BIOMETHANE

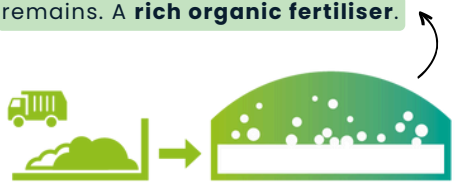
FACTS & FIGURES

INPUTS (FEEDSTOCK)

- Monocrops
- Plant by-products
- Animal by-products
- Biowaste from households
- Industrial & commercial organic waste

In the **anaerobic digester, bacteria break down organic matter** in the absence of oxygen.

After the process, **digestate** remains. A **rich organic fertiliser**.



Digestate

OUTPUTS

- Biofuel for transport
- Biomethane injected in natural gas grid
- Electricity
- Heat

The term **"biogas"** refers to the raw, non-upgraded gas originating from anaerobic digestion. It consists of roughly **60% methane and 40% carbon dioxide**, although the composition varies depending on the feedstocks and technology used.

Biomethane, on the other hand, is the **upgraded form** of biogas, consisting of almost **100%** methane, approximately equal to natural gas in **quality** and represents the most carbon neutral gas and biogas production.

The European Commission' RePowerEU has set an EU target of **35 bcm** biomethane by 2030.

In 2021, **18.4 bcm** of combined **biogas and biomethane** were **produced** in Europe, which is similar to the entire natural gas consumption of Belgium. Representing **4.5 %** of the **gas consumption of the EU** in 2021.

Reaching the 35 bcm target would allow for **substantial environmental benefits. 4 megaton of CO2 emissions** could be **avoided per year by 2030.**

Sources: EBA Statistical Report 2022 (text and figures) and EBA Statistical Report 2023(visual)

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DID YOU KNOW?



There are around **20,000 biogas plants** and over **1300 biomethane plants** operating in the EU.

The **total emission savings** through the use of **biogas and biomethane** can reach up to **–240%** compared to fossil fuels. How?

- Avoided emissions by replacing fossil fuels
- Avoided methane slips from manure
- Green fertilizer production replacing carbon-intense chemical fertilizers
- Carbon storage in soils and carbon capture and storage.

2020 saw a **biomethane production in Europe** of 31 TWh or 2.9 bcm; this figure grew to 37 TWh or 3.5 bcm in 2021, representing an **increase** of **20%**.

What is the **production cost of biomethane**?

Total production costs excluding gas grid connection costs **vary between €55 and €100** per MWh in 2021, depending on the installation size, feedstock mix and location. **Biomass feedstock costs** make up around **30 to 40%** of the **total costs.**





Biogas and biomethane are replacing fossil fuels. They can be used as **energy source** with many applications. The **CO2** emitted during the use of biogas and biomethane is **climate neutral**: it has been incorporated into the biomass from air during growth process.

Assuming a reduced total gas demand in 2050 of 271 bcm, it is estimated that **biomethane can cover 35 – 62% of the gas demand** by 2050.

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