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Report on the individual review of the annual submission of France submitted in 2015*

Note by the expert review team

Summary

Each Party included in Annex I to the Convention must submit an annual greenhouse gas (GHG) inventory covering emissions and removals of GHG emissions for all years from the base year (or period) to two years before the inventory due date (decision 24/CP.19). Parties included in Annex I to the Convention that are Parties to the Kyoto Protocol are also required to report supplementary information required under Article 7, paragraph 1, of the Kyoto Protocol, with the inventory submission due under the Convention. This report presents the results of the individual inventory review of the 2015 annual submission of France, conducted by an expert review team in accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol”. The review took place from 19 to 24 September 2016 in Paris, France.

* In the symbol for this document, 2015 refers to the year in which the inventory was submitted, not to the year of publication.

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I. Introduction¹

1. This report covers the review of the 2015 annual submission of France organized by the UNFCCC secretariat, in accordance with the “Guidelines for review under Article 8 of the Kyoto Protocol” (decision 22/CMP.1, as revised by decision 4/CMP.11) (hereinafter referred to as the Article 8 review guidelines). As indicated in the Article 8 review guidelines, this review process also encompasses the review under the Convention, as described in the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention” (hereinafter referred to as the UNFCCC review guidelines) and particularly part III, “UNFCCC guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention”. The review took place from 19 to 24 September 2016 in Paris, France, and was coordinated by Mr. Dirk Nemitz and Mr. Roman Payo (UNFCCC secretariat). Table 1 provides information on the composition of the expert review team (ERT) that conducted the review of France.

Table 1

Composition of the expert review team that conducted the review of France

<i>Area of expertise</i>	<i>Name</i>	<i>Party</i>
Generalist	Mr. Ioannis Sempos	Greece
Energy	Ms. Gherghita Nicodim	Romania
IPPU	Mr. Stanford Mwakasonda	United Republic of Tanzania
Agriculture	Mr. Daniel Bretscher	Switzerland
LULUCF	Mr. Sandro Federici	San Marino
Waste	Ms. Mayra Rocha	Brazil
Lead reviewers	Mr. Mwakasonda Mr. Sempos	

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry.

2. This report contains findings based on the assessment by the ERT of the 2015 annual submission against the Article 8 review guidelines. The ERT has made recommendations to resolve those findings related to issues,² including issues related to problems.³ Other findings, and if applicable, the ERT’s encouragements to resolve them, are also included.

3. 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.

4. Annex I shows annual greenhouse gas (GHG) emissions for France, including totals excluding and including the land use, land-use change and forestry (LULUCF) sector, indirect carbon dioxide (CO₂) emissions and emissions by gas and by sector. Annex I also contains background data related to emissions and removals from activities under Article 3, paragraph 3, forest management under Article 3, paragraph 4, and additional activities

¹ At the time of publication of this report, France had not yet submitted its instrument of ratification of the Doha Amendment, and the amendment had not yet entered into force. The implementation of the provisions of the Doha Amendment is therefore considered in this report in the context of decision 1/CMP.8, paragraph 6, pending the entry into force of the amendment.

² Issues are defined in decision 13/CP.20, annex, paragraph 81.

³ Problems are defined in decision 22/CMP.1, annex, paragraphs 68 and 69, as revised by decision 4/CMP.11.

under Article 3, paragraph 4, of the Kyoto Protocol (KP-LULUCF), if elected, by gas, sector and activity for France.

5. Information to be included in the compilation and accounting database can be found in annex II.

6. The ERT notes that France's 2015 annual submission was delayed, consistent with decision 6/CMP.9, paragraph 4. As a result, the review of the 2015 annual submission is being held in conjunction with the review of the 2016 annual submission, in accordance with decision 10/CMP.11, paragraph 1. To the extent that identical information is presented in both annual submissions, the ERT has reviewed this information only once, and, as appropriate, has replicated the findings below in both the 2015 and the 2016 annual review reports.

II. Summary and general assessment of the 2015 annual submission

7. Table 2 provides the ERT assessment of the annual submission with respect to the tasks undertaken during the review. Further information on the issues identified, as well as additional findings, may be found in tables 3 and 5 below.

Table 2

Summary of review results and general assessment of the inventory of France

<i>Assessment</i>	<i>Issue or problem ID #(s) in tables 3 and/or 5^a</i>		
Dates of submission	Original submission: 4 November 2015 (NIR), 4 November 2015, version 2 (CRF tables), 4 November 2015 (SEF tables)		
	Revised submissions: 15 June 2016, version 7 (CRF tables), 7 November 2016, version 8 (CRF tables)		
	The values from the latest submission are used in this report		
Review format	In-country		
Application of the requirements of the UNFCCC Annex I inventory reporting guidelines and Wetlands Supplement (if applicable)	Have any issues been identified in the following areas:		
	1. Identification of key categories	Yes	G.16
	2. Selection and use of methodologies and assumptions	Yes	L.18, L.29, L.31, L.32, L.33
	3. Development and selection of emission factors	Yes	A.31, L.25, L.31
	4. Collection and selection of activity data	Yes	L.11
	5. Reporting of recalculations	Yes	E.1, I.18
	6. Reporting of a consistent time series	Yes	L.28
	7. Reporting of uncertainties, including methodologies	Yes	G.10, G.11, G.18, L.24
	8. QA/QC		QA/QC procedures were assessed in the context of the national system (see below)
	9. Missing categories/completeness ^b	Yes	E.31, E.36, I.20, L.17, L.18, L.19, L.27, L.29, L.30, L.33, KL.1, KL.3, KL.9, KL.16
	10. Application of corrections to the inventory	No	

<i>Assessment</i>			<i>Issue or problem ID #(s) in tables 3 and/or 5^a</i>
Significance threshold	For categories reported as insignificant, has the Party provided sufficient information showing that the likely level of emissions meets the criteria in paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines?	Yes	E.31, I.20, A.31
Description of trends	Did the ERT conclude that the description in the NIR of the trends for the different gases and sectors is reasonable?	Yes	
Supplementary information under the Kyoto Protocol	Have any issues been identified in the following areas:		
	1. National system:		
	(a) The overall organization of the national system, including the effectiveness and reliability of the institutional, procedural and legal arrangements	Yes	G.12
	(b) Performance of the national system functions	No	
	2. National registry:		
	(a) Overall functioning of the national registry	No	
	(b) Performance of the functions of the national registry and the technical standards for data exchange	No	
	3. ERUs, CERs, AAUs and RMUs and on information on discrepancies reported in accordance with decision 15/CMP.1, annex, chapter I.E, taking into consideration any findings or recommendations contained in the SIAR	No	
	4. Matters related to Article 3, paragraph 14, of the Kyoto Protocol, specifically problems related to the transparency, completeness or timeliness of reporting on the Party's activities related to the priority actions listed in decision 15/CMP.1, annex, paragraph 24, including any changes since the previous annual submission	No	
	5. LULUCF activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol:		
(a) Reporting in accordance with the requirements of decision 2/CMP.8, annex II, paragraphs 1–5	Yes	KL.2, KL.3, KL.5, KL.6, KL.7, KL.8, KL.9, KL.10, KL.11, KL.16, KL.17, KL.18, KL.19	
(b) The Party has demonstrated methodological consistency between the reference level and reporting on forest management in accordance with decision 2/CMP.7, annex, paragraph 14	Yes	KL.11, KL.12, KL.13, KL.14, KL.15	
(c) The Party has reported information in accordance with decision 6/CMP.9	No		
(d) The Party plans to apply the provisions for natural disturbances to afforestation and reforestation	No		
(e) The Party plans to apply the provisions for natural disturbances to forest management	No		

<i>Assessment</i>		<i>Issue or problem ID #(s) in tables 3 and/or 5^a</i>
	(f) Country-specific information has been reported to support provisions for natural disturbances, in accordance with decision 2/CMP.7, annex, paragraphs 33 and 34	Yes KL.8, KL.11
	(g) Other issues	No
CPR	Was the CPR reported in accordance with the annex to decision 18/CP.7, the annex to decision 11/CMP.1 and decision 1/CMP.8, paragraph 18?	Yes
Adjustments	Has the ERT applied an adjustment under Article 5, paragraph 2, of the Kyoto Protocol?	No
Response from the Party during the review	Has the Party provided the ERT with responses to the questions raised, including the data and information necessary for the assessment of conformity with the UNFCCC Annex I inventory reporting guidelines and any further guidance adopted by the Conference of the Parties?	Yes
Recommendation for an exceptional in-country review	On the basis of the issues identified, does the ERT recommend that the next ^c review be conducted as an in-country review?	No
Question of implementation	Did the ERT list a question of implementation?	No

Abbreviations: AAU = assigned amount unit, CER = certified emission reduction, CPR = commitment period reserve, CRF = common reporting format, ERT = expert review team, ERU = emission reduction unit, IPPU = industrial processes and product use, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, LULUCF = land use, land-use change and forestry, NA = not applicable, NIR = national inventory report, QA/QC = quality assurance/quality control, RMU = removal unit, SEF = standard electronic format, SIAR = standard independent assessment report, UNFCCC Annex I inventory reporting guidelines = "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories", Wetlands Supplement = 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.

^a The ERT identified additional issues in the energy, IPPU, agriculture, LULUCF, waste and KP-LULUCF sectors that are not specifically listed in table 2 but are included in table 3 and/or 5.

^b Missing categories, for which methods are provided in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, may affect completeness and are listed in annex III to this document.

^c Owing to the timing of the review of the 2015 annual submission, "next" in this context refers to the review of the 2017 annual submission.

III. Status of implementation of issues and/or problems raised in the previous review report

8. Table 3 compiles all the recommendations made in the previous review report. For each issue and/or problem, the ERT has specified whether it believes the issue and/or problem has been resolved by the conclusion of the review of the 2015 annual submission and provided the rationale for its determination, taking into consideration the publication date of the previous review report and national circumstances.

Table 3
Status of implementation of issues and/or problems raised in the previous review report of France

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
General			
G.1	Recalculations (13, 2014) (12, 2013) (29, 2012)	Strengthen the QA/QC procedures of the inventory submission, in order to avoid inconsistencies when	Resolved. The ERT did not identify any inconsistencies in

ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
	Transparency	reporting recalculations	the reporting of recalculations
G.2	Recalculations (14 and 84, 2014) (10, 2013) (29, 2012) Not an issue	Provide CRF table 8(b) with relevant information included for each recalculation	No longer relevant. The current UNFCCC Annex I inventory reporting guidelines do not include CRF table 8(b)
G.3	Consistency (15, 2014) (11, 2013) Transparency	Report all the information in the NIR with respect to the geographical coverage under the Kyoto Protocol, and when not referring to the territory under the Kyoto Protocol clearly indicate this	Resolved
G.4	NIR (16, 2014) Transparency*	Clearly explain the methodologies and the sources of data used for each part of the French metropolitan and overseas territories	Addressing. There are still unresolved issues (e.g. see issues E.20, A.31, L.5, W.2, KL.3)
G.5	NIR (17, 2014) (13, 2013) Transparency*	Provide in the main body of the NIR better descriptions of the methods, sources of data, EFs and parameters used, as required by the method or approach selected	Resolved. France revised the NIR by providing in its main body the description of sectoral methodologies, which were previously included in the report <i>Organization and Methodologies for the National Inventory of Atmospheric Emissions</i> (hereinafter referred to as the OMINEA report) (annex 3 of the 2014 NIR). Moreover, the Party provided in the NIR a weblink ^c to a database (OMINEA database in spreadsheet format), which includes comprehensive information about AD, EFs and parameters used in the emission estimations for all sectors. During the review, the Party also indicated that it plans for the next submission to directly include the OMINEA database 2017 in the inventory submission. The ERT commends the Party for this effort. Nevertheless, the ERT noted that the NIR still does not contain all the information needed (i.e. data sources, assumptions and methodologies used are not clearly explained, in order to facilitate the replication and assessment of the inventory by users of the reported information). However, any outstanding issues are

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			indicated in the sectoral findings below or in table 5 of this report
G.6	NIR (18, 2014) Transparency*	Remove misleading parameters and equations (not actually used in the inventory) for LULUCF and the waste sectors from the NIR and include more accurate explanations of the country-specific methods, as well as more detailed information on AD	Addressing. There are still unresolved issues (e.g. see issues L.3, L.12, L.23, W.2)
G.7	Follow-up to previous reviews (27, 2014) Transparency*	Include in the NIR information on implemented previous recommendations and those that are being or will be implemented with a clear timetable for their implementation	Resolved. Information about implemented previous recommendations was reported in the NIR (annex 10). An improvement plan with a timetable is also reported in the NIR (chapter 10.4)
G.8	Key category analysis (22, 2014) Transparency	Improve the transparency and consistency of the reported key category analysis	Resolved. The key category analysis was transparently reported in the NIR (chapter 1.5)
G.9	Key category analysis (23, 2014) (20, 2013) Adherence to UNFCCC Annex I inventory reporting guidelines	Correct the information in CRF table NIR-3 and improve the description of the key category analysis for KP-LULUCF activities	Not resolved. No information is reported in CRF table NIR-3. No information on the key category analysis for KP-LULUCF activities was included in the NIR
G.10	Uncertainty analysis (24, 2014) (21, 2013) (25, 2012) Adherence to UNFCCC Annex I inventory reporting guidelines	Use a higher level of disaggregation of categories for the uncertainty analysis	Not resolved. Some emission sources, which account for 1.2% of the total national GHG emissions excluding LULUCF in 2014, are reported as aggregated values in the uncertainty analysis (NIR, annex 7). Moreover, some categories, which account for 3.9% of the total national GHG emissions excluding LULUCF in 2014, are not included in the uncertainty analysis. No information is reported in the NIR about which source categories are not included in the uncertainty analysis
G.11	Uncertainty analysis (24, 2014) (21, 114, 2013) (26, 114, 2012) Transparency*	Elaborate the uncertainty analysis for the LULUCF sector and KP-LULUCF activities	Resolved. In the NIR, France reported the LULUCF uncertainty analysis at a more detailed subsector level compared with that reported in the 2014 NIR submission, by applying a tier 2 approach. See issues L.6 and L.24 for

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			the unresolved issue regarding the LULUCF and KP-LULUCF uncertainty analysis
G.12	National system (20, 2014) (18, 2013) (19, 2012) Adherence to UNFCCC Annex I inventory reporting guidelines	Enhance the national system so that it is able to address the reiterated recommendations made in the 2014 review report and previous review reports	Addressing. There are a number of reiterated recommendations made in previous review reports that have not been resolved
G.13	Article 3, paragraph 14 of the Kyoto Protocol (156, 2014) (134, 2013) Transparency	Report any changes in the information provided under Article 3, paragraph 14, of the Kyoto Protocol, in accordance with decision 15/CMP.1, annex, chapter I.H	Resolved. France included this information in pages 309–315 and table 103 of the NIR
Energy			
E.1	1. General (energy sector) (30, 38, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Provide in the NIR the data on recalculations between the latest previous annual submission and the most recent submission (clearly indicating the dates of submission), so that there is as much consistency as possible between the CRF tables and the NIR	Addressing. France did not provide details of the specific submissions for which the recalculations are provided. During the review, the ERT and France discussed what type of information should be provided related to the recalculations
E.2	1. General (energy sector) (31, 2014) Transparency*	Further implement QC activities before submitting its annual submission	Resolved. France has implemented additional QC activities. New reporting issues identified by the ERT (e.g. issue E.34) are included in table 5
E.3	1. General (energy sector) (31, 2014) Transparency*	Ensure consistency between the NIR, the OMINEA report and what is reported in the CRF tables	Resolved. France included all information related to the GHG inventory in the NIR, avoiding the need to make reference to the OMINEA report; inconsistencies with the CRF tables were not found by the ERT
E.4	1. General (energy sector) (31, 2014) (29, 2013) Not an issue	Improve transparency by using the same AD and units of EFs in the NIR and the OMINEA report and CRF tables	No longer relevant. The current ERT considers that using different units for the AD and EFs in the NIR and CRF tables is not required by the UNFCCC Annex I inventory reporting guidelines
E.5	Comparison with international data (33, 2014) (33, 2013) Transparency*	Further improve the description of the differences between the international data and the data used in the inventory	Resolved. The Party has improved the description of the differences between the international data and the data

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			used in the inventory
E.6	Feedstocks, reductants and other non-energy use of fuels (35, 2014) Transparency*	Improve the explanation of the split on the use of natural gas for energy and non-energy purposes	Resolved. The Party explained the energy and non-energy use of fuels in the NIR (chapter 3.2.3)
E.7	Feedstocks, reductants and other non-energy use of fuels (36, 2014) (36 and 37, 2013) Transparency*	Include in CRF table 1.A(d) information on where the associated CO ₂ emissions from non-energy use of fuels are reported	Addressing. During the review, France provided information on where the associated CO ₂ emissions from the non-energy use of fuels are reported. However the information is not included in CRF table 1A(d)
E.8	1.A.3.a Domestic aviation – liquid fuels – CO ₂ , CH ₄ and N ₂ O (40, 2014) (41, 2013) Not an issue	Ensure the consistency of the time series when using the data from the EU ETS for civil aviation	No longer relevant. During the review, France explained that the detailed EU ETS data on a flight-by-flight basis, planned to be used in the estimations for the category domestic aviation, are not yet used in the estimations
E.9	1.A.3.b Road transportation – liquid fuels – CO ₂ (41, 2014) (42, 2013) (52, 2012) Accuracy*	Obtain country-specific CO ₂ EFs for gasoline and diesel oil sold in France for the estimation of the CO ₂ emissions	Not resolved. During the review, the Party explained that an investigation on this issue began in 2016, but results are not yet available
E.10	1.A.3.b Road transportation – liquid fuels – CO ₂ (42, 2014) Transparency*	Improve the reporting of biofuels by including in the NIR information on the differences between the French customs data and the data used in the GHG inventory and on the allocation of biofuels between categories	Resolved. The correct allocation of biofuels between the different categories has been implemented
E.11	1.B.2 Oil and natural gas – CO ₂ (45, 2014) Transparency*	Clearly specify in the NIR the allocation of coke-related emissions in the inventory	Resolved. The NIR (chapter 3.3.2.2.1) states that GHG emissions are estimated from the use of petroleum coke as a catalyst regenerator
E.12	1.B.2.a Oil (44, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Improve the QA/QC procedures before submitting the inventory and ensure consistency between the CRF tables and the NIR	Resolved. The Party improved the consistency between the CRF tables and the NIR, thus demonstrating improved QA/QC procedures
E.13	1.B.2.a Oil (44, 2014) Transparency*	Improve the transparency of the reported method in the NIR by adding more information on the data (AD and EFs) used	Not resolved. The ERT noted that the transparency of the report needs to be improved by providing related information for the AD used and the corresponding parameters

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
E.14	1.B.2.b Natural gas (46, 2014) (29, 2013) Not an issue	For natural gas transmission and distribution, use the same AD in the CRF tables and in the NIR and the OMINEA report	No longer relevant. The ERT noted that France cannot report the same AD and EFs in the NIR and CRF tables, especially when it uses a higher tier approach, as is the case for the transmission and distribution of natural gas
E.15	1.B.2.c Venting and flaring, oil venting (47, 2014) Transparency*	For oil venting, include in the NIR or the OMINEA report the information on the source of the CO ₂ and CH ₄ EFs and fill out the AD description and unit in the CRF tables	Resolved. The Party explained in the NIR the source of the CO ₂ EF used to estimate CO ₂ emissions from oil venting and how it estimated the CH ₄ EF (NIR, chapters 3.3.2.2.1 and 3.3.2.2.3); also, France included in the NIR a description of the AD and reported AD and units in CRF table 1.B.2
E.16	1.B.2.c Venting and flaring, oil flaring (48, 2014) Transparency*	For flaring (oil), correct the AD and emissions and include information on the methodology used in the NIR	Addressing. France explained in the NIR (chapter 3.3.2.2.3, 1.B.2.c. Flaring – oil category), that emissions in this category are estimated from data on oil extraction and oil flaring in refineries. During the review, the Party explained that the reported emissions are correct and that it still needs to analyse the reported AD
E.17	1.B.2.c Venting and flaring, natural gas flaring (49, 2014) Transparency*	For flaring (gas), include clarifications of the sources covered and the AD	Resolved. France provided information in the NIR (chapter 3.3.2.2.2) related to: the sources where the flaring of natural gas is estimated; annual small production quantities of natural gas; and compressor stations and liquefied natural gas terminals
IPPU			
I.1	2. General (IPPU) (52, 2014) (48, 50, 2013) Transparency*	Include all relevant information on methodologies, EFs and sources of AD in the NIR in line with the IPCC good practice guidance and the UNFCCC reporting guidelines	Resolved. France has made improvements to the methodology, AD and EFs descriptions. However, in a number of areas such descriptions are not adequate and further enhancements are needed (for the pending issues on the transparency of the methodologies see

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			issues I.9, I.16, I.17)
I.2	2. General (IPPU) (53, 2014) Transparency	Re-examine all previous recommendations and prioritize and include them as part of the improvement plan for the national inventory	Resolved. France has addressed all IPPU issues raised by the previous ERT
I.3	2. General (IPPU) (54, 2014) (49, 2013) Consistency	Provide detailed information on time-series consistency when different methods are applied across the time series or when updating data or adding new subcategories	Resolved. France has improved the additional information
I.4	2.A.1 Cement production – CO ₂ (55, 2014) Transparency	Clearly describe its QA/QC procedures for this category	Resolved. France described its QA/QC procedures for cement in the NIR (chapter 4.2.4)
I.5	2.A.1 Cement production – CO ₂ (55, 2014) Transparency	Clearly describe the methodologies and data used over the time series	Resolved. France has separated its reporting of cement emissions by cement type, and included a description of data sources for cement production emissions
I.6	2.B.1 Ammonia production – CO ₂ (58, 2014) Consistency	Report detailed information on how time-series consistency is ensured for the category, including the years for which interpolation is applied	Resolved. France has explained how time-series consistency is ensured (NIR, chapter 4.3.2.1)
I.7	2.B.3 Adipic acid production – N ₂ O (65, 2014) Transparency	Correct the information reported in the NIR on the methodological tier used	Resolved. France has indicated that it uses a tier 3 method to estimate these emissions
I.8	2.B.3 Adipic acid production – N ₂ O (65, 2014) Transparency	Include in the NIR trend information	Resolved. France has included information on the measurement of emissions, mentioning continuous measurements as part of normal operations, and has included trend information in its NIR (chapter 4.3.1.3)
I.9	2.C.3 Aluminium production – PFCs (56, 2014) (55, 2013) (67, 2012) Transparency*	Report clearly on the methodological tiers applied or EFs used to estimate PFC emissions	Addressing. France has provided information on the methodological tiers, as recommended. However, the Party did not provide information on the EFs
I.10	2.C.3 Aluminium production – PFCs (56, 2014) (55, 2013) (67, 2012) Transparency	Include information on time-series consistency applied to estimate the PFC emissions	Resolved. France included an explanation of the time-series consistency of PFC emissions in the NIR (chapter 4.4.1.3)
I.11	2.C.3 Aluminium production – PFCs (57, 2014) (55, 2013) (67, 2012)	Include the relevant trend information in the NIR to improve the transparency of its reporting	Resolved. France included in the NIR (chapter 4.4.1.3) an explanation of the aluminium PFC emission trend

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
Transparency			
I.12	2.F.1 Refrigeration and air conditioning – HFCs (61, 2014) Transparency	Provide detailed information on any implemented recalculations	Resolved. France has included details on recalculations in its NIR
I.13	2.F.1 Refrigeration and air conditioning – HFCs (62, 2014) Transparency	Correct the information on the disposal loss factor for HFC-32 for mobile air-conditioning equipment	Resolved. In the NIR, France reports an average disposal factor of 27.7 for the emissions, updated from a study conducted for its 2014 submission. A disaggregation of this factor for different transport modes is included in the NIR
I.14	2.F.1 Refrigeration and air conditioning – HFCs (63, 2014) Completeness	Consider including trams in the model and estimate emissions of F-gases from this subcategory to improve the associated emission estimates	Resolved. France has included trams as part of the emission estimates for mobile air-conditioning equipment, with the associated factors being provided in the NIR
I.15	2.F.6 Other applications (product uses as substitutes for ozone-depleting substances) – SF ₆ (60, 2014) Transparency	Include all the information on the technology used in the recycling system, its efficiency rate and how France is assessing the control of SF ₆ emissions	Resolved. In the NIR, (chapter 4.3.1.8) France has described the recycling technology, and provided the explanation that the recycling of SF ₆ emissions was discontinued in 2007 following technological changes at the uranium processing site
Agriculture			
A.1	3. General (agriculture) (67, 2014) Not an issue	Improve the QA/QC activities by reporting consistently the recalculations in the NIR and CRF table 8(a) on the basis of the geographical coverage under the Kyoto Protocol	No longer relevant. No recalculations were reported in CRF table 8 because of the change in the reporting and review guidelines for GHG inventories
A.2	3. General (agriculture) (68, 2014) Transparency	Improve the transparency and consistency of the information reported regarding the tiers of methodologies used by the Party to estimate emissions of N ₂ O and CH ₄ , both within the NIR and between the NIR and CRF table summary 3	Resolved. The Party has improved the information in the NIR. The issue with CRF table summary 3 could not be resolved because of problems with the CRF Reporter software
A.3	3. General (agriculture) (71, 2014) (66, 2013) Transparency	Improve the transparency of the reporting of AD and EF uncertainties for enteric fermentation and manure management	Resolved. The reporting of uncertainties has been improved
A.4	3.A Enteric	Include information on the comparisons and	Resolved. The NIR (chapter

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
	fermentation – CH ₄ (69, 2014) (68 and 69, 2013) (80, 2012) (89, 2011) (96, 2010) Transparency	divergences between the country-specific CH ₄ EFs for enteric fermentation for cattle and the default values from the IPCC good practice guidance	5.2.4) includes a comparison table and a brief explanation
A.5	3.A Enteric fermentation – CH ₄ (69, 2014) (67, 2013) Transparency	Include information on the progress of the submission of the article on the country-specific methodology used to develop the CH ₄ EF for enteric fermentation for cattle to a peer-reviewed journal	Resolved. The NIR indicates that the article has not yet been published
A.6	3.A Enteric fermentation (cattle) – CH ₄ (72, 2014) (68, 2013) Transparency	Improve the transparency of the reporting of the country-specific methods used to estimate the EFs for cattle by including the information on the applicability of the equation in the study MONDFERENT to the circumstances in France and explain the relationship between CH ₄ emissions and milk production	Resolved. France improved its reporting on the country-specific method for cattle and explained the applicability of the MONDFERENT study. For the pending explanations on the relationship between emissions and milk production, see issue A.9
A.7	3.A Enteric fermentation (livestock other than cattle) – CH ₄ (73, 2014) (69, 2013) (80, 2012) Transparency	Include the results from the comparison of the CH ₄ EFs derived using the country-specific methodology and the methodology from the IPCC good practice guidance in the NIR	Resolved. The NIR (chapter 5.2.4) includes a comparison table and a brief explanation
A.8	3.A Enteric fermentation (dairy cattle) – CH ₄ (75, 2014) Transparency*	Include information on the typical animal mass (average) for dairy cattle in the NIR and in CRF table 4.A	Not resolved. France reports the notation key “NE” for dairy cattle weight in table 3.A. The ERT noted that assessment and reporting should be possible because the requested information should be available in the background documents (see issue A.20)
A.9	3.A Enteric fermentation (dairy cattle) – CH ₄ (76, 2014) (71, 2013) Transparency	Improve the transparency of the reporting on milk production in the NIR by consistently using the appropriate unit	Resolved. Milk production is reported in CRF table 3.As2 and in the NIR using the appropriate unit
A.10	3.B Manure management (swine) – CH ₄ (77, 2014) Transparency	Report consistent figures for swine population for the geographical coverage under the Kyoto Protocol in the NIR and in the CRF tables	Resolved. The population of swine is reported consistently across the NIR and the CRF tables
A.11	3.B Manure management – CH ₄ and N ₂ O (78, 2014) Transparency*	Include sufficient information on the progress of the study MONDFERENT II, with emphasis on the country-specific values for volatile solids for livestock other than cattle	Resolved. The MONDFERENT II study is not yet used in the estimates, but it is mentioned in the NIR under “Planned

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale improvements^c</i>
A.12	3.B Manure management – CH ₄ and N ₂ O (79, 2014) (75, 2013) Transparency*	Report the MCFs for both cold and warm climate in the NIR with the relevant explanations	Addressing. France provided an explanation in the NIR but the ERT noted that the approach is not yet sufficiently transparent because it is not clear which MCF values were used or how a weighted average had eventually been calculated. See issue A.23
A.13	3.B Manure management – N ₂ O (70, 2014) (76, 2013) Transparency*	Improve the transparency of the reporting on the methodology used to estimate N ₂ O emissions (e.g. by reporting accurately the IPCC equation used for the estimation of N ₂ O emissions and explaining any transformation made to it)	Addressing. The description of the approach used to estimate N ₂ O emissions from manure management and agricultural soils is still not sufficiently transparent
A.14	3.D Direct and indirect N ₂ O emissions from agricultural soils – N ₂ O (80, 2014) (82, 2013) Transparency	Improve the transparency of the reporting of the fraction of livestock nitrogen excreted and deposited onto soils by grazing livestock, by providing the reference and background information for this parameter	Resolved. The information was provided in the NIR
A.15	3.D Direct and indirect N ₂ O emissions from managed soils – N ₂ O (81, 2014) Transparency*	Improve the QC activities and correct the discrepancies in the nitrogen input to soils between the NIR and the CRF tables (differences for the nitrogen input to soils from synthetic fertilizers and animal manure; correct the error in the NIR for nitrogen deposited)	Addressing. The description of the approach used to estimate N ₂ O emissions from manure management and agricultural soils is still not sufficiently transparent. See issue A.28
A.16	3.G Liming – CO ₂ (106, 2014) (100, 2013) Transparency*	Report separately emissions from limestone, dolomite and other carbonated amendments to agricultural lands	Addressing. The information in the NIR indicates that the calculation is conducted separately; however, emissions are still not reported separately. See issue A.32
LULUCF			
L.1	4. General (LULUCF) (84, 2014) Not an issue	Include all necessary explanatory information on recalculations in CRF table 8(b)	No longer relevant. CRF table 8(b) is no longer required, under the UNFCCC Annex I inventory reporting guidelines
L.2	4. General (LULUCF) (84, 85, 2014) Transparency	Provide at least a justification for the significant changes owing to recalculations, to increase the transparency of the reporting	Resolved. France has reported a section on recalculation for each land-use category in the NIR
L.3	4. General (LULUCF) (86, 2014) Transparency*	Revise the structure of the NIR to avoid including unnecessary information, while not providing the relevant information (e.g. reasons for not applying directly the IPCC methods to estimate carbon stock	Not resolved. See also issue L.22 in table 5

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
		changes and non-CO ₂ emissions; input data for equations and sources of country-specific data)	
L.4	4. General (LULUCF) (87, 97, 2014) Adherence to UNFCCC Annex I inventory reporting guidelines	Strengthen the QA/QC procedures to ensure greater consistency in reporting between the NIR and the CRF tables	Resolved. Consistency within the GHG inventory is generally achieved for the sector
L.5	4. General (LULUCF) (88, 101, 2014) (86, 2013) Completeness*	Include all of its territories so as to cover its entire geographical area in its annual submission and harmonize the different sources of data to ensure consistency, completeness and accuracy of reporting	Not resolved. The ERT noted that the data sources still do not fully cover the territory of the overseas departments. See issue KL.3 in table 5
L.6	4. General (LULUCF) (89, 2014) (87, 2013) Transparency*	Improve the transparency of the reported information on the uncertainty analysis and update the values once data and methodological improvements are implemented for the estimates	Not resolved. See issue L.24 in table 5
L.7	4.A Forest land – CO ₂ (90, 2014) Transparency	Include in the NIR information that justifies the assignment of a portion of its territory as unmanaged, on the basis of the definition of managed land provided in the IPCC good practice guidance for LULUCF	Resolved. France provided a definition for unmanaged land (NIR, chapter 6.2.1)
L.8	4.A Forest land – CO ₂ (90, 2014) Transparency*	Report changes in carbon stocks on unmanaged land as “NA” instead of “NO” in CRF table 5.A	No longer relevant. Changes in carbon stocks on unmanaged land are no longer reported separately in CRF table 4.A
L.9	4.A Forest land – CO ₂ (91, 2014) Transparency*	Provide more transparent information regarding the integration between TERUTI and the NFI data, and also explain the reasons for the changes in the nomenclature of TERUTI and the per cent coverage of the sampled data for TERUTI and NFI purposes	Not resolved. See issue L.22 in table 5
L.10	4.A Forest land – CO ₂ (92, 2014) Transparency	Provide transparent information on how consistency is maintained in the timber volume harvested acquired from the “direct” and “model” methods for the years for which “direct” data are not available	Resolved. During the review, France provided additional information on this matter and indicated that it will be reported in the next inventory submission
L.11	4.A Forest land – CO ₂ (95, 2014) (90, 2013) Consistency*	Assess and report on the potential impact of using NFI data on carbon stocks and carbon stock changes, calculated over the NFI area, together with the TERUTI areas dataset	Not resolved. The ERT noted that such an assessment is relevant, because the use of different datasets may result in inconsistencies
L.12	4.A.1 Forest land remaining forest land – CO ₂ (96, 2014) Transparency*	Present the correct equations (UTCF20, UTCF22, UTCF29, UTCF31) and the correct definitions in the NIR	Not resolved. See issue L.22 in table 5

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
L.13	4.A.1 Forest land remaining forest land – CO ₂ (98, 2014) (88, 2013) Transparency*	Correct the notation key used for emissions from mineral soils to “NE” and provide a relevant explanation	Not resolved. France continues to report carbon stock change under forest land remaining forest land as “NO”, although it should use “NE” with the justification that a tier 1 method has been applied
L.14	4.A.1 Forest land remaining forest land – CO ₂ (98, 2014) Transparency	Explain in the NIR the reasons for reporting exactly the same value for the carbon gains and losses in living biomass for tropical broadleaf forest and, in case the changes in carbon stock are reported using a tier 1 method, use the notation key “NE”	Resolved. Although France has derived the harvested quantity from statistics on harvested wood products from French Guiana, the carbon stock gain is assumed to be equal to the carbon stock loss because the biomass carbon pool is assumed to be at equilibrium. However, the methodology used is not consistent with the 2006 IPCC Guidelines (see issue KL.9 in table 5)
L.15	4.A.1 Forest land remaining forest land – CO ₂ (99, 2014) Not an issue	Include in the NIR information on soil data collection for overseas territories	No longer relevant. Since a tier 1 method is applied, soil organic carbon is assumed to be at equilibrium in forest land remaining forest land
L.16	4.A.2 Land converted to forest land – CO ₂ (100, 2014) Transparency	Use the notation key “NA” instead of the value zero and justify the reported area of organic soils	Resolved. France has reported the area of organic soils. However, France has not provided a spatial identification of its lands with organic soils. See issue L.26 in table 5
L.17	4.B.1 Cropland remaining cropland – CO ₂ (105, 2014) (98, 2013) Completeness*	Provide estimates of the net emissions and removals for living biomass or perennial crops by applying at least a tier 1 method from the IPCC good practice guidance for LULUCF	Not resolved. France has not provided these estimates. See issue L.29 in table 5
L.18	4.B.2 Land converted to cropland – CO ₂ (102, 2014) (98, 2013) Completeness*	Apply at least a tier 1 method from the IPCC good practice guidance for LULUCF to estimate the net CO ₂ emissions and removals from land converted to perennial crops	Not resolved. France continues to report “NO” for net CO ₂ emissions and removals from land converted to cropland (except from forest land). See issue L.29 in table 5
L.19	Cropland converted to other land uses – CO ₂ (103, 2014) Completeness*	Provide estimates of biomass losses from conversion of perennial crops to other land uses (including cropland converted to wetlands, settlements and other land)	Not resolved. France has not provided these estimates. See issue L.29 in table 5

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
L.20	4 (V) Biomass burning – CO ₂ , CH ₄ and N ₂ O (94, 2014) Accuracy	Continue the efforts to improve the accuracy of the estimates for biomass burning in forest land	Resolved. See issue L.35 in table 5
L.21	4 (V) Biomass burning – CO ₂ , CH ₄ and N ₂ O (107, 2014) Transparency*	Include transparent information on all the input data necessary to apply the IPCC methodology to estimate CO ₂ and non-CO ₂ emissions from biomass burning, including for PTOM	Not resolved. Complete information (e.g. combustion efficiency, mass of available fuel) on biomass burning, especially for PTOM, is not reported in the NIR
Waste			
W.1	5. General (waste) (110, 2014) Transparency	Provide a clear legal basis justifying the treatment of waste amounts landfilled as confidential information	Resolved. The total amounts of waste treated by type of treatment (landfilling, incineration, biogas production, composting, recycling) are published in the ITOM database by ADEME ^d which contains data per treatment plant
W.2	5. General (waste) (111, 2014) (102, 2013) Transparency*	Clearly specify when data and figures refer to the geographical coverage under the Convention or under the Kyoto Protocol, and increase the transparency of the reporting of estimated activities for the overseas territories, including the parameters and methodologies used	Addressing. The Party included some complementary information in the NIR 2016; however, the ERT noted that it is still not clear for some categories, such as industrial wastewater treatment
W.3	5.A Solid waste disposal on land – CH ₄ (112, 2014) Not an issue	Improve the transparency of the information on the country-specific method and measurements (e.g. type, years, frequency, sample size) and how the measurements are aggregated into a national method	No longer relevant. Starting with the 2015 submission, France no longer applies a country-specific methodology. The Party applies the tier 2 model from the 2006 IPCC Guidelines to estimate CH ₄ emissions from landfill sites
W.4	5.A Solid waste disposal on land – CH ₄ (112, 2014) Not an issue	Justify the use of the country-specific methodology by more recent and well-documented measurements and also document such measurements or develop an alternative estimation method consistent with the appropriate IPCC equations and parameters	No longer relevant. France has changed the methodology used to estimate CH ₄ emissions from landfill sites. See W.3 above
W.5	5.A Solid waste disposal on land – CH ₄ (113, 2014) Not an issue	Provide in the NIR additional information on the comparability of the data on waste landfilled reported in the CRF tables with the data in the Eurostat waste database	No longer relevant. The comparison with international data is not a mandatory requirement in the UNFCCC Annex I inventory reporting guidelines. The Party uses information from the ITOM database published by ADEME on the amount of

ID#	Issue and/or problem classification ^{a, b}	Recommendation made in previous review report	ERT assessment and rationale
			waste treated at landfill sites. During the review, the Party explained that this database is also provided by ADEME to SOeS (the national statistical office) to derive the Eurostat reporting. The inventory compiler (CITEPA) is currently in contact with SOeS in order to understand properly how the Eurostat data are derived (amounts, composition), as part of the QA activities
W.6	5.A Solid waste disposal on land – CH ₄ (114, 2014) Accuracy	Apply fractions consistent with the Revised 1996 IPCC Guidelines for all parameters that depend on waste composition	Resolved. France has used default fractions from the 2006 IPCC Guidelines
W.7	5.A Solid waste disposal on land – CH ₄ (115, 2014) Accuracy	Justify the selection of country-specific values for the methane generation rate constant (k) or choose the appropriate IPCC default parameters	Resolved. France has used default parameters from the 2006 IPCC Guidelines
W.8	5.A Solid waste disposal on land – CH ₄ (115, 2014) Accuracy	If France decides to keep a bulk approach to calculate k, present the method as a bulk approach in the NIR, with one average k value, instead of a separation of three different values that are not linked to waste composition	Resolved. France no longer uses the bulk approach to calculate k
W.9	5.A Solid waste disposal on land – CH ₄ (116, 2014) Accuracy	Justify that country-specific DOC values for the rapid and moderate degradability waste fractions are applicable for the waste categories and for all types of landfills on all territories where they are used and over the entire time series, or use the IPCC default DOC values based on the national waste composition data	Resolved. France uses default DOC values from the 2006 IPCC Guidelines based on waste composition
W.10	5.A Solid waste disposal on land – CH ₄ (117, 2014) (105, 2013) Transparency*	Provide more information on the waste composition allocation to the degradation categories used for the estimation for all years of the time series by adding a table to the NIR that explains how the ITOM categories are matched to the degradation categories used for the estimation and provide another table that shows the share of these degradation categories in relation to the total waste landfilled for all years of the time series	Not resolved. The tables have not been included in the NIR
W.11	5.A Solid waste disposal on land – CH ₄ (118, 2014) Completeness	Improve the QA/QC checks to ensure that the amount of waste landfilled included in the calculation is complete	Resolved. The ERT did not identify any issues with the completeness of the AD. Complementary QA/QC checks were performed, but France explained (during the review) that it is still performing some checks concerning waste allocations

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
			to IPCC waste categories
W.12	5.A Solid waste disposal on land – CH ₄ (119, 2014) Accuracy*	Allocate the fraction of waste rejected from composting plants to the easily degradable waste category or justify that this waste category is correctly allocated to the moderately degradable category	Not resolved. The fraction of waste rejected from composting plants is still allocated to the moderately degradable category
W.13	5.A Solid waste disposal on land – CH ₄ (120, 2014) Comparability*	Gather additional data on the composition of the bulky waste fraction or allocate the category to the rapidly degradable fraction, if the low DOC assumption has not been justified	Addressing. The NIR indicates that there is only one study concerning the composition of bulk waste. This study is at the local scale on collecting, sorting and recycling centres. The categorization of waste is listed under QA processes in order to define the relationships between ITOM, Eurostat and IPCC categories. This analysis is being carried out by a working group that includes SOeS, waste operators and ADEME
W.14	5.A Solid waste disposal on land – CH ₄ (121, 2014) Transparency	Clarify in the NIR which parameters are actually used in the estimation and which are calculated for presentation purposes only	Resolved. The methodological description in the NIR has been updated starting with the 2015 submission (implementation of the tier 2 method from the 2006 IPCC Guidelines)
W.15	5.C.1 Waste incineration – CO ₂ (124, 2014) Transparency	Provide data on the carbon content of the waste (without energy recovery) and the oxidation factor used	Resolved. The methodology from the 2006 IPCC Guidelines is now applied to estimate CO ₂ emissions from waste incineration on the basis of waste composition. Default FCF, CF, dry matter and oxidation factor are applied for each household waste category
W.16	5.C.1 Waste incineration – CO ₂ (125, 2014) Transparency	Report consistent units for the CO ₂ implied emission factor in the CRF tables and the NIR	Resolved. The methodology from the 2006 IPCC Guidelines is now applied to estimate CO ₂ emissions from waste incineration, and parameters (FCF and CF) are provided in the NIR with their correct units
W.17	5.D Wastewater treatment and discharge – N ₂ O (122, 2014) Accuracy	Use the updated FAOSTAT data in the next submission, if France continues to use FAOSTAT data	Resolved. The FAOSTAT data used has been updated

<i>ID#</i>	<i>Issue and/or problem classification^{a, b}</i>	<i>Recommendation made in previous review report</i>	<i>ERT assessment and rationale</i>
W.18	5.D Wastewater treatment and discharge – N ₂ O (123, 2014) Completeness	Calculate the emissions for the whole geographical coverage under the Convention	Resolved. Sewage N ₂ O emissions from overseas territories have been estimated
KP-LULUCF			
KL.1	General (KP-LULUCF) – CO ₂ (133, 2014) Completeness*	Ensure that the coverage of all territories (including overseas territories) is as comprehensive as possible to further increase the completeness of the reporting	Not resolved. The ERT noted that TERUTI and the NFI do not fully cover the overseas territories and that the national system of France does not have other arrangements to prepare accurate estimates of GHG emissions and removals in the overseas departments. See issue KL.3 in table 5
KL.2	Biomass burning – CO ₂ , CH ₄ , N ₂ O (137, 2014) Transparency*	For wildfires, provide the reference for each of the CO ₂ , CH ₄ and N ₂ O EFs used and the underlying assumptions, if applicable	Not resolved. There is no additional information provide in the NIR for biomass burning/wildfires. See issue KL.8 in table 5

Abbreviations: AD = activity data, ADEME = Agence de l'environnement et de la maîtrise de l'énergie (Environment and energy matrix agency), CITEPA = Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique, CF = carbon fraction, CRF = common reporting format, DOC = degradable organic carbon, EF = emission factor, ERT = expert review team, EU ETS = European Union Emissions Trading System, FAOSTAT = database of the Food and Agriculture Organization of the United Nations, FCF = fossil carbon fraction, F-gases = fluorinated gases, GHG = greenhouse gas, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, IPCC good practice guidance for LULUCF = IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, IPPU = industrial processes and product use, ITOM = Installations de traitement des Ordures Ménagères, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, LULUCF = land use, land-use change and forestry, MCF = methane conversion factor, NE = not estimated, NFI = national forest inventory, NIR = national inventory report, NO = not occurring, PTOM = Pays et Territoires d'Outre-mer (overseas territories not included in the EU territory), QA/QC = quality assurance/quality control, Revised 1996 IPCC Guidelines = *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, UNFCCC Annex I inventory reporting guidelines = "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories", 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

^a References in parentheses are to the paragraph(s) and the year(s) of the previous review report(s) where the issue was raised. Issues are further classified as defined in decision 13/CP.20, annex, paragraph 81. In the review of the supplementary information reported in accordance with Article 7, paragraph 1, of the Kyoto Protocol, the ERT has applied the classification in decision 22/CMP.1, annex, paragraph 69, in conjunction with decision 4/CMP.11.

^b An asterisk is included next to each issue type for all issues that are also problems, as defined in decision 22/CMP.1, annex, paragraphs 68 and 69, including those that lead to an adjustment or a question of implementation.

^c See <www.citepa.org/fr/activites/inventaires-des-emissions/ominea>.

^d See <<<http://www.ademe.fr/installations-traitement-ordures-menageres-itom>>>.

IV. Issues identified in three successive reviews and not addressed by the Party

9. In accordance with paragraph 83 of the UNFCCC review guidelines, the ERT noted that the issues included in table 4 have been identified in three successive reviews, including the review of the 2015 annual submission of France, and have not been addressed by the Party.

Table 4

Issues identified in three successive reviews and not addressed by France

<i>ID#^a</i>	<i>Previous recommendation for the issue identified</i>	<i>Number of successive reviews issue not addressed^b</i>
General		
G.9	Correct the information in CRF table NIR-3 and improve the description of the key category analysis for KP-LULUCF activities	3 (2013–2015/2016)
G.10	Use a higher level of disaggregation of categories for the uncertainty analysis	4 (2012–2015/2016)
G.12	Enhance the national system so that it is able to address the reiterated recommendations made in the 2014 review report and previous review reports	4 (2012–2015/2016)
Energy		
E.7	Include in CRF table 1.A(d) information on where the associated CO ₂ emissions from non-energy use of fuels are reported	3 (2013–2015/2016)
E.9	Obtain country-specific CO ₂ EFs for gasoline and diesel oil sold in France for the estimation of the CO ₂ emissions	4 (2012–2015/2016)
IPPU		
I.9	Report clearly on the methodological tiers applied or EFs used to estimate PFC emissions	4 (2012–2015/2016)
Agriculture		
A.12	Report the MCFs for both cold and warm climate in the NIR with the relevant explanations	3 (2013–2015/2016)
A.13	Improve the transparency of the reporting on the methodology used to estimate N ₂ O emissions (e.g. by reporting accurately the IPCC equation used for the estimation of N ₂ O emissions and explaining any transformation made to it)	3 (2013–2015/2016)
A.16	Report separately emissions from limestone, dolomite and other carbonated amendments to agricultural lands	3 (2013–2015/2016)
LULUCF		
L.5*	Include all of its territories so as to cover its entire geographical area in its annual submission and harmonize the different sources of data to ensure consistency, completeness and accuracy of reporting	3 (2013–2015/2016)
L.6	Improve the transparency of the reported information on the uncertainty analysis and update the values once data and methodological improvements are implemented for the estimates	3 (2013–2015/2016)
L.11	Assess and report on the potential impact of using NFI data on carbon stocks and carbon stock changes, calculated over the NFI area, together with the TERUTI areas dataset	3 (2013–2015/2016)

<i>ID#^a</i>	<i>Previous recommendation for the issue identified</i>	<i>Number of successive reviews issue not addressed^b</i>
L.13	Correct the notation key used for emissions from mineral soils to “NE” and provide a relevant explanation	3 (2013–2015/2016)
L.17*	Provide estimates of the net emissions and removals for living biomass or perennial crops by applying at least a tier 1 method from the IPCC good practice guidance for LULUCF	3 (2013–2015/2016)
L.18*	Apply at least a tier 1 method from the IPCC good practice guidance for LULUCF to estimate the net CO ₂ emissions and removals from land converted to perennial crops	3 (2013–2015/2016)
Waste		
W.2	Clearly specify when data and figures refer to the geographical coverage under the Convention or under the Kyoto Protocol, and increase the transparency of the reporting of estimated activities for the overseas territories, including the parameters and methodologies used	3 (2013–2015/2016)
KP-LULUCF		
No such issues for KP-LULUCF activities were identified		NA

Abbreviations: CRF = common reporting format, EF = emission factor, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance for LULUCF = IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, IPPU = industrial processes and product use, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, LULUCF = land use, land-use change and forestry, MCF = methane conversion factor, NA = not applicable, NE = not estimated, NFI = national forest inventory, NIR = national inventory report.

^a An asterisk is included after any issue ID# where the underlying issue is related to accuracy or completeness of a key category, a missing category or a potential key category, as indicated in decision 13/CP.20, annex, paragraph 83.

^b The review of the 2015 annual submission is being held in conjunction with the review of the 2016 annual submission. As the reviews of the 2015 and 2016 annual submissions are not “successive” reviews, but are rather being held in conjunction, for the purpose of counting successive years in table 4, 2015/2016 is considered as one year. The ERT noted that this table 4 is the same as that in the 2016 annual review report for France, modified to reflect the combined 2015/2016 review.

V. Additional findings made during the 2015 technical review

10. Table 5 contains findings made by the ERT during the technical review of the 2015 annual submission of France that are additional to those identified in table 3 above.

Table 5
Additional findings made during the 2015 technical review of the annual submission of France^a

ID#	Finding classification	Description of the finding with recommendation or encouragement	<i>Is finding an issue^b and/or a problem^c? If yes, classify by type</i>
General			
G.14	QA/QC and verification	<p>France has implemented a number of well-designed QC procedures, including automatic integrity checks, use of checklists and the application of specialized software tools (e.g. VESUVE) that enable it to perform additional sector-specific checks. Regarding QA activities, in 2015, a specific bilateral review with German inventory colleagues was completed for F-gases. In addition, a working group (not involved in the inventory preparation) reviews the inventory results each December. Moreover, France was reviewed in 2012 and 2016 pursuant to European Union decision 406/2009/EC (the effort sharing decision). The ERT also noted that the QA/QC management is supported by a specialized software tool, RISQ, which is a management tool to monitor the daily implementation of numerous quality procedures in place for the national emission inventories' use of advanced software tools</p> <p>The ERT commends France for its well-established QA/QC system</p>	Not an issue
G.15	Key category analysis	<p>France did not include in the NIR a key category analysis for the base year. The ERT noted that, according to paragraph 14 of the UNFCCC Annex I inventory reporting guidelines, Parties shall identify their key categories for the base year as well. During the review, France indicated that it has performed a key category analysis for 1990, but this analysis was not included in the NIR</p> <p>The ERT recommends that France include the key category analysis for the base year in the NIR</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
G.16	Key category analysis	<p>France has performed a key category analysis, both level and trend, including and excluding LULUCF, using both tier 1 and tier 2 approaches. In annex I of the NIR, the identified key categories per approach were reported (six tables). The ERT noted that the Party did not include in the NIR a summary table with all key categories identified by France, adapted to the level of category disaggregation used for determining its key categories. Therefore, a reader of the NIR has to navigate through six tables in order to identify whether a category is identified as key by the Party. During the review, France indicated that CRF table 7 already gives such a summary of the different key category analyses. The ERT noted that CRF table 7, which is automatically generated by the CRF Reporter, is based on a different level of category disaggregation compared with the one followed by the Party, and performs the tier 1 key category analysis only. Moreover, it contains errors because of the functionality problems of the CRF Reporter at the time the CRF tables were generated</p> <p>The ERT recommends that France include a summary table with key categories identified in its NIR,</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		as required by paragraph 50(d)(i) of the UNFCCC Annex I inventory reporting guidelines	
G.17	Methods	<p>France did not include in the NIR a summary table to indicate the method and type of EFs that have been applied for each category. The ERT considers that this table would facilitate the reader of the NIR to identify whether recommended methods from the appropriate decision tree in the 2006 IPCC Guidelines are used for calculation of emissions from key categories, in line with paragraph 50(c) of the UNFCCC Annex I inventory reporting guidelines. During the review, France explained that this information is reported in CRF table “Summary3s1”, but the ERT noted that in the submission each cell of this table contains the notation key “NA”. France explained that this is due to functionality problems of the CRF Reporter at the time the CRF tables were generated</p> <p>The ERT encourages France to report a summary table that indicates the method and type of EFs that have been applied for each category, in order to improve the transparency of the reporting of the selection and use of methodologies</p>	Not an issue
G.18	Uncertainty analysis	<p>The ERT noted that France did not explain in the NIR how the uncertainties of AD and EFs, which are reported in annex 7 of the NIR, were estimated. During the review, France explained that, since 2015, an expert group within the inventory agency has been set up to improve the uncertainty assessment. One of its main goals is to improve all the sources of information/assumptions used for the calculation of the AD and EF uncertainties</p> <p>The ERT welcomes the efforts made by France in addressing this issue and recommends that France transparently report the information and assumptions used when defining the uncertainty of AD and EFs in line with the 2006 IPCC Guidelines (vol. 1, chapter 3.5)</p>	Yes. Transparency*
G.19	Uncertainty analysis	<p>France did not include in the NIR an uncertainty analysis for the base year. The ERT notes that according to paragraph 15 of the UNFCCC Annex I inventory reporting guidelines, Parties shall report uncertainties for the base year as well. During the review, France indicated that the 1990 level uncertainty analysis will be included in the next NIR submission</p> <p>The ERT recommends that France include an uncertainty analysis of the base year in its NIR</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
G.20	Other	<p>In CRF table 6, the indirect emissions of CO₂ and N₂O from the energy, IPPU, agriculture, LULUCF and waste sectors were reported as “NO” (except for CO₂ emissions from IPPU), although these emissions most likely occur within the country. During the review, France indicated that it plans to change the notation keys in CRF table 6 in the next submission as follows: for the energy sector, CO₂ will be reported as “IE” and N₂O as “NE”; for the IPPU sector, N₂O will be reported as “NE” (indirect CO₂ emissions from IPPU are estimated and reported); for the agriculture sector, CO₂ will</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		<p>be reported as “NO” and N₂O as “IE”; for the LULUCF sector, CO₂ will be reported as “IE” and N₂O as “NE”; for the waste sector, CO₂ will be reported as “IE” and N₂O as “NE”. Moreover, NH₃ emissions will be reported as “NE” (they are currently reported as “NO”)</p> <p>The ERT welcomes the efforts made by France in addressing this issue and recommends that France revise the notation keys used in CRF table 6 in line with the UNFCCC Annex I inventory reporting guidelines, annex I, paragraph 37</p>	
G.21	Other	<p>The ERT noted that France did not include in the NIR a summary table that includes information and explanations in relation to categories that are reported as “NE” or “IE”. Moreover, the ERT noted that CRF table 9 is empty. During the review, the Party explained that this happened because of the functionality problems of the CRF Reporter at the time the CRF tables were generated</p> <p>The ERT recommends that France report a completed CRF table 9 and include in the NIR information and explanations in relation to categories that are reported as “NE” or “IE”, in line with paragraph 50(f) of the UNFCCC Annex I inventory reporting guidelines</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
G.22	National registry	<p>The ERT noted that the 2016 standard independent assessment report for France indicates that the Party did not mention the establishment of its previous period surplus reserve (PPSR) in its report to facilitate the calculation of its assigned amount. During the review, France explained that the implementation of functions related to the second commitment period of the Kyoto Protocol is planned in the EU ETS as soon as it is technically possible</p> <p>The ERT recommends that France establish a PPSR as soon as technically possible, which the ERT assumes will be prior to the 2017 annual submission</p>	Comparability*
G.23	Recalculations	<p>The Party submitted its original 2015 NIR on 4 November 2015. On 7 November 2016 the Party resubmitted the CRF tables of its 2016 submission, indicating that this submission constitutes a resubmission under the Convention and under the Kyoto Protocol for both years, 2015 and 2016. The ERT noted that the 2015 NIR contains only information on recalculations between the original 2015 submission and the 2014 submission, and that information on the full extent of recalculations between the 2014 submission and the final 2015 submission is not included. The ERT concludes that the reporting is not transparent but noted that this situation was related to the unique circumstances referred to in paragraph 6 above</p>	Not an issue
Energy			
E.18	1. General (energy sector)	<p>Further to a previous recommendation to improve transparency by using the same AD and units of EFs (see issue E.4 in table 3 above), France explained, in response to a question raised by the ERT, that the background AD are reported in their original units. France considers as not relevant the</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		<p>requirement to change the official statistics data, so this specific recommendation will not be implemented. The ERT noted that, in the NIR, France uses the original units of the statistical data and finds this useful. Moreover, the ERT considers that providing the values of the conversion parameters and the final results after the conversion would increase the transparency of the report and could facilitate greater consistency between the NIR and the CRF tables</p> <p>The ERT recommends that France provide in the NIR the conversion factors used to transform the values in the original source of AD into the AD used in the estimates and also provide the results of the conversion</p> <p>The ERT noted that the units used in the CRF tables for emissions are tonnes (t) or kilotonnes (kt) and not gigagrammes (Gg) or megagrammes (Mg). The ERT encourages France to express emissions in t or kt, as appropriate</p>	
E.19	1. General (energy sector)	<p>The international publications of the Party's data (Eurostat, IEA or UNECE) do not include the data for the French overseas territories</p> <p>The ERT encourages France to explain which territories are included in the official submissions to Eurostat, IEA or UNECE</p>	Not an issue
E.20	1. General (energy sector)	<p>The ERT noted that the NIR does not provide information on the AD used in the sector used for the overseas territories under the Convention and the Kyoto Protocol</p> <p>The ERT recommends that France provide separately in the NIR the AD used in the energy sector categories for the overseas territories under the Convention and the Kyoto Protocol, respectively. In order to increase transparency, the ERT encourages France to provide this information in the energy balance format</p>	Yes. Transparency*
E.21	1. General (energy sector)	<p>France used default CO₂ EFs from the 2006 IPCC Guidelines to estimate CO₂ emissions from fuel combustion for some categories not included in the EU ETS (non-ETS categories) (e.g. 1.A.3 transport and 1.A.4 other sectors). The ERT noted that, because the CO₂ emissions from fuel combustion are closely linked to the carbon content of the fuels, rather than to the used technologies, France could consider using the country-specific CO₂ EFs derived from EU ETS reports in the CO₂ emission estimations for other non-ETS categories (e.g. for transport diesel). The ERT also noted that using country-specific CO₂ EFs is mandatory for categories identified as key</p> <p>For fuels used in the activities which are key in the French GHG inventory, the ERT recommends that France determine country-specific values for the CO₂ EFs (e.g. for gasoline and diesel oil used in road transportation)</p>	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
E.22	Fuel combustion – reference approach – solid and other fuels – CO ₂	<p>In CRF table 1.A(c) on the difference between the reference approach and the sectoral approach, France reported notable differences in 2014: for solid fuels a different of +30.87%; and for other fuels a difference of –89.07%. During the review, France explained that the difference in solid fuels between the two approaches has occurred because, in the reference approach, the non-energy use of solid fuels in the iron and steel category was not subtracted</p> <p>For the difference in the other fuels, France explained that, in the sectoral approach, this type of fuel includes the non-biomass fraction from waste and the industrial gases used as fuels, mainly from chemical industries (steam cracking). France also explained that these industrial gases are not industrial waste and could be considered liquid fuels. France indicate that it will contact all operators to clarify what kind of gases are involved, in order to avoid double counting and to ensure the correct allocation of these CO₂ emissions by type of fuel</p> <p>The ERT recommends that France: (a) subtract the non-energy use of the fuels in the reference approach in order to have a consistent comparison with the sectoral approach; and (b) properly identify and allocate the emissions from the industrial gases by origin from the primary fuels, in line with the 2006 IPCC Guidelines and avoiding double accounting, and provide relevant explanations in the NIR</p>	Yes. Comparability*
E.23	Comparison with international data	<p>Although the difference in accounting of the geographical perimeter is a common cause for differences between IEA and CRF data, the ERT noted that the marine bunkers data shows a different behaviour to that for international aviation. Specifically, the IEA data for fuel used for international aviation are larger than in the CRF tables (e.g. the consumption for international aviation, as reported to the IEA, is larger than that reported in CRF table 1.D, by 2–7% for most years), whereas for international marine bunkers, data in CRF table 1.D are systematically 3–9% higher than the IEA data for all years, and gas/diesel oil are systematically 35–155% larger than data reported to the IEA</p> <p>During the review, France explained that the IEA data exclude the overseas departments and territories whereas they are taken into account when reporting under the Convention and Kyoto Protocol perimeters. The journeys between overseas territories and metropolitan France are considered as international for reporting to IEA, whereas they are domestic for reporting under the Convention. Nevertheless, France explained in the NIR, chapter 3.2.2 “Soutes internationales” (International bunkers) the modality used to separate the domestic aviation and navigation from the international bunkers. In particular, France explained how it separates the domestic maritime navigation (French coast) from international bunkers by using the statistical data which distinguish only the fuel sold by type of vessel flags (French or foreign flags)</p>	Not an issue

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E.24	International bunkers and multilateral operations – jet kerosene, residual fuel oil and gas/diesel oil	<p>The ERT encourages France to add to the NIR (chapter 3.2.2) the information explaining the different trends of the differences between the data reported to the IEA and the data in the CRF tables for fuel consumption in international aviation and marine bunkers</p> <p>The values reported for fuel consumption for international aviation (jet kerosene) and international navigation (residual fuel oil and gas/diesel oil) in CRF table 1.A(b) are different to those reported in CRF table 1.D (e.g. 228 485.07 TJ for jet kerosene for 2014 in CRF table 1.A(b) but 228 186.90 TJ in CRF table 1.D; and 71 665.23 TJ for residual fuel oil for 2014 in CRF table 1.A(b) but 72 986.58 TJ in CRF table 1.D)</p> <p>During the review, France explained that in CRF table 1.A(b), for the reference approach, IEA data are used. However, in CRF table 1.D, the geographic perimeter definition for the inventory sectoral approach was used (Convention and Kyoto Protocol perimeter). France also explained that the IEA data considers journeys between the overseas territories and metropolitan France as international transportation (as in CRF table 1.A(b)) whereas they are regarded as domestic transportation for reporting under the Convention and Kyoto Protocol (as reflected in CRF table 1.D)</p> <p>The ERT noted that the comparison between the reference approach and the sectoral approach in the energy sector is an important verification activity</p> <p>The ERT recommends that France explain in the NIR the discrepancies between the sectoral and the reference approaches for international aviation (jet kerosene) and international navigation (residual fuel oil and gas/diesel oil) reported in the CRF tables</p> <p>The ERT encourages France to make this comparison more straightforward by using consistent data between the two approaches and, as a result, correcting the discrepancies for international aviation (jet kerosene) and international navigation (residual fuel oil and gas/diesel oil) in the relevant CRF tables. The ERT noted that this could be achieved by including in the reference approach the corresponding values from the overseas territories reported in CRF table 1.A(b) and CRF table 1.D</p>	Yes. Transparency*
E.25	International navigation – All fuels	<p>France indicated in the NIR (chapter 3.2.2) that, for metropolitan France, a study completed in 2010 (carried out by Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique (CITEPA) and based on the port traffic data for 2005) established that 6.2% of the fuel sold in metropolitan France for navigation was for domestic navigation and the rest was for international navigation</p> <p>For the overseas territories, from 2001 onwards, the statistics no longer provide separate data on the bunker consumption for a given territory. Starting with 2001 a “conservative approach” was adopted and the share of 50% determined in 2000 has been applied to separate the bunkers from domestic</p>	Not an issue

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		data in total consumption	
		The ERT encourages France to conduct a new study to update the split between domestic and international navigation for the fuel sold in metropolitan France and in the overseas territories	
E.26	Feedstocks, reductants and other non-energy uses of fuels coking coal – CO ₂	France has reported CO ₂ emissions from coking coal for non-energy use in CRF table 1A(d) for the entire time series. France has assumed that all coking coal is used as a non-energy use of fuel. However, the ERT noted that coking coal, as a primary fuel, is usually transformed in coke ovens and the produced coke-oven coke is used both as a reductant (i.e. non-energy use) and as fuel The ERT recommends that France correct the assumption that all coking coal is used as a non-energy use of fuel and report the quantities of the transformed fuels from this primary fuel which are used for non-energy purposes, such as coke-oven coke or coke-oven gas	Yes. Accuracy*
E.27	1.A.1.c Manufacture of solid fuels and other energy industries – solid fuels and biomass - CO ₂	The manufacture of solid fuels in France comprises the production of charcoal and coke oven coke in mining and steel coking plants. The NIR (chapter 3.2.4.2.4) states that in category 1.A.1.c – mining coking plants, a tier 3 method is applied for the entire time series, even if the plant-specific data (e.g. net calorific value and CO ₂ EF) are available only for 2001 During the review, France clarified that there were two mining coking plants but they closed in 2009. France also indicated that plant-specific data (i.e. net calorific value and CO ₂ EF) are available for just one year for one plant and for six years for the second plant. The plant-specific CO ₂ EFs are used for the years where no data are available for that plant. France also explained that the methodology used is tier 2 and not tier 3 The ERT recommends that France correct the information about the tier used (in both the NIR and CRF table summary 3) and provide in the NIR a complete explanation on how CO ₂ emissions are estimated for the fuels used	Yes. Transparency*
E.28	1.A.3.b Road transportation – liquid fuels – CO ₂ , CH ₄ and N ₂ O	France estimated CO ₂ , CH ₄ and N ₂ O emissions from road transportation using the COPERT model. The NIR (figure 38), shows the difference between the statistical data and the COPERT model related to each fuel consumption type in road transportation: motor gasoline, transport diesel, LPG and natural gas vehicle. The ERT noted that, for LPG, a difference arises in the latter part of the time series (starting with around 2008), namely that LPG consumption in the energy balance is much lower than in the COPERT estimations (e.g. in 2014 it is 50% lower) During the review, France explained that the LPG consumption factor (a parameter to be used in the model provided by the <i>EMEP/EEA Air Pollutant Emission Inventory Guidebook</i> , hereinafter referred to as the EMEP/EEA guidebook) is kept constant for the vehicles which are beyond the “Euro 2” standard (the EMEP/EEA guidebook provides this parameter only up to Euro 2 standard, meaning	Yes. Transparency*

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		<p>for vehicles registered from 1997 to 2000). In addition, the LPG fleet is estimated for France by using the relation between the dual-fuel vehicles with double motorization (LPG and gasoline) and the number of gasoline-only vehicles</p> <p>The COPERT model for fuel consumption is reconciled with the statistical data for fuel sold; therefore the ERT recommends that France transparently explain in the NIR the differences (especially the biggest ones, such as LPG) and their trend, between the consumption determined using the COPERT model and the data for fuel sold provided by statistics</p>	
E.29	1.A.3.c Railways – liquid fuels – N ₂ O	<p>The NIR (p. 182) states that the N₂O EF for the transport diesel used in railways is assumed to be the same as the N₂O EF of the diesel used by the heavy-duty vehicles (HDV) before before the introduction of European Union standards and the NIR cites a reference, namely “EMEP/EEA – Air Pollutant Emission Inventory Guidebook – Technical report N° 12/2013, 1.A.3.b Road transport”. During the review, France informed the ERT that the N₂O EF for the diesel fuel used in railways is the same as the N₂O EF for diesel for HDV from the COPERT model used for the estimations in road transport (i.e. 2.98 kg N₂O/TJ)</p> <p>The ERT recommends that France clearly explain the source of the N₂O EF for transport diesel used in railways and avoid providing non-relevant references</p>	Yes. Transparency*
E.30	1.A.3.e.ii Other (other transportation) – all fuels – CO ₂ , CH ₄ and N ₂ O	<p>During the review, France explained that the combustion emissions (CO₂, CH₄ and N₂O) from ground transport activities in airports and harbours are reported together in the category other (1.A.2.g) in the manufacturing and construction subsector. France also explained that the AD and emissions from ground activities in airports and harbours cannot be separated</p> <p>The ERT noted that emissions from these activities should be reported in the category other (1.A.3.e) in the transport subsector (2006 IPCC Guidelines, vol. 2, chapter 3, p. 3.9)</p> <p>The ERT recommends that France report AD and CO₂, CH₄ and N₂O emissions from ground transport activities in airports and harbours in the category other (1.A.3.e) and explain in the NIR how these AD and emissions are estimated. If reporting AD and emissions under 1.A.3.e is not possible, the ERT recommends that France explain in the NIR why these emissions from ground transport activities in airports and harbours are reported in the category other (1.A.2.g) in the manufacturing and construction subsector</p>	Yes. Comparability*
E.31	1.B.2.a.1 Oil exploration – liquid fuels – CO ₂ , CH ₄ and N ₂ O	<p>France reported AD and CO₂, CH₄ and N₂O emissions for oil exploration (1.B.2.a.) as “NO” in CRF table 1.B.2. During the review, France explained that there is some well drilling in France, for which it provided GHG emissions for the entire time series (e.g. 12.44 kt CO₂ eq for 2014) and explained that these are under the significance threshold</p>	Yes. Completeness*

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		The ERT recommends that France estimate and report CO ₂ , CH ₄ and N ₂ O emissions for the category oil exploration or, if the Party considers them insignificant, report AD and emissions as “NE” and include a justification of the likely level of emissions, as required by the UNFCCC Annex I inventory reporting guidelines	
E.32	1.B.2.a.3 Oil transport – liquid and gaseous fuels – CO ₂ and CH ₄	<p>The NIR (chapter 3.3.2.2.1) states that a tier 1 methodology has been used to estimate CO₂ and CH₄ emissions from transport of crude oil through pipelines and tankers and that the corresponding EFs are default values from the 2006 IPCC Guidelines. Nevertheless, the ERT noted that the EFs used in the estimations and provided in the OMINEA database^d for different types of oil transport are expressed in g or kg per Mg crude oil (for CH₄ and CO₂ respectively), which is different from the EF values given in the 2006 IPCC Guidelines (vol. 2, chapter 4, table 4.2.4), which are expressed in Gg per 1000 m³ oil transported by pipeline</p> <p>To increase the transparency of the report, the ERT recommends that France explain the AD and CO₂ and CH₄ EFs used in the estimation of emissions from transport of crude oil through pipelines and tankers, including the conversion parameters used for the units reported in CRF table 1.B.2 and in the OMINEA EFs database</p>	Yes. Transparency*
E.33	1.B.2.a.3 Oil transport – liquid fuels – CO ₂ and CH ₄	<p>The NIR (chapter 3.3.2.2.1) states that the CO₂ and CH₄ emissions from the unloading and storage of crude oil in oil terminals are estimated using a country-specific methodology developed in collaboration with experts from the oil sector. This methodology is based on the NMVOC emissions from these activities and on the ratio between the EF for NMVOCs and the EFs for CO₂ and CH₄ for oil transport through pipelines and tankers. The NIR does not provide further details</p> <p>The ERT recommends that France explain in detail the methodology used in the estimation of CO₂ and CH₄ emissions from the unloading and storage of crude oil</p>	Yes. Transparency*
E.34	1.B.2.b.3 Natural gas processing – gaseous fuels – CO ₂ and CH ₄	<p>The CO₂ IEF for natural gas processing for 2014 is 5 361 447 kg CO₂/TJ, whereas for the rest of the time series it is around 2 667 937 kg CO₂/TJ). For CH₄, for the same AD, the CH₄ IEF has a descending trend: 2 376.19 kg CH₄/TJ for 1990; 134.67 kg CH₄/TJ for 2013; and 303.95 kg CH₄/TJ for 2014. During the review, France explained that the discrepancies in the IEFs for CO₂ and CH₄ are due to a mistake which duplicated the AD for the main processing site for the entire time series before 2014. The discontinuation of the IEF trend is because the main site closed in 2014 and the associated data are no longer reported. France also explained that the mistakes do not affect the emission estimates</p> <p>The ERT recommends that France correct the AD for natural gas processing</p>	Yes. Transparency*
E.35	1.B.2.b.4 Natural gas	France estimates CO ₂ and CH ₄ emissions from transmission and storage of natural gas by using a	Yes. Transparency*

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	transmission and storage – gaseous fuels – CO ₂ and CH ₄	<p data-bbox="510 263 1142 288">tier 2 methodology, as stated in the NIR (chapter 3.3.2.2.2)</p> <p data-bbox="510 312 1590 499">For 2006–2014, estimates are provided by Gaz de France (GDF) (specifically, by GRTgaz) and Transport Infrastructure Gaz France (TIGF), the two operators of the transmission network (TIGF accounted for only 4% of the CO₂ and CH₄ emissions from this category for 2014). For 2004–2005 the estimates are provided by GDF only. Emissions for 1990–2003 are assumed to be the same as for 2004. The ERT noted that the NIR (chapter 3.3.2.2.1) includes only a brief description of the methodology and some of the AD used by GDF and TIGF in their estimations</p> <p data-bbox="510 523 1590 710">During the review week, France explained that there is no agreement between the inventory compilers and GDF or TIGF to provide the estimates and that they provide the estimates voluntarily. GDF and TIGF communicate only the estimations and the general information that the estimates consider the normal operation of the network (including pipeline decompression operations during the maintenance period, leaks related to the design of the network and the operating conditions of certain types of equipment) as well as the operation of the safety valves</p> <p data-bbox="510 734 1590 826">The ERT noted that if a tier 1 method were used, the estimates would be 50% higher than the estimates reported; for example, for 2014, tier 1 estimates for CO₂ and CH₄ would be 343 kt CO₂ eq (CO₂ and CH₄) whereas the estimate reported is 222 kt CO₂ eq</p> <p data-bbox="510 850 1590 997">The ERT considered that the estimation of CO₂ and CH₄ emissions from the transmission and storage of natural gas is not transparently explained in the NIR. Therefore the ERT could not assess whether the estimations of this category are accurate and consistent with the 2006 IPCC Guidelines, and included this issue in the list of potential problems and further questions raised by the ERT during the review</p> <p data-bbox="510 1021 1590 1273">In response to this list, France submitted revised estimates and a detailed description of the methodology used in the estimates for the two transmission operators. France updated the emission estimations from the compression activity and added the emissions from microleakages from compressors and distribution posts. At the same time, France provided a correction owing to the centralization of the emissions calculations, such as additional leakages for some sites and corresponding equipment (including chromatographs or safety devices). As a result, the emissions from this category increased by 303 kt CO₂ eq for 2014, 304 kt CO₂ eq for 2013 and 311 kt CO₂ eq for 1990</p> <p data-bbox="510 1297 1590 1415">For data reported by GRTgaz, France assumed that the CH₄ emissions for 2005 (for compressors) and 2004 (for all other equipment) were also the emissions in the period from 1990 to 2004, whereas for data reported by TIGF, France assumed that the emissions for 2006 were also the emissions for 1990–2005. The ERT noted that these assumptions do not overestimate the base-year emissions,</p>	

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E.36	1.B.2.b.5 Natural gas distribution – gaseous fuels – CO ₂ and CH ₄	<p>because fugitive emissions decrease with better equipment and maintenance, and that the values reported were better in 2004–2006 than in 1990. France also explained that the estimation of CO₂ emissions is based on the proportion of CH₄ and CO₂ in natural gas (CO₂/CH₄ = 0.0123). The ERT considers that the revised estimates resolve the potential problem raised</p> <p>The ERT recommends that France explain in its NIR how it estimates CO₂ and CH₄ emissions from the transmission and storage of natural gas</p> <p>France estimates CO₂ and CH₄ emissions from distribution of natural gas. These estimates are provided by Gaz Reseau Distribution France (GRDF) and other small distributors. The ERT noted that the methodology used by GRDF is briefly explained in the NIR (chapter 3.3.2.2.2). During the review week, France explained that there is no formal agreement with GRDF to provide the estimates. GRDF only communicates the estimations and general information, but does not provide information on the AD, parameters or EFs used</p> <p>The ERT noted that if a tier 1 method were used, the estimates could be more than double the values reported; for example, for 2014, tier 1 estimates for CO₂ and CH₄ would be 1 383 kt CO₂ eq, whereas the estimates reported are 507 kt CO₂ eq. The ERT considered that the estimation of GHG emissions from distribution of natural gas is not transparently explained in the NIR. Therefore the ERT could not assess whether the CO₂ and CH₄ estimations of this category are accurate and consistent with the 2006 IPCC Guidelines, and included this issue in the list of potential problems and further questions raised by the ERT during the review</p> <p>In response to this list, France submitted detailed information provided by GRDF on the methodology used, including the input parameters, hypothesis and calculations for the CH₄ fugitive emissions from natural gas distribution. The method is mainly based especially on the monitoring of events on the network by using a database which is updated daily. Thus, the CH₄ emissions are estimated from network permeability, operations and incidents. At the same time, France submitted the CH₄ emissions estimated from the microleaks detected by systematic monitoring of network incidents, which will be added in the inventory starting with the next submission</p> <p>The ERT recommends that France explain in a synthetic description in its NIR how it estimates CO₂ and CH₄ emissions from distribution of natural gas, including information on the parameters and assumptions used, and include the CH₄ emissions from the microleaks detected by systematic monitoring of network incidents in its estimates</p>	Yes. Completeness*
IPPU	2. General (IPPU)	The ERT noted in the NIR that France provides references to weblinks to the OMINEA database as	Yes. Transparency*

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		<p>part of the methodological descriptions for some of the source categories (e.g. Other carbonate uses (2.A.4)). During the review, the ERT identified the need for France to make the NIR submission clear enough to allow for an independent review to a satisfactory level</p> <p>The ERT recommends that France review the references to weblinks to the OMINEA database in the IPPU chapter of its NIR and, for each of them, decide if replacing the links with the appropriate information would make the NIR more transparent</p>	
I.17	2. General (IPPU)	<p>The ERT noted in the NIR that, in a number of cases, France uses different data sources and methodologies/tiers for different periods, resulting in significant inter-annual IEF changes in some cases (e.g. production of lime, ammonia, nitric acid, and iron and steel)</p> <p>During the review, the ERT discussed with France that lack of explanations on new AD and EFs has in the past resulted in frequent queries regarding IEFs</p> <p>The ERT recommends that, if different data sources and methodologies/tiers are used for different periods (e.g. production of lime, ammonia, nitric acid, and iron and steel), France provide explanations for such inter-annual changes, where applicable, including information on how the consistency of the time series is ensured when different data sources or methodologies are used to estimate emissions for different periods of time</p>	Yes. Transparency*
I.18	2. General (IPPU)	<p>The ERT noted that the NIR states that France made recalculations between the 2014 and 2015 annual submissions for the industrial processes sector. The recalculations made were in many subcategories under most IPPU subsectors (i.e. use of carbonates (2.A.4.d); ammonia production (2.B.1); other metals (2.C.7); use of lubricants (2.D.1); use of paraffins (2.D.2); solvent use (2.D.3-1); air conditioning and refrigeration (2.F.1); solvents (2.F.5); and electrical equipment (2.G.1)). The ERT noted that the NIR briefly describes that the recalculations have been made because of changes in AD or EFs. During the review, France provided a detailed description of the recalculations. The ERT noted the improvement in the description of recalculations for consumption of halocarbons and SF₆</p> <p>The ERT recommends that France improve the description and justification for all recalculations in the IPPU sector</p>	Yes. Transparency*
I.19	2.A.1 Cement production – CO ₂	<p>The ERT noted that the NIR states that France has implementing some recommendations made by previous ERTs by providing a description for the cement production emissions. This description includes differentiation between types of cement and details on category-specific QC procedures. However, the ERT noted that some further enhancements to the methodological description for cement production will improve the transparency of the NIR. For example, the ERT noted that no</p>	Yes. Transparency*

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		<p>adequate information was provided on disaggregated EFs and AD by type of cement, despite the recommendation made in the previous review report (see issue I.5 in table 3)</p> <p>The ERT recommends that France provide clear information on disaggregated EFs and AD by type of cement, and on the methodologies and data used over the time series, including details on estimations that use a tier 3 methodology</p>	
I.20	2.A.4 Other process uses of carbonates – CO ₂	<p>France estimates CO₂ emissions from 2.A.4 using EU ETS data for large emitters. The ERT observed in the NIR that France has not conducted any surveys to determine the presence of small production and use of lime in the country (non-marketed lime), which might not be registered under the EU ETS because of the low level of operation. During the review, France identified small users of cupola furnaces, which amounted to total emissions of less than 7 kt CO₂ per year. The ERT noted that this level of emissions is below the significance thresholds for France (229.55 kt CO₂ eq (0.05% of the national total GHG emissions) and does not exceed 500 kt CO₂ eq)</p> <p>The ERT recommends that France conduct surveys to determine small producers and users of lime and include their emissions under the category 2.A.4 or, if the Party considers these emissions to be insignificant, provide justification in its NIR in accordance with paragraph 37(b) of the UNFCCC Annex I inventory reporting guidelines</p>	Yes. Completeness*
Agriculture			
A.17	3. General (agriculture)	<p>In the NIR, France provides a comparison of country-specific values with the values from the tier 2 approach from the IPCC good practice guidance. This comparison is conducted for the IEFs for CH₄ emissions from enteric fermentation (see issue A.4 in table 3) as well as for other parameters used to estimate CH₄ emissions from livestock (enteric fermentation and manure management). During the review, France stated that it is planning to extend these QA/QC checks and make comparisons between the country-specific values with the corresponding values of the 2006 IPCC Guidelines</p> <p>The ERT commends France for these QA/QC activities and encourages France to proceed in its efforts to conduct comparisons between the country-specific parameters and EFs and the corresponding values in the 2006 IPCC Guidelines, including explanations for the observed deviations</p>	Not an issue
A.18	3. General (agriculture)	<p>France mentioned in the NIR (e.g. chapter 5.2.4) that a bilateral review between the GHG inventories of France and the United Kingdom of Great Britain and Northern Ireland was conducted in 2008. However, the ERT could not find information on the findings of this review in the NIR</p> <p>The ERT commends France for this QA/QC activity and encourages France to provide information on the major findings of all QA/QC activities or to provide references to the respective documents in</p>	Not an issue

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		the NIR	
A.19	3. General (agriculture)	<p>The ERT noted that France is using two different time series of livestock population statistics, one for 1990–1999 and the other for 2000–2014 (the census method changed). The ERT found a high increase of the number of non-dairy cattle between the years 1999 and 2000 (7.0%) that might be related to the use of the two different time series. Additionally, the ERT found some fluctuations of the time series of the IEFs for several animal species and in particular for non-dairy cattle. During the review, France explained that it is using an interpolation to ensure time-series consistency as soon as the difference between the two censuses is above 10%</p> <p>The ERT recommends that France provide in the NIR a transparent explanation on the method used to ensure time-series consistency for the livestock population statistics when two different census methods are used</p>	Yes. Consistency*
A.20	3.A.1 Enteric fermentation – Cattle – CH ₄	<p>For cattle, estimates of CH₄ emissions from enteric fermentation are based on estimates of digestible organic matter intake. Also the calculation of excretion of VS is based on feed digestibility (i.e. the ratio of digestible to non-digestible organic matter intake). However, the ERT noted that no values for organic matter intake or feed digestibility are provided in the CRF tables or in the NIR. Furthermore, the ERT noted that the NIR does not contain information such as animal body weight from which the above-mentioned parameters could be estimated. During the review, France explained that different mass values for different types of dairy cows are used in the calculation and France is planning to report an average mass based on independent data</p> <p>In addition to reiterating the recommendation included in table 3 above (see issue A.8), the ERT recommends that France provide in the NIR disaggregated values on a livestock subcategory level for this parameter and any other important parameters used (e.g. net energy intake, organic matter intake, feed digestibility) and explain the approach used to calculate weighted average values</p>	Yes. Transparency*
A.21	3.B.1 Manure management – Cattle – CH ₄	<p>France is using a country-specific method to estimate the VS excretion by cattle. However, the ERT could not assess whether or not this estimate includes the VS excretion related to urinary energy, which has to be taken into account according to equation 10.24 in the 2006 IPCC Guidelines. During the review, France stated that the country-specific method used (MONDFERENT) ensures completeness in the sense that all VS excreted are accounted for</p> <p>The ERT recommends that France explain in more detail, in its NIR, the approach used to estimate VS excretion by cattle and provide clear evidence that the VS excretion related to urinary energy is included in this estimate</p>	Yes. Transparency*
A.22	3.B.3 Swine – CH ₄	In the NIR (chapter 5.3.2), France states that it is using default values for the VS excretion by swine.	Yes. Transparency*

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A.23	3.B Manure management – CH ₄	<p>However, the ERT noted that the values reported in the NIR (0.22 to 0.20 kg/head/day) are below the IPCC default values (2006 IPCC Guidelines, vol. 4, tables 10.A.7 and 10.A.8) for both market swine (0.3 kg/head/day) and breeding swine (0.46 kg/head/day) and that no values for VS excretion by swine are reported in CRF table 3.B(a)s1. During the review week, France explained that the following values for VS excretion were used: fattening pigs (porcins à l'engraissement), 0.30 kg/head/day; breeding pigs (truies), 0.46 kg/head/day; boars, 0.46 kg/head/day; piglets under 20 kg, 0.00 (zero) kg/head/day</p> <p>France further explained that, owing to the relatively high share of piglets under 20 kg in the overall swine population (approximately 39%) the weighted VS excretion factor is comparatively low. However, France acknowledged that the proportion of piglets under 20 kg might be overestimated and provided new preliminary estimates of livestock numbers for each subcategory during the review week</p> <p>The ERT considered that France could thus not provide clear evidence that all swine currently reported in the category “piglets under 20 kg” have a VS excretion rate of zero (i.e. that the share of piglets is not overestimated). Based on this finding the ERT concluded that the VS excretion of swine is possibly underestimated by France. Accordingly, CH₄ emissions from manure management are possibly underestimated for the entire time series 1990–2014 and the ERT included this issue in the list of potential problems and further questions raised by the ERT during the review week</p> <p>In its response to this list, France submitted revised estimates. The categories of swine were modified, resulting in the following new categories and VS excretion rates: (a) piglets under 8 kg (suckling piglets, 0 kg/head/day); (b) piglets from 8 kg to 30 kg (weaned piglets, 0.30 kg/head/day); (c) fattening pigs over 30 kg (0.30 kg/head/day); (d) sows (0.46 kg/head/day); and (e) boars (0.46 kg/head/day). All VS excretion rates refer to the default values from the 2006 IPCC Guidelines. Considering this correction, the averaged VS excretion of swine is 0.28 kg/head/day in 1990 and 0.27 kg/head/day in 2014. As a result of these changes, CH₄ emissions from manure management from swine increased by 12.94 kt, 17.86 kt and 19.47 kt for 1990, 2013 and 2014, respectively. The ERT considers that the revised estimates resolved the issue raised</p> <p>The ERT recommends that France provide in the NIR a transparent explanation of the methodology used to calculate the weighted average VS excretion rate of the total swine population (e.g. by providing VS excretion rates and livestock population statistics on a disaggregated subcategory level)</p> <p>France mentions in the NIR (chapter 5.3.2) that it is using the default methane conversion factors (MCFs) from the 2006 IPCC Guidelines to estimate CH₄ emissions from manure management. Furthermore, France states that the values for liquid systems vary according to the regional annual</p>	Yes. Transparency*

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A.24	3.B Manure management – CH ₄	<p>mean temperatures, which are provided by MétéoFrance. For dairy cattle and non-dairy cattle average national MCFs are provided in CRF table 3.B(a)s2 for the cool, temperate and warm climate zones</p> <p>The ERT noted that the MCFs provided for liquid systems in the temperate climate zone are slightly different for dairy cattle and non-dairy cattle (e.g. 27.04% and 28.04%, respectively for 1990). Furthermore, the ERT could not reconstruct some of the temporal variation of the MCFs for non-dairy cattle. The values reported for liquid manure management in temperate zones for the years 2010 and 2013 are approximately 7% higher than the values of the respective preceding and following years. Finally, the ERT noted that the MCFs for liquid systems for dairy cattle in the temperate climate zone are reported as “NE” in the years 2005, 2010 and 2013</p> <p>During the review, France explained the approach used in more detail, provided further background data and stated that the notation key “NE” used for liquid manure management for dairy cattle in the temperate climate zone was incorrect and should have been reported as “NO”</p> <p>The ERT recommends that France use the correct notation keys to report MCFs for liquid manure management for dairy cattle in CRF table 3.B(a)s2. Furthermore, the ERT recommends that France provide in the NIR a more detailed description of the methodology used to estimate average MCFs for manure management in liquid systems (e.g. by providing temperature time series and/or a regional temperature distribution map)</p> <p>France mention in the NIR (chapter 5.3.2) that the CH₄ emissions from manure management take into account CH₄ emissions from anaerobic digestion. The NIR states that the CH₄ emissions captured are subtracted from the total amount of CH₄ emissions without taking into account anaerobic digestion</p> <p>The ERT recommends that France estimate the amount of CH₄ that is still emitted during anaerobic digestion of animal manure and report it under the respective manure management system in the CRF tables and report only the amount of manure actually still treated as liquid manure under “liquid systems”</p> <p>The ERT also recommends that France report the corresponding calculation parameters (MCFs, animal waste management system distribution (AWMS)) under the manure management system “digesters” in CRF table 3B(a)s2</p>	Yes. Comparability*
A.25	3.B.4 Other livestock – CH ₄	<p>France states in the NIR (chapter 5.3.2) that all poultry manure was allocated to the solid storage manure management system except for manure from ducks and geese which was allocated to the liquid manure system. During the review, France explained that it is using the poultry-specific MCFs from table 10.17 of the 2006 IPCC Guidelines. However the ERT noted that no poultry-specific data</p>	Yes. Transparency*

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		<p>are reported in CRF table 3.B(a)s2</p> <p>The ERT recommends that France report all parameters related to poultry manure management under the manure management system “other” in CRF table 3B(a)s2. The ERT also recommends that France ensure consistency between the reporting of CH₄ emissions from manure management for poultry in the NIR and the CRF tables and encourages France to describe transparently in the NIR which parameters are used for which poultry subcategory</p>	
A.26	3.B.3 Swine – N ₂ O	<p>France states in the NIR (page 298 and 299) that estimation of nitrogen excretion rates for swine is based on CORPEN (2003). In the OMINEA database France reports: (a) nitrogen excretion rates for fattening pigs (Porcins à l’engraissement) ranging from 4.32 kg/head/year to 6.92 kg/head/year; and (b) nitrogen excretion rates for breeding pigs (Truies) that range from 21.21 kg/head/year to 21.83 kg/head/year. During the review week, France provided weighted average nitrogen excretion rates for swine ranging from 6.9 kg/head/year (year 2012) to 7.4 kg/head/year (year 2000). Based on the numbers in CRF table 3.B(b) the ERT estimated a nitrogen excretion rate of 7.2 kg/head/year (average of 1990–2014)</p> <p>The ERT compared the French estimate of the nitrogen excretion (7.03 kg/head/year for 2014, estimated by the ERT by dividing the total nitrogen excretion with the total population) to reported values from neighbouring countries for the year 2014 (nitrogen excretion in kg/head/year): Belgium, 9.38; Switzerland, 9.20; Germany, 12.96; Denmark, 7.95; Spain, 8.77; United Kingdom, 10.31; Ireland, 8.36; Italy, 12.30. Furthermore, the ERT estimated nitrogen excretion rates of swine using equation 10.30 from the 2006 IPCC Guidelines and default values for default nitrogen excretion rate per body weight (table 10.19) and default values for typical animal mass (2006 IPCC Guidelines, tables 10A-7 and 10A-8). The resulting nitrogen excretion rate amounts to 9.31 kg/head/year for market swine and 30.35 kg/head/year for breeding swine</p> <p>During the review week, France explained that there might be an error in the accounting of piglets below a body weight of 20 kg. Additionally, France stated that it is planning to revise nitrogen excretion rates in the near future based on a new study by Dourmad et al.^e France provided informally a new estimate for the weighted average nitrogen excretion rate (as an example, the rate for the year 2014 amounts to 9.29 kg/head/year)</p> <p>Based on these findings, the ERT considered that the nitrogen excretion rate of swine is possibly underestimated in the calculations submitted by France. Accordingly, N₂O emissions from manure management and N₂O emissions from agricultural soils were possibly underestimated by France for the entire time series 1990–2014. The ERT included this issue in the list of potential problems and further questions raised by the ERT during the review week</p>	Yes. Transparency*

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A.27	3.B.4 Other livestock – N ₂ O	<p>In its response to this list, France submitted revised estimates. The categories of swine were modified, resulting in the following new categories and nitrogen excretion rates: (a) piglets under 8 kg (suckling piglets, 0 kg/head/year); (b) piglets from 8 kg to 30 kg (weaned piglets, 3.74 kg/head/year in 2014); (c) fattening pigs over 30kg (13.40 kg/head/year in 2014); (d) sows (21.24 kg/head/year in 2014); and (e) boars (21.24 kg/head/year in 2014). All nitrogen excretion rates are now directly calculated on the basis of animal production based on values in the above-mentioned report by Dourmad et al, corrected in order to take into account the mortality rate, and are no longer based on annual averaged populations. As a result of these changes, the averaged nitrogen excretion of swine is 10.47 kg/head/year in 1990 and 9.44 kg/head/year in 2014</p> <p>The ERT considers that the revised estimates resolved the issue raised. As a result of these changes, N₂O emissions from subcategory 3.B.3 (swine) increased by 0.04 kt, 0.02 kt and 0.02 kt for 1990, 2013 and 2014, respectively</p> <p>The ERT recommends that France explain in detail in its NIR how it estimates the nitrogen excretion rates for swine (e.g. by providing nitrogen excretion rates on a livestock subcategory level together with the respective population statistics)</p> <p>France explains in the NIR (chapter 5.3.2) that for estimating direct N₂O emissions from manure management it is using the default N₂O EFs from the 2006 IPCC Guidelines. France reported using different EFs for solid storage (0.005 kg N₂O-N/kg N excreted), liquid systems (0.0001 kg N₂O-N/kg N excreted) and poultry systems (0.001 kg N₂O-N/kg N excreted). However, the ERT found that none of the N₂O EFs reported in CRF table 3.B(b) correspond to these IPCC default values. (The ERT also noted that the EFs are displayed incorrectly in the CRF tables because of problems with the CRF Reporter and thus corrected the values for the molecular weight before the comparison). During the review, France explained that emissions from poultry manure are reported in the CRF tables under solid storage except for the emissions from ducks and geese, which are reported under liquid systems. As a consequence, the EFs reported in the CRF tables represent a weighted average and do not correspond to any default value</p> <p>The ERT recommends that France report all direct N₂O emissions related to poultry manure management under the manure management system “other” in CRF table 3.B(b). Additionally, the ERT recommends that France explain in the NIR which N₂O EFs were used for which poultry subcategory</p>	Yes. Transparency*
A.28	3.B.5 Indirect N ₂ O emissions 3.D Direct and	<p>France applies a detailed nitrogen mass flow approach when estimating N₂O emissions from manure management and agricultural soils. The ERT found that the nitrogen left (498 kt N, average 1990–2014; for 1990 the value is 513 kt N) when subtracting the nitrogen lost through volatilization and</p>	Yes. Transparency*

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A.29	3.D.a.5 Mineralization/ immobilization associated with loss/gain of soil organic matter –	<p>leaching (row 25 in CRF table 3.B(b)) from the nitrogen entering the manure management systems (row 26 in CRF table 3.B(b)) is lower than the value provided under nitrogen input from manure applied to soils in CRF table 3D (cell C11) (600 kt N, average 1990–2014; for 1990, the value is 623 kt N)</p> <p>During the review week, France explained that the nitrogen volatilization during manure management was overestimated. Additionally, there was an error in the nitrogen balance because not all nitrogen losses from manure management were subtracted from the total amount of nitrogen excreted. France explained that this resulted in an overestimation of the animal manure applied to soils</p> <p>Based on this finding the ERT considers that the reporting of the N₂O emissions in categories 3.B and 3.D is not consistent and that N₂O emissions from animal manure applied to agricultural soils are possibly overestimated in the entire time series 1990–2014. As a result, the Party is possibly overestimating its Annex A emissions for the base year. The ERT included this issue in the list of potential problems and further questions raised by the ERT during the review week</p> <p>In response to this list, France submitted revised estimates for indirect N₂O emissions (category 3.B.5) and direct and indirect N₂O emissions from agricultural soils (category 3.D) on 7 November 2016. These estimates were calculated using the correct accounting of: (a) leaching during manure storage, according to EMEP/EEA Guidebook 2016;^f (b) the nitrogen budget for the overseas territories; and (c) nitrogen volatilization during manure management</p> <p>The ERT considers that the revised estimates resolved the issue raised. As a result of these changes: N₂O emissions from 3.B.5 decreased by 1.69 kt, 1.44 kt and 1.46 kt for 1990, 2013 and 2014, respectively; and N₂O emissions from 3.D decreased by 0.008 kt for 1990 and increased by 0.018 kt and 0.008 kt for 2013 and 2014, respectively (the ERT noted that these impacts also include the impact of issues A.29 and A.30 below)</p> <p>The ERT recommends that France provide in the NIR a transparent description of the nitrogen flow model and the corresponding methodology to estimate indirect N₂O emissions from manure management and direct and indirect N₂O emissions from animal manure applied to agricultural soils</p> <p>France does not report N₂O emissions from nitrogen mineralization/immobilization associated with loss/gain of soil organic matter on mineral soils in CRF table 3.D (reported as “NO”). Furthermore, France reported net carbon stock change under cropland remaining cropland as “NO” in CRF table 4.B. During the review, France provided preliminary data from a new project showing that soils under cropland remaining cropland are a net sink of carbon. Accordingly, France stated that there is no nitrogen mineralization in soils under cropland remaining cropland and that the N₂O emissions</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
N ₂ O		<p>from mineralization/immobilization associated with loss/gain of soil organic matter are correctly estimated as “NO”</p> <p>The ERT recommends that France explain in the agriculture chapter of the NIR why mineralization/immobilization associated with loss/gain of soil organic matter is not occurring and make a reference to this chapter in the documentation box of CRF table 3.D</p>	
A.30	3.D.a.6 Cultivation of organic soils (i.e. histosols) – N ₂ O	<p>France provides the area of cultivated organic soils (i.e. histosols) in CRF table 3.D. Furthermore, France provides areas of organic soils under cropland in CRF table 4.B and areas of organic soils under grassland in CRF table 4.C. The ERT noted that the area provided in the agricultural sector is, on average, almost 2.5 times higher than the area reported under cropland and grassland in the LULUCF sector (for example, for 1990, 201.33 kha are reported for agriculture and 15.78 kha for cropland and 52.18 kha for grassland in the LULUCF sector)</p> <p>During the review week, France acknowledged that the area of organic soils reported in the agriculture sector is possibly overestimated. The estimate is based on the FAO soil map but it could not be confirmed that all the identified land is actually managed as cropland or grassland</p> <p>Based on this finding the ERT considers that the estimates of the areas of cultivated organic soils in the agricultural and the LULUCF sector are not consistent and that the N₂O emissions from cultivated organic soils are potentially overestimated for the entire time series 1990–2014. By potentially overestimating these emissions France is potentially overestimating its Annex A emissions for the base year. The ERT included this issue in the list of potential problems and further questions raised by the ERT during the review week</p> <p>In response to this list, France submitted revised estimates for N₂O emissions from cultivation of organic soils (i.e. histosols) (category 3.D.a.6) on 7 November 2016. These estimates were calculated considering information available in the BDGSF (Base de données Géographique des Sols de France) soil cartography and the Corine Land Cover map for the metropolitan territories and a report by Cubizolle et al.⁸ and the Corine Land Cover map for French Guiana. The ERT considers that the revised estimates resolved the issue raised. As a result of these changes, N₂O emissions from cultivation of histosols decreased by 0.2460 kt, 0.2456 kt and 0.2456 kt for 1990, 2013 and 2014, respectively</p> <p>The ERT recommends that France provide in the NIR a transparent explanation of the methodology used to estimate the area of organic soils in the agriculture sector and that the Party ensure the consistency of the areas of organic soils reported under the agriculture sector and the LULUCF sector</p>	Yes. Transparency*

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A.31	3.D.a.6 Cultivation of organic soils (i.e. histosols) – N ₂ O	<p>In the NIR (chapter 5.5.2, subchapter ‘Histosols’) it is stated that there are 199.08 kha of histosols in France (metropolitan territories) and 2.25 kha in French Guiana. The ERT noted that assuming that all histosols in French Guiana are under cropland and managed grassland and further assuming a default EF of 8 kg N₂O–N/ha/year for temperate soils and 16 kg N₂O–N/ha/year for tropical soils (table 11.1 in the 2006 IPCC Guidelines) would yield a weighted EF of 8.09 kg N₂O–N/ha/year. However, in the CRF table 3.D France is reporting a lower EF (8.03 kg N₂O–N/ha/year)</p> <p>During the review, France stated that a problem had been detected in the calculation for the areas of histosols in the overseas territories. France also explained that it assumes that organic soils are only found in EU overseas territories and not in the non-EU overseas territories (French Polynesia, Wallis and Futuna, Mayotte, New Caledonia, Saint Pierre and Miquelon, the French Southern and Antarctic territories, and Clipperton). However, the emissions from the EU overseas territories were divided by the total area of overseas territories (EU and non-EU) which resulted in a lower EF. Subsequently this lower EF was used to estimate overall emissions from cultivated histosols, which resulted in an underestimate of overall emissions. During the review France provided unofficial revised estimates for the N₂O emissions from the cultivation of organic soils that were, on average, 5.25 kt CO₂ eq higher than the estimates provided in the CRF tables, thus demonstrating that the difference is below the threshold for significance in the UNFCCC Annex I inventory reporting guidelines</p> <p>The ERT recommends that France revise the EF for the calculation of N₂O emissions from the cultivation of histosols and provide revised emission estimates</p>	Yes. Accuracy*
A.32	3.G Liming – CO ₂	<p>France mentions in the NIR (chapter 5.7.2) that data on the supply of carbonates for agricultural purposes is provided by ANPEA (Association Nationale Professionnelle pour les Engrais et Amendements). The estimates encompass limestone, dolomite, marl, lime from the sugar beet industry and other amendments. The ERT noted that liming with dolomite, CaMg(CO₃)₂, is reported as “IE” in CRF table 3.G-I. During the review, France explained that CO₂ emissions from dolomite are included in the CO₂ emissions from limestone and that the separate reporting between limestone and dolomite is only conducted in the background files but not in the CRF tables</p> <p>The ERT recommends that France report CO₂ emissions from the use of limestone and dolomite in CRF table 3.G-I separately and describe in the NIR the methodological approach used to split between limestone and dolomite</p>	Yes. Transparency*
LULUCF			
L.22	4. General (LULUCF) –	The ERT noted that complete and transparent information on sources of AD, assumptions and methodologies is not provided in the NIR	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
CO ₂ , CH ₄ and N ₂ O	<p>As the transparency of inventories is fundamental to the success of the process for the communication and consideration of information, the ERT recommends that France report in the NIR complete information on data sources, assumptions and methodologies used. In particular, the ERT recommends that France ensure that the following information is reported:</p> <ul style="list-style-type: none"> (a) The land use and land-use change matrix (from 1990 to the latest reported year) using the relevant categories from the survey on land use (known as TERUTI) (b) The time series 1971–1989 of the land use and land-use change matrix (equivalent to CRF table 4.1) (c) The equations applied for deriving from the TERUTI data the annual averaged estimates of areas of each land use and land-use change category reported in the CRF tables (d) Information to explain the differences for the area of forest land and of associated land-use conversions (to and from forest land) between data collected by TERUTI and data collected by the NFI (e) Information on how the monitoring system is able to identify land-use changes occurring in the unmanaged forest land from those occurring in the managed forest land (f) Information on how the monitoring system is able to identify disturbances occurring in the unmanaged forest land from those occurring in the managed forest land and whether the time series of data used for calculating the background level of natural disturbances, and its margin, includes GHG emissions from natural disturbances occurred in unmanaged forest land (g) The time series from 1990 to the latest reported year of the area subject to each of the KP-LULUCF activities (h) The time series from 1990 to the latest reported year of the biomass average gross annual increment (t C/ha) in forest land remaining forest land and in land converted to forest land together with the area across which the value has been calculated, disaggregated at the level of regions and forest types applied for calculating the national total biomass gross annual increment (i) The time series from 1990 to the latest reported year of the mortality (t C/ha) in forest land remaining forest land and in land converted to forest land, disaggregated at the level of regions and forest types applied for calculating the national total biomass gross annual increment (j) The time series from 1990 to the latest reported year of average biomass carbon stock (t C/ha) disaggregated at the level of regions and forest types applied for calculating the national total 		

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
L.23	4. General (LULUCF)	<p>biomass gross annual increment</p> <ul style="list-style-type: none"> (k) For each natural disturbance type, the time series from 1990 to the latest reported year of areas of forest land subject to natural disturbances disaggregated at the level of regions and forest types applied for calculating the national total biomass gross annual increment (l) The time series from 1990 to the latest reported year of the total harvested wood subdivided by land of origin (i.e. metropolitan France and overseas territories), and land use of origin (i.e. forest land, possibly subdivided between FM and AR lands, cropland and grassland) (m) A table with a compilation of root-shoot ratios applied for estimating biomass gains and each biomass loss type (i.e. natural mortality, harvesting and disturbances), disaggregated at the level of the various forest types used for calculating the national total biomass gross annual increment (n) The equation applied for calculating the total annual net biomass increment from the biomass increments calculated a plot level (o) For each biomass carbon stock loss and gain, information on whether it includes belowground biomass (p) Information on AD to clarify the timing of the collection of data used to elaborate the AD (e.g. the land representation), the methodology applied for data collection, the method (including any assumptions and equations) applied for the elaboration of AD from rough data (q) Information on EFs to clarify the timing of collection, the methodology applied for data collection, the method (including any assumption and equation) applied for the elaboration of EFs from rough data (r) Information on the evidence on which each assumption is based, including quantitative information for each carbon pool assumed to be at equilibrium or for which the gross carbon stock change is assumed to be at equilibrium (s) For each country-specific method, information, consistent with the 2006 IPCC Guidelines, on the verification of the method's estimates <p>The ERT noted that the NIR included references to equations that are not used in the estimation of emissions and removals in the LULUCF sector (e.g. NIR equations 20, 21 and 22)</p> <p>The ERT recommends that France remove from the NIR all references to equations that are not used in the estimation of emissions and removals in the LULUCF sector, including NIR equations 20, 21</p>	Yes. Transparency*

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		and 22	
L.24	4. General (LULUCF)	The ERT encourages France to reference each IPCC equation used with its number, without reporting in the NIR its formulation and its legend	Yes. Transparency*
		<p>The ERT noted that France has applied a tier 2 uncertainty analysis, Monte Carlo analysis, and reported the results of such analysis. However, the ERT noted that without information on the uncertainty value and associated probability density function type assigned for each parameter entered in the Monte Carlo analysis and for all parameters and data used for preparing the GHG estimates it is not possible to make an assessment of the uncertainty analysis</p> <p>Therefore, the ERT recommends that France report in the NIR information on the uncertainty value and associated probability density function for all parameters and data used to prepare the GHG estimates. This could be achieved by, for example, including in the NIR, for each land use and land-use change category, a table that includes, for all parameters and data used for preparing the GHG estimate, the average value, the unit, the assigned confidence interval, together with information on how the confidence interval has been calculated, and information on the type of probability density function applied to the parameter/data uncertainty</p>	
L.25	4. General (LULUCF) – CO ₂ and N ₂ O	<p>France has calculated country-specific SOC values for mineral soils (except for overseas territories) stratified by land use and by geographical regions. The NIR does not report information on the methodology applied for the calculation of these country-specific factors or information on applied verification on the CS values. The ERT noted that the minimum stratification of SOC, as indicated by the 2006 IPCC Guidelines, should take into consideration soil type, climate zone, land use and land management systems</p> <p>Therefore, the ERT recommends that France ensure that the country-specific SOC values in mineral soils applied are calculated by stratifying available data per soil type, climate zone, land use and land management system</p> <p>The ERT also recommends that France report complete information on background data and methods used for calculating the country-specific SOC values</p> <p>Further, the ERT recommends that France verify, consistently with the 2006 IPCC Guidelines, the estimates prepared with the country-specific SOC values</p> <p>Finally, the ERT recommends that France apply the IPCC default SOC values and SOC change factors for those territories (e.g. overseas territories), for which country-specific factors have not been calculated</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
L.26	Land representation	<p>The ERT noted that inconsistent information on the area of organic soils subject to agricultural practices has been reported in CRF table 3.D (a constant value across the time series of 201 330 ha for the category 3.D.a.6 “cultivation of organic soils (i.e. histosols)”) (see also issues A.30 and A.31 above), CRF table 4.B (the area of organic soils reported under cropland ranges between 15 780 ha and 19 537 ha in the time series) and CRF table 4.C (the area of organic soils reported under grassland ranges between 52 177 ha and 75 132 ha in the time series). During the review, France clarified that it does not have complete information on the area of organic soils in metropolitan France and in its overseas territories</p> <p>Therefore, the ERT recommends that France identify in its metropolitan territory and overseas departments the areas of organic soils and the land use to which those areas are subject. To achieve this, the ERT suggests that France may consider using the French soil map or data contained in international soil databases combined with the Corine Land Cover map or other land-use/land-cover databases^h</p>	Yes. Accuracy*
L.27	4.A Forest land – general	<p>France reported in the NIR (p. 311) that unmanaged forests in metropolitan France are identified on the basis of their accessibility. Remote, not accessible forest areas are classified as unmanaged and the associated GHG emissions and removals are consequently excluded from the report; in total almost 5% of the forest area in the metropolitan territory is classified as unmanaged. The ERT noted that the same definition of unmanaged forest land does not apply to forest land in the overseas territories, so that all forest lands in the overseas territories are considered as managed. The Party did not provide any rationale to justify such difference in the application of the unmanaged forest definition</p> <p>The ERT recommends that France harmonize the application of the unmanaged forest definition across the entire national territory and, in doing so, ensure consistency between the reporting of managed forest land and of forest management (see also issue KL.6) and complete coverage of forest lands in the metropolitan territory, regardless of their accessibility</p>	Yes. Completeness*
L.28	4.A Forest land – CO ₂	<p>The ERT noted that, for the storm which occurred in 2000, carbon stock losses in forest land have been reported as averaged (subdividing the losses across a period of 5 years), which corresponds to variations observed in statistics on wood harvest (a peak just after the storm and less harvest in the following years). However, the ERT noted that it is not a good practice to average across a time period the anthropogenic GHG emissions and removals associated with events that occur in a single year</p> <p>The ERT recommends that France report for the year 2000 only the entire amount of biomass carbon stock losses, and associated carbon stock gains in the DOM pool, caused by the storm of 2000</p>	Yes. Consistency*

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L.29	4.B Cropland CO ₂ and N ₂ O	<p>The ERT noted that the TERUTI methodology contains subcategories in both cropland and grassland land-use categories, which implies a different carbon stock content in biomass and soil pools. The ERT also noted that the TERUTI data contains information on land conversions from and to cropland and grassland. The ERT further noted that both land-use categories, cropland and grassland, contain estimates of perennial biomass gains and losses, where the biomass losses are estimated on the basis of logging data and the gains are assumed to be equal to the losses because the biomass carbon stock pool is assumed to be at equilibrium in both land-use categories, although such assumption is not consistent with the IPCC default methodology, which requires the estimation of net carbon stock gains and net carbon stock losses according to the cultivation cycle and the age of the perennial biomass. In particular, the ERT noted that, according to 2006 IPCC Guidelines (see vol. 4, section 5.2.1.1), the net accumulation of perennial biomass carbon stocks and the net loss of perennial biomass carbon stock at the end of the cultivation cycle (followed either by a change of crop or by the replanting of the perennial crop) should be reported under cropland remaining cropland</p> <p>The ERT recommends that France, applying at least the tier 1 IPCC methodology, report estimates of biomass and soil carbon stock changes, and associated CO₂ and N₂O emissions, in:</p> <ul style="list-style-type: none"> (a) Cropland remaining cropland, reporting emissions and removals associated with changes in cropland subcategories (b) Land converted to cropland, reporting also emissions and removals from conversions of land uses other than forest to cropland subcategories 	Yes. Completeness*
L.30	4.C Grassland CO ₂ and N ₂ O	<p>The ERT noted issue L.29 above</p> <p>The ERT recommends that France, applying at least the tier 1 IPCC method, report estimates of biomass and soil carbon stock changes, and associated CO₂ and N₂O emissions, in:</p> <ul style="list-style-type: none"> (a) Grassland remaining grassland, reporting emissions and removals associated with changes in grassland subcategories (b) Land converted to grassland, reporting also emissions and removals from conversions of land uses other than forest to grassland subcategories 	Yes. Completeness*
L.31	4.B Cropland and 4. C Grassland and 4.E Settlements – CO ₂	<p>The ERT noted that the selection of biomass density values reported in the NIR (figure 86) is not completely supported by information regarding their calculation/selection. The ERT further noted that there is no value reported for treed croplands and that perennial shrubby crops are assumed to have the same biomass density value as annual crops, although perennial crops have a higher biomass carbon stock, at least in consideration of the resident time of the biomass on the land (i.e.</p>	Yes. Accuracy*

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		<p>continue during the year for perennial crops and limited to a portion of the year for annual crops)</p> <p>The ERT recommends that France report in the NIR complete information on the calculation/selection of each biomass density value</p> <p>The ERT also recommends that France report a biomass density value for treed cropland and revise the biomass density value reported for perennial shrubby crops</p> <p>Further, the ERT recommends that France clarify that the values reported for treed grassland and treed settlements are applied only to urban forest parks and to grassland subcategories composed of treed lands that do not reach the minimum area threshold of the forest definition</p>	
L.32	4.D. Wetlands – CO ₂ and N ₂ O	<p>The ERT noted that France applies the IPCC default methodology for mineral soils for estimating carbon stock changes in land converted from and to wetlands (which are organic soils) and that France has not justified that the method best suits national circumstances</p> <p>Therefore, the ERT recommends that France either report information to demonstrate that the methodology used to estimate carbon stock changes in land converted from and to wetlands produces more accurate and/or precise estimates than the IPCC methodology (2006 IPCC Guidelines, vol. 4, equation 2.26) or apply the IPCC methodology for estimating GHG emissions and removals from drained (wetlands converted to other land uses) and rewetted (other land uses converted to wetlands) organic soils</p> <p>Further, the ERT encourages France to use the IPCC Wetlands Supplement in preparing its annual inventories for wetlands converted to other land uses and for other land uses converted to wetlands</p>	Yes. Transparency*
L.33	4.F.2 Land converted to other land – CO ₂ and N ₂ O	<p>The ERT noted that no carbon stock changes have been reported for the conversion of cropland, grassland, wetlands and settlements to other land (reported as “NO” in CRF table 4.F). The ERT further noted that, according to methods contained in the 2006 IPCC Guidelines, it is necessary to report biomass and SOC losses, and associated CO₂ and N₂O emissions, in cropland and grassland converted to other land, and SOC losses and associated CO₂ and N₂O emissions, in wetlands and settlements converted to other land. During the review, France explained that its methodology for land representation identifies both land cover and land uses and in the above-listed conversions, although the land use is changed the land cover does not; consequently, the methodology applied does not estimate carbon stock changes</p> <p>The ERT recommends that France classify under the category other land, only land without significant carbon stock</p> <p>The ERT also recommends that France estimate SOC losses and associated CO₂ and N₂O emissions</p>	Yes. Completeness*

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L.34	4.G.3 Other (harvested wood products) – CO ₂	<p>originated from conversions of cropland, grassland, wetlands and settlements to other land either applying the IPCC default assumption (i.e. all SOC lost in the conversion), or applying a country-specific SOC factor for other land</p> <p>The ERT noted that France has not reported the background data, disaggregated by HWP category, used for calculating the HWP contribution in CRF table 4.Gs2 (the table is blank). Further, the ERT noted that the Party has not reported in the NIR the background data (i.e. the time series of HWP domestically produced from domestic wood) for each HWP category as well as the equations of the country-specific method and the factors applied in the method for converting the HWP weight or volume in tonnes of carbon</p> <p>To improve transparency, the ERT recommends that France complete CRF table 4.Gs2 and report in the NIR the background data (i.e. the time series of HWP domestically produced from domestic wood) for each HWP category as well as the equations of the country-specific method and the factors applied in the method for converting the HWP weight or volume in tonnes of carbon</p> <p>Further, the ERT encourages France to publish the technical report: “Méthode opérationnelle de comptabilisation des produits-bois dans l’inventaire national GES” used in the estimates</p>	Yes. Transparency*
L.35	4 (V) Biomass burning – CO ₂ , CH ₄ and N ₂ O	<p>The 2014 ARR (paragraph 94) indicated that “France estimates that 13% of the above-ground biomass is burned on-site after harvesting, according to the OMINEA report (page “OMINEA 5A forestland GES/1, b.1”)”. The current ERT noted that no further information has been provided in the NIR. During the review, France explained its difficulty in estimating this value and provided the rationale for the estimate provided in the NIR, which assumes that 100% of the stem and 30% of the branches are harvested and 10% of the above-ground biomass is left to decay, following the default value provided in the IPCC good practice guidance for LULUCF (p. 3.178). The remaining biomass is assumed to be burned. France acknowledged the need to improve the method of estimation, and clarified that the assumption of the share of wood left to decay and burned seems adequate, but the partition between burning and decay remains a challenge</p> <p>The ERT agrees that the method is a first-order approximation and encourages France to continue its efforts to improve the accuracy of the estimates of CO₂, CH₄ and N₂O emissions from biomass burning in forest lands</p> <p>Among the improvements envisaged in future inventories discussed during the review, France mentioned a collaboration between the Institut National de l’Information Géographique et Forestière and CITEPA to refine the calculation of the types of burned forests using data from the “PROMETHEE database”</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		The ERT recommends that France provide information on the progress of the collaboration between the Institut National de l'Information Géographique et Forestière and CITEPA to refine the calculation of the types of burned forests using data from the "PROMETHEE database"	
Waste			
W.19	5.A Solid waste disposal on land – CH ₄	The ERT noted that the NIR has no specific information of AD, CH ₄ EFs and other parameters used to calculate the CH ₄ emissions from solid waste disposal on land. During the review week, the Party presented the database and calculations spreadsheets used to estimate CH ₄ from solid waste disposal on land	Yes. Transparency*
		The ERT recommends that France increase the transparency of the NIR by including the amount of waste sent to landfill, the CH ₄ EFs and the default parameters used from the 2006 IPCC Guidelines	
W.20	5.A Solid waste disposal on land – CH ₄	According to the 2006 IPCC Guidelines (vol. 5, chapter 3, p. 19), CH ₄ recovery should be reported only when references documenting the amount of CH ₄ recovery are available. The ERT noted that the NIR does not include information about the source of the data used to support the values reported for CH ₄ recovery (for example, for 2014 France reported 274.13 Gg CH ₄ recovered in CRF table 5.A). During the review, France explained that, in response to recommendations made in previous review reports, since 2012 research has been conducted based on measurements from landfill operators to collect representative data on CH ₄ recovery and used in the emission estimates	Yes. Transparency*
		The ERT recommends that France include in the NIR the information about the survey realized to define the CH ₄ recovery values used for the solid waste disposal CH ₄ emissions estimations	
W.21	5.A Solid waste disposal on land – CH ₄	The ERT noted that the NIR does not have information on the fraction of degradable organic carbon which decomposes (DOCf); however, in CRF table 5.B the DOCf value is 0.13. According to the 2006 IPCC Guidelines (vol. 5, chapter 3, p. 13) the default value is 0.5. During the review week, France explained that the value used in the estimates is the default value from the 2006 IPCC Guidelines and not the value reported in the CRF table. France stated that it intends to correct this value in the next annual submission	Yes. Adherence to UNFCCC Annex I inventory reporting guidelines
		The ERT recommends that the Party report the correct the value used for DOCf in the CRF tables	
W.22	5.B. Biological treatment of solid waste – CH ₄ and N ₂ O	The ERT noted that there is no information in the NIR regarding the AD and EFs used to calculate CH ₄ and N ₂ O emissions from composting. During the review week, France explained that the database ITOM is the source of the AD and provided the study published by ADEME ("ADEME/CTBA – Impacts environnementaux de la gestion biologique des déchets", 2005) upon which the EFs were based	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		The ERT recommends that France include in the NIR clear information on the AD used and about the source used as reference for the CH ₄ and N ₂ O EFs	
W.23	5.B.2 Anaerobic digestion at biogas facilities – CH ₄	<p>The ERT noted that France reported the amount of CH₄ for energy recovery for the category anaerobic digestion at biogas facilities (5.B.2) as not occurring (“NO”). However, during the review, France explained that CH₄ for energy recovery occurs</p> <p>The ERT recommends that France report the estimated amount of CH₄ for energy recovery in CRF table 5.B for the appropriate years since 1990</p>	Yes. Accuracy*
W.24	5.D.2 Industrial wastewater – CH ₄	<p>The ERT noted that the NIR did not provide the AD source or values used to calculate industrial wastewater CH₄ emissions and also noted that it was not possible to identify which industry types were considered in the industrial wastewater emissions. During the review week, France provided a database of AD and the industries included in calculation</p> <p>The ERT recommends that France include in the NIR clear information on AD, CH₄ EFs and detailed information about the industries and amounts of wastewater discharged by those industries considered to calculate CH₄ emissions from industrial wastewater</p>	Yes. Transparency*
W.25	5.D.1 Domestic wastewater – CH ₄	<p>According to the NIR (chapter 7.5.1), domestic wastewater (CH₄ emissions) was identified as a key category. The ERT noted that the 2006 IPCC Guidelines (vol. 5, chapter 6, decision tree 6.2) recommend that Parties estimate CH₄ emissions using country-specific values for Bo and methane correction factor for the key pathways. The ERT noted from the NIR that the Bo and methane correction factor used by the Party are the default values from the 2006 IPCC Guidelines</p> <p>During the review, France acknowledged the recommendation from the 2006 IPCC Guidelines; however, it explained that no reliable national values of these parameters are available and also stated that very few countries are using such national parameters, and even when this is the case it could not be considered as country-specific for France, so it chose to use the default values provided by the 2006 IPCC Guidelines</p> <p>The ERT recommends that the Party follow the decision tree in the 2006 IPCC Guidelines regarding the values for Bo and methane correction factor when estimating CH₄ emissions from domestic wastewater</p>	Yes. Accuracy*
KP-LULUCF			
KL.3	General (KP-LULUCF)	The ERT noted that TERUTI (the land cover and land use survey) and the NFI aim to ensure that information on AD in forest land in metropolitan France is collected, with sufficient and timely information to allow the Party to prepare accurate estimates of GHG emissions and removals for	Yes. Completeness*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		<p>LULUCF activities under the Kyoto Protocol (FM, AR and D) in the metropolitan territory. However, the ERT noted that TERUTI and the NFI do not fully cover the territory of the overseas departments (TERUTI has covered some overseas territories since 2005, although it only covers a small portion of French Guiana, which means that it does not allow a complete monitoring and quantification of forest area and forest-related area changes (i.e. D and AR)) and that the national system of France does not have other arrangements for permanent monitoring systems to ensure that enough information is collected, and with the needed timeliness, to prepare accurate estimates of GHG emissions and removals in the overseas departments for the above-mentioned LULUCF activities. In particular:</p> <ul style="list-style-type: none"> (a) The collection of data on land representation for FM, AR and D in French Guiana is limited to three exercises made by NFI and ONF (the national forest service) that have provided data for assessing forest land-use losses at three periods in time, namely 1990–2006, 2006–2008 and 2008–2012. (Data have been collected on satellite images for the years 1990, 2006, 2008 and 2012, although the last date has erroneously not been reported in the NIR (chapter 6.3)). France does not have a plan to conduct the monitoring on an operational basis (i.e. with an established timing and assigned resources to meet the data requirements for the GHG inventory) for the future (b) In other overseas territories specific studies have been conducted by NFI and ONF which provided data on forest land-use changes between 1990 and 2006 based on remote sensing techniques; also for other overseas territories no plan is known to conduct the monitoring on an operational basis (c) The net biomass carbon stock change of forests in overseas departments, including French Guiana, is assumed to be at equilibrium. However, only the harvesting rate is estimated and the annual net increment is just assumed to be larger than the harvesting rate because the harvested forest area is a small fraction of the total forest area of the overseas departments where a net annual increment of the biomass stock is expected. The ERT noted that such an assumption is inconsistent with IPCC methods, which require Parties to estimate annual carbon stock gains and losses, and associated GHG emissions and removals, for the biomass carbon pools (2006 IPCC Guidelines, vol. 4, chapter 2). Furthermore, such an assumption may result in inconsistencies in FM and AR reporting because, for instance, the GHG emissions associated with forest fires in the overseas departments are included in the FMRL and in the FM estimates, while the subsequent removals are not <p>During the review, France explained that the Ministry of Agriculture, Agrifood and Forestry has ordered a study in order to assess what solution could be applied for the production of homogeneous</p>	

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		<p>data in these territories. The goal is to improve the monitoring and to better assist public policies. On the basis of this study, a decision will be taken for the continuous monitoring of forests in overseas departments. The results of the study will be presented in January 2017</p> <p>The ERT noted that extending the spatial coverage of TERUTI and/or of the NFI to the overseas territories may provide the data needed. Consequently, the ERT recommends that France improve its national system for the overseas territories by introducing additional institutional arrangements to ensure that at minimum information be collected on a continuous basis to be included in France's future annual submission on:</p> <ul style="list-style-type: none"> (a) Forest area and forest area changes (b) Forest areas subject to natural disturbances (c) Forest biomass carbon stock gains (d) Forest biomass carbon stock losses associated with harvesting and carbon stock losses associated with natural disturbances 	
KL.4	General (KP-LULUCF)	<p>The ERT noted that France has spatially explicit data on land use and land-use change (TERUTI) and on disturbances (NFI) for the metropolitan territory</p> <p>Therefore, the ERT recommends that France use the data from the NFI plots collected in the areas subject to disturbance or land-use conversion for estimating biomass and DOM carbon stocks in disturbed/converted areas to enhance the accuracy of its estimates of GHG emissions associated with disturbance of forest lands and their conversions to other land uses</p>	Yes. Accuracy*
KL.5	Article 3.3 activities	<p>The ERT considers that the information reported in the NIR is not sufficient to allow ERTs to assess and replicate the estimates reported for AR and D, and in particular there is no data provided on the time series for some of the main AD and parameters used in the estimates</p> <p>Therefore, the ERT recommends that France report in the NIR the following quantitative information:</p> <ul style="list-style-type: none"> (a) For both AR and D, the time series (from 1990 to the last reported year) of area subject to the activity (i.e. extend back to the time period 1990–2007 the data series reported in NIR table 69) and of net annual SOC changes (b) The time series (from 1990 to the last reported year) of annual harvesting, of biomass net annual increment, of GHG emissions from natural disturbances in lands subject to AR (c) The time series (from 1990 to the last reported year) of biomass carbon stock loss from areas 	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		deforested every year	
KL.6	Afforestation and reforestation – Forest management – general	<p>The ERT noted that France allocates all harvesting losses to forest land under FM, implicitly assuming that forest lands under AR are not affected by carbon stock losses from harvesting. However, the ERT noted that AR lands do contain forest plantations, for example poplar plantations, that may have a harvesting cycle shorter than 24 years (the time period passed since 1 January 1990) and that therefore some harvesting has likely occurred in AR lands and, as a result, the net CO₂ estimates reported for AR are probably overestimated (because France is underestimating the losses)</p> <p>The ERT recommends that France allocate the appropriate portion of harvested wood to AR lands and remove it from FM, and revise its carbon stock change estimates in AR and FM accordingly</p>	Yes. Accuracy*
KL.7	Afforestation and reforestation – general	<p>France does not estimate the initial loss of biomass associated with conversion of land to forest land (ΔC conversion). However, the ERT noted that, for plantations on shrubby or treed grassland and/or cropland, such a quantity may not be insignificant and consequently net emissions for AR may be underestimated</p> <p>Therefore, the ERT recommends that France revised its AR estimates by estimating and reporting the initial loss of biomass (ΔC conversion) associated with the conversion of land to forest land in grassland and cropland converted to forest land which did contain woody vegetation under their previous land use</p>	Yes. Accuracy*
KL.8	Afforestation and reforestation – Forest management – general	<p>The ERT notes that France, in its annual submission, has calculated its background level and margin values for AR and FM by including only emissions from fires and storms, although in France's report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol the Party indicated that the natural disturbances provision applies also to pests and drought</p> <p>The ERT recommends that France address the inconsistency between the information reported in its report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol and the annual submission by including pests and droughts in the estimates of the background level and margin for FM and AR</p> <p>The ERT also recommends that France make a technical correction of its FMRL to make it consistent with the recalculated background level</p> <p>Further, when calculating the background level and margin for both FM and AR, the ERT recommends that France revise the apportioning of area burned between FM and AR lands for each year of the time series by using the time series of actual area of AR land (kha)</p>	Yes. Accuracy*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
KL.9	Afforestation and reforestation – Forest management – CO ₂	<p>The ERT noted that France has assumed that in overseas territories the biomass carbon stock in forest land, including both lands under FM and AR, is at equilibrium. The ERT noted that such an assumption is not consistent with good practice, because the IPCC tier 1 method requires Parties to estimate and report all carbon stock gains and carbon stock losses that occur in any inventory year in forest land</p> <p>Therefore, the ERT recommends that France either report evidence that such an assumption is accurate or estimate, at least at tier 1, biomass net carbon stock changes in FM and AR lands in overseas territories and report those estimates</p>	Yes. Completeness*
KL.10	Afforestation and reforestation – Forest management – general	<p>The ERT noted that France has a time series of national forest inventory data collected on permanent plots suitable to be used for preparing national estimates of net biomass carbon stock at the national level. The ERT also noted that it is good practice (see section 2.4.5 of the Kyoto Protocol Supplement) to verify estimates made with results calculated using another tier methodology (approach 2 in box 2.4.3 of the Kyoto Protocol Supplement)</p> <p>Therefore, the ERT recommends that France apply the stock difference method for estimating biomass and DOM net carbon stock changes to verify the estimate reported by applying the gain and loss method. The ERT notes that the stock difference method can be applied at the level of each single plot, and to estimates aggregated at national level or directly applied at national level; although if implemented at the national level the stock difference method would estimate the aggregated impact of AR, D and FM</p>	Yes. Accuracy*
KL.11	Forest management – general	<p>The ERT noted that France has not implemented a technical correction for its FMRL to ensure its consistency with the background level of emissions from natural disturbances</p> <p>The ERT recommends that France calculate a technical correction of its FMRL to ensure consistency with the background level of emissions from natural disturbances in order to include in the FMRL the net GHG emissions calculated as the background level of natural disturbances. To do so, the technical correction of the FMRL has to add to the FMRL the background level value and subtract from the FMRL the emissions (already included) which originate from the type of natural disturbances that have been included in the calculation of the background level</p>	Yes. Accuracy*
KL.12	Forest management – general	<p>The ERT noted that, according to the Kyoto Protocol Supplement, it is good practice to provide information in the NIR on the main factors responsible for a higher (or lower) sink during the commitment period, as compared with the FMRL. It is also good practice to provide information on whether the accounting quantity (AQ = FM – FMRL) is consistent with these factors, with the aim of showing that the accounting quantity can be explained as deviations in policy assumptions compared with those included in the FMRL, rather than as differences in the factors/parameters,</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		<p>including increments, used in the FMRL and in the actual GHG emissions and removals (see Kyoto Protocol Supplement, p. 2.97). During the review, France provided preliminary information clarifying that the harvesting rate in 2013 and 2014 for the commercial roundwood removals in France were the highest level ever, and the same progress seems to continue. However, the ERT considers that this information does not explain why the net sink reported in the years 2013 and 2014 is higher than the projected FMRL</p> <p>The ERT recommends that France report in the NIR quantitative information on the drivers that have determined the deviation of the actual estimates of GHG emissions and removals reported under FM from the projected GHG emissions and removals included in the FMRL correction (FMRLcorr) value, including:</p> <ul style="list-style-type: none"> (a) The time series (from 1990 to the latest reported year) of annual harvesting, of biomass gross annual increment, of natural mortality, of FM area and of GHG emissions from natural disturbances used for preparing estimates for FM during the commitment period (b) The historical time series (1990–2012) of annual harvesting, of biomass gross annual increment, of natural mortality, of FM area, of GHG emissions from natural disturbances used for projecting the FMRLcorr value (c) The amount of annual harvesting, of biomass gross annual increment, of natural mortality, of FM area, of GHG emissions from natural disturbances included in the FMRLcorr value 	
KL.13	Forest management – general	<p>The ERT noted that France has used two different age class structures (see figure 3 of the Party's report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol) for calculating the FMRLcorr value, when using the EFISCEN model and the G4M model. The ERT noted that the use of two different age class structures produces an inconsistency between the outputs of the two models because the age class structure of a forest determines the carbon stock content of each carbon pool and, before considering the impact of disturbances, its annual change</p> <p>The ERT recommends that France use the same age class structure, as derived from the NFI for the year 2010 for calculating the FMRLcorr value. Further, the ERT recommends that France ensure consistency in the factors applied in the FMRL and in the FM estimates to calculate the total biomass (above and below ground) of forest from the growing stock volume</p>	Yes. Accuracy*
KL.14	Forest management – general	<p>The ERT noted that, in table 2 of France's report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol, the forest area applied for constructing the FMRL is 15.6 Mha, the forest area applied for calculating the FMRLcorr value is 13.8 Mha and the</p>	Yes. Accuracy*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		<p>area reported for under FM (2014) is 21.6 Mha. During the review, France explained that the FM area used for calculating the FMRL was erroneously the TERUTI forest area instead of the NFI forest area, which is the area on which the biomass and DOM carbon stock changes are calculated. Further, France clarified that the area under FM for French Guiana was not included in the FMRL because the carbon stocks in that forest land are assumed to be at equilibrium. Considering that the forest area is one of the elements for which consistency between the FMRL and the FM estimates has to be ensured (see decision 2/CMP.7, annex I, para. 4), the ERT notes that the FMRLcorr value is not consistent, in areas, with the FM areas and that therefore a technical correction of the FMRL is needed to remove the inconsistency</p> <p>The ERT recommends that France implement a technical correction to its FMRL in order to ensure consistency between the areas of forest applied for calculating the FMRLcorr value and the areas reported under FM during the commitment period, including the forest area under FM in the overseas departments. The ERT further recommends that France calculate, for each year of the time series of historical data, the areas under FM to be used for calculating the FMRLcorr value (i.e. the total managed forest area reported in the year in CRF table 4.A minus the cumulated AR area from 1990 until that year)</p>	
KL.15	Forest management – CO ₂	<p>The ERT noted that France has used a country-specific methodology for estimating the HWP contribution under FM (–4 967.51 kt CO₂ eq, for the year 2014) but France has used the default method in the Kyoto Protocol Supplement to calculate the HWP contribution included in the FMRLcorr value (i.e. 122.08 kt CO₂ eq, according to NIR table 72). The ERT noted that this inconsistency would result in an overestimation of the net removals from the HWP contribution under FM</p> <p>The ERT recommends that France ensure consistency in its application of the methodology and in the dataset used for estimating the HWP contribution in the FMRL and in the actual estimates for FM, by using a single methodology fully consistent with the guidance contained in the Kyoto Protocol Supplement</p>	Yes. Accuracy*
KL.16	Forest management – general	<p>France has reported that it considers some of its inaccessible forest land in metropolitan France as unmanaged (NIR, chapter 6.2.1), although such unmanaged forest lands are subject to the same legal provisions to which forests reported under FM are subject. However, as noted in issue L.27 above, the same definition of unmanaged forest land does not apply to forest land in the overseas territories, so that all forest lands in the overseas territories are considered as managed and therefore accounted for under the Kyoto Protocol</p> <p>Further, during the review, France explained that unmanaged forest land cannot be geographically</p>	Yes. Completeness*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		<p>identified; consequently area change and disturbances and associated GHG emissions and removals, if any, in unmanaged forest lands are reported together with GHG emissions and removals occurring in forest land subject to FM</p> <p>The Party did not provide a rationale that justifies the different application of the unmanaged forest definition, and considering that France has not established methods to distinguish disturbances and area changes occurring in unmanaged forest lands from those occurring in areas subject to FM and also considering that inaccessible areas of forest land in the overseas territories already accounted for under the Kyoto Protocol cannot be excluded in subsequent years, the ERT recommends that France harmonize the application of the unmanaged forest land definition by accounting under FM all the forest lands in the metropolitan territory that are not reported under AR or D, regardless to their accessibility</p>	
KL.17	Forest management – general	<p>France reported its forest management cap in CRF table “accounting” to be 153 465.492 kt CO₂ eq. However, the ERT noted that the quantity amounting to 3.5% of the base-year GHG emissions, excluding LULUCF, is 19 181.951 kt CO₂ eq and that this amount times eight equals 153 455.612 kt CO₂ eq. Therefore, the ERT concluded that the forest management cap is 153 455.612 kt CO₂ eq</p> <p>The ERT recommends that France report 153 455.612 kt CO₂ eq as its forest management cap in the CRF table “accounting”</p>	Yes. Accuracy*
KL.18	Forest management – CO ₂	<p>The ERT noted that for the metropolitan territories the estimates of biomass carbon stock losses associated with fuelwood are based on fuelwood consumption statistics. The ERT further noted that the total fuelwood consumed in France is the sum of fuelwood both domestically produced and imported and that the FAOSTAT databaseⁱ reports a time series (1961–2015) of fuelwood imported by France</p> <p>The ERT recommends that France remove the imported fuelwood from the fuelwood consumption statistics before estimating the amount of biomass carbon stock lost associated with domestically produced fuelwood</p>	Yes. Accuracy*
KL.19	Harvested wood products – CO ₂	<p>The ERT noted that France has not reported the data, disaggregated by HWP category (including paper, sawnwood and wood panels), used for calculating the HWP contribution in CRF table 4(KP-DC). Further, the Party has not reported in the NIR for each HWP category the background data (i.e. the time series of HWP domestically produced from domestic wood), the information on how HWP domestically produced from domestic wood have been singled out from the total HWP domestically produced. Finally, France has not reported information on how the HWP contribution of exported HWP, domestically produced with domestic wood, and of HWP domestically produced with domestic wood harvested in non-forest land, if any, have been estimated and whether they have been</p>	Yes. Transparency*

ID#	Finding classification	Description of the finding with recommendation or encouragement	Is finding an issue ^b and/or a problem ^c ? If yes, classify by type
		<p>excluded from the HWP contribution</p> <p>The ERT recommends that France report in CRF table 4(KP-I)C and in the NIR, as follows:</p> <ul style="list-style-type: none"> (a) Background data (i.e. the time series of HWP domestically produced from domestic wood) for each HWP category (b) Information on how HWP domestically produced from domestic wood have been singled out from the total HWP domestically produced (c) Information on how the HWP contribution of exported HWP, domestically produced with domestic wood, have been estimated (d) Information on how HWP domestically produced with domestic wood harvested in non-forest land, if any, have been estimated and whether they have been excluded from the HWP contribution 	
		<p>Information that demonstrates the consistency between the harvesting rate reported for estimating biomass net carbon stock change in land under FM and AR and the HWP domestic production</p>	
KL.20	Harvested wood products – CO ₂	<p>The ERT noted that, according to paragraph 41 of the UNFCCC Annex I inventory reporting guidelines, when a tier 3 method is applied verification information consistent with the 2006 IPCC Guidelines shall be reported. The ERT also noted that France has estimated the HWP contribution using a tier 3 method (NIR, chapter 11.5.2.5)</p> <p>The ERT recommends that France report verification information for the estimates of the HWP contribution. The ERT notes, in this regard, that verification information may be an alternative estimate prepared applying the default methodology contained in the Kyoto Protocol Supplement</p>	Yes. Accuracy*

Abbreviations: AD = activity data, AR = afforestation/reforestation, CRF = common reporting format, D = deforestation, DOM = dead organic matter, EF = emission factor, ERT = expert review team, EU = European Union, EU ETS = EU Emissions Trading System, FAO = Food and Agriculture Organization of the United Nations, F-gases = fluorinated gases, FM = forest management, FMRL = forest management reference level, GHG = greenhouse gas, HWP = harvested wood products, IE = included elsewhere, IEA = International Energy Agency, IEF = implied emission factor, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, IPCC good practice guidance for LULUCF = IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, IPPU = industrial processes and product use, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, Kyoto Protocol Supplement = *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*, LPG = liquefied petroleum gas, LULUCF = land use, land-use change and forestry, NA = not applicable, NE = not estimated, NFI = national forest inventory, NIR = national inventory report, NMVOCs = non-methane volatile organic compounds, NO = not occurring, QA/QA = quality assurance/quality control, SOC = soil organic carbon, UNECE = United Nations Economic Commission for Europe, UNFCCC Annex I inventory reporting guidelines = “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”, VS = volatile solids, Wetlands Supplement = *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*, 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

^a The review of the 2015 GHG annual submission is being held in conjunction with the review of the 2016 annual submission, in accordance with decision 10/CMP.11, paragraph 1. The ERT has reviewed both the 2015 and the 2016 inventory submission, and in accordance with the conclusions from the 13th meeting of greenhouse gas inventory lead reviewers (para. 9) has started with the review of the 2016 submission. This table includes all findings that are relevant for both the 2015 and the 2016 annual submission (i.e. this table excludes findings that, although they may have been relevant for the 2015 annual submission, had already been resolved in the 2016 annual submission).

^b Recommendations are related to issues as defined in decision 13/CP.20, annex, paragraph 81, or problems as identified in decision 22/CMP.1, annex, paragraph 69, identified by the ERT during the review. Encouragements are made to the Party to address all findings not related to such issues.

^c An asterisk is included next to each issue type that is also a problem, as defined in decision 22/CMP.1, annex, paragraphs 68 and 69, including those that lead to an adjustment or a question of implementation.

^d The OMINEA database is available at <www.citepa.org/fr/activites/inventaires-des-emissions/ominea>.

^e Dourmad JY, Levasseur P, Daumer M, Hassouna M, Landrain B, Lemaire N, Loussouarn A, Salaün Y, Espagnol S. 2015. *Evaluation des rejets d'azote, phosphore, potassium, cuivre et zinc des porcs*. RMT Elevages et Environnement, Paris, 26 pp.

^f EMEP/EEA. 2016. *EMEP/EEA Air Pollutant Emission Inventory Guidebook – 2016*. European Environment Agency. Copenhagen; Denmark.

^g Cubizolle H, Muller F and Mayindza-Mouanza M. 2012. *A la Recherche des Tourbières de la Guyane Française*. (In French).

^h International soil databases are available at, for example, <<http://esdac.jrc.ec.europa.eu/>>, <<http://esdac.jrc.ec.europa.eu/content/global-data>>, <www.fao.org/soils-portal/soil-survey/soil-maps-and-databases/harmonized-world-soil-database-v12/en> and <www.isric.org>. The Corine Land Cover map is available at <www.eea.europa.eu/publications/COR0-landcover>. Other land-cover databases include, for example, <<http://glcf.umd.edu/data/lc/>> and <http://due.esrin.esa.int/page_globcover.php>.

ⁱ See <<http://faostat3.fao.org/download/F/FO/E>>.

VI. Application of adjustments

11. The ERT has not identified the need to apply any adjustments to the 2016 annual submission of France

VII. Accounting quantities for activities under Article 3, paragraph 3, and, if any, activities under Article 3, paragraph 4, of the Kyoto Protocol

12. France has elected commitment period accounting and therefore the issuance and cancellation of units for activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol are not applicable for the 2015 review.

VIII. Questions of implementation

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

Annex I

Overview of greenhouse gas emissions and removals for France for submission year 2015 and data and information on activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol

1. Tables 6–9 provide an overview of total greenhouse gas emissions and removals, as submitted by France.

Table 6
Total greenhouse gas emissions for France, base year^a–2013^b
 (kt CO₂ eq)

	<i>Total GHG emissions excluding indirect CO₂ emissions</i>		<i>Total GHG emissions including indirect CO₂ emissions^c</i>		<i>Land-use change (Article 3.7bis as contained in the Doha Amendment)^d</i>	<i>KP-LULUCF activities (Article 3.3 of the Kyoto Protocol)^e</i>	<i>KP-LULUCF activities (Article 3.4 of the Kyoto Protocol)</i>	
	<i>Total including LULUCF</i>	<i>Total excluding LULUCF</i>	<i>Total including LULUCF</i>	<i>Total excluding LULUCF</i>			<i>CM, GM, RV, WDR</i>	<i>FM</i>
FMRL								–67 410.00
Base year	515 484.52	546 065.54	517 474.74	548 055.76	NA		NA	
1990	515 474.46	546 055.48	517 464.67	548 045.70				
1995	512 703.55	545 254.74	514 439.27	546 990.47				
2000	519 975.15	552 734.34	521 727.38	554 486.57				
2010	475 023.60	513 793.40	476 053.48	514 823.28				
2011	441 794.43	486 255.08	442 860.46	487 321.11				
2012	435 125.68	487 646.61	436 126.74	488 647.66				
2013	432 114.79	485 643.95	433 104.53	486 633.69		1 106.81	NA	–64 639.88

Abbreviations: CM = cropland management, FM = forest management, FMRL = forest management reference level, GHG = greenhouse gas, GM = grazing land management, KP-LULUCF = LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, LULUCF = land use, land-use change and forestry, NA = not applicable, RV = revegetation, WDR = wetland drainage and rewetting.

^a Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases except NF₃, for which the base year is 1995. France has not elected any activities under Article 3, paragraph 4, of the Kyoto Protocol. For activities under Article 3, paragraph 3, of the Kyoto Protocol and forest management under Article 3, paragraph 4, only the inventory years of the commitment period must be reported.

^b Emissions/removals reported in the sector other (sector 6) are not included in total GHG emissions.

^c Totals do include indirect CO₂ emissions reported in common reporting format table 6.

^d The value reported in this column refers to 1990.

^e Activities under Article 3, paragraph 3, of the Kyoto Protocol, namely afforestation and reforestation, and deforestation.

Table 7

Greenhouse gas emissions by gas for France, excluding land use, land-use change and forestry, 1990–2013^a(kt CO₂ eq)

	<i>CO₂^b</i>	<i>CH₄</i>	<i>N₂O</i>	<i>HFCs</i>	<i>PFCs</i>	<i>Unspecified mix of HFCs and PFCs</i>	<i>SF₆</i>	<i>NF₃</i>
1990	400 231.55	69 166.63	66 820.02	4 402.20	5 190.39	NA, NO	2 218.42	16.48
1995	400 249.78	71 371.88	67 735.63	1 907.84	3 069.28	NA, NO	2 629.51	26.54
2000	415 567.94	71 190.37	55 721.48	6 624.10	2 985.41	NA, NO	2 377.39	19.89
2010	390 451.73	62 960.74	42 603.97	17 310.58	605.29	NA, NO	858.84	32.13
2011	364 228.25	62 117.07	41 024.94	18 522.53	761.96	NA, NO	635.00	31.36
2012	366 549.62	60 561.19	41 163.98	18 931.02	778.27	NA, NO	643.19	20.40
2013	365 913.47	59 368.32	40 996.10	19 113.72	657.61	NA, NO	573.85	10.63
Per cent change 1990–2013	–8.6	–14.2	–38.6	334.2	–87.3	NA	–74.1	–35.5

Abbreviations: NA = not applicable, NO = not occurring.

^a Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.

^b Totals do include indirect CO₂ emissions reported in common reporting format table 6.

Table 8
Greenhouse gas emissions by sector for France, 1990–2013^{a, b}
 (kt CO₂eq)

	<i>Energy</i>	<i>IPPU</i>	<i>Agriculture</i>	<i>LULUCF</i>	<i>Waste</i>	<i>Other</i>
1990	384 486.76	63 352.15	82 795.78	–30 581.02	17 411.00	NO
1995	386 106.58	59 610.88	80 268.55	–32 551.20	21 004.46	NO
2000	399 446.36	48 759.82	83 527.91	–32 759.20	22 752.48	NO
2010	373 134.16	42 594.83	77 635.90	–38 769.80	21 458.39	NO
2011	346 849.89	42 270.94	77 238.88	–44 460.65	20 961.41	NO
2012	350 918.70	40 553.79	76 952.49	–52 520.92	20 222.69	NO
2013	350 084.41	41 047.54	75 748.85	–53 529.16	19 752.90	NO
Per cent change						
1990–2013	–8.9	–35.2	–8.5	75.0	13.5	NA

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, NO = not occurring.

^a Emissions/removals reported in the sector other (sector 6) are not included in total greenhouse gas emissions.

^b Totals do include indirect CO₂ emissions reported in common reporting format table 6.

Table 9

Greenhouse gas emissions/removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol by activity, base year^{a,b}–2013, for France
(kt CO₂ eq)

	<i>Article 3.7bis as contained in the Doha Amendment^c</i>			<i>Article 3.3 of the Kyoto Protocol</i>		<i>Forest management and elected Article 3.4 activities of the Kyoto Protocol</i>		
	<i>Land-use change</i>	<i>Afforestation and reforestation</i>	<i>Deforestation</i>	<i>Forest management</i>	<i>Cropland management</i>	<i>Grazing land management</i>	<i>Revegetation</i>	<i>Wetland drainage and rewetting</i>
FMRL				-67 410.00				
Technical correction				21 795.00				
Base year	NA				NA	NA	NA	NA
2013		-9 777.89	10 884.70	-64 639.88	NE	NE	NE	NE, NO
Per cent change Base year–2013					NA	NA	NA	NA

Abbreviations: FMRL = forest management reference level, NA = not applicable, NE = not estimated, NO = not occurring.

^a Base year refers to the base year under the Kyoto Protocol, which is 1990 for all gases except NF₃, for which the base year is 1995. France has not elected any activities under Article 3, paragraph 4, of the Kyoto Protocol. For activities under Article 3, paragraph 3, of the Kyoto Protocol, and forest management under Article 3, paragraph 4, only the inventory years of the commitment period must be reported.

^b Values in this table include emissions on lands subject to natural disturbances, if applicable.

^c The value reported in this column refers to 1990.

2. Table 10 provides an overview of relevant key data for France's reporting under Article 3, paragraphs 3 and 4, of the Kyoto Protocol.

Table 10

Key relevant data for France under Article 3, paragraphs 3 and 4, of the Kyoto Protocol

<i>Key parameters</i>	<i>Values</i>
Periodicity of accounting	(a) Afforestation/reforestation: commitment period accounting (b) Deforestation: commitment period accounting (c) Forest management: commitment period accounting (d) Cropland management: not elected (e) Grazing land management: not elected (f) Revegetation: not elected (g) Wetland drainage and rewetting: not elected
Election of activities under Article 3, paragraph 4	None
Election of application of provisions for natural disturbances	Yes, for afforestation and reforestation and forest management
3.5% of total base-year GHG emissions, excluding LULUCF	19 181.951 kt CO ₂ eq (153 455.612 kt CO ₂ eq for the duration of the commitment period)
Cancellation of AAUs, ERUs, CERs and/or issuance of RMUs in the national registry for:	
1. Afforestation and reforestation in 2014	NA
2. Deforestation in 2014	NA
3. Forest management in 2014	NA
4. Cropland management in 2014	NA
5. Grazing land management in 2014	NA
6. Revegetation in 2014	NA
7. Wetland drainage and rewetting in 2014	NA

Abbreviations: AAU = assigned amount unit, CER = certified emission reduction, ERU = emission reduction unit, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, NA = not applicable, RMU = removal unit.

Annex II

Information to be included in the compilation and accounting database

Table 11 includes the information to be included in the compilation and accounting database for France. Data shown are from the original annual submission of the Party, including the latest revised estimates submitted, adjustments (if applicable), as well as the final data to be included in the compilation and accounting database.

Table 11

Information to be included in the compilation and accounting database for 2013, including the commitment period reserve, for France

(t CO₂ eq)

	<i>Original submission</i>	<i>Revised estimates</i>	<i>Adjustment^a</i>	<i>Final^b</i>
Commitment period reserve	2 713 243 349			2 713 243 349
Annex A emissions for 2013				
CO ₂ ^c	365 913 325	365 913 474		365 913 474
CH ₄	58 617 758	59 368 315		59 368 315
N ₂ O	41 565 149	40 996 095		40 996 095
HFCs	19 113 718			19 113 718
PFCs	657 612			657 612
Unspecified mix of HFCs and PFCs	NA, NO			NA, NO
SF ₆	573 850			573 850
NF ₃	10 630			10 630
Total Annex A sources	486 452 042	486 633 695		486 633 695
Activities under Article 3, paragraph 3, of the Kyoto Protocol for 2013				
3.3 Afforestation and reforestation	–9 777 893			–9 777 893
3.3 Deforestation	10 884 702			10 884 702
Forest management and elected activities under Article 3, paragraph 4, of the Kyoto Protocol for 2013				
3.4 Forest management for 2013	–64 639 880			–64 639 880

Abbreviations: Annex A sources = sources included in Annex A to the Kyoto Protocol, NA = not applicable, NO = not occurring.

^a “Adjustment” is relevant only for Parties for which the expert review team has calculated one or more adjustment(s).

^b “Final” includes revised estimates, if any, and/or adjustments, if any.

^c CO₂ emissions include indirect CO₂ emissions reported in common reporting format table 6.

Annex III

Additional information to support findings in table 2

Missing categories that may affect completeness

The categories for which methods are included in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* were reported as “NE” (not estimated) or for which the expert review team otherwise determined that there may be an issue with the completeness of reporting in the Party’s inventory are the following:

- (a) CO₂, CH₄ and N₂O emissions from 1.B.2.a.1 Oil exploration – liquid fuels (see issue E.31);
- (b) CH₄ emissions from 1.B.2.b.5 Natural gas distribution – gaseous fuels (see issue E.36);
- (c) CO₂ emissions from 2.A.4 Other process uses of carbonates (see issue I.20);
- (d) Net CO₂ emissions and removals from living biomass from cropland remaining cropland (see issue L.17);
- (e) Net CO₂ emissions and removals from land converted to perennial crops (see issue L.18);
- (f) CO₂ emissions from biomass losses from conversion of perennial crops to other land uses (including cropland converted to wetlands, settlements and other land) (see issue L.19);
- (g) Emissions from not accessible forest land in metropolitan France (see issue L.27);
- (h) Biomass and soil carbon stock changes, and associated CO₂ and N₂O emissions, in cropland remaining cropland (emissions and removals associated with changes in cropland subcategories) and land converted to cropland (emissions and removals from conversions of land uses other than forest to cropland subcategories) (see issue L.29);
- (i) Biomass and soil carbon stock changes, and associated CO₂ and N₂O emissions, in grassland remaining grassland (emissions and removals associated with changes in grassland subcategories) and land converted to grassland (emissions and removals from conversions of land uses other than forest to grassland subcategories) (see issue L.30);
- (j) Soil organic carbon losses and associated CO₂ and N₂O emissions in the conversions of cropland, grassland, wetlands and settlements to other land (see issue L.33);
- (k) For the overseas departments: forest area and forest area changes, forest areas subject to natural disturbances, forest biomass carbon stock gains and forest biomass carbon stock losses associated with harvesting and with natural disturbances (see issue KL.3);
- (l) Biomass net carbon stock changes in afforestation and reforestation, and forest management, in overseas territories (see issue KL.9).

Annex IV

Documents and information used during the review

A. Reference documents

Aggregate information on greenhouse gas emissions by sources and removals by sinks for Parties included in Annex I to the Convention. Note by the secretariat. Available at <<http://unfccc.int/resource/webdocs/agi/2015.pdf>>.

Annual status report for France for 2015. Available at <<http://unfccc.int/resource/docs/2015/asr/fra.pdf>>.

FCCC/ARR/2014/FRA. Report on the individual review of the annual submission of France submitted in 2014. Available at <<http://unfccc.int/resource/docs/2015/arr/fra.pdf>>.

FCCC/ARR/2013/FRA. Report of the individual review of the annual submission of France submitted in 2013. Available at <<http://unfccc.int/resource/docs/2014/arr/fra.pdf>>.

FCCC/ARR/2012/FRA. Report of the individual review of the annual submission of France submitted in 2012. Available at <<http://unfccc.int/resource/docs/2013/arr/fra.pdf>>.

“Guidelines for national systems for the estimation of anthropogenic greenhouse gas emissions by sources and removals by sinks 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 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>>.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”. Annex to decision 24/CP.19. Available at <<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=4>>.

“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 the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. Annex to decision 13/CP.20. Available at <<http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf#page=6>>.

“Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, part I: implications related to accounting and reporting and other related issues”. Decision 3/CMP.11. Available at <<http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf#page=5>>.

“Implications of the implementation of decisions 2/CMP.7 to 4/CMP.7 and 1/CMP.8 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol, part II: implications related to review and adjustments and other related issues”. Decision 4/CMP.11. Available at <<http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf#page=30>>.

Intergovernmental Panel on Climate Change. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Available at <www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>.

Intergovernmental Panel on Climate Change. 2014. 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol. Available at <www.ipcc-nggip.iges.or.jp/public/kpsg>.

Intergovernmental Panel on Climate Change. 2014. 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands. Available at <www.ipcc-nggip.iges.or.jp/public/wetlands/index.html>.

Standard independent assessment report, part 1, for France for 2015. Available at <<http://unfccc.int/4061>>.

Standard independent assessment report, part 2, for France for 2015. Available at <<http://unfccc.int/4061>>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Pascale Vizy (Ministry of the Environment, Energy and the Sea), including additional material on the methodology and assumptions used. The following documents¹ were also provided by France:

Ministere De L'ecologie, Du Developpement Durable, Et De L'energie – Direction Generale De L'energie Et Du Climat - *Rapport technique: Méthode opérationnelle de comptabilisation des produits-bois dans l'inventaire national GES.*

Mallard P et al (2005). *Impacts Environnementaux De La Gestion Biologique Des Dechets – Bilan Des Connaissances*. Rapport final de l'étude répondant au Marché n° 0375C0081 entre l'ADEME et le Groupement Cemagref – INRA – CReeD – Anjou Recherche – Ecobilan – Orval. Available at <http://www.ademe.fr/sites/default/files/assets/documents/34867_bilanimpactsgbademe05_decembre_2005.pdf>.

¹ Reproduced as received from the Party.

Annex V

Acronyms and abbreviations

CH ₄	methane
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CRF	common reporting format
ERT	expert review team
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
KP-LULUCF	LULUCF emissions and removals from activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol
kt	kilotonne
LULUCF	land use, land-use change and forestry
NA	not applicable
NE	not estimated
NIR	national inventory report
NO	not occurring
QA/QC	quality assurance/quality control
SEF	standard electronic format
SIAR	standard independent assessment report
UNFCCC	United Nations Framework Convention on Climate Change
