



The BIOMETHAVERSE project

UKRAINE: INNOVATIVE BIOMETHANE PRODUCTION PROJECTS:

**biomethanization, green hydrogen,
decarbonization and
biosynergy integration**

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MHP ECO ENERGY



**Co-funded by
the European Union**



Demonstrating and Connecting Production Innovations in the **BIOMETHANE** uniVERSE

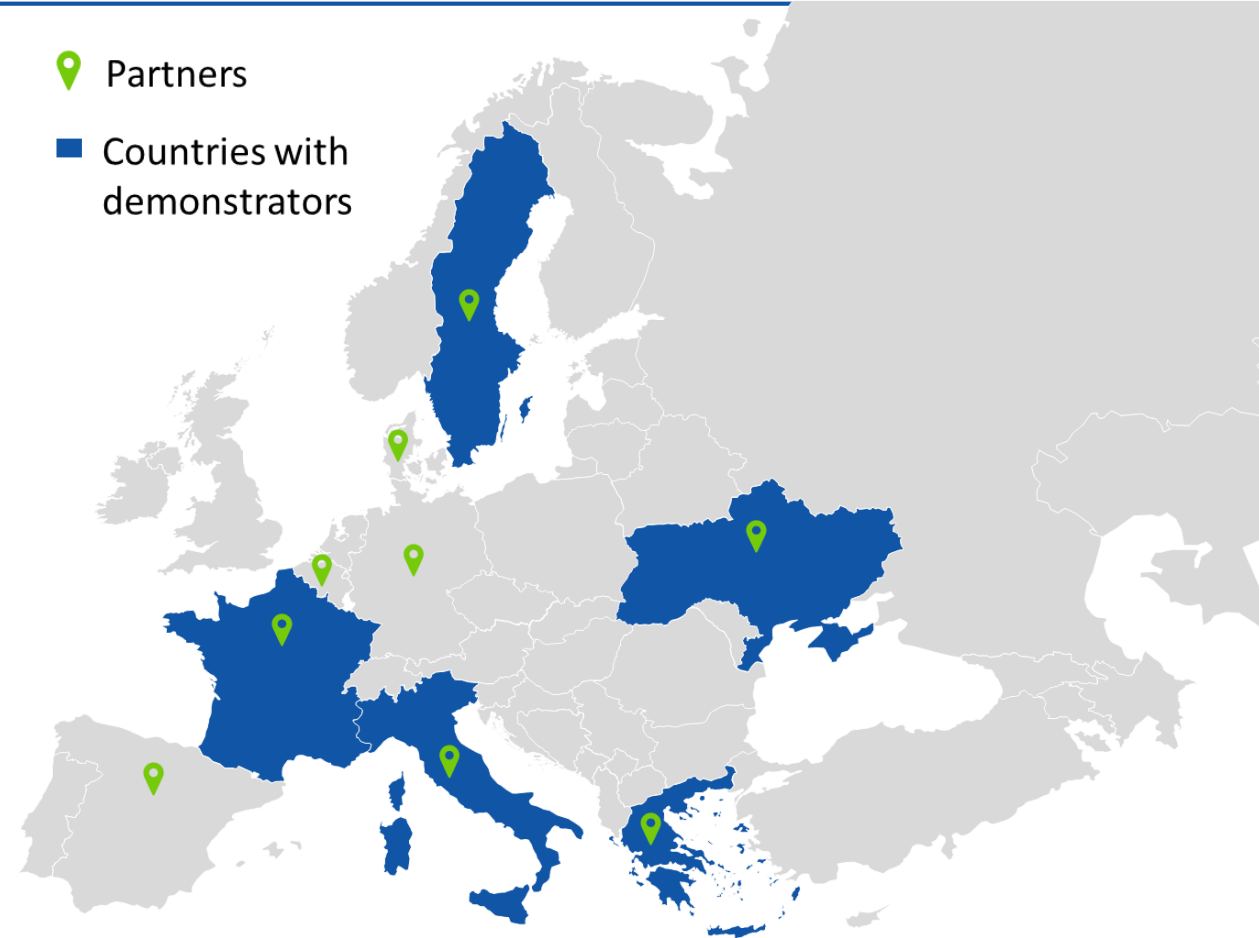
• **October 2022 – March 2027**

• **22 partners** in **9 countries**

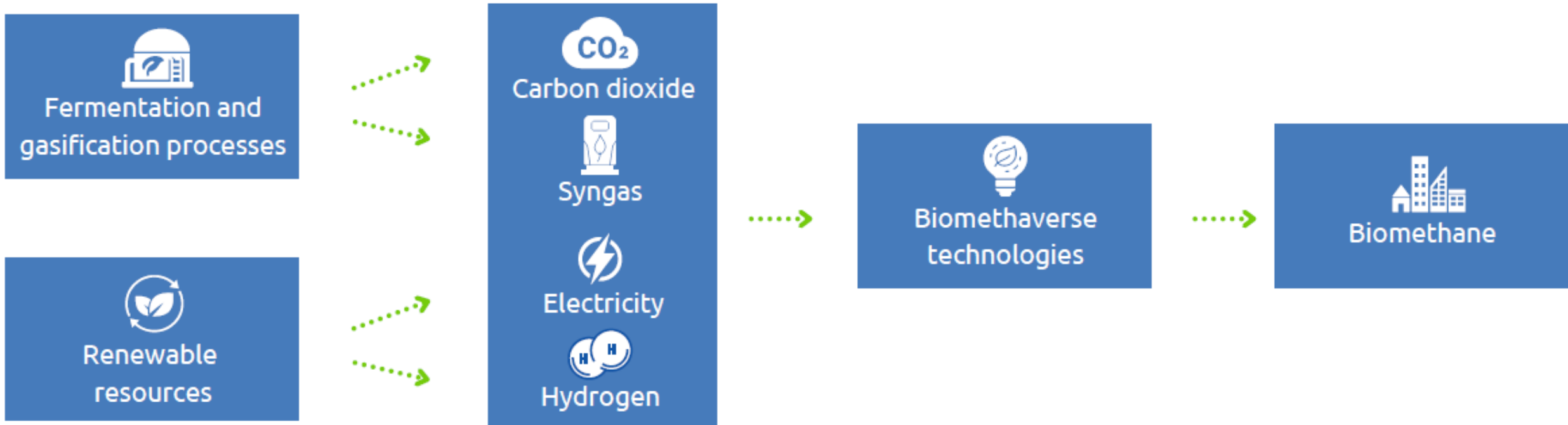
• **€ 9,871,773** of EC funding (70% of EU funding)

• To **diversify the technology** basis for biomethane production in Europe, to **increase cost-effectiveness**, and to contribute both to the **uptake of biomethane technologies**

• **Five innovative biomethane production pathways** in Europe: **France, Greece, Italy, Sweden, and UKRAINE** MHP



Innovative technological concepts in BIOMETHAVERSE



Demonstration of Innovative Biomethane Pathways

- **Design and implementation of demonstration activities:**
 - ✓ In-Situ and Ex-Situ Electro-methanogenesis (**EMG**) in France
 - ✓ Ex-Situ Thermochemical/catalytic Methanation (**ETM**) in Greece
 - ✓ Ex-Situ Biological Methanation (**EBM**) in Italy
 - ✓ Ex-Situ Syngas Biological Methanation (**ESB**) in Sweden
 - ✓ In-Situ Biological Methanation (**IBM**) in Ukraine MHP
- **Wrap-up of demonstration activities**

“ORIL LEADER” Biogas Complex (5,5 MW)



Annual electricity generation – 42 GW*h

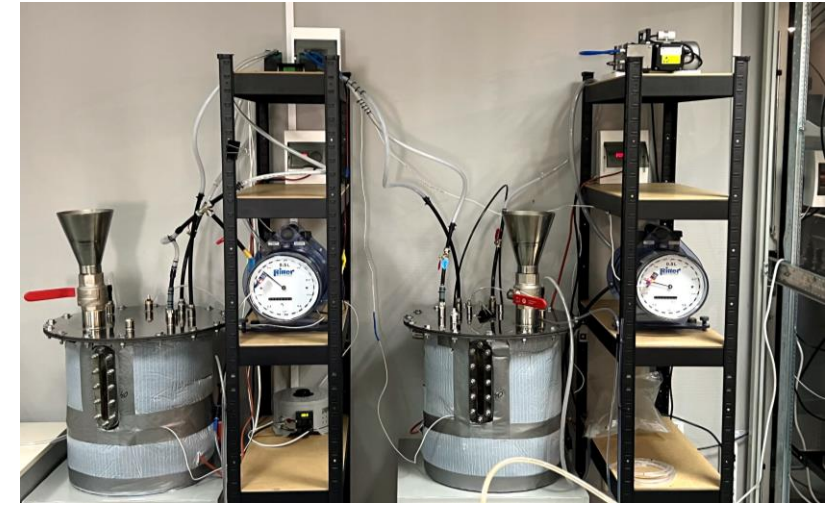


LAB research for Innovative Biomethane Pathways: MHP ECO ENERGY

Everyday challenges

MHP is moving forward despite the **constant attacks on energy, infrastructure and civil objects**

However, the laboratory is functioning stable, with appropriate heating and ventilation – **reserve capacities were installed and stable energy supply was secured by:**



**30 kW
photovoltaic system**



**25 kWh
energy storage system**



Diesel generator



Electrolyzer



DEMO: In-Situ Biological Methanation (IBM) in Ukraine

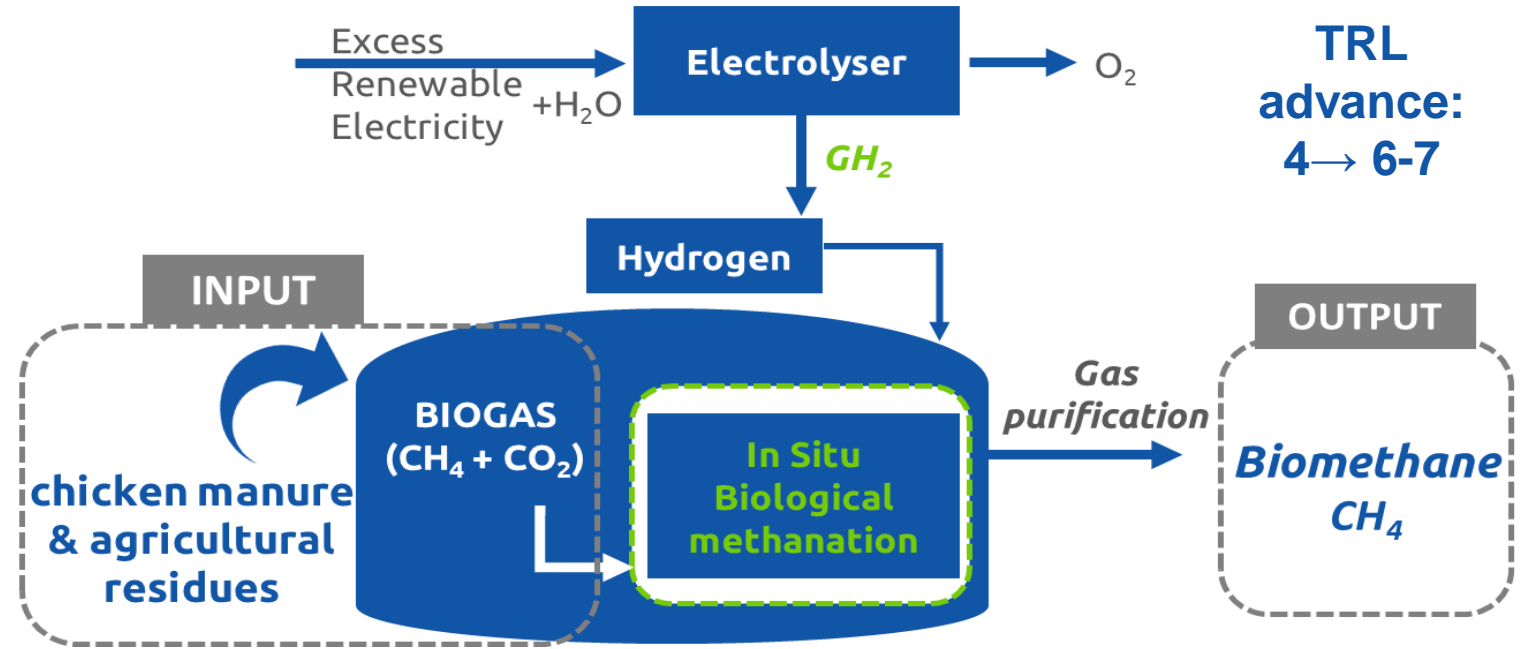
Demonstration site:
LADYZHIN, VYNNITSIA REGION, 12 MW



Feedstock: 300 t/d chicken manure and agricultural residues

Key annual figures:

- 25 mln m³ Biomethane
- or
- 85 GW electricity + 75,000 t of digestate
- 12 reactors
- 90,000 m³ each



PARTNERS:



MHP

UABIO

Ellmann **EE** Engineering GmbH



**OUR GOAL TO INCREASE
OUTPUT OF BIOMETHANE**

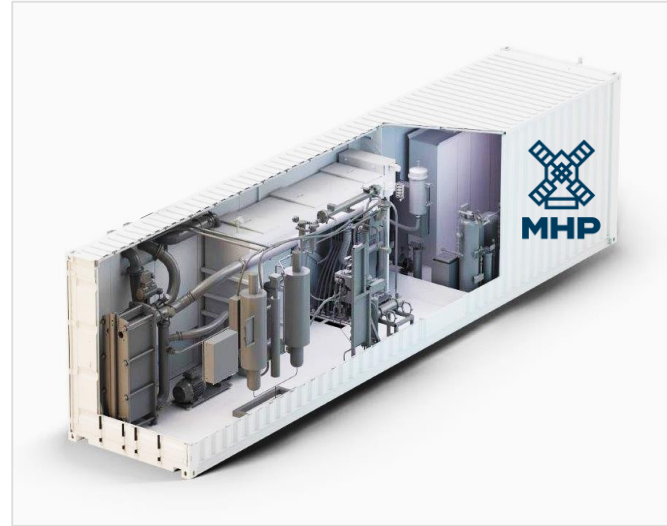
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Biomethane Up-scaling stages



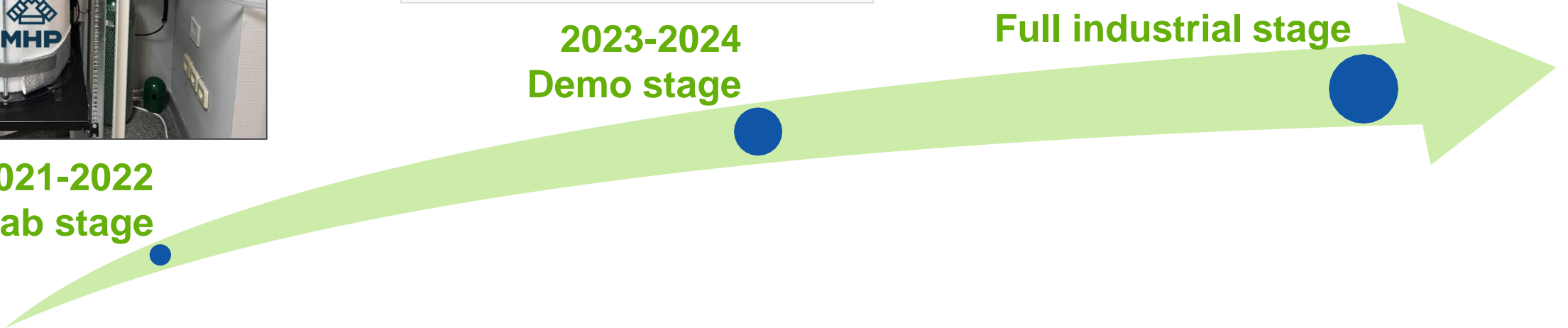
2021-2022
Lab stage



2023-2024
Demo stage



2025-2026
Full industrial stage



Thank you!

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