

# GLOSSARY OF CLIMATE CHANGE TERMS

**Activities Implemented Jointly (AIJ)** — A pilot phase of Joint Implementation (JI), during which net emission reductions are achieved in another country in addition to domestic commitments (i.e. without credits).

**Adaptation Fund** — See Bonn Agreement.

**Additionality** — Refers to the issue of whether greenhouse gas emissions reduction or sequestration in a Joint Implementation or Clean Development Mechanism project occurs over and above the baseline and constitutes a new reduction that would not have otherwise occurred without the existence of the project.

**Ad hoc Group on Article 13 (AG13)** — The AG13 was set up in response to Article 13 of the UN/FCCC, which calls on the Parties to "consider the establishment of a multilateral consultative process for resolution of questions regarding the implementation of the Convention". Article 13 could provide innovative tools for assisting the implementation of the Convention.

**Ad hoc Group on the Berlin Mandate (AGBM)** — The AGBM was established by COP-1 to carry out a "process to enable governments to take appropriate action for the period beyond 2000, including a strengthening of developed country commitments, through the adoption of a protocol or another legal instrument". It was agreed that the AGBM's work should be completed as early as possible so that the results can be adopted at COP-3 in 1997.

**Aerosol** — Particles of matter, solid or liquid, larger than a molecule but small enough to remain suspended in the atmosphere (up to 100µ m diameter). Natural origins include salt particles from sea spray and clay particles as a result of weathering of rocks. Aerosols can also originate as a result of man's activities and in this case are often considered pollutants. Aerosols are important due to their role as participants in chemical reactions in the atmosphere and as absorbers and scatterers of solar radiation where they are considered as negative radiative forcing agents.

**Afforestation** — Establishing new forests on unforested land. Afforesting large areas of land so that trees will absorb and store carbon from the atmosphere could slow carbon dioxide build-up.

**Agenda 21** — Developed at the United Nations Conference on Environment and Development (UNCED) in Brazil in June 1992. A *blueprint* for sustainable development. Focuses up to the year 2000 and projects into the 21st century.

**Airborne Fraction** — The portion of carbon dioxide released from all energy consumption and land-use activities that remains in the atmosphere, as opposed to the amounts absorbed by plants and oceans. How the world's total carbon is partitioned among the oceanic, terrestrial, and atmospheric pools is determined by complex biogeochemical and climatological interactions.

**Albedo** — The fraction of sunlight that is reflected by earth, ice, and clouds back into space. The value for today's earth is about one-third (i.e. two-thirds of the sunlight is absorbed).

**Alliance of Small Island States (AOSIS)** — Group of Pacific and Caribbean nations who call for relatively fast action by developed nations to reduce greenhouse gas (GHG) emissions. The AOSIS countries fear the effects of rising sea levels and increased storm activity predicted to accompany global warming.

**Annex A** — Annex to the Kyoto Protocol listing the GHGs and sector/source categories.

**Annex B** — Annex to the Kyoto Protocol listing the quantified emission limitation or reduction commitment per Party.

**Annex I Parties** — Countries with a quantitative CO<sub>2</sub> target (OECD, Central and Eastern European Countries, listed in Annex I to the UNFCCC).

**Annex II Parties** — OECD countries (listed in Annex II to the UNFCCC).

**Non-Annex I Parties** — Countries without a quantified CO<sub>2</sub> target (also non-Annex B).

**Anthropogenic Emissions** — Emissions of GHGs caused by man's activities.

**Article 2.3 of the Kyoto Protocol** — "The Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimise adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties and in particular those identified in Article 4, paragraphs 8 and 9, of the Convention, taking into account Article 3 of the Convention. The Conference of the Parties serving as the meeting of the Parties to this Protocol may take further action, as appropriate, to promote the implementation of the provisions of this paragraph."

**Article 3.14 of the Kyoto Protocol** — "Each Party included in Annex I shall strive to implement the commitments mentioned in paragraph 1 above in such a way as to minimise adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. In line with relevant decisions of the Conference of the Parties on the implementation of those paragraphs, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, consider what actions are necessary to minimise the adverse effects of climate change and/or the impacts of response measures on Parties referred to in those paragraphs. Among the issues to be considered shall be the establishment of funding, insurance and transfer of technology."

**Article 4.8 of the FCCC** — Article 4.8 in the UNFCCC that is relevant to the concerns of oil exporting countries about the impact of climate change mitigation measures:

"In the implementation of the commitments in this Article, the Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures, especially on:

- (a) Small island countries;
- (b) Countries with low-lying coastal areas;
- (c) Countries with arid and semi-arid areas, forested areas and areas liable to forest decay;
- (d) Countries with areas prone to natural disasters;
- (e) Countries with areas liable to drought and desertification;
- (f) Countries with areas of high urban atmospheric pollution;
- (g) Countries with areas with fragile ecosystems, including mountainous ecosystems;
- (h) Countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products; and
- (i) Land-locked and transit countries.

Further, the Conference of the Parties may take actions, as appropriate, with respect to this paragraph."

These concerns are reiterated in Article 3.14 of the Kyoto Protocol (see separate item).

**Article 4.9 of the FCCC** — "The Parties shall take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology."

**Asian Least-Cost GHG Abatement Strategies (ALGAS)** — The ALGAS project is a regional technical assistance project implemented by the Asian Development Bank in collaboration with UNDP/GEF, and a number of other international and national institutions. It was initiated in 1995 and co-financed by the GEF through UNDP, the Asian Development Bank, and Norway, in addition to in-kind contributions by the governments of the participating countries. The programme focuses on helping the participating countries with meeting their commitments under the UNFCCC with respect to: preparing GHG emissions inventories; formulating national GHG abatement strategies; and developing a stock of GHG abatement projects.

**Assigned amounts (AA)** — the official term in the Kyoto Protocol defining the total allowed emissions for a Party over the commitment period 2008–12. Emissions trading, JI and the CDM could add to or subtract from this amount. More general terms used in the literature are allowance, cap, entitlement, permit and quota, but some of these are more appropriate at the corporate level.

**Benzene** — The simplest aromatic compound, an industrial solvent being replaced where possible by other compounds, e.g. toluene, since it is carcinogenic. Limits for exposure at work and regulations on its use are set in many countries due to concern over the incidence of leukaemia. Most motor spirit specifications now put a maximum benzene content of 5%. It is a highly flammable liquid. The basis for all aromatic organic molecules, for all are derived by replacing one or more of the hydrogen atoms by more complex groups.

**Berlin Mandate** — The Conference of the Parties at its first session, by its decision 1/CP.1 known as the Berlin Mandate, agreed to begin a process to enable it to take appropriate action for the period beyond 2000 through the adoption of a protocol or another legal instrument, including by strengthening the commitments of Annex I Parties in Article 4.2(a) and (b) and continuing to advance the implementation of existing commitments in Article 4.1. The AGBM was established by the Conference of the Parties to conduct this process, with a view to adopting the results at the third session of the Conference of the Parties.

**Bonn Agreement** — Produced at the resumed COP-6, July 2001, covering a set of issues aimed at ensuring the survival of the Kyoto Protocol. Key elements include: inclusion of sinks in the Kyoto mechanisms, exclusion of nuclear in CDM, no formal ceiling on the use of the mechanisms, and establishment of new funding for developing countries, including the objective of assisting with diversification countries that may suffer from mitigation measures, such as OPEC Member Countries. The Bonn Agreements and related decisions provide for the establishment of three new funds: a special climate change fund and a least developed countries fund under the Convention, and an adaptation fund under the Kyoto Protocol. All three funds will most certainly be managed by the entity which operates the financial mechanism of the Convention. The special climate change fund will finance activities relating to climate change in the areas of adaptation; technology transfer; energy, transport, industry, agriculture, forestry and waste management; as well as activities to assist developing countries whose economies are highly dependent on income generated from fossil fuels in diversifying their economies. The least developed countries fund will support a work programme for the LDCs. The adaptation fund, operating under the Kyoto Protocol, will be financed from the "share of the proceeds" on the clean development mechanism and other sources of funding. Several Annex II Parties have already pledged to collectively contribute US\$410 million a year to the funds by 2005. Also as a part of the Bonn Agreements, Annex II Parties must report on their financial contributions under the Convention on an annual basis, and Annex I Parties that intend to ratify the Kyoto Protocol must likewise report annually on their financial contributions under the Protocol.

**Brundtland** — The usual shorthand for the report, published in 1987 by the UN World Commission on Environment and Development, under the title 'Our Common Future'. It advocates the adoption of energy and environmental policies which would not threaten the world environment, yet at the same time allow economic growth. These policies would adhere to the concept of 'sustainable development' which would allow the needs of the present to be met without compromising the ability of future generations to meet their own needs. The report is named after Gro Harlem Brundtland, the Prime Minister of Norway, who chaired the study.

**Bubble** — Refers to the idea that emissions reductions anywhere within a specific area count toward compliance. For example, if a plant with multiple emissions sources is treated as being "under an emissions bubble", regulators assess only the total emissions of the plant, not the emissions of each individual source, in determining compliance.

**Buenos Aires Plan of Action (BAPA)** — The Buenos Aires Plan of Action was adopted at the Fourth Session of the Conference of the Parties in November 1998. The action plan would accelerate work on the 1992 United Nations Framework Convention on Climate Change and prepare the way for industrialised countries to take future action under the 1997 Kyoto Protocol. The plan established deadlines for finalising the outstanding details of the Protocol, so that the agreement would be fully operational when it entered into force. In addition to the Protocol's "mechanisms", it addressed work on compliance issues and on policies and measures. In addition, it boosted work on transferring climate-friendly technologies to developing countries and addressed the special needs and concerns of countries affected by global warming and by the economic implications of response measures.

**CAFE (Corporate Average Fuel Economy)** — The salesweighted harmonic mean mpg of a manufacturer's products. CAFE standards require car-makers to meet this sales-weighted level for its fleets of new cars and light trucks.

**Carbon Cycle** (sometimes "Natural Carbon Cycle") — All parts (reservoirs) and fluxes of carbon; usually thought of as a series of the four main reservoirs of carbon interconnected by pathways of exchange. The four reservoirs, regions of the Earth in which carbon behaves in a systematic manner, are the atmosphere, terrestrial biosphere (usually includes fresh water systems), oceans and sediments (includes fossil fuels). Each of these global reservoirs may be subdivided into smaller pools, ranging in size from individual communities or ecosystems to the total of all living organisms (biota).

**Carbon Dioxide (CO<sub>2</sub>)** — Non-toxic, naturally occurring gas. Also a by-product of burning fossil fuels. One of the "greenhouse gases" that affects the Earth's temperature.

**Carbon Sink** — A pool (reservoir) that absorbs or takes up released carbon from another part of the carbon cycle. For example, if the net exchange between the biosphere and the atmosphere is towards the atmosphere, the biosphere is the source and the atmosphere is the sink.

**Carbon Taxes** — Levies placed on fossil fuels; the tax rate is based on the carbon content of the fuel.

**CC:INFO** — The Climate Convention Information Exchange Programme created jointly by UNFCCC and UNEP.

**CC:TRAIN** — The CC:TRAIN programme was launched in 1993 to promote the long-term implementation of the Climate Change Convention by developing countries. By focusing on education and the training of national policymakers and other stakeholders, the programme aims to maximise public involvement in realising the Convention's goals. It also seeks to strengthen institutions and to build capacity for preparing the national communications that developing countries must submit to the Conference of the Parties to the Convention.

**Certified Emission Reductions (CERs)** — or Certified Emission Reduction Units (CERUs) are verified and authenticated units of greenhouse gas reductions from abatement or sequestration projects which are certified by the Clean Development Mechanism.

**CFCs** — See "chlorofluorocarbons".

**Chlorofluorocarbons (CFCs)** — A family of inert non-toxic and easily liquefied chemicals used in refrigeration, air conditioning, packaging and insulation or as solvents or aerosol propellants. Because they are not destroyed in the lower atmosphere, they drift into the upper atmosphere where their chlorine components destroy ozone.

**Clean Development Mechanism (CDM)** — Defined in Article 12 of the Kyoto Protocol, the purpose of this Mechanism is to support non-Annex I countries in achieving sustainable development through projects set up in co-operation with Annex I Parties. Annex I Parties may use the certified emission reductions accruing from such projects to comply with their QELROS commitments.

**CONCAWE (Oil Companies' European Organisation for Environmental and Health Protection)** — Founded in 1963, originally referred to as Oil Companies' International Study Group for Conservation of Clean Air and Water in Europe; now also referred to as Oil Companies' European Organisation for Health, Safety and Environmental Protection, it aims to study environmental and health aspects of oil processing, handling and use in Europe.

**COP (Conference of the Parties to the UN Framework Convention on Climate Change)** — The COP is the collection of nations which have ratified the UNFCCC. The first meeting was in Berlin from 28 March – 7 April 1995. The result was a mandate to begin a process toward appropriate action for the period beyond 2000, the so-called "Berlin Mandate" (see AGBM). The Second Conference of the Parties (COP-2) met in Geneva from 8-19 July 1996 and concluded by noting the "Geneva Declaration", which endorsed the IPCC conclusions and called for legally binding objectives and significant reductions in GHG emissions. COP-3, meeting in Kyoto, Japan, in December 1997, adopted the "Kyoto Protocol", setting emission targets for Annex I countries. COP-4, meeting in Buenos Aires in November 1998, adopted the "Buenos Aires Plan of Action". COP-5, held in Bonn in October/November 1999, discussed the Buenos Aires Plan of Action.

**COP-6** — Sixth Session of the Conference of the Parties to the UNFCCC.

**COP-6+** — Resumed session of COP-6.

**COP/MOP** — COP serving as the Meeting of the Parties to the Kyoto Protocol.

**Deforestation** — Cutting most or all of the trees in a forested area. Deforestation contributes to warming by releasing carbon dioxide, changing the albedo (amount of sunlight reflected from the surface) and reducing the amount of carbon dioxide taken out of the atmosphere by trees.

**Double Dividend** — Refers to the notion that environmental taxes can both reduce pollution (the first dividend) and reduce the overall economic costs associated with the tax system by using the revenue generated to displace other more distortionary taxes that slow economic growth at the same time (the second dividend).

**Earth Summit** — See "United Nations Conference on Environment and Development".

**EC Technical Assistance Programme to the CIS (TACIS)**

**El Niño** — A vast, naturally occurring pool of warm water that sometimes forms in the tropical central Pacific and affects the climate and global weather systems.

**Emissions Leakage** — A concept used in reference to the problem that emissions abatement achieved in one location may be offset by increased emissions in unregulated locations.

**Emission reduction units (ERU)** — can be earned with JI projects.

**Emissions Trading** — An economic incentive-based alternative to command-and-control regulation. In an emissions trading programme, sources of a particular pollutant (most often an air pollutant) are given permits to release a specified number of tons of the pollutant. The government issues only a limited number of permits consistent with the desired level of emissions. The owners of the permits may keep them and release the pollutants, or reduce their emissions and sell the permits. The fact that the permits have value as an item to be sold or traded gives the owner an incentive to reduce their emissions.

**Environmental Protection Agency (EPA)** — Executive branch agency that conducts pollution control activities in the US, as they are mandated by certain laws, including the Clean Air Act.

**EU Bubble** — In the context of international climate change negotiations refers to the notion that the European Union (EU) as a whole would accept some aggregate limit on carbon reductions but that the limit would not have to be shared pro rata by all members.

**Externalities** — Occur when the activity of one person has an inadvertent impact on the well-being of another person. Many aspects of environmental degradation, such as air pollution, global warming, loss of wilderness, and contamination of water bodies, are viewed as externalities of economic transactions.

**Flexibility Mechanisms** — The term "flexibility mechanisms", which has commonly referred to Joint Implementation, the Clean Development Mechanism and international emissions trading as mandated in the Kyoto Protocol, has now been discarded in favour of the phrase "Kyoto mechanisms". This change in terminology occurred because representatives from developing countries found the term "flexibility" controversial — they believed that term implied that flexibility was intended only for developed countries, rather than all countries.

**Framework Convention on Climate Change (FCCC)** — see UN Framework Convention on Climate Change.

**General Circulation Models (GCM)** — Hydrodynamic models of the atmosphere on a grid or spectral resolution that determine the surface pressure and the vertical distributions of velocity, temperature, density and water vapour as functions of time from the mass conservation and hydrostatic laws, the first law of thermodynamics, Newton's second law of motion, the equation of state, and the conservation law for water vapour. Abbreviated as GCM. Atmospheric general circulation models are abbreviated AGCM, while oceanic general circulation models are abbreviated OGCM.

**Global Environment Facility (GEF)** — Joint programme of the World Bank, the United Nations Development Programme (UNDP) and the United Nations Environment Programme. Serves as a clearing house for funding programmes in developing countries and countries with economies in transition that support biodiversity and reductions in GHG emissions.

**Global Warming** — Theory that the temperature of the Earth is being increased due to the man-made emissions of GHGs.

**Global Warming Potentials (GWPs)** — The radiative forcing that results from the addition of 1 kilogram of a gas to the atmosphere, relatively to that of 1 kilogram of carbon dioxide. Over a time horizon of 100 years, methane has a GWP of 24.5, nitrous oxide has a GWP of 320, and CFC-11 has a GWP of 4,000.

**Grandfathering** of emissions permits is a method by which permits for greenhouse gas emissions may be allocated among emitters and firms in a domestic emissions trading regime according to their historical emissions. Supporters of this method of emissions trading assert that this would be administratively simple but some critics argue that this method would reward firms with high historical emissions and unfairly complicate entry into markets by new firms and emitters.

**Greenhouse Effect** — A popular term used to describe the roles of water vapour, carbon dioxide and other trace gases in keeping the Earth's surface warmer than it would be otherwise. The "radiatively active" gases are relatively transparent to incoming shortwave radiation, but are relatively opaque to outgoing longwave radiation. The latter radiation, which would otherwise escape to space, is trapped by these gases within the lower levels of the atmosphere. The subsequent re-radiation of some of the energy back to the surface maintains surface temperatures higher than they would be if the gases were absent. There is concern that increasing concentrations of GHGs, including carbon dioxide, methane and man-made chlorofluorocarbons, may enhance the greenhouse effect and cause global warming.

**Greenhouse Gases (GHG)** — Those gases, such as water vapour, carbon dioxide, tropospheric ozone, nitrous oxide and methane, that are transparent to solar radiation but opaque to longwave radiation. Their action is similar to that of glass in a greenhouse.

**Halon** — Chemical compound used in firefighting. A halon may be any of a group of halogenated hydrocarbons, most of which are derived from methane or ethane by replacing some or all of the hydrogen atoms with atoms of the halogen series (fluorine, bromine, chlorine, or iodine). Halons are considered destructive of the Earth's ozone shield.

**Hydrofluorocarbons (HFCs)** — Greenhouse gas produced commercially as a substitute for chlorofluorocarbons.

**IET** — International emissions trading.

**INC (Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC/FCCC))** — Established on 11 December 1990 by the UN General Assembly, supported by the UNEP and WMO, the mandate of the INC/FCCC was to prepare an effective framework convention on climate change. The eleventh and final session of the INC/FCCC was in February 1995 to complete the preparations for the first Conference of the Parties.

**Intergovernmental Panel on Climate Change (IPCC)** — Panel established in 1988 by the World Meteorological Organization and the UN Environment Programme. It is a technical, scientific intergovernmental body that prepares reports on the issue of climate change, its environmental, economic and social impacts and possible national and international responses to such changes, and provides advice to the INC/COP.

**International Petroleum Industry Environmental Conservation Association (IPIECA)** — An association of international oil companies and sectional associations set up in 1974 to be the point of contact for the oil industry with the UNEP, and with which it has held a number of international conferences.

**Joint Implementation (JI)** — Prior to the Kyoto Protocol, JI referred to voluntary projects between a developed and a developing country that resulted in either greenhouse gas emission reductions or carbon sequestration. Another term, "Activities Implemented Jointly" or AIJ, refers to JI pilot projects. The Kyoto Protocol changed these definitions, and authorised the three Kyoto Mechanisms to be used to meet binding quantitative emissions reductions targets (as opposed to serving merely as pilot projects). JI now refers only to greenhouse gas reduction or sequestration projects that occur between Annex B, or developed, countries. Such projects are likely to occur primarily between the higher-emitting Annex B countries such as the USA and Japan, and economies in transition, primarily Russia.

**JUSSCANNZ** — Refers to the non-European industrialised countries that meet periodically to discuss various issues related to climate change. These countries include Japan, the United States, Switzerland, Canada, Australia, Norway and New Zealand.

**Kyoto Mechanisms** — see Flexibility Mechanisms.

**Kyoto Protocol** — More formally, the Kyoto Protocol to the United Nations Framework Convention on Climate Change. Adopted at COP-3 in Kyoto, Japan, in December 1997, establishing, *inter alia*, GHG emission limits for Annex I countries. Under the Protocol, overall reduction in Annex I emissions is calculated to be 5.2% from 1990 levels although individual nations have widely differing targets.

**Land-use, land-use change and forestry (LULUCF)** — are part of the regulated activities under the Kyoto Protocol, treated separately from other emissions and restricted to certain categories of human-induced changes.

**Least developed countries fund** — See Bonn Agreement.

**Longwave Radiation** — The radiation emitted in the spectral wavelength greater than 4  $\mu\text{m}$  corresponding to the radiation emitted from the Earth and atmosphere. It is sometimes referred to as "terrestrial radiation" or "infrared radiation", although somewhat imprecisely.

**Methane (CH<sub>4</sub>)** — A GHG with a relatively short atmospheric lifetime of 10+ years. The primary sources of methane are landfills, coal mines, natural gas systems and livestock.

**mmtce (Million metric tons of carbon equivalent)** — Standardised measurement of GHGs used to compare emission levels.

**Montreal Protocol** — An international treaty signed in 1987 that limits production of chlorofluorocarbons.

**ODA (Official Development Aid)** — Loans (including technical co-operation grants) of donor countries (OECD) to recipient countries (developing countries). There are differences in the coverage and presentation of data on official flows published by the World Bank in *Global Development Finance* and by the OECD in *DAC Development Report*. The major differences are data sources, geographic coverage, other official flows, technical co-operation grants and debt forgiveness. In addition, when the volume of official flows is expressed in real terms, the OECD and the World Bank use different methodology to derive the relevant deflators.

**Ozone (O<sub>3</sub>)** — A molecule made up of three atoms of oxygen. In the stratosphere, it occurs naturally and provides a protective layer shielding the Earth from ultraviolet radiation and subsequent harmful health effects on humans and the environment. In the troposphere, it is a chemical oxidant and major component of photochemical smog.

**Particulates** — The term used for microscopic air-borne material, which may be natural and usually benign even if irritating (for example from volcanoes or sand-storms), or be man-made, (for example that from the combustion of fossil fuels), which may be harmful, and even toxic. Most industrial dust is filtered out of exhausts. Particulates in the atmosphere may reduce visibility, reduce solar radiation falling on the earth, provide nuclei for cloud formation and affect rainfall. They may be deposited, ingested or affect lung tissue (for example, asbestosis). Emission limits for particulates are placed on many industrial processes, including power generation, and vehicles.

**PCF (Prototype Carbon Fund)** — The World Bank launched in January 2000 the first global market to reduce carbon emissions. With the creation of the Prototype Carbon Fund (PCF), four governments and nine companies — including six Japanese electric power companies — have agreed to participate in the fund, which will raise money from the public and private sectors to finance projects aimed at reducing greenhouse gas emissions in developing countries.

**PHARE** — Poland and Hungary, Aid for Reconstruction of the Economy; a programme of the EU which provides economic aid to the countries of Central Europe, including the Baltic states Estonia, Latvia and Lithuania.

**Photo-voltaics** — The means for producing electricity directly from light, particularly solar radiation, using a photocell. The attractions are an inexhaustible energy source, no maintenance, long life, lightweight, pollution-free, but the disadvantage is, at present, the high initial cost. In use in remote locations, for example in space, for navigational light-buoys, trickle chargers and many experimental applications, for example for domestic use and in Third World countries. Much research is in hand to improve efficiency and to reduce manufacturing costs.

**ppm (parts per million)** — A convenient way of expressing low concentrations of one particular compound in another, usually in air or water. For example, the solubility of oxygen in cold water is about 6 ppm, or coal, when burnt in a power station, may give some 500 ppm sulphur dioxide in the stack gases (without treatment). Usually parts per million by volume is implied, and may be written ppmv, but parts per million by mass, ppmm or ppmw (for weight) may be used.

**QELROS** — Quantified Emission Limitation and Reduction Objectives.

**Quantified emission limitation and reduction commitment (QELRC)** — The commitments adopted under Annex B of the Protocol. Before Kyoto QELRO was used (O = objective) as the general term for greenhouse gas targets and timetables.

**Renewables** — Energy sources that are indefinitely sustainable, such as solar energy, geothermal heat, hydropower and wind.

**Rio Summit** — See "UN Conference on Environment and Development".

**SAVE (Specific Actions for Vigorous Energy Efficiency)** — An EC programme concerned with the promotion of energy efficiency by organisational means. The programme is divided into three complementary categories: actions of a technical nature; actions of a financial nature; action on user behaviour.

**Secondary pollutants** — Chemical compounds (or radicals) formed in the atmosphere from other chemicals present, and not emitted as such. For example, ozone is formed from nitrogen oxides and hydrocarbons emitted, e.g. by car engines (note that there is evidence that a decrease in one only could lead to an increase in ozone production). Hundreds of different reactions have been identified.

**Shortwave Radiation** — The radiation received from the sun and emitted in spectral wavelengths less than 4 µm. It is also called "solar radiation".

**Smog** — Although first coined in 1905 from a combination of smoke and fog, the term only came into general use to describe the Los Angeles photochemical haze, irritating to the eyes and throat, and generated from small-scale incineration and vehicle exhausts. It was thought initially to be unique to the LA basin, because of its topography and weather, but is now detected in many urban conurbations. Also used to describe the London fog of 1952 which caused some 4,000 deaths and which led to the Beaver report in 1954 and, from that, the Clean Air Act 1956.

**Solar Constant** — The rate at which solar energy is received just outside the Earth's atmosphere on a surface that is normal to the incident radiation and at the mean distance of the Earth from the sun. The current value is 0.140 watt/cm<sup>2</sup>.

**Special Climate Change Fund** — See Bonn Agreement.

**Stratosphere** — The region of the upper atmosphere extending from the tropopause (8-15 km altitude) to about 50 km. The thermal structure is determined by its radiation balance and is generally very stable with low humidity.

**Subsidiary Body for Scientific and Technological Advice (SBSTA)** — The SBSTA is a permanent subsidiary body established by the UN/FCCC. Its role is to serve as the link between the information and assessments provided by expert sources on the one hand, and the policy-orientated needs of the COP on the other. The SBSTA will achieve its maximum potential if it can operate as a non-politicised group of experts. Among other activities, the SBSTA will soon start discussing the guidelines to be used by the developing countries in preparing their first national communications. It will also conduct an inventory of available technologies that will be a valuable input for the AGBM.

**Subsidiary Body on Implementation (SBI)** — The SBI is a permanent subsidiary body established by the UN/FCCC. Its role is to assist the COP in assessing and reviewing the Convention's implementation. It addresses organisational, institutional and budgetary matters. The SBI has recently considered a draft memorandum of understanding between the COP and the Council of the Global Environmental Facility (GEF).

**Sustainable Development** — A broad concept referring to the need to balance the satisfaction of near-term interests with the protection of the interests of future generations, including their interests in a safe and healthy environment. As expressed by the 1987 UN World Commission on Environment and Development (the "Brundtland Commission"), sustainable development "... meets the needs of the present without compromising the ability of future generations to meet their needs."

**Technologies Européennes pour la maîtrise de l'énergie (THERMIE)** — aims to support projects for the application of new energy technologies whose realisation is associated with a considerable degree of risk.

**Trace Gas** — Any one of the less common gases found in the Earth's atmosphere. Nitrogen, oxygen, and argon make up more than 99% of the Earth's atmosphere. Other gases, such as carbon dioxide, water vapour, methane, oxides of nitrogen, ozone, and ammonia, are considered trace gases. Although relatively unimportant in terms of their absolute volume, they have significant effects on the Earth's weather and climate.

**Troposphere** — The inner layer of the atmosphere below about 15 km, within which there is normally a steady decrease of temperature with increasing altitude. Nearly all clouds form and weather conditions manifest themselves within this region, and its thermal structure is caused primarily by the heating of the Earth's surface by solar radiation, followed by heat transfer by turbulent mixing and convection.

**Umbrella group** — the Umbrella group, which emerged at Kyoto and afterwards, brings the JUSSCANNZ countries except Switzerland together with the Russian Federation and Ukraine. They typically favour unrestricted trade of emissions permits.

**UN Commission on Sustainable Development** — Commission consisting of representatives from 53 states whose purpose is to monitor progress made by governments and UN agencies in reaching their commitments to the Framework Convention on Climate Change. In addition, the Commission will oversee the implementation of Agenda 21, a blueprint for environmentally sustainable development for the 21st century.

**UN Conference on Environment and Development (UNCED)** — Summit held in Rio de Janeiro, Brazil, in June 1992 at which the UN Framework Convention on Climate Change was signed. It is also referred to as the "Earth Summit" or the "Rio Summit".

**UN Framework Convention on Climate Change (UNFCCC)** — Intergovernmental Negotiating Committee treaty signed at the 1992 Earth Summit, with an ultimate objective to "stabilise GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (man-made) interference with the climate system". While no legally binding level of emissions is set, the treaty states the "aim of returning these emissions to the 1990 levels". The Convention having been ratified by the minimum requirement of 50 countries, the Intergovernmental Negotiating Committee became a permanent institution (to be called the Conference of the Parties) working to achieve Convention goals.

**United Nations Environment Programme (UNEP)** — Created after the 1972 Stockholm UN Conference on the Human Environment to provide the focus for worldwide discussion and action on urgent environmental threats (for example, the recent, 1987, Montreal agreement on CFCs) and international monitoring. It maintains an office in Paris concerned with industry and the environment, with close liaison with some ten major industries.

**Volatile Organic Compounds (VOC)** — A general term replacing "hydrocarbons" when referring, for example, to discharges into the atmosphere, since some organic compounds being emitted may contain elements in addition to hydrogen and carbon. Most originate from transport operations and solvent use.

### **Sources**

*"Glossary: Carbon Dioxide and Climate", Carbon Dioxide Information Analysis Centre, Oak Ridge National Laboratory, August 1990; Encyclopaedia Britannica; "Energy and Environmental Terms: A Glossary" (P.Brackley, 1998); UN Climate Change Bulletin; OPEC Secretariat; Trexler and Associates, Inc; Public Utilities Commission of Ohio; Weathervane (Resources for the Future), Joint Implementation Quarterly, The Kyoto Protocol – Guide and Assessment, Grubb et al (1999).*