Biogas

THE UNDER-ESTIMATED ENERGY SOURCE

Green power from the region

Biomass as an energy source makes a vital contribution to the security of supply. The biogas generated from biomass is an important component in decentralised energy systems. In contrast to wind and solar energy, biogas offers controllable capacity for electricity production. In other words, it can be stored and is able to flexibly meet demand for an electrical-based load[1]. Processed into biomethane and fed into the natural gas grid, it contributes to defossilisation. As part of our VNG 2030+ strategy, we are therefore focusing our investments on the biogas business.

CONTRIBUTION TO THE SECURITY OF SUPPLIES

Biogas is playing an increasingly important role in the current energy landscape and is already an important pillar of a secure energy supply from renewable energies. Biogas in Germany today comes from almost 10,000 biogas facilities.

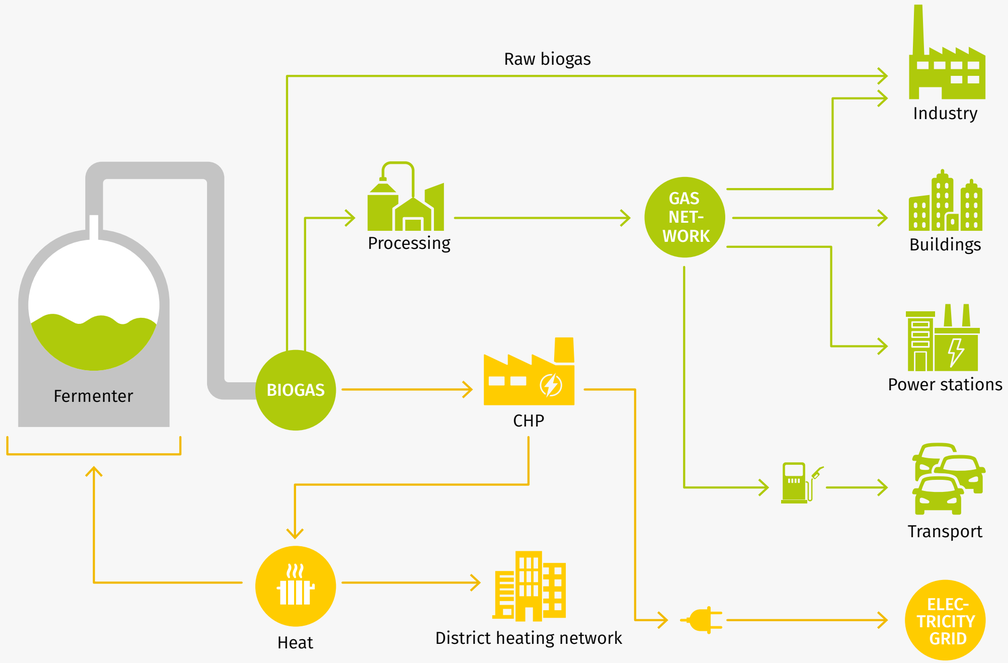
The total volume of electricity generated from biogas amounts to 28 TWh, representing around six per cent of Germany's total electricity demand (570 TWh). Around one percent of current natural gas consumption in Germany is already being replaced by biogas and biomethane. And as a heat supplier, biogas and biomethane generate around two per cent of Germany's heat production from natural gas.

The biogas facilities contribute to a secure energy supply because they supply gas and therefore energy independently of wind or sun. For example, for controllable gas-fired power plants that have a stabilising effect on the electricity grid and can also be operated in a climate-friendly manner using green gas. In addition, unlike electricity from wind and solar energy, biogas and biomethane are easily storable. Biogas therefore flexibly supplements the energy from other renewable sources

[1] In-demand electrical power minus the feed-in from volatile generators such as wind or solar energy

FROM THE SYSTEM TO THE END USER

Biogas is climate-friendly, renewable, regionally available and can be used in a variety of ways for electricity and heating applications. Unlike wind and solar energy, biogas can be stored and is therefore an important component of a climate-friendly energy supply.



BALANCE operates

42

biogas facilities

in Eastern and Northern Germany.

BALANCE fed

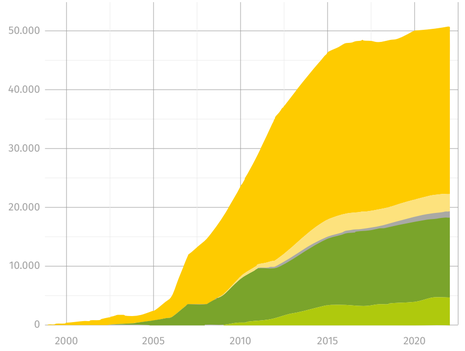
835

GWh of biomethane

into the grid last year.

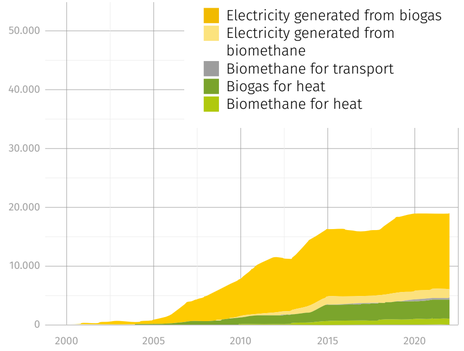
WHAT BIOGAS DOES TODAY...

... for the energy transition



Gross electricity and final energy consumption
GWh

and for climate protection



Greenhouse gas reduction
kt CO_2 equiv.

Source: AGEEStat (2023)

and can also be made available as required when the sun doesn't shine and the wind doesn't blow.

GROWTH IN BIOGAS

It is therefore hardly surprising that the biogas business is one of VNG's most important growth areas. The subsidiary BALANCE Erneuerbare Energien GmbH bundles the Group's activities in the areas of alternative energies and energy efficiency technologies. BALANCE operates biogas facilities and generates energy from renewable resources and agricultural residues. With 42 facilities in Northern and Eastern Germany, BALANCE is one of the leading biogas facility operators in Germany. This means that around 180,000 households can be supplied with green energy every year.

More information on the website

LOCAL VALUE CREATION

In addition to operating the facilities, BALANCE invests in existing and new system concepts and develops them further. "We support local agriculture. Local farms supply the facilities with biomass," says BALANCE Managing Director Thomas Fritsch, describing the company's regional ties. "We operate a genuine circular economy. The fermentation products left over after production are used locally as fertiliser to grow new renewable biomass . In this way, we contribute directly to value creation in regional economic cycles."

HEAT FROM THE LAND

And biogas facilities are also ideal as the basis for combined heat and power plants, which feed heat into small, regional grids in addition to producing electricity. In combination with wind and photovoltaics, many places, especially in rural areas, can be self-sufficient and supply themselves directly with energy. Also smaller communities are therefore able to realise their own heating concepts with sustainable energy. “There is growing interest in our solutions for district heating systems in smaller rural communities,” says VNG board member Hans-Joachim Polk. “This is because smaller communities in rural areas will not be prioritised for connection to district heating networks.”

THE VERSATILITY OF BIOGAS FACILITIES PAYS OFF

The state-of-the-art biogas and biomethane facility in Kodersdorf not only feeds biomethane into the gas grid and generates electricity from biogas, it also supplies heat to companies in the nearby industrial estate. The offer of a local heating supply from biogas facilities is well received; we are seeing an increasing number of enquiries.

The biomass required to supply the facilities comes from local farms.

Our biomethane plant in Kodersdorf can feed up to 700 Nm³ of biogas per hour into the grid.

We procure the substrates for biogas production from within a

25

kilometre

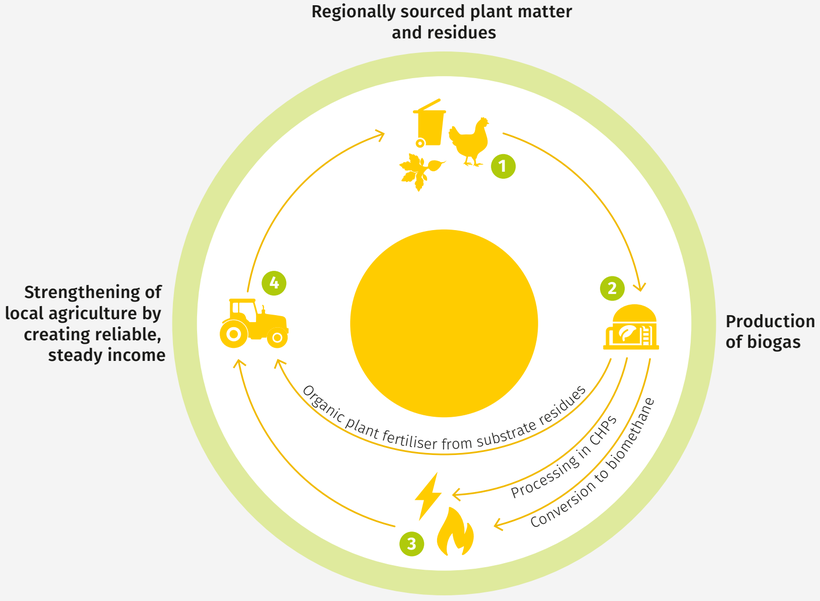
radius of our biogas facilities.

180,000

households

can be supplied with green energy from our biogas facilities every year.

Sustainable material and commercial cycle of our biogas facilities



Our product is well received

An interview with Thomas Fritsch, Managing Director of BALANCE, on the strategic importance of biogas.

Biogas is a sustainable alternative to fossil fuels that contributes to security of supply, domestic value creation and greenhouse gas reduction. What is needed to further expand this relevant segment?

We need a fundamental political commitment to biogas as an important building block for climate neutrality and security of supply. This is because there is a lack of legal and planning certainty. In addition, we have a lot of documentation and reporting obligations, a burdensome bureaucracy. I would also like to see greater harmonisation of regulations between the federal ministries relevant to biogas. And more fairness: cheap imports of supposedly green fuels and measures to avoid emissions are not scrutinised in the same way as our domestic products.

How important is biogas for agriculture?

The production of biogas offers a sustainable alternative source of income in agriculture and creates jobs in rural areas. It also creates added value at the regional level. We generally procure our substrates from within a 25 kilometre radius of the facilities. In addition, biogas production can be ideally integrated into agricultural cycles. We are increasingly utilising residual materials such as liquid manure and plant residues. The fermentation residue is a nutrient-rich fertiliser. Alternative substrate plants increase biodiversity and soil quality.

How much potential does biogas have in Germany?

A very high one. With biogas, we have a domestic and secure energy source that fits perfectly into the future energy system with flexible demands for electricity and heat. Biogas is a cost-effective solution for the defossilisation of electricity, transport, buildings and industry. The quality and sustainability certifications assure transparent traceability and ensure compliance with greenhouse gas reductions compared to fossil fuels.

What developments do you see in the coming years?

Biogas facilities will develop into veritable biorefineries that provide other products in addition to biomethane. Furthermore, the production and feed-in of hydrogen at biogas facilities is also being researched and may become relevant in the future.

Thomas Fritsch
Managing Director
BALANCE