Glossary for Greenhouse Gas Bulletin

Greenhouse Gases (GHG)	The gases in the atmosphere which absorb infra-red (thermal) radiation
Greenhouse Effect	The Earth has a natural greenhouse effect due to trace amounts of water vapour (H_2O), carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) in the atmosphere. These gases let the solar radiation reach the Earth's surface, but they absorb infrared radiation emitted by the Earth and thereby lead to the heating of the planet.
Radiative forcing	The radiative forcing of the atmosphere is the difference between the incoming and outgoing energy in the Earth-atmosphere system (downward radiation minus upward radiaton, expressed in Watt per square meter) caused by climate factors such as greenhouse gases, particles (aerosols), change in ice/snow reflectivity and land characteristics. The emissions of man-made long-lived greenhouse gases to the atmosphere from pre-industrial times has led to an increase in the infrared radiation trapped in the atmosphere that amounts to 2.74 Watt per square meter. Such an increase corresponds roughly to the warming effect caused by a 40 W light bulb in a room that measures 3 m x 5 m. This can sound like a fairly small warming effect, but keep in mind that every 15 square meter of the globe would have to be warmed by a 40 W light bulb to cause the same warming effect as the human emissions of greenhouse gases.
Global abundances	Concentration or mixing ratio of a particular gas averaged over the whole troposphere (the lowest atmospheric layer)
CFCs	Chlorofluorocarbons; chemical compounds previously used as refrigerants, as propellants in spray cans and as solvents, which cause destruction of the ozone layer. These compounds are now banned by the Montreal Protocol on Substrances that Deplete the Ozone Layer. Due to their long lifetime in the atmosphere, ranging from a few decades to centuries, they will be present in the atmosphere for a long time after emissions stopped. In addition to depleting the ozone layer the CFCs are also potent greenhouse gases. On a molecule per molecule basis the CFCs are several thousand times more efficient greenhouse gases than CO_2.
HCFCs	Hydrochlorofluorocarbons are chemical compounds which are used as a substitution to CFCs. They are less dangerous to the ozone layer than CFCs, but still have about 10% of the capacity to destroy ozone compared to the CFCs. The HCFCs have a much shorter lifetime in the atmosphere than the CFCs, typically a few years. They are also potent greenhouse gases, with a warming potential a few hundred times larger than that for CO_2.
HFCs	Hydrofluorocarbons are chemical compounds which are used as a substitution to CFCs and HCFCs. They are not dangerous to the ozone layer, but they are, just like the CFCs and HCFCs, potent greenhouse gases with, for many of them, a long lifetime in the atmosphere and warming potentials ranging from a few hundred to a few thousands times larger than for CO_2.
CFC-11, CFC-12	The most widely used chlorofluorocarbons
SF_6	Sulphur hexafluoride is used as an electrical insulator in power distribution equipment. SF_6 is a potent greenhouse gas with a lifetime in the atmosphere of 3200 years and it is almost 23000 times

	more potent than CO_2 as a greenhouse gas on a molecule per molecule basis if one has a time horizon of 100 years.
ppm	Mixing ratio of the gas in the atmosphere; 1 molecule of gas per million molecules of air
ppb	Mixing ratio of the gas in the atmosphere; 1 molecule of gas per billion (10^9) molecules of air
ppt	Mixing ratio of the gas in the atmosphere; 1 molecule of gas per trillion (10^{12}) molecules of air
Gt	Gigatonnes, 1 billion tonnes (10^9)