



Frequently Asked Questions

How much carbon dioxide is produced by burning gasoline and diesel fuel?

About 19.64 pounds of carbon dioxide (CO₂) are produced from burning a gallon of gasoline that does not contain ethanol. About 22.38 pounds of CO₂ are produced by burning a gallon of diesel fuel.

EIA estimates¹ that U.S. gasoline and diesel fuel consumption for transportation in 2013 resulted in the emission of about 1,095 and 427 million metric tons of CO₂ respectively, for a total of 1,522 million metric tons of CO₂. This total was equivalent to 83% of total CO₂ emissions by the U.S. transportation sector and 28% of total U.S. energy-related CO₂ emissions.

Under international agreement, CO₂ from the combustion of biomass or biofuels are not included in national greenhouse gas emissions inventories.² Most of the retail gasoline now sold in the United States contains about 10% fuel ethanol (or E10) by volume. Burning a gallon of E10 produces about 17.68 pounds of CO₂ that is emitted from the fossil fuel content. If the CO₂ emissions from ethanol combustion are considered, then about 18.95 pounds of CO₂ are produced when a gallon of E10 is combusted. About 12.72 pounds of CO₂ are produced when a gallon of pure ethanol is combusted.

It is possible to buy [biodiesel fuel](#) in many states. Biodiesel fuel is sold with various amounts of biodiesel content. A commonly sold biodiesel fuel is B20, which contains 20% biodiesel and 80% petroleum diesel fuel. Burning a gallon of B20 results in the emission of about 17.90 pounds of CO₂ that is emitted from the fossil fuel content. If the emissions from burning the biodiesel in B20 are included, then about 20.22 pounds of CO₂ are produced. About 20.13 pounds of CO₂ are produced from burning a gallon of B100 (100% biodiesel).

¹ As of April 25, 2014.

² [Environment \(Section Note\)](#), *Monthly Energy Review*.

Learn more:

[Carbon Dioxide Emission Factors for Transportation Fuels.](#)

[Historical U.S. energy-related CO₂ emissions by source \(fuel type\) and sector.](#)

[Historical data on U.S. ethanol and biodiesel production and consumption \(Tables 10.3 and 10.4\).](#)

[Metric Conversion Factors \(U.S. Unit to Equivalent in Metric Units\).](#)

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Other FAQs about Environment

[Does EIA have projections for energy production, consumption, and prices for individual states?](#)

[Does EIA report water vapor emissions data?](#)

[How do I convert between short tons and metric tons?](#)

[How does the hole in the ozone layer affect global warming?](#)

How much carbon dioxide is produced by burning gasoline and diesel fuel?

How much carbon dioxide is produced per kilowatt-hour when generating electricity with fossil fuels?

How much carbon dioxide is produced when different fuels are burned?

Why do carbon dioxide emissions weigh more than the original fuel?

How much of U.S. carbon dioxide emissions are associated with electricity generation?

What are greenhouse gases and how do they affect the climate?

What are the energy-related carbon dioxide (CO₂) emissions by source and sector for the United States?

What are the greenhouse gas and air pollutant emissions factors for fuels and electricity?

What are the sources of energy-related carbon dioxide emissions by type of fuel for the United States and the world?