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**Report of the individual review of the greenhouse gas inventories of France
submitted in 2007 and 2008***

* In the symbol for this document, 2008 refers to the year in which the inventory was submitted, and not to the year of publication.

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I. Overview

A. Introduction

1. This report covers the centralized review of the 2007 and 2008 greenhouse gas (GHG) inventory submissions of France, coordinated by the UNFCCC secretariat, in accordance with decision 22/CMP.1. In accordance with the conclusions of the twenty-seventh session of the Subsidiary Body for Implementation, the focus of the review is on the most recent (2008) submission.¹ The review took place from 8 to 13 September 2008 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: generalists – Mr. Klaus Radunsky (Austria) and Mr. Marius Țăranu (Moldova); energy – Mr. Simon Eggleston (United Kingdom of Great Britain and Northern Ireland) and Ms. Roberta Quadrelli (International Energy Agency); industrial processes – Ms. Suvi Monni (European Community) and Mr. Menouer Boughedaoui (Algeria); agriculture – Ms. Tajda Mekinda-Majaron (Slovenia) and Mr. Sergio González (Chile); land use, land-use change and forestry (LULUCF) – Ms. Naoko Tsukada (Japan) and Mr. Walter Oyhantçabal (Uruguay); waste – Mr. Kai Skoglund (Finland) and Mr. Oscar Paz (Bolivia). Mr. Radunsky and Mr. González were the lead reviewers. The review was coordinated by Mr. Harald Diaz-Bone (UNFCCC secretariat).

2. In accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol” (decision 22/CMP.1), a draft version of this report was communicated to the Government of France, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

B. Inventory submission and other sources of information

3. The 2008 inventory was submitted on 10 April 2008; it contains a complete set of common reporting format (CRF) tables for the period 1990–2006 and a national inventory report (NIR), which also includes a methodological report (the OMINEA report). The expert review team (ERT) noted that the structure of the NIR is not in line with decision 13/CP.9 or 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” (hereinafter referred to as the UNFCCC reporting guidelines). The Party indicated that the 2008 submission is also its voluntary submission under the Kyoto Protocol.² The ERT recommends that France follow the format required by decision 15/CMP.1 more closely when completing its next NIR by including in the appropriate part of the NIR the relevant information on the methodologies used to estimate emissions of direct GHGs included in the OMINEA report. Where needed the ERT also used 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 2006 (as reported in the 2008 annual inventory submission), the main GHG in France was carbon dioxide (CO₂), accounting for 74.7 per cent of total GHG emissions³ expressed in CO₂ eq, followed by nitrous oxide (N₂O) (12.0 per cent), methane (CH₄) (10.4 per cent), hydrofluorocarbons (HFCs) (2.5 per cent), perfluorocarbons (PFCs) (0.31 per cent) and sulphur hexafluoride (SF₆) (0.22 per cent). The energy sector accounted for 72.3 per cent of the total GHG emissions, followed by agriculture (17.5 per cent), industrial processes (7.5 per cent) and waste (2.5 per cent). Total GHG

¹ FCCC/SBI/2007/34, paragraph 104.

² Parties may start reporting information under Article 7, paragraph 1, of the Kyoto Protocol from the year following the submission of the initial report, on a voluntary basis (decision 15/CMP.1).

³ In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding LULUCF, unless otherwise specified.

emissions amounted to 541,308.13 Gg CO₂ eq and decreased by 3.9 per cent between the base year⁴ and 2006. In 2005 (as contained in the 2007 inventory submission), total GHG emissions amounted to 560,695.05 Gg CO₂ eq. The shares of gases and sectors in 2006 (2008 annual inventory submission) were similar to those of 2005 (2007 inventory submission).

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

D. Key categories

6. France has reported a key category tier 1 analysis, both level and trend assessment, as part of its 2008 submission. The key category analysis performed by the Party and that performed by the secretariat⁵ produced different results owing to the different levels of aggregation used by the Party and the secretariat. France has included the LULUCF sector in its key category analysis, which was performed in accordance with 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) and the IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry* (hereinafter referred to as the IPCC good practice guidance for LULUCF).

7. The following key categories were identified in the 2008 submission but not in the 2007 submission: forest land remaining forest land – CO₂; land converted to forest land – CO₂; land converted to cropland – CO₂; land converted to grassland – CO₂; land converted to settlements – CO₂; and adipic acid production – CO₂. The following key categories were identified in the 2007 submission but not in the 2008 submission: road transportation – N₂O, chemicals/other fuels – CO₂, and ammonia production – CO₂. The main reason for the identification of additional key categories in the 2008 submission is that France has included the LULUCF sector in its assessment of key categories for the first time. The ERT acknowledges that France has used key category analysis as a tool to support and guide the improvement of its inventory. The ERT reiterates the recommendation made in previous reviews that France apply a tier 2 key category analysis in accordance with the IPCC good practice guidance.

E. Main findings

8. The inventory is generally in line with the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the Revised 1996 IPCC Guidelines), the IPCC good practice guidance and the IPCC good practice guidance for LULUCF, as France submitted in 2008 a key category assessment that included LULUCF for the first time.

⁴ Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases.

⁵ The secretariat identified, for each Party, the categories that are key categories in terms of their absolute level of emissions, applying the tier 1 level assessment as described in the Intergovernmental Panel on Climate Change *Good Practice Guidance for Land Use, Land-Use Change and Forestry*. Key categories according to the tier 1 trend assessment were also identified for Parties that provided a full set of CRF tables for the base year. 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.

Table 1. Greenhouse gas emissions by gas, 1990–2006

Greenhouse gas emissions	Gg CO ₂ eq								Change base year– 2006 (%)
	Base year ^a	1990	1995	2000	2003	2004	2005	2006	
CO ₂	393 177.54	393 177.54	388 818.62	402 556.18	407 537.01	411 931.75	415 730.16	404 248.19	2.8
CH ₄	68 257.02	68 257.02	69 092.07	64 089.60	59 277.69	57 589.44	56 924.95	56 080.19	–17.8
N ₂ O	91 881.16	91 881.16	89 320.22	76 898.96	69 887.41	67 470.28	67 042.72	64 708.39	–29.6
HFCs	3 657.23	3 657.23	3 249.18	7 681.13	10 696.43	11 515.89	12 404.19	13 383.20	265.9
PFCs	4 293.45	4 293.45	2 561.81	2 486.86	3 163.92	2 266.27	1 713.82	1 694.38	–60.5
SF ₆	2 021.82	2 021.82	2 243.89	1 848.27	1 326.25	1 491.35	1 320.53	1 193.78	–41.0

^a Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases.

Table 2. Greenhouse gas emissions by sector, 1990–2006

Sectors	Gg CO ₂ eq								Change base year– 2006 (%)
	Base year ^a	1990	1995	2000	2003	2004	2005	2006	
Energy	382 081.86	382 081.86	379 431.62	392 467.16	395 937.11	398 292.16	402 131.66	391 283.06	2.4
Industrial processes	56 403.37	56 403.37	54 796.36	42 760.46	43 109.24	41 439.82	41 323.12	40 459.69	–28.3
Solvent and other product use	1 856.59	1 856.59	1 642.09	1 663.69	1 380.72	1 344.78	1 341.01	1 292.83	–30.4
Agriculture	107 181.93	107 181.93	100 888.51	102 552.49	96 977.69	96 942.26	96 354.10	94 830.60	–11.5
LULUCF	NA	–40 167.86	–47 094.87	–51 445.64	–65 010.28	–65 924.46	–65 406.14	–69 891.89	NA
Waste	15 764.46	15 764.46	18 527.21	16 117.19	14 483.95	14 245.95	13 986.48	13 441.96	–14.7
Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total (with LULUCF)	NA	523 120.35	508 190.92	504 115.34	486 878.42	486 340.52	489 730.23	471 416.25	NA
Total (without LULUCF)	563 288.22	563 288.22	555 285.78	555 560.98	551 888.70	552 264.98	555 136.37	541 308.13	–3.9

Abbreviations: LULUCF = land use, land-use change and forestry, NA = not applicable.

^a Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases.

9. The 2008 inventory submission is generally of high quality and covers most sectors and categories. However, the ERT recommends that France include in its next NIR all of the information specified in the UNFCCC reporting guidelines with regard to emissions of direct GHGs. The ERT further recommends that the next NIR be fully consistent with the UNFCCC reporting guidelines, in particular with respect to structure and the information it contains. With the aim of reducing and eventually avoiding reporting emissions as not estimated (“NE”) for some categories, the ERT recommends that France develop a data collection strategy that allows it to address all gaps relating to sources and sinks that are not included in the inventory within a reasonable time frame, for example, within the next three years. The ERT encourages France to further investigate and improve time-series consistency (for example in case the Party changes from using an emission factor (EF) approach to using reported plant data) and the ERT encourages the Party to follow current best practice.

10. France acknowledged these findings at the time of the review and announced that it would make efforts to provide estimates for the categories and subcategories that are currently reported as “NE” in its next annual submission.

F. Cross-cutting issues

1. Completeness

11. The inventory is complete in terms of years and geographic coverage and France has provided all of the CRF tables, with the exception of tables 7, 8(b) and 9(a). Information relating to table 7 is included in the NIR. Although France has provided recalculated estimates in table 8(a) for the period 1990–2005, no corresponding explanatory information (such as changes in methods, EFs and activity data (AD)) has been included in table 8(b). Some related information has been included in annex 4 of the NIR. Table 9(a) lists all of the categories that have not been estimated, but no explanatory information is provided. The ERT encourages France to complete its reporting in CRF tables 7, 8(b) and 9(a) in its next inventory submission.

12. The inventory is generally complete and contains emission estimates for most source/sink categories. Emissions have been reported as “NE” for a number of categories, but the number of categories reported as “NE” has been reduced since the last inventory submission. The ERT welcomes the intention expressed by France to include in future submissions any categories that are not currently included and recommends that France develop a data collection strategy that will allow it to address all gaps regarding the sources and sinks that are not currently included in the inventory within a reasonable time frame, for example, within the next three years.

13. The ERT noted that the information provided in the NIR and in the OMINEA report does not include all of the information required by the UNFCCC reporting guidelines. For example, information on source-specific quality assurance/quality control (QA/QC) and verification for key categories and source-specific planned improvements (e.g. in categories for which emissions have not yet been estimated) is missing. The ERT encourages France to provide a more complete NIR in its next inventory submission.

2. Transparency

14. The ERT noted that a face-to-face exchange of information was necessary to understand the inventory.⁶ The ERT emphasized that the integration of selected information from the OMINEA report into the NIR, following the structure outlined in the UNFCCC reporting guidelines, would significantly improve the transparency of the inventory submission and would thus facilitate the review process. Therefore, the ERT recommends that France increase the transparency of reporting by integrating all of the information currently included in the OMINEA report into the NIR on the condition that this information meets the reporting requirements of the UNFCCC with regard to the emissions of direct

⁶ See FCCC/IRR/2007/FRA, paragraphs 31 and 32.

GHGs. The ERT further recommends that the NIR in the Party's next inventory submission does not require any cross-referencing to the OMINEA report in the context of direct GHGs.

3. Recalculations and time-series consistency

15. The ERT noted that recalculations reported by France for the time series 1990–2005 have been undertaken to take into account various changes/improvements. When the 2008 and 2007 submissions are compared, the recalculated estimate of total GHG emissions in 1990 decreased by 1.3 per cent excluding LULUCF and by 1.9 per cent including LULUCF. In 2005, the recalculated estimate of GHG emissions decreased by 1.0 per cent excluding LULUCF and by 1.2 per cent including LULUCF. The most significant recalculations were noted in the LULUCF sector (estimated CO₂ removals increased by 18.2 per cent in 1990 and by 3.9 per cent in 2005) and in the waste sector (estimated GHG emissions decreased by 1.9 per cent in 1990 and by 1.7 per cent in 2005). The rationale for, and the impact of, the recalculations are addressed in the NIR. Overall, the recalculations resulted in an improvement of the inventory.

4. Uncertainties

16. France has provided a tier 1 uncertainty analysis for 38 categories and for the inventory as a whole (including the LULUCF sector). The NIR includes separate figures for the uncertainty related to EFs, AD and the total amount of emissions from these categories. The ERT noted that the quantitative uncertainty for total emissions (including LULUCF) was estimated to be 22.0 per cent (21.3 per cent in the 2007 submission), whereas the uncertainty of the trend in emissions was estimated to be 4.5 per cent (4.2 per cent in the 2007 submission). The uncertainty for total emissions (without LULUCF) was estimated to be 17.6 per cent (17.7 per cent in the 2007 submission), whereas the uncertainty of the trend in total emissions without LULUCF was estimated to be 3.1 per cent (3.0 per cent in the 2007 submission). The uncertainty analysis is based to a great extent on expert judgement. The uncertainty estimates in the 2008 submission have been revised since the 2007 submission in order to reflect the changes in emission estimates. The ERT noted that, according to the information included in the NIR, the recalculations in the LULUCF sector did not change the uncertainty associated with the sector. The ERT also noted that the main driver of the overall inventory uncertainty is the uncertainty of N₂O emissions from agricultural soils. The ERT welcomes the intention expressed by France to use the uncertainty information to guide further improvements in its inventory.

5. Verification and quality assurance/quality control approaches

17. France has elaborated and implemented a QA/QC plan in accordance with the IPCC good practice guidance. This plan includes general QC procedures (tier 1) as well as source/sink category-specific procedures (tier 2) for key categories and categories where significant methodological and/or data revisions have occurred. The QA of the inventory could be further improved by the introduction of an external review prior to the inventory submission. The ERT welcomes the Party's plans to consult with external experts regarding certain areas of the inventory and the ERT reiterates the recommendation made in previous review reports that France arrange for an independent review of the inventory before it is submitted.

6. Follow-up to previous reviews

18. France included the LULUCF sector in its 2008 key category analysis after recommendations made during previous reviews.

G. Areas for further improvement

1. Identified by the Party

19. The 2008 NIR identifies several areas for improvement, including:
- (a) The undertaking of research to reduce uncertainty in the estimation of emissions from key categories;
 - (b) The further development and application of uncertainty assessment by estimating uncertainty ranges. The information that results from this assessment should be used to improve the inventory further;
 - (c) The inclusion of all categories that are not currently covered or are not sufficiently addressed (e.g. non-energy use of fossil fuels);
 - (d) The further improvement of QA/QC procedures in the quality management system, especially consultations with external experts regarding certain areas of the inventory.
20. In response to the issues raised during the review, France indicated that it intends to take into consideration the recommendations made by the ERT and that it intends to make efforts to estimate the categories that have been reported as “NE” in its next annual submission.

2. Identified by the expert review team

21. The ERT identifies the following cross-cutting issues for improvement:
- (a) The improvement of transparency by:
 - (i) Providing a more comprehensive NIR that includes the relevant information on the emission of direct GHGs, which is currently contained in the OMINEA report;
 - (ii) Including in the NIR the rationale for the selection of country-specific EFs and other parameters;
 - (b) The improvement of completeness by including emission estimates for categories that have not yet been estimated;
 - (c) The improvement of QA by introducing an independent review of the inventory before it is submitted.
22. Recommended improvements relating to specific source/sink categories are presented in the relevant sector chapters of this report.

II. Energy

A. Sector overview

23. In 2006, the energy sector accounted for 391,283.1 Gg CO₂ eq, or 72.3 per cent of total GHG emissions. Within the energy sector, CO₂ accounted for 97.9 per cent of emissions. Within the sector, 35.4 per cent of emissions were from transport, followed by energy use in other sectors (26.6 per cent), manufacturing industries and construction (19.7 per cent), energy industries (16.7 per cent), and fugitive emissions from oil and natural gas (1.6 per cent). Emissions from the sector increased by 2.4 per cent between 1990 and 2006, but decreased by 2.7 per cent between 2005 and 2006. Between 1990 and 2006, CO₂ emissions from transport increased by 16.8 per cent and emissions from manufacturing industries and construction decreased by 10.1 per cent. The reduction in emissions between the years 2005 and

2006 was driven by decreases in CO₂ emissions of 6.8 per cent in the public electricity and heat sector, 5.5 per cent in the residential sector, and 13.2 per cent in the chemical sector.

24. In general, estimates for all sources and gases are included in the CRF. However, the ERT recommends that France complete the documentation boxes and tables, and that the Party provide an explanation of the notation keys and recalculations used in the CRF. The ERT encourages France to include tables of net calorific values and EFs in the main body of the NIR, and that the Party expand the descriptions of sources of country-specific EFs in order to increase the transparency of the inventory.

25. The ERT noted that the energy consumption data are not transparent with regard to geographic coverage in various sections of the inventory. The ERT recommends that France include in the NIR a section that describes the energy statistics and presents the data used to compile the inventory, clearly indicating the contributions from both mainland France and its overseas departments (French Guiana, Guadeloupe, Martinique and Réunion) for each sector.

B. Reference and sectoral approaches

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

26. For the reference approach, the 2007 submission did not provide any estimates for the most recent year (2005). In the 2008 submission, France provided complete estimates for the years 1990–2005 and included a less detailed estimate for 2006. The ERT welcomes the efforts made by France to include a basic reference approach for the most recent year and recommends that in its next submission France complete CRF table 1.A.b, providing the correct disaggregation by energy product. The Party stated that the data needed for the reference approach were not available in time to be included in the inventory. The ERT encourages France to use the best available data when preparing the inventory.

27. The data used for the reference approach only include mainland France and Monaco, and exclude the overseas departments. The ERT recommends that the sectoral and reference approaches be estimated based on the same geographic coverage and with the same allocation of fuel consumption to national and international bunkers in order to increase the transparency of the inventory.

28. For 2006, the difference between the reference and sectoral approach estimates is 11.0 per cent for energy consumption and –4.1 per cent for total CO₂ emissions. Although France provided an explanation of some of the differences in the NIR, the ERT recommends that France complete the documentation box in the CRF and the column “Apparent energy consumption (excluding non-energy use and feedstocks)” in CRF table 1.A.c in order to improve the comparison of energy consumption between the two approaches.

2. International bunker fuels

29. France reported emissions from international bunkers in the memo section of the CRF table for all gases. For aviation, the Party deducts calculated domestic fuel consumption from the total fuel sales to provide the estimate for international bunker fuel. For navigation, the Party assumes that 4 per cent of fuel sales are domestic. The ERT reiterates its recommendation that the Party improve marine bunker fuel statistics, particularly the split between domestic and international navigation. The ERT recommends that France explain in detail how aviation and marine bunkers in the overseas departments are estimated.

3. Feedstocks and non-energy use of fuels

30. The 2007 submission did not include estimates of feedstocks and non-energy use of fuels in CRF table 1.A(d) for the most recent year (2005). The ERT was pleased to see that in the 2008 submission France had followed the recommendation made in the previous review report and had included in the CRF tables estimates of feedstocks and non-energy use of fuels for the most recent year (2006).

C. Key categories

1. Manufacturing industries and construction: solid fuels – CO₂

31. The iron and steel industry accounted for 4.2 per cent of total CO₂ emissions from fuel combustion in 2006. In the 2008 submission, France recalculated the allocation of fuels to this sector, which resulted in an increase in the emission estimate by 2.5 Mt in 1990 and a decrease in the emission estimate by 2.4 Mt in 2005. The ERT recommends that France explain in its next inventory submission the change from an increasing trend to a decreasing trend in the emission estimates from this source since 1990.

32. During the review, the Party provided the ERT with additional information on the statistics used in the manufacturing industries sector as a whole. The ERT encourages France to expand the description of data sources, methodologies and shortcomings for this sector in its next inventory submission in order to improve the transparency of the inventory.

2. Public electricity and heat production: other fuels – CO₂

33. CO₂ emissions from waste incineration with energy recovery more than doubled between 1990 and 2006. France currently uses a constant value for fossil carbon content of 43 per cent in the waste sector, which is based on expert judgement. As this is a key category, the ERT recommends that France update this value and show how it has varied over time using studies on waste composition. The ERT further recommends that France use a higher-tier method to estimate these emissions and that the Party document this in its next inventory submission.

3. Road transportation: liquid fuels – CO₂

34. France reported that it stopped using the COPERT III model and that it now uses the COPERT IV model to estimate emissions from road transportation. This should not affect CO₂ emission estimates. As the COPERT IV model is based on the number of vehicle kilometres travelled, the Party has introduced a measure to reconcile national fuel consumption statistics with the output of the COPERT IV model. The ERT reiterates the recommendation made in the previous review report that France explain this measure in the NIR. The ERT recommends that France include fuel consumption estimates from the COPERT IV model before and after these are reconciled with the national fuel statistics.

4. Coal mining and handling – CH₄

35. Emissions decreased by 99.9 per cent between 1990 and 2006, as all mines in the country closed in 2004. For all years, the Party included estimates of CH₄ emissions from mining, based on mine-specific EFs. The ERT was pleased to note that France included emissions from closed mines, but recommends that the methodology used be explained in more detail in the NIR. The ERT further recommends that France clearly state where these emissions are included in the CRF. The ERT believes that emissions from closed mines should be reported under the category other (CRF 1.B.c).

D. Non-key categories

Road transportation: liquid fuel – CH₄, N₂O

36. The NIR states that the change from the COPERT III model to the COPERT IV model had important implications for N₂O and CH₄ emissions. Estimates of N₂O emissions were reduced by 1.16 Mt CO₂ eq in 1990 and by 3.7 Mt CO₂ eq in 2005. The ERT recommends that France explain and justify this change in its next inventory submission.

III. Industrial processes and solvent and other product use

A. Sector overview

37. In 2006, the industrial processes sector accounted for 40,459.7 Gg CO₂ eq, or 7.5 per cent of total GHG emissions, and solvent and other product use accounted for 1,292.8 Gg CO₂ eq, or 0.24 per cent of total GHG emissions. Between 1990 and 2006, emissions from the industrial processes sector, and the solvent and other product use sector decreased by 28.3 per cent and 30.4 per cent, respectively. The key driver for these decreases in emissions is the chemical industry, as emissions from this industry decreased by 73.6 per cent. Most of the sectoral emissions came from cement production, which accounted for 22.0 per cent of sectoral emissions, followed by refrigeration and air conditioning (20.1 per cent), nitric acid production (8.8 per cent), aerosols and metered dose inhalers (8.1 per cent), and iron and steel production (7.3 per cent).

38. Emissions from ferroalloys production are reported as included elsewhere (“IE”). During the previous review, France indicated that emissions from this category were included under iron and steel production. During the earlier stages of the previous review, France indicated that these emissions should have been reported as not occurring (“NO”). Internal verifications are in progress to establish if this is the case. Ferroalloys production is not mentioned in the NIR. The ERT recommends that France investigate further the occurrence of emissions from ferroalloys production and that the Party include a description of ferroalloys production in its next inventory submission.

39. Emissions from asphalt roofing and potential emissions of fluorinated gases (F-gases) are reported as “NE”. Emissions from road paving with asphalt are reported as not applicable (“NA”). The ERT recommends that the Party provide an estimate of these emissions in its next inventory submission.

40. Emissions from the production of carbon black, ethylene, dichloroethylene, styrene and methanol are reported as “IE”. During the review, France clarified that the notation key “NO” would have been the appropriate notation key to use for these emissions, except in the case of CH₄ emissions from the production of carbon black, which are reported under the category other non-specified (CRF table 2.B.5.8). The ERT recommends that the Party find out whether or not carbon black, ethylene, dichloroethylene, styrene and methanol are produced in France. The ERT further recommends that France use the correct notation keys and that France report the corresponding information in the NIR and CRF, including CRF table 9, in its next inventory submission.

41. During the previous review, the ERT recommended that France: investigate the possibility of ensuring time-series consistency for categories where the method used has changed from an EF approach to reports from industry; undertake research to improve estimates of uncertainty in order to reflect more accurately national circumstances; and investigate the possibility of using a database for storing and supporting methodological files, which would assist QC procedures. The ERT noted that the 2008 submission does not mention any follow-up actions with regard to these recommendations. The ERT reiterates the recommendations made during previous reviews and recommends that the Party provide a description of these activities in its next inventory submission.

42. The ERT noted that the information presented in the NIR does not fully follow the UNFCCC reporting guidelines in several instances. For example, the QA/QC procedures and planned improvements are not reported in the category chapters, and in some cases recalculations are reported in sectoral chapters, but in other cases they are only reported in an annex. The ERT recommends that France follow the UNFCCC reporting guidelines more closely with regard to these issues.

B. Key categories

1. Cement production – CO₂

43. The implied emission factor (IEF) for this category fluctuated between 0.5 and 0.9 per cent during the period 2003–2005. The 2006 value is 1.5 per cent lower than the 1990 value. During previous stages of the review, France informed the ERT that clinker particulates have been included in the estimates since 2004, and a specific EF is applied for the two plants that produce aluminate cement. During the review, France clarified that some cement plants only included cement kiln dust (CKD) in their CO₂ emissions for 2006 and that CKD was not considered in the calculations made before 2006. Under the European Union Emissions Trading Scheme, all plants are required to report CKD emissions for 2008, which will make available more detailed information about emissions from CKD. The ERT recommends that France take this new information into account in its 2010 submission and recommends that France consider recalculating the time series when detailed CKD data become available. The ERT also recommends that France explore the possibility of applying the new plant-specific EF of aluminate cement production for the entire time series in order to ensure time-series consistency. France informed the ERT of its plans to include more detailed information on this matter in its next inventory submission. The ERT encourages the Party to implement these plans.

2. Lime production – CO₂

44. The trend in IEFs for CO₂ for lime production fluctuates and has been identified as an outlier. The Party reports in the NIR that the EF fluctuates depending on the share of hydraulic lime used in lime production. The ERT recommends that France increase transparency by reporting the share of calcium oxide and magnesium oxide used in lime production, as well as the AD used.

45. During previous review stages, France informed the ERT that emissions have been estimated on a plant-by-plant basis since 2004, whereas estimates for the period 1994–2003 were derived from the data submitted for a subset of the industrial plants. For the other plants, an EF approach was used. The ERT encourages the Party to report on the number of plants included in the subset that provided the emission estimates and to report on the number of plants for which the EF approach was used. The ERT encourages France to explore the possibility of recalculating the data for earlier years to ensure time-series consistency.

46. During the previous review, France explained that all of the lime produced in paper mills and in the sugar industry is produced from CO₂ from biomass combustion, and that the iron and steel industry does not produce lime on site. The ERT from the previous review recommended that France continue to investigate the external input of limestone for calcination in these and other industries. The ERT noted that there has been no follow-up to this recommendation described in the NIR and therefore the ERT reiterates this recommendation.

3. Ammonia production – CO₂

47. The IEF for this category decreased from 1.59 t CO₂/t NH₃ in 1990 to 1.43 t CO₂/t NH₃ in 2005 and increased to 1.72 t CO₂/t NH₃ in 2006. According to the OMINEA report, the decrease in the EF is due to the use of more efficient catalysts. However, the NIR states that the IEF increase in the latest year is due to extraordinary conditions at one specific production plant. The ERT recommends that France explain the fluctuations in the IEF by reporting on the catalysts used and the conditions at the production plants in order to increase transparency in its next annual submission.

48. In the NIR, France reports on the difficulties it has experienced in distinguishing between fuel used for ammonia production and fuel used for ammonia combustion (about 10 per cent of the total fuel use). As a result, emissions from both ammonia production and ammonia combustion are included under ammonia production (CRF table 2.B.1). The ERT noted that this may result in double counting between the chemicals (CRF table 1.A.2.c) and the ammonia production (CRF table 2.B.1) categories. It remains unclear in the NIR whether or not this potential double counting could have occurred for all years or only

years in the early 1990s. The ERT encourages France to find out whether or not double counting occurs in these categories and encourages France to ensure that emissions from these categories are allocated in accordance with the UNFCCC reporting guidelines.

49. France reports in the NIR that some of the CO₂ from ammonia production is used to produce urea. During the review, France explained that urea is used as a fertilizer in agriculture. The Party also explained that no CO₂ emissions from urea have been reported in the inventory, which is in line with the Revised 1996 IPCC Guidelines. In ammonia production, CO₂ used for urea production is not reported. The ERT reminded France that according to the Revised 1996 IPCC Guidelines, CO₂ from ammonia production may be used to produce urea or dry ice, but it should only be stored for a short time. Therefore, on no account should urea and dry ice be taken for intermediate binding of CO₂ in downstream manufacturing processes and products. Therefore, the ERT noted that the method used by France is not in accordance with the Revised 1996 IPCC Guidelines and that it leads to an underestimation of CO₂ emissions. The ERT recommends that France follow the Revised 1996 IPCC Guidelines more closely and revise its methodology for estimating CO₂ from ammonia production in its next inventory submission.

4. Nitric acid production – N₂O

50. N₂O emissions from nitric acid production have decreased from 21.2 Gg in 1990 to 11.9 Gg in 2006 due to a decrease in the number of nitric acid production plants (the number of plants decreased from 19 to 10 during this period) and due to the implementation of control measures at the remaining plants in 2002. Since 2002, the emission estimates have been based on reports from industry. As recommended during the previous review, France has included a more detailed explanation for the decrease. However, the ERT encourages France to improve transparency further by reporting on the methods that the industrial plants use to estimate emissions, the number of plants that use specific production and emission control technology, and by reporting the years when the nitric acid production plants have been closed.

5. Adipic acid production – N₂O

51. There is only one plant that produces adipic acid in France and the emissions from this plant decreased considerably between 1990 and 2006 due to a decrease in production and the installation of an emission control system. The emission estimate is based on reports from the plant and these data are confidential. In order to increase transparency, the ERT encourages France to report on how the plant estimates these emissions in its next inventory submission.

6. Chemical industry, other – N₂O

52. Emissions from glyoxylic acid production are reported under this category. There is only one production site in France and an abatement technique is used there. The production site reports emissions. In order to increase transparency, the ERT encourages France to report on how the plant estimates these emissions in its next inventory submission.

7. Iron and steel – CO₂

53. The ERT noted that the description of the method used for this category in the OMINEA report is not transparent and that it presents the EFs in kg CO₂/Mg iron or steel, which is not in line with the IPCC good practice guidance. During the review, the Party explained that the emissions are estimated on the basis of coke consumption and the Party explained that the EF for CO₂ emissions based on iron and steel production has been recalculated for information purposes. The ERT recommends that France indicate this more clearly in its next inventory submission.

8. Aluminium production – PFCs

54. Primary aluminium is only produced by one plant in France. The estimation of emissions is based on reports from the plant, which follow a tier 2 approach. According to the OMINEA report, the EFs for tetrafluoromethane (CF₄) and hexafluoroethane (C₂F₆) have decreased from 1,131 g CF₄/t aluminium to 150 g CF₄/t aluminium and from 212 g C₂F₆/t aluminium to 37 g C₂F₆/t aluminium between 1990 and 2006, respectively. It remained unclear to the ERT whether or not a QA/QC process was in place. The ERT recommends that France apply QA/QC procedures to the plant-level data and that it report them in line with the UNFCCC reporting guidelines in its next inventory submission.

9. Production of halocarbons and SF₆ – HFCs, PFCs and SF₆

55. France reports four subcategories under the category production of halocarbons and SF₆: the production of chlorodifluoromethane (HCFC-22); other by-product emissions – TFA; fugitive emissions; and other – conversion of uranium. The estimates of emissions are based on reports from the relevant facilities. The ERT encourages France to report on the methods used by the facilities to estimate emissions in its next inventory submission.

56. In its 2007 submission, France reported fictive AD and EF values in the CRF tables for HCFC-22 production and uranium conversion because of confidentiality issues. The ERT acknowledges that in the 2008 submission, France reported AD and EFs as confidential (“C”), which is in line with the UNFCCC reporting guidelines. During the review, France informed the ERT that it plans to follow the UNFCCC reporting guidelines on confidentiality for other subcategories in its next inventory submission. The ERT supports this intention.

57. During the previous review, the ERT recommended that France investigate further whether or not fugitive emissions of PFCs occur in industry because these emissions have been reported as “NO” since 2003. The ERT noted that this recommendation has not been followed up by France and therefore the ERT reiterates its recommendation.

10. Consumption of halocarbons and SF₆ – HFCs, PFCs and SF₆

58. Potential emissions of F-gases are reported as not estimated (“NE”). During previous stages of the review, the ERT was informed that France planned to report potential emissions of F-gases in its next inventory submission, if possible. The ERT recommends that France implement this plan in order to improve the completeness of its reporting in line with the UNFCCC reporting guidelines.

59. During the review, the ERT raised several questions regarding the parameters that were considered as outliers, such as the product life factor for 1, 1, 1, 2-tetrafluoroethane, pentafluoroethane and 1, 1, 1-trifluoroethane. The Party clarified that the inventory is based on a model developed and updated by the Ecole des Mines de Paris, and that surveys are carried out for commercial refrigeration. The Party also clarified that the Ecole des Mines de Paris intends to examine cross-country comparisons. The ERT encourages the Party to carry out these comparisons as a QA/QC procedure, report the results and provide more detailed documentation of the methodology used in its next inventory submission.

C. **Non-key categories**

1. Limestone and dolomite use – CO₂

60. Emissions from limestone and dolomite use are reported as “IE” in the CRF tables, but no explanation is provided in CRF table 9. The NIR states that the use of limestone in the production of cement, lime and glass are reported under the respective source categories. The ERT recommends that the Party explore other possible uses of limestone and recommends that it estimate these emissions in its next inventory submission.

2. Iron and steel – N₂O

61. The OMINEA report presents an EF for N₂O emissions from iron and steel, but no emission estimates are reported. The ERT welcomes the information provided on the EF and recommends that France report N₂O emissions from iron and steel in its next inventory submission.

IV. Agriculture

A. Sector overview

62. In 2006, emissions from the agriculture sector accounted for 94,830.6 Gg CO₂ eq, or 20.1 per cent of total GHG emissions. Emissions decreased by 11.5 per cent between 1990 and 2006. The key drivers for this decline are decreases in emissions from agricultural soils and enteric fermentation. In 2006, most of the emissions came from agricultural soils (49.9 per cent), followed by enteric fermentation (29.3 per cent), manure management (20.8 per cent) and rice cultivation (0.1 per cent). N₂O accounted for 56.2 per cent of sectoral emissions and CH₄ accounted for 43.8 per cent.

63. The ERT noted that no information on cross-cutting issues at the sectoral level was provided in the NIR or the OMINEA report. Recalculations led to an increase in estimated sectoral emissions by 1.1 per cent for 2005, and an increase of 2.1 per cent for CH₄ and 0.3 per cent for N₂O, respectively. The ERT noted that the CRF table summary 3 was not completed in the 2007 submission, but it has been completed in the 2008 submission.

B. Key categories

1. Enteric fermentation – CH₄

64. France applied a tier 2 approach (using the core inventory of air emissions (CORINAIR)) to estimate emissions from cattle and a tier 1 approach (using the 1996 IPCC default values) for the rest of the animal species, which is in line with the IPCC good practice guidance. However, in CRF table summary 3 France reported that it used the CORINAIR method for all animal species. The ERT recommends that France improve the consistency of its reporting on this issue in its next inventory submission.

65. In the 2006 submission, there was an inconsistency in the numbers of the swine population between 1998 and 1999 due to a change in the classification of piglets. In response to a request made by the ERT, France agreed to correct this inconsistency. In the 2008 submission, the inconsistency was resolved in the CRF tables, but the ERT noted that the NIR did not provide sufficient information on this issue. The ERT encourages France to provide a full explanation for this in its next inventory submission.

66. The value for milk yield differ substantially between France's submissions under the Convention and under the Kyoto Protocol. In response to a request made by the ERT, France explained that this was an internal error that did not affect emission estimates and which will be corrected in its next inventory submission. The correct value for milk yield ranges from 13 to 17 kg/head/day. The ERT recommends that France correct this error in its next inventory submission.

2. Agricultural soils – N₂O

67. During the previous review, France explained that the difference between the IEF for sewage sludge applied to soils (0.01125 kg N₂O-N/kg N) and the IPCC default value (0.0125 kg N₂O-N/kg N) was due to the fact that nitrogen (N) volatilization was not included in this subcategory. The ERT reiterated the recommendation made during the previous review that France include an explanation for this in its next inventory submission.

68. The ERT noted that the information provided in the NIR and the OMINEA report on the methodology used to estimate emissions from agricultural soils was insufficient. Therefore, the ERT recommends that France improve the transparency of its reporting on this matter in its next inventory submission by including, inter alia, the explanation provided by France during the previous review for the differences between the amount of N reported in CRF table 4.B(b) and the amount of N used as AD in CRF table 4.D.

3. Manure management – CH₄

69. The 1990–2006 IEFs for swine (approximately 21.0 kg/head/year) are among the highest values of reporting Parties (ranging from 1.4 to 23.2 kg/head/year) and are higher than the IPCC default value (10 kg/head/year). France explained that the EF values were based on the IPCC default for temperate areas and on country-specific values for animal waste management systems. The Party also explained that further research is in progress. The ERT recommends that France include this explanation in its next inventory submission, as well as an explanation of how animals are allocated to animal waste management systems, which would help explain the differences in the IEFs for N excretion rates.

C. Non-key categories

1. Rice cultivation – CH₄

70. During the previous review, France announced its plan to investigate rice production practices in the country. The ERT noted that no information on this matter was included in the NIR and therefore the ERT encourages France to provide the results of this investigation in its next inventory submission.

2. Manure management – N₂O

71. In CRF table 4.B(a)s2, the values for swine in pasture, range and paddock change year by year, in the sequence 0.0025, 0.17 and 0.84 every three years. The ERT reiterated the recommendation made during the previous review that France correct the value for swine allocation, which seems to be 0.25.

V. Land use, land-use change and forestry

A. Sector overview

72. In 2006, the LULUCF sector was a net sink in France and it removed 69,891.9 Gg CO₂ eq. This represents 12.9 per cent of total GHG emissions without LULUCF. Removals of CO₂ from LULUCF increased by 65.6 per cent between 1990 and 2006. Within the sector, forest land removed 84,015.9 Gg CO₂ eq in 2006. Regarding emissions, cropland is the most significant category, as it emits mainly CO₂ (12,811.1 Gg CO₂), but also CH₄ (213.4 Gg CO₂ eq) and N₂O (1,089.3 Gg CO₂ eq). Emissions from cropland declined by 43.5 per cent between 1990 and 2006.

73. The ERT noted that the inventory is complete, as all categories are estimated. In addition, the OMINEA report provides sufficient information to conclude that the system used by France to represent land use and land-use changes produces adequate results for mainland France. However, improvements are recommended for the overseas departments, where the local systems do not meet the requirements of the IPCC good practice guidance for LULUCF. The ERT noted that this issue is relevant because the overseas departments have tropical forests that may be subject to deforestation and forest degradation.

74. France uses country-specific data and tier 2 methods to estimate emissions and removals from the LULUCF sector. However, the ERT noted that the NIR does not provide any information on AD, EFs or the methodologies applied. The OMINEA report provides some information on these matters, but the ERT did not consider it to be sufficiently complete and transparent for the LULUCF sector. The ERT encountered difficulties when it assessed the methodologies and data used, as the OMINEA report often refers to secondary sources. Therefore, the ERT recommends that France include all relevant descriptions of the methods, AD and EFs used in its next inventory submission.

75. The ERT noted that uncertainties are not covered in the relevant sections of the NIR and no information is provided on QA/QC. The ERT recommends that France report this information in its next inventory submission.

B. Key categories

1. Forest land – CO₂

76. After consulting the relevant information in the OMINEA report, the ERT concluded that the estimation of carbon stock changes in the five main carbon pools was conducted in line with the IPCC good practice guidance for LULUCF. Estimates for carbon stock changes from living biomass are generally based on country-specific data from the National Forest Inventory, such as biomass expansion factors, root-shoot ratios, annual growth in cubic metres, and the densities of temperate and tropical forests. Temperate forests are divided into four subcategories: broadleaf forests, coniferous forests, mixed forests and poplar forests. CRF table 5.A provides complete AD and IEFs for all four subcategories. Tropical forests are reported using one generic value. This information contained in the CRF is not described or explained in the NIR or the OMINEA report. The ERT recommends that France address this transparency and completeness issue by providing this information in its next inventory submission.

77. Emissions of CH₄ caused by biomass burning are taken into account using country-specific and default values. Data are reported in CRF table 5(V), but are not complete because AD (areas of land burned) are not provided. France reports 'methane sinks' in undisturbed forests, which seems to include mainly the oxidation of CH₄ to CO₂ in soils. To estimate this 'methane sink' a country-specific factor of 2.4 kg/ha is provided in the OMINEA report, but AD (areas of undisturbed forest) are not provided. The ERT encourages the Party to provide AD for these estimates in its next inventory submission.

2. Cropland – CO₂

78. The ERT noted that information in the NIR and the OMINEA report on methods and EFs for cropland was not sufficient for it to assess the methodologies, AD and EFs used. The ERT noted that the 2006 value for carbon stock changes is 7.7 per cent higher than the 1990 value.

79. The time series shows significant fluctuations in carbon stock changes in living biomass in land converted to cropland, which are not explained in the NIR or the OMINEA report. During the review, France recognized the need for further efforts to improve the inventory on this specific issue. The ERT encourages the Party to revise the complete time series and make the necessary recalculations in its next inventory submission.

3. Grassland – CO₂

80. The ERT noted that information in the NIR and the OMINEA report on the methods and EFs for grassland is not sufficient for it to assess the methodologies, AD and EFs used. The ERT noted that the 2006 value for carbon stock changes is 22.6 per cent higher than the 1990 value.

81. The time series shows significant fluctuations in carbon stock changes in living biomass in land converted to grassland, which are not explained in the NIR or the OMINEA report. During the review, France recognized the need for further efforts to improve the inventory on this specific issue. The ERT encourages the Party to revise the complete time series and to make the necessary recalculations in its next inventory submission.

4. Wetlands – CO₂

82. Due to a lack of information in the NIR and the OMINEA report, the ERT was unable to assess whether or not the tier 2 methodologies applied by France are appropriate and in line with the

IPCC good practice guidance. The ERT recommends that the Party provide a more complete and transparent description of the methodologies and data used in its next inventory submission.

83. The 1994–1998, 2000 and 2002–2006 values for carbon stock changes in living biomass in land converted to wetlands (which range from –17.7 Mg C/ha to –9.5 Mg C/ha) have been identified as outliers. They are among the lowest values of reporting Parties (which range from –76.9 Mg C/ha to –0.002 Mg C/ha). The 2006 value is 400.9 per cent lower than the 1990 value. No explanation is provided in the NIR or in the OMINEA report for this decrease. The Party recognizes that this needs further investigation. The ERT recommends that the Party revise the complete time series in its next inventory submission.

5. Settlements and other lands – CO₂

84. Some information on AD and some EFs is provided in the NIR, but no reference is made to the tier 2 methods used to produce the estimations that are presented in the CRF. The OMINEA report does not provide any relevant complementary information. As a result, the ERT was unable to assess whether or not the methodologies were appropriate and in line with the IPCC good practice guidance.

VI. Information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol

85. France provided some information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, on a voluntary basis. The information is contained in an annex to the NIR, and includes specific CRF tables to report these activities and a general note on the reporting of LULUCF activities under the Kyoto Protocol. The ERT acknowledges the effort made by France to report this information, which represents significant progress towards reporting complete information on this matter during the commitment period.

86. The ERT was unable to fully assess the AD and EFs reported in the CRF because of a lack of information in the NIR. Some inconsistencies were detected in the EFs and notation keys used between reporting under the Convention and reporting under the Kyoto Protocol. The ERT noted that no further specific information was provided by France in the NIR or the OMINEA report regarding activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol. Therefore, the ERT was unable to assess whether or not the methodologies and data used are appropriate and in line with the IPCC good practice guidance for LULUCF. The ERT recommends that the Party ensure consistency in both reporting formats. The ERT encourages the Party to continue to improve the quality of information on land representations and land-use changes, particularly for the overseas departments.

87. The ERT encourages the Party to improve its reporting of LULUCF activities by providing the following in its future inventory submissions:

- (a) Information on how inventory methodologies have been applied, taking into account the IPCC good practice guidance for LULUCF and decision 16/CMP.1;
- (b) Information on the geographical location of the boundaries of the following land areas:
 - (i) Units of land subject to activities under Article 3, paragraph 3, of the Kyoto Protocol. This information has been provided in the CRF tables, but it should also be included in the NIR;
 - (ii) Units of land subject to activities under Article 3, paragraph 3, of the Kyoto Protocol;
 - (iii) Land subject to activities under Article 3, paragraph 4, of the Kyoto Protocol. This information has been reported in the specific tables of the CRF, but it should also be included in the NIR;

- (c) Information on the spatial assessment unit used for determining the area of accounting for afforestation, reforestation and deforestation;
- (d) Information on GHG emissions by sources and removals by sinks from LULUCF activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol to show that they are clearly distinguished from emissions from Annex A sources;
- (e) Information on whether or not activities under Article 3, paragraph 3, of the Kyoto Protocol and (elected) activities under Article 3, paragraph 4, of the Kyoto Protocol factor out removals from:
 - (i) Elevated CO₂ concentrations above pre-industrial levels;
 - (ii) Indirect N deposition;
 - (iii) Dynamic effects of age structure resulting from pre-1990 activities.

88. Regarding specific pieces of information to be reported under Article 3, paragraph 3, of the Kyoto Protocol, the ERT noted that the 2006 submission does not explain how the Party identified activities that occurred after 1 January 1990. Furthermore, the 2006 submission does not provide information on how to distinguish between deforestation and harvesting or forest disturbances that are followed by the re-establishment of forest.

89. Regarding specific information to be reported for selected activities under Article 3, paragraph 4, of the Kyoto Protocol, the ERT noted that information to demonstrate that forest management has occurred since 1 January 1990 and information to explain that these activities were human-induced should have been included in the NIR.

VII. Waste

A. Sector overview

90. In 2006, the waste sector accounted for 13,441.0 Gg CO₂ eq, or 2.8 per cent of total GHG emissions (excluding LULUCF). Emissions from the sector decreased by 14.7 per cent between 1990 and 2006. The key driver for the decrease in emissions is a reduction in CH₄ emissions from solid waste disposal on land, which decreased by 21.2 per cent between 1990 and 2006, and by 6.5 per cent between 2005 and 2006.

91. Solid waste disposal on land accounted for 65.1 per cent of sectoral emissions, followed by wastewater handling (16.2 per cent), waste incineration (15.5 per cent) and other sectors (compost production and biogas production) (3.1 per cent).

92. All of the sectoral CRF tables have been completed, except for the information boxes in CRF tables 6A, 6B and 6C. The ERT noted that the NIR does not contain information regarding AD and EFs. The OMINEA report does not contain all of the required information. The ERT reiterates the recommendation made during previous reviews that the Party provide more detailed information on the methodologies, AD and EFs used in the waste sector, and that it comment in more detail on the national circumstances relating to this sector in its next NIR.

93. The NIR presents the evaluation of a quantitative assessment of uncertainties. These uncertainties were calculated using the IPCC tier 1 method for the AD and EFs of all subcategories, but the ERT noted that comments have not been provided for the waste sector. The ERT recommends that France provide comments on this matter in its next NIR.

B. Key categories

1. Solid waste disposal on land – CH₄

94. The IPCC tier 2 method, combined with country-specific parameters, has been used to estimate CH₄ emissions from solid waste disposal on land. The OMINEA report contains information on the model used, but EFs and AD are not provided. The ERT reiterates recommendations made during previous reviews that France address this gap in its next inventory submission.

95. The data on municipal solid waste (MSW) have been generated from data on household waste (generation rate, composition). The NIR and the OMINEA report do not give details of the composition of the MSW or how the chemical oxygen demand (COD) value was calculated. During the review, the Party explained that the COD value was calculated using national waste composition, and the average value of the country-specific value and the IPCC good practice guidance maximum default value of 210 kg/t. However, the ERT noted that the IPCC good practice guidance does not provide a default value. In response, France announced that it plans to include an explanation for this in its next inventory submission. The ERT recommends that France provide this information in its next inventory submission.

96. The ERT noted that the value for per capita waste production (0.82–0.95 kg/capita/day) is low compared with other countries in the European Union. During the review, the Party explained that the linear extrapolation of national data from the French Environment and Energy Management Agency (ADEME) was used for years not covered by the ADEME. The ERT noted that this does not explain the low values for per capita waste production. In the Revised 1996 IPCC Guidelines, the value for France is 1.29 kg/capita/day. The ERT recommends that France investigate further these waste generation values.

97. The ERT noted that the generation rate (k) value is not clearly explained. During the review, the Party explained that the k₁ value was estimated based on measurements taken from 150 disposal sites. The ERT recommends that France include better explanations for the distribution of the k₁, 2 and 3 values in its next inventory submission.

2. Waste incineration – CO₂

98. The tier 2 IPCC method is used for this category with a country-specific EF. The NIR states that emissions from incineration of special industrial waste have been partially estimated. The ERT reiterates recommendations made during previous reviews that France provide AD for this subcategory.

99. The OMINEA report explains that between 15 and 20 per cent of the sludge from wastewater treatment is incinerated and between 60 to 70 per cent is watered down. The ERT noted that these values are not justified and the ERT recommends that France provide further explanation of, and justification for, these values in its next inventory submission.

C. Non-key categories

Wastewater handling – CH₄, N₂O

100. In the NIR, CH₄ emissions are only estimated for wastewater treated in individual septic tanks using the IPCC tier 2 method, combined with country-specific data.

101. The NIR indicates that CH₄ emissions from industrial wastewater handling are negligible and there are no AD available to make an estimation. During the review, the Party confirmed that according to expert judgement these AD are low. Nonetheless, the ERT reiterates the recommendation made during previous reviews that France provide more precise information on industrial wastewater handling in its next inventory submission.

102. CRF summary table 3 states that a tier 2 method is used to estimate N₂O emissions from human sewage. However, protein consumption and N fraction are not reported. The ERT recommends that

France provide this information in its next inventory submission. The distribution between the amount of wastewater treated anaerobically and aerobically is not explained in the NIR or the OMINEA report.

VIII. Other issues

1. Changes to the national system

103. The ERT noted with regard to the recommendations made during the previous review that:
- (a) The documentation of the national inventory has not been significantly improved and has not been made more user-friendly;
 - (b) An independent review of the inventory prior to its submission as part of the QA system has not been reported;
 - (c) The improvement of the completeness of reporting in categories where emission data have been reported was small compared with the remaining number of categories that have not yet been included.
104. The ERT noted that not all areas of France have to be reported under the Kyoto Protocol. There seems to be agreement about the French overseas departments that are part of France. However, it has not been possible for the ERT to identify the corresponding legal documentation that specifies these regions. The ERT would welcome further clarification on this issue in the next inventory submission.

2. Changes to the national registry

105. The ERT noted that no additional information on the national registry has been submitted since the publication of the document FCCC/IRR/2007/FRA. The ERT reiterates the request made in this document that France provide a more detailed description of its national registry in its next national communication.

3. Commitment period reserve

106. The ERT noted that, according to information provided by the Party in response to the draft of this report, France calculates its commitment period reserve to be 2,537,663,976 t CO₂ eq, based on its calculated assigned amount. The ERT agrees with this figure.

IX. Conclusions and recommendations

107. The ERT concluded that the inventory is generally in line with the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF. The 2008 inventory submission is generally of high quality and covers most sectors and categories.

108. The ERT concluded that the information provided by France in its inventory submission did not address all of the recommendations included in the review of the 2006 inventory submission. In particular, the ERT noted that the national inventory system still lacks the level of resources required for the full implementation of the requirements of the Kyoto Protocol. For example, there are still a number of gaps with regard to emission data of source categories in the energy, waste and industrial processes sectors.

109. The key recommendations are that France:

- (a) Include in its next NIR all of the information required by the UNFCCC reporting guidelines regarding direct GHG emissions;

- (b) Include in the NIR all of the information required by the UNFCCC reporting guidelines that is currently included in the OMINEA report regarding direct GHG emissions;
- (c) Develop a data collection strategy that addresses all gaps regarding sources and sinks that are not yet included in the inventory within a reasonable time frame, for example, within the next three years;
- (d) Enhance further the resources provided for the national inventory system in order to meet the reporting requirements under the Kyoto Protocol.

X. Questions of implementation

110. No questions of implementation were identified by the ERT during the review.

Annex

Documents and information used during the review

A. Reference documents

Intergovernmental Panel on Climate Change. *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. Available at <<http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.htm>>.

Intergovernmental Panel on Climate Change. *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. Available at <<http://www.ipcc-nggip.iges.or.jp/public/gp/english>>.

Intergovernmental Panel on Climate Change. *Good Practice Guidance for Land Use, Land-Use Change and Forestry*. Available at <<http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.htm>>.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories”. FCCC/SBSTA/2006/9. Available at <<http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf>>.

“Guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention”. FCCC/CP/2002/8. Available at <<http://unfccc.int/resource/docs/cop8/08.pdf>>.

“Guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol”. Decision 19/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=14>>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Decision 15/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf#page=54>>.

“Guidelines for review under Article 8 of the Kyoto Protocol”. Decision 22/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=51>>.

Status report for France 2007. Available at <<http://unfccc.int/resource/docs/2007/asr/fra.pdf>>.

Status report for France 2008. Available at <<http://unfccc.int/resource/docs/2008/asr/fra.pdf>>.

Synthesis and assessment report on the greenhouse gas inventories submitted in 2007. Available at <<http://unfccc.int/resource/webdocs/sai/2007.pdf>>.

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FCCC/ARR/2006/FRA. Report of the individual review of the greenhouse gas inventory of France submitted in 2006. Available at <<http://unfccc.int/resource/docs/2007/arr/fra.pdf>>.

FCCC/IRR/2007/FRA. Report of the review of the initial report of France. Available at: <<http://unfccc.int/resource/docs/2007/irr/fra.pdf>>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Frédérique Millard (Ministry for Ecology, Sustainable Development and Spatial Planning), including additional material on the methodology and assumptions used. The following documents were also provided by France:

EMEP/CORINAIR. 2007. *Emission inventory guidebook*. Available at <<http://www.eea.europa.eu/publications/EMEPCORINAIR5>>.

CITEPA. 2008. *Organisation et méthodes des inventaires nationaux des émissions atmosphériques en France*. OMINEA report. Available at <<http://www.citepa.org/publications/Inventaires.htm#inv6>>.
