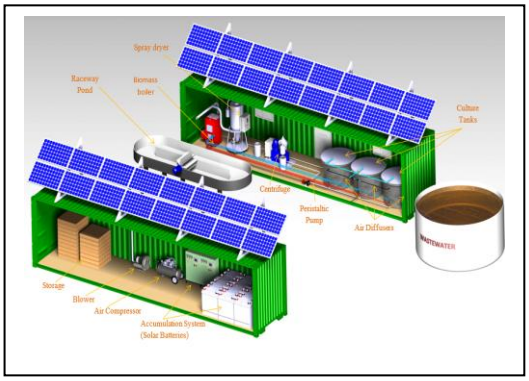
TECHNOLOGY FOR N&P RECOVERY AS MICROALGAE BASED BIOFERTILISERS STARTING FROM WASTEWATER WITH HETEROTROPHIC MICROALGAE

Keywords: *microalgae • heterotrophic • wastewater • biofertiliser • renewable energy*

Key facts:

- → **Category of the technology**: Water and agriculture
- → **Input:** Wastewater and heterotrophic microalgae
- → **Output product(s):** Treated water and biofertiliser
- → **Available capacity:** Wastewater treatment: ~ 400 m3 /y
  Microalgae powder: ~ 400 kg /y
- → **Focusing geographical areas**: EU28
- → **Technology status:** TRL 7
- → **EC/MS Authority permits:** The corresponding municipality permits for the demo plant installation.



Summary of the technology: Max 1500 character

The LIFE ALGAECAN project proposes a sustainable treatment model of high loaded and salty effluents that combines cost-effective heterotrophic algae cultivation with spray drying of the collected microalgae to obtain a product of commercial interest as raw material for the production of biofertilisers, animal feed, etc.

The treatment system prototype is composed of three main steps: 1) a two-phase microalgae growing system, which consumes the organic matter and nutrients contained in the effluent; 2) a separation step to recover the clean water (that will comply with reuse standards), and; 3) a drying step to recover the dry microalgae (sub-product as biofertiliser or animal feed).

This system is placed in two containers with solar panels that provide energy to the whole system. In case that there is not enough solar radiation, this technology will be supported by energy from biomass.

Competitive position and advantages:

- → Closed-loop technology in which no waste is created. Valorisation of the by-product as a final product (biofertiliser).
- → Biofertiliser as a substitute for chemical fertilizers.
- → The actual technology for microalgae culturing requires long hydraulic residence times and extensive surfaces, which is why heterotrophic microalgae are used in this technology (a large amount of space is saved).
- → The obtained effluent would be suitable for industrial use, cleaning or irrigation, if required, which implies an obvious decrease in the consumption of other water resources.

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