CASE STUDY

VERTICAL GREEN: FROM LANDFILL GAS TO ALGAE PRODUCTS

Vertical Green Farming, based in Madrid, Spain, designs and manufactures large-scale photobioreactors for growing high-purity microalgae such as spirulina, chlorella and Haematococcus pluvialis.

1. THE CHALLENGE

(Problem Statement)

Downstream processing was the hardest part. The company takes waste gas from landfills and, instead of flaring it, extracts the methane to power the facility and uses the CO2 to feed the bioreactors. It needed to make this conversion **viable** and its spirulina system **profitable**.

2. THE MENTORSHIP IMPACT

(Actions Taken)

With mentor Raschid Stoffel, the company focused on building a **profitable cascade**: spirulina yields E18 and E25 grade phycocyanin, leftover biomass becomes animal feed, and chlorella produces biostimulant precursors for soil remediation. A second expert helped them build **digital twins** of the photobioreactors to fine-tune performance.

3. THE RESULT

(Impact/Outcome)

The techno-economic analysis and downstream design developed in the programme built a **solid economic case**. Vertical Green Farming has signed its **first letter of intent (LOI)** for a large facility and is continuing with the build-out. Gas that was contaminating the atmosphere now becomes valuable products, along with carbon credits.

Check them out on their website and LinkedIn.