

Development of an integrated PPB/HOB system for the valorization of digestates, CO₂, and the production of sustainable fertilizers

DEPURHOB addresses key challenges in manure and digestate management within the livestock sector — a cornerstone of Catalan agriculture — with a focus on nutrient surplus (N, P) and CO₂ emissions.

Results

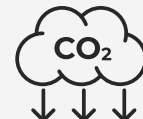
- Effective digestate pretreatment optimized for PPB-HOB growth.
- Robust PPB-HOB performance under high-load conditions.
- Stable biomass production yielding biofertilizers validated through agronomic testing.
- Continuous operation validated at demonstrative scale. Comprehensive techno-economic assessment of the technology.



Circular
agri-food



Sustainable
recycling of
resources



Reduced
emissions



High-value
by product

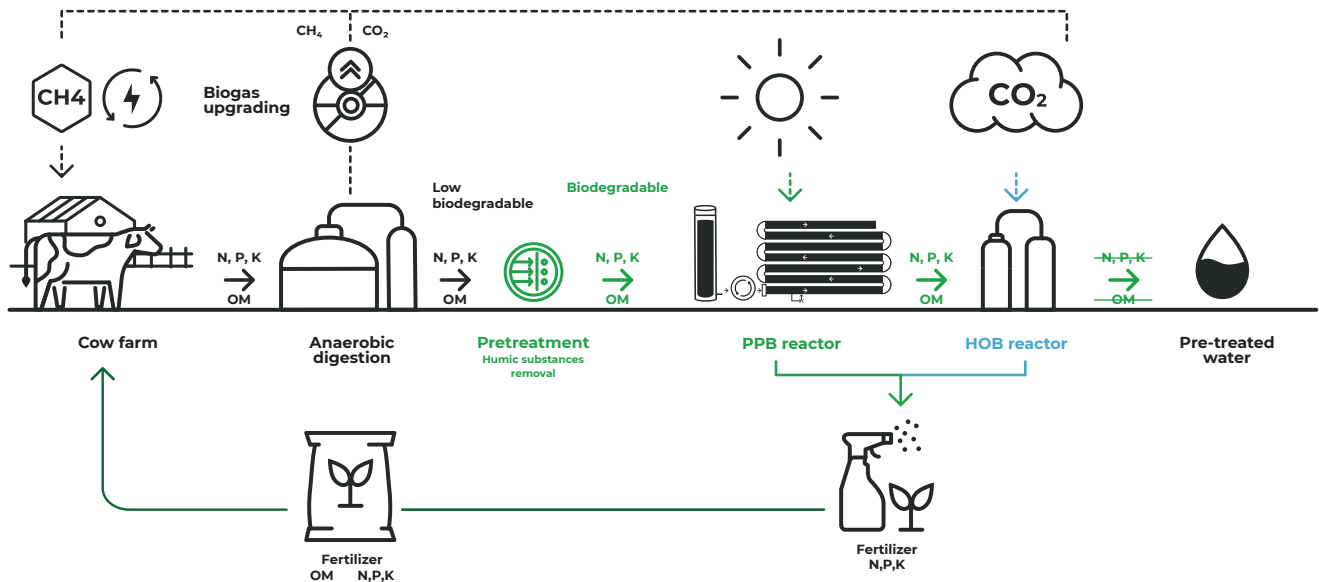




Potential of PPB-HOB

- A sustainable, integrated solution for livestock waste management.
- Contribution to the energy transition through biogas production.
- Recovery of nutrients (N, P, K), preventing diffuse pollution.
- Integrated PPB-HOB process for maximum resource recovery from waste streams.
- CO₂ utilization (from biogas) to drive process decarbonization.
- Production of biofertilizer and reclaimed water within a circular economy framework.

Our Solution



What we address:

- Anaerobic digestate treatment and valorization.
- A biological process based on Purple Phototrophic Bacteria (PPB) and Hydrogen-Oxidizing Bacteria (HOB).
- Circular economy and biorefinery approaches.
- Resource recovery (nutrients and energy).
- Reduction of environmental pollution from livestock farms.
- Production of high-value organic fertilizers.

Partners



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