

Demonstrating a cost-competitive, sustainable and scalable microalgae bioprocess

cleanalgae2value.eu

PROJECT OVERVIEW

CleanAlgae2Value is a European Innovation Action funded under the Circular Bio-based Joint Undertaking (CBE JU).

The project develops a scalable microalgae bioprocess that converts CO₂ into food-grade, medium-value ingredients through cascading valorisation.

THE SOLUTION

CleanAlgae2Value develops a Micro-Algae Biorefinery Upgrade Module (MABUM) that integrates into existing industrial systems.

The module enables efficient microalgae processing using CO₂, supporting scalable and cost-competitive production.

THE CHALLENGE

Europe needs sustainable, resilient sources of bio-based ingredients to meet growing demand and reduce environmental impact.

Microalgae offer strong potential but remain underused due to cost, scalability, and integration barriers.

CONSORTIUM

CleanAlgae2Value brings together 15 organisations from 9 European countries, combining research institutions, technology providers, and industrial end-users to ensure technical robustness, scalability, and market relevance.

1 CO₂-BASED CULTIVATION

Microalgae are cultivated using CO₂ as the sole carbon source, enabling an efficient and resource-responsible production pathway.



2 BIOMASS PROCESSING

The harvested biomass is processed through an intensified fractionation approach enabling cascading valorisation.



3 INGREDIENT PRODUCTION

Food-grade, medium-value ingredients are produced, including proteins, oils, pigments and starch.



4 VALIDATION & IMPACT

Prototypes are validated with end-users and assessed for environmental, economic and social sustainability.



Circular
Bio-based
Europe

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