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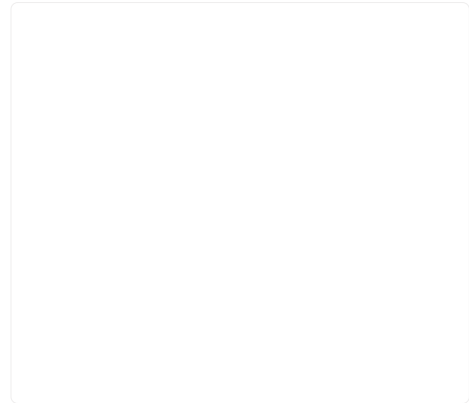
Reading time: 3 mins

## What Does CO2-eq Have To Do With My Climate Impact?

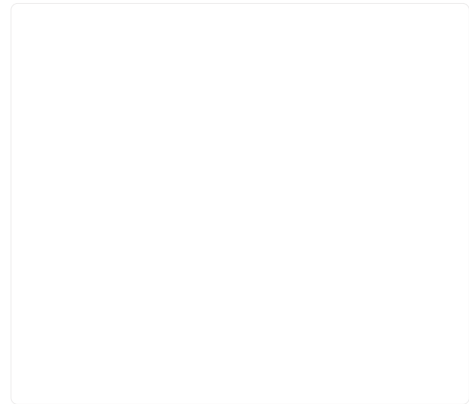


By [Gemma Alexander](#)

© JUL 29, 2021 [carbon dioxide](#), [Climate Change](#), [CO2](#), [greenhouse gases](#)



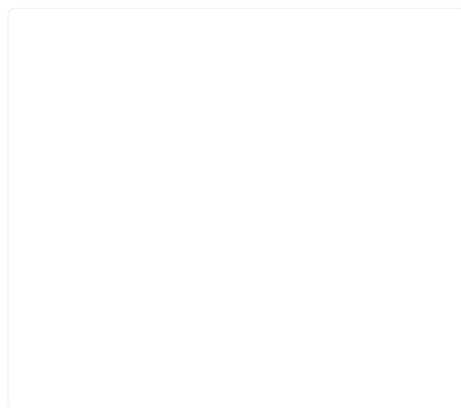
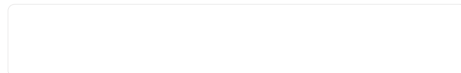
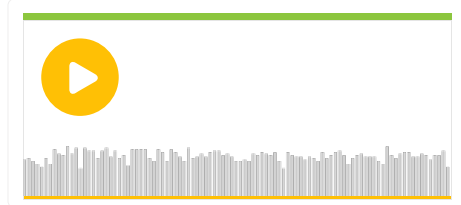
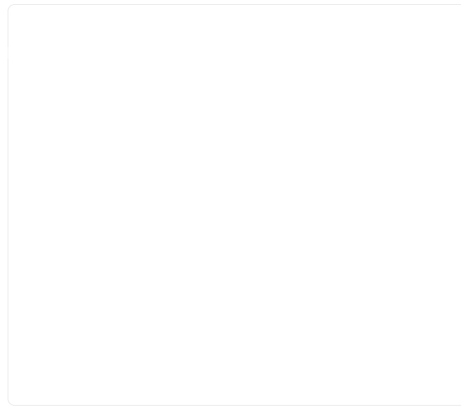
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You've probably heard the term [carbon footprint](#). Every human activity has an environmental impact from using natural resources, generating waste, and emitting [greenhouse gases](#) that contribute to climate change. A carbon footprint is the climate portion of that impact. It is measured as the amount of [carbon dioxide \(CO<sub>2</sub>\)](#) released into the atmosphere by a particular human activity. Carbon dioxide is significant for climate change because humans have released so much of it into the atmosphere. The concentration of carbon dioxide in the atmosphere has increased from [280 parts per million](#) in the 1800s to more than 417 parts per million today. It is still [increasing rapidly](#). It remains in the atmosphere for a very long time – from 300 to 1,000 years.

### Global Warming Potential

Pound for pound, carbon dioxide is not the most potent greenhouse gas (GHG). Other GHGs include methane, nitrous oxide, fluorinated gases, and water vapor. Each gas degrades over time in the atmosphere, a period known as its "lifetime," and has a different ability to trap heat before it degrades, known as "radiative efficiency." Together, their total ability to trap heat is known as [global warming potential](#). Global warming potential (GWP) allows comparisons of the climate impacts of different kinds of gases. Carbon dioxide is the gas that scientists use as a standard for determining GWP.



## CO<sub>2</sub>-eq: A Unit of Measurement

The GWP of a greenhouse gas is how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO<sub>2</sub>). It is measured as [CO<sub>2</sub>-eq](#), which means “carbon dioxide equivalent.”

By converting emissions into CO<sub>2</sub>-eqs, researchers can include all GHG emissions, instead of only carbon, in their calculations. They can even convert other quantified environmental impacts – the use of natural resources and waste generation – into CO<sub>2</sub>-eqs to provide a measurement for total environmental impact. Having a standard unit of measurement allows direct comparisons among the impacts of different activities.

## Informed Choices

When you [drive your car](#), it emits carbon dioxide. But it also emits carbon monoxide, nitrous oxides, sulfur dioxide, and volatile organic compounds. None of these gases is as significant as CO<sub>2</sub>, but each has a GWP. Using the GWP of each gas emitted, it's possible to convert those emissions into carbon dioxide equivalents (CO<sub>2</sub>-eq) to more accurately reflect the climate impact of your commute.

If you want to know whether baking with [cane sugar or corn syrup](#) is more sustainable, or if you are looking for the [greenest coffee](#), CO<sub>2</sub>-eq allows you to directly compare their total climate impact.

CO<sub>2</sub>-eq is awkward to read and to type. So people often use terms like “carbon emissions” or “greenhouse gas emissions” or even just “emissions” to describe climate impact. But these general terms are not entirely accurate. In any case where impact is quantified, the carbon footprint is measured in CO<sub>2</sub>-



Gemma Alexander has an M.S. in urban horticulture and a backyard filled with native plants. After working in a genetics laboratory and at a landfill, she now writes about the environment, the arts and family. See more of her writing [here](#).

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