

# European Biogas Outlook

**Biomethane: an ally for decarbonization**  
**18 March 2026 | Online**

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# EBA and the sector in a nutshell



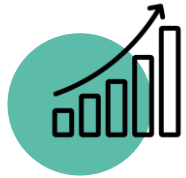
# Representing the full European value chain



# The biogases market in Europe



# 22 bcm of biogases are produced today in Europe



## Combined biomethane and biogas production

»» **22 bcm** in Europe

=

Gas consumption of Belgium, Denmark and Ireland combined

»» **19 bcm** in the EU-27

=

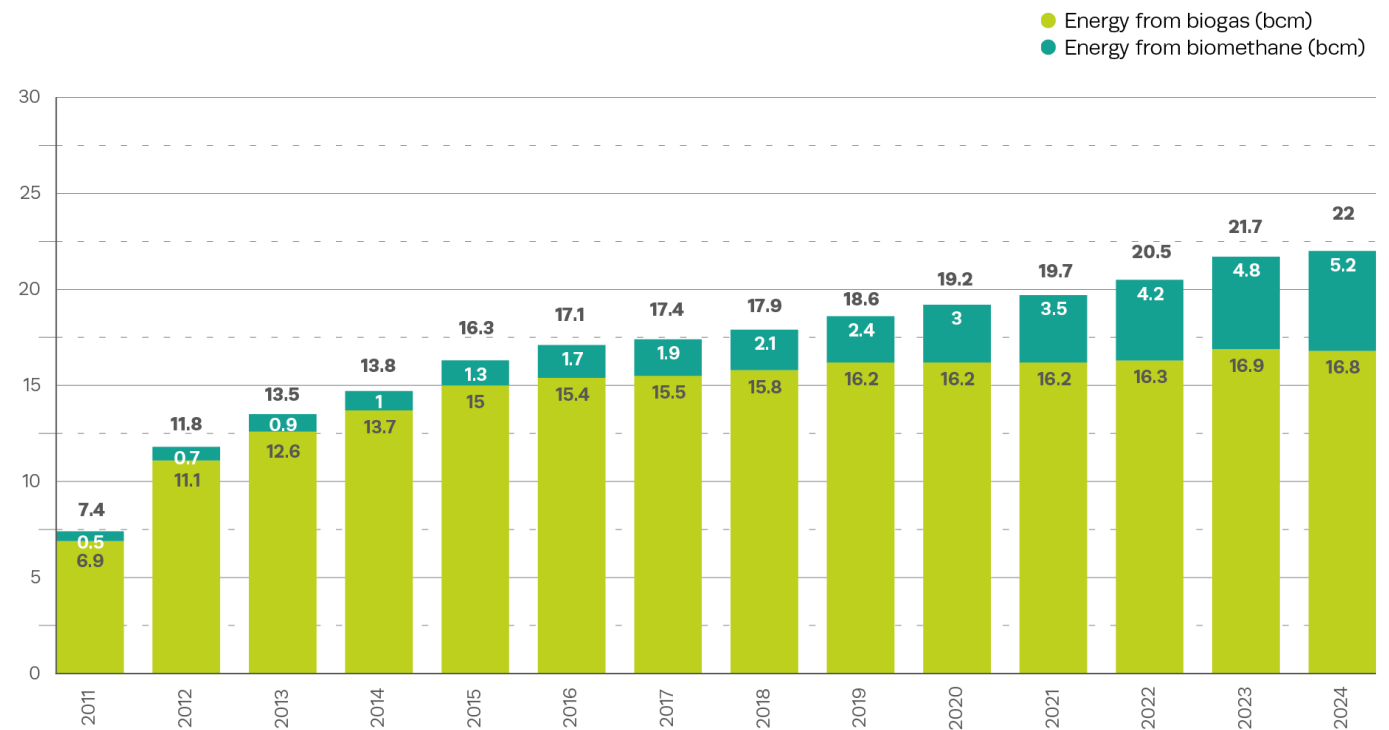
6% of EU natural gas consumption in 2024



## Biogas and biomethane plants

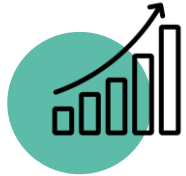
»» **+21,000 plants** in Europe

Combined biomethane and biogas production in Europe (bcm)



EBA ©2025

# 25 biomethane-producing countries in Europe



**Biomethane production in 2024**

»»» **5.2 bcm**

produced in Europe

»»» **4.3 bcm**

produced in the EU-27



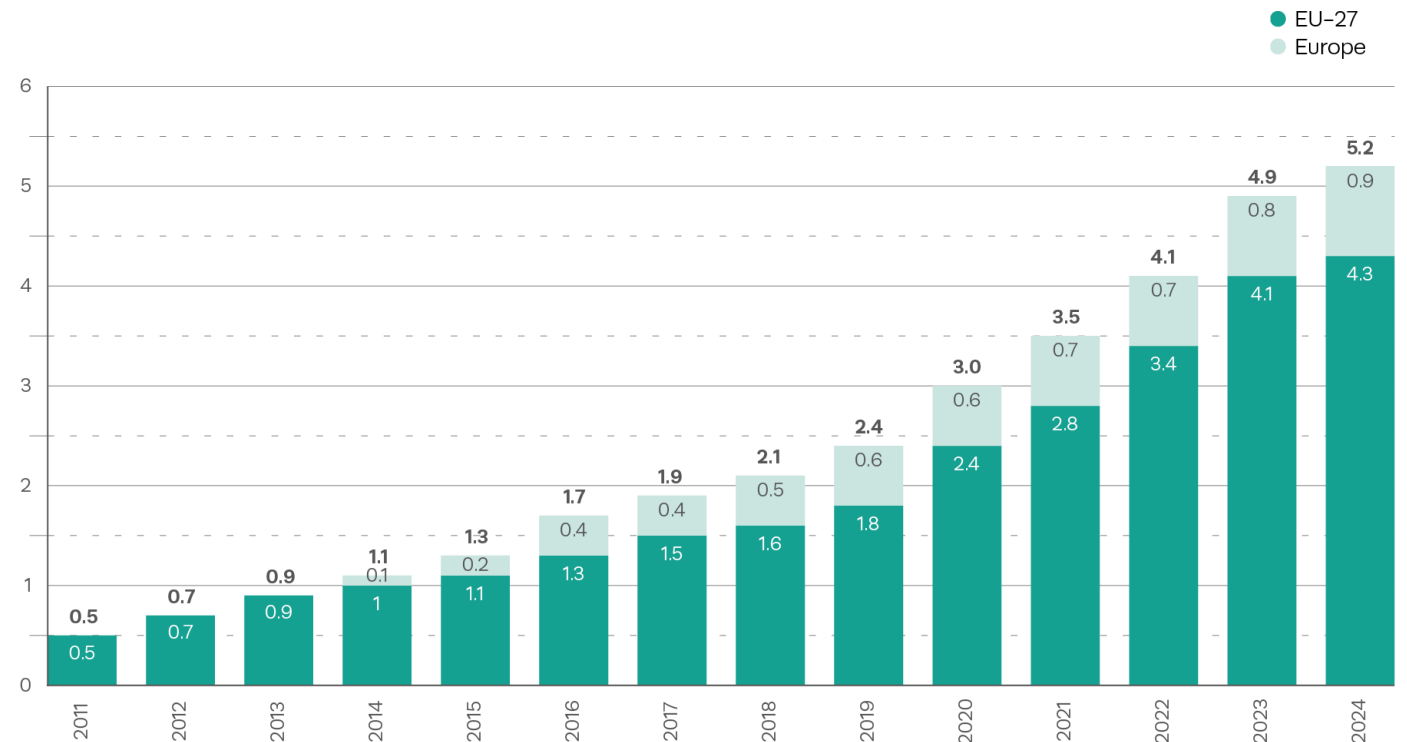
**7 bcm/year**

biomethane installed capacity in Europe (Q1 2025)



**France, Germany, Italy, Denmark, and the UK** are leading the production and scale-up of biomethane

*Biomethane production in the EU-27 and Europe (bcm)*



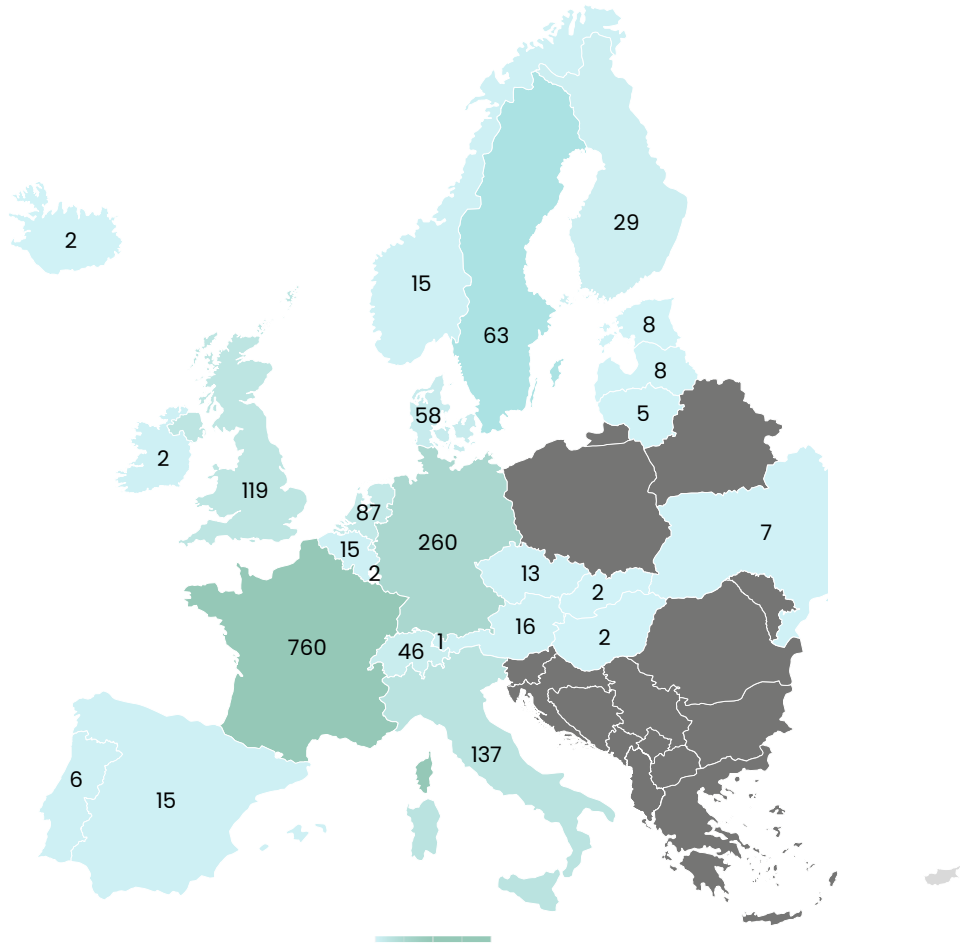
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# Biomethane plants in Europe and EU-27

Number of biomethane plants per country in 2024

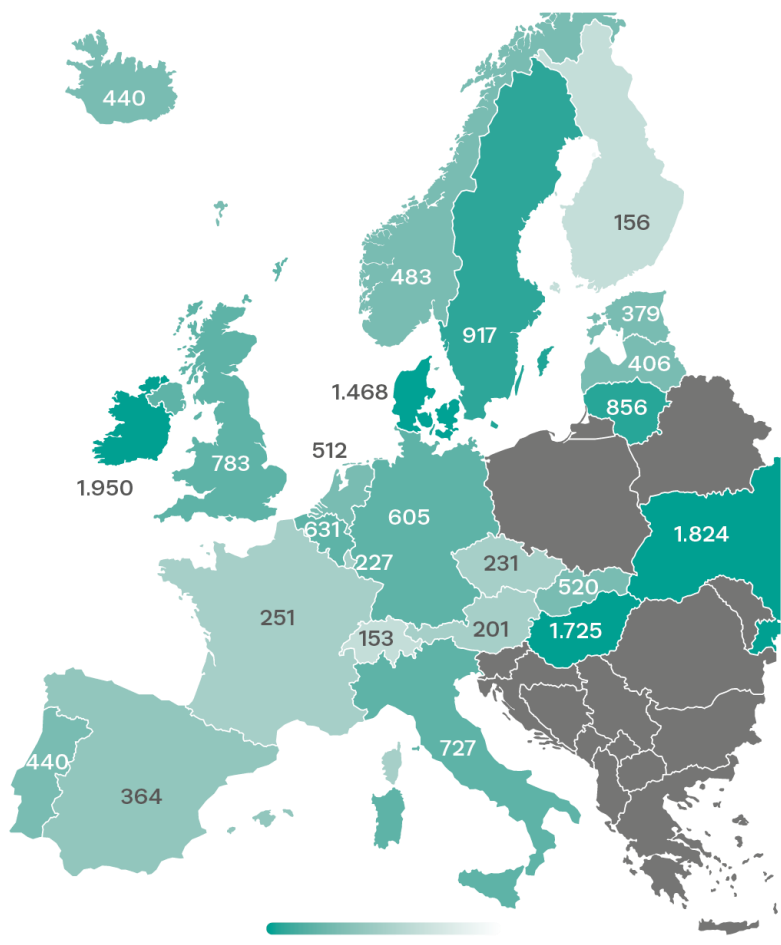
>>> **1,620**  
 biomethane plants  
 in Europe

>>> **1,433**  
 biomethane plants  
 in the EU-27



Average biomethane plant size per country in 2024 (m<sup>3</sup>/h)

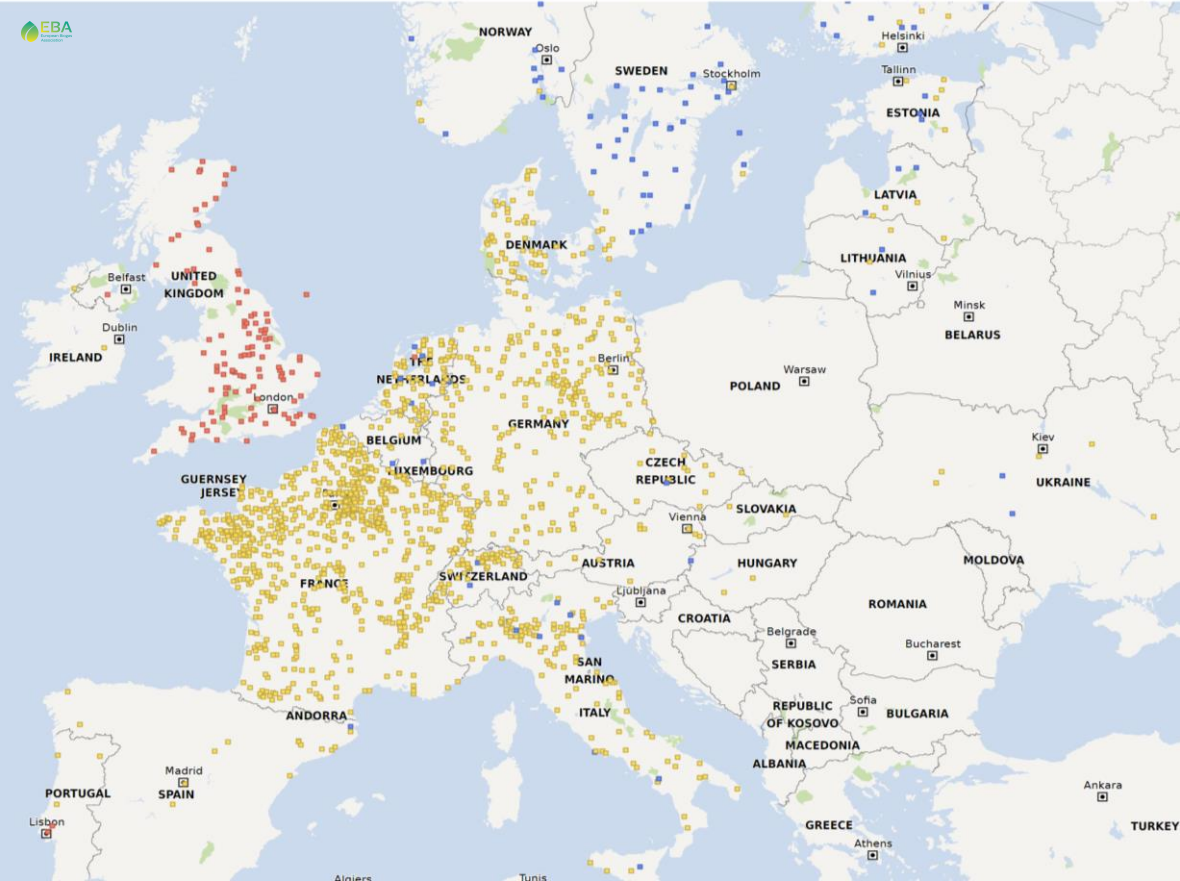
>>> **483 m<sup>3</sup>/h**  
 average size of biomethane plant  
 in Europe



# Grid connections and upgrading technologies

## Biomethane plants connected to gas grid in Europe in 2025

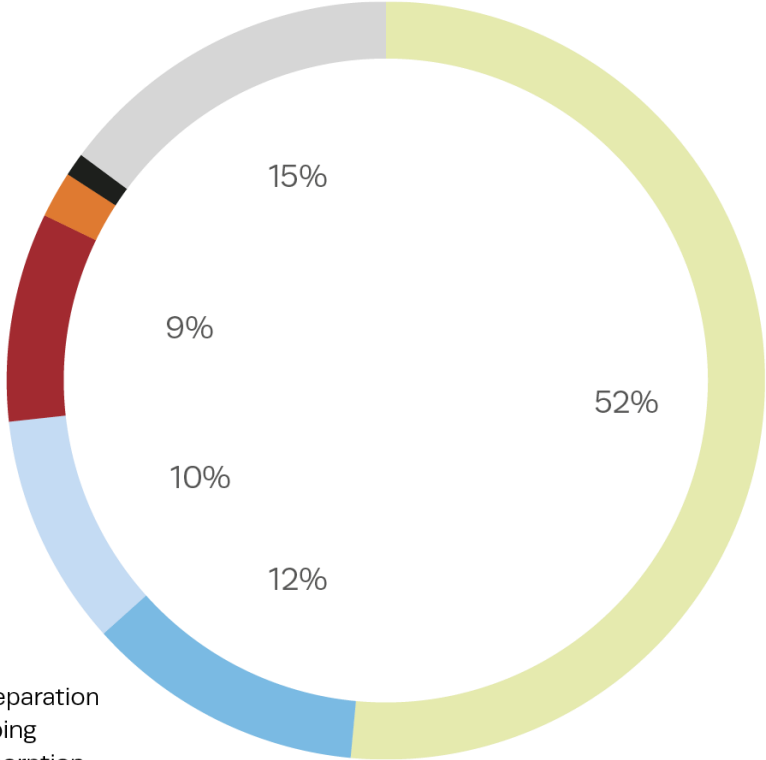
»» **86% connected to grid**  
Mainly distribution grid



yellow – connected, blue – not connected, red – unknown

## Upgrading technologies for biomethane production

»» **½ of biomethane plants use**  
Membrane separation



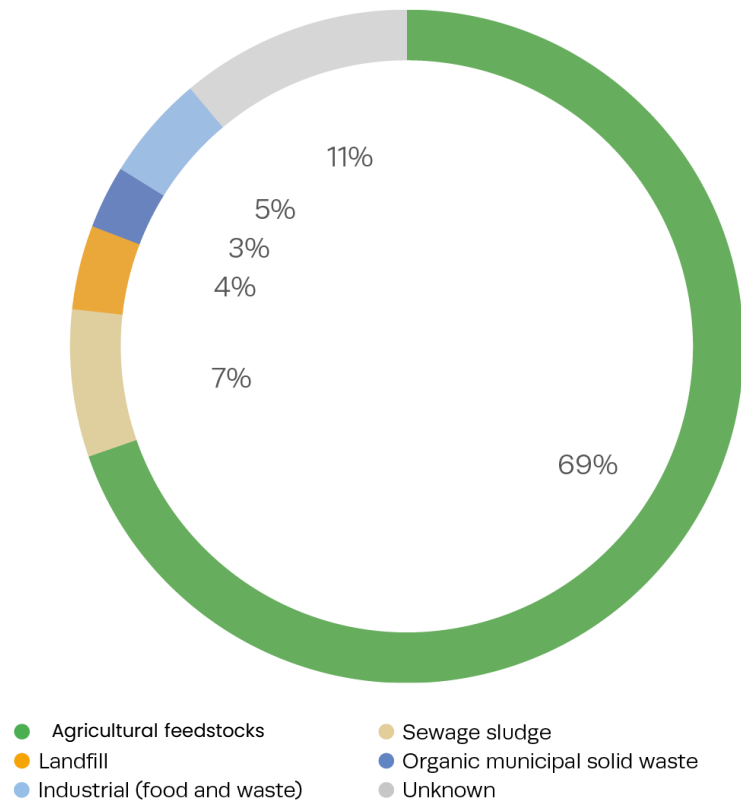
- Membrane separation
- Water scrubbing
- Chemical absorption
- Pressure swing adsorption
- Physical absorption
- Cryogenic separation
- Unknown

# Transition towards sustainable feedstocks

## Primary biogas feedstock:

- Agricultural feedstocks

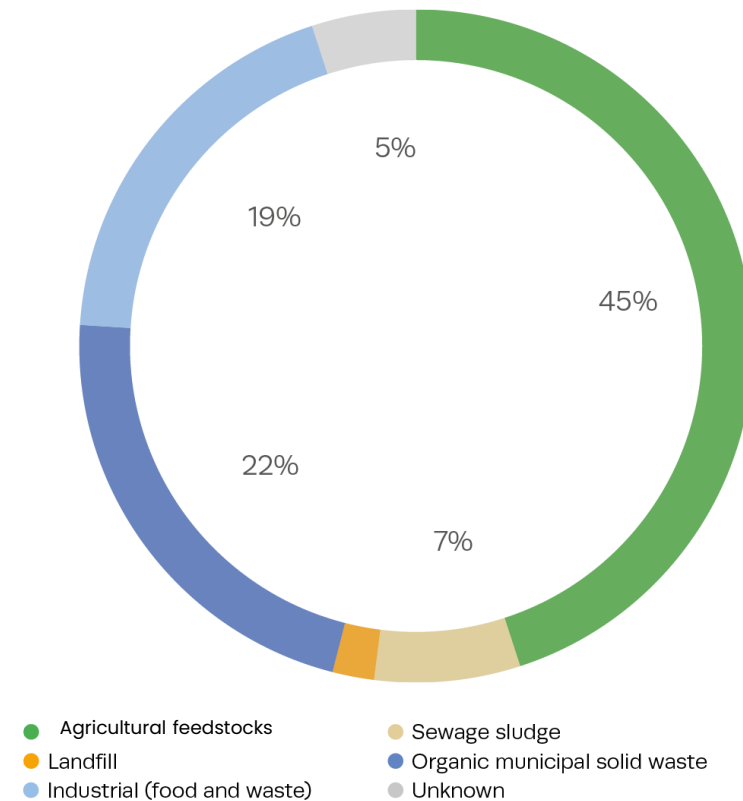
Percentage of European biogas production per plant type in 2024



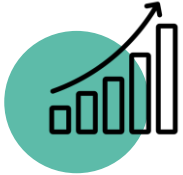
## Primary biomethane feedstocks:

- Agricultural feedstocks
- Municipal organic solid waste

Percentage of European biomethane production per plant type in 2024



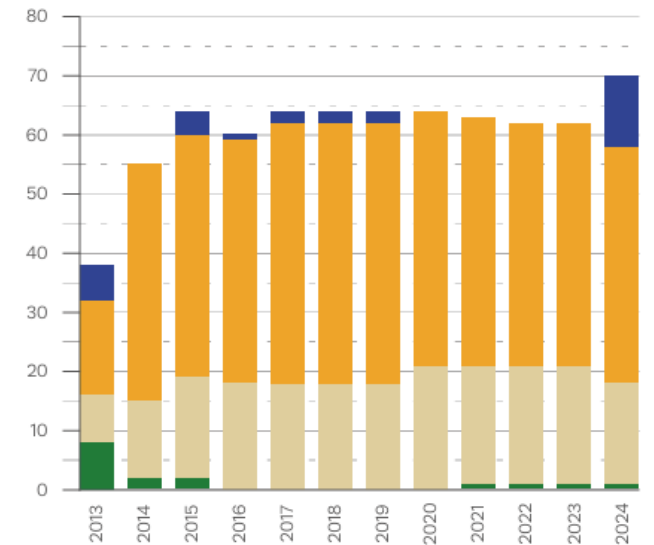
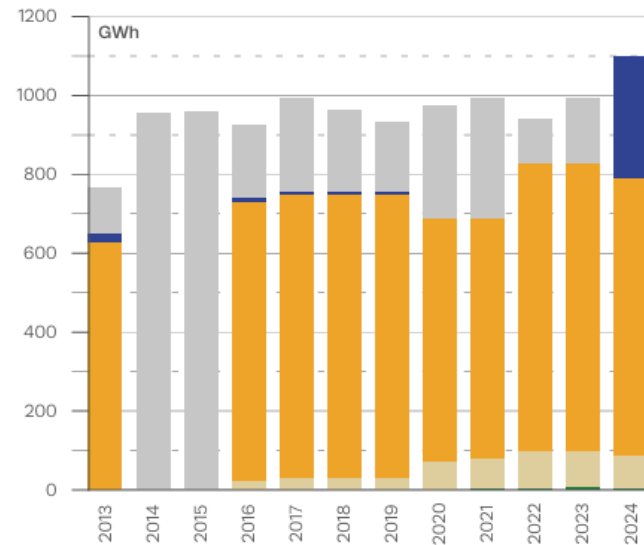
# Biogas and Biomethane production in Portugal



## Country highlights

- ✓ 70 biogas plants, producing 1,101 GWh of biogas in 2024
- ✓ Three biomethane plants were in operation in 2024
  - ✓ New bio-LNG plant is expected to become operational in 2025, with an estimated production of circa 365 tonnes of bio-LNG/year
- ✓ The Biomethane Action Strategy 2024–2040 set a target of 2.7 TWh biomethane by 2030, equal to 9.1% natural gas replacement.

Development of biogas production (GWh) (left); and development of the number of biogas plants (right)

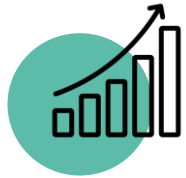


- Agricultural residues
- Landfill
- Industrial (food and drink)
- Industrial wastewater
- Unknown
- Sewage sludge
- Organic municipal solid waste
- Industrial solid waste
- Other

# Future potential of biomethane in Europe



# Growth prospects for biomethane



**Continued need for gas in the coming decades**



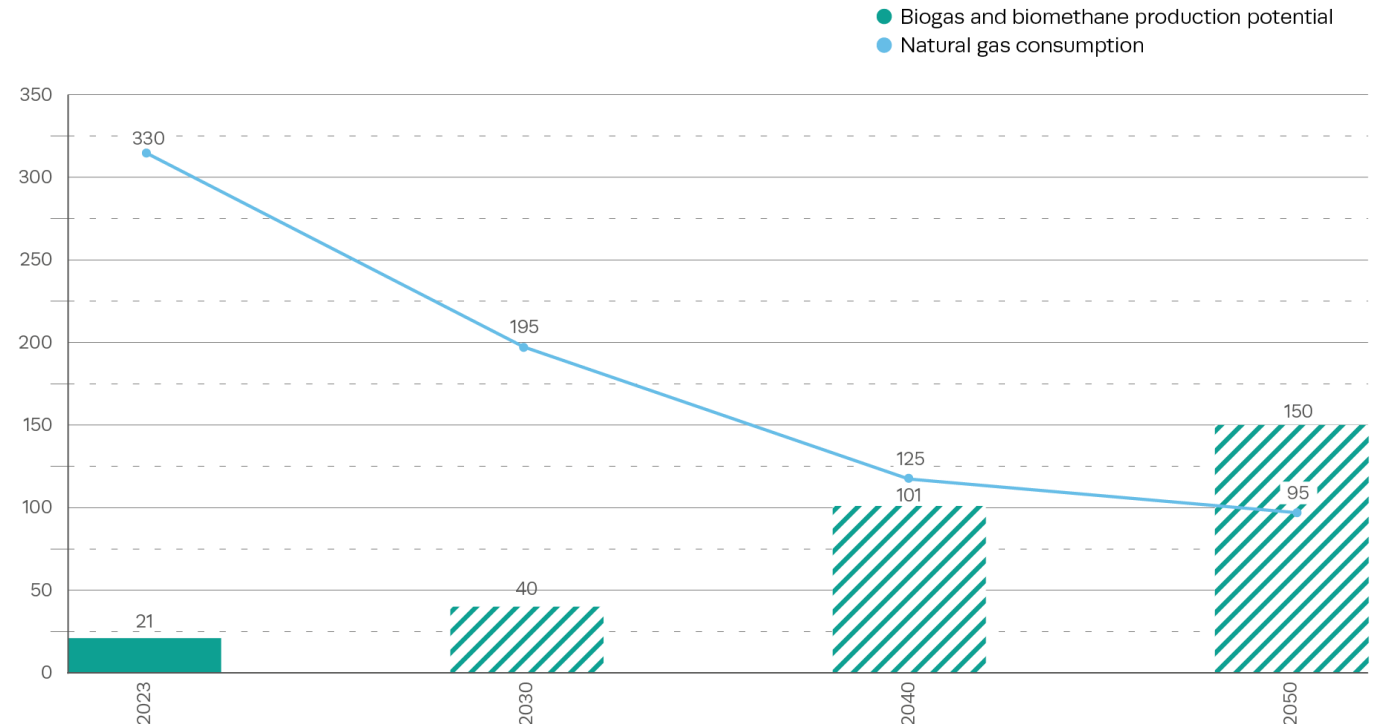
**By 2040–2050**, projected natural gas consumption and projected biogas production potential are expected to converge



**Research and innovation** will unlock further potential for biogases:

- E-methane via methanation
- Gasification

*Comparison of current and potential biogas production in the EU-27 for 2030, 2040 and 2050 with current and anticipated natural gas demand for those years, according to specific EU regulations*



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# EBA Roadmap towards 2040

Biogases are at the center of **three circular pathways**:



**Renewable energy**



**Organic fertilisers**



**Biogenic CO<sub>2</sub>**

## EBA RECOMMENDATIONS TOWARDS 2040



Binding biogases target of 100 bcm by 2040



European Biogases Charter



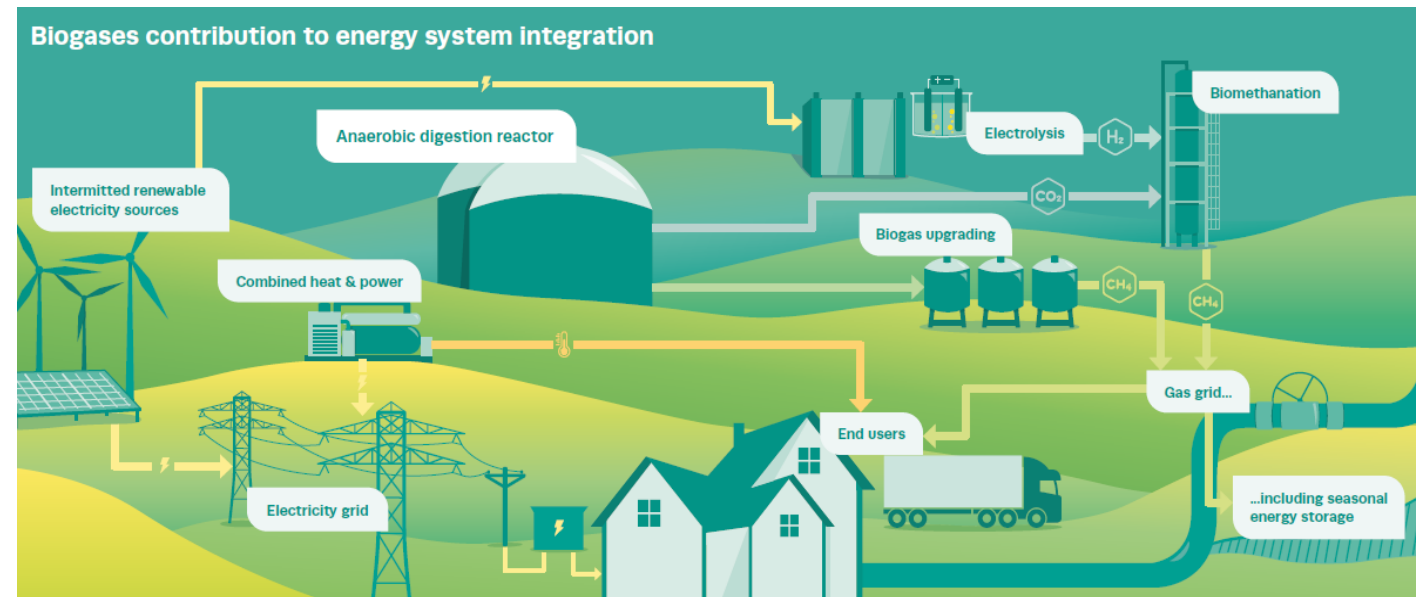
National Pledges for Biogases

# Energy system integration



## Complementarity between electricity and gas systems

- ✓ Biogas-CHP plants deliver fast, flexible power and heat, helping stabilise the grid when other renewables (wind and solar) fluctuate.
- ✓ Biomethane can be stored seasonally in existing gas infrastructure, aligning energy production with demand over longer periods.
- ✓ Through bio-methanation, excess wind and solar power can also be converted into biomethane and stored in the gas grid.



# Biomethane Potential in Europe and Portugal by 2040



## Distribution of Europe's 2040 biomethane potential



By 2040, Europe could produce 111 bcm/yr of biomethane

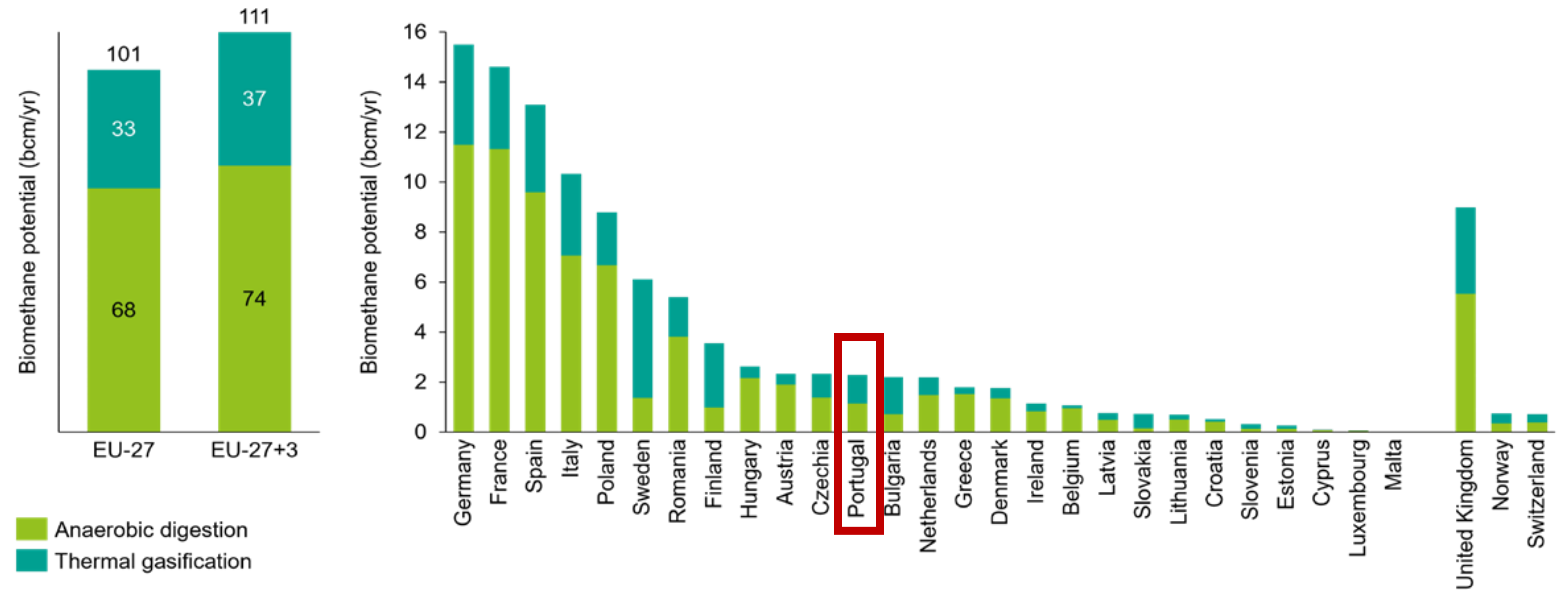
- ✓ 2/3 coming from AD
- ✓ Most potential in DE, FR, ES, IT and PL.
- ✓ **Portugal has the potential to produce 1,6 bcm**



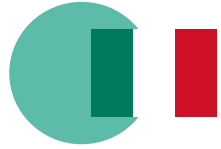
## Achieving this potential—

Requires coordinated action on feedstocks, permitting and infrastructure

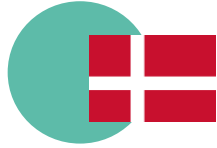
Biomethane potential (bcm/year) in 2040 per country and technology



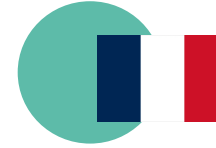
# Success stories from Italy, Denmark and France



- ✓ **Italy is one of Europe's largest biogas producers**  
1,800+ plants and ~24 TWh of biogas in 2024, driven by long-standing support schemes.
- ✓ **Among the fastest-growing biomethane markets**  
Expanding from 48 plants (2022) to 115 (2024) and 137 by mid-2025.
- ✓ **Strong policy push**  
The 2022 Biomethane Decree mobilised €1.73bn (RRF) + €2.8bn incentives, enabling 382 new projects and a 2030 target of 5.7 bcm.



- ✓ **Denmark is Europe's biogas pioneer**  
3rd-largest biomethane producer, with rapid growth since 2015.
- ✓ **A highly efficient agriculture-based model**  
delivering ~41% biomethane share in the national gas grid by 2025.
- ✓ **Long-term policy stability and innovation leadership**  
20-year support guarantees, a national biomethane registry (since 2011), and new frameworks such as bio-CCS tenders and carbon-tax reforms driving continued sector evolution.



- ✓ **Europe's most dynamic biomethane market**  
731 plants injecting and production capacity increasing tenfold in five years.
- ✓ **Rapid scale-up**  
Supported by Biogas Production Certificates and growing industrial demand.
- ✓ **Strong policy backbone**  
Feed-in tariffs, "right to inject", reverse-flow infrastructure and ambitious planned targets (22 TWh by 2028; 44 TWh proposed for 2030).

# Conclusions



# Some critical issues

**1**

## **Full recognition and support**

- Targets on biogases
- Acknowledgement of biogases cost-competitiveness

**2**

## **Address bottlenecks**

- De-risk investments in clean technologies
- Speed-up permitting
- Facilitate grid injection

**3**

## **Resource valorisation**

- Valorise use of digestate as organic fertiliser
- Encourage use of bio-CO<sub>2</sub> as a replacement of fossil CO<sub>2</sub> in industrial processes

# How to boost the scale-up of biomethane?



Solid and consistent **regulatory framework** (clear objectives and guidelines for the industry, positive signals for investors)



Encourage **sustainable** biomethane **production** (compliance with RED III, access to sustainable financing and EU ETS)



Facilitate **grid injection** and **cross-border trade** of biomethane



Increase investments on **R&D** to speed-up the development of new technologies, novel feedstocks and improve efficiency



Valorise **digestate and bio-CO2** as biogases co-products

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