UNITED
NATIONS

UNFCCC Framework Convention on Climate Change

Distr.
GENERAL

FCCC/ARR/2006/FRA
27 November 2007

ENGLISH ONLY

Report of the individual review of the greenhouse gas inventory of France submitted in 2006*

* In the symbol for this document, 2006 refers to the year in which the inventory was submitted, and not to the year of publication.

CONTENTS

I. Overview

A. Introduction

1. This report covers the in-country review of the 2006 greenhouse gas (GHG) inventory submission of France, coordinated by the United Nations Framework Convention on Climate Change (UNFCCC) secretariat, in accordance with decision 19/CP.8. The review took place from 28 May to 2 June 2007 in Paris, France, and was conducted by the following team of nominated experts from the roster of experts: generalist – Mr. Tinus Pulles (the Netherlands); energy – Ms. Chia Ha (Canada); industrial processes – Mr. Newton Paciornik (Brazil); agriculture – Mr. Sergio Gonzalez (Chile); land use, land-use change and forestry (LULUCF) – Mr. Héctor D. Ginzo (Argentina); waste – Mr. Faouzi Ahmed Senhaji (Morocco). Mr. Newton Paciornik and Mr. Tinus Pulles were the lead reviewers. The review was coordinated by Mr. Sergey Kononov (UNFCCC secretariat).

2. In accordance with the "Guidelines for the technical review of GHG inventories from Parties included in Annex I to the Convention" (the UNFCCC review guidelines), a draft version of this report was communicated to the Government of France, which has provided comments that were considered and incorporated, as appropriate, in this final version of the report.

B. Inventory submission and other sources of information

3. In 2006, France submitted a complete set of common reporting format (CRF) tables for the years 1990–2004 and a national inventory report (NIR). Where needed, the expert review team (ERT) also used the previous year's submission, additional information provided during the review and other information. The full list of materials used during the review is provided in the annex to this report.

C. Emission profiles and trends

4. In 2004, the most important GHG in France was carbon dioxide (CO_2) contributing 74.2 per cent to total[1] national GHG emissions expressed in CO_2 eq., followed by nitrous oxide (N_2O), 12.7 per cent, and methane (CH_4), 10.5 per cent. Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) taken together contributed 2.7 per cent of the overall GHG emissions in the country. The energy sector accounted for 72.7 per cent of the total GHG emissions followed by agriculture (17.1 per cent), industrial processes (7.3 per cent) and waste (2.6 per cent). Total GHG emissions amounted to 562,634.7 Gg CO_2 eq. and decreased by 0.8 per cent from the base year to 2004. The trends in the individual gases and sectors seem consistent with developments in economic activity in France and the policy measures taken.

5. Tables 1 and 2 show the GHG emissions by gas and by sector, respectively.

[1] In this report, the term total emissions refers to the aggregated national GHG emissions expressed in terms of CO_2 eq. excluding LULUCF, unless otherwise specified.

Table 1. Greenhouse gas emissions by gas, 1990–2004

Greenhouse gases	Gg CO_2 eq.								Change
	Base year (Convention)	1990	1995	2000	2001	2002	2003	2004	BY (Convention) – 2004 (%)
CO_2 (with LULUCF)	367 983.5	367 983.5	362 191.0	368 774.8	366 499.6	354 721.5	358 979.5	362 924.9	–1.4
CO_2 (without LULUCF)	367 983.5	395 085.1	392 983.1	405 647.2	409 262.9	404 705.4	412 090.7	417 352.9	13.4
CH_4	69 575.9	69 575.9	70 310.6	65 164.6	63 843.3	62 191.8	60 875.3	59 467.8	–14.5
N_2O	96 132.3	96 132.3	93 882.1	82 016.0	79 570.1	77 593.5	75 494.6	73 183.6	–23.9
HFCs	3 658.7	3 658.7	3 055.3	7 317.0	8 167.7	9 602.1	10 802.1	11 598.7	217.0
PFCs	4 293.5	4 293.5	2 561.8	2 486.9	2 191.0	3 477.4	3 163.9	2 266.3	–47.2
SF_6	2 075.4	2 075.4	2 84.2	1 787.4	1 449.3	1 277.8	1 377.5	1 376.7	–33.7

Note: BY = Base year; LULUCF = Land use, land–use change and forestry.

Table 2. Greenhouse gas emissions by sector, 1990–2004

Sectors	Gg CO_2 eq.								Change
	Base year (Convention)	1990	1995	2000	2001	2002	2003	2004	BY (Convention) – 2004 (%)
Energy	383 637.6	383 637.6	385 342.3	398 806.2	402 459.4	397 342.1	405 273.8	409 137.7	6.6
Industrial processes	57 834.6	57 834.6	54 479.8	42 073.7	41 852.8	42 095.8	42 812.9	41 003.8	–29.1
Solvent and other product use	1 928.1	1 928.1	1 715.0	1 664.6	1 592.8	1 530.6	1 462.9	1 428.2	–25.9
Agriculture	107 752.6	107 752.6	101 428.0	102 263.8	99 918.8	99 820.3	96 575.6	96 479.7	–10.5
LULUCF	–23 375.1	–23 375.1	–27 580.0	–33 889.4	–39 938.8	–47 220.4	–50 399.6	–51 816.8	121.7
Waste	15 941.3	15 941.3	18 799.9	16 627.9	15 835.9	15 295.7	14 967.5	14 585.3	–8.5
Total (with LULUCF)	543 719.3	543 719.3	534 184.9	527 546.7	521 721.0	508 864.0	510 693.0	510 817.9	–6.1
Total (without LULUCF)	567 094.3	567 094.3	561 765.0	561 436.1	561 659.8	556 084.4	561 092.6	562 634.7	–0.8

Note: BY = Base year; LULUCF = Land use, land-use change and forestry.

D. Key categories

6. France reported a key category tier 1 analysis, both level and trend assessment, as part of its initial report submission. France has not included the LULUCF sector in its key category analysis. The key category analysis was performed at a greater level of detail than that proposed in the Intergovernmental Panel on Climate Change (IPCC) *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC good practice guidance). The ERT recommends that France include LULUCF in its key category analysis for the next submission. Since France is reporting uncertainty values, the ERT also recommends France to apply a tier 2 key category analysis, following the decision tree for key category analysis provided in the IPCC good practice guidance.

7. The key category analyses performed by the Party and the secretariat[2] produced different results, the key reasons being the fact that France has not included the LULUCF sector in its key category analysis, and the differences in the level of aggregation of categories between the secretariat's analysis and that of France.

E. Main findings

8. In its 2006 submission, France for the first time included the CRF tables for LULUCF required by decision 13/CP.9. This inclusion makes France's GHG inventory complete and increases its quality. A number of specific, generally minor, issues are mentioned in the relevant sectoral sections of this report.

9. France has split the information between its NIR and the underlying OMINEA[3] report. The transparency of the inventory could be improved by reconsidering the balance of information between these two documents and providing the rationale behind the selection of specific emission factors (EFs) in the OMINEA report.

10. The quality assurance (QA) of the inventory could be improved by the introduction of an external review, prior to inventory submission, as is required by the IPCC good practice guidance.

F. Cross-cutting topics

1. Completeness

11. France has provided inventory data for the years 1990 to 2004 and included all the required tables, except for summary table 3 and tables 5(I), 5(II), 7, 8(b), 9(a) and 9(b). Notation keys are used throughout the tables.

12. The French inventory is almost complete and contains emission estimates and activity data (AD) for all relevant gases and years. Emissions for a number of minor categories are not estimated ("NE"), because they are expected to be very small. The ERT invites France to estimate emissions from these categories in future submissions.

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[2] The secretariat identified, for each Party, those source categories that are key categories in terms of their absolute level of emissions, applying the tier 1 level assessment as described in the IPCC *Good Practice Guidance for Land Use, Land-use Change and Forestry* (hereinafter referred to as the IPCC good practice guidance for LULUCF) for the base year or base year period as well as the latest inventory year. Key categories according to the tier 1 trend assessment were also identified. Where the Party performed a key category analysis, the key categories presented in this report follow the Party's analysis. However, they are presented at the level of aggregation corresponding to a tier 1 key category assessment conducted by the secretariat.

[3] OMINEA = Organisation et Méthodes des Inventaires Nationaux des Emissions Atmosphériques.

2. Transparency

13. France has developed a detailed and highly sophisticated approach for the compilation of its inventories, which serves not only the reporting requirements under the Climate Change Convention and its Kyoto Protocol, but also the requirements of several other international obligations. This approach ensures consistency between the French submissions to all international conventions and protocols. This is one of the reasons why France has separated detailed technical information from the NIR and provided this in a separate report (OMINEA). Since the OMINEA report is a living document, some of the information in it lags behind the preparation of the inventory. An example of this is the country-specific EFs used in the energy sector.

14. The ERT appreciated very much the explanations that France provided to the ERT during the review process to help the ERT better understand the methods used. This face-to-face exchange of information was necessary in order to assess the quality of the French inventory because the NIR in combination with the OMINEA report merely list the EFs used, rather than providing information on why such EFs were chosen and how their values have been derived. The ERT recommends that France increase transparency in the inventory by including more explanatory notes in the NIR and the OMINEA report.

3. Recalculations and time-series consistency

15. France's institutional arrangements can ensure that recalculations of previously submitted estimates of GHG emissions by sources and removals by sinks are prepared in accordance with the IPCC good practice guidance. Recalculations are part of the French annual inventory cycle and are planned, implemented and monitored by the Groupe de coordination et d'information sur les inventaires d'émission (GCIIE). The ERT noted that recalculations of the time series reported by the Party had been undertaken from the base year to 2003 to take into account updated AD, and in some cases improved estimation methods. Emissions and removals in the LULUCF sector are reported with the latest submission whereas they were not in the previous submission. The national total of emissions excluding LULUCF changed only slightly due to these recalculations. For 2003 the estimate of emissions in the energy sector increased, compared to the estimate in the 2005 submission, by about 3,117 Gg CO_2 eq.. The net effect on the estimate of 2003 emissions is an increase of 4,164 Gg CO_2 eq., which is about 0.8 per cent.

4. Uncertainties

16. The Party has provided a tier 1 uncertainty analysis for each category and for the inventory in total, following the IPCC good practice guidance. The uncertainty parameters used by France are in most cases based on expert judgement; these experts are frequently staff of the Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique (CITEPA). The ERT recommends that France seek additional information on uncertainty estimates that might be available within other institutions in France.

17. The uncertainty estimates presented in the NIR are a result of analyses detailed further in the OMINEA report. This information is not used in the key category analysis. The NIR does not mention that the uncertainty analyses are used to prioritize inventory improvements. The ERT recommends the Party to further develop its uncertainty analysis and to use the results both in a tier 2 key category analysis and to prioritize inventory improvements.

5. Verification and quality assurance/quality control approaches

18. France has elaborated and implemented a quality assurance/quality control (QA/QC) plan in accordance with the IPCC good practice guidance. This includes general QC procedures (tier 1) as well

as source/sink category-specific procedures (tier 2) for key categories and for those individual categories in which significant methodological and/or data revisions have occurred.

6. Follow-up to previous reviews

19. France has made a step forward in preparing the OMINEA report that accompanies the French NIR. OMINEA presents background information on and references for the methods and parameters used in all the inventories prepared at national level. The 2006 OMINEA report, however, is still not complete although the 2007 version, submitted with the 2007 inventory submission, provides many additional references.

G. Areas for further improvement

1. Identified by the Party

20. The NIR identifies several generic areas for improvement. These include to:

(a) Undertake research to improve the precision of the key categories;

(b) Further develop and apply uncertainty information by estimating uncertainty ranges and using the information explicitly in inventory improvement;

(c) Include any source not yet covered or insufficiently treated (e.g. non-energy use of fossil fuels);

(d) Further improve procedures in the quality management system, especially consultation with external experts in certain areas.

2. Identified by the ERT

21. The ERT identified the following cross-cutting issues for improvement over and above the issues identified by the Party. The Party should:

(a) Improve transparency in the inventory through improving the explanatory power of both the NIR and the OMINEA report by:

(i) Reconsidering the balance between the NIR and the OMINEA report, and including or repeating some of the general explanations in the OMINEA report in the NIR;

(ii) Decreasing the need for consultation of by giving the rationale for the selection of country-specific EFs and other parameters in the NIR/the OMINEA report;

(b) Improve QA in the system by implementing a review prior to each inventory submission; the ERT suggests that France consult with other European Union (EU) member States that have already implemented such a procedure.

22. Recommended improvements relating to specific source/sink categories are presented in the relevant sector sections of this report.

II. Energy

A. Sector overview

23. Total GHG emissions from the energy sector in France increased by 6.6 per cent from 383,637.6 Gg CO_2 eq. in 1990 to 409,137.7 Gg CO_2 eq. in 2004. In 2004, the energy sector contributed 72.7 per cent of national GHG emission excluding CO_2 from LULUCF. Within the energy sector,

35.9 per cent of the GHG emissions were from transport, followed by 27.1 per cent from the sector other, which includes emissions from commercial and residential sources. Manufacturing industries and construction contributed 19.5 per cent and energy industries as a whole contributed 15.7 per cent to the GHG emissions from the energy sector. The remaining 1.7 per cent is associated with fugitive emissions.

24. In general, the GHG emission inventory for the energy sector is complete and includes relevant overseas territories.[4] Overall, the energy sector's approach is consistent with the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the Revised 1996 IPCC Guidelines) and the IPCC good practice guidance. In almost all cases sector emission estimates or AD derived by a model and/or reported by facilities are continuously validated by the technical experts at CITEPA using national statistics such as the energy balance from the Ministère de l'économie, des finances et de l'industrie (MEFI), 2005, and the petroleum statistics report (CPDP, 2005). The ERT acknowledges the efforts made by the CITEPA team to ensure the accuracy and quality of their estimates for the energy sector by comparing the AD generated or reported, EFs and estimates with other relevant national and international statistics.

25. With respect to the CRF tables, there are some transparency and completeness issues such as blank cells, a lack of explanations for the use of the notation keys "NE" and/or "included elsewhere" ("IE"), and incorrect usage of notation keys. For example, no explanations are provided in the 1990 CRF for the use of "NE" and "IE" for flaring (1.B.2(c)), or in table sectoral background data for energy – fugitive emissions from oil and natural gas (1.B.2). In addition, for natural gas transmission and distribution (1.B.2(b)), the notation keys "not applicable" ("NA") and "not occurring" ("NO") should be corrected to "IE" since the Party has indicated that emissions from natural gas transmission and distribution are accounted for in the exploration line. For the future, the Party has indicated that efforts toward refinement will continue with respect to notation keys and that it will review the possibility of reporting separately fugitive emissions associated with natural gas transmission and distribution. To ensure completeness and to increase the transparency of the information reported in the CRF, the ERT recommends that the Party provide relevant explanations in the CRF documentation and explanation boxes. The ERT also encourages the Party to review the allocation of fugitive emissions from oil (1.B.a), in particular for oil transport, distribution of oil products and other sources for both crude oil and refined petroleum products.

26. With respect to the methodological write-up for the energy sector in the NIR and the OMINEA report, discussions of emission trends (for the electricity and heat generation, petroleum refining, transport and residential sources) and EF tables are included; however, additional details such as those provided during the review will further enhance the transparency of both documents. Additional details such as explanations, including reference materials, for the use of AD, country-specific EFs, and the methods and factors influencing energy trends were very useful for understanding the methodology and the emission trends. The ERT encourages the Party to further elaborate in the NIR and the OMINEA report on the relevant criteria used for the development of estimation methods (including EFs and AD) and to supply relevant information via tables and figures for trend analyses such as fuel consumption patterns and production data.

B. Reference and sectoral approaches

1. Comparison of the reference approach with the sectoral approach and international statistics

27. The reference approach as reported in the CRF tables for the period 1990–2003 is consistent with the IPCC reference approach, which is based on the energy data set provided by the Observatoire de l'énergie to the International Energy Agency (IEA) along with IPCC default conversion factors, carbon conversion factors and oxidation rates. The reference approach information for the year 2004 was not

[4] The French GHG inventory under the Convention includes the following overseas territories: the *départements d'outre-mer* (DOMs) and the *collectivités d'outre-mer* (COMs).

reported in the CRF table because the energy data set provided to the IEA is not available annually in time to be used to report to the UNFCCC. Instead, the Party has developed a simplified reference approach for the complete time series, including 2004, and this is presented in the NIR. The simplified reference approach is based on the national energy balance and country-specific conversion factors. Information on overseas territories is also included in the simplified reference approach to ensure that results are comparable with those obtained from the sectoral approach. The ERT recommends that the Party report information in the reference approach tables of the CRF for all the years in order to meet the completeness criteria set out in the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories" (UNFCCC reporting guidelines). The Party has indicated that the inventory and national energy balance teams will work jointly on developing an approach to ensure that a consistent set of energy data is made available on a timely basis.

2. International bunker fuels

28. Emissions from international bunkers are reported in the memo section of the CRF table for all gases. In 2004, emissions from aviation and marine bunkers contributed 15,906.4 Gg CO_2 eq. and 9,858 Gg CO_2 eq., respectively. An IPCC tier 2b approach, a method similar to that used for civil aviation, is used to estimate emissions for the aviation bunker by excluding the domestic fuel consumed for landing and take-off (LTO) and cruise parts of flight from the national total of fuel sold. The ERT encourages the Party to implement its improvement plans to obtain timely overseas territory statistics and to ensure that the CO_2 estimates and the volume of fuel for international bunkers match those from the national statistics, and to include overseas data in the national energy balance and in those reported to the IEA. The ERT also recommends the Party to review its practice of reporting aviation bunker fuels and emissions, separately by fuel type, in table 1.C (sectoral background data for energy – international bunkers and multilateral operations). Currently, the "IE" notation key is reported for gasoline aviation bunker without further explanation.

29. The methodology applied for the marine bunker is a CORINAIR approach with default IPCC EFs. Marine bunker fuels are calculated based on 100 per cent of the foreign flag fleet and 96 per cent of the French flag fleet, with the remaining 4 per cent being included in domestic navigation. The Party acknowledged the uncertainty associated with coastal traffic data due to a lack of better statistics. The ERT encourages the Party to improve the collection of marine bunker fuel statistics and to improve the maritime and inland traffic statistics in order to properly allocate domestic and foreign marine emissions.

3. Feedstocks and non-energy use of fuels

30. Feedstocks and non-energy use of fuels are reported in the CRF tables from 1990 to 2003. To ensure completeness, the ERT recommends the Party to report in the CRF tables a full time series of feedstock information. As was indicated during the in-country visit, feedstocks and non-energy use of fossil fuels have been allocated to the industrial sector based on the quantity and percentage of fossil fuel used as a material input to a process by each industry, as published in the Pétrole report by the Comité professionnel du pétrole (CPDP, 2005).

4. Country-specific issues

31. To ensure completeness, the Party includes in the NIR and CRF tables the GHG emissions associated with overseas territories, but the national energy balance compiled by the Observatoire de l'énergie from data supplied by the MEFI does not include fossil fuel and energy information from the overseas territories. The official decision to include information from the overseas territories in the national energy balance project is expected during 2007. If approved, the project is expected to be completed by 2010 and will incorporate fuel information from 1990 to the current year. The ERT encourages the Party to implement the inclusion of fossil fuel and energy data from overseas territories in

order to ensure accurate and complete coverage of emissions and fuels, which is an essential criterion of the UNFCCC reporting guidelines.

C. Key categories

1. Road transportation: liquid – CO_2

32. CO_2 from road transportation increased by 19.1 per cent between 1990 and 2004. In 2004, CO_2 emissions were 132,683.6 Gg, contributing over 33.6 per cent of the energy sector's CO_2 emissions. The COPERT III model is used to estimate emissions from road transportation. The inputs to the COPERT III model include such parameters as length of trip, average speed, fleet technology (including the penetration rate of new fleet with emission control technologies), and the shares of urban, rural and highway journey conditions. A validation of the model is performed by comparing the reported information on the fuel sold (such as gasoline and diesel oil) with the results calculated by the COPERT III model. Results from the validation process show that the volume of fuel sold for road transportation compared to that estimated by the COPERT III model differs within a range of 0.1 to 5.0 per cent. For 2004, the validation process shows a difference of 4.5 per cent, indicating that the volume of fuel consumed and the emissions are overestimated by the COPERT III model. A correction step to account for the volume of fuel sold and emissions has been included in the road transport model. To increase the transparency of the road transport methodology, the ERT recommends the Party to further elaborate the validation and correction processes in the NIR. The Party has indicated that they have updated the road transportation method with the COPERT IV model as part of its improvement plan which also includes a validation process of the new estimates. The ERT also encourages the Party to ensure that estimated fuel consumption in the new model matches exactly the volume of fuel sold in national statistics.

2. Stationary combustion: all fuels – CO_2

33. CO_2 emission estimates from stationary combustion categories are based on a mix of tier 1, tier 2 and tier 3 approaches depending on data availability for each category. During the in-country visit, the Party presented in detail the methodology and verification process for some categories, such as the use of a tier 2 method for public power production and a tier 1 method for small district heating plants. To ensure that the emission estimates are comparable in terms of quality and accuracy it is important that a tier 2 approach is applied when estimating CO_2 emissions from electricity and heat generation.

34. For some industrial sectors, such as the petroleum industry estimates, stationary combustion estimates are based on facility-specific emissions, EFs and/or AD. The increasing use of facility-reported information from the EU Monitoring Directive and the EU emissions trading scheme (EU ETS) means that a comprehensive description of how facility-specific information is integrated into the combustion and fugitive estimation methods of the inventory, including an assessment of the quality of facility-reported data and the applicability of facility-specific EFs or AD used at the national level for cases where coverage is not 100 per cent, should be included in the NIR. As part of the Party's planned improvements, the ERT encourages France to ensure that its CO_2 estimates are consistent with the data on CO_2 emissions reported by facilities under the EU ETS.

3. Civil aviation: liquid – CO_2

35. CO_2 emissions from jet kerosene for civil aviation have been identified as a key category based on a level assessment. In 2004, CO_2 from civil aviation accounted for 1.2 per cent of CO_2 from the energy sector or 4.968.3 Gg CO_2 eq.. An IPCC tier 2b approach is used to estimate CO_2 emissions along with data on annual commercial air traffic movements and EFs, depending on the type of aircraft engine in operation and landing and take-off conditions. In 1994, the number of direct flights between France and its overseas territories increased and as a result the volume of fuel consumed for domestic flights also increased, contributing to CO_2 emissions from liquid fuels. Emissions for both jet kerosene and aviation gasoline have been reported for information purposes as jet kerosene in sectoral background data

for energy – civil aviation (1.A.3(a)) in the CRF. A validation check has been performed by the Party with respect to the volume of fuel calculated by the model and the volume sold. The ERT supports the Party's future improvement plans to increase the reporting transparency of the CRF by disaggregating emissions associated with aviation gasoline and jet kerosene as well as the Party's plan to account for new aircraft and changes in operational conditions.

4. Coal mining and handling: CH_4

36. Coal mining and handling activities resulted in the emission of 27.7 Gg CH_4 in 2004. Emissions decreased by 86.4 per cent between 1990 and 2004, mainly due to mine closures. Although minimal compared to other sources in the energy sector, coal mines will continue to emit CH_4 from the exposed mine surface and from mine degasification. The methodology applied is based on the CORINAIR with mine-specific information on the AD and CH_4 EFs. This is considered to be consistent with an IPCC tier 2/3 approach. Where mine-specific data are not available, an IPCC tier 1 approach has been applied for surface mines since 2002 and for underground mines since 2005. The ERT recommends that the Party review the methods used to estimate fugitive emissions associated with coal mining and handling in order to ensure that a consistent method is applied for the entire time series.

D. Non-key categories

Manufacturing industries and construction: cement and glass production – CH_4 and N_2O

37. National production data on clinker and on glass are used instead of fuel consumption data to estimate non-CO_2 emissions from combustion activities in cement and glass production. The ERT encourages the Party to develop fuel-based non-CO_2 EFs for use in estimating fuel combustion emissions instead of the use of product-based EFs from a Swiss study, which may not reflect furnace technologies and operating conditions in France.

III. Industrial processes and solvent and other product use

A. Sector overview

38. In 2004, GHG emissions from the industrial processes sector accounted for 7.3 per cent of total national GHG emissions – less than in the base year (1990) when the share was 10.2 per cent. In both 1990 and 2004, the solvent and other product use sector accounted for 0.3 per cent of total national emissions. In 2004, CO_2 accounted for 47.6 per cent of emissions from the industrial processes sector, N_2O for 15.2 per cent, and actual emissions of fluorinated gases (F-gases) for 37.2 per cent. In 2004, in the solvent and other product use sector, CO_2 accounted for 94.3 per cent of emissions, the rest being N_2O emissions. In the period 1990–2004, GHG emissions from the industrial processes sector decreased by 29.1 per cent, mainly because of decreases in CO_2 emissions from cement and ammonia production, N_2O emissions from adipic and nitric acid production, HFC emissions from the production of halocarbons, and PFC emissions from the production of aluminium.

39. France's overall inventory is complete for the industrial processes sector. Emission estimates for a few, usually small, categories are still missing even though they were highlighted in previous reviews, such as asphalt roofing and some emissions from petrochemicals. The completeness of the coverage of limestone calcination in emission estimates should be further investigated by France. France does not report potential emissions of HFCs even though this is recommended by the UNFCCC reporting guidelines for QC and verification. Notation keys are sometimes used incorrectly and explanations associated with the "IE" notation key are not provided. For instance, France reports emissions from ferroalloys production as "NE". During the in-country visit France indicated that emissions from ferroalloys production were included in the iron and steel production category, although this is not mentioned in the NIR and not presented, for example, with the use of the "IE" notation key, in the CRF

tables. The ERT recommends that the approach to reporting emissions from ferroalloys production be further investigated and clearly described in the NIR.

40. Many items of methodological or criteria information cannot be found in either the NIR or the OMINEA report. This is particularly relevant for the categories related to the production and consumption of halocarbons. However, this information was provided to the ERT during the in-country visit.

41. The time series is consistent overall. A few inconsistencies have been identified for categories where data for recent years now rely on mandatory emissions reports by industries while past estimates were based on EFs. The ERT recommends that France investigate the possibilities for ensuring time-series consistency in the relevant categories. Some recalculations have been undertaken since the last (2005) submission. The most relevant is related to PFC emissions from aluminium production, where the emissions for the year 1990 increased by 32.4 per cent as a result of a recalculation.

42. Uncertainty estimates for AD and EFs are provided for most categories. These estimates are in line with the default values in the IPCC good practice guidance. The ERT recommends that France undertake research to improve these estimates to better reflect national circumstances.

43. Information on the QC procedures that are undertaken for each category was provided for the ERT during the in-country visit. The methodological files are well prepared and well documented. However, they are in a spreadsheet format and often large in size, making QC difficult. The ERT recommends that France investigate opportunities to use a database for storing and supporting the methodological files.

B. Key categories

1. Cement production – CO_2

44. In the period 1990–2004, CO_2 emissions from cement production decreased by 17.7 per cent due to a decrease in cement production. The EF was kept constant during the period (0.525 t CO_2/t clinker). This EF is higher than the IPCC default (0.51 t CO_2/t clinker). France explained in the OMINEA report that clinker in France contains about 2 per cent of magnesium oxide (MgO), which increases the EF.

2. Lime production – CO_2

45. Reported emissions in this category do not include emissions by auto-producers (producers of lime for use on-site). During the in-country visit France explained that all lime produced in paper mills and the sugar industry is produced from CO_2 generated by biomass combustion, and that the iron and steel industry does not produce lime on-site. The ERT recommends that France continue to investigate the external input of limestone for calcination in these and other industries.

3. Ammonia production – CO_2

46. In the period 1990–2004, emissions from ammonia production decreased by 41.8 per cent, in part due to a decrease in the implied emission factor (IEF) from 1.7 t/t in 1990 to 1.4 t/t in 2004. During the in-country visit France explained that this decrease was because of an increase in the efficiency of the process. France estimates emissions of CO_2 from this category by extrapolating, for all the national production, the reported emissions from 75 per cent of the ammonia production in the country. The contribution of one facility is 25 per cent of total French production. However, the variation of the value over time appears to be high for this site. In response to questions from the ERT, France justified the rationale for the extrapolation method used and informed the ERT of plans to improve data collection. In addition, France identified a data error for 1995 as the reason for the time-series variation. The error will be corrected in the next submission.

4. Adipic acid production – N_2O

47. In the period 1990–2004, N_2O emissions from adipic acid production decreased by 92.1 per cent. The reduction was because of the installation of abatement equipment since 1998 in the sole production plant in France. AD and IEFs are treated as confidential by France. During the in-country visit, the ERT had access to the confidential data and acknowledged that the emissions estimates are in accordance with the IPCC good practice guidance.

5. Nitric acid production – N_2O

48. In the period 1990–2004, N_2O emissions from nitric acid production decreased by 29.2 per cent. This decrease was in part because of a reduction in the production of nitric acid (–14.0 per cent) and in part because of the reduction of the IEF (–17.7 per cent). During the in-country visit, France explained that the reduction in the EF resulted from the optimization of the process and from the installation of abatement equipment in some plants since 2001. The ERT recommends that France include more detailed explanation of the decrease in the NIR.

6. Chemical industry – other – N_2O

49. In the period 1990–2004, N_2O emissions from this category decreased by 85.7 per cent. These emissions are mainly from the production of glyoxylic acid. The installation of abatement equipment in this industry since 1999 explains the decrease in emissions.

7. Iron and steel production – C_2O

50. The ERT welcomed the extensive carbon balance assessment applied by France, together with the assessment of energy consumption in the production of iron and steel. This approach permits the correct division of CO_2 emissions between the energy sector and the industrial processes sector as recommended by the IPCC good practice guidance.

8. Aluminium production – PFCs

51. In the period 1990–2004, emissions of PFCs in this category decreased by 59.1 per cent. This decrease was because of the closure of old plants and the construction of a new plant in 1991, together with improvements to anode effect control in the industry. A complete time-series recalculation of the emissions has been carried out since the last (2005) submission, due to a methodological change in line with International Aluminium Institute (IAI) recommendations. As a result, emissions in the base year increased by 32.4 per cent. The ERT recommends France to include this information in the NIR.

9. By-products emissions – HFCs

52. In the period 1990–2004, HFC-23 emissions from the production of HCFC-22 decreased by 80.7 per cent, following the installation of abatement equipment since 1994/1995. France also reports HFC-125 and CF_4 emissions from trifluoroacetic acid (TFA) production.

10. Fugitive emissions – F-gases

53. France produces HFCs in two plants. One of them also produces PFCs. In the period 1990–2004, fugitive emissions of HFCs decreased by 93.3 per cent due to the optimization of processes and to incineration equipment installed since 1993. France reported a 100 per cent reduction of PFC emissions since 2003. The ERT recommends that France further investigate whether fugitive emissions of PFCs occur in the industry.

11. Consumption of halocarbons and SF_6

54. The ERT recognizes the extensive coverage of the sector in the inventory of France, including the implementation of an in-depth study of the refrigeration sector. Total emissions from halocarbons and SF_6 in CO_2 eq. increased by 764.5 per cent in the period 1990–2004.

IV. Agriculture

A. Sector overview

55. In 2004, emissions from the agriculture sector in France amounted to 96,479.7 Gg CO_2 eq., or 17.1 per cent of total national GHG emissions; these emissions had decreased by 10.5 per cent from the 1990 level. In 2004, sectoral emissions were composed of CH_4 (42.5 per cent) and N_2O (57.5 per cent). This ratio is stable – the respective shares were 41.5 and 58.5 per cent in the base year. No recalculations have been made since the 2005 submission.

56. The NIR and the OMINEA report describe the relevant methodological issues but these descriptions are rather brief, which makes it difficult to understand the rationale and the particularities for the most complex categories, such as manure management and agricultural soils.

57. The sectoral submission of GHG data can be defined as complete and consistent, but France did not complete table summary 3s2. QA/QC procedures are in place but only general explanations are given in section 1.6 of the NIR. Uncertainties estimates for individual sectoral categories are provided in table 40 of annex 2 to the NIR; more detailed information was provided for the ERT during the review.

58. The ERT recommends France to improve:

(a) Transparency in methodological issues, on the development of country-specific EFs and on AD specificities;

(b) The accuracy of the emissions estimates for manure management, mainly by enhancing the characterization of the most significant species (cattle, swine) and fully applying a tier 2 methodology.

59. The ERT encourages France to improve the accuracy of the emission estimates for agricultural soils, in particular by investigating the opportunities for using country-specific EFs for each fertilizer type, crop and/or agricultural region with similar environmental conditions.

B. Key categories

1. Enteric fermentation – CH_4

60. The ERT noted some differences in the animal populations given in the NIR and in the United Nations Food and Agriculture Organization (FAO) database for all years; these differences are minor for cattle and sheep but considerable for swine. According to the explanations provided by France during the in-country visit, these differences are due to (1) the animal populations in the *départements d'outre-mer* (DOMs) and (2) differences for swine population.

61. The swine population decreased by 12 per cent between 1998 and 1999. During the review, France explained that the decrease was due to a change in the definition of "piglet" (a subcategory which is systematically deducted from the total swine population) by AGRESTE, the French agriculture statistics institute. Formerly, the definition of piglet only covered individual pigs with a weight up to 20 kg, whereas from 1999 it also contained individuals with a weight between 20 kg and 50 kg. For consistency, the ERT recommends that population numbers from 1999 onwards be corrected and that GHG emissions linked to swine (for enteric fermentation, manure management, agricultural soils) be

recalculated for the next submission. In its response to the ERT's questions, France has shown that this will solve the time-series inconsistency. France will apply the corrected values in its future submissions.

62. In the NIR, France reported the use of a tier 1 method and default EFs, except for dairy cows for which a model derived at the Institut National de la Recherche Agronomique (INRA) was applied which can be considered as a tier 3 method. During the in-country visit, France explained that this national approach was also applied for non-dairy cattle, which is in line with the IPCC good practice guidance. The ERT encourages France to estimate emissions from other important species applying higher tiers.

2. Manure management – CH_4 and N_2O

63. France reported the use of a tier 1 method and default EFs, which, for a key category, is not fully in line with the IPCC good practice guidance. During the in-country visit, France explained that the use of equation 4.17 of the IPCC good practice guidance and country-specific manure management distribution allowed the generation of country-specific EFs for cattle and swine. The ERT encourages France to apply higher tiers to estimate emissions from the important species.

64. In table 4.B(a)s1, zeros were specified for the allocation of climate regions for three subgroups of non-dairy cattle, whereas no data were provided in table 4.A for the same group of animals. To ensure consistency across the CRF tables, the notation key "NA" must be used for these parameters.

3. Manure management – N_2O

65. As is noted in previous reviews, the value for the amount of nitrogen (N) from pasture range and paddock differs between tables 4.B(b) and 4.D. France explained that the difference is due to the impossibility of allocating N in DOMs to this subcategory in table 4.D, which results in their allocation under 4.D others. The ERT encourages France to explain this difference in its next submission.

66. In table 4.B(a)s2, values for swine allocation in "pasture range and paddock" vary in the sequence 0.0025, 0.17 and 0.84 every three years. Taking into account that allocation values for "liquid system" and "solid storage" are correct, the right allocation value for "pasture range and paddock" should be 0.25. The ERT suggests that France rectify this issue for its next submission.

67. The N excretion rates for non-dairy cattle, sheep and swine differ from IPCC default values (57.9 vs 70, 18.5 vs 20, and 16.4 vs 20 kg N/head/year, respectively), although France reported the use of a tier 1 approach and default values. During the review, France explained that the differences are due to a different allocation of animals between manure management systems. For transparency, the ERT recommends France to include this explanation on its next submission.

4. Agricultural soils – N_2O

68. In the NIR, France reported the use of a tier 1 approach and default EFs but the EF_1 for sewage sludge (0.01125 kg N_2O–N/kg N) differs from the default value (0.0125 kg N_2O–N/kg N). During the review, France explained that this was because the total N was considered for sewage sludge spreading, whereas for the other sources the amount of N considered was the difference between the applied N and the volatilized N. The ERT considers this to be an inconsistency and recommends that France correct it in its next submission.

C. Non-key categories

Rice cultivation – CH_4

69. No information is provided in the NIR on management practices. The ERT recommends that France provide such information, mainly on the use of organic amendments that can imply the use of scaling factors.

V. Land use, land-use change and forestry

A. Sector overview

70. In 2004, the LULUCF sector was a net sink: the net GHG removals from LULUCF amounted to 51,816.8 Gg CO_2 eq., which corresponded to 9.2 per cent of France's total national GHG emissions. This net sink value was made up of the sum of net CO_2 removals of 54,428.0 Gg, CH_4 emissions of 628.0 Gg CO_2 eq. and N_2O emissions of 1,983.3 Gg CO_2 eq.. Net GHG emissions from LULUCF have increased by 121.7 per cent since 1990, when they amounted to 23,375.1 Gg CO_2 eq..

71. Forest land remaining forest land was the largest net sink with total net CO_2 removals of –56,823.3 Gg CO_2, followed by land converted to forest land (–11,244.2 Gg CO_2) and land converted to grassland (–7,858.5 Gg CO_2). The largest sources of CO_2 emissions were land converted to cropland (15,459.2 Gg CO_2) and land converted to settlements (3,232.8 Gg CO_2). Minor sources of GHGs were grassland remaining grassland, and lands converted to wetlands or settlements or other land. Land converted to wetlands was the category for which CO_2 emissions increased most since 1990 – by 365.9 per cent.

72. Emissions of CO_2 from cropland remaining cropland were assumed to be zero (using the tier 1 method from the IPCC *Good Practice Guidance for Land Use, Land-use Change and Forestry*, hereinafter referred to as the IPCC good practice guidance for LULUCF). Emissions from changes in living biomass carbon stocks and changes in carbon stocks in dead biomass in grassland remaining grassland were also assumed to be zero (also using the tier 1 method from the IPCC good practice guidance for LULUCF).

73. In the 2006 submission, the values of the entire time series, 1990–2003, were recalculated because previous CRF tables in the earlier data format (data for land-use change and forestry – LUCF) were replaced with the current LULUCF format, as recommended in the review of the 2005 submission. This was a major improvement in the 2006 submission, which solved several reporting problems noted by the previous (2005) review.

74. In general, the reporting for the LULUCF sector is complete, except for the absence of a key category analysis including LULUCF. The ERT recommends that France conduct such an analysis for its next submission.

75. However, the reporting is not uniformly transparent. Some CRF tables have not been completed (e.g. CRF tables 7, summary 3s2, 5(I) and 5(II)). There are useful references in the 2007 OMINEA report (e.g. in the section on forest fires), which is not currently under review, that should have been included in the 2006 version of the report. The OMINEA report is not very explicit on the methodologies used to estimate changes in biomass stocks; however, during the in-country visit, after discussions with country experts, it became clear that these methodologies correspond with the IPCC good practice guidance for LULUCF. The ERT encourages France to provide more details on methodologies and parameters in its inventory report as this would easily resolve such transparency problems.

76. The reporting is consistent. The 2005 review raised a case of inconsistency relating to a removal of 31.1 Gg of CH_4 by soils, for which the calculation method was not clear. During the 2006 review, the ERT received a report[5] containing the EF value and a file[6] containing the AD used to estimate that

[5] *Contribution à la lutte contre l'effet de serre. Stocker du carbone dans les sols agricoles de France? Expertise Scientifique Collective.* Expert report by the INRA at the request of the Ministère de l'écologie et du développement durable. October 2002.

[6] FRA: Methane sink ARR 2005 Forestland_activity(1).xls.

removal of CH_4 by soils; these data are consistent with the IPCC good practice guidance, and some of them are referenced in section 3.2.1.4 of the IPCC good practice guidance for LULUCF.

77. Uncertainty estimates (for AD and parameter values) are provided in the NIR for the whole LULUCF sector only and not for individual categories, even though the IPCC good practice guidance for LULUCF advises that estimates should be made for individual categories. The ERT recommends that France evaluate the uncertainties for individual LULUCF categories in its next inventory submission.

78. Emissions and removal estimates from carbon pools were generally estimated using tier 2 approaches, consistent with the IPCC good practice guidance for LULUCF, and country-specific parameter values.

79. France has not included the LULUCF sector in its key category analysis. According to the key category analysis conducted by the secretariat, the key categories in 2004 were, for CO_2, forest land remaining forest land, land converted to cropland, land converted to grassland, land converted to forest land, land converted to wetlands and settlements. For N_2O, the only key category was land converted to cropland. The key categories for the base year (1990) are the same as those for 2004, except for CO_2 from land converted to wetlands which is a key category for 2004 only.

B. Key categories[7]

1. Forest land remaining forest land – CO_2

80. This category was a sink for CO_2. In the tier 1 key category analysis this category represented 8.6 per cent in the level assessment and 12.6 per cent in the trend assessment. The total of CO_2 emissions from changes in carbon stocks was 24,590.1 Gg CO_2, 81.5 per cent of which was removals derived from changes in living biomass stocks, the rest being emissions from changes in dead biomass stocks. The changes in soil carbon stocks were set to zero (using the tier 1 method from the IPCC good practice guidance for LULUCF). The ERT recommends that France upgrade the methodology to a tier 2 methodology because the category is a key category.

2. Land converted to cropland – CO_2

81. This category was a source of CO_2 in 2004. In the tier 1 key category analysis this category represented 2.3 per cent in the level assessment and 2.9 per cent in the trend assessment. The total of emissions of CO_2 was 15,459.2 Gg CO_2 in 2004, 21.4 per cent of which was emissions from the conversion of forest land to cropland, and the rest from the conversion of grassland to cropland. Of the emissions from the conversion of forest land to cropland, 55.9 per cent were due to changes in biomass carbon stocks, 4.9 per cent to changes in carbon in dead organic matter, and 39.2 per cent to changes in soil carbon stocks. The emissions of CO_2 from the conversion of grassland to cropland were the result of changes in soil carbon stocks.

3. Land converted to forest land – CO_2

82. This category was a sink for CO_2 in 2004, and represented 1.5 per cent in the key category level assessment and 1.2 per cent in the trend assessment. About half of CO_2 removals (51.1 per cent) were the consequence of changes in soil carbon biomass, and the remaining CO_2 removals were from changes to carbon in dead matter (28.7 per cent) and changes in soil carbon stocks (20.2 per cent). The strongest sink for CO_2 in the category was the conversion of grassland to forest land (50.0 per cent of the total category sink value), followed by the conversion of other land (23.6 per cent) and of cropland (20.7 per cent) to forest land. Changes in soil carbon stocks in the conversion of other land to cropland were assumed to be zero (using the tier 1 method from the IPCC good practice guidance for LULUCF).

[7] As France has not included the LULUCF sector in its key category analysis, this section is structured following the secretariat's key category analysis.

4. Land converted to grassland – CO_2

83. This category was a sink for CO_2 in 2004 and represented 7,848.4 Gg of removals in the tier 1 key category analysis, which was 1.2 per cent in the level assessment and 0.7 per cent in the trend assessment. The category value resulted from emissions and removals of CO_2 from forest land, cropland, wetlands, settlements or other land converted to grassland. The category was a net sink for CO_2 because 9,570.9 Gg was removed by changes in soil carbon stocks in cropland converted to grassland. The other land use conversions produced emissions of CO_2, from changes in biomass in carbon stocks in forest land converted to grassland (1,179.5 Gg), changes in carbon stocks in dead organic matter in all land-use conversion categories (353.2 Gg CO_2) and changes in soil carbon stocks (180.7 Gg CO_2) in forest land converted to grassland.

5. Settlements – CO_2

84. This category was a source of 3,232.8 Gg CO_2 in 2004, which represents 0.5 per cent in the key category level assessment. Ninety-two per cent of the emissions were from changes in biomass carbon stocks ("living biomass"), and the rest were from changes in dead wood stocks.

6. Land converted to wetlands – CO_2

85. This category was a source of 1,348.2 Gg CO_2 in 2004, which represents 0.6 per cent in the key category trend assessment. Ninety-nine per cent of the emissions were from changes in living biomass carbon stocks, and the rest were from changes in dead wood stocks.

7. Land converted to cropland – N_2O

86. This category was a source of 6.0 Gg N_2O (1,849.0 Gg CO_2 eq.) in 2004, which represents 0.4 per cent of the key category trend assessment. Emissions were mostly derived from grassland converted to cropland (90.1 per cent). They were estimated using a tier 1 method and IPCC default parameter values from the IPCC good practice guidance for LULUCF.

VI. Waste

A. Sector overview

87. The contribution of the waste sector to the total national GHG emissions in 2004 was 3.2 per cent, compared to 3.1 per cent in 1990. Most of the sectoral emissions stemmed from solid waste disposal on land (68.5 per cent compared to 68.9 per cent in 2003). The categories wastewater handling and waste incineration contributed 16.4 and 13.1 per cent, respectively, while the subcategory D (other) accounts for the remainder (compost and biogas, 2.0 per cent). Sectoral GHG emissions decreased by 8.5 per cent between 1990 and 2004.

88. All the sectoral CRF tables have been provided. However, in some cases notation keys have been used incorrectly. Table 7 and summary table3s2 were not completed. The ERT recommends that France provide more detailed information on the methodologies, AD and EFs used in the waste sector, make use of the documentation boxes in the CRF tables and comment more extensively on the results.

89. The estimates for all relevant sources are reported to be of low or medium quality in the NIR (CRF table 7). A quantitative assessment of uncertainties, calculated using the IPCC tier 1 method for the AD and EFs of all subcategories, is reported in the NIR (annex 2, table 40), but is not commented on or used in the NIR. The ERT recommends that the Party not only report on the uncertainties but also elaborate on them in the NIR and use them in data processing (e.g. in interpolation).

B. Key categories

1. Solid waste disposal on land – CH_4

90. In 2004, CH_4 emissions from solid waste disposal on land was identified as a key category in both the level and the trend assessment, and accounted for 17.0 per cent of total national CH_4 emissions and for 87.5 per cent of sectoral CH_4 emissions. The IPCC tier 2 methodology combined with country-specific parameters has been used to estimate CH_4 emissions from solid waste disposal on land.

91. The composition of municipal solid waste (MSW) is not provided, which decreases the transparency of the emission estimates. The ERT recommends that France provide data that reflect the characteristics of its MSW and a flow diagram for solid waste in its next NIR.

92. The amount of solid waste disposed of on sites equipped with landfill gas recovery systems represents 86.0 per cent of total solid waste landfilled. Data on solid waste disposal on land are drawn from a survey carried out since 1989 (and regularly every two years since 2000) by the Agence de l'environnement et de la maîtrise de l'énergie (ADEME). France is invited to provide in its next NIR the number and capacities of solid waste disposal sites both with and without landfill gas recovery systems.

2. Waste incineration – CO_2

93. Emissions of waste incineration with heat recovery (95 percent of the total municipal waste) are reported in the energy sector. In 2004, CO_2 emissions from waste incineration were identified as a key category by the level and trend assessments and accounted for 0.5 per cent of total national CO_2 emissions. Waste incineration contributed 16.6 per cent to sectoral GHG emissions in 1990 and 13.1 per cent in 2004.

94. Emission factors are drawn from CORINAIR. The ERT recommends that France justify this choice either in the OMINEA report or in the NIR.

95. It is reported in the NIR that emissions from the incineration of special industrial waste in situ, notably in the chemical industry, have been partially estimated. The ERT encourages France to provide AD for this subcategory of waste.

C. Non-key categories

1. Wastewater handling – CH_4

96. CH_4 emissions are estimated only for domestic and commercial wastewater treated in centralized treatment units or in individual septic tanks. Industrial wastewater is not accounted for because of the lack of data. The ERT recommends that France fill this gap in its next submission.

97. For these CH_4 (and N_2O) emissions estimates, France has used the IPCC tier 2 methodology combined with a country-specific one. The ERT recommends that France present and document the country-specific methodology in such a manner that information given in the OMINEA report and that given in the NIR are coherent and complementary.

2. Other (biodegradation of waste and waste composting) – CH_4

98. Biodegradation of waste and waste composting are briefly reported in the NIR. Neither the NIR nor the OMINEA report contains justifications for the selection of the methods and the EFs for these waste treatments. The ERT recommends that this information be provided in the Party's next submission.

VII. Conclusions and recommendations

99. The GHG inventory is generally in line with the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF. In its 2006 submission, France for the first time included the CRF tables for LULUCF required by decision 13/CP.9. This inclusion makes France's GHG inventory complete and improves its quality.

100. Total GHG emissions amounted to 562,634.7 Gg CO_2 eq. in 2004 and decreased by 0.8 per cent from the base year to 2004. This trend and the trends in the individual gases and sectors seem consistent with developments in economic activity in France and the policy measures taken.

101. In the course of the review, the ERT formulated a number of recommendations relating to the completeness and transparency of France's inventory as submitted in 2006. The key recommendations[8] are that France:

- Include an independent review prior to submission of the inventory as part of the QA system;
- Ensure time-series consistency in future inventories submitted under the Convention;
- Provide more explanatory texts in NIR and OMINEA reports to increase transparency;
- Further develop its uncertainty analysis and use the results both in a tier 2 key category analysis and in prioritizing inventory improvements;
- Include LULUCF in its key category analysis and apply a tier 2 key source analysis, including uncertainty information.

[8] For a complete list of recommendations, the relevant sections of this report should be consulted.

Annex

Documents and information used during the review

A. Reference documents

IPCC. Good practice guidance and uncertainty management in national greenhouse gas inventories, 2000. Available at: <http://www.ipcc-nggip.iges.or.jp/public/gp/english/>.

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B. Additional information provided by the Party

Responses to questions during the review were received from Mr. Régis Meyer and Ms. Frédérique Millard (Mission interministérielle de l'effet de serre) including additional material on the methodology and assumptions used. The following additional information was provided by France during the review:[1]

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[1] This list does not include the presentations made by French experts during the in-country visit.

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Houllier C and Crozet B. 1992. *Analyse critique des méthodes utilisées par différents pays pour établir leurs inventaires nationaux d'émissions de dioxyde de carbone*. Rapport final. Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique (CITEPA).

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