



Servicios Ciudadanos



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FROM WASTEWATER TO BIOENERGY

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Three large scale demonstration projects for biofuel production:

- Industrial scale of up to **10 hectares**
- Annual productivity: **90 t/ha year**



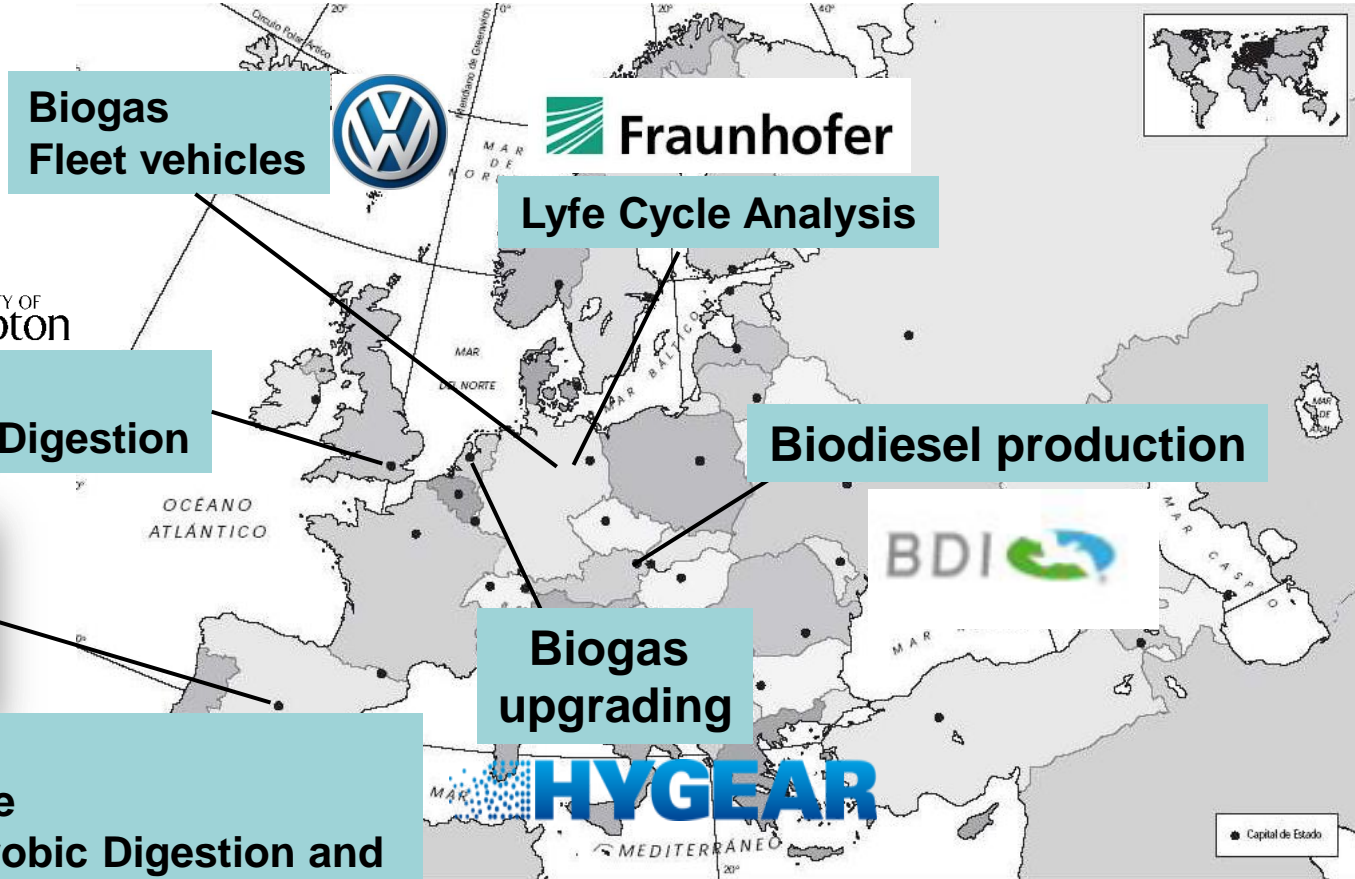
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- Open ponds
- Wastewater as culture medium
- Biomethane as final product
- By-products: clean water, lipids, heat

2011-2015: Research & Development

2016-2018: Extension for Demonstration

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Coordinator
Microalgae culture
Harvesting, Anaerobic Digestion and
DEMO design

Thursday April 7th 2016

9.00 – 10.10: Session 3, Residual streams (chair: Gabriel Acién)

9.00 – 9.30: Robert Reinhardt. Algae - Wastewater – Biogas. Algal Technology Center. AlgaeBioGas (invited speaker)

9.30 – 9.50: Ignacio de Godos Crespo. Optimization of microalgae culture in High Rate Algae Ponds for simultaneous bioenergy production and wastewater treatment. Aqualia SA. AllGas

9.50 – 10.10: Fabian Abiusi. Microalgae cultivation on wastewater to enhance water quality and for sustainable production of biobased products. Wageningen University. MAB2.0

10.10 – 11.00: Session 4, Cultivation Systems and Scale-up (chairs: Liliana Rodolfi and Carlos Unamunzaga)

10.10 – 10.40: Carlos Unamunzaga. Scale up strategy for an algae biorefinery approach: High added value products vs Specialties and commodities paradigm. Fitoplancton Marino S.L, MIRACLES (invited speaker)

10.40 – 11.00: Diana Bastos da Fonseca. Business Plan for a 10 ha production plant. A4F. BIOFAT

11.00 – 11.30 Coffee break and poster session

11.30 – 13.00 Session 4: Cultivation Systems and Scale-up (chairs: Liliana Rodolfi and Carlos Unamunzaga)

11.30 – 11.50: Liliana Rodolfi. One-step vs two-step oil production from *Nannochloropsis oceanica* and *Phaeodactylum tricornutum* cultivated outdoors in Green Wall Panels. University of Florence. FUEL4ME

11.50 – 12.10: Edgar Tavares dos Santos. Ethanol production from engineered cyanobacteria. A4F. DEMA

12.10 – 12.30: Rafael Garcia Cubero. A better understanding of culture parameters to increase exopolysaccharide production by *Botryococcus braunii* CCALA 778. Wageningen UR. SPLASH

12.30 – 12.50: Packo Lamers. Continuous versus batch production of microalgal lipids. Wageningen University. FUEL4ME

12.50 – 13.10: Zouhayr Arbib. From wastewater to bioenergy. Aqualia SA. AllGas