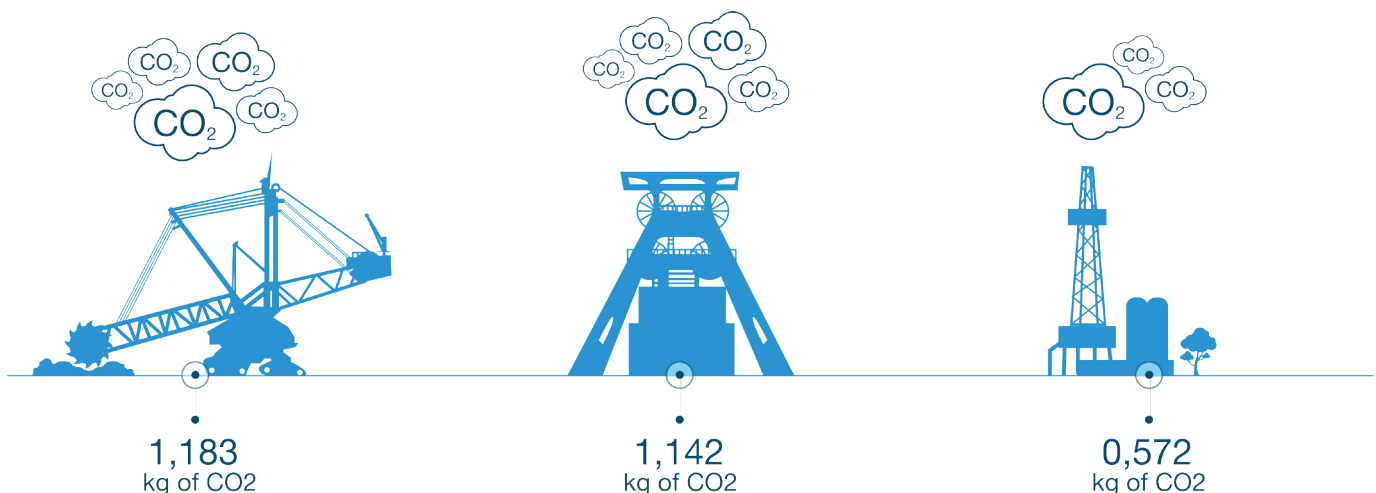


Natural gas is the most climate-friendly fossil fuel in electricity production.

The advantages of natural gas in terms of climate protection can also be seen in the electricity market. These are the results of the latest study on „Greenhouse gas emission figures for fossil fuels and power station scenarios in Germany“ carried out by the Institute for Energy and Environmental Research (ifeu). For their study, the researchers from Heidelberg looked at the entire value power generation chain, including production, transport and combustion of fossil fuels. According to the study, natural gas emits around 50 percent less CO₂ per kilowatt hour (kWh) than hard and brown coal.

Generating one kilowatt hour of electricity in a power station produces the following CO₂ emissions:



If transport, production and processing materials are taken into account, **brown coal** produces 1.183 kg of CO₂ per kWh of electricity generated

If transport, production and processing materials are taken into account, **hard coal** produces 1.142 kg of CO₂ per kWh of electricity generated

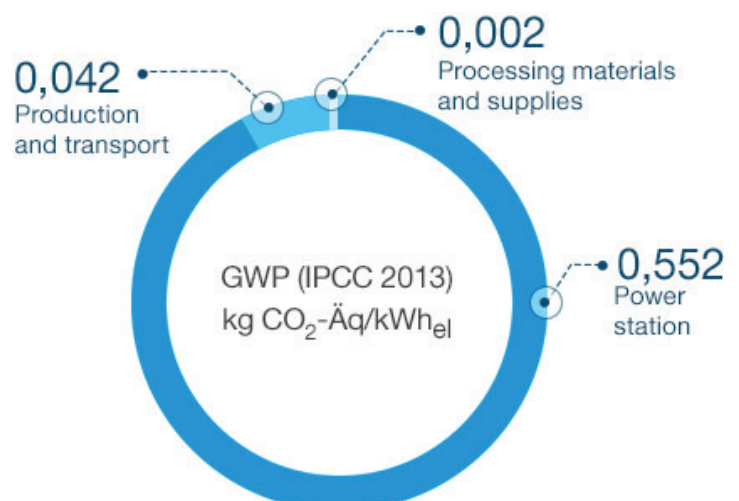
If transport, production and processing materials are taken into account, **natural gas** produces 0.572 kg of CO₂ per kWh of electricity generated

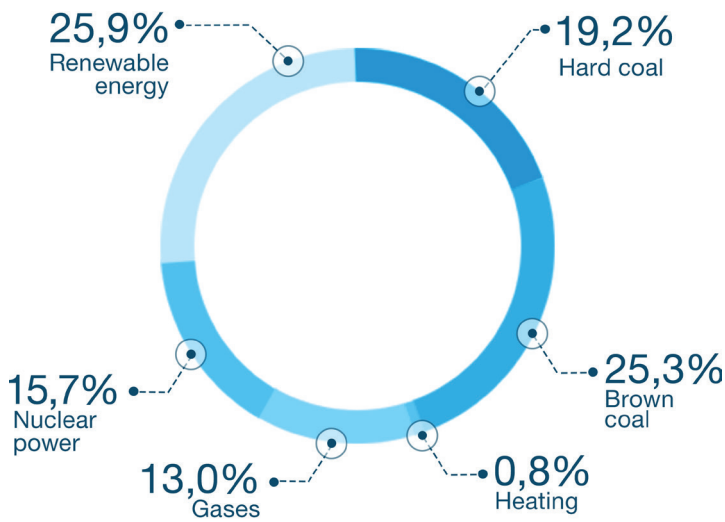
In production and transport, domestic brown coal fares best, with just 0.008 kg CO₂ per kilowatt hour, as opposed to 0.070 kg for natural gas and even as much as 0.149 kg for hard coal.

With regard to combustion at the power plant, natural gas is nevertheless well ahead, emitting just 0.502 kg CO₂ per kilowatt hour of electricity, compared with 0.987 kg for hard coal and 1.170 kg for brown coal. Taking these factors together, the CO₂ emissions for natural gas are almost half as low as for coal.

The CO₂ emissions for the average electricity production of all power stations in Germany

With the average energy mix in Germany, 0.596 kilograms of CO₂ are currently produced for each kilowatt hour of electricity generated. Increasing the share of natural gas in electricity generation would considerably reduce CO₂ emissions.





Energy mix for average electricity production (net) in Germany

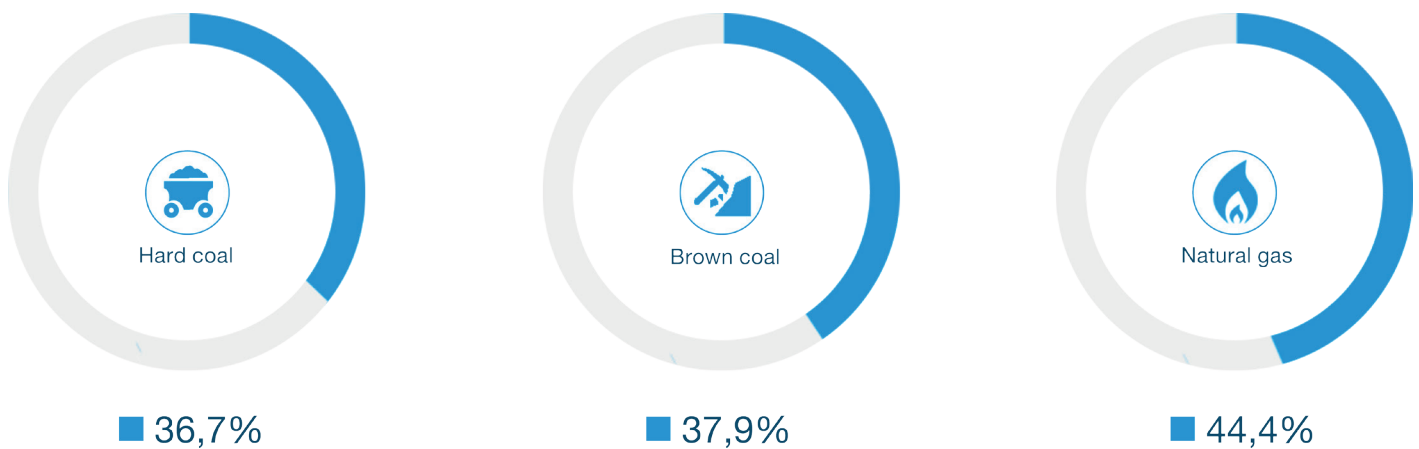
In 2013, renewable energy sources overtook brown coal, hard coal and nuclear power for the first time ever and now account for the largest share of electricity production. The share of natural gas in the energy mix has fallen to 13 percent.

Gross efficiency of power stations in Germany

The higher the efficiency of a power station, the less fuel needs to be used in order to generate electricity. If for example electricity is generated using a fuel with a high CO₂ content in a power station with low efficiency, the amount of CO₂ emissions will be all the higher.

Natural gas impresses here in two ways. Gas-fired power stations are highly efficient and natural gas has a low CO₂ content. Generating electricity from natural gas in gas-fired power stations therefore produces smaller amounts of CO₂.

Gross efficiency of power stations in Germany



The conclusion of the study

1. When generating electricity, natural gas emits considerably less CO₂ than coal.
2. The advantages of climate-friendly natural gas can also be seen in the electricity market.

You can find more information on the study at www.wingas.com



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