

Statistics

Specific Carbon Dioxide Emissions of Various Fuels



Fuel is not equal to fuel - at least if we consider carbon dioxide emissions. Burning of lignite emits nearly 100 % more carbon dioxide with respect to the energy content than burning of natural gas. Even natural fuels such as wood or peat have high specific emissions, if they are not used sustainably. Hence, deforestation has a high impact on climate change. On the other hand, if we only use as much wood as can grow again, it is carbon dioxide neutral because it binds as much carbon dioxide during growing as it emits during burning.

If fuels are used for electricity generation, carbon dioxide emissions increase with the reciprocal of the power plant efficiency. E.g. if a power station with an efficiency of 34 % burns coal, it emits 1.0 kg carbon dioxide for generating one kilowatt hour of electricity.

Changing to less carbon dioxide intensive fuels reduces the emissions and contributes to climate protection in the short-term. For a long-term climate protection the only alternative are zero-carbon energy resources such as sustainably-used biomass and other renewable types of energy.



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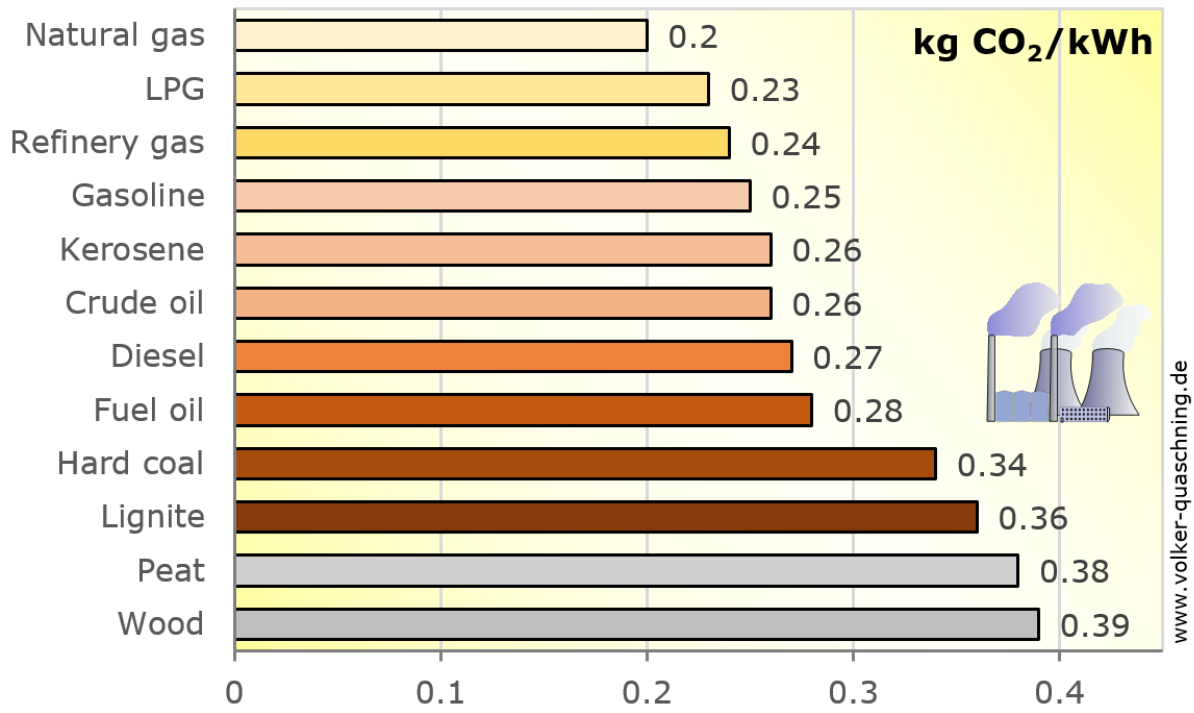
Fuel	Emissions in kgCO₂ / kWh	Emissions in kgCO₂ / GJ
Wood *)	0,39	109,6
Peat	0,38	106,0
Lignite	0,36	101,2
... Lusatia	0,41	113,0
... Central Germany	0,37	104,0
... Rhineland	0,41	114,0
Hard coal	0,34	94,6
Fuel oil	0,28	77,4
Diesel	0,27	74,1
Crude oil	0,26	73,3
Kerosene	0,26	71,5
Gasoline	0,25	69,3
Refinery gas	0,24	66,7
Liquid petroleum gas	0,23	63,1
Natural gas	0,20	56,1

*) not sustainably used without reforestation

Source: [Fachbuch Regenerative Energiesysteme](#) and UBA



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