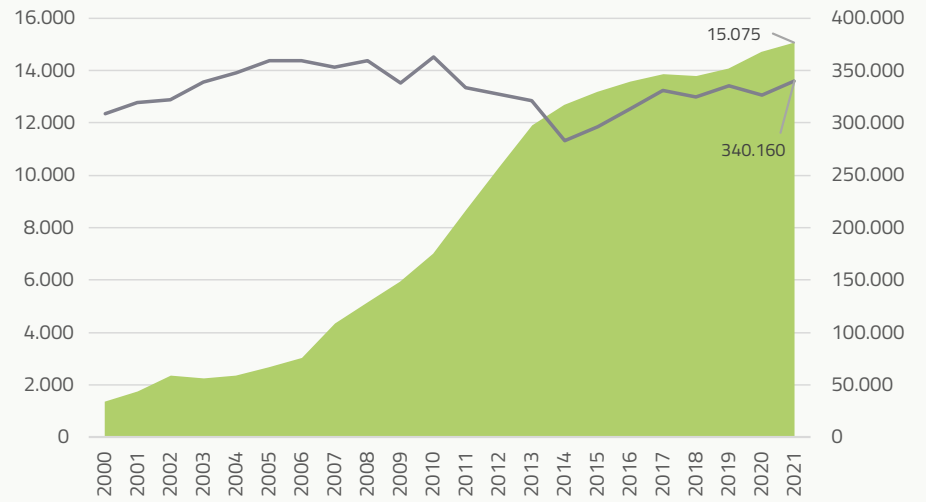
BIOGAS

One year after the launch of the REPowerEU plan, the biogas and biomethane sector has been growing at an accelerated pace[1] . Solid and coherent regulatory drivers are more crucial than ever to ensure that 35 billion cubic meters (bcm) a year of sustainable biomethane are produced by 2030. This will contribute to increasing EU energy security, while achieving its climate change mitigation objectives. Biogas and biomethane are also highlighted in the Net-Zero Industry Act (NZIA) where they were included in the list of "Net-Zero Strategic Technologies", that should receive favoured treatment. Biogas and biomethane technologies are chiefly European, with some 20.000 companies in the EU. Their recognition as strategic technologies is key as it can help leveraging the needed expansion of manufacturing capacity in size and geographic spread across Member States. It is excellent to see such bold target setting and regulatory embracement of the biogas sector, but in order to unlock the full potential of all bioenergy solutions, it is important that bioenergy as a whole is recognized and supported.



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

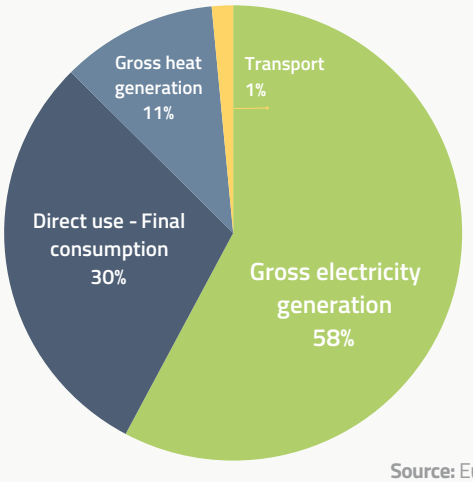
Biogas
Natural gas

Source: Eurostat

Biogas: The Circular Bio-Economy Hub

Through biogas digesters, organic materials, such as urban and industrial wastewaters, organic waste, agricultural residues and manure, are treated and transformed into a renewable and cost-efficient energy carrier. The production of biogas also generates valuable co-products, such as digestate and biogenic CO_2. The former can be used as an organic fertiliser with valuable nutrients substituting fossil-based synthetic alternatives; the latter can be permanently stored creating negative emissions or utilized for multiple end-uses. From 2024 onwards, separate collection of biowaste will be mandatory in the EU.

Gross final energy consumption from biogas by end-use in EU27 in 2021 (in %)



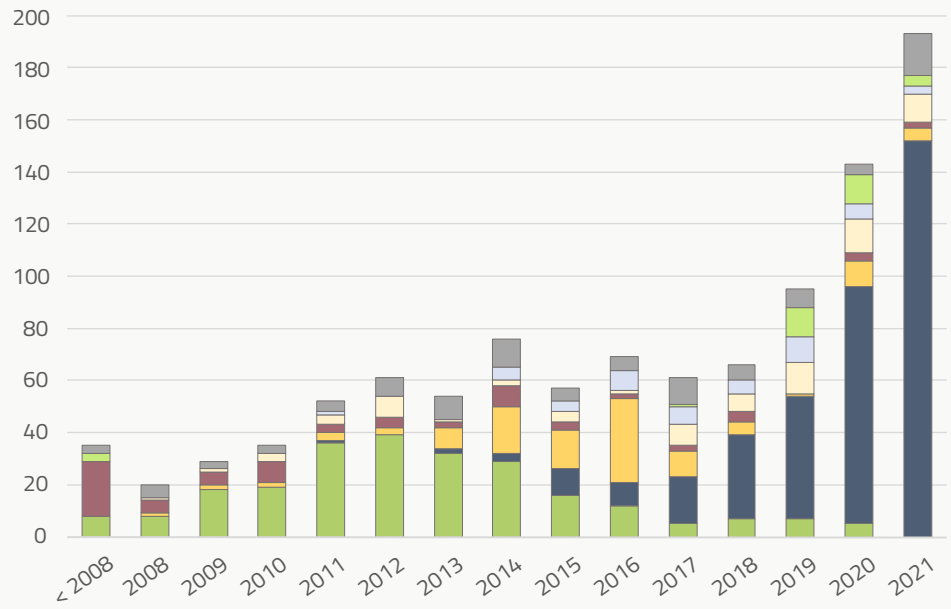
Source: Eurostat

[1] Biomethane Map 2022-2023

This is expected to increase the amount of organic waste available for biogas generation. Similarly, as the urban wastewater treatment plants move towards energy self-sufficiency, anaerobic digestion is the most suitable solution to produce renewable energy while reducing and treating sludge.

Biomethane: Greening the Gas Grid and the Transport Sector

As soon as biogas impurities are removed, biomethane assumes the same features to natural gas. As such, it can be injected into the gas grid, as well as exploited in the transport sector. Over the last half of decade, biomethane's production has more than doubled. Moreover, in 2021, 184 new plants were built, mostly in France. Thus, provided with appropriate regulatory frameworks, biomethane may constitute a practicable substitute to fossil gas and transport fuels (especially for heavy duty vehicles).



Number of new biomethane plants in Europe each year, 2008-2021 overall and per country

Source: European Biogas Association (EBA)

Recommendations

1. Acknowledge biogas and biomethane whole-system benefits. Ensure consistency among current and future legislation, allowing for legal certainty for all bioenergy operators.
2. Apply a technology neutral life-cycle approach across sectors to capture the true impact of energy use along the value chain.
3. Provide adequate drivers for further mobilization and utilization of advanced and sustainable feedstocks, such as sequential crops, for the production of advanced biofuels.
4. Support the upscale of bioenergy equipment manufacturing and plant building in the Net Zero Industry Act.
5. Support the role of anerobic digestion in managing and valorizing waste, and promote digestate as an efficient alternative organic fertilizer with benefits in terms of nutrient recycling, GHG emissions reduction and soil organic carbon build-up.