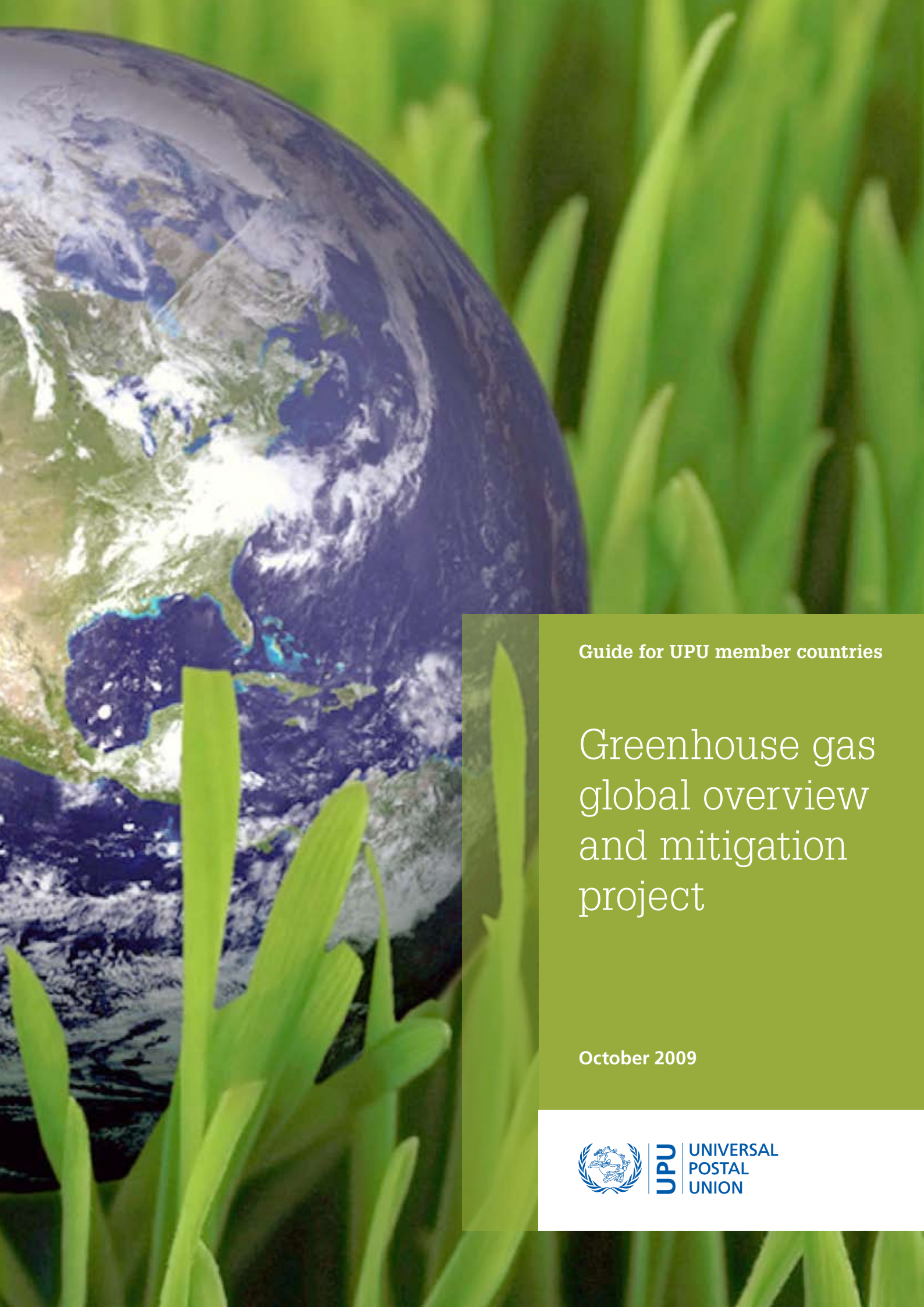


Guide for UPU member countries

Greenhouse gas global overview and mitigation project

October 2009

UPU
UNIVERSAL
POSTAL
UNION

Foreword

Sustainable development, a major challenge for our planet, has also become an unavoidable issue for the postal sector. The links between the postal sector and the environmental aspects of sustainable development are clear: the sector's impact on the environment and on climate change in particular is undeniable. A few facts about the postal sector provide ample proof. It has:

– around 660,000 post offices open to the public;

– over 700,000 motor vehicles and 250,000 motor cycles travelling hundreds of thousands of kilometres each year;

– hundreds of intercontinental flights a day; and

– thousands of tonnes of paper, ink cartridges and chemical products used each year.

This means that the postal sector consumes vast quantities of natural resources (fuel, wood, metal) and, most importantly, produces considerable amounts of polluting emissions, particularly greenhouse gases, which cause climate change.

As international efforts to tackle climate change are constantly being stepped up, and the spotlight falls on one of its main sources, the business world, every sector of activity is putting time and effort into combating this major problem of our time.

The postal sector is no exception: although postal operators bear some responsibility for the problem, they can also be an integral part of its solution.

Action taken in this area shows the postal sector to be a responsible player in the economy, aware of environmental issues, and committed to reducing the harmful impact of its activities on the environment. It is also a means of anticipating the ever stricter and more numerous new regulations on economic activities, for example by identifying the effects of integrated transport in the emissions control system set out in the Kyoto Protocol. This is especially a means of sustaining their business or

create new levers for growth in meeting the ever-increasing expectations of their customers who want a greener sector.

Recognizing the importance of this, the Universal Postal Union (UPU) decided at its 24th Congress to step up efforts to promote sustainable development, and in particular initiatives to combat global warming.

In recommendation C 27/2008 "Initiatives for the sustainable reduction of the negative environmental impact of the postal sector" and resolution C 34/2008 "Work on sustainable development" it undertakes to urge its members to assess and successfully reduce their carbon footprint, and to provide them with technical support in order to do so.

To promote these efforts, it has developed a specific programme, the *Greenhouse Gas Global Overview and Mitigation Project*, designed to measure the postal sector's impact on climate change and to encourage initiatives to reduce that impact, particularly through the exchange of sound environmental practices.

The first step in the process of reducing the sector's carbon footprint is to take stock of the polluting emissions associated with postal activities.

To this end, the UPU is now making available to all its member countries and their designated operators this "inventory guide", to assist them in the first phase of the sector-wide survey of greenhouse gas emissions.

The purpose of this guide is to explain how the UPU’s International Bureau intends to map these emissions, with particular reference to its cooperation with the Restricted Unions and the United Nations Environment Programme (UNEP). It also points out the need for member countries' active cooperation in collecting the data needed to implement this inventory.

Participation by all is crucial in order to build together a sustainable postal sector turned towards the future.

Edouard Dayan
Director General

1 A general standard and a specific guide

In June 2008, postal operators received the UPU's first questionnaire on greenhouse gas emissions. The aim of this three-part questionnaire was to identify the annual fuel consumption of the vehicle fleet, the number of kilometres travelled by each means of transport, and the amounts of fuel and electricity used for lighting, heating, air-conditioning and the daily running of the buildings.

1.1 An inventory drawn up by the UPU

Given the low level of response in the first year, mainly due to the difficulty experienced by some operators in finding and providing data, and in view of the importance of this inventory, the UPU relaunched the questionnaire in May 2009. Its purpose in doing so was to produce a regional map of postal sector emissions by the end of 2009.

It is important to note that this inventory will be drawn up by the International Bureau itself, on the basis of figures provided by UPU member countries.

1.2 …in conjunction with all the players involved

The UPU wished to carry out this exercise in cooperation with key partners. It therefore sought the expertise of the United Nations Environment Programme (UNEP), with which it signed a cooperation agreement in 2008. Among other things, the UNEP read and endorsed the questionnaires sent out to the 191 member countries. In addition, the UPU decided to work in conjunction with PostEurop which has also embarked on programme to assess the carbon footprint of its members.

Besides, since March 2009, the UPU, PostEurop and IPC have been working jointly on developing a common inventory method for all three organizations, thus enabling the harmonization of data collected from their members. This should, ultimately, make it possible to produce reliable results for the sector as a whole. This partnership has led to the creation of a tripartite working committee to develop a common standard for measuring greenhouse gas emissions, the *Standard Protocol,* which will be referred to later in this document.

1.3 A common standard for three postal organizations

This will be a lasting cooperation, as the three organizations aim to extend the scope of their inventories each year, and to include as many operators as possible.

The *Standard Protocol* is based on internationally recognized sources in this field, such as the *GHG Protocol* of the WRI/WBCSD (World Resources Institute and World Business Council for Sustainable Development), the International Energy Agency, the *Global Reporting Initiative* (GRI) and the ISO 14000 standards (14,064 and 14,065); it can be used by the designated postal operators of the 191 UPU member countries.

The purpose of this document is to identify all possible sources of emissions resulting from postal activities. It is a tool for understanding the methods of calculation used to carry out a carbon inventory. To this end, it provides information on the indicators used, the preferred methods of collection and consolidation.

As such, it is the most advanced tool for the postal sector. The ultimate aim of operators over the coming years should be to identify, collect and consolidate all the data envisaged in the *Standard,* to form part of a detailed, global inventory.

1.4 A specific guide for UPU members

The UPU must, however, take into account the different levels of development of its member countries. This prompted its decision to carry out an initial inventory that would be less detailed than the one envisaged in the *Standard Protocol,* and to focus on the main sources of emissions from postal sector activities (transport and buildings).

To this end, the UPU has created a tool for calculating emissions automatically from raw data provided by its members, which is entered after it has been checked, consolidated and converted.

This document is an explanatory guide to the method used by the UPU. It is a specific, simplified version of the *Standard Protocol*, which follows the same lines while taking into account the specificities of UPU member countries. The two documents are complementary:

– the *Standard* sets out the optimum terms of reference to aim for;

– this Guide defines the minimum scope of the UPU inventory.

It describes the procedures to be followed in order to participate in and contribute to the UPU inventory. It enables the harmonization of the data received, the calculations made and, consequently, the results obtained.

This guide can also be used by all operators wishing to draw up an inventory and then reduce their greenhouse gas emissions.

(In the event of an external audit, the UPU will submit both the Guide and the Standard as reference documents to enable the auditors to check the data published.)

2 Key principles of the UPU inventory

To ensure its success, all member countries must be involved in the inventory project. Widespread participation will ensure that the inventory is representative, thus giving sufficient credibility to the results obtained.

2.1 Geographical scope of the inventory

Each designated operator should base the data provided to the UPU on its national activity. Those that also operate in other countries are asked to provide figures for their activities abroad, indicating in each case the country to which the data supplied corresponds. As a minimum, a questionnaire should be completed for the designated operator's country of origin.

2.2 Organizational scope of the inventory

All the designated operator's branches and subsidiaries should be taken into account in this inventory. Businesses in which the designated operators has a majority shareholding (over 50% + one branch) must also be included. However, businesses in which the operator has a minority shareholding should not be included.

2.3 Quality of data received by the UPU

To guarantee the quality of the inventory, data submitted by members should meet the following five criteria: relevance, completeness, reliability, clarity and neutrality.[1] Each of these criteria affects the reliability of the inventory, and therefore has an impact on the credibility of the sector as a whole.

Relevance: data sent to the UPU should, as a minimum, cover the activities selected and described in the terms of reference approved by the UPU.

Completeness: none of the sources chosen and included in the terms of reference by the UPU should be disregarded by operators, unless they can explain why they are unable to provide the data concerned.

Reliability: operators should be able to support or explain the data by means of official documents (bills, contracts, etc.).

Clarity: data supplied by operators should be clear, sound, and unambiguous. Figures provided on this basis should also be expressed in a convertible unit (a unit recognized by the International System of Units – SI).

Neutrality: the information provided must be objective and not modified (for example, in an attempt to reduce the carbon footprint).

2.4 Collection and consolidation of data

In the further interests of ensuring the coherence and credibility of the results calculated by the UPU, operators should specify whether the data provided are proven (precisely measurable) or estimated.

2.4.1 Units

Financial data (i.e. the annual fuel bill expressed in CHF, USD, EUR, etc.) are not equivalent to units of measurement (as recognized in the International System), nor can they be used as such. Only measurements expressed in litres, gallons, kilogrammes, tonnes, etc. can be used.

Once it has obtained results in usable, measurable units, the UPU will be able to convert the data received into the unit employed for drawing up the inventories – the carbon equivalent.

To determine the impact on climate change of any activity, the consumption of fuel, electricity, etc. has to be converted to a comparable unit. This unit is the carbon equivalent: CO_2 Eq.

This is therefore the unit that will be used to express the final result of the inventory for the postal sector.

[1] *Criteria recognized by the Global Reporting Initiative.*

2.4.2 Inventory period

In order to harmonize consolidation, the data required covers a full year, from 1 January to 31 December. For this initial survey, the UPU will accept data for the years corresponding to the financial periods 2007 and 2008. In future inventories, the year studied will always be the year N-1 (2009 for an inventory carried out in 2010, for example).

As the inventory is to be carried out annually, a history of the data provided should be kept by both the participating countries and the UPU. This will enable results to be compared from one year to the next, and the level of emissions to be recalculated in line with the gradual widening of the terms of reference.

3 Terms of reference used by the UPU

Each year, the UPU will try to broaden the scope of activities measured in the inventory, until it matches the optimum inventory described in the *Standard Protocol.* In making its recommendations and choices, it will always take account of the opportunities and wishes of the participating countries, as well as the expectations of its stakeholders (particularly the Restricted Unions).

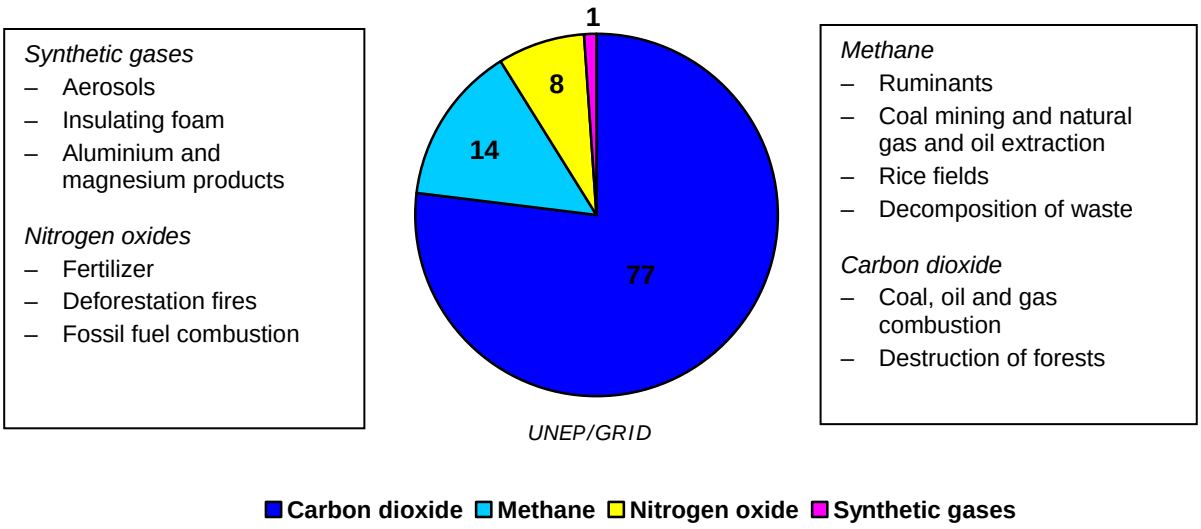
For their part, the countries participating in the inventory should try to improve the quality of the data they supply to the UPU. This means making them more precise, more easily verifiable, more global (relating to all the actual activities), etc.

These, then, are the main criteria used by the UPU for this initial inventory.

3.1 Type of greenhouse gas chosen

The UPU is aware that the increase in the greenhouse effect and, *de facto,* climate change, is the result of the cumulative effect of several gases, i.e. greenhouse gases (GHG).

However, for reasons of feasibility, the UPU decided to focus on carbon dioxide emissions (CO_2) in its first inventory. In fact, because it is the gas responsible for the most emissions, CO_2 is the most highly concentrated greenhouse gas in the atmosphere, and therefore the one which plays the biggest part in climate change.



Consequently, the survey, and this guide in particular, will give instructions on ways of calculating CO_2 while excluding other greenhouse gases, such as methane, nitrogen oxide, PFCs, etc. Information about these gases can, however, be found in the *Standard Protocol*, which includes, among other things, the conversion factors.

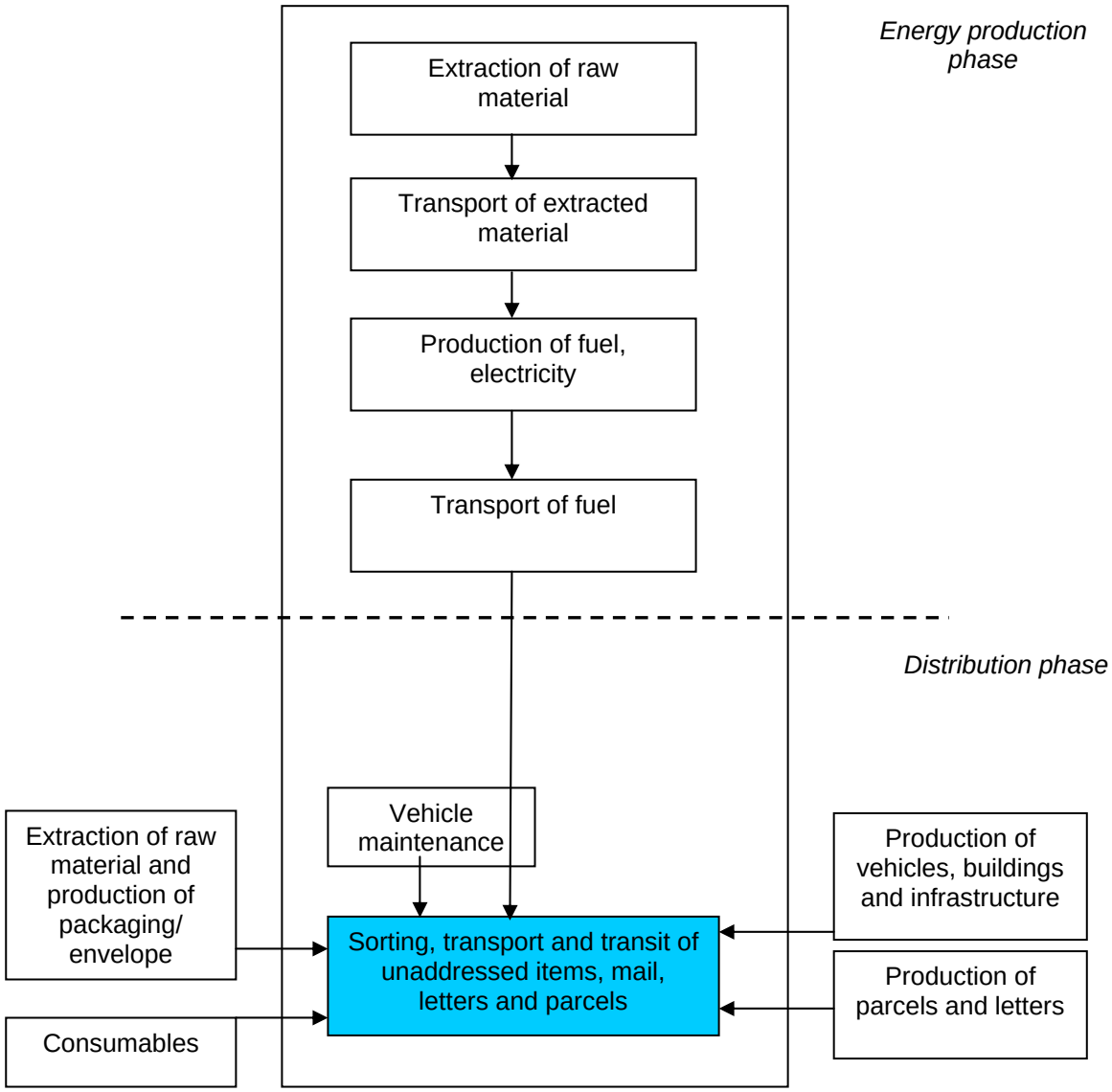
3.2 Emission threshold

Unlike the Standard Protocol, the UPU does not propose an emission threshold below which the operator cannot enter its emissions (too low, or associated with an indirectly linked activity).

In fact, since the UPU requires the minimum information for its initial postal sector inventory, it feels that all the required data concerning these emissions should be included (without exception).

3.3 Activities to be taken into account

To carry out any postal activity, all the production/distribution steps described in the following diagram are necessary. Furthermore, each one of these steps is a source of greenhouse gas emissions. Because of this, they should all be included in postal sector inventories in future.



Product Category Rules (PCR) for preparing an environmental product declaration, PCR 2003:7, Version 2.0, The Swedish Environmental Management Council, 2003.

The activities included in the terms of reference for the inventory carried out in 2009 (based on data from 2007 and 2008) are those representing the main sources of CO_2 emissions, and therefore having the greatest impact in terms of climate change: transport and buildings. These areas are associated with the main services provided by member countries and their designated postal operators: transport of mail and parcels, EMS, payment services, logistics, etc. Activities carried out by subcontractors in this connection may also be included, on a voluntary basis, in the figures supplied to the UPU.

3.3.1 General information

The questionnaire sent out to member countries asks for information about the number of postal facilities, their surface area, and the number of staff employed.

The minimum information required is the total number of employees. If possible, this figure should be broken down according to place of work (office, sorting centre, warehouse, etc.).

Other minimum information: total surface area of facilities. If possible, this should also be broken down by type of premises (offices, sorting centres, warehouses, etc.).

Finally, the total number of installations is required. If possible, this figure should be broken down for the various premises (offices, sorting centres, administrative buildings, etc.).

This information is required for the calculations the UPU carries out to consolidate the data, to calculate the carbon footprint per employee, per square metre, etc., and, finally, to compare the emissions of different operators with the same specific features.

3.3.2 Transport – Vehicle fleet

Vehicles to be taken into consideration

All vehicles used for administrative purposes or the transportation of mail and parcels (collection, transportation and delivery) should be included, regardless of whether they are owned by the postal operator or not (e.g. leased vehicles). Where postal services (sold to customers by the designated operator) are performed by a subcontractor, the vehicles used by the subcontractor to perform these outsourced services may also be included, on a voluntary basis.

Definitions

Passenger cars are motor vehicles with a maximum weight of 3.5 tonnes, used for carrying passengers.

Light-duty trucks are motor vehicles used for the carriage of goods and having a maximum weight of 12 tonnes (international classification: category N 1 and N 2, i.e., light-duty and medium-duty trucks respectively). Heavy-duty trucks are motor vehicles used for the carriage of goods and having a weight exceeding 12 tonnes (international classification: category N 3).

Gathering data

Data on fuel consumption can be obtained from fuel purchase or fuel consumption records.

Fuel consumption by vehicle type can be estimated by multiplying the approximate consumption per kilometre (or mile) of the vehicle type by the distance travelled. Example for passenger car (petrol):

Total distance travelled by the car (km)	X	Litres of petrol used per km	=	Petrol consumption (car)

If vehicles of a given type (e.g. passenger cars) differ with respect to their fuel consumption per kilometre, the above calculation should ideally be done separately for each level of energy efficiency.

Minimum information required

The minimum information required in order to estimate emissions from road transport is total fuel consumption in 2008 (or the latest available year) by fuel type (in litres, gallons, m^3 or tonnes).

If possible, this minimum information is to be supplemented by figures for consumption by fuel type and by vehicle type, as emissions can vary according to the vehicle used (by as much as double).

Where this information on fuel quantities used is not available, participants should indicate the total distance travelled by each type of vehicle, and for each type of fuel (in miles or kilometres).

3.3.3 Buildings

3.3.3.1 Fuel in the buildings

Stationary combustion sources (as opposed to mobile sources, i.e. the fleet of vehicles) mainly comprise fuel used in the buildings, particularly for the boilers, furnaces, heating equipment, ovens, etc.

Facilities to be taken into account

As in the case of vehicles, all facilities are to be taken into account, whether they are owned or simply controlled by the designated operator (see 2.2 Organizational scope of the inventory). In other words, rented offices and buildings should be taken into account as well as offices (post offices and administrative offices), warehouses and sorting centres owned by the operator.

Minimum information required

The minimum information required is the total amount of fuel purchased in 2008 (or the latest year available) by fuel type.

If possible, the operator should also indicate or estimate the fuel consumption for each type of facility (e.g. sorting centres, offices, administrative buildings, etc.).

Gathering data

Data on fuel consumption can be obtained from fuel purchase or fuel consumption records.

Difficulties in gathering data can arise when only part of a facility is controlled by the postal operator, as the relevant documents generally apply to the building as a whole. In these cases, the share of total fuel consumption attributable to the designated operator can be estimated, based, for example, on the proportion of total building space occupied by the latter:

Surface area occupied by the designated operator / Total surface area of the building	X	Total fuel consumption in the building	=	Approximate fuel consumption of designated operator

Alternatively, the proportion of the total fuel consumption attributable to the designated operator can be estimated from the number of people employed by the latter in relation to the total number of people working in the building.

Number of people employed by the designated operator Total number of employees in the building	X	Total fuel consumption in the building	=	Approximate fuel consumption by designated operator

3.3.3.2 Electricity in the buildings

In the case of electricity consumption, the facilities to be taken into account are the same as for fuel consumption (i.e. buildings owned or rented by the designated operator).

The data required by the UPU under this heading relates to the amount of electricity purchased in 2008 (or latest available year) and the quantity produced on site (for example, by a generator).

Minimum information required

The minimum information required is the annual electricity consumption for 2008, expessed as kWh, MWh, terajoules or megajoules.

Where designated operators know the source of the electricity they purchase, they are asked to supply this information to the UPU, as greenhouse gas emissions can vary widely according to the source (e.g. renewable or non-renewable).

Gathering data

Data on electricity consumption can be obtained from monthly bills or from electricity meter readings.

If this is not possible (for example, because the premises are leased and costs are included in the rent), the designated operator's electricity consumption can be estimated using one of the following two methods:

Method 1 – Estimate based on consumption for the whole building:

Where only part of the facility is controlled by the postal operator and electricity consumption is documented for the building as a whole, the share of electricity consumption attributable to the designated operator should be estimated, for example in terms of the percentage of the total surface area of the building occupied by the operator:

Surface area occupied Total surface area	X	Total electricity consumption for building	=	Approximate electricity consumption of operator

Method 2 – Estimate based on consumption in a similar building:

If data on the building are not available, electricity consumption can be estimated on the basis of consumption in other, similar buildings. It should be noted that electricity consumption can vary considerably according to factors such as geographical situation, size, energy efficiency, use and operating hours of the building, etc. Because of this, method 2 should be used only where the data are on a similar building with comparable electricity consumption parameters.

3.3.4 Special cases

3.3.4.1 Offsetting

In the UPU inventory, (and in the *Standard Protocol*, which explains the reasons) CO_2 offsetting will not be considered as an emission-cutting measure. Since the objective of the survey carried out by the UPU is to calculate postal sector emissions as precisely as possible, and a quantity offset is, first and foremost, a quantity emitted, offset emissions will not be deducted from the total.

3.3.4.2 National carbon footprint assessments

Postal operators having already drawn up a carbon inventory using national tools or their own methodology and rules for calculations and data gathering need only provide the UPU with figures relating to the terms of reference used for this inventory, provided that:

– the methods used comply with the GHG Protocol of the *World Business Council on Sustainable Development (WBCSD)* or a nationally recognized methodology; and

– details of the calculation (particularly the conversion factors) and the choice of terms of reference are explained, and the differences in relation to the UPU methodology are pointed out.

Annexes

1. **Questionnaire sent out to member countries in June 2008 and May 2009**
2. **Data conversion factors**
3. **Glossary of terms used**

Vehicle inventory/vehicle fuel consumption

PETROL (GASOLINE): Please indicate whether the data reported on this sheet are for owned, leased, subcontracted or all vehicles: _____

Fuel consumption (2008) *Unit of fuel consumed (e.g. gallons, litres)*			**Number of vehicles by type (2008)**	**Distance travelled (2008)** *Unit of distance (e.g. miles, kilometres)*		
Total	*By vehicle type (if available)*			*By vehicle type (if available)*		**Total**
	Passenger cars (total)			**Passenger cars** (total)		
	– without catalyst			– without catalyst		
	– with catalyst			– with catalyst		
	Trucks (total)			**Trucks** (total)		
	– light-duty trucks			– light-duty trucks		
	– heavy-duty trucks			– heavy-duty trucks		
	Motorcycles (total)			**Motorcycles** (total)		
	– 4-stroke engines			– 4-stroke engines		
	– 2-stroke engines			– 2-stroke engines		
	Other, please specify			**Other, please specify**		

Universal Postal Union
International Bureau

Annex 1 to letter 1457(DCC)1078
Of 15 May 2009

FUEL CONSUMPTION IN FACILITIES

Type of fuel	**Amount purchased in 2008**		**By type of facility** (if available)	
Heating oil	**Total**		– Offices	
	Unit (e.g. litres, gallons)		– Sorting centres	
			– Warehouses	
Coal	**Total**		– Offices	
	Unit:		– Sorting centres	
			– Warehouses	
Coal gas	**Total**		– Offices	
	Unit:		– Sorting centres	
			– Warehouses	
Diesel	**Total**		– Offices	
	Unit:		– Sorting centres	
			– Warehouses	
Bio-diesel	**Total**		– Offices	
	Unit:		– Sorting centres	
			– Warehouses	
Gasoline	**Total**		– Offices	
	Unit:		– Sorting centres	
			– Warehouses	
Heavy fuel oil	**Total**		– Offices	
	Unit:		– Sorting centres	
			– Warehouses	

ELECTRICITY/HEAT CONSUMPTION

A. General facility information

Number of facilities	**Total**		– Offices	
			– Sorting centres	
			– Warehouses	
			– Other	
Number of employees (equivalent of full-time staff*)	**Total**		– Offices	
			– Sorting centres	
			– Warehouses	
			– Other	
Surface area of facilities	**Total**		– Offices	
			– Sorting centres	
			– Warehouses	
			– Other	

Please indicate the unit in which the surface is measured (e.g. square metres, square feet, etc.)

* E.g. two employees having a 50% contract count as one full-time employee.

B. Electricity/heat purchased in 2008

Electricity/heat purchased in 2008				*Unit in which electricity is measured (e.g. kWh, MWh, gigajoules, terajoules, etc.)*
Total		– Offices		
		– Sorting centres		
		– Warehouses		
		– Other		

Electricity/heat purchased by Source of Power (only totals) *(if available)*		*Unit in which electricity is measured (e.g. kWh, MWh, gigajoules, terajoules, etc.)*
– Coal		
– Oil		
– Gas		
– Biomass		
– Nuclear		
– Hydro		
– Geothermal		
– Solar		
– Wind		
– Tide		
– Other, please specify		
– Other, please specify		

Is any power generated on-site? Yes ☐ No ☐

If yes,

– please indicate the (approximate) amount of electricity generated:

Total ☐ Unit (kWh, TJ, etc.) ☐

– please indicate the source(s) of the power generator:

☐ heavy fuel oil ☐ petrol (gasoline) ☐ bio-diesel ☐ kerosene

☐ coal ☐ coal gas ☐ heating oil ☐ solar

☐ wind ☐ other, please specify _____

ANNEX 2

DATA CONVERSION FACTORS - Used by the UPU in the framework of its first inventory of GHG emissions for the postal sector

1. CONVERSION FACTORS FOR THE FLEET OF VEHICLES

1.1. REGARDING THE AMOUNT OF FUEL USED

	Gasoline	Diesel	LPG	Natural Gas
Liter	0.002271	0.002745771	0.00157368	0.001885
US Gallon	0.009016627	0.010405559	0.00595344	*
Ton	3.01704245	3.268775247	*	*
Kg	0.003017042	0.003268775	0.0029072	0.00293194
m3	*	*	*	*
Lbs	*	*	0.00132088	0.00127817

Conversion factors for a result in Tonnes CO2e
UNEP, GHG Calculator, Version 6.0 (Manual) and *GHG Protocol, Emissions from transport or mobile sources, Version1.3, janvier 2005*

1.2. REGARDING THE DISTANCE TRAVELLED

	Km	Miles
Hybrid	0.0000556	0.0000895
Small gas auto	0.0001073	0.0001727
Large gas auto	0.0001638	0.0002636
LPG auto	0.0000989	0.0001591
Diesel auto	0.0001495	0.0002406
Gas light truck	0.0002223	0.0003578
Gas heavy truck	0.0005188	0.0008349
Diesel light truck	0.0002392	0.0003849
Diesel heavy truck	0.0005125	0.0008248
Light motor cycle	0.0000519	0.0000835
Diesel bus long distance	0.0000485	0.0000781
Diesel bus urban transit	0.0001862	0.0002997

Conversion factors for a result in Tonnes CO2e
GHG Protocol, Emissions from transport or mobile sources, Version1.3, janvier 2005

2. CONVERSION FACTORS FOR THE ELECTRICITY

Country	2006
Albania	0.00003443950
Algeria	0.00067094480
Angola	0.00034274670
Argentina	0.00030644950
Armenia	0.00013832900
Australia	0.00087331000
Austria	0.00022487000
Azerbaijan	0.00050485220
Bahrain	0.00089010220
Bangladesh	0.00055687770
Belarus	0.00029883400
Belgium	0.00026795900
Benin	0.00070993460
Bolivia	0.00048135200
Bosnia-Herzegovina	0.00061865060
Botswana	0.00184769410
Brazil	0.00008421920
Brunei Darussalam	0.00078882840
Bulgaria	0.00044800350
Cambodia	0.00120593070
Cameroon	0.00003909820
Canada	0.00019866400
Chile	0.00035747570
People's Republic of China	0.00078786780
China (including Hong Kong)	0.00078813340
Chinese Taipei	0.00063168220
Colombia	0.00016319090
Democratic Republic of Congo	0.00000295790
Costa Rica	0.00002689380
Côte d'Ivoire	0.00051812230
Croatia	0.00031132640
Cuba	0.00098744340
Cyprus	0.00079232370
Czech Republic	0.00051557300
Denmark	0.00028358200
Dominican Republic	0.00057399290
Ecuador	0.00036909440
Egypt	0.00047144380
El Salvador	0.00026340970
Eritrea	0.00069616610
Estonia	0.00066490890
Ethiopia	0.00000663820
Finland	0.00019355100
France	0.00009085900
Gabon	0.00036833520
Georgia	0.00008923110
Germany	0.00034923200

Ghana	0.00020376620
Gibraltar	0.00074308970
Greece	0.00077649300
Guatemala	0.00038375880
Haiti	0.00030735610
Honduras	0.00041071270
Hong Kong, China	0.00080978090
Hungary	0.00033870300
Iceland	0.00000619000
India	0.00094336150
Indonesia	0.00077073700
Islamic Republic of Iran	0.00053376640
Iraq	0.00070070560
Ireland	0.00058417300
Israel	0.00076748050
Italy	0.00040539300
Jamaica	0.00071334880
Japan	0.00042854000
Jordan	0.00065888200
Kazakhstan	0.00113684680
Kenya	0.00030676990
Dem. P. Rep.of Korea	0.00052095460
Korea	0.00041818800
Kuwait	0.00080748680
Kyrgyzstan	0.00008162620
Latvia	0.00016203380
Lebanon	0.00066734170
Libya	0.00089937480
Lithuania	0.00012960190
Luxembourg	0.00032775600
FYR of Macedonia	0.00064479050
Malaysia	0.00055700990
Malta	0.00089189290
Mexico	0.00051547000
Republic of Moldova	0.00051572330
Mongolia	0.00053321540
Morocco	0.00077750210
Mozambique	0.00000133840
Myanmar	0.00036480270
Namibia	0.00002636400
Nepal	0.00000140750
Netherlands	0.00038666700
Netherlands Antilles	0.00071782930
New Zealand	0.00027542200
Nicaragua	0.00053876940
Nigeria	0.00040296300
Norway	0.00000550200
Oman	0.00085453830
Pakistan	0.00037956760
Panama	0.00027683610
Peru	0.00019783840
Philippines	0.00049514940

Poland	0.00065889900
Portugal	0.00049822300
Qatar	0.00061796960
Romania	0.00039413580
Russia	0.00033796060
Saudi Arabia	0.00074761150
Senegal	0.00063412520
Serbia and Montenegro	0.00074792290
Singapore	0.00054392960
Slovak Republic	0.00023206300
Slovenia	0.00032829080
South Africa	0.00084835750
Spain	0.00039429800
Sri Lanka	0.00039763280
Sudan	0.00084803470
Sweden	0.00004453700
Switzerland	0.00002623100
Syria	0.00058749820
Tajikistan	0.00002741200
United Republic of Tanzania	0.00060656320
Thailand	0.00053133970
Togo	0.00047406950
Trinidad and Tobago	0.00070902960
Tunisia	0.00048159210
Turkey	0.00043284200
Turkmenistan	0.00079512340
Ukraine	0.00031431600
United Arab Emirates	0.00084361650
United Kingdom	0.00047251400
United States	0.00057293400
Uruguay	0.00010273960
Uzbekistan	0.00044303730
Venezuela	0.00022522320
Vietnam	0.00040559640
Yemen	0.00084547290
Zambia	0.00000683910
Zimbabwe	0.00057233750
Other Africa	0.00042014250
Other Latin America	0.00051826610
Other Asia	0.00036085070
World	0.00050174350
OECD North America	0.00052453700
OECD Pacific	0.00048321000
OECD Europe	0.00032555900
Middle East	0.00069011380
Non-OECD Europe	0.00047859020
Former USSR	0.00035147150
Asia (excluding China)	0.00072830180

Conversion factors for a result in Tonnes CO2e / kWh
International Energy Agency, Data Services, 2006

3. CONVERSION FACTORS FOR THE FUELS (BUILDINGS)

	TJ	GJ	kWh	Tonne	Kg	m3	Litre
Heating oil	73.3	0.0733		3.1	0.0031		0.00248
Coal	112	0.112		3.304	0.003304		
Coal gas	107	0.107		2.823	0.002823	0.0048	0.000242
Diesel	74.1	0.0741		3.1863	0.0031863	0.0031	0.00268
Biodiesel	70.8	0.0708		1.9116	0.0019116		
Gazoline	69.3	0.0693		3.1863	0.0031863	0.0031	0.00268
Natural gas	56.1	0.0561	0.000202	2.6928	0.0026928	0.00188	
Wood	112	0.112		2.94666	0.00294666	0.00468	
Peat	106	0.106		1.03456	0.00103456		

For a result in Tonnes CO2e
UNEP, GHG CALCULATOR 6.0 (MANUAL)

ANNEX 3

GLOSSARY OF TERMS USED

This glossary of terms is meant to assist the user of this guidance in interpreting information collected and used in the process of developing greenhouse gas emission estimates. Most of the terms presented here are not explicitly used in this guidance document, but may be encountered in the process of its use. The definitions provided below are simply indicative of typical usage, and may not be applicable in a strict (e.g., legal) sense in relation to individual programs or regulations[2].

Additionality: A criterion for assessing whether a project has resulted in GHG emission reductions or removals in addition to what would have occurred in its absence. This is an important criterion when the goal ofthe project is to offset emissions elsewhere.

Airmail item: in the classification system based on contents, letter-post item conveyed by air with priority.

Allowance: A commodity giving its holder the right to emit a certain quantity of GHG.

Anthropogenic: Resulting from or produced by human beings

Baseline: A hypothetical scenario for what GHG emissions, removals or storage would have been in the absence of the GHG project or project activity.

Base year: A historic datum (a specific year or an average over multiple years) against which a company's emissions are tracked over time.

Base year emissions: GHG emissions in the base year.

Biofuels: Fuel made from plant material, e.g. wood, straw and ethanol from plant matter.

Biodiesel: a biofuel produced through transesterification, a process in which organically derived oils are combined with alcohol (ethanol or methanol) in the presence of a catalyst to form ethyl or methyl ester. Biodiesel can be made from soybean or rapeseed oils, animal fats, waste vegetables oils or microalgae oils.

Boundaries: GHG accounting and reporting boundaries can have several dimensions, i.e. organizational, operational,geographic, business unit, and target boundaries. The inventory boundary determines which emissions are accounted and reported by the company.

Cap and trade system: A system that sets an overall emissions limit, allocates emissions allowances to participants, and allows them to trade allowances and emission credits with each other.

[2] This glossary has been prepared from the following documents : *WRI/WBCSD GHG Protocol, Stationary Combustion Guidance, M. Gillenwater* and *IPCC, Glossary of terms used in the IPCC Fourth Assessment Report* and *Letter Post Manual, UPU, 2005.*

Carbon dioxide (CO2): A colorless, odorless, non-poisonous gas that is normal part of Earth's atmosphere. Carbon dioxide is a product of fossil-fuel combustions as well as other processes. It is considered as greenhouse gas as it traps heat (infrared energy) radiated by the Earth into the atmosphere and thereby contributes to the potential for global warming. The global warming potential (GWP) of other greenhouse gases is measured in relation to that of carbon dioxide, which by international scientific convention is assigned a value of one (1).

Carbon dioxide equivalent (CO2 Eq or CO2e): a metric measure used to compare the emissions of the different greenhouse gases based upon their global warming potential (GWP).

Carbon dioxide (CO2) fertilization: The enhancement of the growth of plants as a result of increased atmospheric *carbon dioxide* concentration. Depending on their mechanism of *photosynthesis*, certain types of plants are more sensitive to changes in atmospheric carbon dioxide concentration. In particular, plants that produce a three-carbon compound (C3) during photosynthesis—including most trees and agricultural crops such as rice, wheat, soybeans, potatoes, and vegetables— generally show a larger response than plants that produce a four-carbon compound (C4) during photosynthesis—mainly of tropical origin, including grasses and the agriculturally important crops maize, sugar cane, millet, and sorghum.

Clean Development Mechanism: A mechanism established by Article 12 of the Kyoto Protocol for project-based emission reduction **(CDM)** activities in developing countries. The CDM is designed to meet two main objectives: to address thesustainability needs of the host country and to increase the opportunities available to Annex 1 Parties to meet their GHG reduction commitments. The CDM allows for the creation, acquisition and transferof CERs from climate change mitigation projects undertaken in non-Annex 1 countries.

Certified Emission Reductions: A unit of emission reduction generated by a CDM project. CERs are tradable commodities that can be **(CERs)** used by Annex 1 countries to meet their commitments under the Kyoto Protocol.

Climate: Climate in a narrow sense is usually defined as the "average weather" or more rigorously as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period is 30 years, as defined by the World Meteorological Organization (WMO). These relevant quantities are most often surface variables such as temperature, precipitation, and wind. Climate in a wider sense is the state, including a statistical description, of the *climate system*.

Climate change: Climate change refers to a statistically significant variation in either the mean state of the *climate* or in its variability, persisting for an extended period (typically decades or longer). Climate change may be due to natural internal processes or *external forcings*, or to persistent *anthropogenic* changes in the composition of the *atmosphere* or in *land use*. Note that the *United Nations Framework Convention on ClimateChange* (UNFCCC), in its Article 1, defines "climate change" as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." The UNFCCC thus makes a distinction between "climate change" attributable to human activities altering the atmospheric composition, and "climate variability" attributable to natural causes.

Coal: A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time.

Compressed natural gas (CNG): CNG is natural gas for use in special CNG vehicles, where it is stored in high-pressure fuel cylinders (typically 2000 to 3600 psi). CNG's use stems in part from its clean burning properties, as it produces fewer exhaust and greenhouse gas emissions than motor gasoline or diesel oil. It is used most frequently in light-duty passenger vehicles and pickup trucks, medium duty delivery trucks, and in transit and school buses.

Consolidation: Combination of GHG emissions data from separate operations that form part of one company or group of companies.

Control: The ability of a company to direct the policies of another operation. More specifically, it is defined as either operational control (the organization or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation) or financial control (the organization has the ability to direct the financial and operating policies of the operation with a view to gaining economic benefits from its activities).

Cross-sector calculation tool: A GHG Protocol calculation tool that addresses GHG sources common to various sectors, e.g. emissions from stationary or mobile combustion.

Direct GHG emissions: Emissions from sources that are owned or controlled by the reporting company.

Direct monitoring: Direct monitoring of exhaust stream contents in the form of continuous emissions monitoring (CEM) or periodic sampling.

Double counting: Two or more reporting companies take ownership of the same emissions or reductions.

Emissions: Releases of gases to the atmosphere (e.g., the release of carbon dioxide during fuel combustion). Emissions can be either intended or unintended releases.

Emissions coefficient/factor. A unique value for scaling emissions to activity data in terms of a standard rate of emissions per unit of activity (e.g., grams of carbon dioxide emitted per barrel of fossil fuel consumed).

Emission inventory: A list of air pollutants emitted into a community's, state's, nation's, or the Earth's atmosphere in amounts per some unit time (e.g. day or year) by type of source. An emission inventory has both political and scientific applications.

Emission Reduction Unit (ERU): A unit of emission reduction generated by a Joint Implementation (JI) project. ERUs are tradable commodities which can be used by Annex 1 countries to help them meet their commitment under the Kyoto Protocol.

Employees: An Employee denominator is quite simply the number of employees under contract and directly employed by a company. The number of employees is included as a denominator because of its current use and also its applicability to industry sectors in which added value and unit turnover have limited value (e.g. the banking sector).

Estimation uncertainty: Uncertainty that arises whenever GHG emissions are quantified, due to uncertainty in data inputs and calculation methodologies used to quantify GHG emissions.

Equivalent CO2 (carbon dioxide): The concentration of *carbon dioxide* that would cause the same amount of *radiative forcing* as a given mixture of carbon dioxide and other *greenhouse gases*.

Equivalent carbon dioxide (CO2) concentration: The concentration of *carbon dioxide* that would cause the same amount of *radiative forcing* as a given mixture of carbon dioxide and other *greenhouse gases.*

Equivalent carbon dioxide (CO2) emission: The amount of *carbon dioxide* emission that would cause the same integrated *radiative forcing*, over a given time horizon, as an emitted amount of a well mixed *greenhouse gas* or a mixture of well mixed greenhouse gases. The equivalent carbon dioxide emission is obtained by multiplying the emission of a well mixed greenhouse gas by its *Global Warming Potential* for the given time horizon. For a mix of greenhouse gases it is obtained by summing the equivalent carbon dioxide emissions of each gas. Equivalent carbon dioxide emission is a standard and useful *metric* for comparing emissions of different greenhouse gases but does not imply exact equivalence of the corresponding *climate change* responses (see Section 2.10).

Express courrier: general terms, refers to an item forwarded and delivered in the most rapid way (includes EMS)

Express item: general term, refers to items transported and distributed in the fastest way. At international level, the service corresponds to EMS and other similar services.

Facility: Includes all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or is under common control, with such person). Also referred to as an “installation.” A facility may contain one or more establishments and any number of combustion units.

Fingerprint: The *climate* response pattern in space and/or time to a specific forcing is commonly referred to as a fingerprint. Fingerprints are used to detect the presence of this response in observations and are typically estimated using forced *climate model* simulations.

Fuel: Any material substance that can be combusted to supply heat or power. Included are petroleum, coal, and natural gas (the fossil fuels), and other combustible materials, such as biomass, and hydrogen.

Fugitive emissions: Emissions that are not physically controlled but result from the intentional or unintentional releases of GHGs. They commonly arise from the production, processing transmission storage and use of fuels and other chemicals, often through joints, seals, packing, gaskets, etc.

GHG capture: Collection of GHG emissions from a GHG source for storage in a sink.

GHG credit: GHG offsets can be converted into GHG credits when used to meet an externally imposed target. A GHG credit is a convertible and transferable instrument usually bestowed by a GHG program.

GHG offset: Offsets are discrete GHG reductions used to compensate for (i.e., offset) GHG emissions elsewhere, for example to meet a voluntary or mandatory GHG target or cap. Offsets are calculated relative to a baseline that represents a hypothetical scenario for what emissions would have been in the absence of the mitigation project that generates the offsets. To avoid double counting, the reduction giving rise to the offset must occur at sources or sinks not included in the target or cap for which it is used.

GHG program: A generic term used to refer to any voluntary or mandatory international, national, sub-national, government or non-governmental authority that registers, certifies, or regulates GHG emissions or removals outside the company. e.g. CDM, EU ETS, CCX, and CCAR.

GHG project: A specific project or activity designed to achieve GHG emission reductions, storage of carbon, or enhancement of GHG removals from the atmosphere. GHG projects may be stand-alone projects, or specific activities or elements within a larger non-GHG related project.

GHG Protocol calculation tools: A number of cross-sector and sector-specific tools that calculate GHG emissions on the basis of activity data and emission factors.

GHG Protocol Initiative: A multi-stakeholder collaboration convened by the World Resources Institute and World Business Council for Sustainable Development to design, develop and promote the use of accounting and reporting standards for business. It comprises of two separate but linked standards—the *GHG Protocol Corporate Accounting and Reporting Standard* and the *GHG Protocol Project Quantification Standard.*

GHG removal: Absorbtion or sequestration of GHGs from the atmosphere.

GHG source: Any physical unit or process which releases GHG into the atmosphere.

GHG trades: All purchases or sales of GHG emission allowances, offsets, and credits.

Global surface temperature: The global surface temperature is an estimate of the global mean surface air temperature. However, for changes over time, only anomalies, as departures from a climatology, are used, most commonly based on the area-weighted global average of the *sea surface temperature* anomaly and *land surface air temperature* anomaly.

Global Warming Potential (GWP): The index used to translate the level of emissions of various gases into a common measure in order to compare the relative radiative forcing of different gases without directly calculating the changes in atmospheric concentrations. GWPs are calculated as the ratio of the radiative forcing that would result from the emissions of one kilogram of a greenhouse gas to that from the emission of one kilogram of carbon dioxide over a period of time (usually 100 years). Gases involved in complex atmospheric chemical processes have not been assigned GWPs.

Green power: A generic term for renewable energy sources and specific clean energy technologies that emit fewer GHG emissions relative to other sources of energy that supply the electric grid. Includes solar photovoltaic panels, solar thermal energy, geothermal energy, landfill gas, low-impact hydropower, and wind turbines.

Greenhouse effect: *Greenhouse gases* effectively absorb *thermal infrared radiation*, emitted by the Earth's surface, by the *atmosphere* itself due to the same gases, and by clouds. Atmospheric radiation is emitted to all sides, including downward to the Earth's surface. Thus, greenhouse gases trap heat within the surface-*troposphere* system. This is called the *greenhouse effect*. Thermal infrared radiation in the troposphere is strongly coupled to the temperature of the atmosphere at the altitude at which it is emitted. In the troposphere, the temperature generally decreases with height. Effectively, infrared radiation emitted to space originates from an altitude with a temperature of, on average, –19°C, in balance with the net incoming *solar radiation*, whereas the Earth's surface is kept at a much higher temperature of, on average, +14°C. An increase in the concentration of greenhouse gases leads to an increased infrared opacity of the atmosphere, and therefore to an effective radiation into space from a higher altitude at a lower temperature. This causes a *radiative forcing* that leads to an enhancement of the greenhouse effect, the so-called *enhanced greenhouse effect*.

Greenhouse gas (GHG): Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include, but are not limited to, water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrochlorofluorocarbons (HCFCs), ozone (O_3), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Group company / subsidiary: The parent company has the ability to direct the financial and operating policies of a group company/subsidiary with a view to gaining economic benefits from its activities.

Heating value: The amount of energy released when a fuel is burned completely. Care must be taken not to confuse higher heating values (HHVs), used in the US and Canada, and lower heating values, used in all other countries.

Indirect GHG emissions: Emissions that are a consequence of the operations of the reporting company, but occur at sources owned or controlled by another company.

Insourcing: The administration of ancillary business activities, formally performed outside of the company, using resources within a company.

Intensity ratios: Ratios that express GHG impact per unit of physical activity or unit of economic value (e.g. tonnes of CO**2** emissions per unit of electricity generated). Intensity ratios are the inverse of productivity/efficiency ratios.

Intensity target: A target defined by reduction in the ratio of emissions and a business metric over time e.g., reduce CO**2** per tonne of cement by 12% between 2000 and 2008.

Intergovernmental Panel on Climate Change (IPCC): The IPCC was established jointly by the United Nations Environment Programme and the World Meteorological Organization in 1988. The purpose of the IPCC is to assess information in the scientific and technical literature related to all significant components of the issue of climate change. The IPCC draws upon hundreds of the world's expert scientists as authors and thousands as expert reviewers. Leading experts on climate change and environmental, social, and economic sciences from some 60 nations have helped the IPCC to prepare periodic assessments of the scientific underpinnings for understanding global climate change and its consequences. With its capacity for reporting on climate change, its consequences, and the viability of adaptation and mitigation measures, the IPCC is also looked to as the official advisory body to the world's governments on the state of the science of the climate change issue. For example, the IPCC organized the development of internationally accepted methods for conducting national greenhouse gas emission inventories.

Inventory: A quantified list of an organization’s GHG emissions and sources.

Inventory boundary: An imaginary line that encompasses the direct and indirect emissions that are included in the inventory. It results from the chosen organizational and operational boundaries.

Inventory quality: The extent to which an inventory provides a faithful, true and fair account of an organization’s GHG emissions.

Jet fuel: Includes both naphtha-type and kerosene-type fuels meeting standards for use in aircraft turbine engines. Although most jet fuel is used in aircraft, some is used for other purposes such as generating electricity.

Joint Implementation (JI): The JI mechanism was established in Article 6 of the Kyoto Protocol and refers to climate change mitigation projects implemented between two Annex 1 countries. JI allows for the creation, acquisition and transfer of “emission reduction units” (ERUs).

Joule: The work done when a force of one Newton moves an object through one meter in the direction of the force.

Kerosene: A petroleum distillate that has a maximum distillation temperature of 401 degrees Fahrenheit (205 degrees Celsius) at the 10 percent recovery point, a final boiling point of 572 degrees Fahrenheit (300 degrees Celsius), and a minimum flash point of 100 degrees Fahrenheit. Comprises refined petroleum distillate intermediate in volatility between gasoline and gas/diesel oil. It is a medium oil distilling between 150 C (302 F) and 300 C (572 F). Used in space heaters, cookstoves, and water heaters, and suitable for use as an illuminant when burned in wick lamps.

Kyoto Protocol: The Kyoto Protocol to the *United Nations Framework Convention on Climate Change* (UNFCCC) was adopted in 1997 in Kyoto, Japan, at the Third Session of the Conference of the Parties (COP) to the UNFCCC. It contains legally binding commitments, in addition to those included in the UNFCCC. Countries included in Annex B of the Protocol (most Organisation for Economic Cooperation and Development countries and countries with economies in transition) agreed to reduce their *anthropogenic greenhouse gas* emissions (*carbon dioxide*, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride) by at least 5% below 1990 levels in the commitment period 2008 to 2012. The Kyoto Protocol entered into force on 16 February 2005.

Letter Post Items : Reference *Letter Post Manual*(2005), UPU, Berne. Letter-post items basically consist of letters, postcards, printed paper (newspapers, periodicals, advertising, etc.), small packets, literature for the blind, and, as applicable in the domestic service, commercial papers, samples of mechandise, “phonopost” items, postal packets. Letter-post items are:

-priority items and non-priority items, up to 2 kilogrammes;

- letters, postcards, printed papers and small packets, up to 2 kilogrammes;

- literature for the blind, up to 7 kilogrammes;

- special bags containing newspapers, periodicals, books and similar printed documentation for the same addressee at the same address called “M bags”, up to 30 kilogrammes.

- Letter-post items shall be classified on the basis either of the speed of treatment of the items or of the contents of the items in accordance with the Letter Post Regulations.

-Higher weight limits than those indicated in paragraph 2 apply optionally for certain letter-post item categories under the conditions specified in the Letter Post Regulations.

Life Cycle Analysis: Assessment of the sum of a product’s effects (e.g. GHG emissions) at each step in its life cycle,including resource extraction, production, use and waste disposal.

Liquefied natural gas (LNG): Natural gas cooled to approximately –160°C (-256 degrees F) under atmospheric pressure condenses to its liquid form called LNG. LNG is odourless, colourless, non-corrosive and non-toxic.

Liquefied petroleum gases (LPG): LPG are light paraffinic hydrocarbons derived from the refinery processes, crude oil stabilisation and natural gas processing plants. They consist mainly of propane (C3H8) and butane (C4Hl0) or a combination of the two. They could also include propylene, butylene, isobutene and isobutylene. LPG are normally liquefied under pressure for transportation and storage.

Logistics: set of operations involved in the physical distribution of a company's products (such as warehousing, labelling, computerized stock management, deliveries, and possibliy also packaging and billing) and simultaneous management of the corresponding information flows.

Mail flow: volume of mail exchanged between countries

Mail train: set of postal carriages making up a train travelling at times convenient to the postal service

Material discrepancy: An error (for example from an oversight, omission, or miscalculation) that results in the reported quantity being significantly different to the true value to an extent that will influence performance or decisions. Also known as material misstatement.

Materiality threshold: A concept employed in the process of verification. It is often used to determine whether an error or omission is a material discrepancy or not. It should not be viewed as a de minimus for defining a complete inventory.

Megawatt: (MW) The electrical unit of power that equals one million Watts (1,000 kW).

Mobile combustion: Burning of fuels by transportation devices such as cars, trucks, trains, airplanes, ships etc.

Operation: A generic term used to denote any kind of business, irrespective of its organizational, governance, or legal structures. An operation can be a facility, subsidiary, affiliated company or other form of joint venture.

Operational boundaries: The boundaries that determine the direct and indirect emissions associated with operations owned or controlled by the reporting company. This assessment allows a company to establish which operations and sources cause direct and indirect emissions, and to decide which indirect emissions to include that are a consequence of its operations.

Organic growth/decline: Increases or decreases in GHG emissions as a result of changes in production output, product mix, plant closures and the opening of new plants.

Organizational boundaries: The boundaries that determine the operations owned or controlled by the reporting company, depending on the consolidation approach taken (equity or control approach).

Outsourcing: full or partial sub-contracting of tasks hitherto performed internally by a company.

Ozone: Ozone, the triatomic form of oxygen (O3), is a gaseous atmospheric constituent. In the *troposphere*, it is created both naturally and by photochemical reactions involving gases resulting from human activities (*smog*). Tropospheric ozone acts as a *greenhouse gas*. In the *stratosphere*, it is created by the interaction between solar ultraviolet radiation and molecular oxygen (O2). Stratospheric ozone plays a dominant role in the stratospheric radiative balance. Its concentration is highest in the *ozone layer*.

Parameter uncertainty: GHG quantification uncertainty associated with quantifying the parameters used as inputs to estimation models.

Post / Mail: all postal items. Also refers to the carrier.

Postal Administration: Public service responsible for providing postal or even administrative services, in accordance with laws, regulations, etc.

Postal operator: public or private entity providing postal services

Postal parcel : Referencial *Parcel Post Manual* (2005) , UPU, Berne. Member countries shall also ensure the acceptance, handling, conveyance and delivery of postal parcels up to 20 kilogrammes, either as laid down in the Convention, or, in the case of outward parcels and after bilateral agreement, by any other means which is more advantageous to their customers. Weight limits higher than 20 kilogrammes apply optionally for certain parcel-post categories under the conditions specified in the Parcel Post Regulations.

Postal parcel service: branch of the international postal service dealing with parcel-post items

Primary effects: The specific GHG reducing elements or activities (reducing GHG emissions, carbon storage, or enhancing GHG removals) that the project is intended to achieve.

Process emissions: Emissions generated from manufacturing processes, such as the CO**2** that is arises from the breakdown of calcium carbonate (CaCO**3**) during cement manufacture.

Productivity/efficiency ratios: Ratios that express the value or achievement of a business divided by its GHG impact. Increasing efficiency ratios reflect a positive performance improvement. e.g. resource productivity(sales per tonne GHG). Productivity/efficiency ratios are the inverse of intensity ratios.

Parts per billion (ppb): Number of parts of a chemical found in one billion parts of a particular gas, liquid, or solid mixture.

Parts per million (ppm): Number of parts of a chemical found in one million parts of a particular gas, liquid, or solid.

Ratio indicator: Indicators providing information on relative performance such as intensity ratios or productivity/efficiency ratios.

Renewable energy: Energy taken from sources that are inexhaustible, e.g. wind, water, solar, geothermal energy, and biofuels.

Reporting: Presenting data to internal management and external users such as regulators, shareholders, the general public or specific stakeholder groups.

Reversibility of reductions: This occurs when reductions are temporary, or where removed or stored carbon may be returned to the atmosphere at some point in the future.

Scope: Defines the operational boundaries in relation to indirect and direct GHG emissions.

Scope 1 inventory: A reporting organization’s direct GHG emissions.

Scope 2 inventory: A reporting organization’s emissions associated with the generation of electricity, heating/ cooling, or steam purchased for own consumption.

Scope 3 inventory: A reporting organization’s indirect emissions other than those covered in scope 2.

Scope of works: An up-front specification that indicates the type of verification to be undertaken and the level of assurance to be provided between the reporting company and the verifier during the verification process.

Sequestered atmospheric carbon: Carbon removed from the atmosphere by biological sinks and stored in plant tissue. Sequestered atmospheric carbon does not include GHGs captured through carbon capture and storage.

Significance threshold: A qualitative or quantitative criteria used to define a significant structural change. It is the responsibility of the company/ verifier to determine the “significance threshold” for considering base year emissions recalculation. In most cases the “significance threshold” depends on the use of the information, the characteristics of the company, and the features of structural changes.

Solar energy: Solar radiation exploited for hot water production and electricity generation, by:

• Flat plate collectors, mainly of the thermosyphon type, for domestic hot water or for the seasonal heating of swimming pools

• Photovoltaic cells

• Solar thermal electric plants.

Stationary Combustion: Burning of fuels to generate electricity, steam, heat, or power in stationary equipment such as boilers, furnaces etc.

Structural change: A change in the organizational or operational boundaries of a company that result in the transfer of ownership or control of emissions from one company to another. Structural changes usually result from a transfer of ownership of emissions, such as mergers, acquisitions, divestitures, but can also include outsourcing/ insourcing.

Target base year: The base year used for defining a GHG target, e.g. to reduce CO**2** emissions 10% below the target base year levels by the target base year 2007 by the year 2010. (Chapter 11)

Target boundary: The boundary that defines which GHG’s, geographic operations, sources and activities are covered by the target.

Target commitment period: The period of time during which emissions performance is actually measured against the target. It ends with the target completion date.

Target completion date: The date that defines the end of the target commitment period and determines whether the target is relatively short- or long-term.

Target double counting policy: A policy that determines how double counting of GHG reductions or other instruments, such as allowances issued by external trading programs, is dealt with under a GHG target. It applies only to companies that engage in trading (sale or purchase) of offsets or whose corporate target boundaries interface with other companies’ targets or external programs.

Turnover: (also referred to as sales) represents the total value of goods and services sold by the company to third parties in the normal course of trade. Turnover as a denominator is a summation of the whole value of a product or a service up to the point of sale. Unit turnover has the advantage of being an obligatory requirement for annual accounts. Unit turnover is an attractive denominator. However, turnover does not permit inter-sector benchmarking because it does not directly correlate to global warming contribution. On the other hand, turnover may allow intra-sector comparison of companies with similar profiles and production processes.

Uncertainty: 1. Statistical definition: A parameter associated with the result of a measurement that characterizes the dispersion of the values that could be reasonably attributed to the measured quantity. (e.g., the sample variance or coefficient of variation). 2. Inventory definition: A general and imprecise term which refers to the lack of certainty in emissions related data resulting from any causal factor, such as the application of non-representative factors or methods, incomplete data on sources and sinks, lack of transparency etc. Reported uncertainty information typically specifies a quantitative estimates of the likely or perceived difference between a reported value and a qualitative description of the likely causes of the difference.

United Nations Framework Convention on Climate Change (UNFCCC): The Convention was adopted on 9 May 1992 in New York and signed at the 1992 Earth Summit in Rio de Janeiro by more than 150 countries and the European Community. Its ultimate objective is the 'stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'. It contains commitments for all Parties. Under the Convention, Parties included in Annex I (all OECD countries and countries with economies in transition) aim to return *greenhouse gas* emissions not controlled by the *Montreal Protocol* to 1990 levels by the year 2000. The convention entered in force in March 1994. See *Kyoto Protocol*.

Value chain emissions: Emissions from the upstream and downstream activities associated with the operations of the reporting company.

Verification: An independent assessment of the reliability (considering completeness and accuracy) of a GHG inventory.

Wind energy: Kinetic energy present in wind motion that can be converted to mechanical energy for driving pumps, mills, and electric power generators.

Wood energy: Wood and wood products used as fuel, including round wood (cord wood), limb wood, wood chips, bark, sawdust, forest residues, charcoal.

UNite to combat CLIMATE CHANGE

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Contact

Anne-Claire Blet
T +41 31 350 35 17
Sust.dev@upu.int

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