

An aerial photograph of a lush green agricultural field, possibly corn, with a straight road cutting through it. The field is divided into sections by a narrow path or ditch. The overall scene is vibrant green, suggesting a healthy crop.

Green Energy Connection: Biogas, Biomethane and Beyond

ALFA Project Networking event

2nd April 2025

SEMPRE-BIO

New cost-effective biomethane
solutions to support circular
economy



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CENTRO TECNOLÓGICO DEL AGUA

Pioneering public-private partnership model

Main activities

1. R&D



Resource planning and management



Production and new resources



Zero waste and decarbonisation



Territorial and social sustainability



Efficient, safe and digital operation

2. KNOWLEDGE-BASED SERVICES



3. DIGITAL SERVICES





SEMPRE-BIO at glance

Goals

- ❖ Demonstrate novel and cost-effective biomethane production solutions and pathways.
- ❖ Increase the market up-take of biomethane related technologies.
- ❖ Support circular economy.
- ❖ Reduce dependence on fossil fuels.

Numbers

42
Months



17
Partners



7
Countries



9.9M
Funding



Locations



Funded by
the European Union

CETAQUA
CENTRO TECNOLÓGICO DEL AGUA

Aigües de
Barcelona

SINTEF

ProPuls

DBFZ

TMB

terrawatt

Naturgy

Innolab

CRYOinox

Beta
Biodiversitat, Ecologia,
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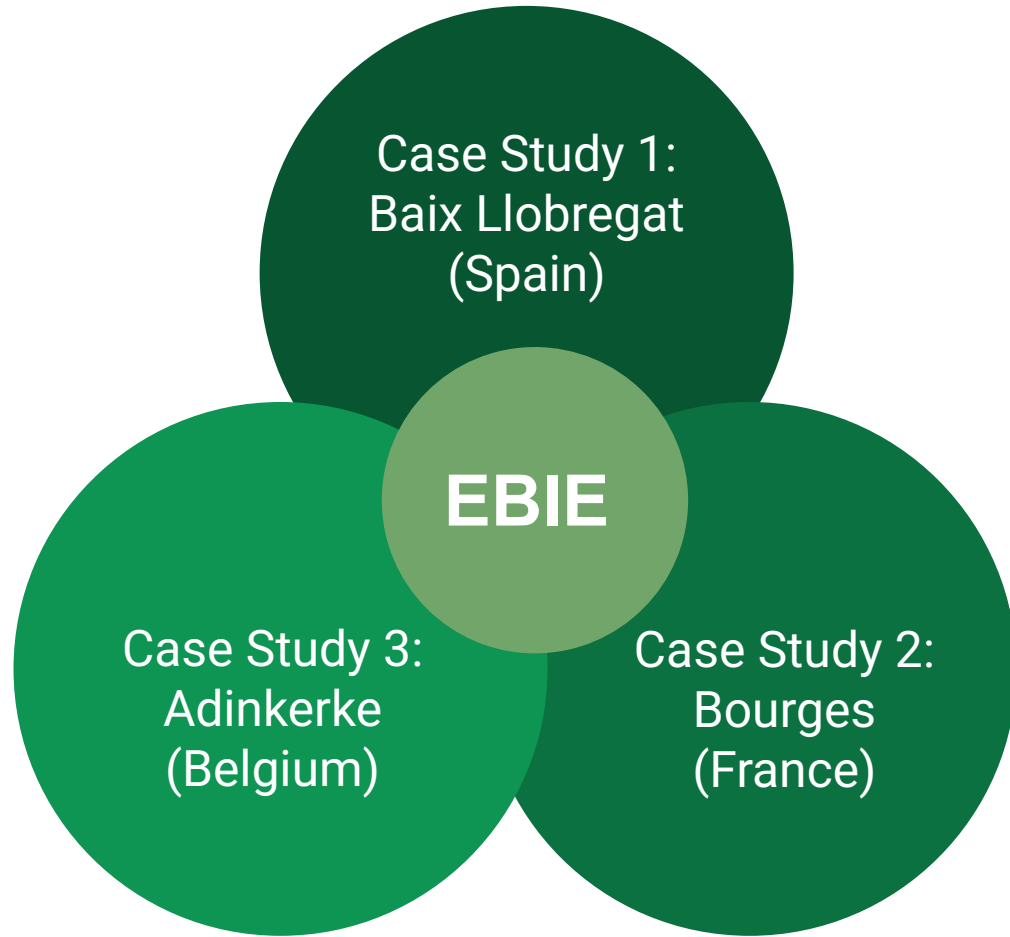
inveniam

NV De
Zwanebloem

Biogas-
platform voor aanpak vergisting

DTU

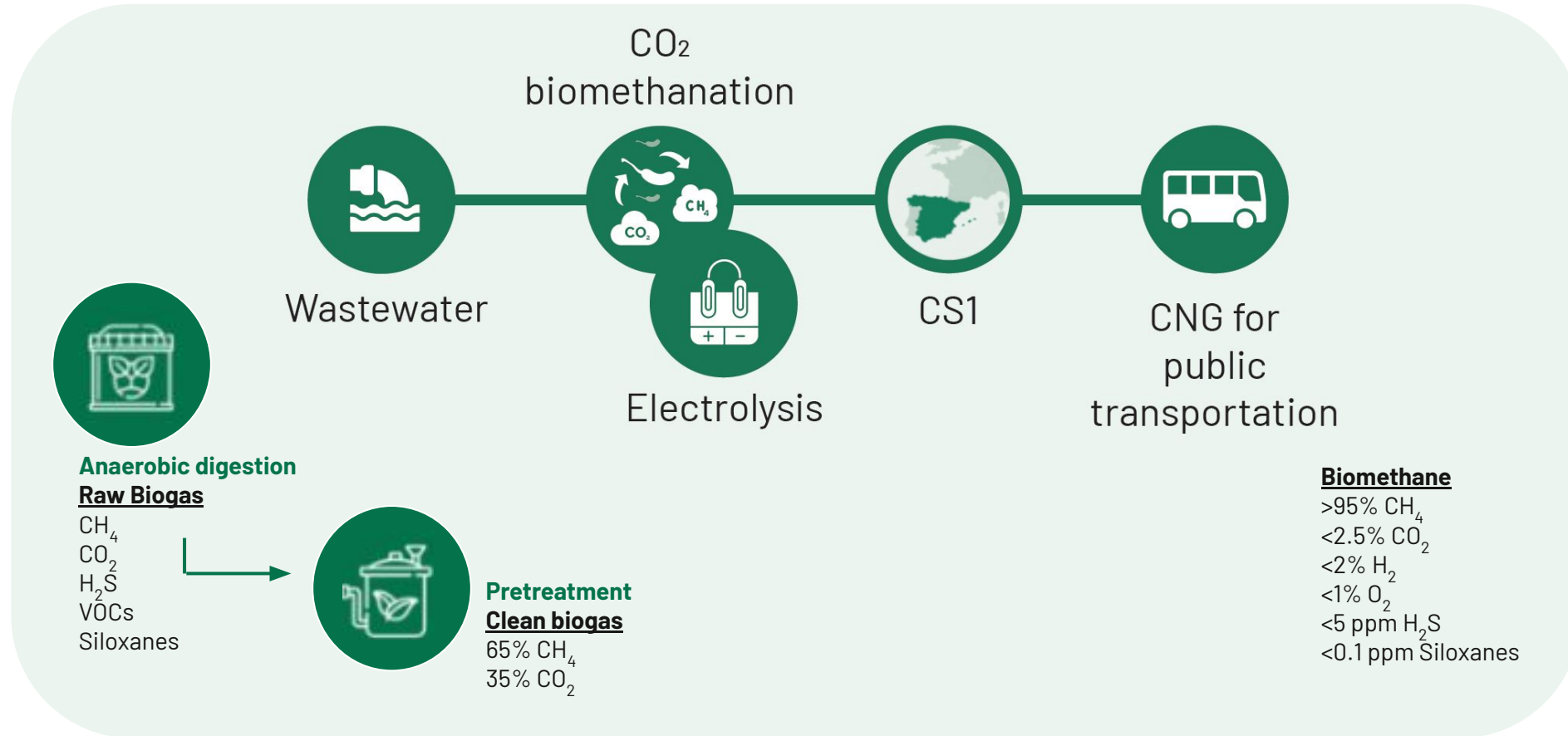
BIOTHANE
by VEOLIA
Water Technologies



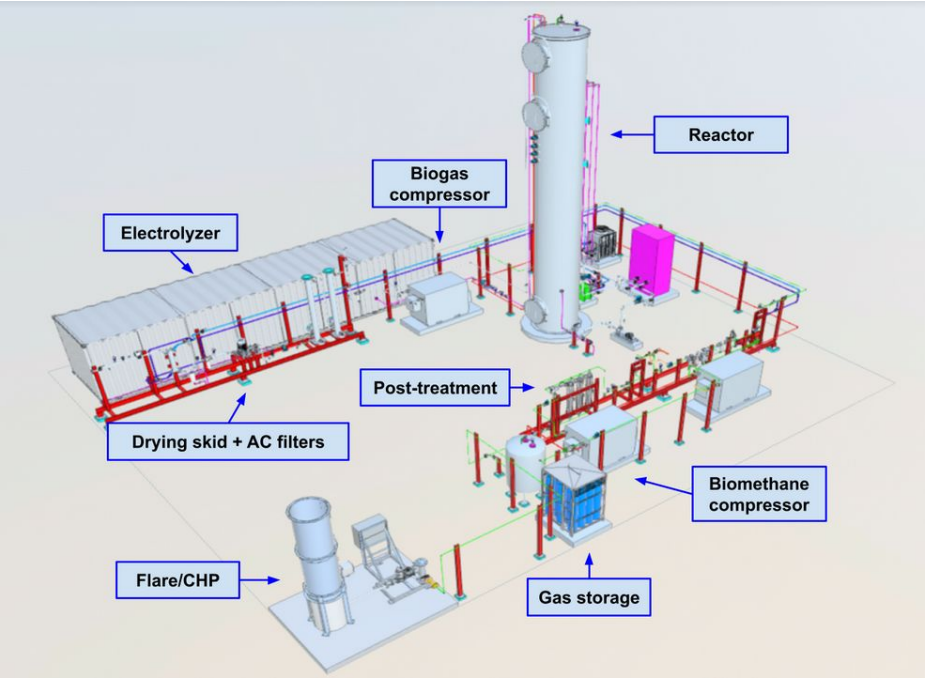
European Biomethane Innovation Ecosystem



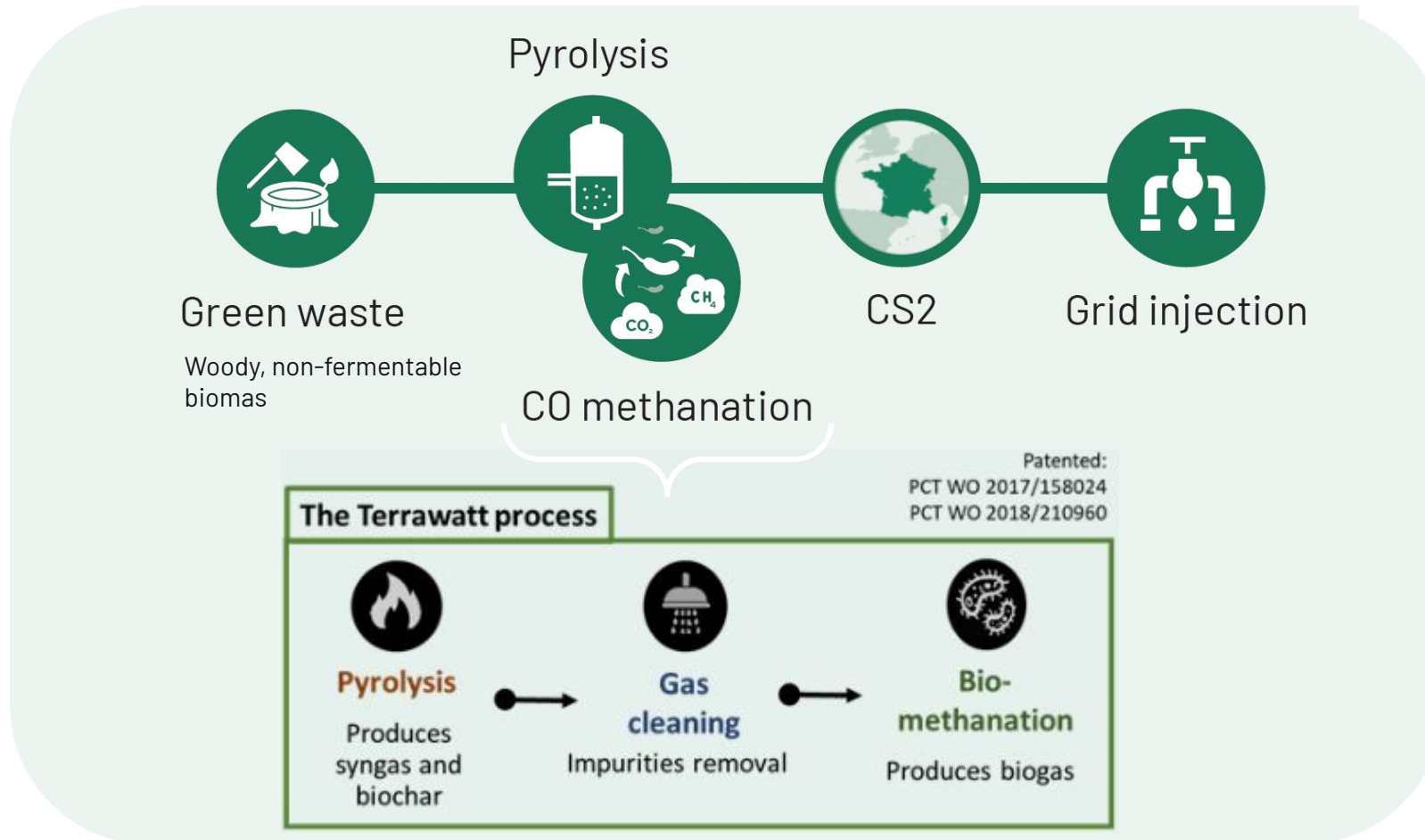
Case Study I: Baix Llobregat (Spain)



Status of Case Study I: Under construction

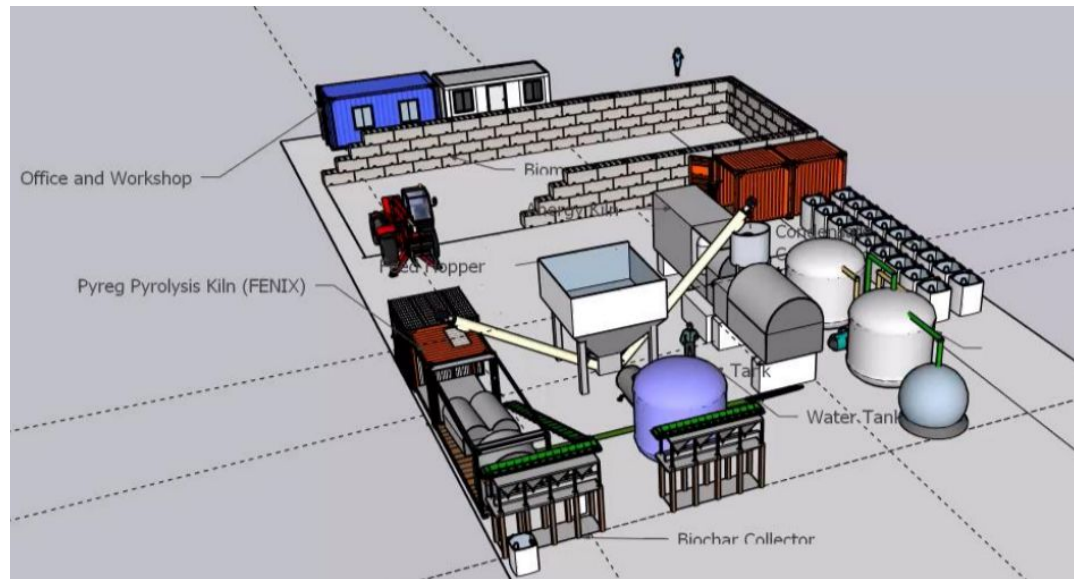


Case Study 2: Bourges (France)

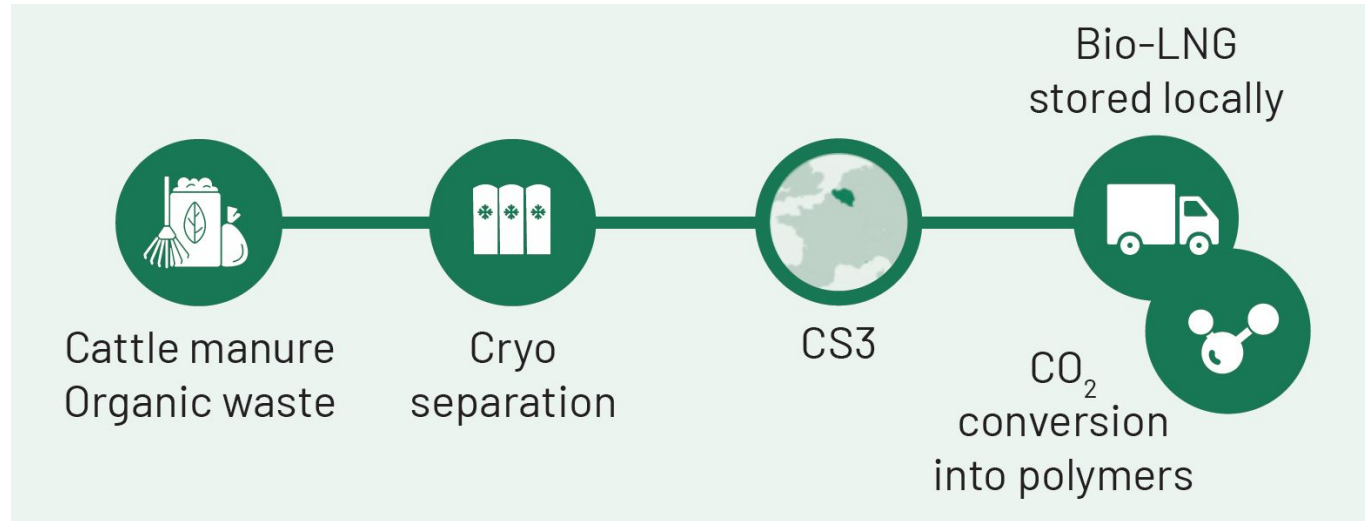




Status of Case Study 2: Under construction



Case Study 3: Adinkerke (Belgium)



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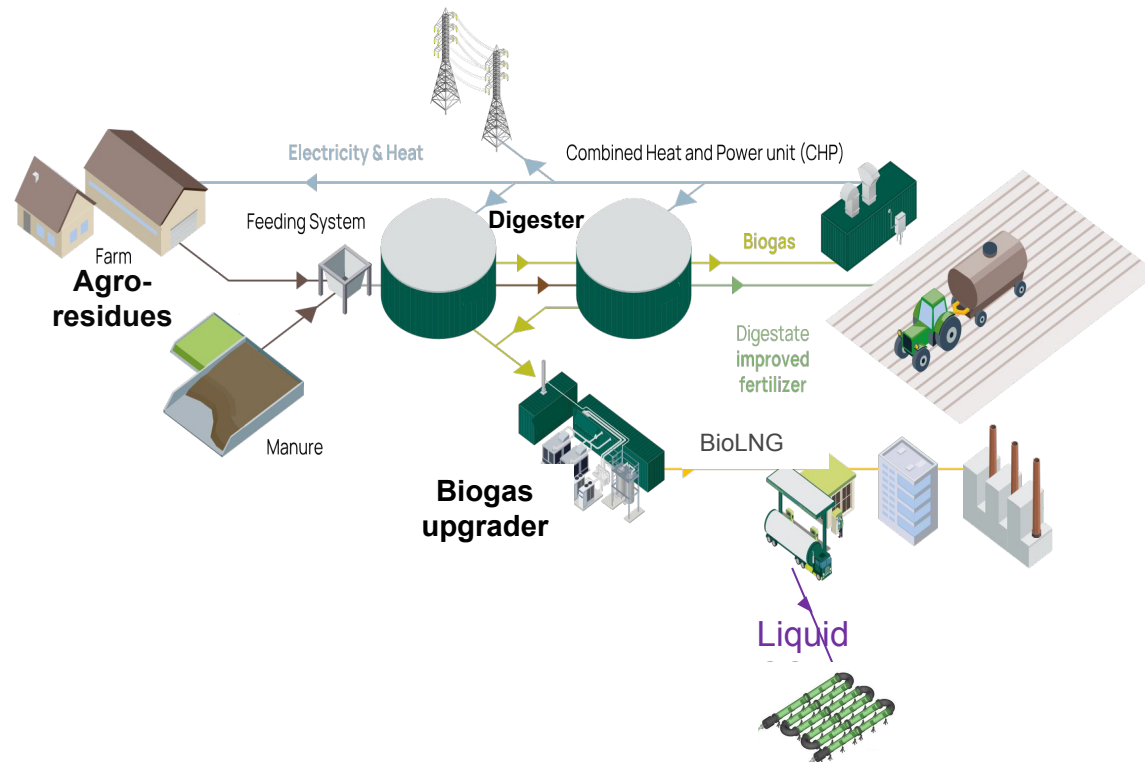
Innolab



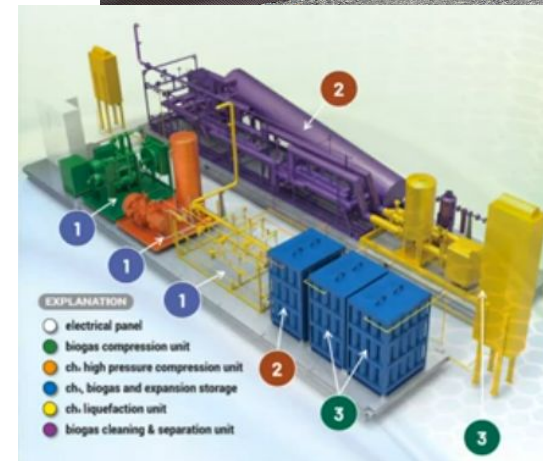
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Status of Case Study 3: Under construction

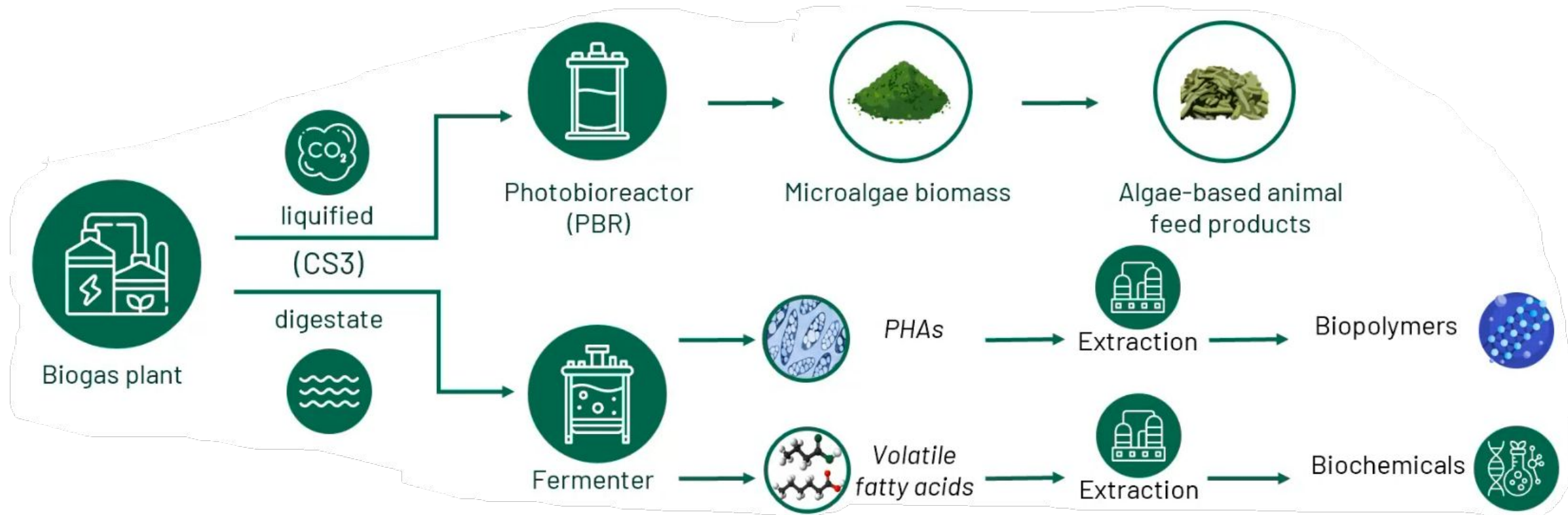


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Advanced technologies for efficient valorization of CO₂ from biogas/biomethane streams

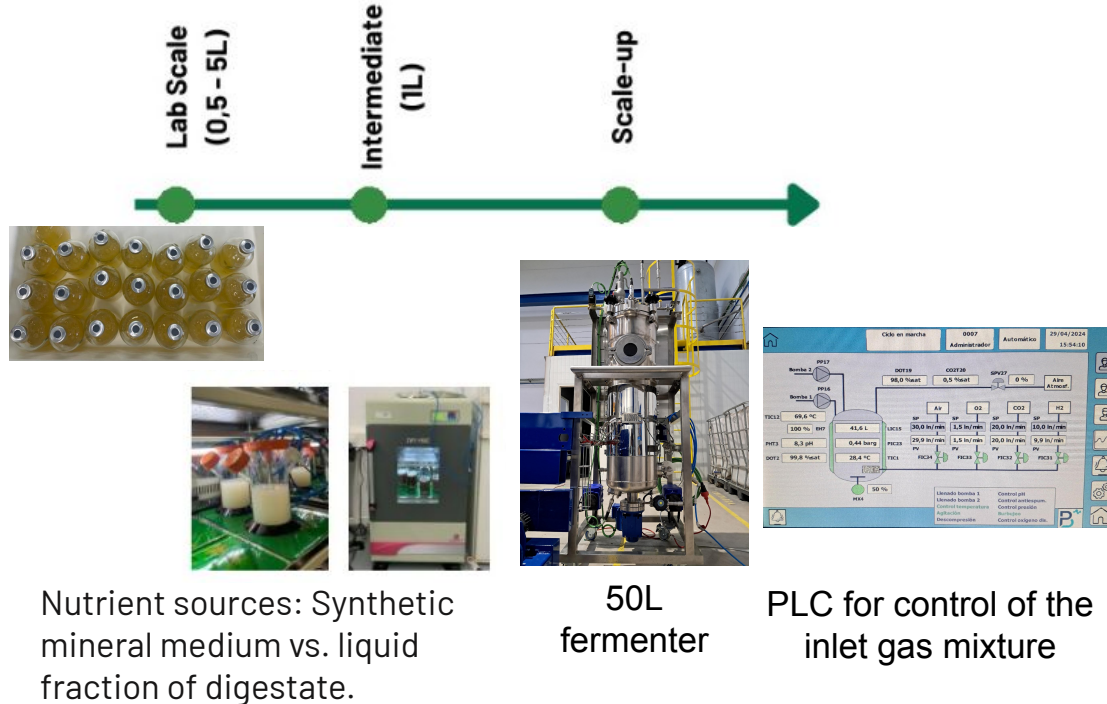




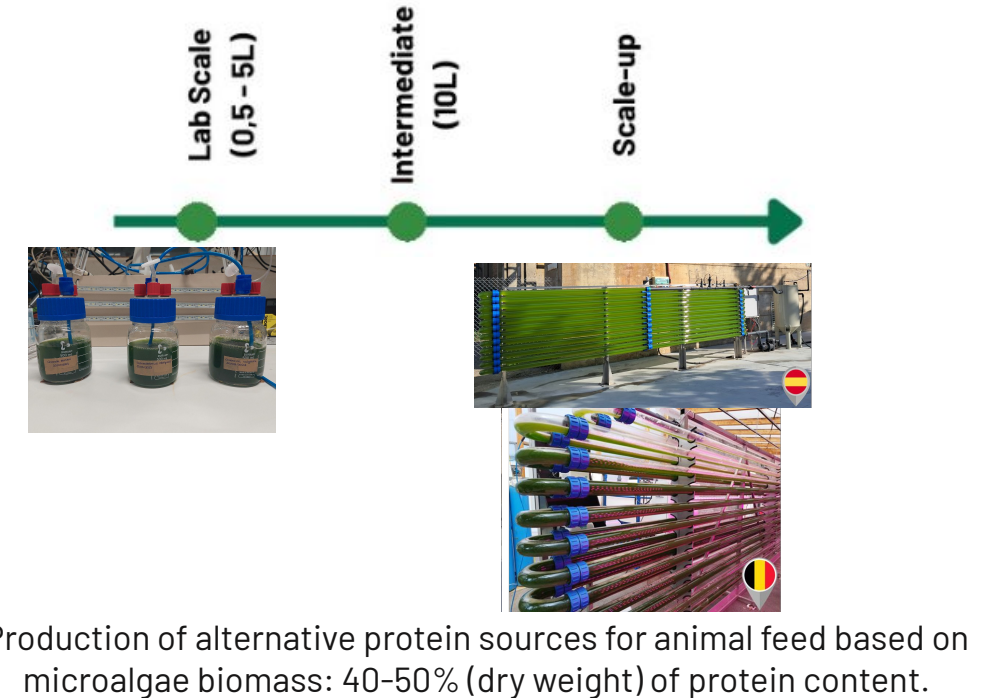
Advanced technologies for efficient valorization of CO₂ from biogas/biomethane streams

Technical feasibility to produce potentially marketable biopolymers, biochemicals and alternative protein sources from CO₂ demonstrated.

□ Fermentation process (biopolymers & biochemicals)



□ Microalgae cultivation (alternative protein sources)





Expected outcomes



01

Increase the cost-effectiveness of conversion in biomethane production.

02

Diversify conversion technologies for biomethane.

03

Contribute to the acceptance of biomethane technologies in the gas market.

04

Contribute to the demonstration on a semi-industrial scale of new conversion technologies to produce biomethane from wastewater, wood biomass and manure.





Thank you for your attention!

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