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Cross-Asset- and Strategy-Research

Up the biogas ladder – into a policy trap?

There is no way around electrifying
the German heating market

Over the past three years, Germany's Building Energy Act (GEG) has repeatedly made headlines. In the election campaign, the conservative Christian Democratic Union (CDU) promised to abolish the law that tabloid media had dubbed the "heating hammer". Now words are being backed by action: the government has presented a draft for the so-called Building Modernization Act (GMG).

In new buildings, this would mean that heating systems would no longer have to be designed from the outset to run on at least 65 % renewable energy. For existing buildings, this rule under the GEG would have applied from June. In both cases, the renewable share would have had to rise to 100 % by 2045. The new GMG instead provides, starting in 2029, for an initial renewable quota of only 10 %, which then increases much more gradually, in what it calls a "biogas ladder". The obligation to heat exclusively with renewables from 2045 onwards disappears entirely. Both laws have suggested that gas heating systems running on biogas have a future – the new one even more so than the old.

With biogas, it gets more expensive

The market already offers tariffs with a biomethane share of 15 % or 65 %. The number of such products listed on price comparison portal Verivox has almost doubled over the past two years, rising from 189 to 326. A closer look reveals that blending in biomethane makes heating more expensive. A sample shows that, for a 10 % to 65 % biogas blend, the current price per kilowatt hour (kWh) is around 1 to 3 euro cents above that of conventional gas tariffs. For an Art Nouveau building, constructed in

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Biogas ladder
signals business
as usual

1 to 3 euro
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the early 20th century, partially renovated, annual consumption for heating and hot water on 100 square meters easily comes to 15,000 to 20,000 kWh. At today's prices, that translates into 150 to 600 euros in additional annual costs for biogas.

Generating power beats “refining” gas

If you compare biogas tariffs with 12- and 24-month terms, one thing stands out: tariffs with longer terms are more expensive than those with shorter ones. For conventional gas tariffs, the opposite is true – they reward loyalty with lower prices. For biogas, providers are obviously building a price increase into their calculations. The reason is simple: there is not much biomethane, and the problem will become more acute. A survey counted a total of 9,605 biomass plants in Germany at the end of 2025. Of these, only 290 upgraded biogas to biomethane.

The share of biomethane plants is growing, and there is further potential. Together with imports, biomethane could cover 6.3 % of the natural gas consumption for residential heating in Germany. In 2024, more than **56 %** of existing heating systems were gas-fired. And from 2029 onwards, every new gas heating system must run on at least 10 % biogas. There is a large biogas gap between potential supply and potential demand – and it will grow. That gap comes at a price. Especially since the heating market is not the only potential buyer. Biomass is highly versatile.

Efficient use of biomass is essential

Today, almost 97 % of German biogas plants use the gas on site to generate power instead of turning it into biomethane. The advantage is that combined heat and power (CHP) units can produce not only electricity but also heat. This dual use is significantly more efficient than upgrading biogas to biomethane.

Biogas can also generate renewable electricity when sun and wind are in short supply. It can serve as a biofuel in transport and replace fossil carbon in the chemical industry.

Leaving aside the fact that biogas is too valuable to be used just for heating, in the vast majority of cases there is a much better alternative. Compared with a condensing gas boiler, a heat pump stands out for its much higher efficiency. From one kilowatt hour of electricity, it can generate about three kilowatt hours of heat. From one kilowatt hour of gas, by contrast, you get less than one kilowatt hour of heat – and most existing systems have an even lower efficiency.

Anyone who opts for the biogas ladder when installing a new heating system needs to be aware that biogas is a limited resource. That is reflected in the price. Alternatives such as green hydrogen are not available in practice today – and would probably be even more expensive. The risk is high that the biogas ladder will quickly turn into a biogas trap.

Biomethane covers only 6.3 % of residential gas consumption

Many competing uses for biomass

A scarce resource always comes at a price

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