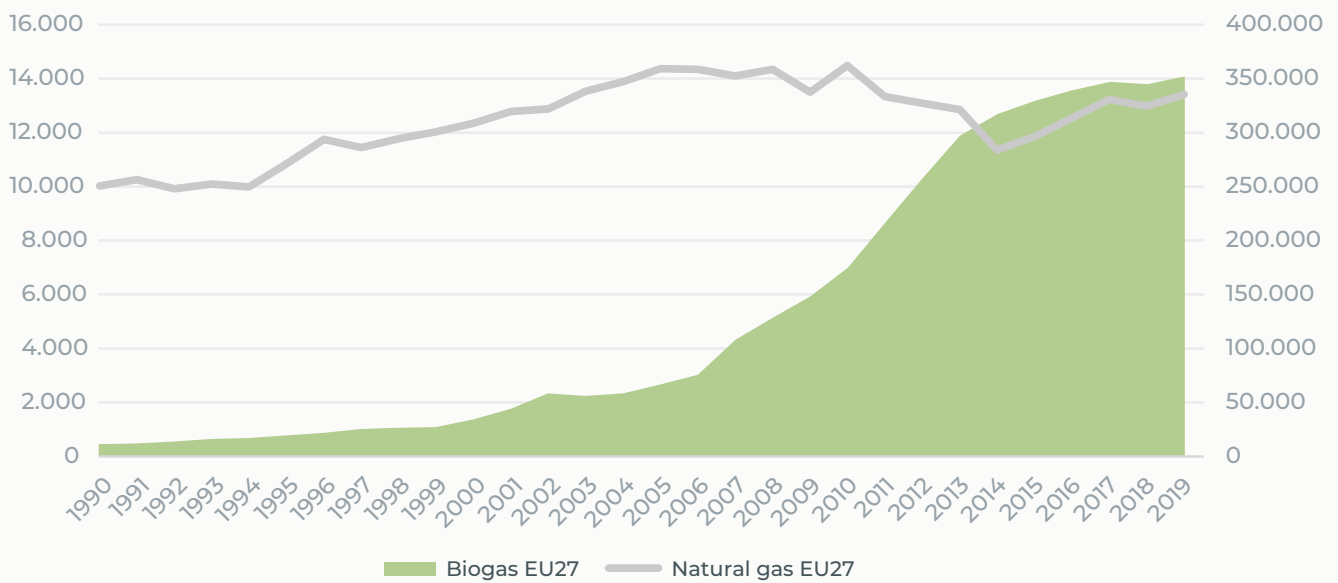


BIOGAS

Achieving the ambitious target of 55% CO₂ emission reductions by 2030 will require dramatic changes to the energy sector. Biogas is a versatile renewable fuel that can be used to produce heat or electricity. When upgraded to biomethane, it can also be injected into the existing gas grid or used as a transport fuel. Sustainable biogas production also reduces methane emissions from manure and landfilling, and limits dependency on mineral-based fertilisers while increasing material efficiency.

Evolution of the gross inland energy consumption of biogas (left axis) and natural gas (right axis) in EU27 (in ktoe)

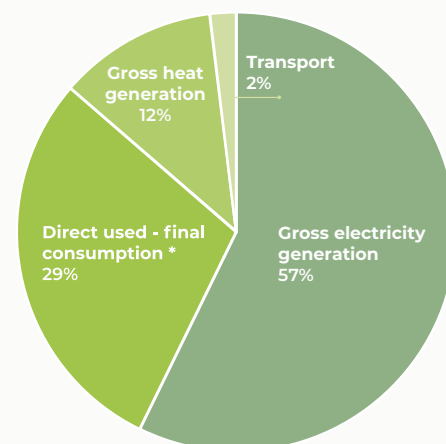


Source: Eurostat

A Proven and Growing Industry

The European biogas market continues to grow and between 2018-2019 it grew at a rate of 2%; however, the use of biogas is far outpaced by the continued use of fossil gas which grew by 3% over the same period. In 2019 the EU27 used 14.079 Ktoe of biogas while the use of fossil gas was over 23 times higher at 335.684 Ktoe. Changes will be necessary if this growing consumption is going to be met by biogas rather than fossil gas. Although the majority of biogas, 57%, is used for electricity generation, a growing share is transportation and gross heat generation.

Gross final energy consumption from biogas by end-use in EU27 in 2019 (in %)



* In agriculture, industry, commercial, households & others.

Source: Eurostat

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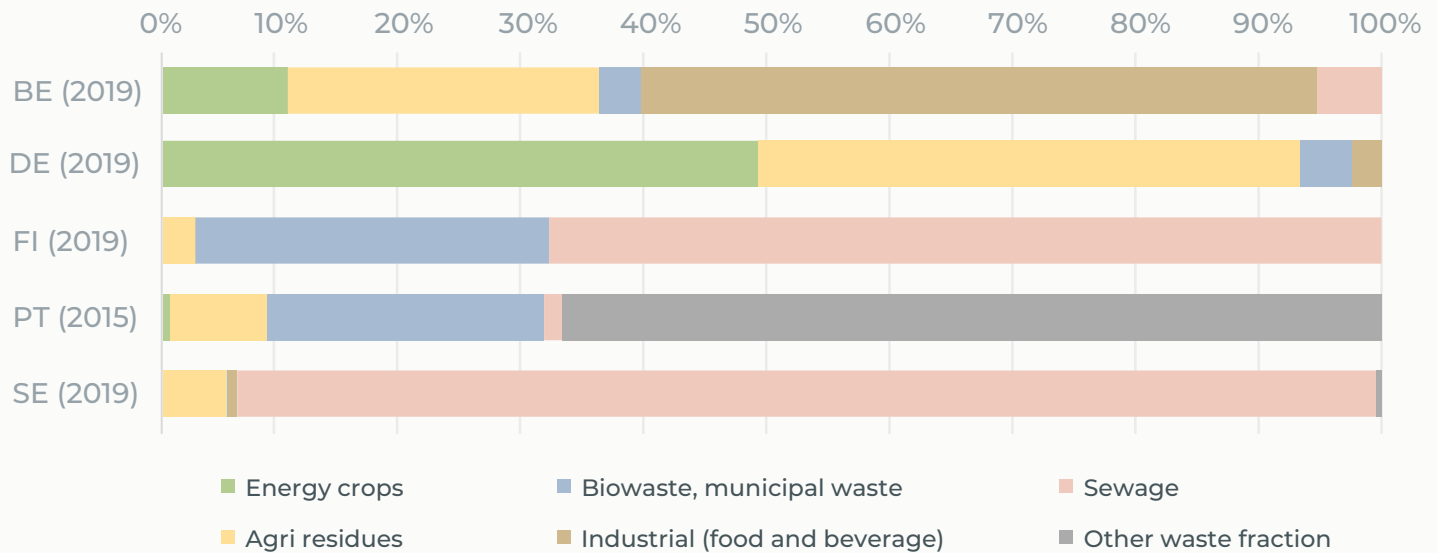


Biogas: Creating a Circular Bioeconomy

Biogas generation works by breaking down the organic material without oxygen, releasing methane. If methane is not captured for biogas production, it is released into the atmosphere where it is a greenhouse gas more than 20 times stronger than CO₂. The by-product of biogas (digestate) can also be utilized as organic fertiliser, providing socio-economic advantages to rural areas by replacing energy-intensive production and supply of mineral fertilisers.

Most European biogas, 71%, is generated from agricultural feedstocks; however, this varies greatly by country. In Sweden 93% of biogas uses sewage as a primary feedstock whereas in Portugal 89% comes from waste. Starting in 2023, the EU will mandate separate collection of biowaste which will increase the amount of food waste available for biogas generation.

Feedstock use for biogas production in selected european countries (excluding landfill - expressed as a mass percentage)



Note: data is not available for all countries, the year refers to date of the data, more countries available in the full report

Source: European Biogas Association (EBA)

Biomethane: Greening the Gas Grid and the Transport Sector

Once biogas impurities are removed, it has characteristics like fossil natural gas and can be used in transport sector or injected into the gas grid. Biomethane production has more than doubled in the past five years and last year grew at an annualized rate of 16%. In 2019, a record 92 new biomethane plants were added with over half utilizing agricultural residues as their primary feedstocks.

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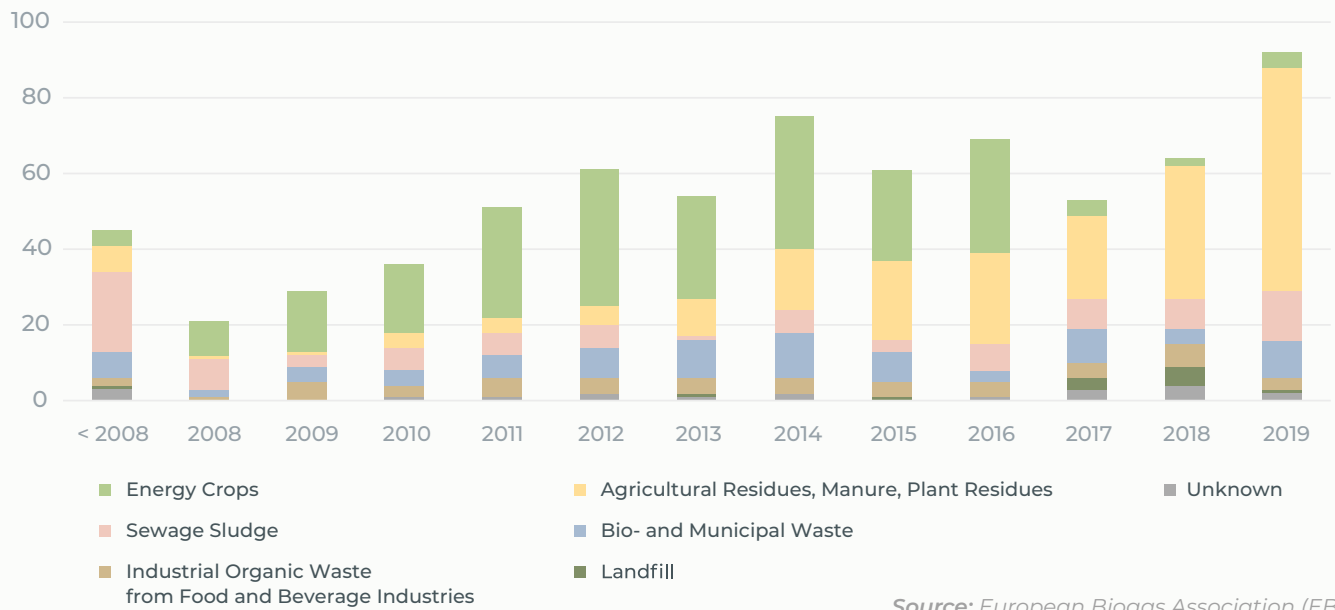


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Evolution of newly installed biomethane plants per main feedstock



Source: European Biogas Association (EBA)

Recommendations

1. The EU must begin the process of reducing the greenhouse gas intensity of gas. To promote the production, market uptake, and system integration of biogas, it will be important to have binding 2030 EU targets on demand for renewable gases of at least 11% in terms of the energy content of the gas consumed.
2. Compared to EU fossil fuels, biogas can save up to 240% of GHG emissions and biomethane up to 202% because powerful greenhouse gases, such as methane, that would have been emitted under standard practices are eliminated. More should be done to promote biogas' consumption complementing renewable electricity and recognize these saved emissions.
3. Apply life-cycle emissions approach across sectors to capture the true impact of energy use along the value chain. All EU policies should be aligned in the Fit for 55 Package to equally promote all sustainable fuels and their infrastructure including in the transport sector.
4. Member States must implement separate bio-waste collection as soon as possible and reinforce their strategies aimed at energy and materials recovery in their waste treatment. Higher quality waste streams will allow for increasing circularity in the bioeconomy with environmental and socio-economic benefits.
5. The new Common Agricultural Policy must adequately recognize the benefits of biogas production for rural development and the benefits of the use of digestate as a fertiliser and soil improver. This will help reduce costs and emissions caused by mineral fertilisers and lessen dependence on critical raw materials such as phosphorous.