The main greenhouse gases

Greenhouse gases	Chemical formula	Pre-industrial concentration	Concentration in 1994	Atmospheric lifetime (years)***	Anthropogenic sources	Global warming potential (GWP) *
Carbon-dioxide	CO^2	280 ppmv	358 ppmv	50-200	Fossil fuel combustion Land use conversion Cement production	1
Methane	CH_4	700 ppbv	1720 ppmv	12-17	Fossil fuels Rice paddies Waste dumps Livestock	21 **
Nitrous oxide	N_2O	275 ppbv	312 ppmv	120-150	Fertilizer industrial processes combustion	310
CFCs	CFC12	0	503 pptv	102	Liquid coolants. Foams	125-152
HCFCs	HCFC-22	0	105 pptv	13	Liquid coolants	125
Perfluorocarbon	CF_4	0	110 pptv	50 000	Production of aluminium	6 500
Sulphur hexa-fluoride	SF_6	0	72 pptv	1 000	Production of magnesium	23 900

Note : **pptv**= 1 part per trillion by volume; **ppbv**= 1 part per billion by volume, **ppmv**= 1 part per million by volume

* GWP for 100 year time horizon. ** Includes indirect effects of tropospheric ozone production and stratospheric water vapour production. *** On page 15 of the IPCC SAR. No single lifetime for CO_2 can be defined because of the different rates of uptake by different sink processes.

GRID Arendal UNEP

Source: IPCC radiative forcing report ; Climate change 1995, The science of climate change, contribution of working groupe 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge press university, 1996.