



Project Information Sheet

CO₂ capture and nutrients recycling using a patented algae system for bio-fertilizer production (COFERT)

Programme area:	Water, Greening businesses, Recycling
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Website:	www.cofert-ecoinnovation.com
Benefits (max. 150 characters incl. space):	The achievement of a global algae based process able to capture, sequester and recycle CO ₂ from biogas plants and produce a high-quality bio-fertilizer
Keywords:	CO ₂ -capture, algae, bio-fertilizer
Sector:	Recycling
Type of solution	Process
Duration:	01/10/2013 – 30/09/2016
Budget:	1.523.873 € (EU contribution: 37,94 %)
Contract number:	ECO/12/333032/SI2.658721

Summary

COFERT project targets on the implementation of global algae based process able to capture, sequester and recycle the CO₂ from biogas plants and demonstrate that this technology is ready for the market.

The process is based on the ability of microalgae to capture CO₂ via photosynthesis in the presence of sunlight in symbiosis with a bacterial consortium capable of oxidizing H₂S (biogas contaminant) using the photosynthetically produced O₂ (*BFC patent*). The CO₂ absorbed is then converted into biomass in a High Rate Algae Pond, using the digestate produced as nutrients source (N, K, P). The wet microalgae biomass obtained is then harvested through a patented innovative system (AFF), coalescer, obtaining a pre-concentrated algae slurry which is dried with solar heat energy input to minimize the energy requirements. A dried algae biomass is obtained ready to extract the high added value products out with the use of a green solvent. A plant hormone and a bio-fertilizer from the algae biomass is produced.

The expected work programme extends over 3 years, in 3 main stages of interconnected actions such as management, technical activities and dissemination activities.



Expected and/or achieved results

- A low-cost alternative for biogas-conditioning process which allows using it in new applications
- A recycling CO₂ process in biogas plants for growing algae biomass in a zero emission process with no by-products generation.
- An Energy efficient and easily up-scalable technology
- Maximum utilization of the algae biomass as source of high value products and suitable recycling of resources (nutrients -N,P,K- and water)
- The production of a plant hormone and a bio-fertilizer from the algae biomass

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