
GLOSSARY

Starred items () in the definitions denote headings appearing elsewhere in this Glossary.*

Activity data

Data on the magnitude of human activity resulting in emissions or removals taking place during a given period of time. In the energy sector for example, the annual activity data for fuel combustion sources are the total amounts of fuel burned. Annual activity data for methane emissions from enteric fermentation are the total number of animals being raised, by species.

Adipic acid

A material primarily used in the chemical industry as an intermediate step in the production of nylon. The process of producing adipic acid also produces nitrous oxide (N₂O) as a by-product.

Afforestation

Planting of new forests on lands which, historically, have not contained forests. These newly created forests are included in the category Changes in Forest and Other Woody Biomass Stocks in the Land Use Change and Forestry module of the emissions inventory calculations.

See also Reforestation.

Alcohol

For the purposes of the inventory preparation alcohols include methyl alcohol (methanol), ethyl alcohol (ethanol) and tertiary butyl alcohol (TBA) (2-methyl propan-2-ol).

Alcohol produced from non-biomass sources for use as a blending component in fuels should be included with refinery feedstocks figures in the inventory.

Bio-alcohol used in fuels should be reported as a liquid biomass for information only.

Anaerobic

Conditions in which oxygen is not readily available. These are important for the production of methane emissions. Whenever organic material

decomposes in anaerobic conditions (in landfills, flooded rice fields, etc.) methane is likely to be formed.

Andosol

A soil developed in volcanic ash. Generally Andosols have good drainage and are prone to fertility problems

Anthracite

A high rank coal with generally less than 10 per cent volatile matter.

Anthropogenic

Man-made, resulting from human activities. In the *Guidelines*, *anthropogenic* emissions are distinguished from *natural* emissions. Many of the greenhouse gases are emitted naturally. It is only the man-made increments over natural emissions which may be perturbing natural balances.

API Gravity

(American Petroleum Institute Gravity). A measurement scale, related to density, for crude oil or other liquid hydrocarbons, based on the formula

$$\text{degrees API} = \frac{141.5}{\text{specific gravity}} - 131.5$$

where the specific gravity measurement is made at 60°F. Its application enables a linear scale to be used on the stem of a density-measuring device like a hydrometer.

Apparent consumption

A concept used in the calculation of CO₂ emissions from fossil fuel consumption. This concept deals with *apparent* rather than *actual* consumption because it tracks the consumption of primary fuels to an economy with adjustments for net imports and stock changes in secondary fuels. While this procedure ensures that all of the carbon in fuels is accounted for, it is important to note that it does not produce actual consumption by specific fuel or fuel product. In cases where exports of secondary fuels exceed imports, it will produce negative numbers. This is clearly not an accurate estimate of the consumption of secondary fuel. It is merely an adjustment to the primary fuel supply calculated elsewhere in the worksheet.

Aviation Gasoline

See Gasoline.

Base year

The year for which the inventory is to be taken. This is currently 1990. In some cases (such as estimating CH₄ from rice production) the base year is simply the middle of a three-year period over which an average must be taken.

Benzole

A mixture of light hydrocarbons used as a solvent and sometimes blended into gasoline. Benzole should be included with refinery feedstocks in the inventory.

Biochemical oxygen demand (BOD)

The amount of oxygen consumed by the organic material in wastewater during the decomposition of the waste materials in the wastewater. BOD is used as a measure of the organic content of wastewater. See Section 6.3.2 of the *Reference Manual*.

Biomass

Non-fossilised organic material both above ground and below ground, and both living and dead, e.g., trees, crops, grasses, tree litter, roots etc.. When burned for energy purposes, these are referred to as *biomass fuels*. Biomass fuels also include gases recovered from the decomposition of organic material.

Bitumen

Solid, semi-solid or viscous hydrocarbon with a colloidal structure, brown to black in colour, obtained as a residue in the distillation of crude oil by vacuum distillation of oil residues from atmospheric distillation. It is soluble in carbon bisulphate, non-volatile, thermoplastic (between 150°C and 200°C) with insulating and adhesive properties. Bitumen is used mainly in road construction and is also known as asphalt.

Bituminous Coal

Includes Anthracite*, Steam coal (other than anthracite) and Coking coal*. In the *Guidelines* steam coal is referred to as "Other Bituminous Coal".

Coal with a gross calorific value greater than 23 865 kJ/kg (5 700 kcal/kg) on an ash-free but moist basis and with a mean random reflectance of vitrinite of at least 0.6.

BKB (Braunkohlenbriketts)

A composition fuel manufactured from brown coal. The brown coal is crushed, dried and moulded under high pressure into an even-shaped briquette without the addition of binders. Also includes peat briquettes.

Black Liquor

See Sulphite Lies.

Blast Furnace Gas (BFG)

Obtained as a by-product in operating blast furnaces; it is recovered on leaving the furnaces and used partly within the plant and partly in other steel industry processes or in power stations equipped to burn it. Any Oxygen Steel Furnace Gas should be included in this category.

BOD

See Biochemical oxygen demand.

Boreal

Northern biotic area characterised especially by dominance of coniferous forests.

Bunker fuels (International)

Fuels consumed for international marine and air transportation.

Calcination

Chemical process in the manufacture of cement in which the raw materials (primarily limestone – calcium carbonate) are heated in kilns producing lime and CO₂.

Calorific value

The calorific value of a fuel is a measure of its value for heating purposes. It is expressed in terms of the heat released from a specified unit quantity under defined conditions of complete combustion. The calorific value is sometimes referred to as the heating value of the fuel.

Two measures of calorific value are possible and are referred to as the net (NCV) and gross (GCV) calorific values. Also termed the lower (LHV) and higher (HHV) heating values.

The Gross Calorific Value is the total quantity of heat released during combustion when all water formed by the combustion reaction is returned to the liquid state.

The Net Calorific Value is the total quantity of heat released during combustion when all water formed by the combustion reaction remains in the vapour state.

The Net Calorific Value is therefore less than the Gross Calorific Value. For natural gas this difference is approximately 9-10 per cent whilst for oils and coals the difference is approximately 5 per cent.

Throughout the *Guidelines* net calorific values are used and expressed in SI units, for example TJ/kt. The term *Conversion Factor* has two uses. First, as net calorific value, to convert quantities expressed in natural units to energy units and, secondly as a scaling factor to convert one form of energy unit to another (e.g. Btus to GJ).

CFCs

See Chlorofluorocarbons.

Charcoal

A black, amorphous form of carbon made by heating wood or other organic matter in the absence of air.

Chlorofluorocarbons (CFCs)

Hydrocarbon derivatives consisting of carbon, chlorine and fluorine, in which chlorine and fluorine partly or completely replace the hydrogen. Chlorofluorocarbons are chemical substances which have been used in refrigeration, foam blowing etc.. CFCs contribute to the depletion of the earth's ozone layer in the upper atmosphere. Although they are greenhouse gases, they are not included in the *Guidelines* because they are already being regulated under the Montreal Protocol.

Clinker

An intermediate product created during the manufacture of cement. In the production of clinker, calcium carbonate is heated, producing lime and carbon dioxide. The carbon dioxide is normally released to the atmosphere as a waste product and is a significant global source of CO₂ emissions.

Closed forest

A dense forest with closed canopy through which sunlight does not penetrate sufficiently for grasses to grow on the forest floor. These forests contain a significantly greater amount of biomass per hectare than do open forests.

Coke

Coke is subdivided into:

Coke-oven coke

The solid product obtained from the carbonisation of coal, principally coking coal, at high temperature, low in moisture and volatile matter. Coke oven coke is used mainly in the iron and steel industry acting as energy source and chemical agent. Semi-coke, the solid product obtained from the carbonisation of coal at a low temperature, should be included in this category. Semi-coke is used as a domestic fuel or by the transformation plant itself. This heading also includes coke and semi-coke made from lignite.

Gas coke

A by-product of hard coal used for the production of town gas in gas works. Gas coke is used for heating purposes.

Coke Oven Gas

Obtained as a by-product of solid fuel carbonisation and gasification operations carried out by coke producers and iron and steel plants which are not connected with gasworks and municipal gas plants.

Coking Coal

Coal of calorific value greater than 23,865 kJ/kg (5,700 kcal/kg) on an ash free but moist basis with a mean random reflectance of vitrinite of at least 0.6.

Coal with a quality that allows the production of coke suitable to support a blast furnace charge. The following classification codes cover coals which fall into this category.

- International classification codes: (UN Geneva 1956): 323, 333, 334, 423, 433, 434, 435, 523, 533, 534, 535, 623, 633, 634, 635, 723, 733, 823.
- USA classification codes: Class II Group 2 "Medium volatile Bituminous".
- British classification: Classes 202, 203, 204, 301, 302, 400, 500, 600.
- Polish classification: Classes 33, 34, 35.1, 35.2, 36, 37.

Conference of the Parties (COP)

The Conference of the Parties under the UN Framework Convention on Climate Change.

Continuously flooded (rice fields)

Fields inundated for the duration of the growing season, whether water is provided by managed irrigation or by rain.

Conversion factor

See Calorific value.

Crude Oil

Crude oil is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is commingled with the commercial crude oil stream.

Inputs other than crude oil and NGL should be included with crude oil and footnoted. These include hydrogen, synthetic crude oil such as mineral oils extracted from shales, bituminous sand etc. Although they are not hydrocarbons, additives and other chemical alloys such as tetraethyl lead should be included.

Cultivar

In horticulture, a particular strain or selected clone of a given species; a cultivated variety or subspecies (of rice). In taxonomy, a grouping below the subspecies level.

Dairy cattle

Cattle producing milk for commercial exchange and calves and heifers being grown for dairy purposes.

Degradable organic carbon (DOC)

The organic carbon that is accessible to biochemical decomposition. DOC is used in the method for the estimation of CH₄ from solid waste disposal on land. See the *Reference Manual*.

Distillate Fuel Oil

See Gas/Diesel Oil.

DM

See Dry matter.

DOC

See Degradable organic carbon.

Dry (forest)

Generally consistent with the definition of open forests in previous documents. Less than 1200 mm rainfall per year.

Dry (rice fields)

Upland fields which are seldom flooded during the growing season.

Dry biomass

See Dry matter.

Dry matter (DM)

In this *Workbook* dry matter refers to biomass which has dried to an *oven dry* state. This means that all loose water has been driven off but water that is part of the carbohydrate molecule and various volatiles still remains. By contrast, dry matter which is only *air dry* may contain 15% moisture.

ECE

Economic Commission for Europe. A United Nations body.

Emission factor

A coefficient that relates the activity data to the amount of chemical compound which is the source of later emissions. Emission factors are often based on a sample of measurement data, averaged to develop a representative rate of emission for a given activity level under a given set of operating conditions.

Enteric fermentation

A process of digestion in herbivores (plant-eating animals) which produces methane as a by-product.

Ethane

A naturally gaseous straight-chain hydrocarbon, (C₂H₆) extracted from natural gas and refinery gas streams.

Evaporative emissions

Evaporative emissions fall within the class of fugitive emissions and are released from area (rather than point) sources. These are often emissions of Non-Methane Volatile Organic Compounds (NMVOCs), and are

produced when the product is exposed to the air – for example in the use of paints or solvents.

Excreta

The faecal and urinary excretions of livestock and poultry. They include, but are not necessarily limited to, manure.

FAO

Food and Agriculture Organization of the United Nations.

FCCC

Framework Convention on Climate Change. A United Nations convention.

Flaring

The burning of gas which cannot be contained or used productively. In some cases, when associated natural gas is released along with oil from production fields remote from energy users, the gas is burned off as it escapes, primarily for safety reasons. Some flaring may also occur in the processing of oil and gas.

The IPCC *Guidelines* classify emissions from venting and flaring as fugitive emissions.

See also Venting.

Fossil Fuel

Fossil Fuel comprises combustible fuels formed from organic matter within the earth's crust over geological time scales and products manufactured from them. The fuels extracted from the earth and prepared for market are termed "Primary fuels" (e.g. coal, natural gas, crude oil, lignite) and fuel products manufactured from them are termed "Secondary fuels" (e.g. coke, blast furnace gas, gas/diesel oil).

Fugitive emissions

Fugitive emissions are intentional or unintentional releases of gases from anthropogenic 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 (e.g., flaring of natural gases at oil and gas production facilities).

Gas Coke

See Coke.

Gas/Diesel Oil

Gas/diesel oil is a medium distillate oil primarily distilling between 180°C and 380°C. Several grades are available depending on uses:

- diesel oil for diesel compression ignition (cars, trucks, marine, etc.);
- light heating oil for industrial and commercial uses;

- other gas oil, including heavy gas oils which distil between 380°C and 540°C, and which are used as petrochemical feedstocks.

Gas Works Gas

Covers all types of gases including substitute natural gas produced in public utility or private plants whose main purpose is manufacture, transport and distribution of gas. It includes gas produced by carbonisation (including gas produced by coke ovens and transferred to gas works gas), by total gasification with or without enrichment with oil products (LPG, residual fuel oil, etc.), by cracking of natural gas, and by reforming and simple mixing of gases and/or air.

Gasoline

Gasoline includes the following products:

Aviation Gasoline

This is motor spirit prepared especially for aviation piston engines, with an octane number suited to the engine, a freezing point of -60°C and a distillation range usually within the limits of 30°C and 180°C.

Jet Gasoline (Naphtha type Jet Fuel or JPA)

A light hydrocarbon oil distilling between 100°C and 250°C for use in aviation turbine power units. It is obtained by blending kerosenes and gasoline or naphthas in such a way that the aromatic content does not exceed 25 per cent in volume, and the vapour pressure is between 13.7 kPa and 20.6 kPa.

Motor Gasoline

Motor Gasoline consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is used as a fuel for land-based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (Tetraethyl lead) and TML (tetramethyl lead).

GCV

See Calorific value.

Gley soil (also Gleysol)

Occur on level land, usually with a high water table (poorly drained mineral soil).

Greenhouse gases

The current IPCC inventory includes six major greenhouse gases.

Three direct greenhouse gases are included: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O) and three precursor gases are included: Carbon monoxide (CO), Oxides of nitrogen (NO_x), Non-Methane Volatile Organic Compounds (NMVOCs).

Other gases which also contribute to the greenhouse effect are being considered for inclusion in future versions of the *Guidelines*.

Gross calorific value (GCV)

See Calorific value.

Hard Coal

Includes Coking Coal*, Anthracite* and other Bituminous Coal*.

Heavy Fuel Oil

See Residual Fuel Oil.

HFCs

See Hydrofluorocarbons.

HHV

See Calorific value.

Higher heat value (HHV)

See Calorific value.

Hydrofluorocarbons (HCFC)

Hydrocarbon derivatives consisting of one or more halogens which partly replace the hydrogen. The abbreviation HCFC followed by a number designates a chemical product of the chlorofluorocarbon (CFC) family.

IEA

The International Energy Agency. An autonomous body attached to the OECD.

See also OECD.

INC

Intergovernmental Negotiating Committee (for a Framework Convention on Climate Change).

Intermittently flooded (rice fields)

Fields not inundated for the duration of the growing season, whether water is provided by managed irrigation or by rain.

IPCC

The Intergovernmental Panel on Climate Change. A special intergovernmental body established by UNEP and the WMO to provide assessments of the results of climate change research to policy makers. The *Greenhouse Gas Inventory Guidelines* are being developed under the auspices of the IPCC and will be recommended for use by parties to the Framework Convention on Climate Change (FCCC).

Jet Gasoline

See Gasoline.

Jet Kerosene

This is a distillate used for aviation turbine power units. It has the same distillation characteristics between 150°C and 300°C (generally not above 250°C) and flash point as kerosene. In addition, it has particular specifications (such as freezing point) which are established by the International Air Transport Association (IATA).

Kerosene (other than Jet Kerosene)

Kerosene comprises refined petroleum distillate and is used in sectors other than aircraft transport. It distils between 150°C and 300°C.

Kilns

Equipment used in the manufacture of cement. Vessels in which the raw materials (primarily limestone - calcium carbonate) are heated to cause a chemical process known as calcination which produces lime and CO₂.

LHV

See Calorific value.

Lignite

Non-agglomerating coals with a gross calorific value less than 17,435 kJ/kg (4165 kcal/kg) and greater than 31 per cent volatile matter on dry mineral matter free basis.

The distinction between Sub-bituminous Coal* and Lignite is not normally made in Europe.

Liquefied Petroleum Gas (LPG)

LPGs are light saturated paraffinic hydrocarbons derived from the refinery processes, crude oil stabilisation and natural gas processing plants. They consist mainly of propane (C₃H₈) and butane (C₄H₁₀) or a combination of the two. They are normally liquefied under pressure for transportation and storage.

Lower heat value (LHV)

See Calorific value.

LPG

See Liquefied Petroleum Gas.

Lubricants

Lubricants are hydrocarbons produced from distillate or residue, and they are mainly used to reduce friction between bearing surfaces. This category includes all finished grades of lubricating oil, from spindle oil to cylinder oil, and those used in greases, including motor oils and all grades of lubricating oil base stocks.

Manure

Waste materials, produced by domestic livestock, which are managed for agricultural purposes. When manure is managed in a way that involves anaerobic decomposition, significant emissions of methane can result.

Methanol

Methanol produced from natural gas should be included with refinery feedstock figures.

Moist (forest)

These are evergreen dense forests which receive significant rainfall evenly throughout the year (i.e., there is not a distinct wet and dry season). Rainfall in these forests is 2000 mm per year or more.

Montreal Protocol

The international agreement which requires signatories to control and report emissions of CFCs and related chemical substances which deplete the earth's ozone layer. The Montreal Protocol was signed in 1987 in accordance with the broad principles for protection of the ozone layer agreed in the Vienna Convention (1985). The Protocol came into force in 1989 and established specific reporting and control requirements for ozone depleting substances.

MSW

See Municipal solid waste.

Municipal solid waste (MSW)

Solid waste that is collected regularly by municipalities, e.g. household and commercial trash and garbage.

Naphtha

Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha comprises material in the 30°C and 210°C distillation range.

Natural Gas

Natural gas comprises gases at normal temperature and pressure occurring in underground deposits. In its marketed state it consists mainly of methane. It includes both "non-associated" gas coming from fields producing hydrocarbons predominantly in gaseous form and "associated" gas produced in association with crude oil. It also includes methane recovered from coal mines (colliery gas).

Production is normally measured dry, i.e. after the removal of the natural gas liquids (NGL) and impurities present in the gas at the well head. It therefore excludes gas re-injected into the wells, gas flared and gas used at the production and treatment plants.

Natural Gas Liquids (NGL)

NGL are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include ethane, propane, butane (normal and iso-), (iso) pentane and pentanes plus (sometimes referred to as natural gasoline or plant condensate).

Net calorific value (NCV)

See Calorific value

NGL

See Natural Gas Liquids.

Nitric acid

A raw material used mainly as feedstock in fertiliser production and in the production of adipic acid. The production of nitric acid can also produce nitrous oxide (N₂O).

NMVOG

See Non-Methane Volatile Organic Compounds.

Non-dairy cattle

All cattle which are not dairy cattle, including cattle kept or grown for key production, draft animals and breeding animals.

Non-Methane Volatile Organic Compounds (NMVOCs)

A class of emissions which includes a wide range of specific organic chemical substances. Non-Methane Volatile Organic Compounds (NMVOCs) play a major role in the formation of ozone in the troposphere (lower atmosphere). Ozone in the troposphere is a greenhouse gas. It is also a major local and regional air pollutant, causing significant health and environmental damage. Because they contribute to ozone formation, NMVOCs are considered "indirect" greenhouse gases.

OECD

The Organisation for Economic Co-operation and Development. A regional organisation of free-market democracies in North America, Europe and the Pacific.

Open forests

Open forests are less dense than closed forests, do not have a closed canopy, and have grasses growing on the forest floor. These forests contain less biomass per hectare than do closed forests.

Other Products

The category "Other Products" included in the energy statistics provided by the IEA includes Refinery gas*, White spirit*, Paraffin waxes*, and other products not included elsewhere such as tar, grease and sulphur.

Oxygen steel furnace gas

Obtained as a by-product of the production of steel in an oxygen furnace: it is recovered on leaving the furnace. The gas is also known as converter gas or LD gas. Data should correspond to the quantity of gas used for the production of electricity or in cases where waste heat is recovered from the gas and sold to third parties. Quantities of this gas should be included with Blast Furnace Gas.

Paraffin Waxes

These are saturated aliphatic hydrocarbons. These waxes are residues extracted when dewaxing lubricant oils. They have a crystalline structure which is more-or-less fine according to the grade. Their main characteristics are as follows: they are colourless, odourless and translucent, with a melting point above 45°C.

Patent Fuel

A composition fuel manufactured from coal fines by shaping with the addition of a binding agent (pitch). Note that the amount of patent fuel produced can be slightly higher than the amount of coal consumed in the transformation process because of the addition of pitch.

Peat

Combustible, soft, porous or compressed sedimentary deposit of plant origin with a high water content (up to 90 per cent in its natural state), easily cut, of light to dark brown colour.

Peat soil (also Histosol)

A typical wetland soil with a high water table and an organic layer of at least 40 cm thickness (poorly drained organic soil).

Perfluorocarbons (PFCs)

Carbon tetrafluoride (CF₄) and hexafluorethane (C₂F₆) which are extremely potent greenhouse gases. The only known major source of these gaseous emissions is aluminium smelting. Production and emission of PFCs results from aluminium smelting during the occurrence of electrical arcing or "anode effects."

Petroleum Coke

Petroleum coke is a black solid residue, obtained mainly by cracking and carbonising residue feedstock, tar and pitches in processes such as delayed coking or fluid coking. It consists mainly of carbon (90 to 95 per cent) and has a low ash content.

PFCs

See Perfluorocarbons.

Process emissions

Emissions from industrial processes involving chemical transformations other than combustion.

Refinery Feedstocks and Blending Components

Refinery feedstocks are processed oils destined for further processing in refineries (e.g. straight run fuel oil or vacuum gas oil). For IPCC purposes they include non-biomass alcohols as oxygenates for blending in motor gasoline whether within or outside refineries.

Refinery Gas (not liquefied)

Refinery gas includes a mixture of non-condensable gases mainly consisting of hydrogen, methane, ethane, and olefins obtained during distillation of crude oil or treatment of oil products (e.g., cracking) in refineries. This also includes gases which are returned from the petrochemical industry.

Reforestation

Planting of forests on lands which have, historically, previously contained forests but which have been converted to some other use. Replanted forests are included in the category "Changes in Forest and Other Woody Biomass Stocks" in the Land Use Change and Forestry module of the emissions inventory calculations.

See also Afforestation.

Residual Fuel Oil

This covers all residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10 cSt at 80°C. The flash point is always above 50°C and density is always more than 0.90 kg/l.

Ruminant animals

Herbivores (grazing animals such as cattle, buffalo, sheep, goats and camels) which have a large free stomach or rumen. Digestion in anaerobic conditions in the rumen can create significant emissions of methane from ruminant animals.

Savanna

Savannas are tropical and subtropical formations with continuous grass cover, occasionally interrupted by trees and shrubs. Savannas are found in Africa, Latin America, Asia and Australia.

Seasonal (forest)

Semi-deciduous forests with a distinct wet and dry season and rainfall between 1200 and 2000 mm per year.

Season length (in rice agriculture)

The number of days during which rice is grown on a given field. The field is not necessarily flooded for the entire season.

Sequestered carbon

See Stored carbon.

Sludge Gas

Sewage gas and gas from the anaerobic decomposition of animal slurries.

Steam Coal

See Bituminous Coal.

Stored carbon

Carbon retained for long periods of time within non-fuel products manufactured from fuels.

Sulphite Lies (Black Liquor)

An alkaline spent liquor from the digesters in the production of sulphate or soda pulp during the manufacture of paper. The energy content derives from the lignin removed from the wood pulp.

Sub-bituminous Coal

Non-agglomerating coals with a gross calorific value between 17,435 kJ/kg (4165 kcal/kg) and 23,865 kJ/kg (5700 cal/kg) containing more than 31 per cent volatile matter on dry mineral matter free basis.

See also Lignite. The distinction between Sub-bituminous coal and Lignite is not normally made in Europe.

Synthetic crude oil

Synthetic crude oil, including mineral oils extracted from shales, bituminous sand etc. should be included with the figures for crude oil.

Temperate (Rain Forests)

Woodland of temperate but usually rather mild climate areas with heavy rainfall, usually including numerous kinds of trees and distinguished from a tropical rain forest by the presence of a dominant tree.

Temperate Zone

The area between the Tropic of Cancer and the Arctic Circle or between the Tropic of Capricorn and the Antarctic Circle.

Trace gas emission ratios (Non-CO₂)

Ratios for carbon compounds are mass of carbon released as CH₄ or CO (in units of C) relative to mass of total carbon released from burning (in units of C). Those for nitrogen compounds are expressed as the ratios of nitrogen released as N₂O and NO_x relative to the nitrogen content of the fuel (in units of N).

Tropical (Rain Forests)

Tropical woodland with an annual rainfall of at least 100 inches and marked by lofty broad leaved evergreen trees forming a continuous canopy.

UNECE

United Nations Economic Commission for Europe.

UNEP

United Nations Environment Programme.

UNFCCC

United Nations Framework Convention on Climate Change.

US EPA

United States Environmental Protection Agency.

Vegetal Waste

Includes wood waste, straw, bagasse etc.

Venting

The release of gas to the atmosphere which cannot be contained or used productively. In some cases, when associated natural gas is released along with oil from production fields remote from energy users, the gas is allowed to escape into the atmosphere.

The IPCC *Guidelines* classify emissions from venting and flaring as fugitive emissions.

See also Flaring.

Volatile solids

The amount of organic material that disappears after drying.

Water management regime

A variety of practices used to classify rice production into categories for estimating emissions of methane. The three major water management regimes are irrigated, rainfed and deepwater. Upland (dry) rice cultivation produces little or no methane, while the continuously flooded category is a significant source.

White Spirit and SBP

White Spirit and SBP are defined as refined distillate intermediates with a distillation in the naphtha/kerosene range. They are sub-divided as:

Industrial Spirit (SBP): light oils distilling between 30°C and 200°C. There are 7 or 8 grades of industrial spirit, depending on the position of the cut in the distillation range. The grades are defined according to the temperature difference between the 5 per cent volume and 90 per cent volume distillation points (which is not more than 60°C).

White Spirit: Industrial spirit with a flash point above 30°C. The distillation range of white spirit is 135°C to 200°C.

WMO

The World Meteorological Organization of the United Nations.