



German energy imports decline – but only slightly

November 1, 2019

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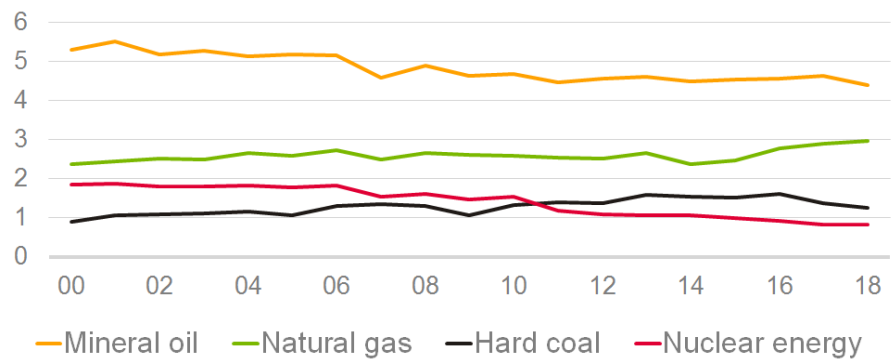
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Between 2000 and 2018, German net energy imports declined by almost 12%. Oil and nuclear energy imports were down considerably as oil heating becomes less popular and the German government has decided to give up nuclear energy. In contrast, net natural gas imports are trending upwards. Coal imports did not start to decline until 2016 and were still considerably higher in 2018 than in 2000 because domestic coal mining was abandoned. Germany's dependence on energy commodity imports has not declined much over time. In 2018, almost 71% of the necessary energy commodities were imported (2000: 72.6%).



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German net energy imports by energy source, '000 petajoule



Source: Working Group on Energy Balances (AG Energiebilanzen)

Germany's net fuel imports have trended downwards in the last few years. Total net imports were down 11.6% in 2018 compared to 2000 and were the lowest since 1991.



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Oil: imports of the most important energy commodity are declining

Oil imports continued to take up the largest share of German total net energy imports, at 47.5% in 2018. In absolute terms, however, oil imports have been steadily declining for a number of years now. In fact, they were down by about 17% between 2000 and 2018. This trend is due to several reasons. Above all, heating oil has become less popular. In 2000, 32.6% of all existing homes still had oil heating. By 2018, this percentage had dropped to less than 26%. In fact, oil heating has only rarely been installed in new buildings for about a decade now. In addition, the (on average) warmer winters of the last few years have dampened demand for heating oil. Moreover, the domestic output of basic chemicals (for which oil is an important raw material) has declined by c.10% between 2010 and 2018, as measured by the production index. While demand from the transport sector for oil products dropped by 12% between 2000 and 2009, it has risen again since, by c.8%. Overall, transport demand has not contributed much to the decline in oil imports.

Natural gas: Rising net imports

The picture is different for natural gas, the second most important imported source of energy (share in total net imports in 2018: 32%). In 2018, net imports were up by 25% compared to 2000. The percentage of homes with natural gas heating systems has risen by c. 5pp during this period, to 49.4%. While natural gas has become less important as a source of heat for new homes in the last few years (builders now prefer electrical heat pumps and district heating), the percentage of existing homes with natural gas heating systems has remained quite steady for some years now. Over the years, natural gas has been increasingly used for electricity production. Its share in total gross electricity production has risen from only 8.5% in 2000 to almost 13% in 2018. In absolute terms, gas-based gross electricity generation was up by roughly 70%. And finally, domestic gas production has trended downwards between 2000 and 2018, so net imports had to rise to cover demand. Germany has become an important transit country for gas (new pipelines), which is why not only imports, but also exports have increased considerably.

Coal: Bifurcated development

Turning to hard coal (share in total net energy imports in 2018: 13.6%), it may come as a surprise that net imports exceeded the level of 2000 by 39% in 2018. This is largely due to the fact that domestic coal mining has been steadily reduced (and stopped altogether at the end of 2018), whereas the use of coal for electricity production has declined much more slowly. The gap caused by the stop to domestic coal mining had to be closed by higher imports. In 2017 and 2018, however, net coal imports fell considerably because gross coal-based electricity generation slid as well due to the increase in prices for carbon emission certificates in the framework of EU emissions trading, which makes coal more expensive than natural gas, and the steady increase in the share of renewable energies.

Planned exit from nuclear energy leaves its traces

Net imports of nuclear energy sources (uranium) dropped by c. 55% between 2000 and 2018, largely due to the planned exit from nuclear energy. Moreover,



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plant operators already have nuclear fuel inventories in Germany, which they will use up before the actual exit date. These inventories reduce the need for additional imports.

Dependence on imports has not declined much

One goal of the energy transition is to reduce Germany's dependence on fuel imports. While net energy imports have declined by 11.6% in absolute terms since 2000 (see above), the overall dependence on imports has not become much smaller. In 2000, net energy imports made up for 72.6% of domestic primary energy consumption, and in 2018, the percentage was still 70.6%. Moreover, there has not been any major change since 2010. Excluding nuclear energy, which will soon be obsolete anyway, the dependence on imports comes to "only" 64%. The import quotas are particularly high for oil (99%) and natural gas (96%). In fact, renewables and lignite are the only domestic sources of energy in Germany.

Original in German published on October 29, 2019: "Deutsche Energieimporte sinken, aber nur leicht"

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