

Table 1: Greenhouse gases influenced by human activities

Variable	CO ₂	CH ₄	N ₂ O	CFC-11	HCFC-22	CF ₄
Pre-industrial concentration	280 ppmv	700 ppbv	275 ppbv	0	0	0
Concentration in 1994	358 ppmv	1720 ppbv	312 ppbv‡	268 pptv‡	110 pptv	72 pptv‡
Annual rate of increase in concentration*	1.5 ppmv (0.4%)	10 ppbv (0.6%)	0.8 ppbv (0.25%)	0 pptv (0%)	5 pptv (5%)	1.2 pptv (2%)
Atmospheric lifetime, † yr	50–200§	12¶	120	50	12	50 000

Note: CO₂ = carbon dioxide, CH₄ = methane, N₂O = nitrous oxide, CFC-11 = chlorofluorocarbon-11, HCFC-22 = hydrochlorofluorocarbon-22, CF₄ = carbon tetrafluoride, ppmv = parts per million per volume, ppbv = parts per billion per volume, pptv = parts per trillion per volume.

*The rates for CO₂, CH₄ and N₂O are based on data for the decade beginning 1984; the rates for the other gases are based on data for recent years (1990s).

†Average time spent by a gas in the atmosphere after it has been emitted.

‡Estimated from 1992/93 data.

§No single lifetime for CO₂ can be defined because of the different rates of uptake by different sink processes. Sinks are systems such as forests and oceans that can take up greenhouse gases.

¶Adjusted to take into account the indirect effect of methane on its own lifetime. CFCs also deplete ozone in the stratosphere and are now controlled by the Montreal Protocol. HCFCs have been temporarily permitted as substitutes for CFCs but are also potent greenhouse gases.

Adapted from Houghton JT et al.¹

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