



Chart in focus

March 2, 2023

German energy supply

Oil, coal and renewables are gaining in importance

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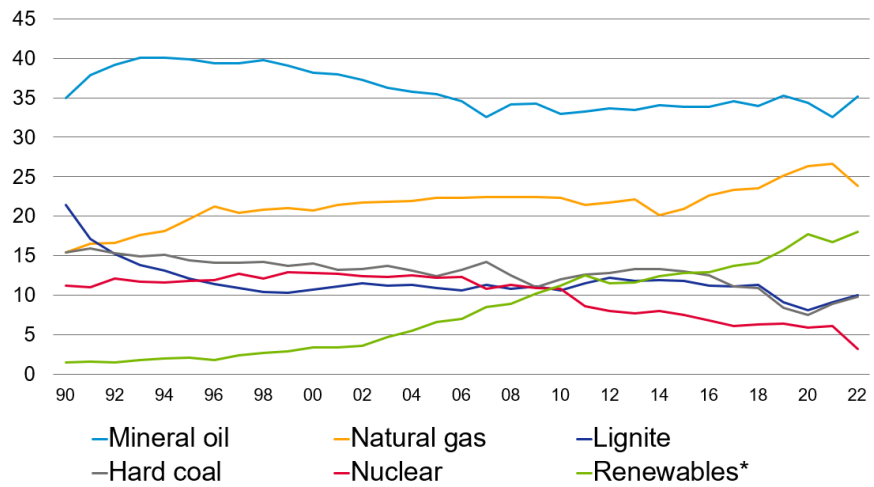
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Stefan Schneider

Despite the lower absolute energy imports, Germany had to pay significantly more for its imports because of higher prices. Total primary energy demand in Germany fell by just under 5% in 2022. Oil, coal, and renewables have expanded their share in primary energy demand, while natural gas and nuclear energy have lost importance.

Oil, coal, and renewables are gaining in importance

Share of energy sources in primary energy demand in Germany, %



* Including others

Sources: BMWK, AG Energiebilanzen

The energy industry in Germany has been particularly hard hit by Russia's war against Ukraine. One year after the start of the war, this is reflected in energy imports as well as the cost of these, absolute energy consumption, and the energy mix. For many years, Germany's net energy imports have accounted for about 70% of total German primary energy demand. Before the war, Russia was by far the most important energy supplier. For natural gas and hard coal, Russia accounted for more than 50% of German imports. For crude oil, the share was about one third. These shares tended toward zero in the course of 2022 due to mutual sanctions. Energy deliveries from Russia were offset by higher imports from other countries (in the case of natural gas, for example, from the Netherlands or Norway, as well as more indirect LNG imports via the European gas network). In addition, energy imports in volume terms have fallen (e.g., 30% lower natural gas imports, but just under 1%





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lower crude oil imports) because Germany has consumed less energy (see below).

Despite the lower absolute energy imports, Germany had to pay significantly more for its imports because of higher prices. The bill for crude oil and natural gas in the foreign trade statistics rose by 79% to EUR 131 bn. In the case of coke and petroleum products (e.g., gasoline and diesel), Germany had to pay around EUR 36 bn for its imports in 2022 – an increase of around 66%. Germany spent a good EUR 12 bn on coal imports last year. Here, the increase compared to 2021 was 174%. The share of these three product groups in total German goods imports rose from a good 8% in 2021 to 12% last year.

Total primary energy demand in Germany fell by just under 5% in 2022. Due to the particular shortage caused by the Russian supply freeze in the summer of 2022, a decline of just under 15% was recorded for natural gas. Both industry and private households significantly reduced their gas consumption in 2022 (by just under 17% and 19% respectively, according to the Federal Network Agency). In industry, part of the reduced gas consumption is of a permanent nature, as some production facilities will remain closed due to structurally higher gas prices. For example, domestic production in the chemical industry fell by just under 12% in 2022. In the case of private households, higher prices and mild temperatures on average had a dampening effect on gas consumption. Electricity generation based on natural gas was reduced by a good 12%. In terms of primary energy demand, in addition to natural gas, nuclear energy also recorded a decrease in 2022, namely by 50%. This is due to the fact that three of the six remaining nuclear power plants were taken off the grid at the end of 2021. For all other energy sources, primary energy demand increased last year: mineral oil +3%, hard coal and lignite both +5% and renewable energy +4.4%. In the electricity sector in particular, the reduced use of natural gas and the halving of nuclear power capacity were offset by higher electricity production from hard coal and renewables. Total gross electricity generation fell by just under 2% last year.

The developments are reflected in the German energy mix. Mineral oil, the most important energy source, increased its share in primary energy demand from 32.5% to 35.2%. In second place is natural gas, whose share has shrunk from 26.6% to 23.8%. All renewables together (including the important bioenergies) accounted for a share of 17.2% in 2022 (after 15.7% in 2021). Lignite and hard coal each increased by about 1 percentage point to a 10% share. The share of nuclear energy fell from 6% to just over 3%. Overall, the shifts in the energy mix are surprisingly small, considering that the current energy crisis is one of the biggest since World War II.



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