

# **The importance of animal manures for the biogases industry**

ATF Seminar, 20/11/2024, Brussels

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# EBA – representing the full value chain



≤ 300  
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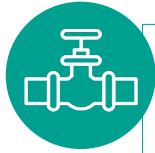
250  
COMPANIES

50  
NATIONAL ASSOCIATIONS

35  
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# 21 bcm of biogases in Europe in 2022

## Combined biomethane and biogas production in Europe

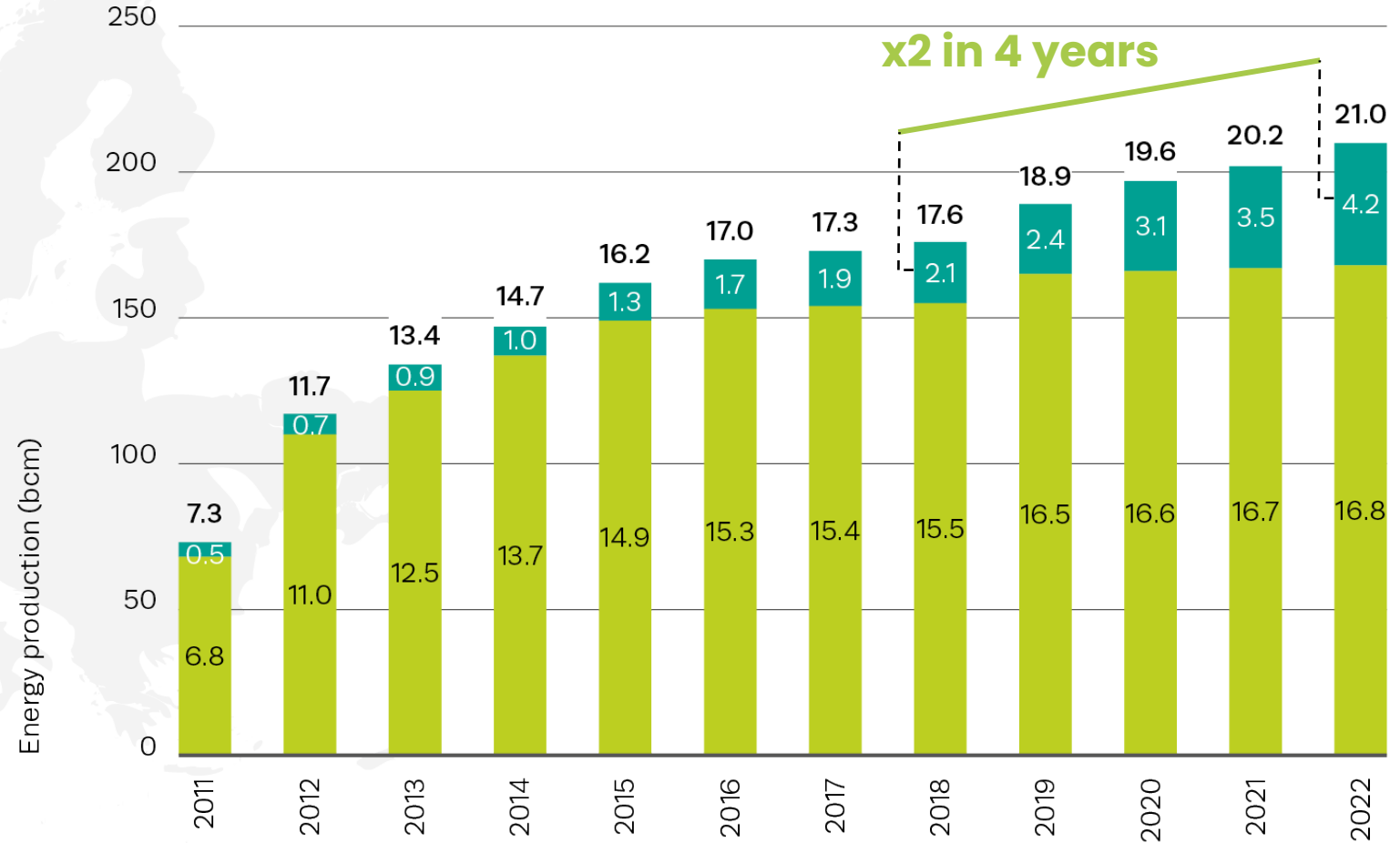


> gas demand of Poland

= 6% EU gas consumption



20% biogases upgraded

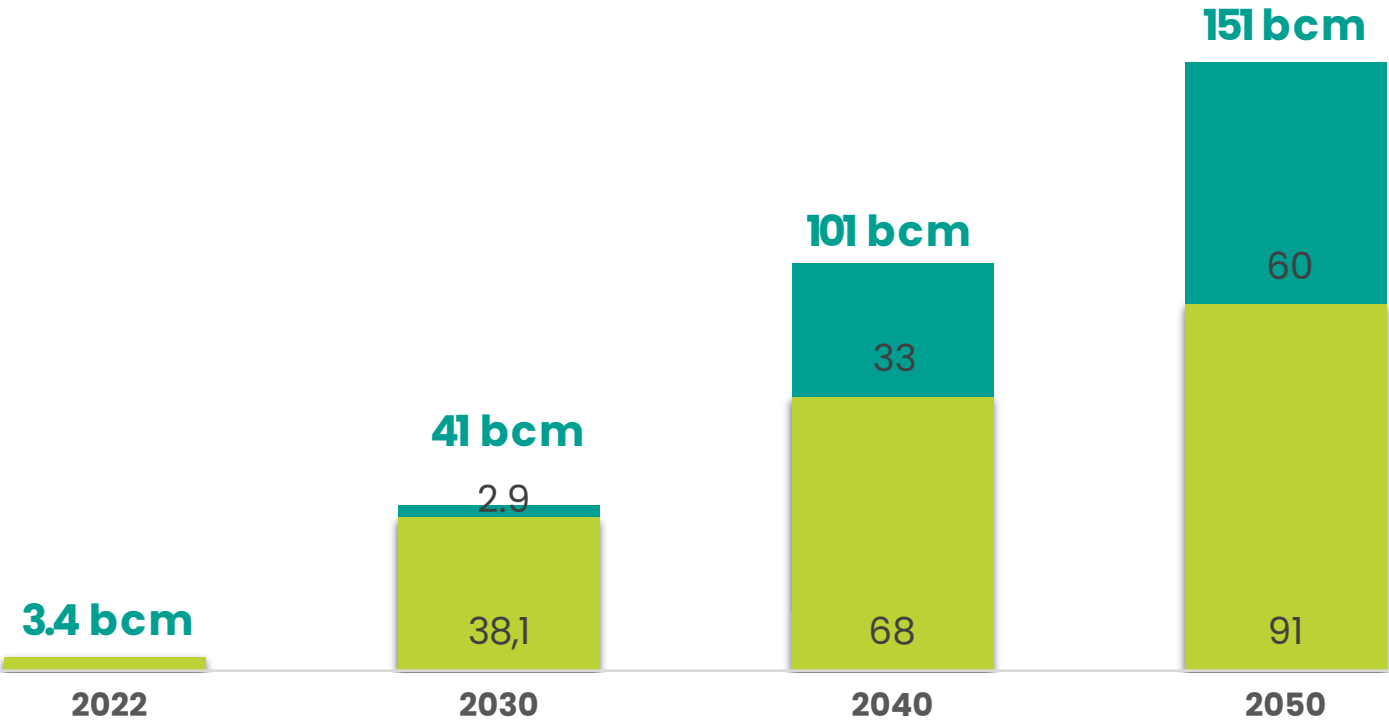


■ Energy from biogas (bcm)  
■ Energy from biomethane (bcm)

# Enabling a resilient transition

## Production potential in EU-27 until 2050 compared to existing production (bcm)

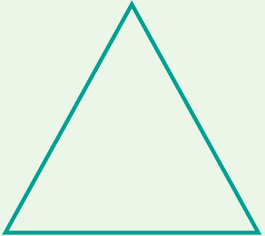
■ Anaerobic Digestion    ■ Gasification



2040

Biomethane production could supply 85% of gaseous fuels demand

SECURITY



SUSTAINABILITY

EQUITY

Balancing the TRILEMMA while responding to great societal challenges: waste management, farming emissions abatement, affordability.

Sources: EC, Impact Assessment Report, SWD(2024) 63 final (2024), EBA, Statistical Report 2023 (2023); Gas for Climate, Biomethane Production Potentials in the EU (2022); Guidehouse, Biogases towards 2040 and beyond (2024).

# 2040 Anaerobic digestion feedstock mix: dominated by sequential crops, agricultural residues and manure

- **2040 AD potential in Europe:**

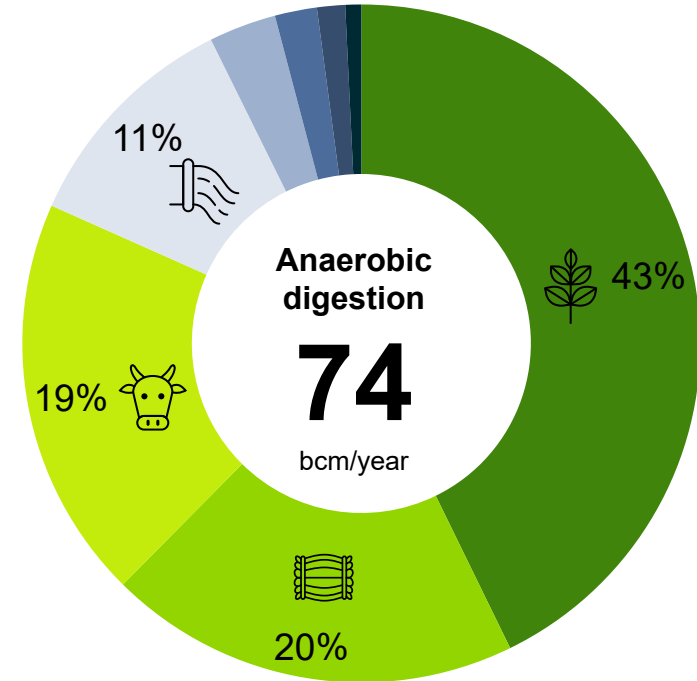
- 74 bcm/yr in Europe

- **Main feedstocks:**

- Sequential cropping
- Agri residues
- Manure
- Industrial wastewater

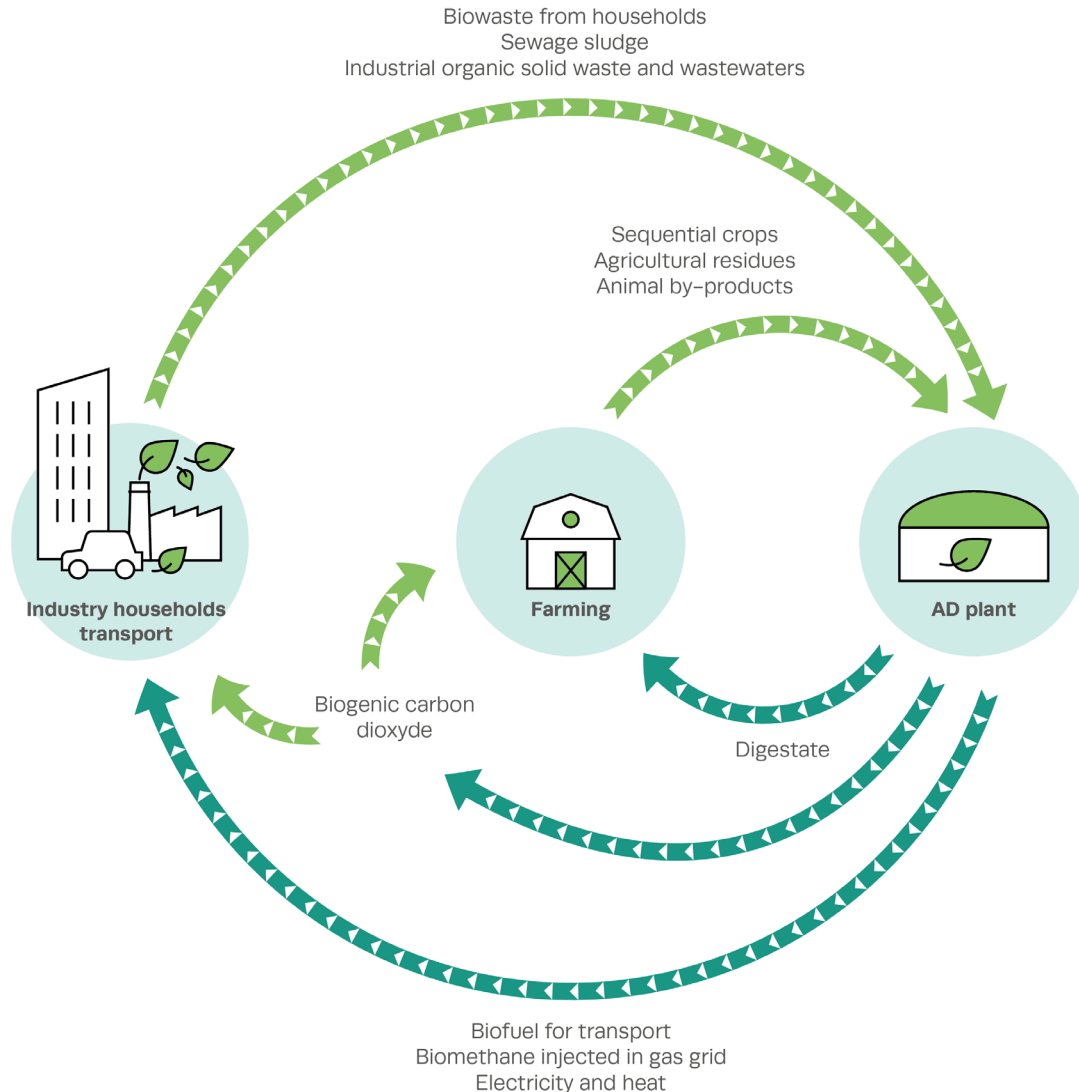
- **Top 5 countries:**

- Germany
- France
- Spain
- Italy
- Poland



# What is digestate?

## Schematic overview of the inputs and outputs of the biogases production process



During anaerobic digestion, **biogas is produced** along with **digestate**.



Digestate contains a higher proportion of **readily available nutrients** than in the raw feedstock.



The same amount of **stabilised organic matter** is present in the digestate than in the raw feedstock.

→ **Digestate is a valuable organic fertiliser and soil improver.**

# Digestate: an alternative to synthetic fertilisers



**31 Mt (DM)**  
digestate produced  
Europe, **2022**

Digestate can already displace:  
**15%**

**Nitrogen-based fertilisers**  
(N demand in EU-27: 11.1 Mt/year)

**11%**  
**Phosphorus fertilisers**  
(P demand in EU-27: 2.8 Mt/year)

**6%**  
**Potassium fertilisers**  
(K demand in EU-27: 3.1 Mt/year)



GHG reduction potential when  
displacing synthetic N-fertilizers  
with digestate

**10 Mt**  
**of CO<sub>2</sub> equivalent**  
**in 2022**

**Natural gas** is the main feedstock and  
energy source to produce **synthetic**  
**fertilisers**

The replacement of 15%  
of **synthetic nitrogen fertilisers** with  
digestate could save today around  
**2 bcm of natural gas**

# Digestate is an enabler of carbon sequestration



**9,3 Mt** of Total Organic Carbon, **2022**

More **stable organic carbon**, particularly **recalcitrant to biodegradation**

- High potential for **carbon sequestration**
- Leads to **humus** and **structure formation** in the soil and increases its **fertility, functionality, microbial activity, aeration, and water storage capacity**

## Carbon sequestration potential of digestate

	% of remaining TOC after 1,5 year
Solid fraction of digestate	86%
Digestate 1	73%
Digestate 2	56%
Cattle manure	58%
Maize straw	43%

*Reuland, G.; Sleutel, S.; Li, H.; Dekker, H.; Sigurnjak, I.; Meers, E. Quantifying CO<sub>2</sub> Emissions and Carbon Sequestration from Digestate-Amended Soil Using Natural <sup>13</sup>C Abundance as a Tracer. Agronomy 2023, 13, 2501.*

➔ The application of (solid fraction) digestate on soil is both a **sustainable soil management** and a **carbon farming practice**





- Contribution to food, feed, energy and fertiliser autonomy
- Waste management
- Local circularity
- Income diversification
- Decarbonisation tool

### Tackle emissions from biogases

Address the root source of nitrate pollution, regardless of the nitrogen source, in the **Nitrates Directive**, and finance equipment to reduce emissions via the **Common Agricultural Policy**.



### Acknowledge the role of anaerobic digestion in reducing GHG emissions

Recognise and credit appropriately emissions reductions from AD and the use of digestate.



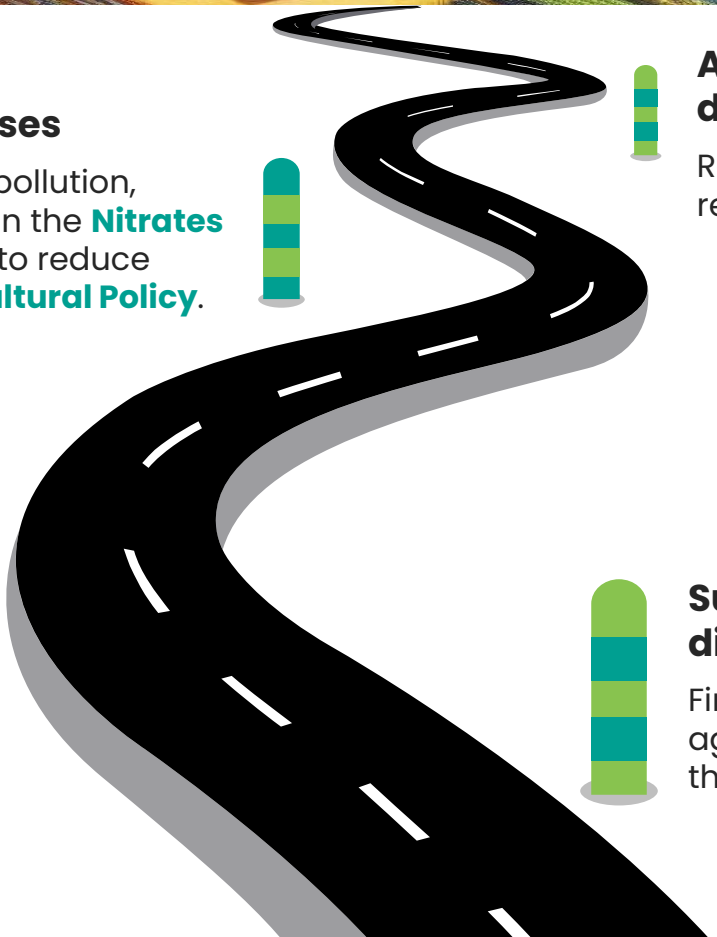
### Promote the application of digestate

Recognise digestate as a sustainable soil management practice under the **Soil Monitoring Law** and a carbon farming practice under the **Carbon Removals and Carbon Farming Certification Framework**.



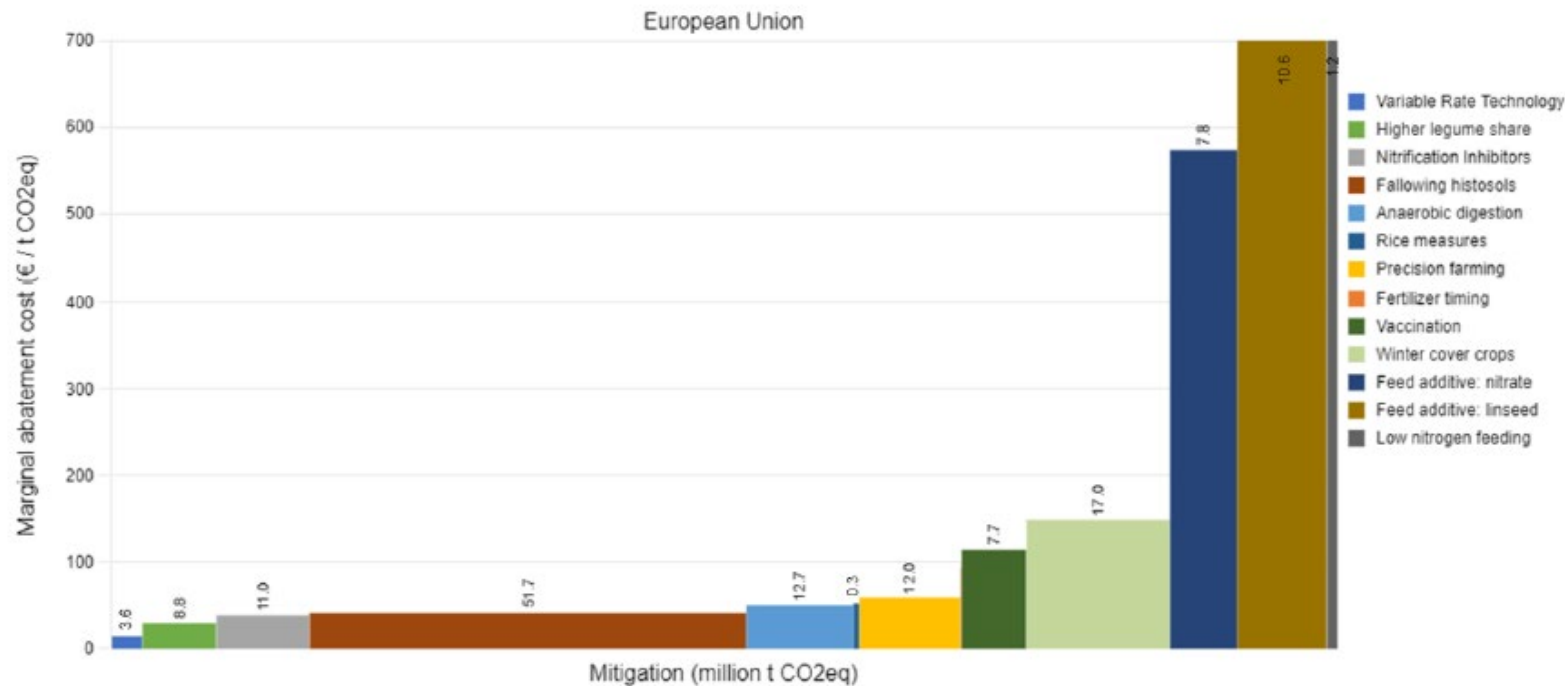
### Support the development of anaerobic digestion in rural areas

Finance installations, equipment and good agronomic practices (i.e. sequential crops) via the **Common Agricultural Policy**.



# Cutting GHG emissions on the farm: the cost-effective impact of anaerobic digestion

## Ranking of various technological emissions mitigation options



**2<sup>nd</sup> most promising measure** in terms of total emission abatement, among those with relatively low costs

Perez Dominguez, I., et al. *Economic assessment of GHG mitigation policy options for EU agriculture*. EUR 30164 EN. Publications Office of the European Union, Luxembourg, 2020.

# THANK YOU!

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EBA Statistical Report 2024 unveiled:  
key market trends from the biogas  
and biomethane industries in Europe



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10h-11h15 AM



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