

The Emissions Savings of a Nuclear Power Station in Germany

Each nuclear reactor saves around 10m tonnes of CO2 emissions annually:

Gross power production in 2018 in TWh:

146 lignite

83 coal

83 natural gas

5 oil

Total from fossil fuels: 317 TWh

Total from nuclear: 76 TWh

Nuclear power generation as a proportion of fossil fuel power generation: $(76/317) \times 100 = 24\%$

Power generation from CO2 emitting sources in energy sector (= fossil fuels, biomass & waste) in 2018: $317 + 45 + 6 = 368$ TWh

Fossil fuel power generation as a proportion of power generation from CO2 emitting sources in energy sector: $(317/368) \times 100 = 86\%$

Emissions of energy sector in 2018: 299m tonnes CO2

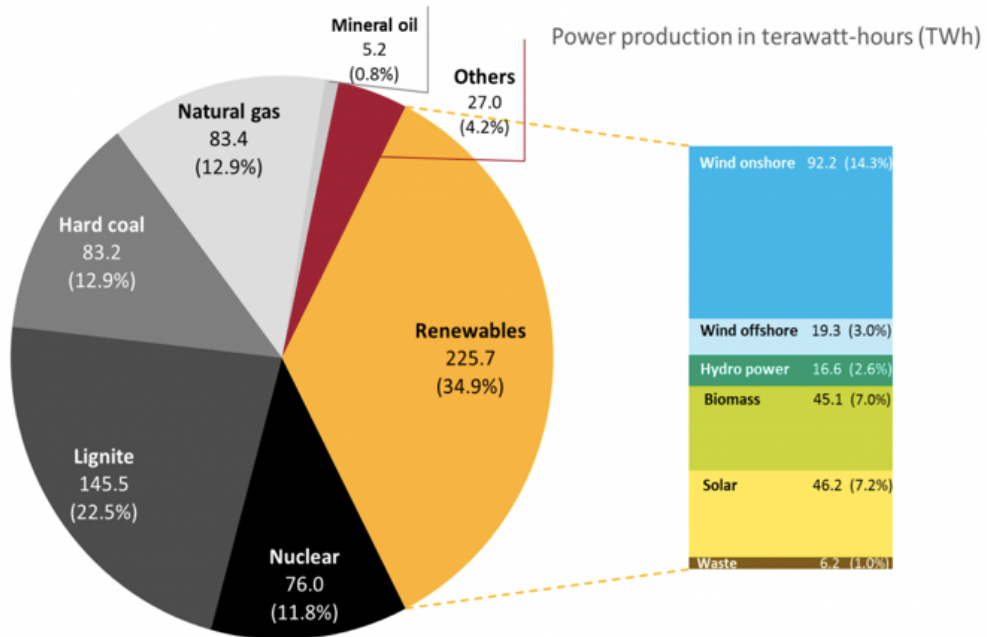
Emissions of energy sector attributable to fossil fuels in 2018: $86\% \times 299 = 257$ m tonnes CO2

Projected boost to emissions of fossil fuels if nuclear power (six power stations) wholly replaced by additional fossil fuels: $24\% \times 257 = 62$ m tonnes CO2

Annual savings attributable to each nuclear power station: $62 / 6 = 10.3$ m tonnes CO2

Share of energy sources in gross German power production in 2018.

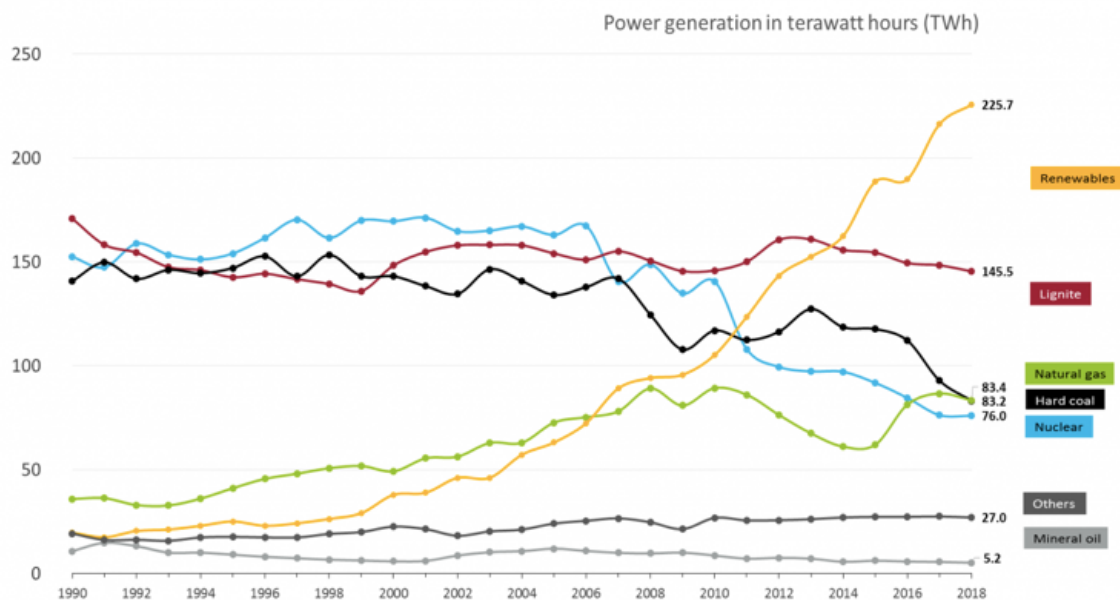
Data: AG Energiebilanzen 2019, preliminary.



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Gross power production in Germany 1990 - 2018, by source.

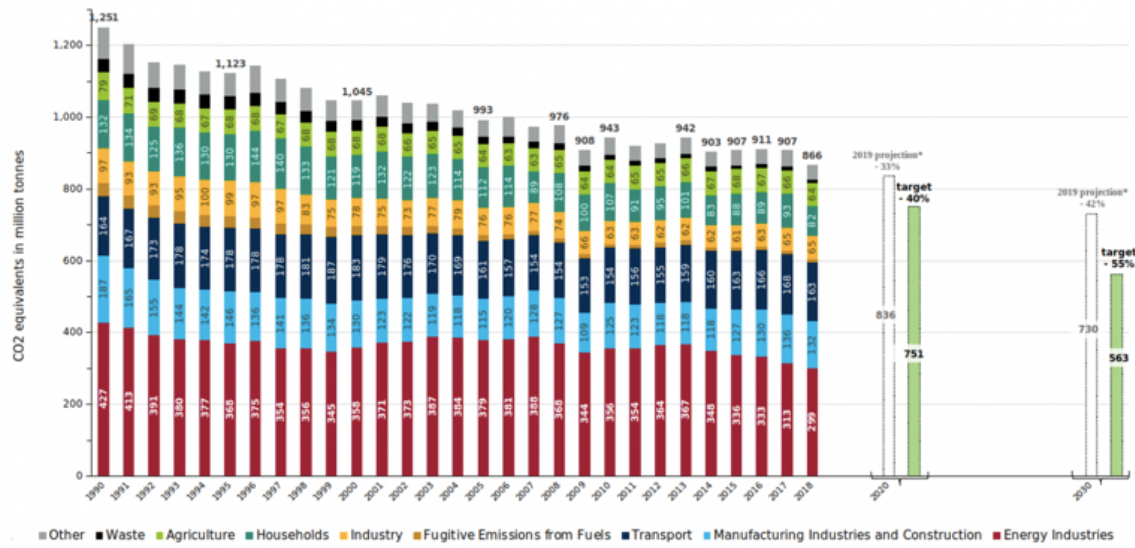
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Greenhouse gas emission trends in Germany by sector 1990-2018.

Data: UBA 2019, BMU 2019.



Note:
Without emissions from land use, land-use change and forestry (LULUCF)

*According to the federal environment ministry's 2019 emissions projections report, Germany is set to widely miss its goal to reduce greenhouse gas emissions by 40 percent by 2020.



Source: Clean Energy Wire

<https://www.cleanenergywire.org/factsheets/germanys-greenhouse-gas-emissions-and-climate-targets>