# **Human activities releasing greenhouse gases (GHGs)**

# <http://unfccc.int/cop3/fccc/climate/fact22.htm>

* **Most important human activities emit greenhouse gases (GHGs).** Emissions started to rise dramatically in the 1800s due to the Industrial Revolution and changes in land use. Many greenhouse-gas-emitting activities are now essential to the global economy and a fundamental part of modern life.
* **Carbon dioxide from the burning of fossil fuels is the largest single source of greenhouse gas emissions from human activities.** The supply and use of fossil fuels accounts for about three quarters of mankind's carbon dioxide (CO2) emissions (equal to some 5.9 billion metric tonnes of carbon in 1992), one-fifth of the methane (CH4), and a significant quantity of nitrous oxide (N2O). It also produces nitrogen oxides (NOx), hydrocarbons (HCs), and carbon monoxide (CO), which, though not greenhouse gases themselves, influence chemical cycles in the atmosphere that create or destroy other greenhouse gases, such as tropospheric ozone.
* **Most emissions associated with energy use result when fossil fuels are burned.** Oil, natural gas, and coal (which emits the most carbon per unit of energy supplied) furnish most of the energy used to produce electricity, run automobiles, heat houses, and power factories.
* **Extracting, processing, transporting, and distributing fossil fuels also releases greenhouse gases.** These releases can be deliberate, as when natural gas is flared or vented from oil wells, emitting mostly carbon dioxide and methane, respectively. They can also result from accidents, poor maintenance, and small leaks in well heads, pipe fittings, and pipelines.
* **Deforestation is the second largest source of carbon dioxide.**When forests are cleared for agriculture or development, most of the carbon in the burned or decomposing trees escapes to the atmosphere.
* **Producing lime (calcium oxide) to make cement accounts for 2.5% of CO2 emissions from industrial sources.**
* **Domesticated animals emit methane.** The second-most important greenhouse gas after carbon dioxide, methane is produced by cattle, dairy cows, buffalo, goats, sheep, camels, pigs, and horses.
* **Rice cultivation also releases methane . . .** "Wetland" or "paddy" rice farming produces roughly one-fifth to one-quarter of global methane emissions from human activities. Accounting for over 90 percent of all rice production, wetland rice is grown in fields that are flooded or irrigated for much of the growing season. Bacteria and other micro-organisms in the soil of the flooded rice paddy decompose organic matter and produce methane.
* **. . . as does the disposal and treatment of garbage and human wastes.** When garbage is buried in a landfill, it sooner or later undergoes anaerobic (oxygen-free) decomposition and emits methane (and some carbon dioxide). Unless the gas is captured and used as a fuel, the methane eventually escapes to the atmosphere.
* **Fertilizer use increases nitrous oxide emissions.** The nitrogen contained in many fertilizers enhances the natural processes of nitrification and denitrification that are carried out by bacteria and other microbes in the soil. These processes convert some nitrogen into nitrous oxide.
* **Industry creates chlorofluorocarbons (CFCs) and other halocarbons for use in various products and industrial processes.**