COMPLIANCE COMMITTEE **CC/ERT/ARR/2010/22**
19 March 2010

Report of the individual review of the annual submission of France submitted in 2009

Note by the secretariat

The report of the individual review of the annual submission of France submitted in 2009 was published on 18 March 2010. For purposes of rule 10, paragraph 2, of the rules of procedure of the Compliance Committee (annex to decision 4/CMP.2, as amended by decision 4/CMP.4), the report is considered received by the secretariat on the same date. This report, FCCC/ARR/2009/FRA, contained in the annex to this note, is being forwarded to the Compliance Committee in accordance with section VI, paragraph 3, of the annex to decision 27/CMP.1.

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Report of the individual review of the annual submission of France submitted in 2009*

* In the symbol for this document, 1990 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 2009 annual submission of France, coordinated by the UNFCCC secretariat, in accordance with decision 22/CMP.1. The review took place from 31 August to 5 September 2009 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: generalists – Mr. Newton Paciornik (Brazil) and Mr. Tinus Pulles (Netherlands); energy – Mr. Gebru J. Endalew (Ethiopia); Ms. Erasmia Kitou (European Union) and Mr. Hongwei Yang (China); industrial processes – Mr. Menouer Boughedaoui (Algeria) and Mr. Jos Olivier (Netherlands); agriculture – Mr. Paul Duffy (Ireland) and Mr. Jacques Kouazounde (Benin); land use, land-use change and forestry (LULUCF) – Mr. Sandro Federici (Italy) and Mr. Motoshi Hiratsuka (Japan); and waste – Ms. Melissa Weitz (United States of America) and Ms. Kyoko Miwa (Japan). Mr. Duffy and Mr. Yang were the lead reviewers. The review was coordinated by Mr. Vitor Gois Ferreira (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. Emission profiles and trends

3. In 2007, the main greenhouse gas (GHG) in France was carbon dioxide (CO_2), accounting for 74.8 per cent of total GHG emissions[1] expressed in CO_2 eq, followed by nitrous oxide (N_2O) (12.1 per cent) and methane (CH_4), (10.1 per cent). Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) collectively accounted for 3.1 per cent of the overall GHG emissions in the country. The energy sector accounted for 72.3 per cent of the total GHG emissions, followed by agriculture (18.0 per cent), industrial processes (7.6 per cent), waste (1.9 per cent) and solvent and other product use (0.3 per cent). Total GHG emissions amounted to 531,104.62 Gg CO_2 eq and decreased by 5.6 per cent between the base year[2] and 2007.

4. Tables 1 and 2 show total GHG emissions by gas and by sector, respectively. Table 1 includes emissions from Annex A sources only and excludes emissions and removals from the LULUCF sector.

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

[2] "Base year" refers to the base year under the Kyoto Protocol, which is 1990 for all gases. The base year emissions include emissions from Annex A sources only.

Table 1. Total greenhouse gas emissions by gas, 1990–2007[a]

Greenhouse gas	Gg CO_2 eq							Change base year–2007 (%)
	Base year[b]	1990	1995	2000	2005	2006	2007	
CO_2	395 813.97	395 813.97	393 245.93	406 387.74	416 693.88	407 041.08	397 075.65	0.3
CH_4	64 932.61	64 932.61	65 206.42	60 964.75	54 477.42	53 774.92	53 504.23	–17.6
N_2O	91 922.04	91 922.04	89 426.28	76 947.98	67 046.32	64 729.45	64 237.49	–30.1
HFCs	3 657.23	3 657.23	3 467.92	8 172.34	12 900.13	13 828.33	14 287.58	290.7
PFCs	4 293.45	4 293.45	2 561.81	2 486.86	1 430.37	1 166.58	920.20	–78.6
SF_6	2 021.82	2 021.82	2 243.89	1 848.27	1 320.53	1 193.78	1 079.47	–46.6

[a] Total GHG emissions includes emissions from Annex A sources only (exclude emissions/removals from the LULUCF sector).
[b] Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases. The base year emissions include emissions from Annex A sources only.

Table 2. Greenhouse gas emissions by sector, 1990–2007

Sector	Gg CO_2 eq							Change base year–2007 (%)
	Base year[a]	1990	1995	2000	2005	2006	2007	
Energy	384 513.34	384 513.34	383 694.33	396 137.56	402 706.93	393 872.28	383 737.13	–0.2
Industrial processes	56 395.55	56 395.55	55 006.72	43 246.41	41 813.54	40 395.25	40 248.08	–28.6
Solvent and other product use	2 061.92	2 061.92	1 820.61	1 839.54	1 446.62	1 392.72	1 360.60	–34.0
Agriculture	107 628.38	107 628.38	101 682.51	103 427.06	97 060.17	95 508.83	95 728.32	–11.1
LULUCF	NA	–40 044.79	–50 151.21	–44 883.55	–70 935.14	–70 861.65	–72 339.29	NA
Waste	12 041.92	12 041.92	13 948.08	12 157.36	10 841.38	10 565.06	10 030.49	–16.7
Other	NO	NO	NO	NO	NO	NO	NO	NA
Total (with LULUCF)	NA	522 596.32	506 001.04	511 924.37	482 933.50	470 872.48	458 765.34	NA
Total (without LULUCF)	562 641.11	562 641.11	556 152.25	556 807.93	553 868.65	541 734.14	531 104.62	–5.6

Abbreviations: LULUCF = land use, land-use change and forestry, NA = not applicable, NO = not occurring.
[a] Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases. The base year emissions include emissions from Annex A sources only.

C. Annual submission and other sources of information

5. The 2009 annual inventory submission was submitted on 6 April 2009; it contains a complete set of common reporting format (CRF) tables for the period 1990–2007. The national inventory report (NIR) was submitted on 6 April 2009, and resubmitted on 7 April 2009. France also submitted information required under Article 7, paragraph 1, of the Kyoto Protocol, including information on: activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, accounting of Kyoto Protocol units, and changes in the national system and in the national registry. The standard electronic format (SEF) tables were submitted on 6 April 2009 and resubmitted on 7 April 2009. Information on changes in the national registry was submitted on 7 April 2009, as an annex to the NIR. The annual submission was submitted in accordance with decision 15/CMP.1. The Party indicated that the 2009 submission is also its voluntary submission under the Kyoto Protocol.

6. In addition to the CRF tables for the Metropole (mainland France) and Department d'Outre Mer, which is France's submission under the Kyoto Protocol, the Party has also submitted a set of CRF tables covering the Collectivités d'Outre Mer (COM), and which are reported under the Convention.

7. In addition, the expert review team (ERT) used the Standard Independent Assessment Report (SIAR), Parts I and II, to review information on the accounting of Kyoto Protocol units (including the SEF tables and their comparison report) and on the national registry.[3]

8. Where necessary, the ERT also used previous years' submissions during the review. During the review, France provided the ERT with additional information. The documents concerned are not part of the annual submission but are in many cases referenced in the NIR. The full list of materials used during the review is provided in annex I to this report.

Completeness of inventory

9. The inventory is complete in terms of years and geographic coverage and covers almost all source and sink categories. Since last year's submission France has made good progress in providing emission estimates for categories that were not included in previous submissions, although the ERT noted that some categories remain reported not estimated ("NE"). During the centralized review, the ERT presented the Party with the list of categories and subcategories that were reported as "NE" and for which methodologies are available in the Intergovernmental Panel on Climate Change (IPCC) *Revised 1996 Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the Revised 1996 IPCC Guidelines) or the IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC good practice guidance). The list of categories and carbon pools that France is reporting as "NE" will be discussed under the LULUCF sector.

10. Responding to the ERT France clarified that the following categories are in fact "NE", and for these emission estimates could be calculated: CO_2 from ferroalloys production; CH_4 emissions from ethylene, styrene and dichoroethylene (reported under category other chemical industry (2.B.5)); CH_4 emissions from industrial waste-water handling and from sludge from waste-water handling. During the review France has also provided preliminary simple estimates for these categories. The Party also

[3] The SIAR, Parts I and II, is prepared by an independent assessor in line with decision 16/CP.10 (paragraphs 5(a), 6(c) and 6(k)), under the auspices of the international transaction log (ITL) administrator using procedures agreed in the Registry System Administrators Forum. Part I is a completeness check of the submitted information relating to the accounting of Kyoto Protocol units (including the SEF tables and their comparison report) and to national registries. Part II contains a substantive assessment of the submitted information and identifies any potential problem regarding information on the accounting of Kyoto Protocol units and the national registry.
The SIAR is not publicly available.

indicated which categories reported as "NE" should instead be reported as not occurring ("NO"): CH_4 from methanol production and N_2O from ethylene production (reported under category other chemical industry (2.B.5)); and N_2O from domestic and commercial waste-water handling. Finally France stated that CO_2 emissions from other industrial production will be reported as included elsewhere ("IE") in the next annual inventory submission. The ERT commends France for its responses and recommends that the Party include the above-mentioned changes in the next annual inventory submission.

11. Further the ERT encourages France to improve the completeness of the inventory, especially for those categories that are known to occur within the Party and for which methodologies to estimate emissions are available in the Revised 1996 IPCC guidelines or the IPCC good practice guidance. The ERT also encourages the Party to explore approaches available in the scientific literature, to estimate emissions for categories that do not have methodologies prescribed in the Revised 1996 IPCC guidelines or in the IPCC good practice guidance, with a view to enhance further, to the extent possible, the completeness and accuracy of its inventory. The ERT also recommends that France, when reporting emissions data for the first time for a given category, ensure that the data are provided for the entire inventory time series, and that the choice of methods and emission factors (EFs) is clearly explained in the NIR.

12. The report on the individual review of the inventory of France submitted in 2007 and 2008 recommended that France complete its reporting of CRF tables 7, 8(b) and 9(a) in the 2009 submission. The ERT notes that table 9 is now completed, but tables 7 and 8(b) are still empty, although the relevant information is available in the NIR. The ERT recommends that France complete these tables in its next annual submission.

D. Main findings

13. The inventory is in line with the Revised 1996 IPCC Guidelines, 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).

14. The 2009 inventory submission is generally of high quality and covers all sectors and almost all categories: only a reduced number of categories are still reported as "NE", but France is planning to prepare estimates and report them in the next annual submission. France has provided a complete NIR and an almost complete set of CRF tables: tables 7 and 8(b) are missing.

15. France has submitted, in part, on a voluntary basis supplementary information required under Article 7, paragraph 1, of the Kyoto Protocol in accordance with section I of the annex to decision 15/CMP.1. The Party did not submit on a voluntary basis information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol.

16. France has reported on a voluntary basis information on activities under Article 3, paragraph 3, and the elected activity (forest management) under Article 3, paragraph 4, of the Kyoto Protocol in accordance with section I.D of the annex to decision 15/CMP.1.

17. France has reported information on its accounting of Kyoto Protocol units in accordance with section I.E of the annex to decision 15/CMP.1, and used the SEF tables as required by decision 14/CMP.1.

18. The national system continues to perform its required functions as set out in the annex to decision 19/CMP.1.

19. The national registry continues to perform the functions set out in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1, and continues to adhere to the technical standards for data exchange between registry systems in accordance with relevant Conference of the Parties serving as the

meeting of the Parties to the Kyoto Protocol (CMP) decisions. However, the SIAR highlighted several areas in need of improvement, in particular concerning the public availability of information.

20. The ERT notes that the major concern about France's submission relates to the structure of the NIR, and the inclusion of parts of the report 'Organisation et méthodes des inventaires nationaux des émissions atmosphériques' (OMINEA) as an annex to the NIR. Although the ERT understands the efforts made by France to have a common approach towards air pollutants and GHG emissions and to present the underlying data used for their estimation in a systematic way, it also notes that the inclusion of the OMINEA report, which is a separate, self-standing document, in the NIR complicates the report as opposed to improving its transparency. Earlier reviews already emphasized that the integration of selected information from the OMINEA report into the NIR, following the structure outlined 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" (hereinafter referred to as the revised UNFCCC reporting guidelines), would significantly improve the transparency of the inventory submission and would thus facilitate the review process. The ERT reiterates the recommendations from previous reviews and further recommends France to consider structuring the reporting in its next annual submission by following the annotated outline of the NIR, and the guidance contained therein, which can be found on the UNFCCC website.[4]

21. In the course of the review, the ERT identified a number of additional areas where further improvements to the inventory are needed. These improvements include: implement external reviews of the inventory as part of the quality assurance procedures; implement a tier 2 key category analysis; improve the completeness of the inventory; improve the transparency on reporting of the choice of EFs; improve reporting of the uncertainty analysis adding more explanations at category and subcategory level; improve the explanations for the larger inter-annual variations in activity data (AD), implied emission factors (IEFs), EFs and emissions; provide explanations of how time-series consistency is maintained when European Union emissions trading scheme (EU ETS) data are included for more recent years; and elaborate a detailed reference approach, consistent for the whole time series, in a timely manner.

E. A description of the institutional arrangements for inventory preparation, including the legal and procedural arrangements for inventory planning, preparation and management

1. Overview

22. The ERT concluded that the national system continued to perform its required functions.

23. The NIR describes the national system for the preparation of the inventory. The Ministère de l'Ecologie, de l'Energie, du Développement Durable en de l'Aménagement du Territoire (MEEDDAT)[5] has overall responsibility for the national inventory.

24. Other organizations are also involved in the preparation of the inventory and have specific responsibilities for the planning, preparation and management of the inventory. These include:

(a) The Groupe de coordination et d'information sur les inventaires d'émission (GCIIE), supervised by MEEDDAT and representing several ministries, and whose mission is to discuss and advise on:

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[4] <http://unfccc.int/files/national_reports/annex_i_ghg_inventories/reporting_requirements/application/pdf/annotated_nir_outline.pdf>.

[5] After 24 June 2009 MEEDDAT name has changed to Ministère de l'Ecologie, de l'Energie, du Développement Durable et de la Mer (MEEDDM), which is the current name of the single national entity. At the time of the of the initial review of France the name of the single national entity was Ministère de l'Ecologie et du Développement Durable (MEDD).

(i) The results of each annual inventory;

(ii) Necessary improvements and recommendations for the inventory improvement programme;

(iii) Any other issue the GCIIE may find relevant.

(b) Other ministries and governmental institutions which act as data providers;

(c) The Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique (CITEPA), which is commissioned by MEEDDAT to perform all the technical activities needed to compile the annual inventory, including the preparation of the CRF tables and the NIR;

(d) Direction générale de l'énergie et du climat (DGEC), which submits the inventory results to the UNFCCC secretariat and ensures the review process under the UNFCCC and the Kyoto Protocol.

2. Inventory planning

25. The review of the initial report under the Kyoto Protocol[6] came to the conclusion that the Party's inventory team, in comparison with teams in similar countries (most of the 15 pre-2004 European Union member States), was working at the limits of their available resources . The report of the review of submissions in 2007 and 2008[7] noted that the national system still lacked the necessary level of resources, and further recommended that the Party enhance their level of resources in order to meet the reporting requirements under the Kyoto Protocol. During the review week, France informed the ERT that it has considerably increased its available resources (an increase of 24.0 per cent in terms of man power), the shortage of which was a recurrent problem in earlier reviews, and it is now more able to meet its reporting requirements under the Kyoto Protocol.

26. The ERT welcomes this result, and recommends that France use the additional resources to follow the recommendations from this and previous reviews, in particular by giving priority to the restructuring of the NIR and the improvement of its transparency.

3. Inventory preparation

Key categories

27. France has reported a key category tier 1 analysis, both level and trend assessment, as part of its 2009 submission. The key category analysis performed by the Party and that performed by the secretariat[8] produced generally similar results in spite of differences in disaggregation. France has included the LULUCF sector in its key category analysis, which was performed in accordance with the IPCC good practice guidance and the IPCC good practice guidance for LULUCF.

28. Emissions of N_2O from agricultural soils (direct and indirect emissions considered together) are the third largest key source in the level analysis and the ninth largest in the trend analysis. This category

[6] FCCC/IRR/2007/FRA.

[7] FCCC/ARR/2008/FRA.

[8] 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 or period. 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.

includes several uncorrelated subcategories with significant emissions, and the ERT expressed its view to France during the review that these subcategories should be treated separately in the key category analysis. Responding to the ERT France indicated during the review that a more disaggregated level for this category will be considered for the next inventory.

29. Previous reviews have recommended that France apply a tier 2 key category analysis, following the decision tree for key category analysis provided in the IPCC good practice guidance, and considering that France is performing an uncertainty analysis. The ERT reiterates the recommendations from previous reviews that France apply a tier 2 key category analysis in its next annual inventory submission.

30. The ERT detected that table 51 of the NIR (page 141) was incorrect and that category codes and category names did not match. In response to the ERT France submitted a corrected table during the review.

Uncertainties

31. France has provided a tier 1 uncertainty analysis for 38 categories and for the inventory as a whole (including the LULUCF sector). The overall uncertainty estimated for 2007 is very similar to the uncertainty reported for 2006 in last year's submission. France estimated an uncertainty value for 2007 of 18 per cent if the LULUCF sector is not included in the analysis and 23.0 per cent if this sector is included. The uncertainty in trend was estimated as 2.9 per cent if LULUCF is not included in the analysis and 4.7 per cent if the LULUCF sector is included.

32. Neither the NIR, nor the OMINEA report in the annex to the NIR, include separate explanations of the uncertainty values related to EFs and AD for individual categories. The ERT recommends that France improve the reporting of the uncertainty analysis in its next annual inventory submission.

33. The second largest contribution to the overall uncertainty is the category N_2O from agricultural soils, and this category dominates the uncertainty analysis in the inventory of France. This category includes several subcategories with significant emissions that do not all show strong correlation. The IPCC good practice guidance requires subcategories to be aggregated only if there is a strong correlation between both AD and EFs used in the subcategories. The ERT recommends that these subcategories should be treated separately in the uncertainty analysis carried out, for the next annual inventory submission.

Recalculations and time-series consistency

34. Recalculations have been performed and reported in accordance with the IPCC good practice guidance. The changes, and the magnitude of the impact include: in 1990 a decrease in the estimate of total GHG emissions including LULUCF (0.1 per cent) and a decrease in the estimate of total GHG emissions excluding LULUCF (0.1 per cent), a decrease in the estimate of total GHG emissions including LULUCF in 2006 (0.1 per cent), and an increase in total GHG emissions excluding LULUCF (0.1 per cent) for the same year. The most significant recalculation occurred in the waste sector, where there was a decrease in the estimate of total GHG emissions (23.6 per cent) in 1990 and a decrease (21.4 per cent) in 2006. The rationale for these recalculations is provided in the NIR, but not in CRF table 8(b). The ERT recommends that France complete table 8(b) of the CRF in the next annual submission.

Verification and quality assurance/quality control approaches

35. France has elaborated and implemented a quality assurance/quality control (QA/QC) plan which is based on the ISO 9001 and is in accordance with the IPCC good practice guidance. This plan includes general QC procedures (tier 1) as well as specific procedures for source/sink categories (tier 2) that are key categories and where significant methodological and/or data revisions have occurred.

36. Procedures for QA are also planned, but the NIR does not contain information on what actual measures were already implemented, in spite of the fact that previous reviews recommended that the Party prepare an independent review of the inventory. The ERT recommends that France follow-up on recommendations from previous reviews and introduce an external review prior to the inventory submission as part of its QA procedures.

Transparency

37. The previous year's report recommended that France integrate selected information from the OMINEA report into the NIR, following the structure outlined in the UNFCCC reporting guidelines, in order to improve the transparency of the inventory submission and to facilitate the review process. It further recommended that the NIR not contain any cross-referencing to the OMINEA report in the context of direct GHGs. However, in the 2009 submission, France copied the OMINEA report into the NIR as an annex. This created an imbalance between the information needed in the NIR and detailed background information that could be provided in annexes or background reports. The ERT strongly recommends that the Party improve transparency of reporting by restructuring of the NIR and integrating the relevant information in the OMINEA report into the NIR in accordance with the UNFCCC reporting guidelines. To that end the ERT encourages the Party to follow the annotated outline of the NIR and the guidance contained therein.

38. The NIR, in combination with the OMINEA report, lists the EFs used but does not provide transparent and sufficient information on the reasons underlying the selection of the EFs and how their values have been derived. Data on uncertainties at the level where emissions are estimated are virtually absent. The ERT reiterates the recommendations in the initial review report and recommends that France increase the transparency of its inventory by including more explanatory notes and information on the rationale used to choose EFs and AD in the NIR.

4. Inventory management

39. France has a centralized archiving system which includes the archiving of disaggregated EFs and AD, and documentation on how these factors and data have been generated and aggregated for the preparation of the inventory. The archived information also includes internal documentation on QA/QC procedures, documentation on annual key categories and key category identification, and planned inventory improvements. The archive is kept by CITEPA, in electronic form wherever possible. All inventory files are backed up on a daily basis and are also regularly copied to permanent media which is stored at a secure, off-site location in a bank outside CITEPA. All final versions of the inventory are archived and can be accessed when needed. Hard copies of the reports used are kept in a dedicated library. During the review, the ERT was provided with all the additional information it requested from the archives.

F. Follow-up to previous reviews

40. France has generally followed up on the recommendations of earlier reviews as far as they concern specific comments and remarks on the AD and EFs used. However, more general recommendations have, in a number of cases, not been implemented and the ERT recommends that France continue its efforts and implement these recommendations:

(a) A tier 2 key category analysis, as required by the IPCC good practice guidance and recommended by the 2007 and 2008 reviews;

(b) An external review of the inventory prior to its submission as part of the inventory's QA procedures, required by the IPCC good practice guidance (section 8.8), has not been included in France's inventory preparation and submission procedures;

(c) Restructuring of the NIR with an enhanced balance between information included in the main body of the NIR and in annexes (the OMINEA report) did not improve, despite the comments and recommendations of previous ERTs;

(d) The OMINEA report mainly lists the EFs used and refers to underlying technical reports, but does not explain why these have been selected or why they are applicable for France; virtually no information is provided on the uncertainty ranges for AD and EFs.

G. Areas for further improvement

1. Identified by the Party

41. The 2009 NIR identifies several areas for improvement. These include:

(a) Improve the quality and use of facility-level emission data, especially within the framework of the EU ETS;

(b) Improve the methods and data used for uncertainty analysis;

(c) Reduce the number of emission categories reported as "NE" and improve estimation methods wherever the present ones are seen as inadequate;

(d) Improve the methods, tools and procedures of internal QC for the data flows between the different experts involved.

2. Identified by the expert review team

42. The ERT identifies the following cross-cutting issues for improvement:

(a) Implement the recommendations identified in previous reviews that have not yet been implemented, as listed in section F. above. In particular: the restructuring of the NIR to provide a better balance between what is included in the main body and what is included in the OMINEA report; implement external reviews of the inventory as part of the QA procedures; and implement a tier 2 key category analysis;

(b) Prioritize the increase in resources available to meet all reporting requirements, in particular the restructure the NIR to improve its readability and transparency;

(c) Provide estimates of emissions and removals for the few categories reported as "NE", if methods are available in the Revised 1996 IPCC Guidelines or the IPCC good practice guidance;

(d) Improve the reporting of uncertainty analysis, adding more explanations at category and subcategory level;

(e) Provide explanations of how time-series consistency is maintained when EU ETS data is included for more recent years;

(f) Increase the information provided in the NIR on the selection of EFs and the justification for their use;

(g) Discuss in the NIR and provide explanations for the largest inter-annual variations in AD, IEFs, EFs and emissions, and the overall trends for the period. In particular this applies to the energy and industrial processes sectors. Report disaggregated data in the NIR (e.g. gasoline aviation and jet kerosene used in civil aviation and nitric acid production) if this improves comprehension of the trends and annual variations.

43. Recommended improvements relating to specific categories are presented in the relevant sector chapters of this report.

II. Energy

A. Sector overview

44. The energy sector is the main sector in the GHG inventory of France. In 2007, emissions from the energy sector amounted to 383,737.13 Gg CO_2 eq, or 72.3 per cent of total GHG emissions. Since 1990, emissions have decreased by 0.2 per cent. The key driver for the fall in emissions is the use of nuclear and hydroelectric power along with some favourable weather patterns over the last couple of years which have reduced emissions from the public electricity and heat production category. Within the sector, 35.7 per cent of the emissions were from the transport sector, followed by 25.0 per cent from other sectors, 20.4 per cent from the manufacturing industries and construction sector and 17.5 per cent from the energy industries sector. Fugitive emissions accounted for 1.5 per cent of the total GHG emissions in this sector, of which 99.4 per cent was from oil and natural gas.

45. France has provided complete CRF tables for the energy sector, including emissions estimates for all categories except multilateral operations. France is mostly using tier 3 methods to calculate emissions from the energy sector, and a combination of country-specific and plant-specific EFs. France has significantly improved the use of notation keys in CRF tables since its last submission, with one exception: for natural gas transmission and distribution, the notation keys "NA" and "NO" should be corrected to "IE", since France has indicated in previous reviews that emissions from natural gas transmission and distribution are accounted for under exploration. To ensure completeness and to increase the transparency of the information reported in the CRF tables, the ERT recommends that the Party provide also relevant explanations in the CRF tables' documentation and explanation boxes. The ERT commends France for providing tables of net calorific values (NCV) and EFs in the main body of the NIR, in accordance with the recommendations of previous reviews. The ERT notes, however, that overall the methodological descriptions in the NIR are often not detailed enough, and recommends that the Party enhance transparency in its next annual inventory submission.

B. Reference and sectoral approaches

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

46. France provides a detailed reference approach and a simplified reference approach in its NIR. During the review, France clarified that the simplified approach is directly determined by consumption data defined in the French energy balance (which has only four categories of fuel) and that it covers only mainland France, excluding overseas territories: the national energy balance was compiled by the Observatoire de l'énergie from data supplied by the Ministère de l'Economie, des Finances et de l'Industrie (MEFI) and does not include fossil fuel and energy information from the overseas territories. The detailed approach is elaborated based on comprehensive data from the International Energy Agency (IEA) along with additional statistics covering the overseas territories. For 2007 the data needed to establish the detailed approach was not yet available, and for that year France used data from the simplified approach to elaborate its reference approach. The ERT notes that this approach is not consistent with previous years in the time series, because it is not prepared with the same level of detail and does not include overseas territories. The ERT recommends that France ensure that sufficient data have been collected in time to prepare the reference approach in accordance with the detailed reference approach, and that the sectoral and reference approaches are based on the same geographical coverage.

47. For 2007, the total energy consumption reported in the reference approach is 15.4 per cent higher than in the sectoral approach; while for CO_2 emissions the values estimated according to the reference approach are 1.8 per cent lower. Although France provided explanations for the differences in the NIR,

the ERT reiterates the recommendation from previous reviews that France also provide a summary using the documentation box in CRF table 1.A(c).

48. In the comparison between the reference and the sectoral approach (CRF table 1.A(c)), France does not exclude feedstocks and non-energy use of fuels from the apparent energy consumption and these are reported as "NA" in CRF table 1.A(d). The ERT recommends that France present a corrected table in its next submission.

2. International bunker fuels

49. The ERT found that France was unable to properly allocate emissions to domestic and international navigation. The ERT recommends that the Party improve the collection of underlying data to improve the estimate of the split between international and civil navigation (see para. 59 for further details).

3. Feedstocks and non-energy use of fuels

50. The 2009 submission includes estimates of feedstocks and non-energy use of fuels in the CRF table 1.A(d) as recommended by previous reviews. These are 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. However, the AD and methodologies used for their estimation are neither adequately nor transparently described in the NIR. The ERT recommends that France clearly describe how feedstock values are estimated in the energy chapter of its next annual submission.

C. Key categories

1. Stationary combustion: solid, liquid, gaseous and other – CO_2

51. For the use of liquid fuels in the key categories iron and steel, and liquid and solid fuels in the key category other manufacturing industries, the CO_2 IEFs for 2007 (113.47 t/TJ) have been identified as the highest value among reporting Parties (3.33–113.47 t/TJ), and is higher than the upper limit of the IPCC default range (63.07–100.83 t/TJ). During the review, France clarified for the ERT that the CO_2 IEFs had been over-estimated due to reporting problems with the AD. However, France confirmed that the CO_2 emission estimates are correct. The ERT recommends that France correct such mistakes in its next annual inventory submission.

52. For the key categories petroleum refining (solid, liquid and gaseous fuels), manufacture of solid fuels and other energy industries (other fuels), non-ferrous metal (solid fuels), and chemicals (liquid and other fuels), the CO_2 IEF values have also been identified as significantly different from those of other Parties, and unusual trend changes were observed. As an example the 2007 CO_2 IEF for solid fuels (268.00 t/TJ) has been identified as the highest among reporting Parties (52.30 t/TJ to 268.00 t/TJ), and is higher than the upper limit of the IPCC default range (94.60 t/TJ to 106.70 t/TJ). During the review, France explained that the observed trends are due to changes in the fuel mix and the associated energy consumption variation throughout the time series. In particular, France explained that the fuels used in the non-ferrous metal category can have very different CO_2 EFs ranging from 95.00 t/GJ for coal to 268.00 t/GJ for blast furnace gas. For solid fuels used in petroleum refining the very high IEF is explained by the use of blast furnace gas (268 t/GJ) in some refineries. The ERT recommends that France provide these explanations in its next NIR, along with data demonstrating the fuel mix evolution for the various source categories throughout the time series.

53. France reports CO_2 emissions from waste incineration with energy recovery under public electricity and heat production, which the ERT considers to be in line with the IPCC good practice and the UNFCCC reporting guidelines. However, the Party uses a constant value for fossil carbon content of 43.0 per cent, based on expert judgement. The ERT reiterates the recommendation from previous reviews

that France should update the value of fossil carbon content in the waste sector, and show how it has varied over time using information data 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 annual inventory submission.

54. The ERT acknowledges the use of EU ETS data by France, in particular in the public electricity and heat production and manufacturing industries and construction categories. However, the NIR does not provide any methodological descriptions as to how these data were prepared and incorporated into the inventory, how France has ensured time-series consistency in accordance with the principles of the IPCC good practice guidance, and if the use of this data was subjected to any QA and verification procedures. The ERT recommends that France provide all relevant methodological information in its next NIR.

2. Stationary combustion: biomass – CH_4

55. In the residential sector, the overall trend of the CH_4 IEF is decreasing and the 2007 value (268.33 kg/TJ) is 45.7 per cent lower than the 1990 value (494.57 kg/TJ), which is the largest decrease among reporting Parties. France clarified during the centralized review that the CH_4 EF is based on a national study. The CH_4 IEF for wood combustion is a weighted value of EF from various kinds of equipments (fireplace, domestic stove, etc.). The CH_4 EF takes into account the introduction of new and more efficient equipment between 1990 and 2007. The ERT recommends that France provide the relevant explanations in its next NIR.

3. Road transportation: diesel oil – CO_2

56. The 2007 value for the CO_2 IEF is 74.70 t/TJ, which has been identified as significantly different from those of other Parties and is larger than the IPCC default value (74.00 t/TJ). Although France explained that the CO_2 EF used for road transport is derived from the COPERT model, the ERT is of the view that this does not justify the estimated CO_2 emissions and IEF, as France is calibrating the results of the COPERT model with the fuel sold within the country. The ERT recommends that France, following the recommendations in the IPCC good practice guidance, report CO_2 emissions from road transportation consistent with the use of an independent tier 1 approach based on the total fuel sold, and that it use the tier 3 approach as a quality check.

4. Civil aviation – CO_2

57. The ERT notes that the Party reports gasoline aviation emissions aggregated with jet kerosene ones. For transparency reasons, the ERT recommends that the Party report the emissions from these two types of fuel separately for the next annual submission.

5. Navigation – CO_2

58. The overall trend of CO_2 emissions is increasing and the 2007 value (2,996.12 Gg) is 77.1 per cent higher than the 1990 value (1,691.86 Gg). During the centralized review week France explained that this trend is due to the large increase in CO_2 emissions from fuel consumption by leisure shipping between 1990 and 2007 (1,402.00 Gg). The ERT recommends that France provide the relevant explanation in its next annual inventory submission.

59. France states in its NIR that since 2001 it can no longer distinguish the sales of maritime bunker fuels for each territory which can impede its ability to properly allocate emissions as domestic or international. The distinction which France currently makes between its territories is based on data available for 2000 from which the relevant quantities are calculated. The ERT recommends that efforts

be made by CITEPA to cooperate with Direction des Matières premières et des Hydrocarbures (DIMAH) to start collecting statistics on marine fuel consumption that clearly address the geographical coverage concerns and hence the domestic/international split.

6. Fugitive emissions: oil and natural gas – CO_2

60. The overall trend of CO_2 emissions is decreasing and the 2007 value (2,923.46 Gg) is 14.7 per cent lower than the 1990 value (3,427.50 Gg). The following inter-annual changes have been identified as significant: 1994–1995 (–16.3 per cent) and 2006–2007 (–12.7 per cent). France clarified that the CO_2 emissions estimates for this category are based on facility-level data, but the ERT is of the view that this explanation alone does not address the issues raised by the observed trend changes. The ERT recommends that France investigate this issue further and provide relevant explanations in its next annual inventory submission.

7. Coal mining and handling – CH_4

61. The ERT appreciates that France provides estimates for emissions from the mines that are already closed. However, the ERT notes that these emissions should be reported under category other non specified (fugitive emissions from solid fuels 1.B.1.c), as was recommended in previous reviews and as opposed to the solid fuel transformation category.

III. Industrial processes and solvent and other product use

A. Sector overview

62. In 2007, emissions from the industrial processes sector amounted to 40,248.08 Gg CO_2 eq, or 7.3 per cent of total GHG emissions and from the solvent and other product use sector amounted to 1,360.60 Gg CO_2 eq, or 0.3 per cent of total GHG emissions. Since 1990, emissions have decreased by 28.6 per cent in the industrial processes sector, and decreased by 34.0 per cent in the solvent and other product use sector. The key driver for the fall in emissions in the industrial processes sector is the chemical industry where emissions of CO_2 from ammonia (NH_3) production; N_2O from nitric acid production; and N_2O from adipic acid production; and PFCs from aluminium production decreased drastically. Within the industrial processes sector, 37.2 per cent of the emissions were from the consumption of halocarbons and SF_6, followed by 32.8 per cent from mineral products, 18.3 per cent from the chemical industry, 10.3 per cent from metal production and 1.4 from the production of halocarbons and SF_6.

63. France reported emissions of CO_2, CH_4 from ferroalloy production, CO_2 from ethylene production, CH_4 from ethylene, methanol, styrene and dichloroethylene production, and N_2O from ethylene production, using notation key “NE”. Responding to the ERT during the centralized review, France mentioned that it will prepare estimates for the following categories: CO_2 from ferroalloys production; and CH_4 emissions from ethylene, styrene and dichoroethylene production. It also stated that emissions of CH_4 from methanol production and N_2O from ethylene production should be reported as “NO”, and that CO_2 emissions from ethylene production should be reported as “IE”. The ERT recommends that the Party ensure, to the extent possible, the inclusion in its next annual submission of emissions for categories currently reported as “NE” and for which methods exist for these categories in the Revised 1996 IPCC guidelines and/or the IPCC good practice guidance. If emissions for a given category cannot be estimated then the Party should provide sufficient explanation in the NIR as to why it cannot be estimated.

64. Uncertainties were not reported for all categories and pollutants, only for key categories, which is not in line with UNFCCC reporting guidelines.

65. France did not report QA/QC procedures for each individual category. The local authorities (Directions Régionales de l'Industrie, de la Recherche et de l'Environnement – DRIRE) are responsible for control of the quality of data emissions, but the NIR does not report on the QA/QC plan and procedures. The methodologies used for QA/QC are not discussed in the NIR and the only references given are to French or European standards which are often slightly different from those in the IPCC good practice guidance. The ERT recommends that the Party improve the documentation of the QA/QC system for the next annual inventory submission.

B. Key categories

1. Cement production – CO_2

66. During the review, France clarified for the ERT that emissions from cement production are estimated by compiling data from individual plants with data from the EU ETS. In their reporting most of the cement plants do not take into account cement kiln dust (CKD) when estimating emissions: for instance for the years 2006 and 2007 only two plants declared CKD in their EU ETS reporting. The ERT recommends that France report on the number and production share of plants that are taking CKD into consideration, and the number of plants using plant specific EFs. The ERT also recommends that France provide an explanation of how time-series consistency was maintained when using data from the EU ETS.

67. The CO_2 IEF for cement production has a constant value for the period 1990–2003 (0.525 t/t clinker). After 2004 the IEF fluctuates: 0.520 t/t in 2004, 0.533 t/t in 2005, and 0.517 t/t in 2006 and 2007. During the review, France clarified that since 2004 total CO_2 emissions from cement production have been calculated using plant-specific data collected under the EU ETS; two plants producing alumina cement started operations in 2004, and the EF for alumina cement is considerably lower than other types (40.0 per cent lower according to France). France also explained that the EF for these plants varies annually with changes to the composition of the raw material, and it is specific for each year. France has also clarified that the EF for 2005 is incorrect, and a typing error had been detected in the database for one plant. The correct emission factor for the year 2005 is 0.52 t CO_2/t clinker. The ERT recommends that France provide more explanations on how EFs are calculated for every year in its next annual inventory submission and check the consistency in the time series, particularly between the constant EF used from 1990 to 2003 and the variable EF used thereafter. The ERT recommends that the Party report the AD, EF and emissions separately for alumina cement and other types of cement in the NIR.

2. Lime production – CO_2

68. For the period 1990–2003 emissions are determined either using plant specific data or average EFs. Since 2004, emissions are estimated by collecting data from industrial plants under EU ETS. The ERT found that while the IEF fluctuates between 0.750 t/t and 0.756 t/t in the period 2004–2006, it decreases in a single year from 2006 to 2007 (0.735 kg CO_2/t of lime) by 2.28 per cent. The Party did not provide an explanation for this fluctuation in the NIR, but France clarified during the review that the decrease in EF for 2007 is due to the consideration of impurities in the stone used as raw material for some plants that are included in the EU ETS. The ERT recommends that France provide more information in the NIR that could explain the observed variations, and if time series was maintained (e.g. how impurities were considered in previous years) in its next annual submission.

69. The previous review encouraged France 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 an EF approach was used. In the 2009 submission France presented the required information in table 33 in the NIR. The ERT finds that the total number of plants in France is not clear, (it is either 26 or 34 in 2007), and recommends that the Party clarify the evolution of the number of plants in its next annual inventory submission.

3. Ammonia production – CO_2

70. One industrial plant (producing 150 kt NH_3 per year on average) uses mostly external hydrogen (H_2) (approximately 90.0 per cent), which is obtained from another factory (as a residual from a plant which produces acetic acid and vinyl acetate) and used directly to produce NH_3. Therefore, France does not account for the CO_2 emissions associated with the production of NH_3 from this H_2 fraction, given that emissions are already considered under production of acetic acid and vinyl acetate (category other in the chemical industry). The ERT agrees with the explanation provided by France, and considers that this prevents double counting of emissions.

4. Nitric acid production – N_2O

71. The N_2O IEF value for 2007 is 0.005 t/t nitric acid. The overall trend of the N_2O IEF is decreasing and the 2007 value is 29.5 per cent lower than the 1990 value (0.007 t/t). During the review France responded to the ERT that, for the period 1990–2002, the trend in the N_2O IEF is explained by the closing of some plants (the number of plants decreased from 19 in 1990 to 10 in 2002), and also more efficient production in other plants. Since 2002, the further decrease is explained by the use of control measures using catalysts in some plants. The ERT recommends that France provide explanations for the trend in its next annual submission.

72. In the NIR France explained that N_2O emissions are estimated based on a continuous measuring system in seven plants, and a discontinuous measuring system in another two plants. To increase transparency the ERT recommends that France report the production share of the seven plants where continuous measurements are made independently and compare this to the total production in France. In addition France should also estimate uncertainty for the two sets of plants separately.

5. Adipic acid production – N_2O

73. France reports AD and EFs as confidential in the CRF tables as there is only one plant producing adipic acid, this is in accordance with the confidentiality agreement signed between CITEPA and the industrial plant.

74. The ERT reiterates the recommendation made in the previous review report that France improves the information on how emission estimates are prepared. France reported that measurements of emissions are used, but it is not clear if they are taken on a continuous or discontinuous basis. During transient regimes, emissions are not measured but are calculated using the mass balance methodology. The ERT recommends that France report the share of N_2O calculated during this period in relation to the total N_2O emissions in order to improve transparency.

75. Emissions increased from 47.76 Gg N_2O in 1990 to 56.20 Gg N_2O in 1997. Thereafter, emissions decreased sharply to 14.69 Gg N_2O in 1998, and again decreased to 5.07 Gg N_2O in 2007. The NIR explains that a treatment system to reduce emissions was introduced in 1998 and annual emissions also vary as a function of the number and duration of transient regimes (stops) of the activity of the industrial plant. Given that this is a category in which AD are treated as confidential, France is encouraged to provide more detailed information on the abatement technology that exists and the rate of destruction of N_2O, and to offer more explanations of the emissions trend.

6. Aluminium production – CO_2 and PFCs

76. The trend for the CO_2 IEF shows strong inter-annual fluctuations: it has decreased by 4.9 per cent from 2003 to 2004, and increased by 6.2 per cent from 2005 to 2006. Similarly there is also a significant decrease of 62.1 per cent in the tetrafluoromethane (CF_4) IEF from 2005 to 2006, and a decrease of 17.0 per cent from 2006 to 2007. During the review, France provided explanations for this trend stating that plants which were not performing well were closed, and better control of the anode

effect had been implemented. The ERT considers that this information does not fully explain the trend for CO_2 IEF. The ERT recommends that France describe the methodologies used to estimate CO_2 and PFC emissions from aluminium production in more detail, for the next annual submission.

77. During the review, France explained that the three French plants in operation provide the national emission register with the CO_2 and CF_4 emissions and these emissions are verified by the French administration. The ERT recommends that France also collect explanations of any inter-annual fluctuations in the IEF as a QC measure.

C. Non-key categories

Ferroalloys production – CO_2

78. France does not estimate emissions from ferroalloys production. The Party uses notation key "NE" and provides the explanation in CRF table 9(a) that 'data not available, to be investigated'. However, the ERT found that data are available on international databases such as United States Geological Survey (USGS) and British Geological Survey (BGS), which report that France has been producing around 1 Mt of ferroalloys yearly since 1990. The ERT encourages France to estimate emissions from this category for completeness, reiterating the recommendations from the initial review report.

IV. Agriculture

A. Sector overview

79. In 2007, emissions from the agriculture sector amounted to 95,728.32 Gg CO_2 eq, or 18.0 per cent of total GHG emissions. Since 1990, emissions have decreased by 11.1 per cent. The key drivers for the fall in emissions are the decrease in emissions from agriculture soils and enteric fermentation. Within the sector, 49.5 per cent of the emissions were from agriculture soils, followed by 29.6 per cent from enteric fermentation, 20.8 per cent from manure management and 0.1 per cent from rice cultivation. Emissions of N_2O accounted for 55.8 per cent and CH_4 accounted for 44.2 per cent of total emissions. Emissions of CH_4 decreased by 5.5 per cent and N_2O emissions decreased by 11.5 per cent over the period 1990–2007.

80. The reduction in CH_4 emissions is driven by the trend in enteric fermentation. Emissions decrease from 1990 to 2004 and have become quite stable after 2004, following the trend in animal population (dairy cattle numbers have decreased between 1990 and 2007) and the move to more productive husbandry techniques in milk production. The reduction in N_2O emissions is mostly linked to the decreasing use of synthetic fertilizers in agricultural soils over the period 1990–2007; this is as a result of increasing costs and is also due to a reduction in the use of manure from livestock production.

81. France's inventory is complete for the agriculture sector and no categories are reported as "NE".

82. France performed recalculations for enteric fermentation and manure management estimates. The CH_4 EFs for enteric fermentation were revised for the entire time series, which resulted in an increase in the estimated CH_4 emissions from this category: + 306.91 Gg CO_2 eq for 1990 (a 1.0 per cent increase) and + 508.89 Gg CO_2 eq for 2006 (a 1.8 per cent increase). In terms of manure management, France updated their livestock numbers which resulted in an increase in estimated emissions of CH_4 from this category: + 70.56 Gg CO_2 eq for 1990 (a 0.5 per cent increase) and + 96.46 Gg CO_2 eq for 2006 (a 0.7 per cent increase).

83. There are some transparency issues due to: the spread of information between the NIR and OMINEA reports and the brevity of the information provided in these two documents. In general, explanations of the methodologies and assumptions used to establish parameters and EFs are poorly

developed in the NIR and OMINEA report. The ERT recommends that France improve the description of the underlying assumptions and provide better documentation of the supporting data. In CRF table summary 3, referring to enteric fermentation and manure management, France refers to the use of tier 1 and CORINAIR as 'methods applied'. This information is not consistent with the information in the NIR where tier 1 and tier 2 methodologies are reported as being used. The ERT recommends that France prepare consistent reporting or provide further explanations in the NIR, in particular clarifying whether the CORINAIR methodology is used or not.

B. Key categories

1. Enteric fermentation – CH_4

84. France has not reported their methodological level (tier) in a transparent manner. In the main body of the NIR it states that the IPCC tier 1 methods for all animal types is used, except for non-dairy and dairy cattle, where tier 2 is used. The information in the OMINEA report indicates that country-specific EFs were used for all animal species, although it is not clear if an enhanced characterization for all livestock was used. CRF table summary 3 reports methodologies used as tier 1 and CORINAIR. Responding during the centralized review, France explained that it uses country-specific EFs that were developed by the Institut National de la Recherche Agronomique (INRA) using tables of recommended quantities of animal fodder and converting the quantities into energy values. This explanation is not fully consistent with explanations in the NIR which state that an energy model was used for dairy cattle and an average EF based on measurements was used for non-dairy cattle. The ERT recommends that France update the description of the methodology in its next annual inventory submission.

85. France has corrected the difference that was noted in the previous submission between the values of milk yield reported under the Convention and those reported under the Kyoto Protocol. The ERT commends the party for that action.

86. During the review, France provided explanations for the difference between livestock numbers supplied by the Food and Agriculture Organization of the United Nations (FAO) and those taken from national statistics: FAO data for France only includes the mainland while the inventory uses data for both the mainland and overseas territories, also piglets are not accounted for in FAO statistics and are considered together with sows. The ERT encourages France to provide a full explanation of this in its next inventory submission as requested in previous reviews.

2. Manure management – CH_4

87. France applied a tier 2 approach and used country-specific data on the share of the animal waste management systems (AWMS) to estimate emissions of CH_4 from manure management.

88. The 2007 IEF for swine (20.9 kg/head/year) is among the highest values of reporting Parties (ranging from 1.4 to 23.2 kg/head/year) and is higher than the IPCC default value (10 kg/head/year for temperate western Europe). During the previous review, France explained that the EF values were based on the IPCC default methane conversion factors (MCF) for temperate areas and country-specific values for AWMS. Although France declared that further research is in progress to verify the validity of the resultant IEF, it explained that the swine CH_4 IEF is high because swine are essentially treated in liquid systems and MFC for liquid systems is high. The ERT reiterates the recommendations made during the previous review that France include this explanation in its next annual inventory submission, as well as an explanation of how livestock numbers are allocated to each AWMS.

3. Direct soil emissions from agriculture soils – N_2O

89. During the previous review, France explained that the difference between the IEF used for sewage sludge and applied to soils and compost spreading (0.01125 kg N_2O-N/kg N), and the IPCC

default value (0.0125 kg N_2O-N/kg N) could be explained by the fact that nitrogen volatilization was not deduced in the AD for this category. France has solved this issue in the present submission, and the reported IEF is equal to the IPCC default.

V. Land use, land-use change and forestry

A. Sector overview

90. In 2007, net removals from the LULUCF sector amounted to –72,339.29 Gg CO_2 eq. Since 1990 net removals have increased by 80.6 per cent. The key driver for the rise in net removals in the period 1990–2007 is the continuously increasing trend of gains in the living biomass pool for both categories: forest land remaining forest land (+12.8 per cent) and land converted to forest land (+121.0 per cent). Also relevant is the increase in the area reported under the forest land category (+6.9 per cent). However, both the above-mentioned increasing trends show a discontinuity in 2005–2006 with a sudden increase of 23.4 per cent for the category land converted to forest land and a decrease of 4.2 per cent for forest land remaining forest land. The ERT therefore recommends that France revise the time series of both AD and EFs in order to remove unexpected inter-annual variations or provide information in the NIR to explain the unlikely trends and discontinuities. Within the sector, 70.3 per cent[9] of the emissions/removals were from forest land, followed by 15.1 per cent from cropland, 9.7 per cent from grassland and 3.4 per cent from settlements. Category other accounted for 0.9 per cent, other land accounted for 0.3 per cent, and the remaining 0.2 per cent was from wetlands.

91. The ERT noted that the inventory does not include emissions and removals occurring in some of France's overseas territories COM or CO_2 emissions from organic soils. Some categories have not been reported: net carbon stock change (CSC) from mineral soils in tropical forests for forest land remaining forest land; net CSC from mineral soils for wetlands, settlements and other land converted to forest land; net CSC from mineral soils for cropland remaining cropland; net CSC from mineral soils for wetlands, settlements and other land converted to cropland; net CSC from mineral soils for cropland remaining grassland; and net CSC from mineral soils for wetlands, settlements and other land converted to grassland. The ERT recommends that France increase completeness of its report by including organic soils and overseas territories. The ERT also recommends that the Party ensure, to the extent possible, the inclusion in its next annual submission of emissions for categories currently reported as "NE" and for which methods exist for these categories in the IPCC good practice guidance for LULUCF. If emissions for a given category cannot be estimated then the Party should provide sufficient explanation in the NIR as to why it cannot be estimated.

92. Only a few categories have been reported as "NO": CO_2 net emissions from dead organic matter (DOM) for forest land remaining forest land; net CSC from living biomass and DOM for land converted to forest land; net CSC from living biomass for coniferous forest converted to wetland; net CSC for cropland, grassland, settlements and other land converted to wetland; net CSC for cropland, grassland, wetland and other land converted to settlement; net CSC for cropland, grassland, wetland and settlements converted to other land; N_2O emissions from fertilization of forest land; and CH_4 and N_2O emissions from drainage of soil in forest land and wetland. However, there is no supporting information to justify using the notation key "NO". The ERT recommends that France either provide information to justify the use of "NO".

93. The information provided on AD, EFs and methodologies is generally not transparent enough in this sector and the consequent lack of transparency does not allow the ERT to verify the compliance of reported estimates with reporting principles and good practices. Uncertainty analysis for each reported

[9] The per cent of each category was calculated by comparing the net emissions/removals expressed as an absolute value, to the sum of the absolute values of the forest land, cropland, grassland, wetlands, settlements, other land, and other categories.

category has not been provided although the contribution of the whole sector to the inventory uncertainty has been reported. Therefore, the ERT recommends that France include a comprehensive and clear description of the methods, AD, EFs and uncertainty values applied for estimating emissions of CO_2, CH_4 and N_2O and removals of CO_2 in its next inventory submission, while avoiding repetitions.

94. The NIR does not include sufficient information on the approaches and methods used for a consistent land representation. The ERT believes, from the information available, that France has not developed a complete and consistent land representation system, with the potential consequence that double counting or omission areas may occur and the inventory may include biased estimates of sources or sinks. For example, the total reported land area for 1990 is 53,817,345 ha, and this changes in every subsequent year of the time series, and is equal to 53,782,360 ha in 2007. However, according to data reported in the NIR, the total land area should be equal to 63,283,400 ha for the whole time series. Moreover, in comparison with other European countries, France reported an unusually high share of the reported land area under the land conversion categories (from all land use change categories): on average 35.1 per cent of the reported land area was under conversion.

95. The ERT recommends that France in its next annual inventory submission:

(a) Use a consistent representation of total land area in accordance with the IPCC good practice guidance for LULUCF;

(b) Provide sufficient documentation on the approaches, methods and data used for land representation;

(c) Include a complete set of annual land use and land-use change matrices since 1971.

96. France reports CH_4 removals in undisturbed forests under category other, which seems to include mainly the oxidation of CH_4 to CO_2 in soils. To estimate these CH_4 removals a country-specific factor of 2.4 kg/ha is provided in the NIR, but AD (areas of undisturbed forest) are not provided. Moreover, such a sink is not reported in Gg CH_4 but is converted to Gg CO_2 eq and added to the mineral soils in forest land category. The ERT noted that the reported sink has not been allocated according to IPCC good practice guidance for LULUCF. Therefore, the ERT recommends that the CH_4 removals be moved to category other (5.G) and that relevant information is reported in the NIR in subsequent annual submissions.

97. The ERT noted that carbon stock changes estimates may be biased since some unmanaged areas of forest in the mainland France have not been reported, while data collected by the forest inventory on those areas have been used for estimating carbon stock changes in managed forests (in practice data belonging to another category have been used for calculating estimates belonging to the forest land category). Unless the whole forest area is considered managed, the ERT recommends that France remove data collected from unmanaged areas from its calculation of carbon stock changes in managed forest land.

B. Key categories

1. Forest land remaining forest land – CO_2

98. In mainland France, the Party considers the DOM pool to be in equilibrium, which is a tier 1 assumption. Nevertheless France reports that the living biomass and the soil organic carbon (SOC) pools show an increasing trend in the period 1990–2007. Considering that forest land remaining forest land is a key category, the ERT recommends that France either provide information demonstrating that DOM is in equilibrium, or use country-specific data and report a complete time series of carbon stock changes in the DOM pool.

99. France uses the IPCC default methodology (gain-loss) for estimating carbon stock changes in the living biomass. However, France has a national forest inventory system that has already completed three

cycles of sampling. Therefore, the ERT encourages France to apply the stock change method using data from its national forest inventory, at least for verification of the estimates.

100. The ERT noted that the total carbon stock per hectare of tropical forests for the whole time series is in equilibrium. However, such equilibrium is reached through an accounting artifice based on two divergent assumptions whose effects cancel each other out: a constant increase of the living biomass carbon stock per hectare (0.03 Gg C/ha) and a constant decrease of the DOM carbon stock per hectare (0.03 Gg C/ha); while soil organic matter is reported as "NE". Considering it is unlikely that in a forest the DOM would decrease while the living biomass increased, the ERT recommends that the Party either revise the estimates or provide information in the NIR of its next annual submission to support the reported data.

2. Land converted to forest land – CO_2

101. France reports a continuously increasing trend for net carbon stock changes in the living biomass pool: the 2007 CO_2 IEF value (1.46 Mg C/ha) is 121.0 per cent higher than the 1990 value (0.66 Mg C/ha). Considering that France is reporting land converted to forest land for a 20-year period in this category and that the total area of land reported under this category increased by 26.3 per cent between 1990 (1,522.64 kha) and 2007 (1,922.35 kha), the ERT would expect a decreasing trend for the above-mentioned parameter over this period. Therefore, the ERT recommends that the Party provide relevant explanations for this trend in its next submission.

3. Land converted to cropland – CO_2 and N_2O

102. The ERT noted that France reports two different values for land area in CRF table 5.B and in CRF table 5(III). The ERT recommends that France resolve this inconsistency in its next submission.

C. Non-key categories

1. Forest land converted to wetland – CO_2

103. The ERT noted a large discontinuity between 1990 and 1991 for values of net carbon stock change in living biomass per hectare (a decrease of 56.3 per cent) and net carbon stock change in DOM per hectare (a decrease of 66.9 per cent). A smaller variation in the same variables has also been noted in the forest land converted to other land use category. The ERT recommends that France investigate the causes of this inconsistency and review the time series, or provide information to clarify the causes of the detected variation in its next annual submission.

2. Other land remaining other land

104. France reports AD for this category as "NO" in spite of the fact that there are areas in France which should be classified under this category. Indeed, France reported land-use changes from and to the other land category. The ERT recommends that France report a consistent time series of AD for other land in its next annual inventory submission.

3. Biomass burning – CO_2, CH_4 and N_2O

105. France reported the CO_2 emissions from this source for each land use category as "NO". However, considering that CH_4 and N_2O emissions have been reported for this category, it is technically impossible that CO_2 has not been emitted as a consequence of biomass burning. Therefore, the ERT recommends that France use the notation key "IE" and clarify which category CO_2 emissions from biomass burning are being included under.

106. Moreover, the ERT noted that, in order to estimate carbon stock losses due to forest fires, France reduces the increment rate applied for calculating gains in living biomass. This is not good practice since

carbon stock losses due to forest fires must either be quantified and then subtracted from carbon stock gains, according to the default methodology, or accounted for in the net change resulting from applying the stock change approach. Therefore, the ERT recommends that France revise its methodology to remove inconsistencies and report all relevant information in its next submission.

107. The ERT noted that France did not give details on either the AD or IEF used to report estimates of CH_4 and N_2O emissions. The ERT recommends that in its next annual submission France improve transparency and report the AD and IEFs used for calculating the reported estimates along with information that would allow the ERT to understand the applied methodology and reconstruct the estimates provided.

4. Other – CO_2

108. France uses notation key "NO" for harvested wood products. The ERT recommends that France either provide information that justifies the use of notation key "NO".

VI. Waste

A. Sector overview

109. In 2007, emissions from the waste sector amounted to 10,030.49 Gg CO_2 eq, or 1.9 per cent of total GHG emissions. Since 1990, emissions have decreased by 16.7 per cent. The key drivers for the fall in emissions are the decrease in CH_4 from solid waste disposal (caused by decreased deposition of wastes in landfills, and increased CH_4 recovery), and the decrease in CO_2 emissions from waste incineration without energy recovery (while more wastes are incinerated with energy recovery, emissions from which are reported in the energy sector). However, the decrease in emissions was partially countered by an increase in CH_4 emissions from wastewater treatment (caused by the growing number of people connected to septic systems). Within the sector, 55.1 per cent of the emissions were from solid waste disposal, followed by 22.4 per cent from wastewater treatment, 18.1 per cent from waste incineration and 4.4 per cent from other waste activities.

110. Generally, the waste sector is almost complete, with the exception of emissions of CH_4 from industrial waste-water handling and CH_4 and N_2O from sludge treatment from domestic and commercial waste-water handling, which are reported as "NE". The ERT commends France for the many improvements made to the transparency of its 2009 submission, and has implemented many of the recommendations of the ERT from the 2008 report. During the centralized review the Party informed the ERT that, for the next annual submission, it is planning to estimate emissions of CH_4 emissions from industrial waste-water handling and from sludge from waste-water handling, and that, concerning domestic and commercial waste-water handling, there are no N_2O emissions from anaerobic digestion of sludge. The ERT noted France's plans and recommends that the Party ensure, to the extent possible, the inclusion in its next annual submission of emissions for categories currently reported as "NE" and for which methods exist for these categories in the Revised 1996 IPCC guidelines and/or the IPCC good practice guidance. If emissions for a given category cannot be estimated then the Party should provide sufficient explanation in the NIR as to why it cannot be estimated.

111. The ERT reiterates the recommendation made during previous reviews that France provide more detailed information on the methodologies, AD and EFs used in the waste sector, and provide more explanations on the national circumstances relating to this sector in its next NIR.

B. Key categories

1. Solid waste disposal on land – CH_4

112. France used a tier 2 methodology to estimate CH_4 emissions from solid waste disposal sites (SWDS). National statistics and survey data were used along with both country-specific and default EFs. Since its last submission, France has improved the transparency of its reporting by providing more detailed information on waste composition and the trends in waste disposal practices in its NIR.

113. During the review week France provided some important clarifications to the ERT. France has explained how its CH_4 emissions from waste disposal are decreasing, while CH_4 collection is increasing. France has provided the ERT with more detailed information on the methodology it is using to estimate CH_4 emissions from solid waste, including the k rates used, and also the fraction of waste going to SWDS. France plans to include this additional information in its next NIR and is encouraged to do so by the ERT. France has also improved the documentation of its degradable organic carbon (DOC) value with country-specific data, from studies made at individual landfills, including measurement data. The ERT encourages France to provide more details on these studies in its next annual submission.

2. Wastewater treatment – CH_4

114. France has used a tier 2 methodology combined with country-specific parameters. Following the recommendations of the previous review, France is now providing AD in a more transparent way. In particular, France has improved transparency in the subcategory of waste-water treatment by including more information on the share of each wastewater treatment system. However, the Party is not yet providing sufficient information on how the EFs were derived. The ERT recommends that France make further improvements to the transparency of this subcategory. France stated during the centralized review that it will report data on biochemical oxygen demand and maximum CH_4 producing capacity in its next NIR. Industrial and domestic sludge emissions are reported as "NE". However, the ERT notes that the NIR explains that CH_4 emissions from sludge are included in the agriculture sector. The ERT is of the view that France should consider revising the notation key or providing explanations in the next annual submission.

3. Waste incineration – CO_2

115. Waste incineration emissions are estimated for several fractions of wastes (biogenic, dangerous industrial waste incineration, municipal waste incineration without energy recovery, agricultural plastic film burning, and other non-specified waste incineration) using tier 1 or 2 methodologies, depending on the waste category, and country-specific or CORINAIR EFs, as described in the OMINEA report. The ERT considers that the use of these methods is appropriate.

116. France has improved the transparency of its NIR by providing information on the composition of wastes incinerated. However, the NIR does not yet clearly distinguish between biogenic and non-biogenic materials for combustion. During the review, France provided information to clarify this issue, and it plans to update its NIR next year to clearly state which materials are included. The ERT welcomes this intention.

C. Non-key categories

1. Wastewater treatment – N_2O

117. Documentation of AD is not clearly explained in the NIR or CRF tables. France has stated that it will report per capita protein values in its next CRF tables, and the ERT encourages the Party to do so.

2. Composting – CH_4 and N_2O

118. France estimates emissions from composting using country-specific EFs for CH_4 and N_2O per unit of waste composted. The country-specific EFs are within the range of values available from recognized international scientific literature.

3. Waste incineration – CH_4 and N_2O

119. References for some EFs are not provided or are unclear in the OMINEA report which forms part of the NIR (e.g. N_2O from waste incineration). The ERT recommends that France provide clear references in its next submission.

VII. Supplementary information required under Article 7, paragraph 1, of the Kyoto Protocol

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

120. France submitted estimates for afforestation, reforestation and deforestation activities under Article 3, paragraph 3 and for one elected activity under Article 3, paragraph 4: forest management.

121. The ERT notes that France did not report all of the information requested by decisions 15/CMP.1. The report did not contain the following information:

(a) Information which demonstrates that activities under Article 3, paragraph 3, began on or after 1 January;

(b) Documentation which demonstrates that all afforestation and reforestation activities included in the identified units of land are directly human-induced;

(c) Information which demonstrates that forest management has occurred since 1 January 1990 and is human-induced and a description of how the definition of forest management has been implemented and applied consistently over time;

(d) Information on units of land subject to Article 3, paragraph 3 activities otherwise subject to elected activities under Article 3, paragraph 4, and demonstration that these are not accounted for under activities under Article 3, paragraph 3;

(e) Information on the size and geographical location of forest areas that have lost forest cover (e.g. harvesting) but which are not yet classified as deforested.

122. The ERT also notes that France did not include other information in accordance with IPCC good practice guidance for LULUCF:

(a) A complete and transparent set of information on applied methodologies, background data, assumptions and related evidences and calculation steps for the activities under Article 3, paragraph 3 and for forest management;

(b) Information which demonstrates that forest management is a system of practices for stewardship and use of forest land aimed at fulfilling relevant ecological (including biological diversity), economic and social functions of the forest in a sustainable manner;

(c) Information on the dead wood carbon pool which has been reported with zero values for afforestation, reforestation and deforestation activities in mainland France;

(d) Information on whether or not indirect and natural GHG emissions and removals have been factored out;

(e) Uncertainty estimates;

(f) Key category analysis for Article 3, paragraph 3, activities and for forest management in accordance with the IPCC good practice guidance for LULUCF.

123. The ERT strongly recommends that France report all the information required by relevant Conference of the Parties and CMP decisions and the IPCC good practice guidance for LULUCF in its next submission, including information noted in paragraphs 121 and 122.

124. The ERT also recommends that the Party resolve the following inconsistencies that may be affecting estimates of activities under Article 3, paragraphs 3 and 4:

(a) Land use and land-use change areas are not consistently estimated (see para. 94). For each reported year the area under land conversion from other uses to forest may have been overestimated and the area under land conversion from forest to other uses may have been underestimated;

(b) The potential inclusion under afforestation and reforestation activities of land spontaneously converted to forest when this is not the result of direct, human-induced actions.

125. The ERT noted an inconsistency in land identification of areas under forest management. Within the geographical boundaries of the country two kinds of forest lands are included: forest land under forest management and forest land not under forest management. Therefore it is not possible to identify, and track, lands under forest management without additional information to identify each kinds of forest land. The ERT recommends that France provide additional information in its next annual submission.

B. Information on Kyoto Protocol units

1. Standard electronic format and reports from the national registry

126. France has reported information on its accounting of Kyoto Protocol units in the appropriate SEF tables, as required by decisions 15/CMP.1 and 14/CMP.1. The ERT took note of the findings and recommendations included in the SIAR on the SEF tables and their comparison report.[10] The SIAR was forwarded to the ERT prior to the review, pursuant to decision 16/CP.10. The ERT reiterates the main findings and recommendations contained in the SIAR.

127. The ERT noted from the SIAR that information on the accounting of Kyoto Protocol units has been prepared and reported in accordance with section I.E of the annex to decision 15/CMP.1, and reported in accordance with decision 14/CMP.1 using the SEF tables. This information is consistent with that contained in the national registry and with the records of the independent ITL and the clean development mechanism registry and meets the requirements set out in paragraphs 88 (a)–(j) of the annex to decision 22/CMP.1.

128. The transactions of Kyoto Protocol units initiated by the national registry were in accordance with the requirements of the annex to decision 5/CMP.1 and the annex to decision 13/CMP.1. No non-replacement has occurred.

2. National registry

129. The ERT noted that France had reported information on the national registry that is complete and has been submitted in accordance with the annex to decision 15/CMP.1. The ERT further noted from the SIAR and its finding that the national registry continues to perform the functions set out in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1, and continues to adhere to the technical standards

[10] The SEF tables comparison report is prepared by the ITL administrator and provides information on the outcome of the comparison of data contained in the Party's SEF tables with corresponding records contained in the ITL.

for data exchange between registry systems in accordance with relevant decisions of the CMP. The national registry has adequate security, data safeguard and disaster recovery measures in place and its operational performance is adequate.

130. The ERT noted from the SIAR that France should improve, in its next annual submission, its reporting of registry related issues and that France has not made the required information referred to in paragraphs 46 and 47 of the annex to decision 13/CMP.1 publicly available. The ERT also noted that France had identified the public information pursuant to paragraphs 46 and 47 of the annex to decision 13/CMP.1 as confidential. The ERT reiterated the recommendation in the SIAR that France enhance the interface of its registry by providing the required information mentioned above, and any changes relating to public information, in its next submission in its next annual submission. The ERT also recommends that the Party make clear on its website which components of this information are confidential.

131. The ERT further recommends that France, in its next annual submission;

(a) Report on changes to the consolidation of its national registry and the related cooperation arrangements, in accordance with paragraph 32(b) of the annex to decision 15/CMP.1;

(b) Improve its reporting on changes to test results and test plans developed with the aim of testing the registry's performance and security procedures, in accordance with paragraph 32(j) of the annex to decision 15/CMP.1.

132. The ERT noted the recommendation in the SIAR that France improve the annex to its NIR which relates to the national registry. During the centralized review, France informed the ERT that it intends to incorporate this annex into the main part of the NIR. The ERT welcomes this decision and recommends that France follow the annotated outline of the NIR provided by the UNFCCC secretariat in its next annual submission.

133. The ERT recommends that France improve the measures put in place in its registry with a view to minimising operator error and ensuring efficient exchange of data with other registries and the ITL, in accordance with paragraphs 115(b) and 115(e) of the annex to decision 22/CMP.1.

134. The ERT recommends also that the following measures be put in place by the end of 2009 at the latest and that France report in its next annual submission on the changes made to its registry following the successful implementation and testing of these measures, including any relevant test plans and test reports:

(a) Automated internal validations should be performed on account type codes before messages are submitted to the ITL;

(b) Mitigation strategies should be implemented to minimise the reuse of recently used transaction unit blocks;

(c) Automated internal validations should be performed to prevent users from proposing units involved in an inconsistency with the ITL;

(d) A review by the Party of the design and implementation of France's registry should take place to prevent inconsistencies from occurring, in accordance with paragraph 25(e) of annex to decision 24/CP.8;

(e) Measures to mitigate and reduce the internal fragmentation of unit blocks should be introduced;

(f) Measures should be brought in to minimise user error with regard to voluntary cancellations.

3. Calculation of the commitment period reserve

135. France has reported its commitment period reserve in its 2009 annual submission. The Party reported that its commitment period reserve has not changed since the initial report review (2,537,663,976 t CO_2 eq) as it is based on the assigned amount and not the most recently reviewed inventory. The ERT agrees with this figure.

C. Changes to the national system

136. France has reported no changes in its national system since the previous annual submission. The description in the NIR is, apart from the name of the Ministry (Ministère de l'Ecologie, de l'Energie, du Développement Durable et de l'Aménagementdu Territoire), is the same as in earlier submissions. The ERT concluded that the Party's national system continues to be in accordance with the requirements of national systems outlined in decision 19/CMP.1.

D. Changes to the national registry

137. France describes in an annex to the NIR and in accordance with section I.G of the annex to decision 15/CMP.1 a small technical change in its national registry, the release of a new version of the registry software. The ERT recommends that France include a statement in its next NIR listing the changes in the national registry or, when no changes occur, state this explicitly in the NIR.

VIII. Conclusions and recommendations

138. France made its annual submission on 6 April 2009 and resubmitted data on 7 April 2009. The Party indicated that it is a voluntary submission under the Kyoto Protocol. The annual submission contains the GHG inventory (comprising CRF tables and an NIR) and supplementary information under Article 7, paragraph 1, of the Kyoto Protocol information (on Article 3, paragraphs 3 and 4, of the Kyoto Protocol, activities, information on Kyoto Protocol units, changes to the national system and the national registry). This is in line with decision 15/CMP.1.

139. The Party's inventory is generally prepared in line with the UNFCCC reporting guidelines. The inventory submission is generally complete and the Party has submitted a NIR and a set of CRF tables for the years 1990–2007 which is complete except for tables 7 and 8(b) which are missing. The inventory is generally complete in terms of geographical coverage, years and sectors, as well as generally complete in terms of categories and gases. However, the ERT also concludes that the completeness of the inventory submission could be improved by including estimates for categories currently reported as "NE", particularly categories in the waste sector and the industrial processes and solvent and other product use sector, for which methodologies for estimating emissions are available in the Revised 1996 IPCC Guidelines and the IPCC good practice guidance, and carbon pools and land uses reported as "NE" and "NO" in the LULUCF sector.

140. France's inventory is generally in line with the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF.

141. The information submitted on a voluntary basis in accordance with Article 7, paragraph 1, of the Kyoto Protocol has been prepared and reported in accordance with decision 15/CMP.1. France has not submitted, on a voluntary basis, information on the minimization of adverse impacts under Article 3, paragraph 14, of the Kyoto Protocol.

142. France has reported, on a voluntary basis, information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol. The ERT concluded that the national system was not yet providing all of the information required. Therefore, the ERT strongly encourages France to improve the quantity and

quality of information submitted, and to remove inconsistencies in the reported data, in its next annual submission.

143. The national system continues to perform its required functions as set out in the annex to decision 19/CMP.1. France has reported no changes to the national system since the previous annual submission. France has recently increased the resources available for the elaboration of the inventory. The ERT commends France for this achievement.

144. The national registry continues to perform the functions set out in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1, and continues to adhere to the technical standards for data exchange between registry systems in accordance with relevant CMP decisions.

145. France has reported information on its accounting of Kyoto Protocol units in accordance with section I.E of the annex to decision 15/CMP.1, and used the appropriate reporting format tables as required by decision 14/CMP.1. The ERT noted from the SIAR that France must improve the availability of public information.

146. In the course of the review, the ERT formulated a number of recommendations[11] relating to the transparency of the information presented in France's annual submission. The key recommendations are that France:

(a) Improve the readability and transparency of the NIR by restructuring it to achieve a better balance between what is included in the main body of the NIR and what is included in the OMINEA report. The contents of the NIR should also include more information on the selection of EFs and the justification of trends. France should consider this task a priority;

(b) Develop activities related to the specific functions of the national system for inventory preparation: implement a tier 2 key category analysis; improve transparency in the reporting of uncertainty analysis; and implement external reviews of the inventory as part of the QA procedures;

(c) Elaborate a detailed reference approach, consistent for the whole time series, in a timely manner;

(d) Provide explanations of how time-series consistency is maintained, in particular when EU ETS data for more recent years is used. Otherwise consider using methodologies that are in line with the IPCC good practice guidance to enhance time-series consistency;

(e) Provide estimates of emissions and removals for the few categories reported as "NE", if methods are available.

IX. Questions of implementation

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

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

Annex I

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.html>.

Intergovernmental Panel on Climate Change. *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. Available at <http://www.ipcc-ggip.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.html>.

"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 2009. Available at <http://unfccc.int/resource/docs/2009/asr/fra.pdf>.

Synthesis and assessment report on the greenhouse gas inventories submitted in 2009. Available at <http://unfccc.int/resource/webdocs/sai/2009.pdf>.

FCCC/ARR/2008/FRA. Report of the individual review of the greenhouse gas inventory of France submitted in 2007 and 2008. Available at <http://unfccc.int/resource/docs/2009/arr/FRA.pdf>.

UNFCCC. *Standard Independent Assessment Report*, Parts I and II. Unpublished document.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Frédérique Millard (Ministère de l'écologie, de l'énergie, du développement durable et de la mer (MEEDDM)), including additional material on the methodology and assumptions used. The following documents were also provided by France:

ADEME. 2003. Annex 2. *Outil de calcul dés emissions dans l'air de CH_4, CO_2, SOx, NOx, issues des centres de stockage de dechéts ménagers et assimilés*.

Annex II

Acronyms and abbreviations

AD	activity data
AWMS	animal waste management systems
CF_4	tetrafluoromethane
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CKD	cement kiln dust
CRF	common reporting format
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CSC	carbon stock change
DOC	dead organic carbon
DOM	dead organic matter
EF	emission factor
ERT	expert review team
EU	European Union
EU ETS	European Union emissions trading scheme
FAO	Food and Agriculture Organization of the United Nations
Gg	gigagrams
GHG	greenhouse gas; unless indicated otherwise, GHG emissions are the sum of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 without GHG emissions and removals from LULUCF
GJ	gigajoule (1 GJ = 10^9 joule)
H_2	hydrogen
HFCs	hydrofluorocarbons
IEA	International Energy Agency
IE	included elsewhere
IEF	implied emission factor
IPCC	Intergovernmental Panel on Climate Change
ITL	international transaction log
kg	kilogram (1 kg = 1 thousand grams)
LULUCF	land use, land-use change and forestry
m^3	cubic metre
MCF	methane conversion factors
Mg	megagram (1 Mg = 1 tonne)
Mt	million tonnes
NA	not applicable
NE	not estimated
NH_3	ammonia
NO	not occurring
N_2O	nitrous oxide
NIR	national inventory report
PFCs	perfluorocarbons
QA/QC	quality assurance/quality control
SEF	standard electronic format
SF_6	sulphur hexafluoride
SIAR	Standard Independent Assessment Report
SO_2	sulphur dioxide
SOC	soil organic carbon
SWDS	solid waste disposal sites
TJ	terajoule (1 TJ = 1012 joule)
UNFCCC	United Nations Framework Convention on Climate Change

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