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The EU reporting obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the monitoring mechanism

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Prepared with the collaboration of
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Introduction

This report is part of the project undertaken with the participation of the firm Garrigues and Andersen to carry out for the European Environment Agency (EEA) the study of the reporting obligations in the framework of environmental conventions and provide support to international activities, also to support the European Commission (Environment DG) as representative of the European Community as Party to the conventions.

The aim of the project is to support the EEA, the European Community and the Member States (MS) in streamlining the reporting system for efficient information analysis within the framework of multilateral environmental conventions fulfilling the need to obtain comparable and accessible information from the Contracting Parties according to their reporting obligations to the executive bodies of the conventions. According to the terms of the abovementioned project, the **United Nations Framework Convention on Climate Change** (UNFCCC) has been chosen as a pilot case to analyse the reporting obligations of the European Union under this Convention.

In the main report of this project on the identification of reporting obligations in the 64 international environmental conventions of which the European Community is a Party, a frame for every convention and a summary chart (to be published as a topic report) of reporting obligations and timing were produced, both to be updated regularly.

In the context of the project, it was agreed with the Environment DG to undertake two in-depth studies on reporting obligations in two conventions: one global — the UNFCCC — and one of the regional conventions — the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (Technical report No 45).

Structure of the report

The scope of the report is to streamline the reporting obligations of the European Community under the UNFCCC, as Party to the Convention, identifying the problems encountered in its reporting, and also reporting to the monitoring mechanism. For this purpose ,we divided the study into two parts. The first part is devoted to streamlining the reporting obligations of the Annex I **Parties under the UNFCCC Convention** and analysing in detail the reporting system developed and implemented under the UNFCCC. The review process of such a reporting mechanism will also be analysed. The second part is devoted to studying specifically the reporting of the European Community under the UNFCCC as well as under the monitoring mechanism.

We have concluded our report with an identification of the problems encountered by the European Community in its reporting under the UNFCCC and under the monitoring mechanism.

For the preparation of the report, we have used the inputs provided by the official documents of the Secretariat of the UNFCCC as the main tool.

In relation to the monitoring mechanism, we have used the inputs provided by the official documents of the European Community as well as internal documents provided by the EEA and also by the Unit of Climate Change of the Environment DG.

Meetings with representatives of the EEA (in particular with A. Jol) and the Environment DG have also been held on this issue. I would like to thank all of them for their cooperation and support.

Finally, this report, as part of the main project, is a contribution to support the European Community (represented by the European Commission Environment DG), the Member States of the European Union and member countries of the EEA, and in cooperation with the UN institutions (UNEP, MAP, UNECE, etc.), in the work towards streamlining the reporting system for environmental conventions.

José Luis Salazar-Máñez
Project Manager
Legislative instruments,
international programmes and conventions

Note
The reporting obligation issues identified in this report are those of the European Community requested by the European Commission (Environment DG) as Party to the UNFCCC (the Convention), but the same issues can be extrapolated for Member States of the European Union as Party to the Convention (reporting burden and reporting 'fatigue') that is common with the Parties to the Convention.

1. Executive summary

1.1. Objective of the study

To analyse the European Community reporting under the UNFCCC and the monitoring mechanism in order to point out the existing problems and conclude with some recommendations and proposals to streamline the existing reporting system.

1.2. Reporting obligations under the UNFCCC (Annex I Parties)

- The European Community (EC) is an Annex I Party as well as the EU Member States. Production of annual inventories of anthropogenic emissions and removals and greenhouse gases must be submitted by 15 April each year.

- National communications must be submitted on a regular basis of three to five year intervals. The submission of the third national communication has been scheduled for 30 November 2001.

- It was agreed at COP 5 that Annex I Parties should submit with their national communications a detailed report on activities in relation to systematic climate observation.

The reporting system under the UNFCCC

When fulfilling their reporting obligations, the Parties should follow the established guidelines adopted by the Conference of the Parties (COP) for inventories and for national communications.

A revision procedure to update such guidelines is established by the Convention in order to improve continuously the comparability and transparency of the information reported by Parties. Recently, at COP 5, a revision of the revised guidelines was adopted for the submissions of inventories due in 2000 and 2001 and national communications due in November 2001 including the adoption of a common reporting format for inventories.

The Convention also establishes an in-depth review procedure of the national communications submitted by Parties.

The main problems of the European Community in fulfilling its obligations under the UNFCCC are:

- the difficulty of the EU in meeting the schedule imposed under the Convention due to the delay with which Member States submit to it their annual inventories and national programmes;

- the dependency of the EU reporting system of its Member States' reports especially relating to inventories, policies and measures;

- the overcoming of inconsistencies in the reporting practices of the Member States;

- incomplete information of the Member States' inventories and communications.

1.3. Monitoring mechanism

In order to monitor annually the European Community's progress towards the objective of stabilising CO_2 emissions at 1990 levels by the year 2000 and the commitments undertaken under the UNFCCC and the Kyoto Protocol, the EU has implemented a system of reporting at the European level by its Member States to the European Commission: the EU monitoring mechanism. The monitoring mechanism was established by Decision 93/389/EEC and was recently modified by Decision 1999/296/EC. The revision of the monitoring mechanism aims to reinforce considerably its role. The monitoring mechanism is at present the only legal instrument available to assess progress towards the Kyoto Protocol commitments.

Reporting obligations

Annual inventories should be submitted by Member States to the Commission not later than 31 December. Member States should report in their inventories:

- anthropogenic emissions and removal by sinks of the six Kyoto greenhouse gases (GHGs) for the previous calendar year;

- the most recent projected emissions for the period 2008–12.

The Commission should assess annually in consultation with the Member States if the current and projected progress is sufficient to ensure commitments under the UNFCCC and shall report to the European Parliament and the Council, even in case of incomplete data from Member States.

- **National programmes** should also be reported regularly by Member States to the Commission. Their frequency and updating will be established by the Commission under the committee procedure. The sufficiency of such national programmes should be assessed.

1.4. Conclusions

After having analysed the existing reporting system under the UNFCCC and under the European GHG monitoring mechanism, the following conclusions arise.

Implementation of a sophisticated system: The reporting system developed under the UNFCCC and the subsequent decisions adopted by the COP can be considered a sophisticated and complex reporting system, where a considerable degree of transparency and comparability of the information has been reached. This reporting system, as stated in the provisions of the Convention, is continually submitted to a revision procedure, in order to improve and upgrade its efficiency. Such a reporting system is without doubt one of the most developed reporting systems implemented to date by any international environmental convention. We understand that this situation is based on the following elements.

The existence of **a predetermined calendar,** according to which Parties should submit and update on an annual basis their inventories and the submissions of national communications on a regular basis of three to five year intervals.

The existence of **a set of guidelines** that Parties should follow in the submission of their reports to the Secretariat of the Convention and the **periodic review procedure** of such guidelines established under the Convention in order to improve the completeness, consistency, transparency, reliability and comparability of the information provided. The transparency of the reporting is a key element in the success of the process for the communication and consideration of information, especially concerning inventories of emissions and removals of GHGs and for projections and assessments of the effect of measures. The reporting guidelines adopted by the COP have been revised and updated several times up to now with this aim. The last revision of such guidelines was adopted recently at COP 5 in Bonn in order to be on time for the preparation of the third national communication, scheduled for 30 November 2001. The revision of the revised guidelines contains a common reporting format, which is part of the national inventory report, according to which Annex I Parties will have to report from 2000 their inventory information using the tables of the common reporting format. Its adoption will considerably increase the transparency and comparability of the inventories. It will also facilitate the technical review and processing of inventory information, as well as the preparation of useful technical analysis and synthesis documentation.

The obligation to use a set of concrete and detailed guidelines (IPCC guidelines) and **comparable methodologies** in the presentation of the Parties' data for national inventories.

The existence of an **in-depth review mechanism** in order to assess the information submitted by the Parties in their national communications.

The recent adoption in COP 5 of guidelines for the technical review of GHG inventories aimed to improve consistency in the review of annual GHG inventories and to establish a process for a thorough and comprehensive technical assessment of inventories.

Notwithstanding, the UNFCCC reporting system also presented **certain deficiencies,** mainly in the evaluation of the policy measures adopted by the Parties. The UNFCCC guidelines focus mainly on the descriptive aspects of such policies but do not provide a basis for evaluation with a common pattern of the qualitative and quantitative effects of the implementation of the mitigation policies. This ends in a lack of transparency of the reporting. The adoption of a standard methodology to evaluate the mitigation effects on such policies could be envisaged.

Additionally, it should be pointed out that the sophistication of the UNFCCC reporting system requires a **degree of expertise that Parties do not always have.** The result is that most of the time the reporting instruments offered by the system are not always used adequately by the Parties or imply an excessive burden that discourage them in their reporting.

The European Community communication prepared by the Commission (Environment DG) builds on communications submitted by the Member States under the UNFCCC and/or under the Community's internal monitoring mechanism. The lack of implementation of the monitoring mechanism up to now has obliged the Commission to base its evaluations mainly on the national communications submitted by Member States under the UNFCCC.

The degree to which the Community's communication builds on the national submissions varies but these are particularly important for the sections on inventories, policies and measures. The communications of the European Community (as Party to the Convention) under the UNFCCC are prepared by the Commission, assisted by the European Environment Agency. The role of the latter is to compile the EU inventory based on Member States' inventories submitted under the UNFCCC and the monitoring mechanism and to coordinate and lead activities to improve the methodologies and presentation. Furthermore, the EEA provides extensive software tools for countries to compile and report their annual inventories and also organises regular workshops for training and exchange of experience.

Due to this dependence on Member States' reporting, the EU annual inventory under the UNFCCC was submitted with delay before 2000, because at the due date several Member States' inventories were not available. However, the reporting in 2000 was on time and complete, although the quality of the reporting can be further improved.

In order to overcome such difficulties, **it is important to develop a reporting system at the European level.** The **European Environment Agency is playing an important role** in the issue of reporting inventory data. With the aim of developing a uniform and comprehensive air emissions inventory system at Community level, the European Topic Centre for Air Emissions (ETC/AE, Corinair) software tool system has been developed. The system is compatible with the UNFCCC and IPCC guidelines. At the end of 1999, after adoption by COP 5 in November 1999, the ETC/AE started the development of a software package fully compatible with the common reporting format. Member States were able to test the system during 2000 to achieve improved reporting by the end of 2000 or early in 2001 to both the monitoring mechanism and the UNFCCC.

Regular workshops, led by the EEA and assisted by the ETC/AE, and software training are also useful tools to ensure a common approach in the use of such a package.

The entry into force of the Kyoto Protocol, which contains clear legally binding reduction targets, will have serious implications for the monitoring mechanism. The European Community bubble provision of Article 4 of the Kyoto Protocol, implementing the possibility for Parties to fulfil their commitments jointly as well as the responsibility of each Party for its own target in case the collective bubble target is not reached, will make it extremely important for the EU to have an effective means of tracking progress towards this target. The monitoring mechanism should play this role. With this aim, efficient reporting by Member States would be crucial. The monitoring mechanism is so far the only legal instrument available to assess progress towards the Kyoto commitments. It will be necessary, therefore, to ensure the full implementation of this mechanism and its enforceability. It will also be important to ensure that the obligation to produce annual assessment reports is complied with, even in the case of incomplete data.

In order to improve the transparency and comparability under the monitoring mechanism, it will be important to test the usability of the UNFCCC guidelines before deciding on possible additional guidelines at the EU level.

It should be noted that the Secretariat of the UNFCCC as well as the Parties have made a very big effort to provide transparency to its reporting system which can be accessed through its web site.

The implementation of a **system of in-depth review,** comparable to that established under the UNFCCC, in order to assess the reporting practices of the Member States under the monitoring mechanism, will enhance the effectiveness of the monitoring and control of the reporting system, as well as facilitate assessment of the EU progress towards the emissions reduction target.

It will also be important to **make the reporting practices under the monitoring mechanism accessible to the public,** posting the full reports of Member States or at least summaries of them on the Internet as part of the EIONET system including national EIONET servers. This could also be an important incentive to improve the efficiency of the system. This is already being done by the EEA.

A maximum level of **compatibility between the reporting schedules and methodologies** under the UNFCCC and the monitoring mechanism should be ensured in order to avoid an unnecessary reporting burden for Member States.

To improve Member States' reporting skills, it will be appropriate to develop **training stages or workshops** for the persons responsible for reporting in each Member State. These could be very important instruments in improving the comparability of the Member States' reporting practices, improving their reporting skills and providing them not only with comparable reporting but also a comparable way in which to apply it.

2. Reporting obligations under the UNFCCC

2.1. Panorama of the UNFCCC

2.1.1. Commitments under the UN Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change was one of two binding treaties opened for signature at the United Nations Conference on Environment and Development (UNCED) in 1992. The Treaty was adopted on 9 May 1992 in New York and subsequently signed and ratified by some 176 Parties, including the Community and its Member States. The Climate Change Convention entered into force on 21 March 1994, after the ratification by the 50th State.

The UNFCCC addresses potential human-induced global warming by pledging countries to seek stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system (being also a clear outcome of the prevention principle).

2.1.1.1. Objectives

The objectives of the UNFCCC are:

- to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, within a time frame sufficient to allow ecosystems to adapt naturally to climate change;
- to ensure that food production is not threatened;
- to enable economic development to proceed in a sustainable manner.

2.1.1.2. Undertakings

The Parties to the Convention undertake the following:

- to develop, periodically update, publish and make available to the Conference of the Parties national inventories of emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol using comparable methodologies;
- to formulate, implement, publish and regularly update national, and, where appropriate, regional programmes containing measures to mitigate climate change by addressing emissions, sinks and reservoirs of GHGs and to facilitate adequate adaptation to climate change;
- to promote and cooperate in the development, application and diffusion of technologies, practices and processes that control, reduce or prevent GHG emissions;

- to promote sustainable management and to promote and cooperate in scientific, technical, socioeconomic and other research systematic observation and development of data archives related to the climate system.

The developed country Parties (including Parties that are undergoing the process of transition to a market economy) shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting their anthropogenic emissions of GHGs and protecting and enhancing their GHG sinks and reservoirs.

These Parties may implement such policies and measures jointly with other Parties, and each of these Parties should communicate within six months of the entry into force of the Convention, and periodically thereafter, detailed information on its policies and measures, as well as on its resulting projected anthropogenic emissions by sources and removals by sinks of GHGs with the aim of returning these emissions individually or jointly to their 1990 levels.

The developed countries (not including countries that are undergoing the process of transition to a market economy) shall provide resources to aid developing countries in their reporting obligations and implementation of the Convention. Among such resources, they should also promote the transfer of technologies.

Developing country Parties should submit their first communication three years after the entry into force of the Convention or upon availability of financial resources.

2.1.2. The Kyoto Protocol

The text of the Protocol to the UNFCCC was adopted at the third session of the Conference of the Parties to the UNFCCC in Kyoto, Japan, on 11 December 1997. It was opened for signature at the United Nations headquarters, New York, from 16 March 1998 to 15 March 1999, and was open for accession from 16 March 1999. It will enter into force on the 90th day after the date on which no fewer than 55 Parties to the Convention, incorporating Parties included in Annex I, have deposited their instruments of ratification, acceptance, approval or accession. So far, only 16 countries (May 2000), all from the developing world, have ratified. Eighty-three countries plus the European Union have taken the initial step of adding their signature to the agreement.

At COP 5, held from 25 October to 5 November 1999 in Bonn, an aggressive timetable for completing the outstanding details to allow early ratification of the Kyoto Protocol was set. The main initiative to get the Kyoto Protocol ratified and in force by Rio+10 (i.e. 2002) was endorsed by many Parties but not the United States. A fully operational and legally binding protocol is essential in order to ensure greater emission reductions by industrialised countries.

2.1.2.1. Commitments

The Kyoto Protocol contains individual emission limitations and reduction commitments for Parties included in Annex I to the Convention, covering six main GHGs. According to it, Parties included in Annex I shall individually or jointly ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the GHGs listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and the provisions of Article 3, with a view to

reducing their overall emissions of such gases by at least 5 % below 1990 levels in the commitment period 2008–12. The 5.2 % reduction in total developed country emissions will be realised through national reductions ranging from an 8 % reduction for certain countries to a 10 % increase for others, by the period 2008–12, calculated as an average over these five years.

- Each Party included in Annex I shall, by 2005, have made demonstrable progress in achieving its commitments.

- The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under Article 3 of each Party included in Annex I.

- The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8.

- Prior to the first session of the COP, serving as the meeting of the Parties (MOP) to the Protocol, each Party included in Annex I shall provide for consideration by the Subsidiary Body for Scientific and Technological Advice (SBSTA) data to establish its level of carbon stocks in 1990 and to enable an estimate to be made of its changes in carbon stocks in subsequent years.

- The COP serving as the MOP to this Protocol shall, at its first session or as soon as practicable thereafter, decide upon modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and emissions and forestry categories shall be added to, or subtracted from, the assigned amount for Parties included in Annex I, taking into account uncertainties, transparency in reporting, verifiability, the methodological work of the SBSTA in accordance with Article 5 and the decisions of the Conference of the Parties. Such a decision shall apply in the second and subsequent commitment periods. A Party may choose to apply such a decision on these additional human-induced activities for its first commitment period, provided that these activities have taken place since 1990.

- Any emission reduction units or any part of an assigned amount which a Party acquires from another Party in accordance with the provisions of Article 6 or of Article 17 shall be added to the assigned amount for the acquiring Party. Any emission reductions units, or any part of an assigned amount which a Party transfers to another Party, shall be subtracted from the assigned amount for the transferring Party. Any certified emission reductions which a Party acquires from another Party in accordance with the provisions of Article 12 shall be added to the assigned amount for the acquiring Party.

- If the emissions of a Party included in Annex I in a commitment period are less than its assigned amount, this difference shall on request of that Party be

added to the assigned amount for that Party for subsequent commitment periods.

- Each Party included in Annex I shall seek to implement its commitments in such a way as to minimise adverse social, environmental and economic impacts on developing country Parties.

2.2. Reporting obligations under the UNFCCC

2.2.1. Streamlining of the reporting obligations under the UNFCCC

Reporting obligations of the Parties to UNFCCC are contained in Articles 4 and 12 of the Convention.

2.2.1.1. All Parties

According to Article 4(1), all Parties taking into account their common but differentiated responsibilities and their specific national and regional development, priorities, objectives and circumstances shall:

- develop, periodically update, publish and make available to the COP, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the COP;

- formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change.

Article 12 of the UNFCCC states that, in accordance with Article 4(1), **each Party** shall communicate to the Conference of the Parties (hereinafter the 'COP') through the Secretariat the following elements of information:

- a national inventory of anthropogenic emissions by sources and removal by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties (Article 12(1)(a) of the Convention);

- a general description of steps taken or envisaged by the Party to implement the Convention;

- any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication including, if feasible, material relevant for calculation of global emission trends.

2.2.1.2. Each developed country and each other Party included in Annex I

Additionally, Article 12(2) establishes that **each developed country and each other Party included in Annex I to the Convention** should also incorporate into their communication the following elements of information:

- a detailed description of the policies and measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs;

- a specific estimate of the effects that the policies and measures referred to above will have on anthropogenic emissions by its sources and removals by its sinks of greenhouse gases by the end of the present decade, with the aim of returning individually or jointly to their 1990 levels.

2.2.1.3. Each developed country Party and each other developed Party of Annex II

In addition, **each developed country Party and each other developed Party included in Annex II** shall incorporate details of measures taken in accordance with Article 4(3) (financial resources and assistance to developing countries).

2.2.1.4. Developing countries

Developing countries may, on a voluntary basis, propose projects for financing, including specific technologies, materials, equipment, techniques and practices that would be needed to implement such projects, along with an estimate of all the incremental costs of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits.

2.2.2. Bodies participating in the reporting

The information should be communicated to the Secretariat that should transmit it to the Conference of the Parties and to any subsidiary bodies concerned. The procedures for the communication of information are agreed by the Conference of the Parties.

2.2.2.1. The Conference of the Parties

The Conference of the Parties (COP) is the supreme body of the Convention. According to Article 7 of the UNFCCC, its main function is to keep under regular review the implementation of the Convention and any related legal instruments that the COP may adopt, and shall make within its mandate the decisions necessary to promote the effective implementation of the Convention.

In relation to the reporting obligations, the COP's role is to promote and facilitate the exchange of information on measures adopted by the Parties to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under the Convention.

The COP should promote and guide, in accordance with the objective and provisions of the Convention, the development and periodic refinement of comparable methodologies, to be agreed by the COP, for the preparation of inventories of GHGs by sources and removals by sinks and for evaluating the

effectiveness of measures to limit the emissions and enhance the removals of these gases.

On the basis of the information provided to it according to the Convention provisions, it shall assess the implementation of the Convention by the Parties.

It should consider and adopt regular reports on the implementation of the Convention and ensure their publication.

2.2.2.2. The Secretariat

A Secretariat has been created in order to assist the COP and the subsidiary bodies established under the Convention. In relation to the reporting, the Secretariat of the Convention ensures the compilation and transmission of the reports submitted to it by the Parties (Article 8 of the UNFCCC).

It also provides assistance to the Parties particularly developing country Parties, on request, in the compilation and communication of information required in accordance with the provisions of the Convention.

2.2.2.3. The Subsidiary Body for Implementation (SBI)

A Subsidiary Body for Implementation (hereinafter the 'SBI') is established by the Convention in Article 10 to assist the COP in the assessment and review of the effective implementation of the Convention. This body shall be open to participation by all Parties and comprise government representatives who are experts on matters related to climate change.

In relation to the reporting issues, this body, under the guidance of the COP, will consider the information communicated in accordance with Article 12(1) in order to assess the overall aggregated effect of the steps taken by the Parties in the light of the latest scientific assessments concerning climate change. It will also consider the information communicated in accordance with Article 12(2) in order to assist the COP in carrying out the reviews required by Article 4(2)(d).

2.2.2.4. The Subsidiary Body for Scientific and Technological Advice (SBSTA)

A Subsidiary Body for Scientific and Technological Advice (hereinafter the 'SBSTA') is also established under Article 9 of the Convention to provide the COP, and, as appropriate, its other subsidiary bodies, with timely information and advice on scientific and technological matters relating to the Convention. This body shall be open to participation by all Parties and shall be multidisciplinary. It shall comprise government representatives competent in the relevant field of expertise. It shall report regularly to the Conference of the Parties on all aspects of its work.

2.2.3. The reporting under the Kyoto Protocol

2.2.3.1. Inventories

According to Article 7(1), each Annex I Party shall incorporate into its annual inventory the supplementary information for the purposes of ensuring compliance with Article 3, beginning with the inventory due under the Convention for the first year of the commitment period after this Protocol has entered into force for that Party (Article 7(3)).

This information shall be reviewed as part of the annual compilation and accounting of emissions inventories and assigned amount (Article 8(1)).

2.2.3.2. National communications

All Parties shall formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and to facilitate adaptation (Article 10(b)).

Annex I Parties shall submit information, including national programmes, in their national communication under Article 12 of the Convention, in accordance with guidelines adopted by the COP (Articles 10(b)(ii), 7(2) and 7(4)).

All Parties should include in their national communications information on programmes and activities undertaken pursuant to Article 10 (Article 10(f)).

2.2.4. Timing and calendar of the reporting obligations

2.2.4.1. Annual inventories

According to Decision 3/CP1, national inventory data on emissions by sources and removals by sinks of all GHGs not included in the Montreal Protocol should be submitted and updated on an annual basis to the COP through the Secretariat by 15 April, according to what was stated in Decision 11/CP4. Parties should use comparable methodologies to be promoted and agreed upon by the COP (Article 12(1) of the Convention).

2.2.4.2. National communications

According to Article 12(5) of the UNFCCC, each developed country Party and each other Party included in Annex I had to submit its initial communication within six months of the entry into force of the Convention for that Party, and periodically thereafter as determined by the COP. Decision 3/CP1 established that Annex I Parties should submit a second national communication by 15 April 1997. At Buenos Aires, the COP decided that the third national communications from Annex I Parties should be submitted by 30 November 2001, and subsequent communications on a regular basis of three to five year intervals. The interval between submission of national communications should ensure that both repetition from former communications and the reporting burden are minimised.

Each of the rest of the Parties shall make its initial communication within three years of the entry into force of the Convention for that Party, or of the availability of financial resources in accordance with Article 4, paragraph 3. Least developed country Parties may make their initial communication at their discretion.

Schedule of the reporting obligations under the UNFCCC

National inventories	Periodicity of reporting: Annually by 15 April (Decisions 3/CP1 and 11/CP4).
National communications	Periodicity: On a regular basis of three to five year intervals to be determined by the COP. ● Initial communication: Due by 21 November 1994. ● Second communication: Due by 15 April 1997 (Decisions 3/CP1 and 9/CP2). ● Third communication: Due by 30 November 2001 (Decision 11/CP4).

2.3. Existing reporting practices and their limitations

2.3.1. National communications

Articles 4 and 12 of the Convention state an obligation of the Parties to prepare national communications on their implementation of the Convention. The transparency of national communications is fundamental to the success of the process for the communication and consideration of information. This transparency is particularly important for inventories of emissions and removals of GHGs and for projections and assessments of the effects of measures. With the aim of ensuring that the reporting practices of the Parties are carried out in a transparent, consistent, comparable and accurate manner, the COP has adopted guidelines for the preparation of national communications, which have been successively revised.

For the preparation of the first communication, Annex I Parties were requested according to Decision 3/CP1 to use the guidelines prepared by the Intergovernmental Negotiating Committee for the UNFCCC and adopted at its ninth session.

2.3.2. Revised guidelines for the preparation of national communications

The guidelines used for the preparation of the first communication were revised at the second session of the COP. The revised guidelines were used by Parties included in Annex I to the Convention for the elaboration of their second national communication. Such revised guidelines were adopted in Decision 9/CP2 of the COP. The guidelines were also applicable to the annual submission of national GHG inventories.

2.3.2.1. Aims of the guidelines

The aims of the guidelines are:

- to assist Annex I Parties in meeting their commitments under Articles 4 and 12 of the Convention;

- to facilitate the process of elaboration of the national communications, including the preparation of useful technical analysis and synthesis documentation, by encouraging the presentation of information in ways that are consistent, transparent and comparable;

- to ensure that the COP has sufficient information in accordance with Article 4(2)(d) to carry out its responsibilities to review the implementation of the Convention and the adequacy of the commitments with Article 4(2)(a) and (b).

2.3.2.2. Content of the communications according to the revised guidelines

In accordance with the guidelines, and in agreement with Articles 4(1)(j) and 12(1)(b), a communication should address the full range of a Party's actions to implement all its Convention obligations, including those relating to adaptation, research, education and other actions, in addition to those limiting emissions and enhancing sinks.

The guidelines contain a set of minimum information that should be reported by the Parties to the COP. Such information should be reported in a single document. Notwithstanding, the Parties may add additional documents as technical annexes. The communication should also include an executive summary not longer than 10 pages containing key information and data.

2.3.2.3. Structure of the communication

The guidelines propose an indicative outline for the presentation of the information by the Parties in their national communications. According to this outline, the communication should have the following structure and content.

(a) Executive summary

The executive summary should contain the key information of the communication and its length should not exceed 10 pages.

(b) Introduction

(c) Additional information related to the national circumstances of the Party related to its greenhouse gas emission/removal profile. Such additional information will permit the data provided by the Parties to be put in context and to explain certain trends or provide valuable data in the analysis and aggregation of the submissions. This information could include the following elements: population profile, geographic profile, climatic profile, economic profile, energy profile, social profile, sectors emitting large quantities of greenhouse gases and outline of which level of government has responsibility for implementing which policies and measures that have an impact on greenhouse gas emissions and information relating to the application of and experience with indicators for performance in greenhouse gas mitigation.

(d) Inventories

Article 12(1)(a) of the Convention requires that communications include a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol.

Content of the inventories: They should contain at least information on the following six GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF_6).

Parties should also provide information on the indirect greenhouse gases — carbon monoxide (CO), nitrogen oxides (NO_x) and non-methane volatile organic compounds (NMVOCs) — and are encouraged to provide data on sulphur oxides. As new gases with significant global warming potential are identified, Parties should include them in the communications.

For the elaboration of their national GHG inventories, Parties should use the Intergovernmental Panel on Climate Change (hereinafter the 'IPCC') guidelines for estimating reporting and verifying inventory data.

Annex I Parties should follow the IPCC guidelines for national greenhouse gas inventories with respect to the presentation of methodologies, activity data, emission factors and other assumptions. They should also use them in providing information on sequestration and emissions of carbon in the land-use change and forestry sector, as well as in agricultural soil.

According to Article 4(2)(b) of the Convention, the year 1990 should be the base year for inventories. Parties should provide GHG inventory information for the years subsequent to 1990. For their second national communication, Parties were requested to provide data for each year (updated where appropriate) for the period 1990–94 and, where available, for 1995. Subsequent national communications should provide data from 1990 and up to three years prior to the submission year.

(e) Policies and measures

In addition to national inventories, Annex I Parties should include in their communications information on policies and measures they have adopted to implement their commitments under Article 4(2)(a) and (b) of the UNFCCC. The communications should describe all of a Party's policies and measures implemented or committed to that the Party believes contribute significantly to its efforts to reduce emissions and enhance sinks of greenhouse gases.

These actions do not need to have as a primary objective the limitation of greenhouse gas emissions. In order to avoid double counting, Parties should report on measures taken by regional or local governments or the private sector.

The overall policy context for the policies and measures adopted should be presented in the communication. This could include reference to other relevant policies as well as elaboration of national greenhouse gas targets.

The reporting of policies and measures should be organised by gas and by sector. This should as much as possible be consistent with the categories set out in the IPCC guidelines for national GHG inventories. If possible, the description and evaluation of each policy and measure should examine reductions in all the relevant gases listed in the inventory. Their description should be structured, according with the lines described in the guidelines.

Enough detail should be provided about each individual policy and measure described in order to allow a third party to understand the action's objective and degree of implementation, as well as how the greenhouse gas effect of the action will be monitored over time. The description should include at least the following elements:

- objectives of the measure in terms of the gas(es) and sector(s) targeted;
- type of policy instrument used by the measure (e.g. economic instrument, regulation, guideline, voluntary agreement, information, education and training, research and development related to mitigation measures);
- how the policy or measure interacts with other policies and measures described;
- status of implementation of, and/or commitment to, the policy or measure;
- how the measure is expected to function or is functioning;
- monitoring through intermediate indicators of progress for policies and measures;
- a quantitative estimate of the mitigation impact of the policy or measure or, if unavailable, a ranking of individual policies and measures according to their relative importance in mitigation;
- as much information as possible (including details of the calculation methodologies) relating to the cost of the policy or measure.

Parties should report on action taken to implement commitments under Article 4(2)(e)(ii) of the Convention, which requires that Parties identify and periodically review their own policies and practices which encourage activities that lead to greater levels of anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol than would otherwise occur. Parties should also provide the rationale for such actions in the context of their national circumstances.

Under Article 12(1)(b), Parties may also briefly describe in a separate section of the national communication policies and measures under consideration that have not yet been adopted.

Parties may wish to include a relevant summary reporting on activities implemented jointly even if a separate and distinct process for their reporting has been implemented by Decision 5/CP1.

(f) Projections and effects of policies and measures

In accordance with Article 4(2)(b), national communications should include a projection of future GHG emission and removal levels. This projection, if possible, should include the effects of policies and measures. In the interest of transparency, Parties should include baseline projections, indicating, using Table 1of the convention, which measures are included and which measures are additional to these baseline projections.

The projections would at least consider future emissions and removals of CO_2, CH_4, N_2O, PFCs, HFCs and SF_6. Parties are encouraged to provide projections of the indirect greenhouse gases CO, NO_X and NMVOCs, as well as sulphur oxides, where methodological or data gaps exist. Information should be presented in a transparent manner.

The Convention requires that Parties provide information on projected anthropogenic emissions by sources and removals by sinks (Article 4(2)(b)) as well as specific estimates of the effects of policies and measures on those levels (Article 12(2)(b)).

According to Article 4(2)(a), Parties should provide data for the year 2000 and include projections on a quantitative basis for the years 2005 and 2010 as well as, if possible, estimates for the year 2020.

Parties should present their projections on a gas-by-gas basis and disaggregate the results by sector. They should summarise the projection data in accordance with the categorisation in the summary tables of the IPCC guidelines on national greenhouse gas inventories.

In accordance with Article 12(2)(b), national communications should provide a specific estimate of the total effect of policies and measures on greenhouse gas emissions and removals.

To ensure transparency, national communications should include enough information to provide a third party with a quantitative understanding of the key assumptions used to develop projections on greenhouse gas emissions and removals and estimates of the total effects of policies and measures on emissions and removals.

(g) Expected impacts of climate change and vulnerability assessment

The communication should contain a brief review of the expected impacts of climate change for the Party concerned and outline the actions taken to implement Article 4(1)(b) and (e) with regard to adaptation. Parties are encouraged to use the IPCC technical guidelines for assessing climate change impacts and adaptations.

(h) Adaptation measures

The communication should outline the actions taken to implement Article 4(1)(b) and (e) with regard to adaptation. For this purpose, Parties should use the IPCC technical guidelines for assessing climate change impacts and adaptations. They are encouraged to report specific results in relation to scientific research.

(i) Financial resources and transfer of technology and know-how

Parties shall when reporting activities related to the promotion, facilitation and financing of the transfer of, or access to, environmentally sound technologies clearly distinguish between activities undertaken by the public sector and those undertaken by the private sector.

(j) Research and systematic observation

Pursuant to Articles 4(1)(g), 5 and 12(1)(b), Annex I Parties should communicate information on their actions relating to research and systematic observation. This could include, *inter alia*:

- research on the impact of climate change;

- modelling and prediction, including global circulation models;
- climate process and climate system studies;
- data collection, monitoring and systematic observation, including data banks;
- socioeconomic analysis, including analysis of both the impacts of climate change and response options;
- technology research and development.

The communications could address both domestic and international programmes and the IPCC. They should also reflect actions taken to support related capacity building in developing countries.

The communications should be limited to reporting on actions undertaken rather than the results of such efforts.

(k) Education training and public awareness

In accordance with Articles 4(1)(i), 6 and 12(1)(b), Annex I Parties should communicate information on their actions relating to education, training and public awareness. This would include information on relevant domestic programmes, as well as participation in international activities.

Parties should also mention in their communication if they are seeking to be accorded flexibility in accordance with Article 4(6) and 4(10) of the Convention.

2.3.3. National inventory report

According to Decision 3/CP1, all Parties shall submit to the COP through the Secretariat, on an annual basis by 15 April, an updated inventory report containing detailed and complete information on their inventories for all years from the base year to the year of the current annual inventory submission, in order to ensure the transparency of the inventory.

The national inventory report should be updated and submitted annually in its entirety to the COP, to reflect changes and may be either published in its entirety as a document or made available in its entirety on national web sites.

2.3.3.1. Content

The national inventory report should include:

- the annual inventory information submitted for all years from the base year to the year of the current annual inventory submission;
- calculation sheets or equivalent database information on detailed inventory calculations in each sector, for all years from the base year to the year of the current annual inventory submission, containing, *inter alia*, disaggregated national emission factors and activity data underlying the estimates;

- a description of the specific methodologies and assumptions used in each sector, including an indication of the level of complexity (IPPC tiers) applied and a description of any national methodology used by the Party;

- references or sources of information related to methodologies' emission factors and activity data, as well as the rationale for their selection;

- information on assumptions and conventions underlying the emission and removal estimates, as well as the rationale for their selection;

- specific information on feedstocks and bunkers:

  — Parties should indicate whether feedstocks have been accounted for in the inventory and if so how they have been accounted for,

  — regarding the reporting of emissions from bunker fuels, Parties should explain how they distinguish between domestic marine and aviation emissions, which are to be included in national totals, and international bunker emissions;

- information on any recalculations related to previously submitted inventory data, as requested in paragraph 20 above;

- information on uncertainties and

- information clearly identifying changes with the previous years.

2.3.3.2. Methodology

The IPCC guidelines offer a default methodology available to any country that wishes to use it; even countries having a comparable methodology can use it if they back up the data presented sufficiently.

The IPCC guidelines request that all Parties report inventory data using the reporting framework contained in the guidelines, which is formed by the following elements:

- summary report tables;

- sectoral report tables;

- overview table;

- worksheets.

Parties should present the information in the worksheets provided in the IPCC guidelines for national GHG inventories or equivalent documentation. Emissions of other greenhouse gases associated with these activities should also be listed as appropriate. Historical trends should be included when available. IPCC worksheet 1.1 or other equivalent documentation indicating the assumptions to estimate CO_2 emissions from fuel combustion in line with the IPCC reference approach should be provided.

Quantitative data related to inventories should be presented on a gas-by-gas basis in units of mass (Gg) with emissions by sources listed separately from removals by sinks except in cases where it is technically impossible to separate information on sources and sinks in the areas of land use, land-use change and forestry.

In addition to communicating emissions in units of mass, Parties may also choose to use global warming potential (GWP) to reflect their inventories and projections in carbon dioxide equivalent terms, using information provided by the IPCC in its second assessment report. The use of GWP should be based on the effects of the greenhouse gases over a 100-year time horizon.

The level of uncertainty of quantitative data related to inventories of greenhouse gas emission and removal levels should be discussed qualitatively and, where possible. quantitatively.

If Parties carry out any adjustment in inventory data, it should be reported in a transparent manner, indicating adjusted and unadjusted data.

With regard to possible double counting or non-counting of emissions, Parties should provide a brief description of how feedstocks have been considered in the industrial processes source category of the inventory in particular in the production of iron and steel and non-ferrous metals and in the chemical and petrochemical industry.

To ensure transparency, enough information should be provided to allow the reconstruction of the inventory from national activity data, emission factors and other assumptions and to assess the results.

2.3.3.4. Record keeping

Parties should gather and archive all relevant inventory information for each year, including all disaggregated emission factors, activity data and documentation about how these factors and data have been generated and aggregated for the reporting of the inventory. This information should also facilitate the timely process of clarifying inventory data when the Secretariat prepares annual compilations of inventories or assesses methodological issues. Parties are encouraged to collect and gather the information in a single national inventory facility or to, at least, keep the number of facilities to a minimum.

2.3.4. The revision of the revised guidelines

2.3.4.1. Overview

A revision of the revised guidelines has been adopted recently in Bonn in the framework of COP 5.

2.3.4.2. Aims of the revision

- To resolve the methodological issues identified by Parties and by the Secretariat while processing GHG inventories contained in the second national communications, including the analysis of the paragraphs of the inventory sections of the UNFCCC guidelines.

- To update the guidelines and improve the transparency, consistency, comparability, completeness and accuracy of the reported national greenhouse gas inventories and other information according to the mandate of Article 7(2)(d) of the Convention.

The revision of the revised guidelines has been divided into two parts.

- Guidelines for the preparation of national communications by Parties included in Annex I to the Convention: Part I: UNFCCC reporting guidelines on annual inventories, contained in document FCCC/SBSTA/1999/6/Add.1.

- Guidelines for the preparation of national communications by Parties included in Annex I to the Convention: Part II: UNFCCC reporting guidelines on projections, policies and measures, financial resources and transfer of technology and other matters, contained in document FCCC/CP/1999/L3/Add.1.

According to Decision 3/CP5, Parties included in Annex I to the Convention should use the UNFCCC guidelines on annual inventories for reporting inventories due by 15 April each year, beginning in the year 2000.

Decision 4/CP5 establishes that Annex I Parties should use Part II of the UNFCCC reporting guidelines for the preparation of their third national communications due by 30 November 2001, in accordance with Decision 11/CP4.

During a two-year trial period, starting in early 2000, the UNFCCC reporting guidelines on annual inventories will be assessed, particularly the common reporting format, with a view to revising them at COP 7. With this aim, Decision 3/CP5 invites Annex I Parties to submit separately, by 1 July 2001, information to the Secretariat on experiences in using the guidelines, in particular the common reporting format, in the period 2000–01. A report should be prepared by the Secretariat on the use of such guidelines on the basis of the experience gained by the Parties in using the guidelines, and by the Secretariat in processing the common reporting format, and input from the Intergovernmental Panel on Climate Change at its 15th session in considering possible revisions to the guidelines.

2.3.5. Guidelines for the preparation of national communications by Annex I Parties to the Convention: Part I: Inventories

2.3.5.1. Scope

The UNFCCC reporting guidelines on inventories cover the estimation and reporting of greenhouse gas emissions and removals of both annual inventories due by 15 April each year, beginning in the year 2000, and inventories included in national communications, as requested by Decision 11/CP4.

2.3.5.2. Objectives

- To assist Annex I Parties in meeting their commitments under Articles 4 and 12 of the Convention and in preparing to meet possible future commitments under Articles 3, 5 and 7 of the Kyoto Protocol.

- To facilitate the process of considering annual national inventories and national inventories included in national communications, including the preparation of technical analysis and synthesis documentation.

- To facilitate the process of verification and technical assessment and expert review of the inventory information.

2.3.5.3. Principles and definitions

National greenhouse gas inventories should be transparent, consistent, comparable, complete and accurate. The guidelines give a definition of what should be understood by each of these terms.

Transparency means that the assumptions and methodologies used for an inventory should be clearly explained to facilitate the replication of the inventory by users of the reported information. The transparency of inventories is fundamental to the success of the process for the communication and consideration of information.

Consistency means that an inventory should be internally consistent in all its elements with inventories of other years. An inventory is consistent if the same methodologies are used for the base and all subsequent years, and if consistent data sets are used to estimate emissions or removals from sources or sinks. Under certain circumstances, an inventory using different methodologies for different years can be considered to be consistent if it has been recalculated in a transparent manner, taking into account any good practices.

Comparability means that estimates of emissions and removals reported by Parties in inventories should be comparable among Parties. For this purpose, Parties should use the methodologies and formats agreed by the COP for estimating and reporting inventories. The allocation of different source/sink categories should follow the split of the revised 1996 guidelines for national greenhouse gas inventories at the level of its summary and sectoral tables.

Completeness means that an inventory covers all sources and sinks as well as gases, included in the revised 1996 guidelines for national greenhouse gas inventories, as well as other existing relevant source/sink categories that are specific to individual Parties, and therefore may not be included in the IPCC guidelines. Completeness also means full geographic coverage of sources and sinks of a Party.

Accuracy is a relative measure of the exactness of an emission or removal estimate. Estimates should be accurate in the sense that they are systematically neither over nor under true emissions or removals, as far as can be judged, and that uncertainties are reduced as far as practicable. Appropriate methodologies conforming to guidance on good practices should be used to promote accuracy in inventories.

2.3.5.4. Methodology

The COP agreed that inventories should be prepared using the revised 1996 guidelines for national greenhouse gas inventories to estimate and report on anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol. In accordance with the IPCC guidelines, Parties may use one of the proposed methodologies, giving priority to those methods which are believed to produce the most accurate estimates depending on

the data available. Parties can also use national methodologies provided they better reflect their national situation and are compatible with the IPCC guidelines and well documented.

The IPCC guidelines offer a default methodology that includes default emission factors and in some cases default activity data. When default data, factors and assumptions are not appropriate for specific national contexts, Parties shall use their own national emissions factors and activity data provided that they are developed in a manner consistent with any good practices and considered to be more accurate and that the reporting of the emission and removal estimates and their underlying data is transparent.

2.3.5.5. Good practices

In order to improve the transparency, consistency, comparability, completeness and accuracy of the inventories, Parties should apply any good practices agreed upon by the COP when preparing them. The IPCC is currently developing guidance on good practices as part of its work related to uncertainties in inventories. This guidance may be available for consideration by the SBSTA in 2000. Guidance on good practices may include, *inter alia,* advice on the choice of methodology, emissions factors, activity data and uncertainties, and on a series of quality assessment and quality control procedures that may be applied during the preparation of inventories.

2.3.5.6. Base year

The year 1990 should be the base year for the estimation and reporting of inventories except for the authorised Annex I Parties that are undergoing a process of transition to a market economy.

2.3.5.7. Recalculations

The purpose of recalculations is to improve accuracy and completeness by ensuring the consistency of time series. The inventories of an entire time series including the base year and all subsequent years for which inventories have been reported should be estimated using the same methodologies and the underlying activity data and emission factors should be obtained and used in a consistent manner. Where the methodology or manner in which underlying activity data and emission factors are gathered has changed, Parties should recalculate inventories for the base and subsequent years.

For cases where activity data are missing, emissions or removals for these years may need to be calculated with alternative methodologies. In these cases, Parties should demonstrate that the time series are consistent. The alternative methodologies should be documented in a transparent manner, taking into account any good practices.

Recalculations of previously submitted estimates of emissions and removals as a result of changes in methodologies, changes in the manner in which emission factors are obtained and used or the inclusion of new sources or sinks not previously reported should be reported for the base year and all subsequent years, up to the year in which the recalculations are made. Parties should report justifications for these changes. The information on the procedures used to perform the recalculations, changes in the calculation methods, emission factors and activity data used, and inclusion of sources or sinks, should be documented in

a transparent manner, indicating the relevant changes in each source or sink category where these changes have taken place.

2.3.5.8. Uncertainties

Parties should estimate the uncertainties of their inventories using the best methodologies available to them, taking account of any good practices. The methodologies used for estimating uncertainties should be reported in a transparent manner. They should report quantitative information on uncertainties where this is available.

2.3.5.9. Verification

In accordance with the IPCC guidelines and for verification purposes, Parties should compare their national estimates of carbon dioxide emissions from fuel combustion with those estimates obtained using the IPCC reference approach, and report them in annual inventories. Parties are also encouraged to report on peer review of their inventory conducted nationally.

2.3.5.10. Adjustments

Adjustments to inventory data should be reported separately and in a transparent manner, with clear indications of the method followed.

2.3.5.11. Reporting

According to Article 12(1)(a), each Party shall communicate to the COP through the Secretariat a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol of at least carbon dioxide, methane, nitrous oxide, perfluorocarbons, hydrofluorocarbons and sulphur hexafluoride. Parties should report on emissions and removals of any other greenhouse gases whose 100-year global warming potential values have been identified by the IPCC and adopted by the COP. Parties should also provide information on the following indirect greenhouse gases: carbon monoxide, nitrogen oxides, and non-methane volatile organic compounds and encouraged to provide information on sulphur oxides.

Greenhouse gas emissions and removals should be presented on a gas-by-gas basis in units of mass (Gg) with emissions by sources listed separately from removals by sinks except in cases where it may be technically impossible to separate information on sources and sinks in the areas of land use, land-use change and forestry. For HCFs and PFCs, emissions should be reported on a disaggregated basis for each relevant chemical in the category. It should be taken into account that emissions and removals should be reported on the most disaggregated level of each source/sink category, taking into account that a minimum level of aggregation may be required to protect confidential business and military information.

In addition, and in accordance with Decision 2/CP3, Parties should report aggregate emissions and removals of greenhouse gases, expressed in CO_2 equivalent terms at summary inventory level, using global warming potential values provided by the IPCC in its second assessment report (referred to below as 1995 IPCC GWP values), based on the effects of greenhouse gases over a 100-year time horizon.

Consistent with Decision 2/CP3, Parties should report actual emissions of HFCs, PFCs and SF_6 where data are available, providing disaggregated data by chemical species (for example HFC-143a) and source category in mass unit, and in CO_2 equivalents using 1995 IPCC GWP values, as contained in the abovementioned table. Parties should make every effort to develop the necessary sources of data for reporting actual emissions. Until they have the necessary data, Parties should report disaggregated potential emissions for these chemicals. Even when Parties report actual emissions, they should also report potential emissions for the relevant sources of these gases, for reasons of transparency and comparability.

Parties should report emissions and removals of any greenhouse gases whose GWP values have been identified by the IPCC and adopted by the COP, from the year they were identified as well as for preceding years. Parties are also encouraged to report emissions of greenhouse gases for which 100-year GWP values are available, but not yet adopted by the COP. These emissions and other related information should be reported separately from national totals.

In accordance with the IPCC guidelines, international aviation and marine bunker fuel emissions based upon fuel sold to ships or aircraft engaged in international transport should not be included in national totals, but reported separately. Parties should also report emissions from international aviation and marine bunker fuels as two separate entries in their inventories.

Emissions and removals should be reported on the most disaggregated level of each source/sink category, taking into account that a minimum level of aggregation may be required to protect confidential business and military information.

2.3.6. Common reporting format

In order to overcome the limitations of the IPCC guidelines, a draft common reporting format for the provision of inventory information by Annex I Parties has been annexed to the guidelines.

Parties shall submit annually to the COP, through the Secretariat, the information required under the common reporting format. The information shall be submitted on an annual basis for the last but one year prior to the year of submission. The common reporting format is part of the national inventory report. It is a standardised format for reporting estimates of greenhouse gas emissions and removals and other relevant information. It consists of summary, reporting and overview tables from the revised 1996 IPCC guidelines, plus newly developed sectoral background tables. The common reporting format maintains, however, consistency with the IPCC guidelines, the sectoral report tables of the IPCC guidelines being the core of the draft common reporting format. Such sectoral report tables are supplemented with sectoral background data tables. It also provides a means for reporting inventory information requested by the UNFCCC reporting guidelines on inventories by providing additional tables. This information includes activity data and emission factors in the specified unit, as well as other numerical and textual information.

The common reporting format follows the source/sink category split of the IPCC sectoral tables. It provides a minimum set of information on methods, aggregate emission factors and activity data, as well as relevant assumptions that underline the estimates given in the sectoral tables. Although the common reporting format is intended to provide mainly numerical data in electronic form, several tables provide textual explanations.

The common reporting format does not seek to allow the full reconstruction of a GHG inventory, as this would require the submission of an enormous amount of information. The common reporting format also intends to facilitate the technical review of inventory information.

2.3.6.1. Elements of the common reporting format

The common reporting format includes, in addition to the summary sectoral report and overview tables of the IPCC guidelines, other tables.

Tables existing in the IPCC guidelines

- Summary report tables.
- Sectoral report tables.
- Worksheet 1-1: This contains estimates of CO_2 emissions from fuel combustion using the IPCC reference approach and a table for comparing estimates under this reference approach with national estimates as well as providing explanations of any significant differences.
- Overview table: This table is provided for reporting uncertainties until the ongoing work of the IPCC on this matter is completed and new tables for reporting uncertainties are adopted by the COP.

New tables

CO_2 equivalent emissions summary report: In addition to reporting GHG emissions on a gas-by-gas basis, Parties should report aggregate emissions of CO_2, CH_4 N_2O, HFCs, PFCs and SF_6, expressed in CO_2 equivalent terms using the 1995 IPCC global warming potential values with a 100-year time horizon. This table also provides information on the relative shares of overall CO_2 equivalent emissions contributed by each gas source category and sector.

Sectoral report for HFCs, PFCs and SF_6 from industrial processes: This table was developed to provide for the disaggregate reporting of emissions of HFCs, PFCs and SF_6 by chemical species, as requested by the UNFCCC reporting guidelines on inventories. The current sectoral report tables for industrial processes do not provide for this disaggregated information.

The table requests information on both actual and potential emissions of these gases, as well as on the ratio of potential to actual emissions in the source category related to consumption of halocarbons and SF_6.

Sectoral background data tables: These tables supplement the sectoral report tables by providing activity data and aggregate emission factors. Key assumptions underlying the emission estimates are also included in these tables. The tables do not generally include the emission estimates themselves except in cases where the estimates provided by the sectoral report tables are highly aggregated. This breakdown by source or gas is intended to improve transparency and covers fugitive emissions from the energy sector and emissions from agricultural soils and land-use change and forestry.

Comparison table for CO_2 emissions from fuel combustion: This table compares estimates of CO_2 emissions from fuel combustion calculated using national methodologies using the methodology of the reference approach as requested by the IPCC guidelines.

Feedstocks table: This table provides information on the quantity of carbon stored through the use of feedstocks. The purpose of this table is to allow Parties to report their treatment of feedstocks in a transparent manner.

International bunkers and multilateral operations table: This table provides activity data and emission factors for international bunker fuel emissions. A box is included for additional information on the bunker fuels used under national and foreign flags. The documentation box provides an explanation of how marine and aviation fuel consumption was separated into national use and international bunkers.

Recalculation table: This table provides information on the magnitude of the changes in emission estimates between the current inventory submission and the previous inventory submissions as a result of recalculations. The information is requested in CO_2 equivalent terms by source and gas. Parties can also report changes in calculation methods, emission factors and activity data and of the inclusion of new sources that give rise to the recalculations.

Completeness table: This table has three sections. The first section is for information on sources or sinks considered in the IPCC guidelines which are not included in the submitted inventory. The second section is for information on sources or sinks which are allocated to sectors other than those suggested by the IPCC guidelines (e.g. allocating emissions from human sewage to agricultural soils rather than wastewater handling). The third section is for information on any emissions of GHGs for which GWP values are not yet agreed upon by the COP.

Anticipated future improvement table: This table requests textual information on anticipated future improvements in the methodologies and inventory information submitted by Parties. The information should be entered separately for each gas and source/sink category where improvements are expected.

Trend tables: These tables facilitate the uniform reporting by all Parties of trends in emissions over time, from the base year and for all the subsequent years by sector and by gas. The table follows the structure of the summary report to allow easy cross-comparison of information.

Checklist: This list provides for the initial checking procedure to be carried out by Parties for the common reporting format. It provides an overview of the main elements of the GHG inventories submitted by Parties.

In addition, the common reporting format includes a form to document anticipated future improvements in methodologies.

Aims of the common reporting format

The information provided by the common reporting format is aimed at enhancing the comparability and transparency of inventories by facilitating, *inter alia,* activity data and aggregate emission factor cross-comparisons among Parties, and easy identification of possible mistakes, misunderstandings and omissions in the inventories.

The preparation of the draft common reporting format aimed at:

- facilitating the processing of inventory information and the preparation of useful technical analysis and synthesis documentation;
- improving the handling of electronic submissions of inventory information;
- providing for quick identification of possible errors, misunderstandings and omissions in inventory information as part of the technical review process;
- comparing aggregate emission factors among Parties and over time;
- providing for aggregate CO_2 equivalent emissions;
- reporting of recalculations of data previously submitted and the provision of the reasons for their recalculation;
- reporting of anticipated future improvements in methodologies.

2.3.7. Reporting guidelines on global climate observing systems

Decision 4/CP5 requests Annex I Parties to provide a detailed report on their activities in relation to systematic observation, in accordance with the UNFCCC reporting guidelines on global climate observing systems adopted by Decision 5/CP5 (document FCCC/CP/1999/L4/Add.1, in conjunction with their national communications.

The Convention Secretariat, in conjunction with the Global Climate Observing System Secretariat, will develop a process for synthesising and analysing the information submitted in accordance with the UNFCCC reporting guidelines on global climate observing systems.

2.3.8. Reporting guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention

In order to enhance the in-depth review of greenhouse gas inventories, Decision 6/CP5 has adopted for a trial period, and covering inventory submissions due in 2000 and 2001, the guidelines for the technical review of greenhouse gas inventories of Annex I Parties (document FCCC/CP/1999/L11/Add.1).

The objective of these guidelines is to promote consistency in the review of annual greenhouse gas inventories of Annex I Parties and to establish a process for a thorough and comprehensive technical assessment of inventories. This process, comprising a number of stages, is aimed at increasing Parties' confidence in greenhouse gas inventories.

The purposes of the technical review of Annex I Parties' greenhouse gas inventories are:

- to ensure that the COP has adequate information on GHG inventories and GHG emission trends;
- to examine in a facilitative, open and transparent manner the quantitative and qualitative information submitted by Annex I Parties in accordance with the UNFCCC reporting guidelines on annual inventories for consistency with those guidelines and to provide the COP with a thorough technical assessment

of the implementation of Annex I Parties' commitments under Articles 4(1)(a) and 12(1)(a) of the Convention;

- to gain experience relevant to the preparation of guidelines related to Articles 7 and 8 of the Kyoto Protocol;

- to assist all Parties in improving the quality of their GHG inventories.

The technical review process comprises three stages:

- initial check of annual inventories in order to determine whether the information provided is complete and in the correct format;

- synthesis and assessment of annual inventories whose aim is to facilitate the consideration of inventory data and other information across Parties, and to identify issues for further consideration during the review of individual inventories;

- expert review of individual inventories in order to provide for periodic detailed examination of the inventory estimates, procedures and methodologies used in the preparation of GHG inventories.

The Secretariat will provide to each Party at each of the stages of the inventory review process the opportunity to clarify issues or provide additional information. The Parties will receive drafts of their status report, the relevant country section of the synthesis and assessment report and their individual inventory report in order to obtain agreement on the content of the report prior to its publication. In case no agreement can be reached, the Party may provide an explanatory text to be included in a separate section of the report.

3. The European Community reporting under the UNFCCC and the monitoring mechanism

3.1. Introduction

The European Community became a Party to the UNFCCC Convention on 21 December 1993. It is the only regional economic integration organisation that is a Party to the UNFCCC, separately from its 15 Member States, that are also party to it. According to Article 4, Annex I Parties have to adopt policies and measures with the aim of returning their anthropogenic CO_2 and their GHG emissions individually or jointly by the year 2000 to 1990 levels.

The European Community instrument of ratification of the UNFCCC was accompanied by a declaration where it was stated that:

'The European Community and its Member States declare that the commitment to limit anthropogenic CO_2 emissions set out in Article 4(2) of the Convention will be fulfilled in the Community as a whole through action by the Community and its Member States, within the respective competence of each.

In this perspective, the Community and its Member States reaffirm the objectives set out in the Council conclusions of 29 October 1990, and in particular the objective of stabilisation of CO_2 emissions by 2000 at 1990 levels in the Community as a whole.

The European Community and its Member States are elaborating a coherent strategy in order to attain this objective.'

A central pillar of the European strategy on climate change is the implementation of a monitoring mechanism that implies a parallel reporting information system to the one existing under the UNFCCC, at the European level between Member States and the European Union.

Its aim is to monitor annually the European Community progress towards the objective of stabilising CO_2 emissions at 1990 levels by the year 2000 and the commitments undertaken under the UNFCCC.

As a result of the implementation of this parallel reporting system, Member States are required to report on such policies and measures through the EU's monitoring mechanism and also in the framework of the UNFCCC.

In this second part of this report, after having streamlined in the first part the reporting system implemented under the UNFCCC, we analyse the problems encountered by the European Union when reporting under the UNFCCC as well as under the monitoring mechanism.

3.2. Overview of the EC strategy on climate change

As stated in the European Commission communication to the Council and the European Parliament 'Preparing for the implementation of the Kyoto Protocol'

(COM(1999) 230 final, 19 May 1999), climate change is a global problem that requires global efforts and overall substantial progress in the abatement of greenhouse gas emissions. To this end, each and every country, and in particular the highly industrialised ones, need to establish credible and ambitious domestic action plans preferably together with clear timetables for the adoption of specific measures.

The European Community started to develop a common response to climate change in the second half of the 1980s. A political agreement on the stabilisation of the total CO_2 emissions by the year 2000 at 1990 levels in the Community as a whole was reached at the joint Council of Energy and Environment Ministers in October 1990. As mentioned before, it has to be pointed out that under Article 4 of the UNFCCC, the EU, as well as the Member States, as Parties of Annex I, shall adopt policies and measures with the aim of returning their anthropogenic CO_2 and other GHG emissions by the year 2000 to 1990 levels.

The objective of stabilisation of CO_2 was agreed for the European Union as a whole, but Member States contribute in different ways to achieving this target. This should be compatible with the fact that Member States which start from relatively low levels of energy consumption and therefore low emissions measured on a per capita or other appropriate basis are entitled to have CO_2 targets and/or strategies corresponding to their economic and social development, while improving the energy efficiency of their economic activities.

Five Member States aim at reducing CO_2 emissions by 2000 compared to emissions in 1990 with specific national emissions reduction targets: Austria, Belgium, Denmark, Germany and the Netherlands. Austria, Italy, Luxembourg, Sweden and the United Kingdom have targets to stabilise their CO_2 emissions by 2000 at the 1990 level.

In 1992, the Commission proposed a strategy to the Council which included the main elements of the present policy, although this is not static and has developed considerably over the years.

The Community strategy on climate change is based on the following four pillars:

- energy conservation and energy technology programmes;
- fiscal measures;
- national programmes;
- monitoring mechanism.

The climate change strategy is currently carried out within the framework of the fifth environmental action programme, 'Towards sustainability', agreed by the Council in 1993.

A shared competence between the Community and its Member States exists on various issues related to climate change. In those issues where the competence belongs to the Community, the Commission takes the lead, while in those for which Member States are competent, it is the Council that leads. The bulk of policies and measures to mitigate climate change is, however, initiated nationally in the Member States, the progress on common actions up to now being very limited. The development of common measures could play an important role and provide lessons for the UNFCCC process in the light of Article 4(2)(e)(i). The important role that the Community can play in creating a common legal and

technical infrastructure for the implementation of policies and measures by Member States should also be noted.

3.3. The European Community monitoring mechanism

3.3.1. Council Decision 93/389/EEC of 24 June 1993 for a monitoring mechanism of Community CO_2 and other greenhouse gas emissions

In 1993, the Council adopted Decision 93/389/EEC to establish a monitoring mechanism for anthropogenic CO_2 and other GHG emissions. The monitoring mechanism established by Council Decision 93/389/EEC for anthropogenic CO_2 and other gas emissions was part of the Community strategy proposed by the Commission in the lead-up to the 1992 UN Conference on Environment and Development in Rio de Janeiro, where the UNFCCC was adopted.

The monitoring mechanism is an essential instrument of this strategy to limit CO_2 emissions and to improve energy efficiency.

3.3.1.1. Objectives of the national programmes for limiting anthropogenic emissions of CO_2

As mentioned before, the main purpose of the monitoring mechanism is to monitor whether progress by the Community as a whole is sufficient to ensure compliance with greenhouse gas emissions targets laid down by the EC itself and with the international legal obligations of the European Community.

Article 2 of the decision requires Member States to devise, publish and implement national programmes to limit their anthropogenic emissions of CO_2 with two objectives:

- the stabilisation of CO_2 emissions by 2000 at 1990 levels in the Community as a whole as agreed in the 1990 Council agreement;
- the fulfilment of the commitment relating to the limitation of CO_2 emissions in the UNFCCC by the Community as a whole through action by the Community and its Member States, within their respective competence.

In the decision on the monitoring mechanism, the stabilisation target is linked to the Community's stabilisation and reduction commitment under the UNFCCC.

The European Commission is required to report on an annual basis to the Council and to the European Parliament on the progress towards the achievement of these objectives.

3.3.1.2. National programmes and inventories

In order to monitor progress on emission reductions, Member States are obliged under the monitoring mechanism to prepare greenhouse gas emissions inventories and national programmes for limiting anthropogenic CO_2 emissions and submit these regularly to the European Commission.

National programmes

Member States should also submit national programmes periodically. The timetable for the national programmes is set in order to make it coincide with requirements under the UNFCCC. Any updates, new targets, new trajectories or new policy measures should be forwarded as they are developed, as determined by the Commission and the Monitoring Mechanism Committee (Articles 2 and 4).

According to Article 2 of the decision, Member States should include in their national programmes the following information:

- its 1990 base year anthropogenic emissions of CO_2, determined in accordance with the methodology developed by the IPCC or compatible with it;
- inventories of its anthropogenic CO_2 emissions by sources and removals by sinks, determined in accordance with the methodology developed by the IPCC or compatible with it;
- details of national policies and measures contributing to limit CO_2 emissions;
- trajectories for its national CO_2 emissions between 1994 and 2000;
- measures being taken or envisaged for the implementation of relevant Community legislation and policies;
- a description of policies and measures in order to increase the sequestration of CO_2 emissions;
- an assessment of the economic impact of the above measures.

According to Article 7, Member States should establish programmes for other greenhouse gases.

Inventories

According to Article 3 of the decision, Member States shall each year, not later than 31 July, report to the Commission provisional data on their anthropogenic CO_2 emissions and CO_2 removal by sinks for the previous calendar year and final figures for the year prior to that. Additionally, they should submit according to the same timetable inventories of emissions of other greenhouse gases not controlled by the Montreal Protocol.

The Commission, in cooperation with Member States, will establish, on the basis of the information provided by them, inventories on anthropogenic CO_2 emissions and CO_2 removals by sinks for the previous calendar year. The Community will circulate them within three months of receiving the information from all Member States.

3.3.1.3. Evaluation of national programmes and assessment of progress

The Commission shall evaluate inventories and national programmes in order to assess whether progress in the Community as a whole is sufficient to ensure that the Community and the UNFCCC commitments are fulfilled.

The review will be undertaken by a core team within the Commission. The team will consult with Member States in order to clarify data and other information

provided in national programmes and annual inventories. Country visits may also be required where deemed helpful and agreed mutually, in order to clarify models, methods, assumptions, levels of uncertainty, and the current implementation status of policies and measures.

The evaluation process is to be carried out according to a timetable, which is partly set in the monitoring mechanism and partly controlled by external events, in order to make the reporting under the monitoring mechanism compatible with the requirements under the UNFCCC.

The Commission will have to report on an annual basis to the European Parliament and to the Council on the progress towards stabilisation of CO_2 emissions in the Member States of the European Union at 1990 levels by the year 2000, and fulfilment of the Community's commitment relating to the limitation of CO_2 emissions under the UNFCCC.

Article 6 on the procedure for subsequent evaluation of progress states that after the first evaluation, the Commission shall assess annually in consultation with the Member States whether progress in the Community as a whole is sufficient to ensure that the Community would reach the objectives of Article 2(1). and report to the European Parliament and to the Council on the basis of the information received under Articles 2 and 3 including, where appropriate, the updated national programmes.

Management of the monitoring mechanism includes the review of inventory data and production reports to the Council and Parliament. An important role will be played in this review process by the European Environment Agency, mainly through the work of the ETC/AE.

The reporting and subsequent review process can be summarised as follows:

- submission of inventories by the Member States to the Commission; copies to the EEA;
- review of the data and assumptions and their consistency with alternative sources by the EEA, assisted by the ETC/AE;
- compilation of a Community-level inventory by the EEA, assisted by the ETC/AE;
- assessment of the process towards the stabilisation target by the Commission, assisted by the EEA;
- reporting to the Council and Parliament by the Commission.

3.3.2. Implementation of the Council decision

The first evaluation has been carried out on the basis of national programmes received by the Commission in 1993. While some guidance was given to Member States regarding the required content and format of these reports, there are major differences in terms of level of detail and treatment of issues.

It has to be pointed out that, according to the second evaluation of national programmes and assessment of progress, the requirement stated in Decision 93/389/EEC to report on an annual basis to the Council and Parliament on whether progress in the Community as a whole is sufficient to ensure stabilisation of CO_2 emissions by 2000 at 1990 levels is independent of evaluations of national programmes. This implies that the requirement to undertake an annual

assessment on that issue does not depend on the availability of updates of national programmes. This can be considered as an important step and can also serve as an instrument of pressure as it will enhance the visibility of the non-reporting countries.

Since the entry into force of Council Decision 93/389/EEC, the European Commission has presented two evaluation reports (COM(94) 67 final, 10.3.1994, and COM(96) 91 final, 14.3.1996).

The first evaluation and assessment was published in 1994. It did not consider annual inventories.

According to the European Commission, this first evaluation had two objectives:

- to assess whether the Community stabilisation target was likely to be achieved;
- to identify the shortcomings and weaknesses of the existing reports in order to identify the areas for improvement for the updates of national programmes.

The conclusions of the Commission can be summarised as follows:

- there was no guarantee that commitments would be achieved;
- national programmes did not provide sufficient or sufficiently harmonised information as a consequence of the lack of criteria for the content of national programmes.

The second evaluation report was published in 1996 and was based on national communications under the UNFCCC, except in the case of Belgium.

The report provided Community emissions inventories on a provisional basis, as Member States had not yet submitted final ones.

At its fifth meeting, the Monitoring Mechanism Committee adopted a proposal for the content and format of annual inventories and a proposal for the methodology for the progress and for the content of national programmes.

Even if clear progress had been achieved, information was still insufficient to evaluate satisfactorily progress towards the stabilisation target.

- It was not possible to review the trend in emissions between 1990 and the review year as no Community CO_2 inventory was available for 1993.
- It was not possible to produce a Community trajectory based on Member State trajectories for the year 2000 because of differences in assumptions and methodologies used by the Member States.
- There was insufficient reporting on the implementation of measures from Member States. The Commission found it generally impossible to assess the effectiveness of the implementation of measures based on national programmes because adequate information was not provided.
- There were difficulties in evaluating non-comparable data from Member States and general compliance problems.
- The annual assessments have been virtually ignored; evaluation of national programmes and assessments of progress seem to have been treated as the same task.

The third evaluation and assessment due in 1996 has still not taken place. However, in May 2000, the EEA published an overview of national programmes to reduce GHG emissions (EEA topic report *Overview of national programmes, 1999*). The report is a contribution to the collection of information required for the forthcoming third evaluation report required under Decision 93/389/EEC. It has been prepared on the basis of the information submitted by Member States to the Commission under the monitoring mechanism and the Member States' second national communication and subsequent annual submissions to the UNFCCC as available to the Commission by April 1999, the European Commission CO_2 emission estimates and GDP from Eurostat and EU CO_2 emission projections from the pre-Kyoto energy scenario. Furthermore, in 1999, the EEA, assisted by the ETC/AE, produced a report *Annual EC greenhouse gas inventory 1990–96,* based on the national EU Member State inventories.

3.3.3. The Kyoto Protocol and the monitoring mechanism

At the third Conference of the Parties to the UNFCCC (COP 3), held in Kyoto in December 1997, the Parties adopted the Kyoto Protocol to the UNFCCC, which sets binding emission targets for six GHGs for a number of Parties, among which are the European Union and all its Member States. The six GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). The Kyoto Protocol aims at a reduction of the aggregated emissions of at least 5 % from 1990 levels during the commitment period from 2008 to 2012. Emissions of the gases are expressed in CO_2 equivalents based on their 100-year global warming potential.

According to Article 3 of the Kyoto Protocol, each Annex B Party is allowed an assigned amount of greenhouse gas emissions that it may emit over the five-year commitment period 2008–12, relative to its carbon dioxide equivalent emissions of all six greenhouse gases in the base year 1990. Parties can decide to achieve jointly the commitment that their aggregate anthropogenic carbon dioxide equivalent emissions of the GHGs listed in Annex I do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B.

As established in Article 4 of the Kyoto Protocol, Parties that have reached an agreement to fulfil their commitments jointly shall be deemed to have met those commitments provided that their total combined aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases do not exceed their assigned amounts calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of Article 3.

The respective emission level allocated to each of the Parties to the agreement shall be set out in that agreement. This common commitment will not impede a differentiation of commitments internally that would allow that certain States can increase their emissions if this is counterbalanced by a reduction of emissions in other States.

The European Community and each of its Member States are committed to an 8 % reduction target that they may emit during the period 2008–12. The European Community intends to redistribute it among Member States according to what was established in Article 4 of the UNFCCC.

In June 1998, the Council reached an agreement in principle on burden sharing, based on earlier provisional agreements. According to this, different emission

targets apply for the EU Member States. This agreement has a political character. It is contained in an appendix to the Environment Council conclusions of 16 and 17 June 1998. According to such conclusions: 'the terms of this agreement will be included in the Council decision on the conclusion of the Protocol by the Community. In accordance with Article 4 of the Protocol, they will also be notified to the Secretariat of the UNFCCC at the time for ratification of the Protocol by the Community and its Member States.'

Apparently, the idea is to embody the burden-sharing agreement into a legal instrument. However, this could meet opposition from some Member States that could see in a legal agreement on burden sharing at EC level a transfer of competence in favour of the EC, that would restrict the right of the Member States to choose their future targets.

Member States' commitments in accordance with Article 4 of the Kyoto Protocol (emission targets including reduction by sinks): emissions of the six GHG basket for 2008–12 relative to 1990 base year levels, agreed upon by the Council (*EU burden sharing*, June 1998)

Member State	Commitments in accordance with Article 4 of the Kyoto Protocol (%)
Belgium	-7,5
Denmark*	-21
Germany	-21
Greece	+25
Spain	+15
France	0
Ireland	+13
Italy	-6,5
Luxembourg	-28
Netherlands	-6
Austria	-13
Portugal	+ 27
Finland	0
Sweden	+ 4
United Kingdom	– 12.5

* In connection with the agreement, Denmark made the following statement: 'Denmark is able to reduce its emissions by 17 % in the first commitment period compared to its 1990 level of about 80 million tonnes corrected CO_2 equivalents through domestic policies and measures and present measures adopted by the Community. In making its legal commitment to a 21 % reduction as set out in the agreement, Denmark has assumed the further elaboration and adoption of common and coordinated policies and measures (CCPMs) prior to the ratification of the Kyoto Protocol.

For this burden-sharing agreement to take effect, it will be necessary for each Member State and the European Community to mention it in their ratification instruments. The agreement must remain in operation for the entire commitment period (Article 4(3)).

According to the conclusions of the Environment Council of 16 and 17 June 1998, the European Commission intends to integrate such burden sharing into a legally binding instrument. Some Member States are worried that this would imply a transfer of competence from Member States to the EC and a restriction of the right of Member States to choose their own target in the future.

In accordance with Article 4(5) of the Kyoto Protocol, if the collective bubble target is not reached, each Party remains responsible for its own target as set out in the agreement.

Work on common and coordinated policies and measures should be intensified in order to meet the emissions reduction targets that will become legally binding when the Kyoto Protocol enters into force. The situation has become critical considering that current trends predict another increase in the emissions for the coming years. Projections for emission trends by the Member States, incorporating the planned emission reduction effect of policies and measures which are still to be adopted, currently show that the EU would reach more or less the same level by the year 2000. This is clearly far away from the Kyoto commitment of an 8 % reduction. As stated by the former Commissioner with responsibility for the environment, Ritt Bjerregaard, on the adoption of the communication to the Council and the Parliament 'Preparing for implementation of the Kyoto Protocol' of 19 May 1999, the entry into force of the Kyoto Protocol is a prerequisite to going beyond moral commitments to the implementation of legal obligations and targets.

The Kyoto Protocol, which contains clear legally binding reduction targets for industrialised countries, has important implications for the monitoring mechanism. These common targets reinforce enormously the role of the monitoring mechanism as well as the need to track the progress towards their fulfilment. It is the only legal instrument available to the EC to assess progress in meeting commitments to reduce greenhouse gas emissions in the near future.

According to the communication from the Commission, to prepare for the implementation of the obligations of the Kyoto Protocol, the entry into force of the Protocol would require the need to bring our own house in order and involves taking the necessary action to enable the full application of the Kyoto provisions. Key elements in such a preparation are compliance questions in a broad political and practical perspective. The political dimension deals with how the EC and its Member States can reach the 8 % reduction in greenhouse gas emissions in the commitment period 2008–12 compared to 1990 levels and is on track for further reductions to establish a comprehensive monitoring system to accompany and follow up the implementation process. To this end, a better view is needed on how we comply and which are the exact requirements we have to comply with, particularly as regards the Kyoto mechanism.

In Kyoto, no agreement was reached on a binding reduction target for the year 2005 as had been proposed by the EU, but Article 3(2) of the Kyoto Protocol requires Parties to make demonstrable progress by 2005.

3.3.4. The reform of the monitoring mechanism by Decision 1999/296/EC

A revision of the monitoring mechanism has been achieved with the aim of including reporting on the three additional gases as well as guaranteeing reporting after 2000. The revision of Council Decision 93/389/EEC is seen as an opportunity to renew its commitment to the implementation of a reliable monitoring mechanism of greenhouse gases within the Community. The decision extends the requirement to establish national programmes to limit and/or reduce anthropogenic emissions by sources and enhance removals by sinks to all greenhouse gases not controlled by the Montreal Protocol with the following objectives:

- the stabilisation of CO_2 emissions by 2000 at 1990 levels in the Community as a whole;

- the fulfilment of the Community's commitments relating to the limitation and/or reduction of all greenhouse gas emissions not controlled by the Montreal Protocol under the UNFCCC and under the Kyoto Protocol;

- the transparent and accurate monitoring of the actual and projected progress of Member States, including the contribution made by Community measures, in meeting any agreed national contributions to the Community's commitments under the UNFCCC and under the Kyoto Protocol.

National programme requirements on policies and measures have been strengthened. Common and coordinated policies and measures are central to EC climate change strategy. The European Environment Council of June 1998 agreed on the realisation of an annual evaluation of progress. The Council pointed out the need to make substantial progress on common measures prior to ratification of the Kyoto Protocol.

In its communication of June 1998 on climate change strategy, the Council proposed the development of cost-effective policies and measures across all gases and sectors, possibly combined with indicative sectoral targets, which according to the Commission could play a key role in a reinforced monitoring system.

3.3.4.1. Content of national programmes

- Estimates of the effect of policies and measures on emissions and removals and incorporation of these in projections for CO_2 and other greenhouse gases not controlled by the Montreal Protocol between the base year and 2000, in line with the reporting requirements under the UNFCCC.

- As a minimum for the six greenhouse gases listed in Annex A to the Kyoto Protocol (carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6)):

  — 1990 base year emissions of CO_2, CH_4 and N_2O, and 1990 or 1995 base year emissions for HFCs, PFCs and SF_6;

  — emission inventories;

  — details of national policies and measures since the base year which contribute significantly to efforts to reduce emissions and enhance sinks by gas and by sector, including the objective, type of policy instrument, status of implementation and, where possible, intermediate indicators of progress;

  — measures being taken or envisaged for implementation of relevant Community legislation and policies;

  — estimates of effects of policies and measures and incorporation of these into projections for the gases covered in Annex A to the Kyoto Protocol, between the base year and the first commitment period 2008–12 and between the base year and 2005;

— an assessment of the economic impacts of the above measures to the greatest extent possible.

- Information on carbon monoxide (CO), nitrogen oxides (NO_X), non–methane volatile organic compounds (NMVOCs) and sulphur oxides, in line the with reporting requirements under the UNFCCC, including:

  — emissions data;

  — description of policies and measures being taken or envisaged for the limitation and/or reduction of the emissions of these gases;

  — as far as possible, estimates of emissions projections at regular intervals in the future.

According to Article 3, Member States are required to submit CO_2 inventories each year to the Commission by 31 December, for the previous year but one, and provisional data for the previous year.

Member States should also report by 31 December the most recent projected emissions of the gases covered by Annex A to the Kyoto Protocol for the first commitment period 2008–12 and for 2005. Provisions related to the year 2005 have been strengthened as this is the year that industrialised countries party to the Kyoto Protocol must show demonstrable progress towards their commitments (Article 3(2) of the Kyoto Protocol).

A key point in the amended decision is that the Commission shall take further steps to promote the comparability, transparency, accuracy, completeness and verifiability of national inventories and reporting, in line with the UNFCCC and Kyoto Protocol requirements. A basis for developing a stricter reporting system coordinated with the UNFCCC reporting requirements can be seen in this provision.

The Community should, in cooperation with the Member States, and based on the information provided by them, establish inventories on anthropogenic greenhouse gas emissions and removals by sinks in the Community. These inventories should be circulated by 1 March each year.

3.3.4.2. Procedures and methods for evaluation

The Commission shall establish procedures and methods for the evaluation of national programmes as referred to in Article 6 and the frequency of updating by the Member States. The Commission will be assisted by a committee. The Commission shall produce an evaluation of progress in the EU towards reaching the emissions targets based on assessment of the national programmes.

The purpose of the evaluation of national programmes is the same as in the original decision: to assess whether progress in the Community as a whole is sufficient to ensure that targets are reached.

The European Environment Agency should assist the Commission in compiling the report. The Commission has to report to the European Parliament and the Council the results of its evaluation of national programmes within six months of

their receipt. With this aim, in 1999 the European Environment Agency published a report *An overview of national programmes to reduce greenhouse gas emissions*. The report is based on data and information provided by the Member States to the Commission under the monitoring mechanism and on the Member States' second national communications and subsequent annual submissions to the UNFCCC, as available to the Commission by April 1999.

The Commission shall assess annually, in consultation with Member States, whether the actual and projected progress of Member States, including the contribution made by Community measures in accordance with the new decision, towards fulfilling the Community's commitments under the UNFCCC and the Kyoto Protocol is sufficient to ensure that the Community and its Member States are on course to fulfil their commitments (Article 6).

The decision establishes an obligation to report to the European Parliament and the Council even in cases of incomplete data being received. In this case, the Commission may use the best available data in the report, in consultation with the Member State concerned.

With the modification of the monitoring, the European Commission expects to achieve a higher commitment from Member States in their reporting of GHG reduction programmes and their effects. The decision embodies in a legally binding instrument the core of the UNFCCC guidelines making the reporting a legal obligation under EC law.

Under the new monitoring mechanism, for the first time both Member States and the Commission are now obliged to identify the separate contributions of Community measures to GHG reductions. For most Community measures, this information is not collected by the Member States nor available to the Commission adding pressure for a revision of existing reporting requirements in other items of EU environmental legislation to include more assessments of the effects and effectiveness of the legislation.

3.4. The European Community communications under the UNFCCC

The first communication of the European Community under the UNFCCC was due on 21 September 1994 but was actually submitted on 11 June 1996. It covered the period from 1990 to August 1995.

A second communication covering the period from September 1995 to October/November 1997, and updating the previous communication on the state of implementation of measures to address climate change which are or will be pursued at Community level, was submitted in July 1998.

The EC communication builds on communications submitted by the Member States under the UNFCCC and/or under the Community's internal monitoring mechanism.

The degree to which the Community's communication builds on the national submissions varies, but these are particularly important for the sections on inventories and policies and measures, while the communication mainly describes activities at the Community level in other chapters. The communication is not meant to cover the Member States' full implementation of the Convention in a comprehensive way.

The in-depth review for the first communication took place in the period from November 1996 to June 1997 and included a visit of the UNFCCC in-depth review team to Brussels from 11 to 15 November 1996. The team met with several directorates of the European Commission, as well as with the EEA. The in-depth review of the Community's communication focused only on activities at the Community level considering that all the reports of the Member States are also being reviewed. In accordance with Decision 2/CP1 of the Conference of the Parties, the in-depth report was communicated to the European Commission which had no further comments on it.

3.4.1. Main points signalled in the in-depth review of the first communication of the EC

The EC communication was submitted with delay. The main cause of this delay was that several of the Member States' communications were not available until late 1995.

3.4.1.1. Inventories on anthropogenic emissions and removals

The inventory of the EC communication is built on the Member States' submissions under the Convention. The Member States are the ones that carry out their individual inventories. The communication contained data on:

- CO_2 emissions from energy and industrial use;
- methane (CH_4);
- nitrous oxide (N_2O);
- carbon monoxide (CO);
- nitrogen oxides (NO_X);
- non-methane volatile organic compounds (NMVOCs).

The figures of the EC communication are based on the inventories submitted by the Member States under the UNFCCC and the EU monitoring mechanism.

The role of the EEA has been to compile these inventories and to coordinate and lead activities to improve the methodologies and presentation. The EEA has cross-checked them with data from the Corinair programme as well as from Eurostat. Certain adjustments have been made in a transparent way to improve the internal consistency, including separate treatment of final non-energy consumption of energy commodities (for which an upper limit estimate is equivalent to 7.4 % of total emissions) and the elimination of adjustments that some Member States had made for temperature and electricity trade anomalies.

Due to the lack of complete information in the communication from the Member States, figures for the land-use change and forestry sector were excluded. The team noted that extensive forestry data are collected and made available through Eurostat. These data could be used to provide information on the underlying levels of activity, as well as to assist Member States in the preparation of their inventories and for checking their assumptions.

Emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) were not included, but were not believed to represent a major share of emissions in 1990. This was due to the fact that only some Member States had been able to produce estimates. To overcome difficulties in data collection, carrying out inventories at the Community level could become increasingly important.

The in-depth review team of the UNFCCC noted that data on industrial activity available through Eurostat could be used to obtain an initial estimate of some of these gases and also to check assumptions in Member States' estimates.

The in-depth review team highlighted the efforts made to develop a uniform and comprehensive air emissions inventory system, Corinair, at the Community level, to extend it to the pan-European level, and to make it compatible with the IPCC system. This system aims to ensure that one set of complete and transparent inventories is available for use by all Member States for national and international air policy purposes.

Significant differences remain between Corinair and national inventories submitted under the UNFCCC according to the IPCC guidelines, which is one of the reasons for the inventories in the communication being based on the Member States' submissions. Cross-checking with Corinair and Eurostat was carried out to identify gross inconsistencies among different major source categories, in particular where comparison of inventory estimates revealed that the national submission provided lower and hence perhaps incomplete estimates of any particular source. Member States' inventories were still adjusted as deemed necessary for reasons of consistency. The EEA had not undertaken detailed reviews of the underlying activity data or emissions factors. It was pointed out that the assessments made through the review process under the Convention could also be done by the EEA.

It was also pointed out that the Corinair activities had helped to enable Parties both inside and outside the Community to compile inventories for direct as well as indirect GHGs and thus implement the Convention. The team noted that information and capacity building are given priority in the Community's programmes, but this will only be complementary to efforts by Member States.

The team noted the important work done over several years to make the Corinair and IPCC inventory systems compatible, which was close to completion at the time of the team's visit. With this aim, the Corinair system has been extended to include GHGs and the addition of the land-use change and forestry sector as a separate anthropogenic source of GHG emissions. In the longer run, the use of Corinair as the basic inventory system by all European countries should improve the overall consistency and quality of inventory data in this region. Since the end of 1997, Corinair data has been reported annually.

The Community did not submit inventory data for the years subsequent to 1990 even though these were due on 15 April 1996.

3.4.1.2. Policies and measures

Even if the Commission is moving towards possible common actions motivated by climate change concerns on emissions other than CO_2 from the energy sector, there is no up-to-date, comprehensive strategy covering all gases and sources.

There is no common energy policy, although most mitigation efforts are directed towards energy-related emissions. Up to now, the bulk of mitigation measures taken in most Member States have been initiated nationally rather than at the Community level.

At present, there are large differences in how member countries organise their energy markets. The in-depth review team noted the importance of developing

common measures implemented EU-wide given the development of a single market where there is pressure to harmonise the conditions for competition. It was noted that the development of common measures could also provide lessons for the UNFCCC process in the light of Article 4(2)(e)(i). The important role of the Community in creating a common legal and technical infrastructure for the implementation of policies and measures by Member States was also pointed out.

It was also pointed out that, notwithstanding the existence of programmes on energy efficiency and new, renewable energy sources such as SAVE and Altener, the European Union was unable to reach an agreement on the implementation of a directive on rational energy planning.

The fact that the Community was unable to agree on common CO_2/energy taxes was also pointed out.

It has been noted that a common adaptation strategy is lacking and the implementation of adaptation measures has so far been left to the Member States. In relation to the projections, the communication included estimates on CO_2 emissions but did not include projections for other gases. Estimates of the total effects of measures were not available at the Community level, and only the effects of some individual measures were described in the communication. The team noted that there has been limited progress in terms of mandatory measures (e.g. regulations, taxes) proposed by the Commission and reported in the communication.

It was also noted that, to be effective, policies and measures agreed at the Community level have to go beyond the least common denominator of policies and measures in the Member States, as well as what the market alone would have achieved. The communication did not document to what extent this was the case.

3.5. Main reporting problems of the European Union to the UNFCCC and within the monitoring mechanism

The delay and quality of reporting of national data of inventories and programmes by the Member States to the European Commission and to the Secretariat of the UNFCCC is one of the main problems of the EU reporting. This problem has been encountered when preparing national communications of the EU to the UNFCCC as well as in the preparation of the *Annual EC greenhouse gas inventory 1990–96* as well as in the evaluation report.

3.5.1. Inventories

The first national CO_2 emissions estimates for 1996 should have been submitted by the Member States to the Commission by 31 July 1997 and the first estimates for 1997 by 31 July 1998. Only a few Member States had submitted 1996 estimates under the monitoring mechanism by 31 July 1997.

By April 1999, inventory data on the major GHGs had been made available to the Commission for all Member States except Italy, Portugal and Spain. For its overview, aiming at the compilation of a complete EU-15 inventory of GHG emissions for 1996, 1995 data for Italy and Spain and 1994 data for Portugal have been used as an initial estimate for 1996; 12 of the 15 Member States had provided 1996 estimates. For 1997, the Member States that reported their estimates were Austria, Finland, Germany, Luxembourg, Ireland and Sweden. Thus, by April 1999, 1996 was the latest year for which a majority of Member States' national

inventories had been made available to the Commission, and the EU-15 inventory could only be estimated by the EEA for the years up to 1996.

By April 2000, the situation had improved substantially, with all MS reporting 1998 data. This has been compiled by the EEA in a report *Annual EC greenhouse gas inventory 1990–98*, which was submitted by the Commission to the UNFCCC Secretariat on 18 April 2000 (i.e. almost within the required deadline). However, some problems remain, for example reporting of F-gases. Also few MS reported according to the very detailed new Common Reporting Format requirements. The Monitoring Mechanism Committee and its working group on inventories, assisted by the EEA and ETC/AE, will continue to work on further improving the MS and EC inventories during 2000, in order to submit them by April 2001 according to the UNFCCC guidelines (e.g. including the Common Reporting Format).

3.5.2. Emission projections for 2000–05

In their national programmes, Member States have presented scenarios of projected emissions in 2000, based on different macroeconomic and other models and assumptions. By the end of 1999/beginning of 2000, Member States had submitted the latest national programmes to the Commission, which will be used to prepare the evaluation report by September 2000.

3.5.3. Policies and measures

The status of the policy measures, whether adopted and implemented in the process of adoption or merely considered, is not always clearly stated in the national programmes. In addition, a quantification of the effect of individual policies and measures in terms of reductions of emissions in absolute figures is often incomplete or unavailable.

In its overview, the EEA has made an attempt to summarise and quantify the main national policies and measures and their emission reduction potential in 2000, based on the national programmes.

Also in its overview, the EEA has pointed out the need to improve the analysis in the report and to help reduce gaps and inconsistencies in the Member States' emission projections, and has presented an alternative 'EU-15 emission' projection prepared by the European Commission based on a pre-Kyoto energy scenario.

In order to establish its estimates, the EEA has considered two scenarios. The estimates under the column 'without measures' represent a baseline scenario, presenting the estimates for the case that no additional mitigating measures would be taken. The column 'with measures' represents the expected emissions taking into account the policies and measures for which an estimation of their reduction potential was available for the national programmes.

The 'with measures' estimates represent the effect of policies and measures that were already adopted by the Member States. It should be noted that the national definitions of the 'without measures' and 'with measures' scenarios differ considerably between Member States. In particular, there is not one harmonised date set for assigning the effect of adopted measures to either the 'without measures' or 'with measures' scenario. In order to improve the reliability and consistency of the EU-15 emission projection, further harmonisation efforts with regard to such a single cut-off date seems to be useful.

A key problem in the existing definition is to determine the types of measures included in the column 'with measures'. A difference between planning, adoption and implementation should be established. We understand that only those measures implemented should be included.

It is expected that due to ongoing work in the Monitoring Mechanism Committee, working group 2 (progress assessment and projections), the evaluation report due in September 2000 will have solved some of these issues, although other problems will remain to be solved over the period 2000–01, in order to have improved third national communications, due in November 2001.

3.6. Conclusions and recommendations

After having analysed the existing reporting system under the UNFCCC and under the European monitoring mechanism, the following conclusions arise.

Implementation of a sophisticated system

The reporting system developed under the UNFCCC and the subsequent decisions adopted by the COP can be considered a sophisticated reporting system, where a considerable degree of transparency and comparability of the information has been reached. This reporting system, as stated in the provisions of the Convention, is continually submitted to a revision procedure, in order to improve and upgrade its efficiency. Such a reporting system is without doubt one of the most developed reporting systems implemented to date by any international environmental convention. We understand that this result is based on the following elements.

- The existence of **a predetermined calendar**, according to which Parties must submit and update on an annual basis their inventories and the submissions of national communications on a regular basis of three to five year intervals.

- The existence of **a set of guidelines** that Parties must follow in the submission of their reports to the Secretariat of the Convention and the **periodical review procedure** of such guidelines established under the Convention in order to improve the consistency, transparency and comparability of the information provided. The transparency of the reporting is a key element in the success of the process for the communication and consideration of information, especially concerning inventories of emissions and removals of GHGs and for projections and assessments of the effect of measures. The reporting guidelines adopted by the COP have been revised and updated several times with this aim. The last revision of such guidelines was adopted recently at COP 5 in Bonn in order to update them for the preparation of the third national communication, scheduled for 30 November 2001. The revision of the revised guidelines contains a common reporting format, which is part of the national inventory report. According to it, Annex I Parties will have to report from 2000 their inventory information using the tables of the common reporting format. Its adoption will considerably increase the transparency and comparability of the inventories. It will also facilitate the technical review of inventory information as well as its processing and the preparation of useful technical analysis and synthesis documentation.

- The obligation to use a set of concrete and detailed guidelines (IPCC guidelines) and **comparable methodologies** in the presentation of the Parties' data for national inventories.

- The existence of an **in-depth review mechanism** in order to assess the information submitted by the Parties under their national communications.

- The recent adoption in COP 5 of guidelines for the technical review of GHG inventories aimed to improve consistency in the review of annual GHG inventories and to establish a process for a thorough and comprehensive technical assessment of inventories.

Notwithstanding, the UNFCCC reporting system presented certain deficiencies, mainly concerning the evaluation of the policy measures adopted by the Parties. The UNFCCC guidelines focus mainly on the descriptive aspects of such policies but do not provide a basis for evaluation with a common pattern of the qualitative and quantitative effects of the implementation of the mitigation policies. This ends in a lack of transparency of the reporting. The adoption of a standard methodology to evaluate the mitigation effects on such policies should be envisaged.

Additionally, it should be pointed out that the sophistication of the UNFCCC reporting system requires a degree of expertise that Parties do not always have. The result is that most of the time the reporting instruments offered by the system are not always used adequately by the Parties or imply an excessive burden that discourage them in their reporting.

As an Annex I Party, the European Union has to prepare and update annually by 15 April an annual inventory of anthropogenic emissions/removals by sinks as well as to submit a national communication when scheduled by the COP. The first communication of the European Community under the UNFCCC was due on 21 September 1994 but was actually submitted to the Secretariat on 11 June 1996.

The second communication updating the previous communication on the state of implementation of measures to address climate change which are or will be pursued at Community level was submitted in July 1998.

The EC communication builds on communications submitted by the Member States under the UNFCCC and/or under the Community's internal monitoring mechanism. Notwithstanding, the lack of implementation of the monitoring mechanism up to now has obliged the Commission to base its evaluations mainly on the national communications submitted by Member States under the UNFCCC. The degree to which the Community's communication builds on the national submissions varies, but these are particularly important for the sections on inventories and policies and measures.

The EU communications under the UNFCCC are prepared by the Commission, assisted by the EEA. The role of the latter is to compile the EU inventory based on Member States' inventories submitted under the UNFCCC and the monitoring mechanism and to coordinate and lead activities to improve the methodologies and presentation. Furthermore, the EEA provides extensive software tools for countries to compile and report their annual inventories and also organises regular workshops for training and exchange of experience.

The EEA also incorporates certain transparent adjustments in order to improve the internal consistency. Due to this dependency on Member States' reporting, the EU annual inventory communications under the UNFCCC were submitted with delay before 2000, because at the due date several Member States'

communications were not available. However, the reporting in 2000 was on time, although the quality of the reporting can be further improved.

The main problems of the European Commission in fulfilling its obligations under the UNFCCC are:

- the delay with which Member States submit to the Convention their national reports, in particular on policies and measures;
- the dependency on its Member States' reports especially concerning inventories, policies and measures;
- inconsistencies in the reporting practices of the Member States;
- lack of reporting of some of the Member States;
- submission of incomplete reports by Member States;
- the quality of the data submitted;
- the non-use or partial use by some of the Member States of the guidelines;
- the different interpretation given by Member States to the guidelines;
- the need for coordination by the Commission services on all the relevant sections of the communication.

In order to overcome such difficulties, it is important to develop a reporting system at the European level. The EEA is playing an important role in the issue of reporting inventory data. With the aim of developing a uniform and comprehensive air emissions inventory system at Community level, the ETC/AE (Corinair) software tool system has been developed. The system is compatible with the IPCC guidelines. At the end of 1999, after adoption by COP 6 in November 1999, the ETC/AE started the development of a software package which is fully compatible with the common reporting format. Member States will be able to test a system during 2000, to achieve improved reporting by the end of 2000/early 2001 to both the monitoring mechanism and the UNFCCC.

Regular workshops led by the EEA, and assisted by the ETC/AE, and software training are also useful tools for ensuring a common approach in the use of such a package.

It should be noted that the Secretariat of the UNFCCC as well as the Parties have made a very big effort to provide transparency to its reporting system, which can be accessed though the web site of the Secretariat.

In addition to the existing reporting system under the UNFCCC, the EU has implemented a parallel system of reporting at the European level between its Member States and the European Commission. Its aim is to monitor annually the Community's progress towards the objective of stabilising CO_2 emissions at 1990 levels by the year 2000 and the commitments undertaken under the UNFCCC. The monitoring mechanism established by Decision 93/389/EEC has recently been modified by Decision 1999/296/EC. According to this, Member States shall, not later than 31 December each year, report to the Commission their

anthropogenic CO_2 emissions and removals by sinks for the previous calendar year. Member States shall also report national inventory data on emissions/removals of the six Kyoto GHGs on an annual basis. They should also report on the most recent projected emissions for the period 2008–12. The Commission shall assess annually in consultation with the Member States if the current and projected progress is sufficient to ensure commitments and shall report to the European Parliament and the Council, even in case of incomplete data from Member States.

Member States should also report under the monitoring mechanism national programmes, the frequency and updating of which will be established by the Commission under the committee procedure. The sufficiency of such national programmes will be assessed. The revision of the monitoring mechanism will reinforce considerably its role. The obligation of the Commission to submit an annual report to the European Parliament and the Council, even in the case of incomplete data having been received from the Member States, will increase its efficiency by putting clearly in evidence the Member States that have not observed their reporting obligations.

The entry into force of the Kyoto Protocol, which contains clear legally binding reduction targets, will have serious implications for the monitoring mechanism. The EC bubble provision of Article 4 of the Kyoto Protocol implementing the possibility for Parties to fulfil their commitments jointly, as well as the responsibility of each Party for its own target in case the collective bubble target is not reached, will make it extremely important for the EU to have an effective means of tracking progress towards this target.

The monitoring mechanism should play this role. With this aim, efficient reporting by Member States would be crucial. The monitoring mechanism is at present the only legal instrument available to assess progress towards the Kyoto commitments. It will be necessary, therefore, to ensure the full implementation of this mechanism and its enforceability. It will be important to ensure that the obligation to produce annual assessment reports is complied with, even in the case of incomplete data.

In order to improve the transparency and comparability under the monitoring mechanism, it will be important to test the usability of the UNFCCC guidelines before deciding on possible additional guidelines at the EU level. The implementation of a system of in-depth reviews comparable to that established under the UNFCCC in order to assess the reporting practices of the Member States under the monitoring mechanism will enhance the effectiveness of the monitoring and control of the reporting system and facilitate the assessment of the EU progress towards the emissions reduction target.

It will also be important to make the reporting practices under the monitoring mechanism accessible to the public, posting the full reports of Member States or at least summaries of them on the Internet as part of the EIONET system including national EIONET servers. This could also be an important incentive to improve the efficiency of the system. This is already being done by the EEA.

A maximum level of compatibility between the reporting schedules and methodologies under the UNFCCC and the monitoring mechanism should be ensured in order to avoid an unnecessary reporting burden for Member States.

To improve Member States' reporting skills, it will be appropriate to develop training stages or workshops for the persons responsible for reporting in each Member State. These could be very important instruments in improving the comparability of the Member States' reporting practices, improving their reporting skills and providing them not only with comparable reporting but also a comparable way in which to apply it. It will also foster the exchange of national experience and discussion on ways of improving the common reporting system.

4. Glossary

Annex I Parties: The industrialised countries listed in this annex to the Convention are trying to return their greenhouse gas emissions to 1990 levels by the year 2000 as per Article 4(2)(a) and (b). They have also accepted emission targets for the period 2008-12 as per Article 3 of and Annex B to the Kyoto Protocol. They include the 24 original OECD members, the European Union, and 14 countries with economies in transition (Croatia, Liechtenstein, Monaco and Slovenia joined at COP 3, and the Czech Republic and Slovakia replaced Czechoslovakia).

Annex II Parties: The rich countries listed in this annex to the Convention have a special obligation to help developing countries with financial and technological resources. They include the 24 original OECD members plus the European Union.

Conference of the Parties (COP): The COP is the supreme body of the Convention. It currently meets once a year to review the Convention's progress. The word 'conference' is not used here in the sense of 'meeting' but rather of 'association', which explains the seemingly redundant expression 'fourth session of the Conference of the Parties'.

COP/MOP: The Kyoto Protocol's supreme body will be the COP, which will serve as the Protocol's meeting of the Parties. The sessions of the COP and the COP/MOP will be held during the same period. This will improve cost-effectiveness and coordination with the Convention.

Emissions trading: The Kyoto Protocol establishes a mechanism whereby Parties with emissions commitments may trade their emission allowances with other Parties. The aim is to improve the overall flexibility and economic efficiency of making emissions cuts.

Entry into force: Intergovernmental agreements, including protocols and amendments, are not legally binding until they have been ratified by a certain number of countries; the Climate Change Convention required 50 and enters into force for each new Party 90 days after it ratifies.

Financial mechanism: As defined by the Convention, its role is to transfer funds and technologies to developing countries on a grant or concessional basis, under the guidance of the COP. The Global Environment Facility 'operates' the mechanism on an interim basis.

Global Environment Facility (GEF): The multi-billion-dollar GEF was established by the World Bank, the UN Development Programme, and the UN Environment Programme in 1990. It operates the Convention's 'financial mechanism' on an interim basis and funds developing country projects that have global climate change benefits.

Greenhouse gases (GHGs): The major GHGs responsible for causing climate change are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The Kyoto Protocol also addresses hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6).

'Hot air': This refers to the concern that some governments will be able to meet their commitment targets with minimal effort and could then flood the market for emissions credits, reducing the incentive for other countries to cut their own domestic emissions.

In-depth review (IDR): The first submissions of national communications by developed countries were subjected to a series of in-depth reviews generally involving country visits by international teams of experts.

Intergovernmental Panel on Climate Change (IPCC): The IPCC was established in 1988 by the World Meteorological Organisation and the UN Environment Programme. It conducts rigorous surveys of the worldwide technical and scientific literature and publishes assessment reports that are widely recognised as the most credible existing sources of information on climate change. The IPCC also works on methodologies and responds to specific requests from the Convention's subsidiary bodies.

Joint implementation (JI): The Kyoto Protocol establishes a mechanism whereby a developed country can receive 'emissions reduction units' when it helps to finance projects that reduce net emissions in another developed country (including countries with economies in transition). Some aspects of this approach are being tested as activities implemented jointly (AIJ).

Mechanisms: The Kyoto Protocol establishes three mechanisms to increase the flexibility and reduce the costs of making emissions cuts; these are the clean development mechanism, emissions trading, and joint implementation.

National communications: A central requirement of the Convention (and the Protocol) is that each Party must inform the others about its national climate change activities. Many developed countries have submitted their second reports and developing countries have started to submit their first.

Policies and measures: Countries must decide what policies and measures to adopt in order to achieve their emissions targets. Some possible policies and measures which Parties could implement are listed in the Kyoto Protocol and could offer opportunities for intergovernmental cooperation.

Quantified emissions limitation and reduction commitments: These are legally binding targets and timetables under the Kyoto Protocol for the limitation or reduction of greenhouse gas emissions for developed countries.

Ratification: After signing the Convention or the Protocol, a country must ratify it, often with the approval of its parliament or other legislature. The instrument of ratification must be deposited with the depositary (in this case the UN Secretary-General) to start the 90-day countdown to becoming a Party.

Review of commitments: The Parties must regularly review the adequacy of the Convention's Article 4(2)(a) and (b) outlining developed country commitments to limit emissions. The first review took place at COP 1 and led to the Berlin Mandate and the adoption of the Kyoto Protocol. The second review is to take place in Buenos Aires.

Secretariat: Staffed by international civil servants and responsible for servicing the COP and ensuring its smooth operation, the Secretariat makes arrangements for

meetings, compiles and prepares reports, and coordinates with other relevant international bodies. The Climate Change Secretariat is institutionally linked to the United Nations.

Sinks: Under the Kyoto Protocol, developed countries can include changes in net emissions (calculated as emissions minus removals of CO_2) from certain activities in the land-use change and forestry sector. Calculating the effects of sinks (growing vegetation tends to absorb carbon dioxide from the atmosphere) is methodologically complex and still needs to be clarified.

Subsidiary body: This is a committee that assists the Conference of the Parties. Two permanent ones are defined by the Convention: the Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technological Advice. COP 1 also established two other temporary bodies: the Ad Hoc Group on the Berlin Mandate, which concluded its work on 30 November 1997, and the Ad Hoc Group on Article 13. Additional subsidiary bodies may be established as needed.

Subsidiary Body for Implementation (SBI): This makes recommendations on policy and implementation issues to the COP and, if requested, other bodies.

Subsidiary Body for Scientific and Technological Advice (SBSTA): This serves as the link between the information and assessments provided by expert sources (such as the IPCC) on the one hand and the policy-oriented needs of the COP on the other.

UNFCCC: United Nations Framework Convention on Climate Change.

Voluntary commitments: During the Kyoto negotiations, a draft article that would have permitted developing countries to adhere voluntarily to legally binding emissions targets was dropped in the final hours. This issue remains important for some negotiators and may be discussed in Buenos Aires.

5. UNFCCC summary table and reporting obligations under the Convention and the Kyoto Protocol

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)	
Convention Secretariat	Bonn, Germany Climate Change Secretariat (UNFCCC) Haus Carstanjen Martin-Luther-King-Straße 8, D-53175 Bonn Tel. (41-228) 815 10 00 Fax (41-228) 815 19 99 secretariat@unfccc.de (personal e-mail with first initial last name@unfccc.de)
Depositary	The Secretariat of the United Nations.
Signature, time and place of adoption	Adoption: 9 May 1992, New York. Signature: 4–14 June 1992, Rio de Janeiro, and 20 June 1992–19 June 1993, New York.
Entry into force	21 March 1994, 90 days after receipt of the 50th ratification.
Status of participation	176 Parties, including the European Community, by 6 May 1998. Nine signatories without ratification acceptance or approval.
Last Conference of the Parties	Bonn, 25 October–5 November 1999, COP 5.
Next Conference of the Parties	The Hague, 13–24 November 2000, COP 6.
Amendments and additional protocols	Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, adopted on 11 December 1997. Open for signature from 16 March 1998 to 15 March 1999. Entry into force: 90th day after the 55th ratification, including developed countries accounting for at least 55 % of developed country emissions. Not yet ratified.
Scope of the Convention	Legal scope: Open to Member States of the UN, its specialised agencies, or Parties to the Statute of the International Court of Justice, and to regional economic integration organisations. Geographic scope: Global.
Aims of the Convention	To stabilise greenhouse gas (GHG) concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, within a time frame sufficient to allow ecosystems to adapt naturally to climate change. To ensure that food production is not threatened. To enable economic development to proceed in a sustainable manner.

Obligations of the Parties	To develop, periodically update, publish and make available to the COP national inventories of emissions. To formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing emissions, sinks and reservoirs of GHGs and facilitate adequate adaptation to climate change. To promote and cooperate in the development, application, and diffusion of technologies and practices, or prevent GHG emissions. To promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of all sinks and reservoirs of GHGs. To promote and cooperate in scientific, technical, socioeconomic and other research, systematic observation, and development of data archives related to climate change.
Implementation	The COP shall keep under regular review the implementation of the UNFCCC and any related instruments that the conference may adopt and shall make the decisions necessary to promote the effective implementation of the Convention. With this aim, the COP shall: periodically examine the obligations of the Parties; promote and facilitate the exchange of information, and the coordination, as appropriate, of policies, strategies, and measures adopted by the Parties to address climate change and its effects; promote and guide the development and periodic refinements of comparable methodologies; assess the implementation of the Convention by the Parties, the overall effects of the measures taken pursuant to the Convention, in particular environmental, economic and social effects, and the extent to which progress towards the objective of the Convention is being achieved; consider and adopt regular reports on the implementation of the Convention and ensure their publication; and seek to mobilise financial resources.
Financial issues	The Convention defines a mechanism for providing financial resources for projects which address climate change. This financial mechanism is operated, on an interim basis and under the guidance of the COP, by the Global Environment Facility (GEF). Projects supported by the GEF are implemented through three implementing agencies: the UN Development Programme (UNDP), the UN Environment Programme (UNEP) and the World Bank. The GEF provides resources for investment projects having global environmental benefits. It also supports the building of capacity of developing countries to implement the Convention and prepare national communications. The GEF promotes bilateral and multilateral co-financing and leveraging of private sector participation and resources.
Information sources and publications	Up-to-date information on the Convention is available through the UNFCCC Secretariat, or through the UNEP/WMO Information Unit on Climate Change. Web page of the Secretariat: http://www.unfccc.de

Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC)	
Convention Secretariat	Bonn, Germany Climate Change Secretariat (UNFCCC) Haus Carstanjen Martin-Luther-King-Straße 8, D-53175 Bonn Tel. (49-228) 815 10 00 Fax (49-228) 815 19 99 E-mail: secretariat@unfccc.de (personal e-mail with first initial last name@unfccc.de)
Depositary	The Secretariat of the United Nations.
Signature, time and place of adoption	Adopted on 11 December 1997 at COP 3 (Kyoto). Open for signature on 16 March 1998–15 March 1999 at New York.
Entry into force	NOT YET IN FORCE. Entry into force: On the 90th day after the date on which not less than 55 Parties to the Convention, incorporating Annex I Parties which accounted in total for at least 55 % of the total carbon dioxide emissions for 1990 form that group have deposited their instrument of ratification, acceptance, approval or accession.
European Community accession and entry into force	NOT YET RATIFIED.
Status of participation	As at 13 January 2000, 84 Parties had signed the Kyoto Protocol and 22 had deposited their instrument of ratification or accession.
Last Conference of the Parties	Not applicable yet.
Next Conference of the Parties	Not applicable yet.
Scope of the Convention	Legal scope: Open to Member States of the UN or its specialised agencies or that are Parties to the Statute of the International Court of Justice and to regional integration organisations. Geographic scope: General.
Amendments and additional protocols	
Aim of the Convention	To strengthen the UNFCCC by adding new, more detailed commitments.
Obligations of the Parties	Parties shall individually or jointly ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the GHGs listed in Annex A do not exceed their assigned amount, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and the provision of Article 3, with a view to reducing their overall emissions of such gases by at least 5 % below 1990 levels in the commitment period 2008–12 according to the reduction emission target assigned to each Party included in Annex I. • Each Party included in Annex I shall, by 2005, have made demonstrable progress in achieving its commitments. • The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under Article 3 of each Party included in Annex I. The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8.

- Prior to the first meeting of the COP, serving as the meeting of the Parties to the Protocol, each Party included in Annex I shall provide for consideration by the SBSTA data to establish its level of carbon stocks in subsequent years. The COP serving as the MOP shall, at its first session or as soon as practicable thereafter, decide upon modalities, rules and guidelines as to how and which additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and emissions and forestry categories shall be added to, or subtracted from, the assigned amount for Parties included in Annex I, taking into account uncertainties, transparency in reporting, verifiability, the methodological work of the SBSTA in accordance with Article 5 and the decisions of the COP.

- Any emission reduction units or any part of an assigned amount which a Party acquires from another Party in accordance with the provisions of Article 6 or of Article 17 shall be added to the assigned amount for the acquiring Party. Any emission reduction units or any part of an assigned amount which a Party transfers to another Party shall be subtracted from the assigned amount for the transferring Party. Any certified emission reductions which a Party acquires from another Party in accordance with the provisions of Article 12 shall be added to the assigned amount for the acquiring Party.

- If the emissions of a Party included in Annex I in a commitment period are less than its assigned amount, this difference shall, on request of that Party, be added to the assigned amount for that Party for subsequent commitment periods.

- Each Party included in Annex I shall seek to implement its commitments in such a way as to minimise adverse social, environmental and economic impacts on developing country Parties.

Sources on the Internet	Up-to-date information on the Kyoto Protocol is available through the UNFCCC Secretariat or through the UNEP/WMO Information Unit on Climate Change. Web page of the Secretariat: http://www.unfccc.de

Reporting obligations under the Convention

National inventories

Each Annex I Party shall incorporate into its annual inventory the supplementary information for the purposes of ensuring compliance with Article 3 (Article 7(1)), beginning with the inventory due under the Convention for the first year of the commitment period after this Protocol has entered into force for that Party (Article 7(3)). This information should be submitted annually.

This information shall be reviewed as part of the annual compilation and accounting of emissions inventories and assigned amount (Article 8(1)).

National communications

All Parties, taking into account their common but differentiated responsibilities, shall formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate

change and to facilitate adaptation. Such programmes would concern energy, transport and industry as well as agriculture, forestry and waste management (Article 10(b)(i)).

Annex I Parties shall incorporate according to Article 7 into their national communications the necessary supplementary information for the purposes of ensuring compliance with Article 3, in accordance with guidelines adopted by the COP (Articles 10(b)(ii), 7(2) and 7(4)). This information should be included as part of the first national communication due under the Convention after this Protocol has entered into force for it and after the adoption of the guidelines. The frequency of submission of such information should be determined by the COP. This information submitted shall be reviewed as part of the review of communications (Article 8(1)).

All Parties shall include in their national communications information on programmes and activities undertaken pursuant to this Article 10 (Article 10(f)).

Each Annex I Party shall have in place, not later than one year prior to the first commitment period, a national system for the estimation of emissions/removals. Guidelines for such a system should be decided by the COP.

Guidelines and methodologies for reporting

Methodologies shall be those accepted by the IPCC, and regularly reviewed and accepted by the COP (Article 5(1) and 5(2)).

Parties shall formulate programmes to improve the quality of local emissions factors, activity data and/or models for the preparation and periodic updating of national inventories using methodologies agreed upon by the COP and consistent with the guidelines for national communications (Article 10(a)).

6. Reporting obligations under the Convention

Article 12 of the Convention regulates the content of national communications on the implementation of the Convention that each Party is required to communicate to the Conference of the Parties.

According to Article 4, paragraph 1, each Party shall communicate to the Conference of the Parties the following elements of information:

(a) each Party shall communicate to the COP through the Secretariat a national inventory of anthropogenic emissions by sources and removal by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extend its capacities permit, using comparable methodologies to be promoted and agreed upon the Conference of the Parties (Article 12(1)(a) of the Convention);

(b) a general description of steps taken or envisaged by the Party to implement the Convention;

(c) any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends.

Additionally, each developed country Party and each other Party included in Annex I to the Convention should also report the following elements:

(a) a detailed description of the policies and measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs;

(b) a specific estimate of the effects that the policies and measures referred to above will have on anthropogenic emissions by its sources and removals by its sinks of greenhouse gases by the end of the present decade, with the aim of returning individually or jointly to their 1990 levels.

Each developed country Party and each other developed Party included in Annex II shall incorporate details of measures taken in accordance with Article 4, paragraphs 3, 4 and 5, relating to the transfer of technology and the provision of financial resources.

Developing country Parties may, on a voluntary basis, propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs, of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits.

Each developed country Party and each other Party included in Annex I shall make its initial communication within six months of the entry into force of the Convention for that Party, and periodically thereafter as determined by the Conference of the Parties.

Each of the rest of the Parties shall make its initial communication within three years of the entry into force of the Convention for that Party, or of the availability of financial resources in accordance with Article 4, paragraph 3. Least developed country Parties may make their initial communication at their discretion.

	Main reporting obligations					
Convention	**Origin**	**Parties involved**	**Kind of reporting**	**Schedule**	**Content**	**General explanation**
IV.3. United Nations Framework Convention on Climate Change (9.5.1992, New York)	Articles 4 and 12	**From Parties** To the COP through the Secretariat	National communications	Within six months of the entry into force of the Convention for that Party. On a regular basis of three to five years to be determined by the COP (third communication: due by 30 November 2001, Decision 11/CP4).	National communication on the implementation of the Convention.	The reporting system is based on the existence of a set of guidelines that Parties should follow in the submission of their reports to the Secretariat of the Convention and the periodical review procedure of such guidelines established under the Convention. The reporting guidelines adopted by the COP have been revised and updated several times up to now. The last revision of such guidelines has been adopted recently at COP 5 in Bonn in order to update them for the preparation of the third national communication, scheduled for 30 November 2001. The revision of the revised guidelines contains a common reporting format, which is part of the national inventory report. According to it, Annex I Parties will have to report, from 2000, their inventory information using the tables of the common reporting format.
IV.3. United Nations Framework Convention on Climate Change (9.5.1992, New York)	Articles 4 and 12	**From Parties** To the COP through the Secretariat	National inventory reports	Each year, by 15 April.	According to what was decided in Decision 3/CP1, all Parties shall submit to the COP through the Secretariat, on an annual basis by 15 April, an updated inventory report containing detailed and complete information on their inventories for all years from the base year to the year of the current annual inventory submission, in order to ensure the transparency of the inventory.	The reporting system is based on the existence of a set of guidelines.

7. Schedule of the reporting obligations under the UNFCCC

National inventories	Periodicity: Annually by 15 April (Decisions 3/CP1 and 11/CP4). Next reporting: 15 April 2000.
National communications	Periodicity: On a regular basis of three to five year intervals to be determined by the COP. • Initial communication: Due by 21 November 1994. • Second communication: Due by 15 April 1997 (Decisions 3/CP1 and 9/CP2). • Third communication: Due by 30 November 2001 (Decision 11/CP4).

Monitoring requirements in:

- **the United Nations Framework Convention on Climate Change;**
- **the Kyoto Protocol; and**
- **Decision 1999/296/EC**

UNFCCC	KYOTO PROTOCOL	DECISION 1999/296/EC
INVENTORIES All Parties shall develop and update national inventories of anthropogenic emissions/removals *(Article 4(1)a)* on an annual basis (Decision 3/CP1), by 15 April (Decision 11/CP4), using comparable methodologies to be promoted and agreed upon by the COP *(Article12 (1))* (see below).	INVENTORIES Each Annex I Party shall incorporate into its annual inventory the supplementary information for the purposes of ensuring compliance with Article 3 *(Article 7(1))*, beginning with the inventory due under the Convention for the first year of the commitment period after this Protocol has entered into force for that Party *(Article 7(3))*. This information shall be reviewed as part of the annual compilation and accounting of emissions inventories and assigned amount *(Article 8(1))*.	INVENTORIES Member States shall each year, not later than 31 December, report to the Commission their anthropogenic CO_2 emissions and removals by sinks for the previous calendar year. Member States shall also report national inventory data on emissions/removals of the six Kyoto GHGs on an annual basis. They shall report to the Commission by 31 December year Y their final data for year Y-2, and provisional data for year Y-1 *(Article 3(2))*. The Commission shall establish inventories of emissions/removals in the Community and circulate them by 1 March *(Article 3(3))*. Member States shall also report by 31 December on the most recent projected emissions for the period 2008–12, and, as far as possible, for 2005 *(Article 3(2))*. The Commission shall assess annually in consultation with Member States if the actual and projected progress is sufficient to ensure commitments, and shall report to the European Parliament and the Council, even in case of incomplete data from Member States *(Article 6)*.

UNFCCC	KYOTO PROTOCOL	DECISION 1999/296/EC
NATIONAL PROGRAMMES/ COMMUNICATIONS All Parties shall publish and regularly update national, and, where appropriate, regional programmes containing measures to mitigate climate change *(Article 4(1)(b))*. In order to promote progress to the achievement of the objective of the Convention and, in particular, that of Article 4(2)(a) (return by the end of the present decade to earlier levels), each of the Annex I Parties shall communicate periodically detailed information on its policies and measures and a specific estimate of their effects on emissions/removals *(Articles 4(2)(b) and 12(2))*. In addition *(Article 12(3))*, each Annex I Party shall incorporate details of measures taken in accordance with Article 4(3) (financial resources and assistance to developing countries).	NATIONAL PROGRAMMES/ COMMUNICATIONS All Parties shall formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and to facilitate adaptation *(Article 10(b))*. Annex I Parties shall submit information, including national programmes, in their national communication under Article 12 of the Convention, in accordance with the guidelines adopted by the COP *(Articles 10(b)(ii), 7(2) and 7(4))*. This information shall be reviewed as part of the review of communications *(Article 8(1))*. All Parties shall include in their national communications information on programmes and activities undertaken pursuant to this Article 10 *(Article 10(f))*.	NATIONAL PROGRAMMES/ COMMUNICATIONS National programmes shall include *(Article 2)*: estimates of effects between the base year and 2000 for the six GHGs; inventories, details of national measures, estimates of effects between the base year and 2008–12 information on other gases. The frequency of updating national programmes is established by the Commission (under the committee procedure) *(Article 4)*. Members shall forward existing national programmes or updates within three months of receiving notification of this decision *(Article 5(1))*. The Commission shall evaluate the national programmes in order to assess whether progress in the Community is sufficient *(Article 5(3))*. It will report to the European Parliament and the Council within six months *(Article 5(4))*.
METHODOLOGIES AND GUIDELINES FOR DATA COLLECTION Calculations of emissions/removals should take into account the best scientific knowledge. Methodologies for these calculations will be regularly reviewed and agreed on by the COP *(Article 4(2)(c))*. Revised guidelines to be used for the preparation of the second communications (annex to Decision 9/CP2). IPCC guidelines to be used for national inventories (Decisions 4/CP1, 2 and 6/CP3).	METHODOLOGIES AND GUIDELINES FOR DATA COLLECTION Each Annex I Party shall have in place, not later than one year prior to the first commitment period, a national system for the estimation of emissions/removals. Guidelines for such a system will be decided upon by the COP. Methodologies shall be those accepted by the IPCC and regularly reviewed and accepted by the COP *(Article 5(1) and 5(2))*. All Parties shall formulate programmes to improve the quality of local emission factors, activity data and/or models for the preparation and periodic updating of national inventories using methodologies agreed upon by the COP and consistent with the guidelines for national communications *(Article 10(a))*.	METHODOLOGIES AND GUIDELINES FOR DATA COLLECTION MS shall determine their emissions/removals in accordance with methodologies agreed upon by the COP *(Article 3(1))*. The Commission shall establish procedures and methods for the evaluation of national programmes *(Article 4)*. The Commission shall take further steps to promote the comparability and transparency of national inventories and reporting *(Article3(2), paragraph 4)*.

NB: Table produced by the Environment DG of the European Commission.

8. Summary table of deadlines for the submission of views or information by Parties

8.1. Submissions agreed at SB 10

	Submission	Deadline
1.	*Technology transfer* Submissions on how the issues and questions listed in the annex to Decision 4/CP4, 'Development and transfer of technologies', should be addressed, as well as suggestions for additional issues and questions *(see document FCCC/SBSTA/1999/6).*	30 November 1999
2.	*LULUCF* Submissions (including data, information and a decision-making framework) on the scope of the workshop to analyse the IPCC special report on land-use, land-use change and forestry in the context of the requirements of the Kyoto Protocol, to be held between SBSTA 12 and COP 6 *(see document FCCC/SBSTA/1999/6l).*	1 February 2000
3.	*Guidelines for the preparation of national communications* Submissions by Annex I Parties not using the sectoral background data tables 5A-D on land-use change and forestry of the common reporting format to specify alternative formats *(see document FCCC/SBSTA/1999/6).*	1 July 2001
4.	*Guidelines for the preparation of national communications* Submissions by Annex I Parties of information on experiences with using the guidelines, in particular the common reporting format *(see document FCCC/SBSTA/1999/6).*	1 July 2001
5.	*Best practices in policies and measures* Summaries of papers for presentation at the workshop to be held in Copenhagen from 11 to 13 April 2000 *(see document FCCC/SBSTA/1999/CRP. 10).*	15 January 2000
6.	*Kyoto Protocol mechanisms* Further proposals, consistent with the existing framework in the note by the chairman, on principles, modalities, rules and guidelines on the mechanisms *(see Decision 14/CP5).*	31 January 2000
7.	*Compliance* Further proposals on compliance (*see document FCCC/SBI/1999/CRP. 7).*	31 January 2000
8.	*National systems, adjustments and guidelines under Articles 5, 7 and 8 of the Kyoto Protocol* Initial views on supplementary information pursuant to Article 7 and methodological and technical aspects related to this article, as well as on Article 8, particularly on the relationship between the review process and the compliance procedure *(see document FCCC/SBSTA/1999/L. 1).*	1 February 2000

9.	*National systems, adjustments and guidelines under Articles 5, 7 and 8 of the Kyoto Protocol* Further views on approaches for considering adjustments referred to in Article 5(2) and any methodologies for their applications *(see document FCCC/SBSTA/1999/L. 14).*	1 February 2000
10.	*Impacts and adaptation assessment methods* Parties, international organisations and other organisations are invited to submit additional information electronically, particularly on new decision tools, models and methodologies, using the format on the Secretariat web site (*see document FCCC/SBSTA/1999/L. 12).*	15 February 2000
11.	*Capacity building* Non-Annex I Parties to elaborate their specific needs and priorities in capacity building *(see Decision 10/CP5).*	1 March 2000
12.	*Capacity building* Annex II Parties to supplement the information contained in their national communications on activities and programmes which facilitate capacity building in developing countries in the area of climate change *(see Decision 10/CP5).*	1 March 2000
13.	*Capacity building* Parties included in Annex I but not included in Annex II to identify their needs and priorities for capacity-building *(see Decision 11/CP5).*	1 March 2000
14.	*AIJ under the pilot phase* Proposals for the improvement of the draft revised uniform reporting format contained in document FCCC/SB/1999/5/Add. 1	31 March 2000
15.	*National systems, adjustments and guidelines under Articles 5, 7 and 8 of the Kyoto Protocol* Additional views on issues referred to in terms 8 and 9 of this summary table, in the light of the outcome of the workshop on these issues to be held in early 2000 *(see document FCCC/SBSTA/1999/L. 14).*	15 April 2000
16.	*AIJ under the pilot phase* Further information from Parties involved in the AIJ under the pilot phase using the uniform reporting format, for consideration in the fourth synthesis report (not for compilation into a Misc.) *(see Decision 13/CP5).*	30 June 2000
17.	*Status of consultative process on technology transfer* Views on a framework for implementation of meaningful and effective actions to enhance implementation of Article 4(5) of the Convention *(see document FCCC/SBSTA/1999/CRP. 2).*	15 July 2000
18.	*Impact of single projects* Additional information on the subject of impact of single projects *(see document SBSTA/1999/L. 17).*	17 July 2000
19.	*LULUCF* Views, or proposals for definitions, on activities under Article 3(3) of the Kyoto Protocol *(see document FCCC/SBSTA/1999/CRP. 8/Rev. 2).*	1 August 2000

20.	*LULUCF* An assessment of net changes in GHG emissions by sources and removals by sinks, measured as verifiable changes in carbon stocks, resulting from activities under Article 3(3) of the Kyoto Protocol *(see document FCCC/SBSTA/1999/CRP. 8/Rev. 2).*	1 August 2000
21.	*LULUCF* Submission from Annex I Parties of preliminary data and information as specified in the first sentence of Article 3(4) of the Kyoto Protocol *(see document FCCC/SBSTA/1999/CRP. 8/Rev.2).*	1 August 2000
22.	*LULUCF* Submissions as to how and which human-included activities will be included under Article 3(4) of the Kyoto Protocol, on modalities, rules and guidelines related to these activities, which may include any linkages to other relevant paragraphs of Article 3 of the Kyoto Protocol, and any relevant information on these activities *(see document FCCC/SBSTA/1999/CRP. 8/Rev. 2).*	1 August 2000
23.	*Estimation of emissions of CO_2 from forest harvesting and wood products* Views on approaches for estimating and accounting for emissions of CO_2 from forest harvesting and wood products, taking into account the report of the IPCC expert meeting held in Dakar, Senegal, 5 and 6 May 1998 *(see document FCCC/SBSTA/1999/CRP. 6).*	15 March 2001
24.	*Scientific and methodological aspects of the proposal by Brazil* Information on the scientific and methodological aspects of, and related information on, the Brazilian proposal *(see document FCCC/SBSTA/1999/L. 13/Rev. 1).*	Before the first SBSTA session following COP 6

NB: The next Conference of the Parties will be held in The Hague (the Netherlands) on 13 and 14 November 2000.