BIO-VALO

Lift off biogas industry : **BIO-VALO**, the pilot test platform for your projects.

BIO-VALO
LA PLATEFORME AU SERVICE DE VOS PROJETS

INSTITUT PASCAL
sciences de l'ingénierie et des systèmes

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UCA Université Clermont Auvergne

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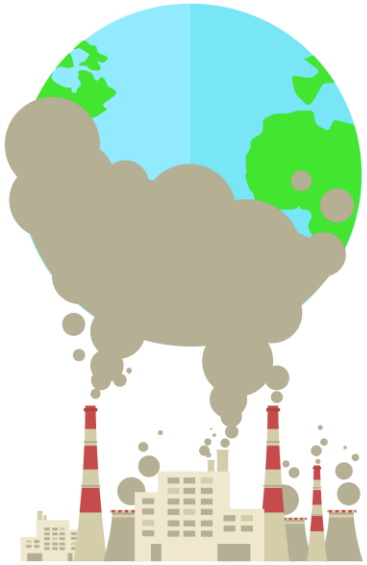
context elements

- One of the main environmental problems of today's society is the continuously increasing production of organic waste.
- Our resources are being depleted and it is urgent to develop sustainable alternatives to fossil fuels
- Since the Russian offensive in Ukraine, Europe is going through a major energy crisis and gas is becoming a strategic resource for our future



context elements

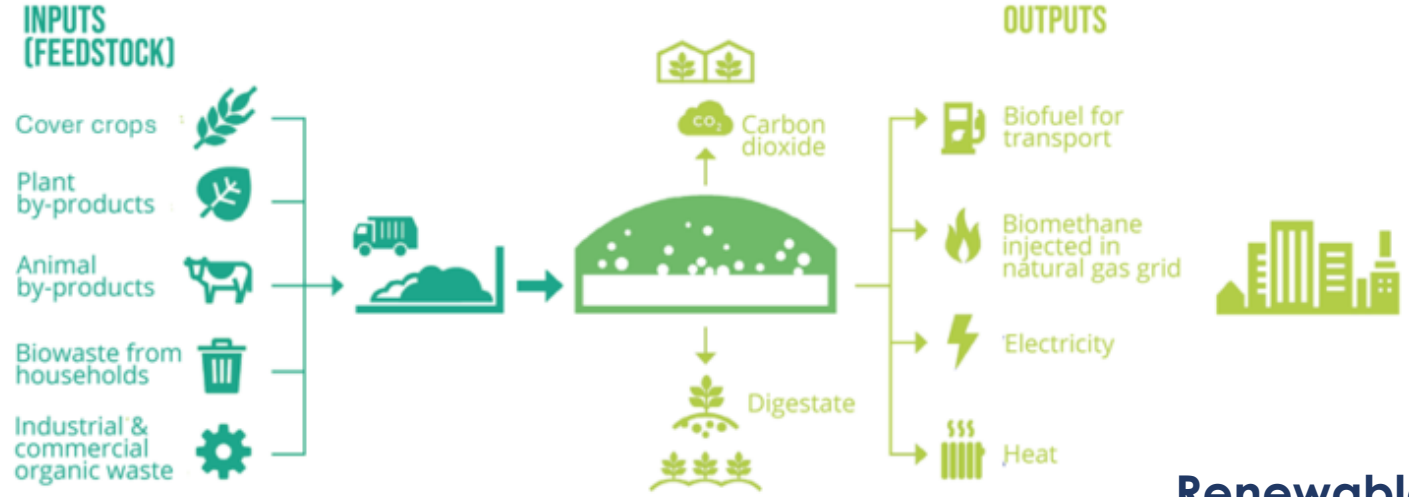


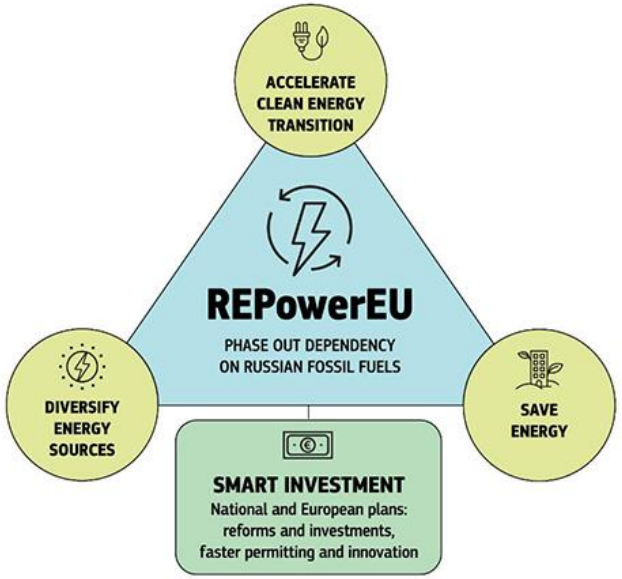
Figure 1.1:
Schematic overview of inputs and outputs of the biogas and biomethane production process

Renewable gases, including biogas and biomethane, will be central to achieve carbon-neutrality by 2050 and help the EU become less dependent in external energy supplies.

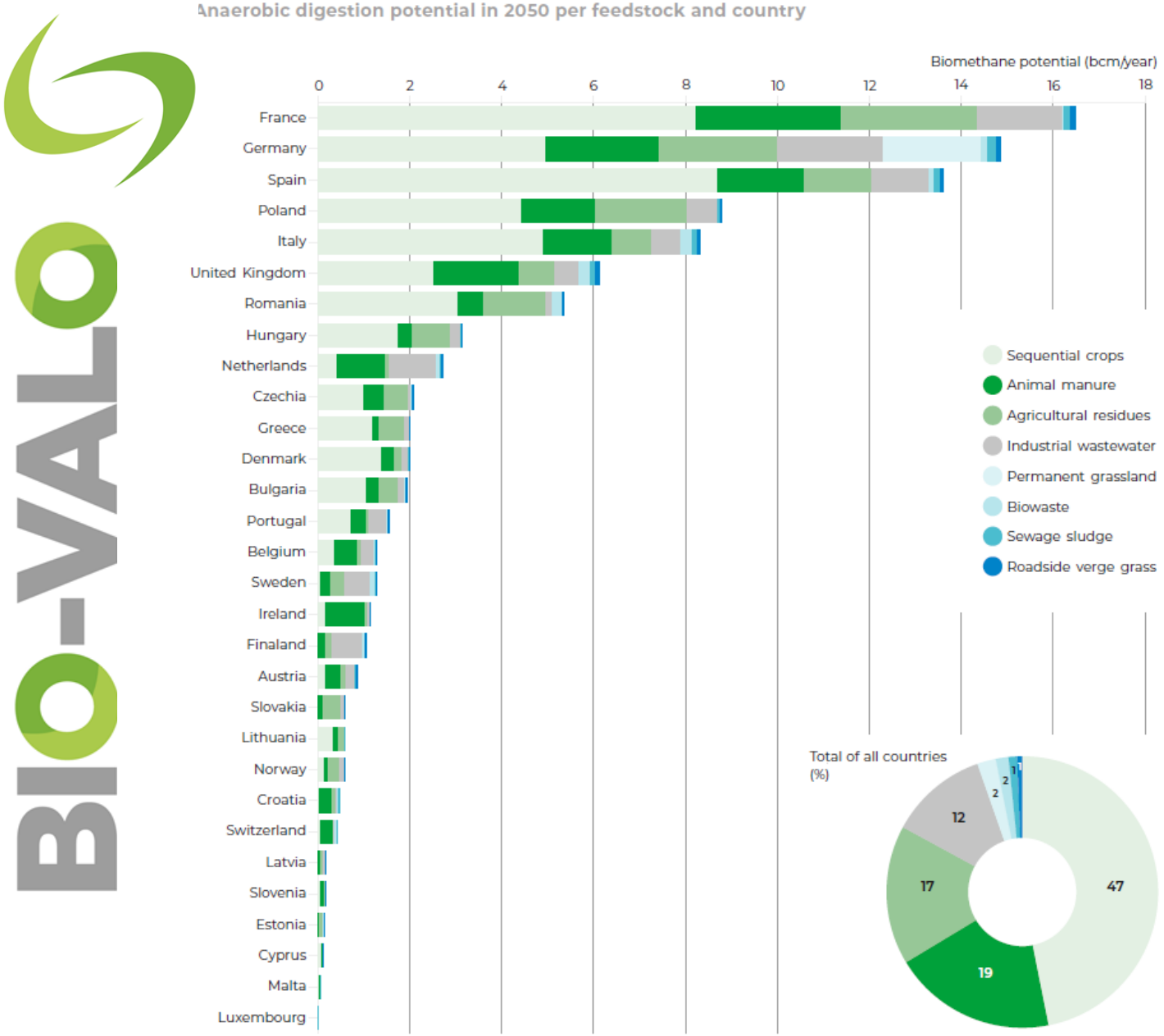
The biogas and biomethane industries are ready and fully committed to scale up the sector encouraged by European decisions

the European Commission proposed a rapid acceleration of renewable energy

REPowerEU will seek to diversify gas supplies, speed up the roll-out of renewable gases and replace gas in heating and power generation.



Doubling the EU ambition for biomethane to produce 35 bcm per year by 2030, in particular from agricultural waste and residues.



Source : EBA European Biogas Association

A potential of 41.8 bcm is estimated for anaerobic digestion in 2030. The potential increases to 98 bcm in 2050 (European Biogas Association, 2022).

In Europe, France has taken the lead,

in this context, **BIO-VALO** contributes to the achievement of these objectives

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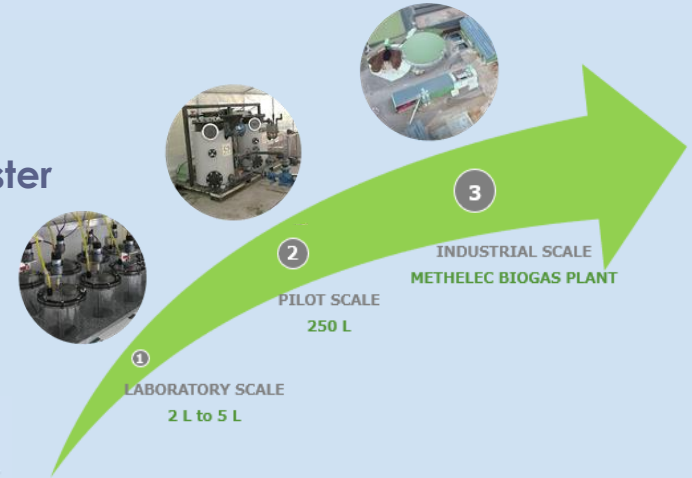
BIO-VALO company is a collaborative platform for innovation, new technology development and research, to improve the valorization of organic matter into Biogas and biomolecules.

3 MAIN ACTIVITIES

PILOT TEST PLATFORM

- Analysis of organic matter, digester content and digestate
- Tests of new technologies and equipment



INDEPENDENT ENGINEERING OFFICE

- Biogas plants feasability studies
- Performance audits
- Operating assistance and biological monitoring service
- French and European R&D projects for innovation

TRAINING ORGANIZATION

BIO-VALO

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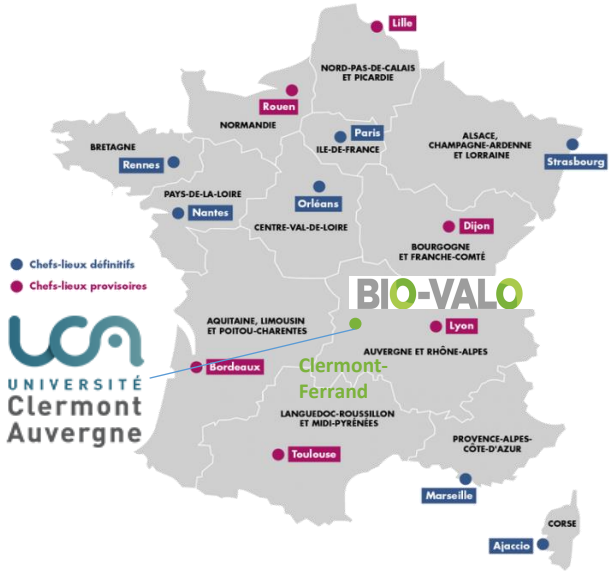


A TEAM OF EXPERTS

Pierre Fontanille
CEO

OPERATIONAL TEAM

Benoit Chezeau
Scientific director

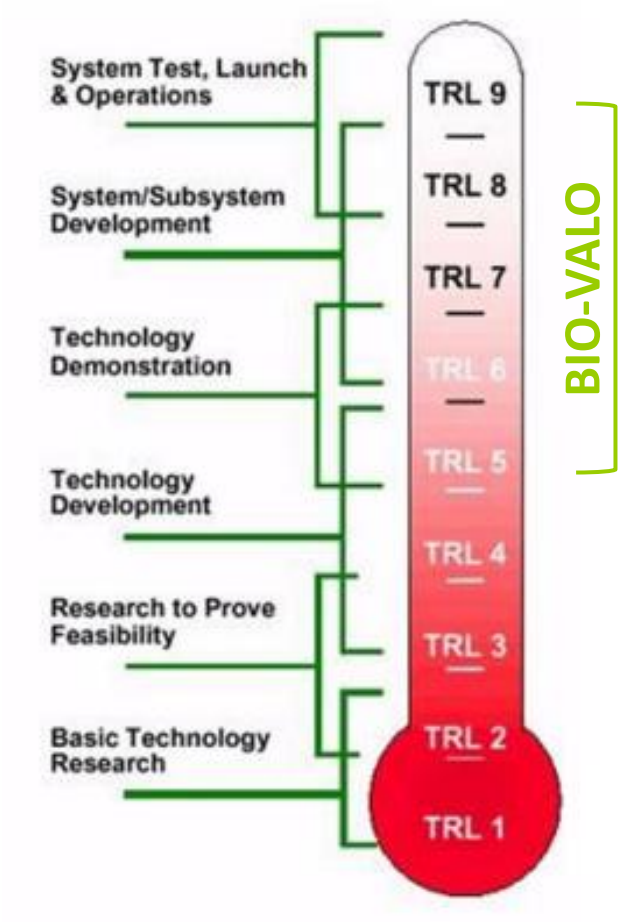
Manon Colas
Biogas Processes Engineer

Garance Ronot
Biogas Projects Engineer

Maxime Reynaud
Biogas Processes Engineer

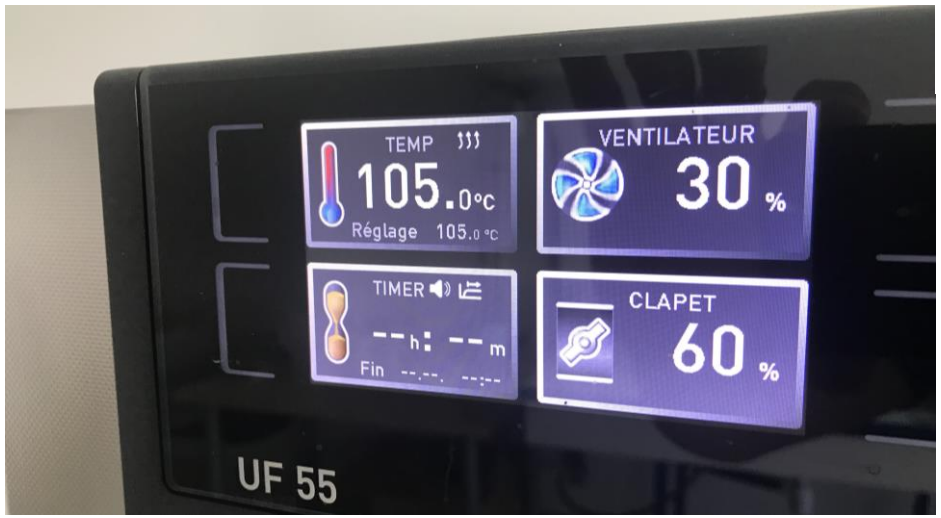
Milène Fournier
Biogas Projects Engineer

BIO-VALO has a fully equipped laboratory for biogas production tests and analysis



TRL (Technology Readiness Level)

BIO-VALO platform is positionning between 5 and 8 of TRL, allowing to test performance of green deep tech innovations at semi-industrial scale



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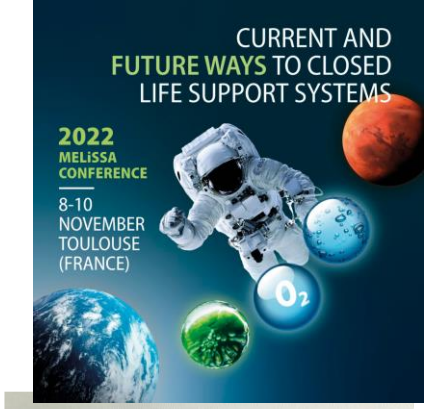
TECHNOLOGIES AT VARIOUS SCALES: OUR EQUIPMENT

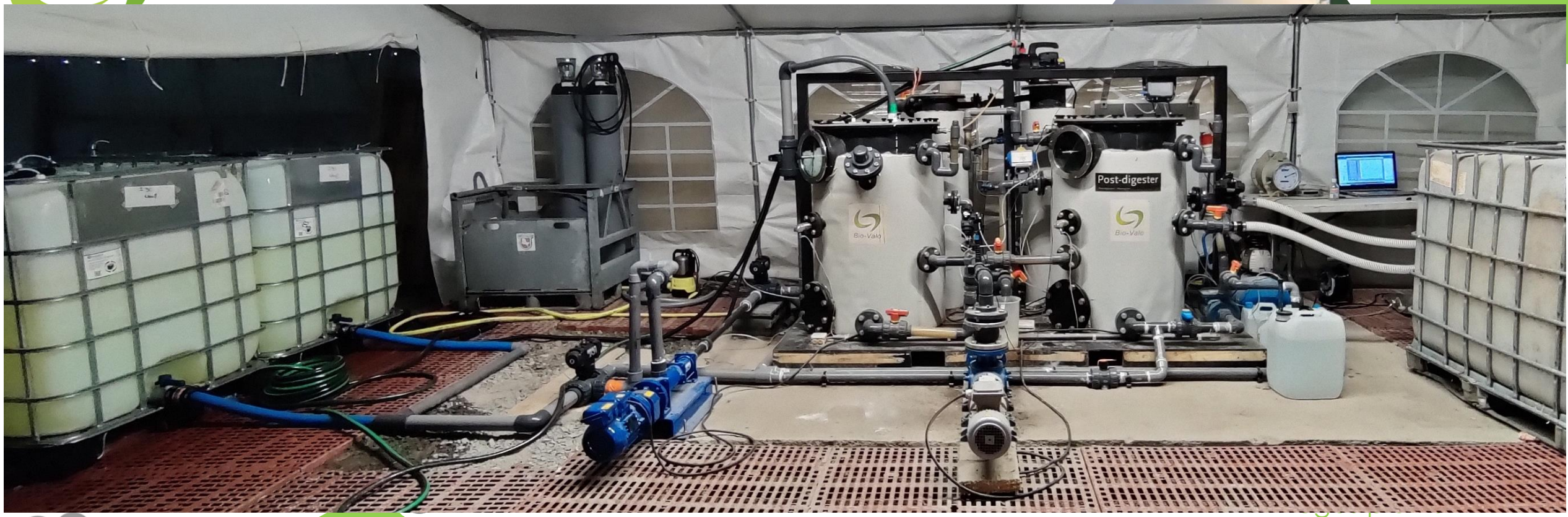
1

LABORATORY SCALE

- ✓ 2 L reactors (36)
- ✓ 5 L reactors (3)



TECHNOLOGIES AT VARIOUS SCALES: OUR EQUIPMENT



LABORATORY SCALE

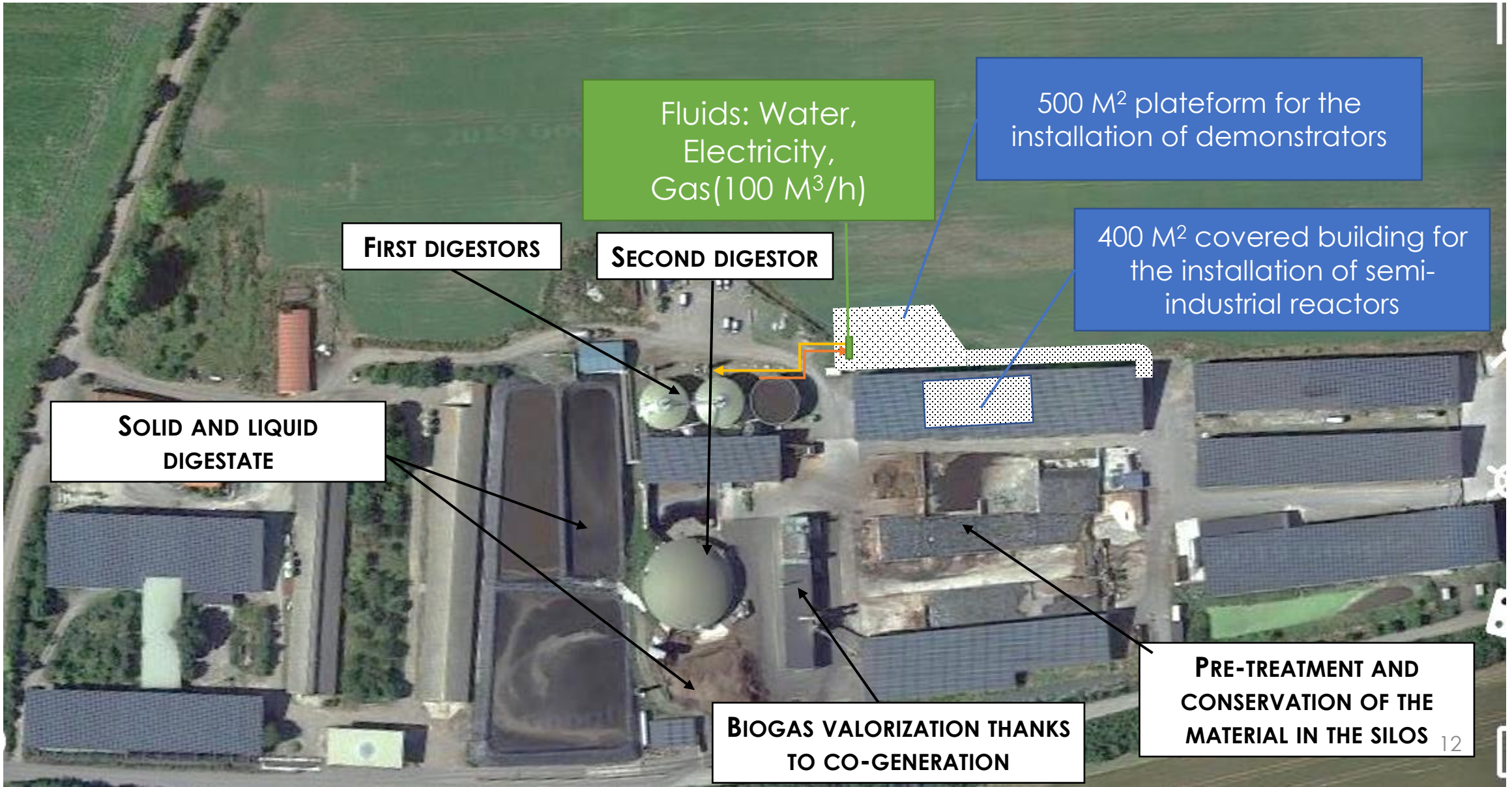
- ✓ 2 L reactors
- ✓ 5 L reactors

SEMI-INDUSTRIAL SCALE

- ✓ 2 x 250 L reactors

BIO-VALO'S TESTING CAPABILITIES ON BIOGAS PLANT

A LIVING LAB IN THE HEART OF A MULTI-ENERGY UNIT



A TECHNOLOGICAL PLATFORM TO DEVELOP AND TO MAKE BIOGAZ PRODUCTION MORE RELIABLE AND PROFITABLE

In cooperation with local authorities, companies, research laboratories and potential users, BIO-VALO promotes open innovation

SOME EXAMPLES OF TESTS ALREADY PERFORMED ON OUR PLATFORM:

- ✓ TESTS ON PRESERVATIVES ON BEET PULP AND OTHER SILAGES
- ✓ TESTS OF INNOVATIVE PRE-TREATMENT TOOL FOR ORGANIC MATTER
- ✓ HYDRODYNAMIC MODELING OF A HYDROLYSIS RING
- ✓ TESTS ON A SEPARATION TOOL TO LIMIT SPREADING VOLUMES AND NITROGEN ACCUMULATION
- ✓ HYDROGEN PRODUCTION IN 250L REACTORS FROM WASTES
- ✓ TESTS OF BIODEGRADATION OF SPECIFIC BIOBASED POLYMERS (PET AND PLA)

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AN EXPERTISE BASED ON INNOVATION

CREATION OF A **SHARED LABORATORY** WITH:

BIOGASLAB

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MELiSSA
MICRO-ECOLOGICAL LIFE SUPPORT SYSTEM ALTERNATIVE

BIO-VALO is involved in collaborative research projects whether as a service provider or as a partner

EXAMPLES OF RESEARCH PROJECTS IN WHICH BIO-VALO IS ACTUALY INVOLVED:

PROBHYM RESEARCH PROGRAM BIO-HYDROGEN – BIOGAS PRODUCTION COUPLING

OLEOFERM RESEARCH PROGRAM BIO-HYDROGEN-VFA – LIPIDS COUPLING

BIOMINTENS RESEARCH PROGRAM BIOLOGICAL METHANATION – BIOGAZ UPGRADING

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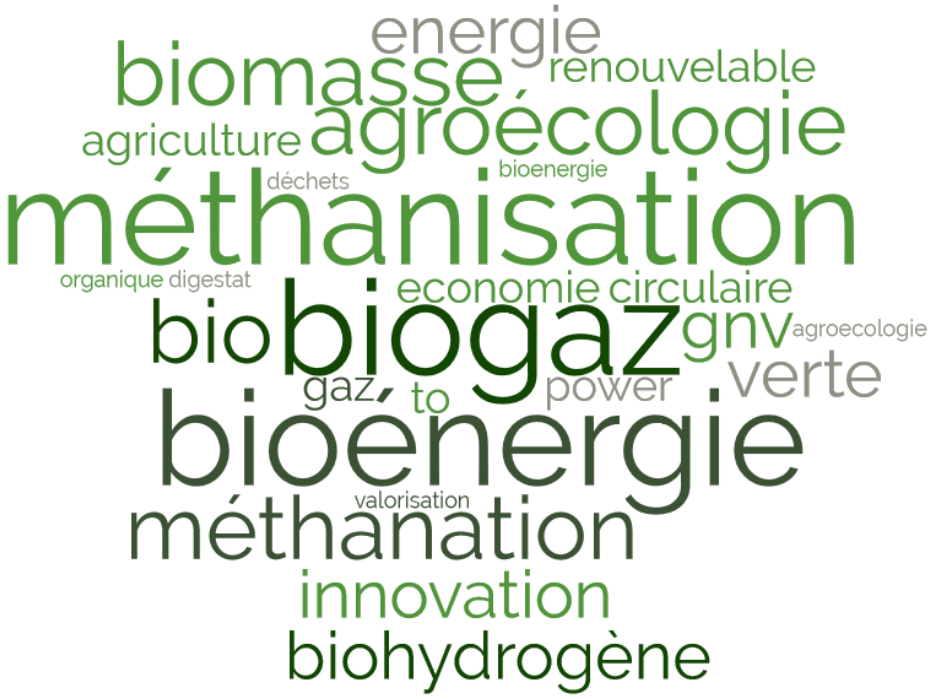
SUMMARY: BIO-VALO PLATEFORM TODAY

- A FULLY EQUIPPED LABORATORY FOR BIOGAS ANALYSIS AND PRODUCTION TESTS (2 TO 250 L)
- 36 REACTORS OF 2L AND 3 REACTORS OF 5L
- ANALYSIS EQUIPMENT (AND SOME MORE WITH OUR NEW SHARED LAB!)
- A 2 X 250 L REACTOR
- THE POSSIBILITY TO MAKE TESTS ON AN INDUSTRIZL BIOGAS PLANT VIA DIFFERENT TAPPING POINTS
- CLOSE COLLABORATIONS WITH PUBLIC RESEARCH INSTITUTIONS
- A NETWORK OF INDUSTRIAL PARTNERS



"OPTIMIZING BIOGAS PRODUCTION TODAY, AND INVENTING ITS FUTURE"

Thank you for your attention !

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