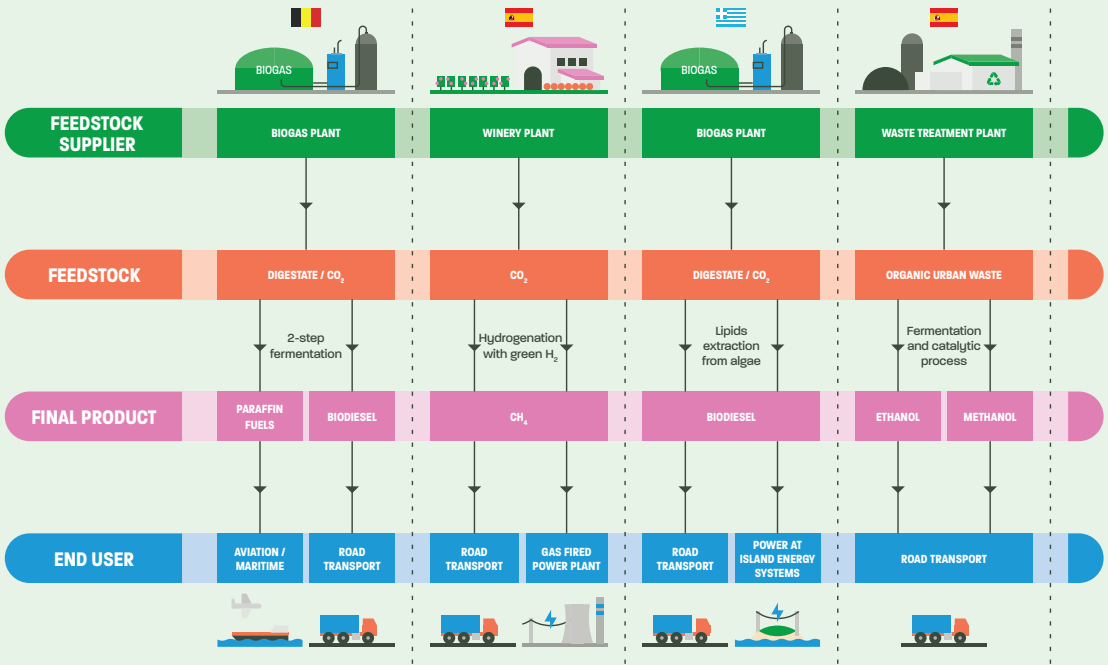


Feedstock suppliers, technology providers, and end-users will collaborate to ensure the supply of sustainable feedstock, its conversion to renewable fuels, and the transportation to the end-users. **FUELPHORIA plans to overcome existing technical issues and establish innovative business models.** The project will test nine different value chains in Europe and will explore the market opportunities and challenges for the commercialisation of advanced biofuel and RFNBOs in Africa.



# CONTACT

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Coordinated by  **CERTH**  
CENTRE FOR RESEARCH & TECHNOLOGY HELLAS



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# FUELPHORIA

Advanced biofuels and renewable fuels  
from sustainable value chains



FUELPHORIA aims to create sustainable value chains for advanced biofuels and RFNBOs. The project will contribute to the replacement of fossil-based fuels in both power and transport sectors, in line with the objectives of the REPowerEU Plan.

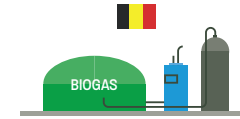
## OBJECTIVES

- To establish complete and sustainable value chains for advanced biofuels and RFNBOs that provide Europe with sustainable, secure, and competitive energy supply schemes.
- To develop new business and marketing strategies for advanced biofuels and RFNBOs in Europe and Africa.
- To produce policy recommendations at the EU level.

## IMPACTS

- Provision of viable alternatives for the green transition of carbon intensive sectors
- Exportation of technology and licensing to Africa
- Creation of jobs in the sustainable fuel production sector
- Enhancement of energy security
- Reduction of GHG emissions by fossil fuel replacement.

### DEMO 1 – Belgium



**What?** Hydrotreated and esterified lipids production from CO<sub>2</sub>

**Where?** Aartselaar and Ghent, Belgium

**Who?** BBEPP supported by CSIC, AQUAFIN, UNICRE, and VERD

DEMO 1 will produce value-added liquid biofuels, using as feedstock CO<sub>2</sub> derived from a biogas upgrading plant, and renewable hydrogen, through a combined biological and thermocatalytic process.

### DEMO 2 – Spain



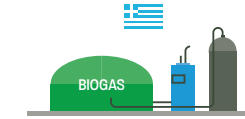
**What?** Synthetic Natural Gas production from CO<sub>2</sub> and green hydrogen

**Where?** Somontano, Spain

**Who?** CIRCE supported by VdV and URV

In DEMO 2, the CO<sub>2</sub> produced in the wine fermentation process will be captured and converted into methane via hydrogenation using renewable H<sub>2</sub> produced via electrolysis from electricity generated from solar energy. In this way, the winery will both reduce its carbon footprint by utilising the CO<sub>2</sub>, and lower its dependency on fossil fuels by using the produced methane.

### DEMO 3 – Greece



**What?** Biodiesel production from algae

**Where?** Thessaloniki, Greece

**Who?** IHU supported by ALGEN, BLAG, QLAB, VERD, and CERTH

DEMO 3 will demonstrate and validate the efficiency of the process for producing biodiesel from microalgae. The main objective is to extract lipids produced from algae and to further convert them to fatty acid methyl esters (biodiesel). The microalgae will grow in high-rate open ponds, using side streams and effluents from a biogas plant, such as CO<sub>2</sub> and digestate.

### DEMO 4 – Spain



**What?** Bioethanol and biomethanol production from organic urban waste fraction

**Where?** L'Alcudia and Madrid, Spain

**Who?** PERSEO supported by CSIC and SAV

In DEMO 4, bioethanol will be produced from urban biowastes through hydrolysis and fermentation. The side streams from that process will be further valorised to produce light alcohols (bioethanol, biomethanol) and biogas via catalytic hydrogenation and anaerobic digestion respectively.