



**SEMPRE-BIO**

11th International Conference on  
Sustainable Solid Waste  
Management Rhodes, Greece,  
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# SEMPRE-BIO

**SEcuring doMestic PReduction of cost-Effective BIOmethane**

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## Pioneering public-private partnership model

### Main activities

#### 1. R&D



Water resource management



Critical infrastructure management and resilience



Biofactory and resource recovery



Environmental, economic and social sustainability

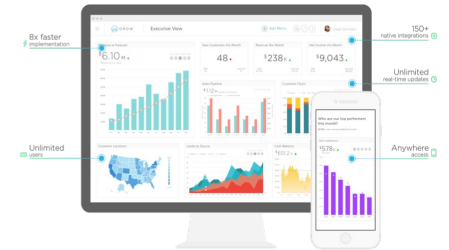


Water 4.0

#### 2. KNOWLEDGE-BASED SERVICES



#### 3. DIGITAL SERVICES





# SEMPRE-BIO at glance

## Goals

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

## Numbers

**42**  
Months



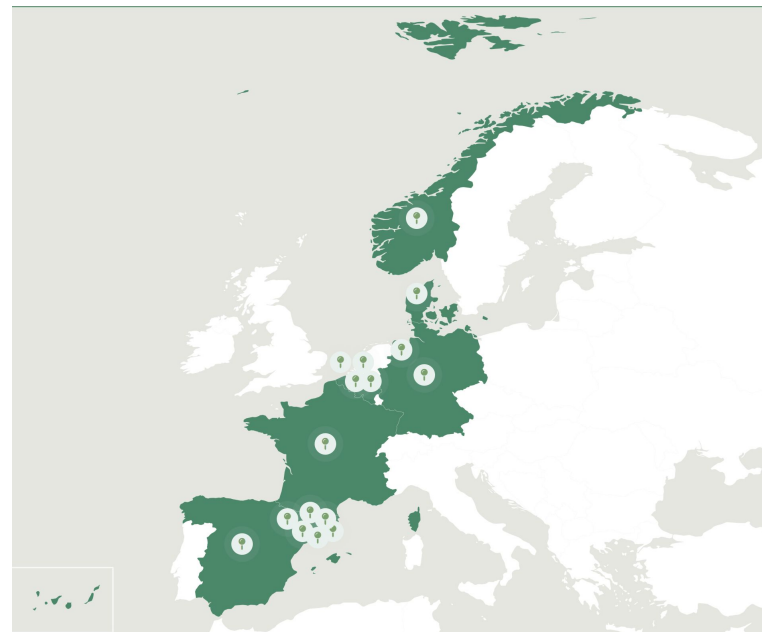
**16**  
Partners



**6**  
Countries



**9.9M**  
Funding



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Aigües de  
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Bioenergies, Ecologies,  
Technologies, Innovations, Diversités

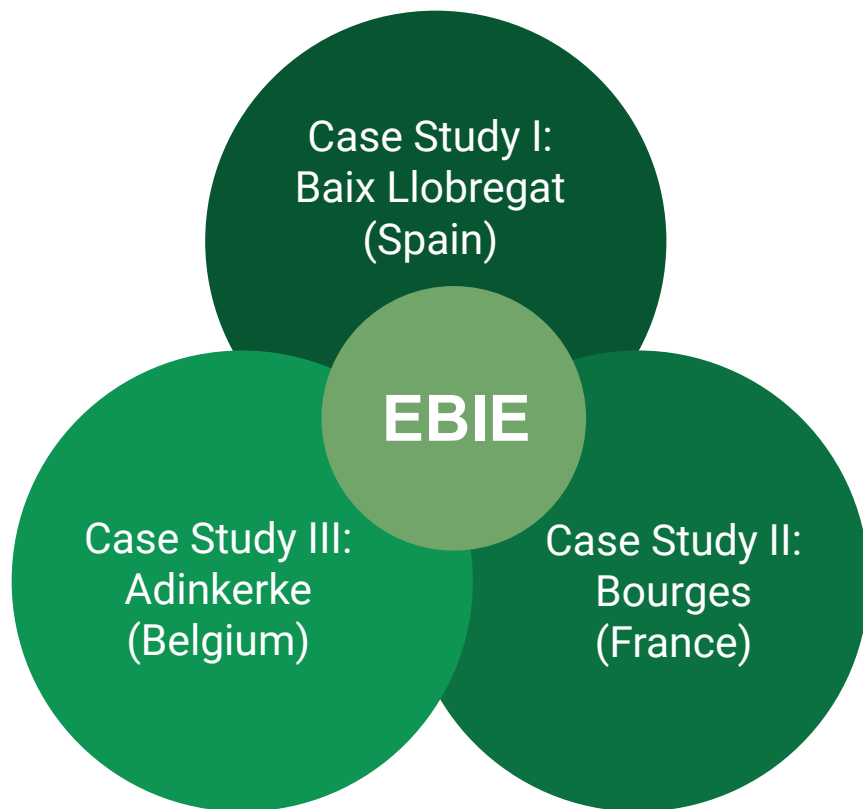
UNIVERSITEIT  
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# European Biomethane Innovation Ecosystem

# Case Study I: Baix Llobregat (Spain)



## Feedstock

## Technology

## Site

## Final use of biomethane

Wastewater



CO<sub>2</sub>  
Biomethanation



Electrolysis



Case Study 1:  
El Prat de LI (ES)



Compression to CNG  
for public transportation

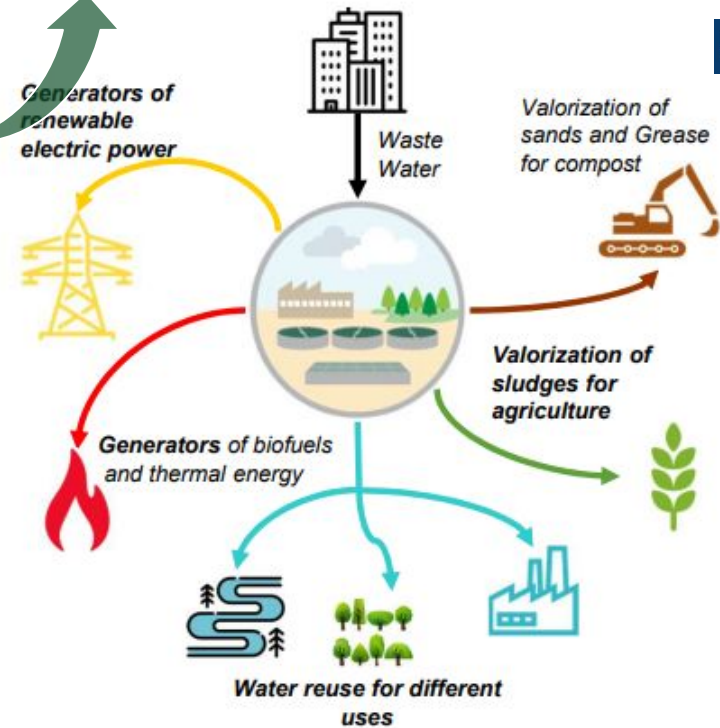
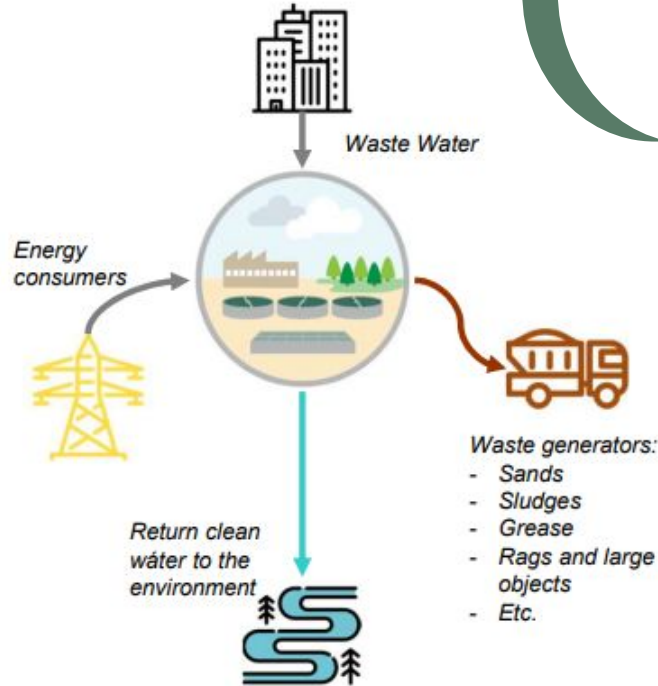


# Case Study I: Baix Llobregat (Spain)



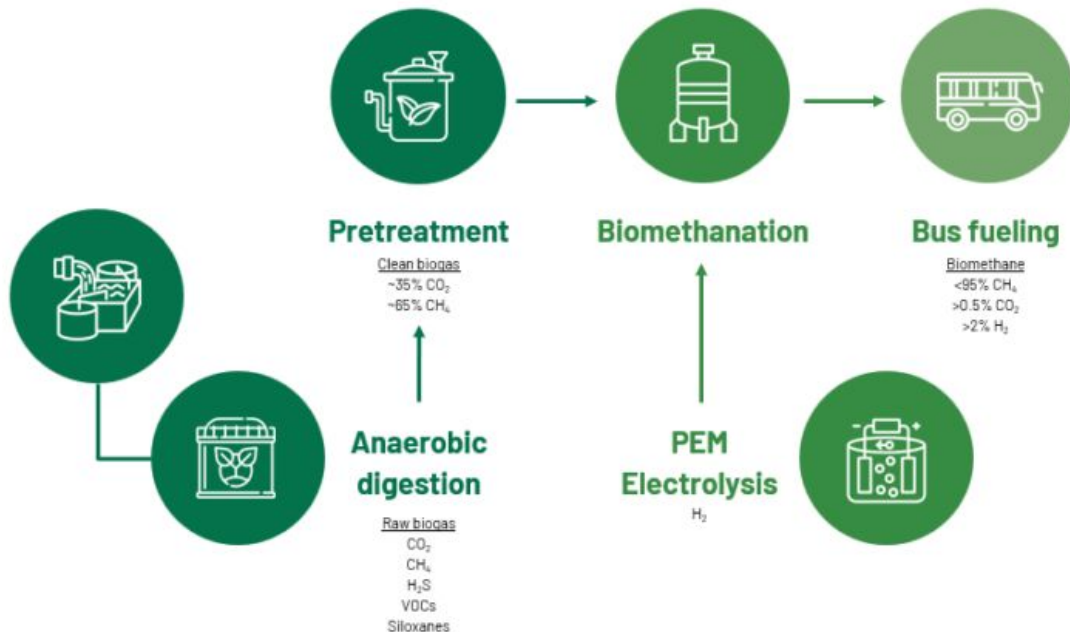
Old Paradigm: Sewage Treatment Plant

New Paradigm: Biofactory





# Case Study I: Baix Llobregat (Spain)





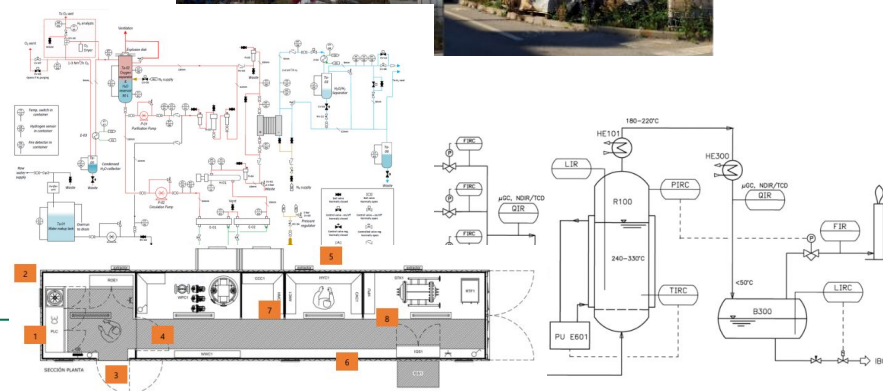


# Biomethanation Demoplant

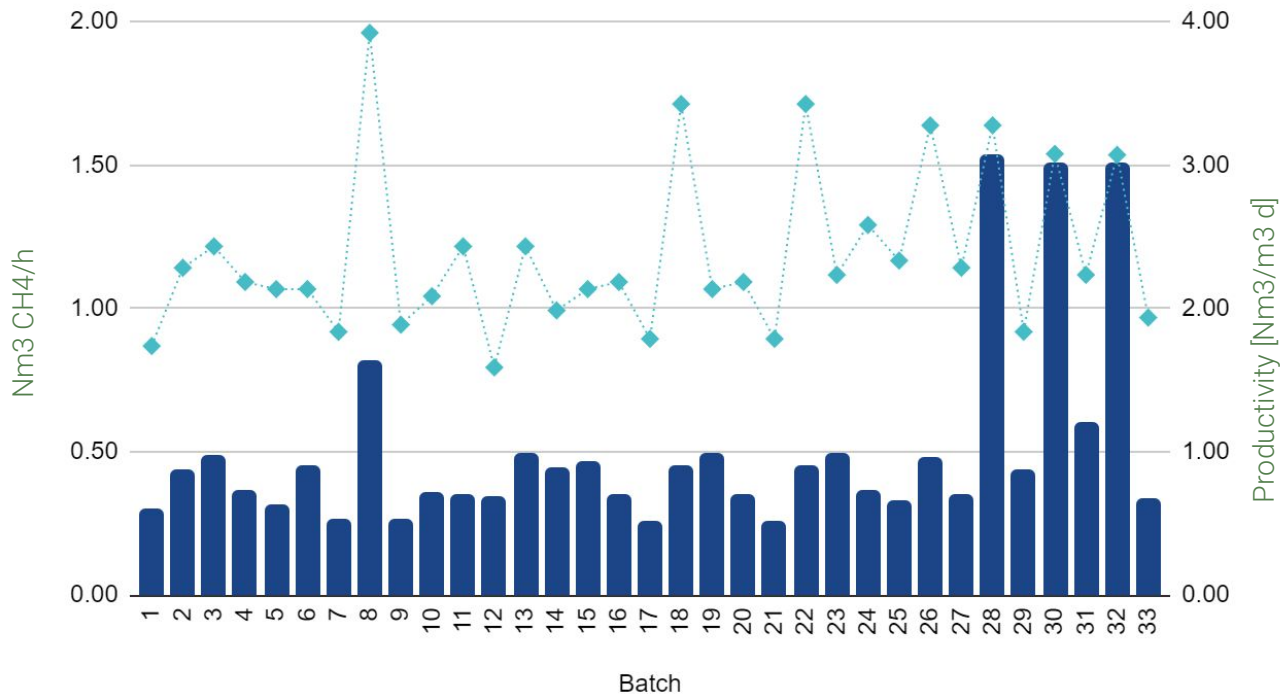
## Life Nimbus



## Sempre-Bio



# Results: Life Nimbus



CH4 = 95 - 98 %



148 Kg CH4

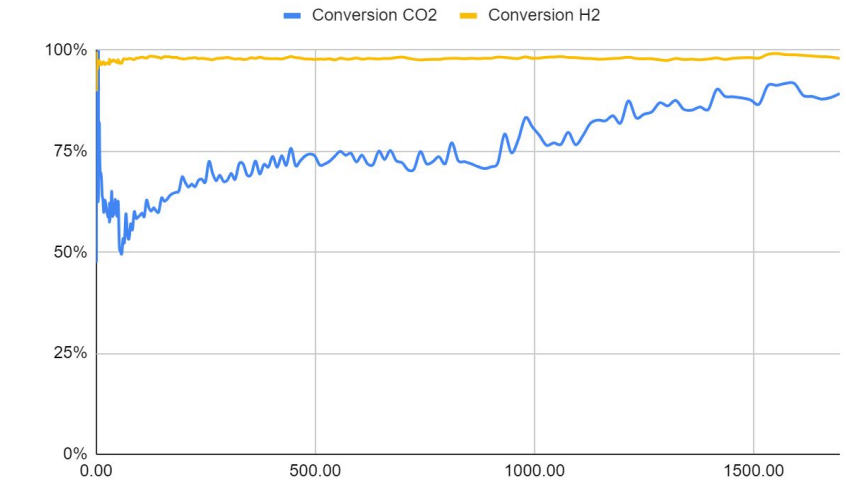
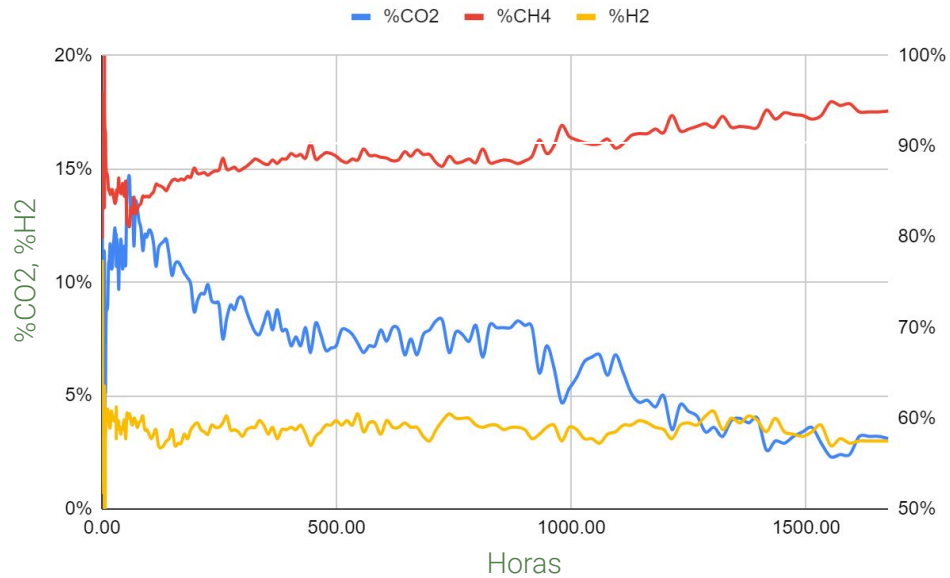


246 Km

sep - oct 23 = 0,04 Nm3/h

mar- abr 24 = 0,3 - 0,5 Nm3/h

# Results: Life Nimbus



# Case Study 2: Bourges (France)



## Feedstock

## Technology

## Site

## Final use of biomethane

Green waste from the city of Bourges

Pyrolysis

CO  
Methanation

Case Study 2:  
Bourges (FR)

Grid injection



# Case Study 3: Adinkerke (Belgium)



## Feedstock

Cattle manure and organic biological waste as co-substrate



## Technology

Cryo separation



## Site

Case Study 3: TBD (BE)



## Final use of biomethane

Stored locally





# 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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