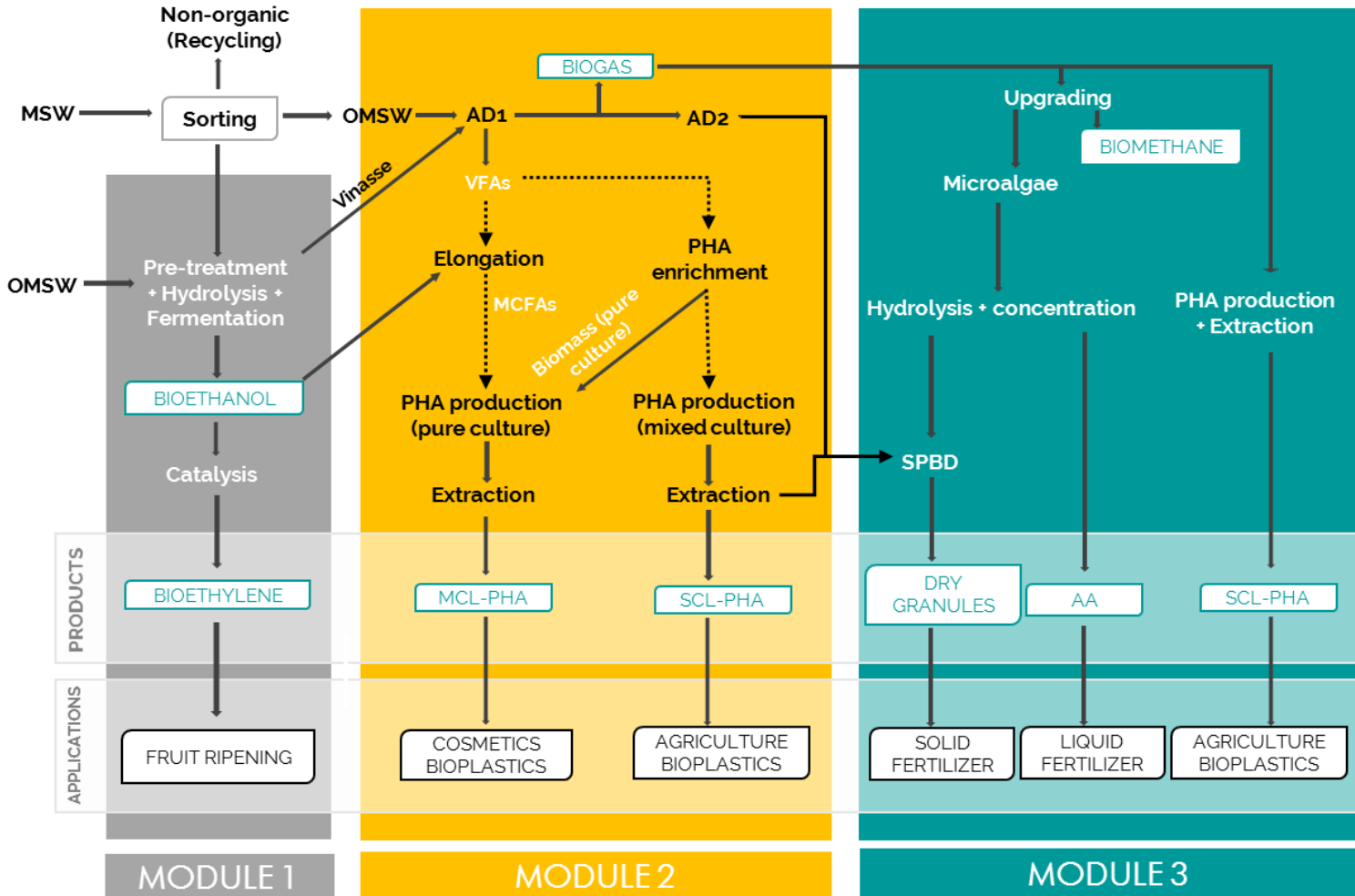


**Most sustainable
and profitable
MSW management
model**



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



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.



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

Waste is a resource: Circular economy.

Circular Economy



Sustainability

Boost competitiveness, foster sustainable economic growth and generate new jobs

Thank you for your attention!!



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<http://www.imecal.com/perseo>