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Cross-Asset- and Strategy-Research

The dependence on electricity, gas and oil

Is Germany right to worry about its energy security?

Four months have passed since the attack on Iran. Ships can once again pass through the Strait of Hormuz. Yet uncertainty remains, as does criticism of Germany's reliance on imported oil and gas. At the same time, fears are circulating that Germany is also reliant on other countries for electricity. Neither concern is new. But what is really behind them?

Energy demand and supply

Germany's demand for primary energy – energy before it is converted into heat, electricity or mechanical energy – has been falling for years. This reflects both lower industrial output and the effects of increased electrification and efficiency gains. In 2025 fossil fuels still made up about 77 % of the primary-energy mix (fig. 1), ten percentage points less than in 1990. Over the same period, nuclear energy was phased out. Renewables have offset both the loss of nuclear power and part of the decline of gas. Their share rose from 1 % in 1990 to 21 % in 2025. The higher the share of renewably generated electricity in the mix, the lower primary-energy consumption: converting oil, coal and gas into electricity or heat involves substantial losses, whereas electricity from renewable sources is assumed to involve a one-to-one conversion.

On the supply side, there is a long-term dependency on gas and oil. Coal is used primarily for electricity generation and, given the planned coal phase-out by 2038, it is likely to play a steadily diminishing role in primary-energy consumption. Gas, by contrast, accounts for almost one third of primary-energy use, and around 95 % of it is imported. Until 2021, roughly half of the 1,500 terawatt-hours (TWh) of imports came from Russia. Germany is

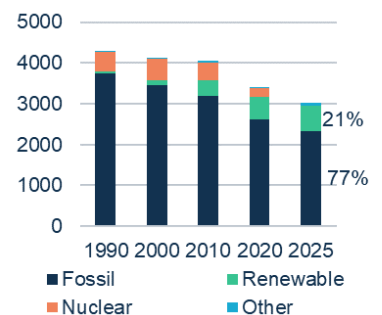
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Uncertainty persists

Fig. 1: Germany's primary-energy consumption by source (in TWh)



Source: AGEBA, LBBW Research

now less exposed to any single supplier: in 2025, 44 % came from Norway, 24 % from the Netherlands and 21 % from Belgium. Slightly more than 10 % reached Germany in liquefied form as LNG, mainly from the U.S. Long-term contracts, some running until 2046, increase security of supply but tie Germany to expensive liquefied gas. In 2025, imports amounted to 1,031 TWh, while consumption was only 864 TWh. In the short term, therefore, the issue is less the available quantity than dependence on supplier countries and prices.

Germany is even more dependent on foreign countries when it comes to oil: its share of primary-energy consumption stood at 36 % in 2025, while more than 98 % of it was imported. Most imports come from the North Sea and North Africa; only around 6 % come from the Middle East. The supplier base has become broader, but remains limited. The real risk lies in prices set on global markets. In times of geopolitical crises, stable prices and planning certainty are largely a matter of chance.

Electrification as the way out

The alternative is electricity. But not everything can be electrified, and certainly not overnight. Current annual electricity consumption stands at around 500 TWh. Rising numbers of electric cars, heat pumps, hopefully also data centers and electrified industrial plants will lead to rising demand. Yet some people doubt whether Germany is able to supply enough power. Their argument: since 2023 Germany has imported more electricity from its neighbors than it has exported.

Yet that is not due to insufficient generation capacity. Even after deducting periods when sun and wind power are unavailable and gas- and coal-fired power plants are offline for maintenance, Germany's potential annual generation capacity - coal, gas and renewables combined - still stands at up to 900 TWh. That is far more than it consumes. Germany therefore does not import electricity because there is a shortage, but when it is cheaper next door. In the first quarter of 2026, incidentally, Germany was again a net exporter, even on cold winter days. In any case, electricity imports have never been material: they amount to about 5 % of electricity demand and less than 1 % of primary-energy demand.

The coal phase-out will, on paper, remove around 260 TWh of annual generation by 2038. Electricity would then indeed become scarce. That makes the European electricity market all the more important, along with the continued expansion of renewables, faster grid build-out and more battery storage. In addition, the integration of electric cars and heat pumps into the grid must progress. This saves money and makes the energy transition more attractive for consumers. Nevertheless, we will not be able to avoid additional gas-fired power plants. It is therefore all the more important to set a framework that makes electrification economically attractive.

Exposure to global market prices remains

Germany imports 95% of its gas and 98% of its oil

Germany's generating capacity is more than sufficient

The coal phase-out poses a challenge

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