



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

**BUDGET: 15 M€; GRANT 10.9 M€
4 YEARS (June 2017–May 2021)**

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**IMECAL
BIOMASA PENINSULAR**

Biowaste treatment is a big issue in Europe and Worldwide, demanding **Sustainable and competitive waste treatment process**. Directive 2008/98/EC on waste (Waste Framework Directive)

COM (2015) 614 Circular economy. From residue to resource.
Market for secondary raw materials.

BIOWASTE AS A RESOURCE



URBIOFIN Project OBJECTIVE

To demonstrate the techno-economic and environmental viability of the conversion of 10 tonnes per day of the organic fraction of MSW into:

- Chemical building blocks (bioethanol, med or short VFAs, biogas),
- Biopolymers (low and medium chain PHAs, composites combining PHAs)
- Additives (Bioethylene, Microalgae derived biochemicals).
- Other (Bio-based fertilisers)

**Landfill
Composting
Anaerobic Digestion**



**NEW MODEL
OF OFMSW
TREATMENT**

Biorefinery



CONSORTIUM

✓ 16 partners covering the value chain of OFMSW to bio-based products

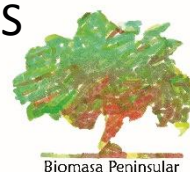
✓ Coordinator: IMECAL

✓ 2 Industries

✓ 7 SMEs

✓ 5 RTOs

✓ 2 Associations

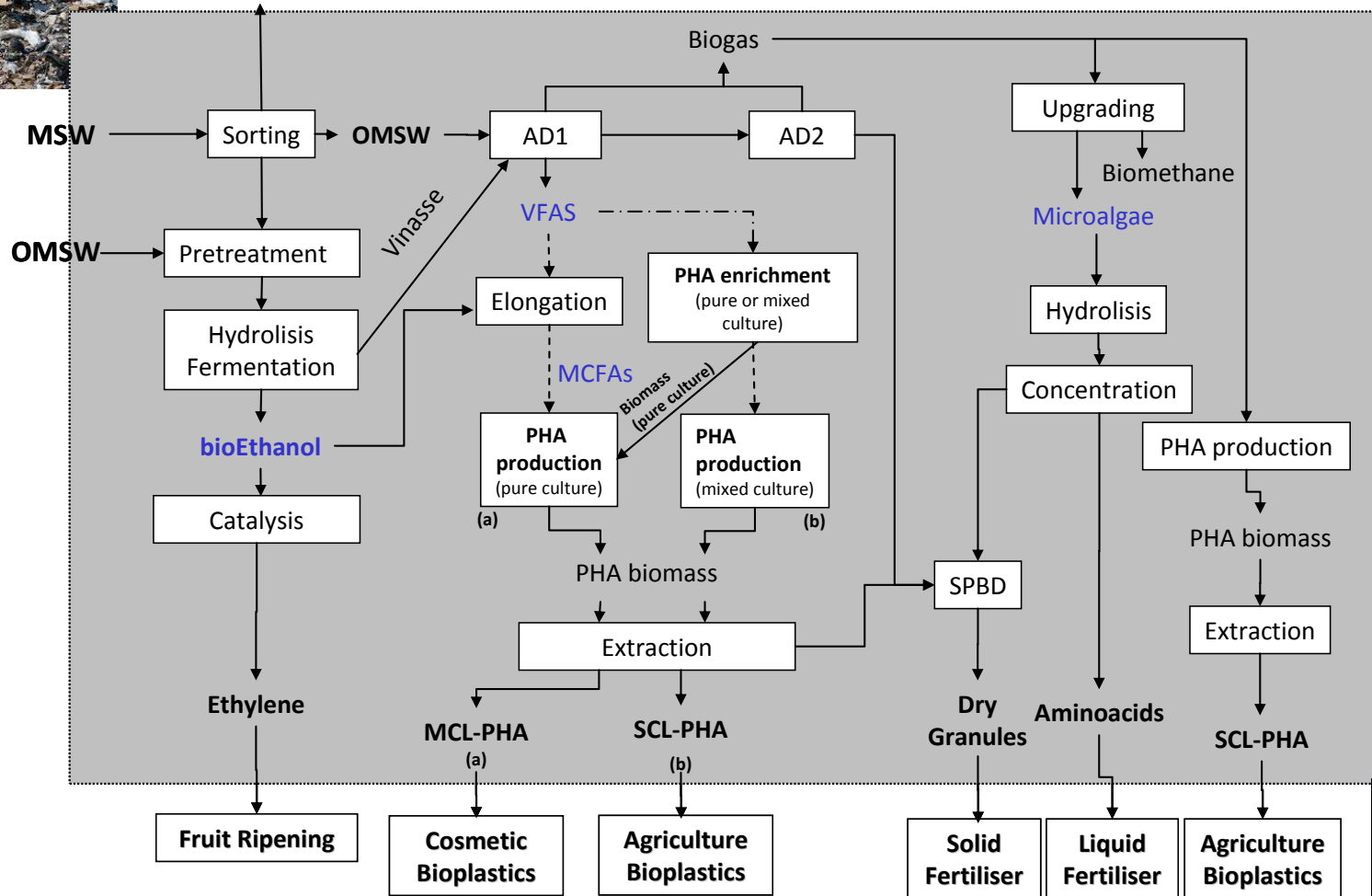


Universidad de Valladolid



URBIOFIN "Demo" Biorefinery Concept

Non organic (recycling)



URBIOFIN *technical Objectives*

TECHNOLOGIES DEMONSTRATED IN URBIOFIN PROJECT

Bioethanol from OFMSW as chemical building block
Ethylene from OFMSW
VFA from 2 phase AD
VFA Elongation to MCFA
SCL-PHA production
MCL-PHA production
Open pond photobioreactor for integral biogas upgrading
Two-stage biological system for biogas revalorization by PHAs production
Biological polishing unit removing volatile methyl siloxanes from biogas



TRL 6/7



Biobased product	Use/ final application
Bioethanol	Chemical building block for bioethylene production and VFAs elongation
Mcl fatty acids (MCFA)	Chemical platform for mcl-PHA production
Biogas	Chemical building block for scl-PHA
Bioethylene gas	Ripening Gas in Post-Harvest Fruit Chambers
Short chain (scl-PHAs)	Agriculture Bioplastic and use for household bags
Medium chain (mcl-PHAs)	Bioplastic for packaging
Biocomposites of scl and mcl-PHA	Cosmetic and hygienic applications
Aminoacids rich liquid fertiliser	High added value liquid biofertilisers
Bio-based fertilisers	Solid Biofertiliser



DEMONSTRATION *Activities*

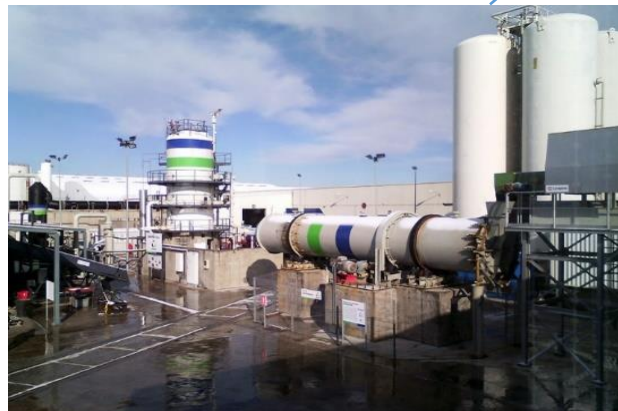
L' Alcudia (Valencia).
IMECAL-PERSEO Bioethanol Plant



Puertollano (Ciudad Real).
IRIAF. CLAMBER



Zaragoza . URBASER
Centro Alfonso Maillo



Demonstration of higher added-value production than current valorisation of the organic fraction of MSW (Biogas /Compost).

Competitive price of the URBIOFIN bio-based products.

Safety, quality and purity of the (new) bio-based products in line with EU legislation and meeting intl' standards and market demands

**Thank you for
your attention!!**

