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**Methodological issues under the Convention**

**Annual report on the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention**

**Annual report on the technical review of greenhouse gas inventories  
from Parties included in Annex I to the Convention**

**Note by the secretariat**

*Summary*

This document describes activities relating to greenhouse gas inventory reviews conducted during the period October 2006–November 2007, and activities planned for the remainder of 2007 and for 2008. It provides information on the Parties subject to review, the training and participation of experts in the review process, the meeting of inventory lead reviewers and the progress in updating the roster of experts.

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## **I. Introduction**

### **A. Mandate**

1. The Conference of the Parties (COP), by its decision 12/CP.9, requested the secretariat to prepare an annual report on inventory review activities, including any recommendation resulting from meetings of lead reviewers participating in the technical review of greenhouse gas (GHG) inventories of Parties included in Annex I to the Convention (Annex I Parties), for consideration by the Subsidiary Body for Scientific and Technological Advice (SBSTA). The COP also requested the secretariat to include in this report information on its inventory review training programme, in particular on examination procedures and on selection of trainees and instructors.

2. In addition, the SBSTA, at its twenty-fourth session, requested the secretariat to continue to prepare annual reports on inventory review activities, pursuant to decision 12/CP.9, for consideration by the SBSTA, and to include in these reports information on progress in updating the roster of experts (FCCC/SBSTA/2006/5, para. 95).

### **B. Scope of the note**

3. This document provides information on the activities relating to GHG inventory reviews conducted from October 2006 to November 2007 and on planned activities for the remainder of 2007 and for 2008. It also suggests possible future approaches aimed at further improving the effectiveness, efficiency and consistency of the review process, in accordance with the UNFCCC review guidelines,<sup>1</sup> in order to ensure the reliability of information on GHG emissions and trends provided to the COP and its subsidiary bodies.

### **C. Possible action by the Subsidiary Body for Scientific and Technological Advice**

4. The SBSTA may wish to consider the information in this document and, if necessary, provide guidance to the Parties and the secretariat, and recommendations to the COP.

## **II. Review activities**

5. The technical review of national GHG inventories from Annex I Parties started in 2000, in accordance with decision 6/CP.5. Following completion of the trial period established in that decision, annual reviews of the individual inventory of each Annex I Party became mandatory in 2003.

6. The UNFCCC review guidelines adopted in 1999 (decision 6/CP.5) and revised in 2002 (decision 19/CP.8) help to ensure that reviews are conducted consistently in a technically sound manner.

7. The GHG inventory review activities are funded from the core budget. Some other related activities, such as development of the GHG information system, the training of review experts and the organization of lead reviewers' meetings were traditionally funded through voluntary contributions to supplementary funds. In 2007, however, very limited funding was available for these other activities and most of them were postponed for the future, when funding is available.

### **A. Individual inventory reviews**

8. In accordance with decision 19/CP.8, the secretariat coordinates the review of national GHG inventories of Annex I Parties. In 2007 a centralized review was organized for Parties to the Convention

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<sup>1</sup> "UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention."

in accordance with decision 7/CP.11, and for Parties to the Kyoto Protocol the reviews of the 2006 GHG inventory were organized during 2007 in conjunction with the initial report under the Kyoto Protocol, in accordance with decisions 7/CP.11 and 26/CMP.1.

9. The inventory review process is conducted in three stages: initial check; synthesis and assessment (parts I and II); and individual review. The initial check stage provides an immediate quality assurance aimed at verifying completeness of the inventory submission and correctness of its format. Part I of the synthesis and assessment compiles and compares basic inventory information, such as emission trends, activity data and implied emission factors, across Parties and over time. Part II provides a preliminary assessment of the inventory of individual Parties, and identifies any potential inventory problems, which are then explored during the individual review stage.

10. During the individual review, an international team of experts, nominated by Parties, conducts a technical review of each inventory. In 2007, until November 2007, individual inventory reviews were conducted or planned for 40 Annex I Parties, as follows:

- (a) Completed in-country reviews: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, European Community, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and United Kingdom of Great Britain and Northern Ireland;
- (b) Completed centralized review: Australia, Croatia, Turkey and United States of America;
- (c) Planned in-country reviews: Canada (November 2007) and Belarus (2008).<sup>2</sup>

11. Of the four centralized review reports, two were completed within the period of time as stipulated in the inventory review guidelines. Two reports were completed about two months later than envisaged by the guidelines. This was because more discussions between the expert review team and the Party under review were required in order to adequately reflect both the review findings and the Party's comments in the final report.

12. A number of the 32 review reports from in-country reviews conducted up to July 2007 were, or will be, published beyond the established deadlines. There are several reasons for that. As a result of each in-country review, not one but two review reports had to be prepared. In-country reviews are thorough and rigorous, and that is reflected in lengthier and more detailed reports requiring more time for their preparation. Thus the workload of experts has been high and lead to some delays. Many experts had to participate in more than one review, some even in three of them. Another reason for the delays is the fact that many reviews took place in the first half of 2007 and, consequently, the preparation of most of the review reports coincided with the summer holidays for many experts from the northern hemisphere. In addition, since all the experts continued to work during the review process for their respective governments or organizations, competing demands on their time affected their ability to prepare reports in the strict time limits imposed by the review guidelines.

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<sup>2</sup> The 2006 inventory submission of Belarus, a Party to the Kyoto Protocol, has not been reviewed as yet. In accordance with decisions 7/CP.11 and 26/CMP.1, the review of the 2006 inventory should be organized in conjunction with the initial report under the Kyoto Protocol. Belarus's Annex B target (92 per cent) was established through an amendment to Annex B of the Kyoto Protocol (decision 10/CMP.2). This amendment has not yet been ratified by the required number of Parties. The review of the 2006 inventory and the initial report has therefore been postponed.

## B. Roster of experts

13. Currently, the roster contains 457 GHG inventory experts, 277 from Annex I Parties and 180 from Parties not included in Annex I to the Convention (non-Annex I Parties). From September 2006 to September 2007, 57 new experts were nominated to the roster, 46 from Annex I Parties and 11 from non-Annex I Parties.

14. Not all of these experts participated in the review process. One of the reasons for this is that not all Parties regularly update the list of experts nominated by them. Some of the experts still on the roster had already moved on to other positions and were no longer available to participate in the review process. Another reason is that some experts nominated to the roster have not yet passed the mandatory training and examination.

15. In order to facilitate the nomination of experts to the roster and updating the list of nominees by a Party, the secretariat has developed an online form. The secretariat has also reorganized the web page<sup>3</sup> on the roster of experts to make it more user-friendly.

## C. Expert review teams

16. During individual inventory reviews, international teams of inventory experts examine the data, methodologies and procedures used in preparing the national inventory. The secretariat selects experts for these teams based on nominations by Parties to the roster of experts. Invitations to participate in the review are copied to the national focal point.

17. In general, each team comprises a generalist who covers cross-cutting inventory issues and one or two experts for each inventory sector: energy; industrial processes; agriculture; land use, land-use change and forestry (LULUCF); and waste. However, for reviews of Parties with smaller economies, experts may be requested to cover two sectors. Each team is led by two lead reviewers, one from a non-Annex I Party and one from an Annex I Party.

18. In selecting members of expert review teams, the secretariat seeks to ensure an overall balance in the number of experts from Annex I Parties and non-Annex I Parties, and a geographical balance within these two groups. In 2007, a total of 132 individuals from 60 different Parties served as inventory experts on review teams. Of these experts, 11 were from Annex I Parties with economies in transition, 20 were from other Annex I Parties, and 29 were from non-Annex I Parties. To manage the very high number of reviews in 2007, most of the experts participated in the reviews more than once. From non-Annex I Parties, 23 experts participated in two reviews, 15 experts participated in three reviews and one expert participated in four reviews; from Annex I Parties, 31 experts participated in two reviews and two experts participated in three reviews.

19. Table 1 provides a breakdown of participation of experts by nominating Party in 2007. It shows that experts from the following Annex I Parties were not involved in the review process in 2007: Estonia, France, Greece, Liechtenstein, Luxembourg, Monaco and Poland. There are several reasons for this: (a) some Parties did not nominate experts, for example Estonia; (b) some Parties have nominated experts, but these experts did not take the training courses and pass the relevant examinations, for example France and Poland; and (c) one Party did not support the participation of their experts in the review owing to funding problems (Greece).

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<sup>3</sup> <[http://unfccc.int/files/parties\\_and\\_observers/roster\\_of\\_experts/application/msword/roster\\_nomination\\_2006new.doc](http://unfccc.int/files/parties_and_observers/roster_of_experts/application/msword/roster_nomination_2006new.doc)>.

20. From 2000, when the individual reviews were first conducted under the trial period, to 2007, 220<sup>4</sup> individual experts from 86 different Parties (37 Annex I Parties and 49 non-Annex I Parties) have participated in GHG review activities. In 2007 the secretariat involved in the reviews 23 new experts who had undergone a training course and successfully passed the examination. In 2007 alone, the number of individual experts was 132, which is more than a half of the number of individual experts in the period 2000–2007, and provides an indication of the breadth of the review activities taking place during 2007.

**Table 1. Inventory review experts in 2007 by nominating Party**

Annex I Parties that are not with economies in transition		Annex I Parties with economies in transition	Non-Annex I Parties	
Australia <sup>a</sup>	New Zealand <sup>a</sup>	Bulgaria <sup>a</sup>	Algeria	Kazakhstan
Austria <sup>a</sup>	Norway <sup>a</sup>	Croatia	Argentina <sup>a</sup>	Malawi
Belgium <sup>a</sup>	Portugal	Czech Republic <sup>a</sup>	Bahamas	Mongolia
Canada <sup>a</sup>	Spain <sup>a</sup>	Hungary	Benin	Morocco
Denmark	Sweden <sup>a</sup>	Latvia	Bolivia	Peru <sup>a</sup>
European Community <sup>a</sup>	Switzerland <sup>a</sup>	Lithuania	Brazil <sup>a</sup>	Philippines <sup>a</sup>
Finland <sup>a</sup>	United Kingdom of	Romania	Chile <sup>a</sup>	Republic of Korea
Germany <sup>a</sup>	Great Britain and	Russian Federation <sup>a</sup>	China <sup>a</sup>	Republic of Moldova <sup>a</sup>
Ireland <sup>a</sup>	Northern Ireland <sup>a</sup>	Slovakia <sup>a</sup>	Cuba	South Africa
Italy <sup>a</sup>	United States of	Slovenia <sup>a</sup>	Egypt <sup>a</sup>	Sudan
Japan <sup>a</sup>	America <sup>a</sup>	Ukraine	Gambia	Thailand
Netherlands <sup>a</sup>			Georgia	Togo
			Ghana <sup>a</sup>	Uruguay <sup>a</sup>
			India <sup>a</sup>	Zambia
			Indonesia	

<sup>a</sup> Parties from which two or more experts participated in reviews in 2007.

#### D. Other inventory review procedures

21. In accordance with decision 12/CP.9, the secretariat developed and put in place procedures to implement the code of practice for the treatment of confidential information during the inventory review. These procedures cover submission, processing and handling by the secretariat of any information designated as confidential by an Annex I Party, and the granting of access to experts.

22. During the 2006 GHG inventory reviews, many Parties provided the review teams with access to confidential information. This was possible as the reviews were conducted in countries and thus the Parties' own procedures on how to share confidential information with the review teams could be followed.

23. Decision 12/CP.9 further requires that all members of expert review teams sign an agreement for expert review services, which specifies the responsibilities, expected time commitment, and appropriate conduct for expert review team members, in particular with respect to the protection of confidential inventory information. All experts participating in the inventory reviews from 2004 onwards have signed this agreement, and this practice will continue.

#### E. Meeting of inventory lead reviewers

24. The UNFCCC review guidelines require that expert teams are to be led by two experts with substantial inventory review experience. For each team, one lead reviewer is to be from a non-Annex I Party and the other from an Annex I Party. Lead reviewers have a special role in guiding the review

<sup>4</sup> There were 11 observers who participated in the reviews between 2000 and 2007 and are not included in these totals.

teams to ensure the quality, consistency and objectivity of the reviews. Recognizing the special role of lead reviewers, the COP, by its decision 12/CP.9, requested the secretariat to organize meetings of lead reviewers to promote a common approach by expert review teams to methodological and procedural issues encountered in the inventory reviews, and to make recommendations to the secretariat on ways to further improve the effectiveness and efficiency of the review process.

25. Owing to a very heavy workload and insufficient funds it was not possible to convene a meeting of lead reviewers in 2007. The next meeting of the lead reviewers is planned for April 2008, subject to the availability of resources.

### **III. Training of experts**

26. Decision 12/CP.9 called for the secretariat to establish a training programme under the Convention, comprising both technical and skill-building courses, for new members of expert review teams. Development of the basic course, covering the general and cross-cutting issues and all inventory sectors except LULUCF, was completed in 2004, and since then only experts who have successfully passed the examination can participate in an inventory review. The LULUCF sector course was completed in 2005. The basic course is offered with an instructor once a year, resources permitting, or as a non-instructed online course throughout the year.

27. The SBSTA, at its twenty-fifth session, requested the secretariat to continue to offer the training programme online, to make instructors available for the online training programme, and to organize a seminar relating to the programme, subject to the availability of resources. The secretariat was not able to implement the request to have an instructed course in 2007 due to a heavy workload and insufficient funds. In 2007, only five experts completed the non-instructed online course and made relevant arrangements to take the examinations under the supervision of the secretariat, without incurring additional costs.

28. Decision 24/CMP.1 also requested the secretariat to develop training courses on national systems for estimation of GHG emissions of Annex I Parties, on adjustments under Article 5, paragraph 2, of the Kyoto Protocol, and on modalities for accounting for assigned amounts under Article 7, paragraph 4, of the Kyoto Protocol. These courses were developed and offered to experts online in 2006. Nine experts passed one or more examinations during 2007.

29. The basic training course developed in 2003 and 2004 is now outdated owing to recent developments in the GHG inventories and experience gained in the review process. There is a need to update the training materials, to, for example, take into account the IPCC good practice guidance for LULUCF, and update the self tests incorporated in the online training and the final exams.

30. The training activities are of crucial importance for ensuring the required quality of the review process. This is particularly true for experts from non-Annex I Parties, as they usually do not work on inventories on a daily basis. The current lack of funds limits substantially the secretariat's ability to organize these activities as mandated by the COP.

### **IV. Issues relating to submissions from Parties**

31. In accordance with the UNFCCC reporting guidelines<sup>5</sup> Parties can submit their national inventory report (NIR) in one of the official languages of the United Nations. The UNFCCC reporting guidelines also encourage Parties to submit, where relevant, a translation of the NIR into English. NIRs submitted in a language other than English limits the transparency of Parties' reporting and puts

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<sup>5</sup> "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories".

additional burden on the secretariat to find review experts with knowledge of that language. With the limited number of review experts, especially those with sufficient knowledge of languages other than English, selecting a team capable of working in that other language is a real challenge. The review becomes limited if the entire review team is not knowledgeable in the language used in the submission as it cannot review the information submitted in depth. This is especially true for centralized and desk reviews but also for in-country reviews.

## **V. Greenhouse gas information system**

32. The inventory review process is not possible without the GHG information system (GHGIS), which comprises CRF Reporter, a database and related software tools developed by the secretariat to import, ensure quality control, process, store, analyse the submitted data, and facilitate the review and the publication of GHG inventory information provided by Parties. The GHGIS is vital to producing authoritative GHG information for the COP and its subsidiary bodies and for ensuring that the large number of annual inventories can be processed in a cost-effective, timely and rigorous manner. The development, maintenance and improvement of the GHGIS continues to be resource intensive (both in human and financial terms).

33. The major task relating to the GHGIS in the period 2004–2007 has been the development of the CRF Reporter software. The secretariat initiated the development of this software, as requested by decision 18/CP.8, in the second half of 2003, when supplementary funds became available.

34. Following extensive testing and feedback from Parties, the software has been further improved and a second version, which covers the revised LULUCF sector tables (decision 14/CP.11), was made available on 5 February 2007 for use by Annex I Parties in preparing inventory submissions due in 2006. All Parties that submitted a GHG inventory in 2007 (38 Parties) used the CRF Reporter software.

35. Changes in reporting requirements (decision 14.CP/11) and changes resulting from the improvements to CRF Reporter have been implemented throughout all components of the GHGIS. This includes the import of CRF Reporter data into the database; the data definition and structure of the database; extract, transform and load processes; and the online analytical processing (OLAP) database and review tools produced by the secretariat. This also includes development and further improvement of the software tools that facilitate the conduct of the first two stages of the review process by the secretariat, namely the initial checks of the annual inventory submission and the synthesis and assessment reports (parts I and II).

36. The CRF Reporter software is under constant development to reflect the latest COP decisions. It is also under constant improvement to increase its user-friendliness and avoid reporting problems. The secretariat is planning one workshop, one in 2008 and one in 2009 (subject to the availability of resources) for CRF Reporter users in order to establish the priorities for further development taking into account the experiences of users.

## **VI. Challenges and possible future approaches**

37. The review process outlined above works well, thanks mainly to the outstanding dedication and commitment of government-nominated experts and of Parties. Without the admirable effort by Parties and experts, supported by the secretariat, it would not have been possible to conduct in 2007 all the planned reviews and to publish the corresponding reports under very tight deadlines.

38. Despite the dedication and commitment of many non-Annex I experts, it was not possible to ensure a proper balance in the review teams between Annex I experts and non-Annex I experts due to insufficient number of the latter experts on the roster. In striving to ensure the balance, the secretariat



had to invite some non-Annex I experts to participate in more than one review, which should not be a normal practice.

39. In order to continue with the rigorous review procedures established by the UNFCCC review guidelines, the process needs further strengthening. A prerequisite is to have a sufficient number of review experts having the required qualifications. Despite an impressive and growing number of experts on the roster, not all of them could be involved in the reviews because some of them have changed their jobs, have not yet passed the mandatory training and examination, or were unavailable for other reasons. Parties are encouraged to continuously (every six months) update the roster of experts by nominating new experts where necessary and to remove experts who are no longer available. The secretariat intends to send regular reminders to Parties to that effect.

40. Participation in the reviews is a time-intensive process. A number of experts invited to participate in the reviews declined citing priorities in their regular jobs. Parties are encouraged to ensure that experts nominated by them can spend sufficient time on the review and receive sufficient support from their national governments, recognizing that such experts temporarily perform duties essential for the proper functioning of the international process established by the COP. It can hardly be considered a normal practice when experts from some Parties participated in more than one review whereas experts from other Parties did not participate in a single review (see table 1).

41. Training is recognized as a prerequisite for ensuring that the reviews are conducted in a rigorous and consistent way and to provide Parties with confidence in their results. The basic course needs to be regularly updated, new courses need to be prepared, refreshment courses are needed even for experienced reviewers, and meetings of lead reviewers help to ensure consistency in review approaches. Traditionally, training activities and meetings of lead reviewers are covered by supplementary funds, which were not sufficient in the reporting period to conduct proper training and to prepare new courses. Parties are encouraged to provide the necessary funding for training activities and for meetings of lead reviewers, without which it would be difficult to maintain the adequate level of expertise in the expert review teams and to maintain the consistency in review approaches. They are also encouraged to nominate the experts from the roster for training activities.

42. It is worth noting that experts participating in other similar UNFCCC activities (e.g. the clean development mechanism) receive remuneration. Parties may wish to consider whether remuneration could in future be introduced for experts participating in the GHG review process. The roles and responsibilities of the members of the expert review teams in ensuring the implementation of the rigorous review process under the Convention are commensurate with those of other instituted bodies.

43. The workload of the secretariat to prepare and coordinate 41 reviews annually is considerable. It includes the preparation of the first two review stages, of the initial checks, the synthesis and assessment reports (parts I and II), and coordinating the third review stage – the individual reviews. It is increasingly difficult to manage the workload with the current secretariat staff. This workload could be facilitated by involving a number of consultants temporarily located at the secretariat assisting in the preparations of the reviews and publication of the reports. For example, some skilled experts from both Annex I and non-Annex I Parties could be invited to serve as consultants.

44. In 2008 the secretariat is expected to conduct two review cycles: one for the 2007 GHG inventory submissions, and another for the 2008 submissions. This puts a significant burden on the experts, Parties and the secretariat. Parties are encouraged to consider ways of streamlining these two review cycles without jeopardizing the quality and credibility of the review process.

45. Development of the GHG information system tools, in particular of the CRF Reporter software, on which to a large extent depends the quality of the reporting and review process, depends on

supplementary funding. **It is essential that Parties continue to support the development and maintenance of the GHGIS tools, including CRF Reporter and other software tools, and ensure proper funding.**

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