

Glossary: Carbon dioxide equivalent

Statistics Explained

A **carbon dioxide equivalent** or **CO₂equivalent** , abbreviated as **CO₂-eq** is a metric measure used to compare the emissions from various [greenhouse gases](#) on the basis of their [global-warming potential \(GWP\)](#) , by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

Carbon dioxide equivalents are commonly expressed as **million metric tonnes of carbon dioxide equivalents** , abbreviated as **MMTCDE** .

The carbon dioxide equivalent for a gas is derived by multiplying the tonnes of the gas by the associated GWP:

$MMTCDE = (\text{million metric tonnes of a gas}) * (\text{GWP of the gas})$.

For example, the GWP for methane is 25 and for nitrous oxide 298. This means that emissions of 1 million metric tonnes of methane and nitrous oxide respectively is equivalent to emissions of 25 and 298 million metric tonnes of carbon dioxide.

Related concepts

- [Carbon dioxide emissions](#)
- [Climate change](#)
- [Global-warming potential \(GWP\)](#)
- [Greenhouse gas \(GHG\)](#)

Statistical data

- [Greenhouse gas emission statistics](#)

Source

- [European Environment Agency - Glossary](#) , based on: IPCC Third Assessment Report, 2001