

Glossary and Abbreviations

Agriculture

This term corresponds to IPCC Source/Sink Category 4, and covers all anthropogenic emissions from this sector except for fuel combustion and sewage emissions, which are covered in energy and waste, respectively.

Agricultural Soils

Emissions and removals of CH₄ and N₂O from agricultural soil/land. These are influenced by irrigation practices, climatic variables, soil temperature and humidity (IPCC category 4D).

Annex I Countries

The industrialized and transition countries listed in this Annex to the Climate Convention. These countries include Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States of America.

Autoproducers

Undertakings which generate electricity/heat wholly or partly for their own use, as an activity which supports their primary activity. Autoproducers may be privately or publicly owned.

BAU

Business as usual. A scenario that represents the most plausible projection of the future. BAU typically embodies the notion of what would happen, hypothetically, if climate-friendly actions were not taken.

Bunker Fuels

Fuel supplied to ships and aircraft. In this report, it refers to international bunker fuels, which denotes the consumption of fuel for international transport activities. For the purposes of GHG emissions inventories, emissions from international bunker fuels are subtracted from national emissions totals.

CAIT

Climate Analysis Indicators Tool. See Appendix 1.

CDM

Clean Development Mechanism. A project-based emissions trading system under the Kyoto Protocol that allows industrialized countries to use emission reduction credits from projects in developing countries that both reduce greenhouse gas emissions and promote sustainable development.

CDIAC

Carbon Dioxide Information Analysis Center. A national lab of the U.S. Department of Energy. See: <http://cdiac.esd.ornl.gov>.

CHP

Combined Heat and Power. Refers to plants that are designed to produce both heat and electricity. Also referred to as co-generation.

Climate Change Convention

See UNFCCC.

CO₂

Carbon dioxide. A naturally occurring gas that is also a byproduct of burning fossil fuels and biomass, other industrial processes, and land-use changes. CO₂ is the principal anthropogenic greenhouse gas affecting the Earth's temperature.

CO₂ equivalent

The amount of CO₂ by weight emitted into the atmosphere that would produce the same estimated radiative forcing as a given weight of another GHG. Carbon dioxide equivalents are computed by multiplying the weight of the gas being measured (for example, methane) by its estimated global warming potential (see GWP). One unit of carbon is equivalent to 3.664 units of carbon dioxide.

Carbon Intensity

The ratio of CO₂ emissions to activity or output. At the national level, this indicator is shown as CO₂ emissions per unit GDP.

Coal

Includes primary coal products (for example, hard coal and lignite) and derived fuels such as patent fuel, coke oven coke, gas coke, BKB, coke oven gas, and blast furnace gas. Peat is also included in this category.

CH₄

Methane. A colorless, flammable, odorless hydrocarbon that is an important greenhouse gas. All CH₄ data in this report is converted and displayed in CO₂ equivalent units, using global warming potentials in IPCC (1996). CH₄ has a GWP of 21 times that of CO₂ over a 100-year horizon (IPCC, 1996). See GWP.

Degree Day (heating and cooling)

A measure commonly used to evaluate energy requirements for heating or air conditioning. The measure is based on departures from an average temperature of 18°C (65°F), a base temperature considered to have neither heating nor cooling requirements.

Developed Countries

See Annex I Countries. Where noted, the term “developed countries” instead denotes the collective member states of the OECD.

Developing Countries

Those countries not designated in Annex I of the Convention. See Annex I. This group, as used in this report, includes some countries that may be considered industrialized or transitional.

EIA

Energy Information Administration. An independent statistical agency of the U.S. Department of Energy. See: <http://www.eia.doe.gov>.

EIT

Economy in transition. EITs typically include the countries of Central and Eastern Europe (such as Poland), the former Soviet Union (such as Russia), and Central Asian Republics (such as Kazakhstan).

Energy Use (Consumption)

Energy use refers to apparent consumption, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport. Energy use may also be referred to as energy supply.

Energy Intensity

The ratio of energy consumption (use) to activity or output. At the national level, this indicator is shown as primary energy consumption per unit GDP.

Energy Production

Production of primary energy; that is, petroleum (crude oil, natural gas liquids, and oil from nonconventional sources), natural gas, solid fuels (coal, lignite, and other derived fuels), and combustible renewables and waste as well as primary electricity production (nuclear, hydro, renewables). Production is usually converted into units of oil equivalents.

Enteric Fermentation

CH₄ production from herbivores as a byproduct of enteric fermentation, a digestive process by which carbohydrates are broken down by microorganisms into simple molecules for absorption into the bloodstream. Includes both ruminant (such as cattle, sheep) and non-ruminant animals (such as pigs, horses) (IPCC category 4A).

EPA

U.S. Environmental Protection Agency.
See: <http://www.epa.gov>.

EU

European Union. Includes either 15 member states (EU-15) or 25 member states (EU-25). For a listing of member countries, see <http://cait.wri.org/cait.php?page=notes&chapt=4>.

FAO

Food and Agricultural Organization of the United Nations.
See: <http://www.fao.org>.

Flaring (natural gas)

Gas disposed of by burning in flares, usually at the production sites or at gas processing plants. See also Fugitive Emissions.

Former Soviet Union (FSU)

Independent countries comprising the former Soviet Union. Members: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

Fugitive emissions

Intentional or unintentional releases of gases from human activities. In particular, they may arise from the production, processing, transmission, storage and use of fuels, and include emissions from combustion only where it does not support a productive activity (such as flaring of natural gases at oil and gas production facilities). See Flaring.

GDP

Gross Domestic Product. The total value of goods and services produced by labor and property located in a given country.

Global Warming Potential (GWP)

An index that allows for comparison of the various greenhouse gases. It is the radiative forcing that results from the addition of 1 kilogram of a gas to the atmosphere compared to an equal mass of carbon dioxide. The data in this report and in CAIT use the GWP estimates in the IPCC Second Assessment Report (IPCC, 1996). Over 100 years, methane has a GWP of 21 and nitrous oxide of 310.

Greenhouse Effect

The effect produced as greenhouse gases allow incoming solar radiation to pass through the Earth's atmosphere but prevent most of the outgoing long-wave infrared radiation from the surface and lower atmosphere from escaping into outer space. This envelope of heat-trapping gases keeps the Earth about 30° C warmer than if these gases did not exist.

GHG

Greenhouse Gas. Any gas that absorbs and re-emits infrared radiation into the atmosphere. The main greenhouse gases include water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O).

GHG Intensity

The ratio of GHG emissions to activity or output. At the national level, this indicator is shown as GHG emissions per unit GDP. This measure is identical to CO₂ intensity, except that non-CO₂ gases may be included here.

HFC

Hydrofluorocarbon. A group of human-made chemicals composed of one or two carbon atoms and varying numbers of hydrogen and fluorine atoms. All HFC data in this report is converted and displayed in CO₂ equivalent units, using global warming potentials in the IPCC Second Assessment Report (1996). Most HFCs have 100-year global warming potentials in the thousands (IPCC, 1996). See GWP.

IEA

International Energy Agency. See: <http://www.iea.org>.

Industrial Processes

This term corresponds to IPCC Source/Sink Category 2, and covers byproduct or fugitive emissions of GHGs from industrial processes, including all emissions of HFCs, PFCs, and SF₆.

Industrialized Countries

Those countries designated in Annex II of the Convention; namely, members of the OECD, but excluding Mexico and South Korea. See OECD.

Industry

This term corresponds to IPCC Source/Sink Category 1A2, and covers emissions from combustion of fuels in manufacturing and construction industries, including combustion for the generation of electricity and heat. Energy used for transport by industry is not included here. Where noted in this report, this term includes industry-related electricity and heat (indirect) emissions as well as industrial process-related emissions.

IPCC

Intergovernmental Panel on Climate Change. An organization established in 1988 by the World Meteorological Organization and the United Nations Environment Programme. It conducts rigorous surveys of the worldwide technical and scientific literature and publishes assessment reports widely recognized as the most credible existing sources on climate change.

ISIC

International Standard Industrial Classification of all Economic Activities. A standard classification that is widely used internationally in classifying data according to kinds of economic activity in the fields of population, production, employment, gross domestic product, and other economic activities. The major groups and divisions, the successively broader levels of classification, combine the statistical units according to the character, technology, organization, and financing of production. This report utilizes primarily ISIC, Third Revision (Rev.3, 1989). See: <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=2>.

Kyoto Protocol

An international agreement adopted by Parties to the Climate Convention in Kyoto, Japan, in December 1997. The Protocol entered into force in 2005. See: <http://unfccc.int>.

LDC

Least Developed Country. A category of countries (currently 49) deemed by the United Nations to be structurally handicapped in their development process, facing more than other developing countries the risk of failing to come out of poverty as a result of these handicaps, and in need of the highest degree of consideration from the international community in support of their development efforts. For a listing of members, see: <http://cait.wri.org/cait.php?page=notes&chapt=4>.

LUCF

Land-use change and forestry. This term corresponds to IPCC Source/Sink Category 5, and covers emissions and removals from forest and land-use change activities, including but not limited to (1) emissions and removals of CO₂ from decreases or increases in biomass stocks due to forest management, logging, fuelwood collection, etc.; (2) conversion of existing forests and natural grasslands to other land uses; (3) removal of CO₂ from the abandonment of formerly managed lands (e.g. croplands and pastures); and (4) emissions and removals of CO₂ in soil associated with land-use change and management.

Manure Management

CH₄ and N₂O produced from the decomposition of manure under low oxygen or anaerobic conditions. These conditions often occur when large numbers of animals are managed in a confined area (such as dairy farms, beef feedlots, and swine and poultry farms), where manure is typically stored in large piles or disposed of in lagoons and other types of manure management systems (IPCC category 4B).

Methane

See CH₄.

MtCO₂

Million metric tons of carbon dioxide equivalent. This measure can aggregate different GHGs into a single measure, using global warming potentials (see GWP). One unit of carbon is equivalent to 3.664 units of carbon dioxide.

N₂O

Nitrous Oxide. A GHG emitted through soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning. All N₂O data in this report is converted and displayed in CO₂ equivalent units, using global warming potentials in the IPCC Second Assessment Report (1996). It has a GWP of 310 times that of CO₂ over a 100-year horizon (IPCC, 1996). See GWP.

Non-Annex I Countries

Those countries that are not listed in Annex I of the Climate Change Convention (see Annex I Parties). This group consists primarily of developing countries. For a listing of members, see: <http://cait.wri.org/cait.php?page=notes&chapt=4>.

Non-CO₂ gases

Refers to the greenhouse gases CH₄, N₂O, HFCs, PFCs, and SF₆.

Natural Gas

A gaseous mixture of hydrocarbon compounds, consisting mainly of methane. Vented or flared gas is excluded.

OECD

Organisation for Economic Co-operation and Development. An international organization consisting of the major industrialized countries. Member states include: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, South Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. See: <http://www.oecd.org>.

OPEC

Organization of Petroleum Exporting Countries. An international organization made up of oil-producing countries that aim to influence world oil prices. Member states include: Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela. See: <http://www.opec.org>.

Oil

A mixture of hydrocarbons usually existing in the liquid state in natural underground pools or reservoirs.

Petrochemicals

A large group of chemicals derived from a component of petroleum or natural gas. Important petrochemical compounds are alcohols and aldehydes, butylene, butadiene, ethylene, propylene, toluene, styrene, acetylene, benzene, ethylene oxide, ethylene glycol, acrylonitrile, acetone, acetic acid, acetic anhydride, and ammonia. Materials made from the gases include synthetic rubber, polystyrene, polypropylene, and polyethylene. Petrochemicals are widely used in agriculture, in the manufacture of plastics, synthetic fibers, and explosives, and in the aircraft and automobile industries.

PFC

Perfluorocarbon. A group of human-made chemicals composed of carbon and fluorine (CF₄ and C₂F₆). PFCs have no commercial uses and are emitted as a byproduct of aluminum smelting and semiconductor manufacturing. These chemicals are potent GHGs. All PFC data in this report is converted and displayed in CO₂ equivalent units, using global warming potentials in the IPCC Second Assessment Report (1996). See GWP.

PPP

Purchasing Power Parity. An international dollar “currency” for GDP that has the same purchasing power over local GDP as a U.S. dollar has in the United States.

ppmv

Parts per Million by Volume. A unit of concentration for a particular substance (for example, CO₂).

Reserves (or proved reserves)

Estimated quantities of energy sources that analysis of geologic and engineering data demonstrates with reasonable certainty are recoverable under existing economic and operating conditions. The location, quantity, and grade of the energy source are usually considered to be well established in such reserves.

Residential

Refers to fuel, electricity, or heat consumption in households.

Rice Cultivation

The anaerobic decomposition of organic material in flooded rice fields, which produces methane that escapes to the atmosphere by ebullition (bubbling up) through the water column, diffusion across the water/air interface, and transport through the rice plants (IPCC category 4C).

SD-PAMs

Sustainable Development Policies and Measures. An approach to climate protection that builds on sustainable development priorities.

SF₆

Sulfur Hexafluoride. A potent GHG used primarily in heavy industry to insulate high-voltage equipment and to assist in the manufacturing of cable cooling systems. All SF₆ data in this report is converted and displayed in CO₂ equivalent units, using global warming potentials in the IPCC Second Assessment Report (1996). It has a GWP of 23,900 times that of CO₂ over a 100-year horizon (IPCC, 1996). See GWP.

Small Island Developing States

(also, *Alliance of Small Island States*)

A coalition of 42 low-lying and island countries that are particularly vulnerable to sea-level rise and share common positions on climate change. For a listing of members, see: <http://cait.wri.org/cait.php?page=notes&chapt=4>.

Transformation

This refers to the conversion of primary forms of energy to secondary and further transformation (such as coking coal to coke, crude oil to petroleum products, heavy fuel oil to electricity).

Transport

This term corresponds to IPCC Source/Sink Category 1A3, and covers emissions from the combustion and evaporation of fuel for all transport activity, regardless of the sector. Emissions pertaining to international transport (bunker fuels) are accounted for separately and not included in national totals. Emissions from the manufacture of vehicles or transport-related machinery are not included here. Where noted in this report, this term includes transport-related electricity (indirect) emissions.

UNFCCC

United Nations Framework Convention on Climate Change (Climate Convention, or Convention). A treaty signed at the 1992 Earth Summit in Rio de Janeiro to which nearly all countries of the world have joined. See: <http://unfccc.int>.

Waste

This term corresponds to IPCC Source/Sink Category 6, and covers emissions from solid waste disposal on land, wastewater, waste incineration, and any other waste management activity. Excludes CO₂ emissions from fossil-based products (incineration or decomposition).

WRI

World Resources Institute. See: <http://www.wri.org>.

Sources:

UNFCCC (<http://unfccc.int/siteinfo/glossary.html>);
EIA (http://www.eia.doe.gov/glossary/glossary_main_page.htm);
IEA (<http://www.iea.org/Textbase/stats/defs/defs.htm>);
World Bank (www.worldbank.org/data/);
IPCC (1997).