Advance Version

COMPLIANCE COMMITTEE

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Report of the technical review of the sixth national communication of France

Note by the secretariat

The report of the technical review of the national communication of France was published on 29 August 2014. For purposes of rule 10, paragraph 2, of the rules of procedure of the Compliance Committee (annex to decision 4/CMP.2, as amended by decisions 4/CMP.4 and 8/CMP.9), the report is considered received by the secretariat on the same date. This report, FCCC/IDR.6/FRA, contained in the annex to this note, is being forwarded to the Compliance Committee in accordance with section VI, paragraph 3, of the annex to decision 27/CMP.1.

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Report of the technical review of the sixth national communication of France

Parties included in Annex I to the Convention are requested, in accordance with decision 9/CP.16, to submit a sixth national communication to the secretariat by 1 January 2014. In accordance with decision 7/CMP.8, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol shall include in their sixth national communication supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. In accordance with decision 15/CMP.1, these Parties shall start reporting the information under Article 7, paragraph 1, of the Kyoto Protocol as part of the inventory submission due under the Convention for the first year of the commitment period. This includes supplementary information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol.

This report presents the results of the technical review of the sixth national communication and supplementary information under the Kyoto Protocol of France conducted by an expert review team in accordance with 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" and the "Guidelines for review under Article 8 of the Kyoto Protocol".

Contents

I. Introduction and summary

A. Introduction

1. For France the Convention entered into force on 23 June 1994 and the Kyoto Protocol on 16 February 2005. Under the Convention, France made a commitment to contribute to the joint European Union (EU) member States economy-wide greenhouse gas (GHG) emission reduction target of 20 per cent below the 1990 level by 2020. Within the burden-sharing agreement of the EU for meeting commitments under the Kyoto Protocol, France committed itself to keeping its GHG emissions at the base year level[1] during the first commitment period, from 2008 to 2012. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, France committed to contribute to the joint EU commitment to reduce GHG emissions by 20 per cent below the base year level.

2. This report covers the in-country technical review of the sixth national communication (NC6) of France, coordinated by the secretariat, in accordance with 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" (decision 23/CP.19) and the "Guidelines for review under Article 8 of the Kyoto Protocol" (decision 22/CMP.1).

3. The review took place from 7 to 12 April 2014 in Paris, France, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Ms. Savitri Garivait (Thailand), Mr. Liviu Gheorghe (Romania), Ms. Maria Jose Lopez (Belgium) and Ms. Nadiya Pustovoytova (Ukraine). Ms. Garivait and Ms. Pustovoytova were the lead reviewers. The review was coordinated by Ms. Sylvie Marchand (secretariat).

4. During the review, the expert review team (ERT) reviewed each section of the NC6. The ERT also reviewed the supplementary information provided by France as part of the NC6 in accordance with Article 7, paragraph 2, of the Kyoto Protocol. In addition, the ERT reviewed the information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol, which was provided by France in its 2013 annual submission and previous submissions under Article 7, paragraph 1, of the Kyoto Protocol.

5. In accordance with decisions 23/CP.19 and 22/CMP.1, a draft version of this report was communicated to the Government of France, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

B. Summary

6. The ERT conducted a technical review of the information reported in the NC6 of France in accordance with the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications" (hereinafter referred to as the UNFCCC reporting guidelines on NCs). As required by decision 15/CMP.1, supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol[2] is provided in the NC6 (see para. 147 below). The supplementary information on the minimization of adverse impacts referred to in paragraph 4 above is complete and transparent.

[1] "Base year" refers to the base year under the Kyoto Protocol, which is 1990 for all gases. The base year emissions include emissions from sectors/source categories listed in Annex A to the Kyoto Protocol.

[2] Decision 15/CMP.1, annex, chapter II.

7. France implemented part of the recommendations provided in the report of the in-depth review of the fifth national communication (NC5) of France.[3] However, France did not follow the recommendations to include complete and transparent information on: policies and measures (PaMs) organized by sector and subdivided by gas; how the Party believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals; emission projections related to fuel sold to ships and aircraft engaged in international transport separate from the total; how France defines "new and additional" financial resources; success and failure stories in the transfer of technology; and steps the Party has taken to promote and/or implement decisions by the International Maritime Organization (IMO) in order to limit or reduce emissions of GHGs from marine bunker fuels.

1. Completeness and transparency of reporting

8. Gaps and issues related to the reported information identified by the ERT are presented in table 1 below.

2. Timeliness

9. The NC6 in French and an abstract of the NC6 in English were submitted on 10 November 2013, followed by a revised version of the NC6 in French submitted on 13 December 2013, before the deadline of 1 January 2014 mandated by decision 9/CP.16.

3. Adherence to the reporting guidelines

10. The information reported by France in its NC6 is mostly in adherence with the UNFCCC reporting guidelines on NCs as per decision 4/CP.5 (see table 1).

[3] FCCC/IDR.5/FRA.

Table 1
Assessment of completeness and transparency of reported information in the sixth national communication of France[a]

Sections of national communication	*Completeness*	*Transparency*	*Reference to paragraphs*	*Supplementary information under the Kyoto Protocol*	*Completeness*	*Transparency*	*Reference to paragraphs*
Executive summary	Complete	Transparent		National systems	Complete	Transparent	
National circumstances	Complete	Transparent		National registries	Complete	Transparent	
Greenhouse gas inventory	Complete	Transparent		Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Complete	Transparent	
Policies and measures (PaMs)	Mostly complete	Mostly transparent	29, 30	PaMs in accordance with Article 2	Mostly complete	Transparent	87
Projections and total effect of PaMs	Mostly complete	Mostly transparent	91	Domestic and regional programmes and/or arrangements and procedures	Complete	Transparent	
Vulnerability assessment, climate change impacts and adaptation measures	Complete	Transparent		Information under Article 10	Complete	Transparent	
Financial resources and transfer of technology	Mostly complete	Mostly transparent	115, 124, 125, 126	Financial resources	Mostly complete	Transparent	115
Research and systematic observation	Complete	Transparent		Minimization of adverse impacts in accordance with Article 3, paragraph 14	Complete	Transparent	
Education, training and public awareness	Complete	Transparent					

[a] A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in the chapter on conclusions and recommendations.

II. Technical review of the reported information in the national communication and supplementary information under the Kyoto Protocol

A. Information on greenhouse gas emissions and national circumstances relevant to greenhouse gas emissions and removals, including other elements related to the Kyoto Protocol

1. Information on relevant national circumstances

11. In its NC6, France has provided a detailed description of the national circumstances and elaborated on the framework legislation and key policy documents on climate change. Further information on the review of the institutional and legislative arrangements for the coordination and implementation of PaMs is provided in chapter II.B below.

12. The ERT noted that during the period 1990–2011 France's population and gross domestic product (GDP) increased by 12.0 and 38.5 per cent, respectively, while GHG emissions per capita and GHG emissions per unit of GDP decreased by 22.0 and 35.9 per cent, respectively. Table 2 illustrates the national circumstances of France by providing some indicators relevant to GHG emissions and removals.

Table 2
Indicators relevant to greenhouse gas emissions and removals for France

	1990	*2000*	*2005*	*2010*	*2011*	*Change 1990–2011 (%)*	*Change 2010–2011 (%)*
Population (million)	58.14	60.73	62.96	64.78	65.12	12.0	0.5
GDP (2005 USD billion using PPP)	1 414.18	1 718.30	1 860.70	1 919.83	1 958.74	38.5	2.0
TPES (Mtoe)	224.00	251.98	270.66	261.16	252.83	12.9	–3.2
GHG emissions without LULUCF (kt CO_2 eq)	557 670.95	560 571.06	559 714.42	515 862.07	487 212.03	–12.6	–5.6
GHG emissions with LULUCF (kt CO_2 eq)	534 878.64	534 140.61	517 676.99	481 322.07	442 705.09	–17.2	–8.0
GDP per capita (2005 USD thousand using PPP)	24.32	28.29	29.55	29.64	30.08	23.7	1.5
TPES per capita (toe)	3.85	4.15	4.30	4.03	3.88	0.8	–3.7
GHG emissions per capita (t CO_2 eq)	9.59	9.23	8.89	7.96	7.48	–22.0	–6.0
GHG emissions per unit of GDP (kg CO_2 eq per 2005 USD using PPP)	0.39	0.33	0.30	0.27	0.25	–35.9	–7.4

Sources: (1) GHG emissions data: France's 2013 GHG inventory submission; (2) population, GDP and TPES data: International Energy Agency.

Note: The ratios per capita and per GDP unit are calculated relative to GHG emissions without LULUCF; the ratios are calculated using the exact (not rounded) values and may therefore differ from ratios calculated with the rounded numbers provided in the table.

Abbreviations: GDP = gross domestic product, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, Mtoe = million tonnes of oil equivalent, PPP = purchasing power parity, TPES = total primary energy supply.

2. Information on the greenhouse gas inventory, emissions and trends

13. France has provided a summary of information on GHG emission trends for the period 1990–2011. Summary tables, including trend tables for emissions in carbon dioxide equivalent (CO_2 eq) (given in the common reporting format (CRF) tables), are provided in an annex to the NC6. However, the ERT noted that while emissions estimates in the NC6 are fully consistent with the 2013 national inventory report (NIR), some emissions data are different in the NC6 than in the CRF tables. During the review, France explained that the correct data are reported in CRF tables, which take into account recalculations made following the review of the 2013 annual submission. The 2013 NIR and NC6 were, however, not updated following these recalculations – only the CRF tables were.

14. Total GHG emissions[4] excluding emissions and removals from land use, land-use change and forestry (LULUCF) included in the geographical boundary of the Kyoto Protocol[5] decreased by 12.6 per cent between 1990 and 2011, whereas total GHG emissions including emissions and removals from LULUCF decreased by 17.2 per cent over the same period. CO_2 emissions comprised the largest portion (73.6 per cent) of France's total GHG emissions in 2011. The main contributors to total CO_2 emissions were from the transport sector (36.5 per cent) and the residential and commercial buildings sector (21.4 per cent). From 1990 to 2011, total CO_2 emissions decreased by 9.7 per cent, mainly due to decreases in manufacturing industries, construction and energy industries. Nitrous oxide (N_2O) was the second most important GHG in 2011, accounting for 12.4 per cent of total emissions with about 89.0 per cent of emissions occurring in the agriculture sector. Between 1990 and 2011, N_2O emissions decreased by about 33.3 per cent, mainly in the chemical industry and from agricultural soils. In 2011, methane (CH_4) accounted for 10.5 per cent of total GHG emissions. Fugitive emissions and manure management were the main contributors, with 55.1 per cent and 19.4 per cent of total CH_4 emissions, respectively. Between 1990 and 2011, CH_4 emissions decreased by 13.3 per cent, mainly because of decreases in coal mining activities and the burning of wood in the residential sector together with the use of more efficient equipment in the latter. Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) collectively accounted for 3.5 per cent of the overall GHG emissions in France in 2011. Their emissions increased by 64.4 per cent between 1990 and 2011. An analysis of the drivers of GHG emissions trends in each sector is provided in chapter II.B below. Table 3 provides an overview of GHG emissions by sector from 1990 to 2011.

15. During the review, France provided additional information, elaborating on its national circumstances, GHG inventory, projections and projections methodology, and provision of financial support (see paras. 35, 37, 55, 92, 115, 116 and 118 below).

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

[5] France defines two geographical boundaries for the purposes of reporting GHG emissions: one under the Convention which includes Metropolitan France, overseas departments (Guadeloupe, Martinique, French Guiana and Réunion), overseas collectivities (Saint Pierre and Miquelon, Mayotte, French Polynesia, and Wallis and Futuna) and New Caledonia; and one under the Kyoto Protocol which includes only Metropolitan France and the overseas departments. GHG emission data reported in this report are those covered by the Kyoto Protocol geographical boundaries.

Table 3
Greenhouse gas emissions by sector in France, 1990–2011

Sector	GHG emissions (kt CO_2 eq)				Change (%)		Share[a] by sector (%)	
	1990	2000	2010	2011	1990–2011	2010–2011	1990	2011
1. Energy	383 415.10	399 635.76	373 070.44	344 896.61	–10.0	–7.6	68.8	70.8
A1. Energy industries	64 266.23	62 364.84	61 518.18	52 961.32	–17.6	–13.9	11.5	10.9
A2. Manufacturing industries and construction	87 433.81	85 401.96	69 357.31	65 400.93	–25.2	–5.7	15.7	13.4
A3. Transport	121 215.26	140 005.37	132 461.95	132 268.91	9.1	–0.1	21.7	27.1
A4.–A5. Other	100 631.71	103 968.29	105 063.12	89 901.12	–10.7	–14.4	18.0	18.5
B. Fugitive emissions	9 868.10	7 895.30	4 669.88	4 364.34	–55.8	–6.5	1.8	0.9
2. Industrial processes	59 173.36	44 084.88	37 655.39	36 255.74	–38.7	–3.7	10.6	7.4
3. Solvent and other product use	2 068.02	1 831.72	1 094.08	1 120.38	–45.8	2.4	0.4	0.2
4. Agriculture	100 382.50	100 178.20	90 870.55	92 154.11	–8.2	1.4	18.0	18.9
5. LULUCF	–22 792.31	–26 430.45	–34 540.00	–44 506.94	95.3	28.9	–4.1	–9.1
6. Waste	12 631.96	14 840.50	13 171.62	12 785.18	1.2	–2.9	2.3	2.6
GHG total with LULUCF	**534 878.64**	**534 140.61**	**481 322.07**	**442 705.09**	**–17.2**	**–8.0**	**NA**	**NA**
GHG total without LULUCF	**557 670.95**	**560 571.06**	**515 862.07**	**487 212.03**	**–12.6**	**–5.6**	**100.0**	**100.0**

Note: The changes in emissions and the share by sector are calculated using the exact (not rounded) values and may therefore differ from values calculated with the rounded numbers provided in the table.

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

[a] The shares of sectors are calculated relative to GHG emissions without LULUCF; for the LULUCF sector, the negative values indicate the share of GHG emissions that was offset by GHG removals through LULUCF.

3. National system

16. France provided in its NC6 a description of how its national system is performing the general and specific functions defined in the guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol (decision 19/CMP.1). The description includes all the elements mandated by decision 15/CMP.1. The ERT took note of the review of the changes to the national system as reflected in the report of the individual review of the GHG inventory of France submitted in 2013.

4. National registry

17. In its NC6, France has provided information on the national registry in accordance with the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1. The ERT took note of the review of the changes to the national registry as reflected in the report of the individual review of the GHG inventory of France submitted in 2013.

18. France described the changes, specifically due to the centralization of the European Union Emissions Trading System (EU ETS) operations into a single EU registry operated by the European Commission called the Consolidated System of European Union registries

(CSEUR). The CSEUR is a platform which implements the national registries in a consolidated manner and was developed together with the new EU registry.

5. Domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol

19. France has reported in its NC6 comprehensive information on domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol.

20. France reported on all the elements under this requirement. However, the ERT noted that the description of provisions to make information on these legislative arrangements and their enforcement and on administrative procedures publicly accessible is limited to one paragraph with a reference to where further information can be found. The ERT considers that additional information in the national communication (NC) would enhance the reporting and encourages France to elaborate on how it makes information on its legislative arrangements and their enforcement and on administrative procedures publicly accessible.

21. The policies and measures aimed at reducing GHG emissions have been gathered in the Climate Plan, which is France's action plan for complying with its European (EU 2020 climate and energy package) and international (Kyoto Protocol) commitments. The Climate Plan has been revised every two years in accordance with Article 2 of the Energy Policy Orientation Law of 13 July 2005, in which France set itself the target of a four-fold reduction in emissions by 2050.

22. The overall responsibility for climate change policymaking lies within the Ministry of Ecology, Sustainable Development and Energy of France, and a number of other ministries, such as the Ministry of Higher Education and Research, the Ministry of Economy and Finance, the Ministry of Agriculture, Food and Forestry, the Ministry of Industrial Renewal and the Ministry of Foreign Affairs. The General Directorate for Energy and Climate is responsible for coordinating and leading the implementation of climate change policy, while the General Directorate for European and International Affairs is responsible for international issues related to the policy. The National Observatory for the Impacts of Global Warming (supervised by the General Directorate for Energy and Climate) is responsible for collecting and distributing information on global warming and extreme weather events.

23. Implementation of the Kyoto Protocol is underpinned by the adoption of two Grenelle environment acts (in 2009 and 2010), regular revisions of the Climate Plan, and implementation of the EU 2020 climate and energy package. France's commitments under the Kyoto Protocol are on their way to being met or even surpassed, particularly because of the measures in the Climate Plan (presented in the monitoring mechanism report submitted to the European Commission in March 2013), but also because of low economic growth in recent years. The base year emissions level of French commitments under the Kyoto Protocol has been set at 563,925.33 kt CO_2 eq. In 2011, French emissions in the Kyoto Protocol geographical boundaries were 487,212.03 kt CO_2 eq.

24. A number of national agencies are involved in the implementation of climate policy, under the supervision of the relevant ministries. These include the Environment and Energy Management Agency, the National Research Agency, the National Agency for Housing Improvements, the National Forestry Commission and the Centre for Interdisciplinary Air Pollution Studies.

25. The ERT noted that the Climate Plan is communicated to the public through the distribution of information materials, in particular a brochure that provides a synthesis of French policy commitments and their results. At the subnational level, regional climate, air and energy schemes are developed by authority representatives in liaison with local stakeholders and are made available to the public before a final policy decision is made by

the chief administrative officer for the region. In addition, the annual Environmental Conference, initiated in 2012, provides a platform for various stakeholders (non-governmental organizations, trade unions, employer organizations, local authorities and the State) to meet, and discuss implemented and planned PaMs in the area of climate change.

26. France provided a description of national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contribute to the conservation of biodiversity and the sustainable use of natural resources. The National Biodiversity Strategy (2004) and the Framework Law 2009-967 on the implementation of the Grenelle Environment Round Table (Articles 29 and 20) are mentioned as the key regulatory instruments in this area.

B. Policies and measures, including those in accordance with Article 2 of the Kyoto Protocol

27. France has provided in its NC6 comprehensive information on its package of PaMs implemented, adopted and planned in order to fulfil its commitments under the Convention and its Kyoto Protocol.

1. Policies and measures related to implementation of commitments under the Convention

28. In its NC6, France reported on its PaMs adopted, implemented and planned in achieving its commitments under the Convention. France provided a description of the principal PaMs, with the textual information on PaMs organized by sector and supplemented by a summary table on PaMs by sector.

29. However, the ERT noted that the textual description of PaMs by sector provided by France is not subdivided by gas, although in the table of the principal PaMs, the gases affected are clearly identified. The ERT therefore recommends that in its next NC France organizes the textual description of PaMs by sector and subdivided by gas to reflect the information reported in the PaMs table.

30. France has provided information on its national low-carbon development strategy being elaborated in order to modify longer-term trends in GHG emissions. The NC6 provides general information on the categories of PaMs that have longer-term effects, such as investments in transport and built environment infrastructure. However, the ERT noted that France does not report in its NC6 on how it believes its key PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention. The ERT therefore recommends that France report on how it believes its key PaMs are modifying trends in GHGs in the longer term.

31. France reported on the effects of several individual PaMs in the textual part of the NC6 and in the table on PaMs, mainly for the years 2015 and 2020. Individual PaMs are evaluated using the bottom-up model SceGES (Scénarisation des Emissions de GES), which estimates emissions using methods compatible with those used in the preparation of the annual GHG inventory in conjunction with descriptions of the technical details specific to each sector modelled. The ERT notes that two different approaches were used in evaluating the effects of PaMs: the bottom-up SceGES model is used to perform the estimation of the effect of individual PaMs, and the top-down combination of Med-Pro and POLES (Prospective Outlook on Long-term Energy Systems) models (see para. 94 below for more information on the models) is used to estimate the total effect of PaMs, overall and by sector. While the SceGES model provides estimates of avoided emissions in a detailed bottom-up fashion, it does not take into account the interactions between PaMs

implemented in France, including synergies, overlaps and counter-effects. It is therefore difficult to reconcile the estimates of avoided emissions for each policy or measure provided by SceGES with the total effect of PaMs; namely, it is difficult to have a clear idea of how much each PaM contributes to the total effect of PaMs and relative to other PaMs and to assess which PaMs are more effective than others. France acknowledges that the current approach can lead to the double counting of emissions avoided as the effects of some PaMs overlap with those of other PaMs. In addition, the ERT noted that the effect of some key individual PaMs is either not quantified or not presented in the NC6. The ERT encourages France to explore the possibility of estimating the effect of individual PaMs using an integrated approach to enhance the transparency of the effect of individual PaMs and the total effect of PaMs. The ERT also encourages France to highlight the PaMs that have the greater GHG emissions avoided and how PaMs supplement each other within and across sectors.

32. France also reported on the costs of implementation of its PaMs by providing a few concrete examples in the energy supply, agriculture, and residential and commercial sectors. However, the costs are not systematically provided for individual PaMs, either by gas or by sector, which makes it difficult to assess the costs and benefits of the implemented PaMs. Due to the fact that France evaluates the cost of individual PaMs and groups of PaMs using the SceGES model, the ERT encourages France to include information on the costs of PaMs in a systematic manner in its next NC. This information could be supported with information on the strengths and weaknesses of the methodologies used and factors included in the cost assessment.

33. In its NC6, France provided information on PaMs that are no longer in place since being reported in the NC5, with a brief explanation as to why they were discontinued. The NC6 contains an augmented set of PaMs compared with those listed in the NC5, and includes additional measures implemented since 2012–2013.

34. The NC6 does not contain any information on PaMs that could potentially increase emissions. The ERT encourages France to include information on how it identifies and deals with policies and practices that encourage activities leading to greater levels of GHG emissions than would otherwise occur.

35. The ERT noted France's lack of a comprehensive system for the monitoring and evaluation of implemented PaMs. During the review, additional information was provided on this topic, with the Party describing monitoring and inter-ministerial coordination during development of PaMs as well as factors tracked for ex post evaluation of some implemented PaMs. However, the ERT encourages France to work further on the systematic monitoring and evaluation of PaMs, including ex post evaluation, and to report on this in its next NC.

36. Some of the recommendations made in the previous review report were taken into consideration in order to improve reporting in the NC6, including providing additional information on PaMs at the subnational level and explanations for the suspension or discontinuation of some PaMs.

37. During the review, France provided additional information, elaborating on recent developments for planned or implemented PaMs; PaMs at the subnational level; coordination between public actors; monitoring and evaluation of PaMs; and research and demonstration projects under the Future Investments Fund and their effects. This information was instrumental in providing a more complete picture of the implemented and planned PaMs as well as their drivers, additionality and anticipated effects.

2. Policy framework and cross-sectoral measures

38. The main frameworks for PaMs relating to climate change in France are the Climate Plan, the two Grenelle environment acts (2009 and 2010) and the EU 2020 climate and energy package. The Climate Plan (established in 2004 and updated every two years, with the latest update in 2013) includes France's actions for meeting its commitments under the Kyoto Protocol. The Climate Plan is based on two pillars, mitigation and adaptation, and is linked to the National Strategy for Sustainable Development (2010–2013). In addition, the annual Environmental Conference, initiated in 2012, was followed by a national debate on energy transition, the aim of which was to promote conservation and efficiency and also to develop renewable energy. The debate, which concluded in July 2013, will provide a framework for investments to be made over the coming years through the energy transition law to be adopted in 2014.

39. The key instruments to support national policy on climate change, in particular with regard to the transport, residential and commercial buildings, and renewable energy sectors, combine regulatory, fiscal (both restricting and incentivizing), economic and information measures, with a focus on development of energy options that emit less and are more efficient. The regulation on CO_2 emissions, 'feebate'[6] scheme and CO_2 labelling for private vehicles combined with supporting the modal shift to rail and the development and take-up of rechargeable electric and hybrid cars are good examples of these synergies.

40. At the EU level, the main framework guiding climate change policy is the EU 2020 climate and energy package, which sets a target for GHG emission reductions of at least 20 per cent below the 1990 level and is linked to the implementation of the EU ETS and the effort-sharing decision (ESD) for the sectors not covered by the EU ETS. The sectors covered by the EU ETS (mainly power plants, energy-intensive industries, commercial airlines, specific acid production and PFCs produced during aluminium production) are required to reduce their GHG emissions by 21 per cent below the 2005 level by 2020. In France, the sectors not covered by the EU ETS (mainly transport, buildings, small businesses and agriculture) are required to reduce their GHG emissions by 14 per cent over 2005–2020.

41. The implementation of the EU 2020 climate and energy package is also linked to the European Energy Efficiency Plan (2011) and the EU renewable energy directive (2009/28/EC). At the national level, France has set a target to decrease energy intensity (GHG emissions per unit of GDP) by 2.0 per cent per year starting in 2015 and by an average of 2.5 per cent per year during 2015–2030. France addresses energy demand through the National Energy Efficiency Action Plan, which is a response to the EU energy efficiency directive (2012/27/EU), as well as through energy efficiency certificates, the implementation of the EU eco-design directive (2009/125/EC) and a range of financial incentives. Promotion of the use of renewable energy sources is addressed through a target to increase the share of renewable energy sources in energy consumption to 23 per cent by 2020, with the help of 50 measures supporting energy from biomass, wind, geothermal, hydroelectric, solar, wave and tidal sources (see para. 50 below for further information on renewable energy sources).

42. At the national level, the climate change policy was strengthened by the Grenelle environment acts, initiated by the Grenelle Environment Forum in 2007 as a result of a broad consultative round-table process involving 16,900 stakeholders. The Grenelle Environment Forum defined a package of PaMs across all sectors, prioritizing transport and buildings.

[6] A feebate imposes a fee on inefficient technology and provides a rebate on efficient vehicles.

43. The Grenelle Planning Act (Grenelle I, 2009), confirmed the national long-term GHG emission reduction target of 75 per cent by 2050 compared with the emissions level in 1990, which was first defined in the Energy Policy Orientation Law of 2005. It was followed by the Grenelle National Commitment Act (Grenelle II, 2010), which specified sectoral targets for transport (to stabilize GHG emissions from the transport sector at the 1990 level by 2020) and waste (to reduce waste generation per capita by 7 per cent by 2013 compared with the 2008 level and to increase the waste recycling rate to 45 per cent by 2015) and included a package of PaMs to achieve these targets. This package is made up of strengthened regulations, renewable energy and energy-efficiency obligations, and financial mechanisms, with priority given to the building and transport sectors.

44. Some PaMs are deferred to the regional and local level. France provided comprehensive information on PaMs at the national and subnational levels. Regional climate, air and energy schemes are developed jointly by the chief administrative officer of the region and the chairperson of the regional council, in liaison with local stakeholders. These schemes define regional scenarios to 2020 and 2050 regarding reduction in GHG emissions, adaptation to climate change and improvement in air quality, compatible with European and national commitments. They ensure the consistency of regional targets on the basis of a guide prepared by the State. Regional, departmental, urban and large inter-municipality levels of government are implementing climate and energy plans (compulsory for all local authorities governing more than 50,000 inhabitants). They are also establishing 'observation structures' in the climate and energy sector and developing actions to raise awareness and support their local stakeholders. In spring 2013, 374 climate and energy plans were established, of which 140 have been adopted and have entered the implementation phase.

45. The ERT notes an increasing level of integration of climate and energy policies at the national and local levels in France and a growing focus on the promotion of energy efficiency and the use of renewable energy sources in the residential and commercial buildings sector and transport sector, which are addressed through regulations, financial incentives, and economic and fiscal instruments.

46. Table 4 provides a summary of the reported information on the PaMs of France.

Table 4
Summary of information on policies and measures reported by France

Sectors affected	*List of key policies and measures*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	Climate Plan (2004, with latest update in 2013)	
	Energy Policy Orientation Law (2005)	
	Grenelle environment acts: Grenelle I (2009) and Grenelle II (2010)	
	Energy Transition Law (to be adopted in 2015)	
	European Union Emissions Trading System (EU ETS), third phase (2013–2020)	
Energy		
Energy supply	Feed-in tariff for electricity produced from renewable energy sources	12 850[a]
	Renewable energy purchase obligations	
	Implementation of the EU ETS	
Renewable energy	National Renewable Energy Action Plan (2010)	
	Feed-in tariff for electricity produced from renewable energy sources	12 850[a]
	Tenders for the construction of wind and biomass power plants	
	Renewable energy purchase obligations	

Sectors affected	*List of key policies and measures*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*
	Renewable Heat Fund	6 600
	Research and demonstration projects under the Future Investments Fund	
Energy efficiency	EU energy efficiency directive (2013)	
	National Energy Efficiency Action Plan (2011), second phase (2011–2014) and third phase (2015–2017) (Energy and residential and commercial sectors)	6 200
	Implementation of the EU eco-design directive, specifically a second working plan for 2009–2013 (phasing out of incandescent light bulbs)	4 050
	Labelling of energy-related products	
	Implementation of the EU ETS	
	Carbon dioxide basis for part of the excise duty on energy	
Residential and commercial sectors	For new buildings:	
	Thermal Regulation on Energy Performance (2012)	1 240
	High energy performance labels	
	For existing buildings:	
	Thermal Regulation on Energy Performance (2012)	3 550
	Sustainable development tax credit (CIDD)	3 760
	Zero-rate eco-loan (eco-PTZ)	
	Social housing eco-loan (eco-PLS)	330
	Reduced value-added tax (VAT) for renovation works	
	Compulsory energy performance diagnostics for sale and rental properties	
	Investment plan for housing, for the renovation of new and existing buildings (2013)	
Transport	National Plan for Sustainable Mobility (2013)	9 200[a]
	Kilometre ecotax on heavy vehicles (planned)	
	Carbon dioxide emissions information for transportation services	
	Automobile feebate; carbon dioxide labelling of private vehicles; annual tax for company vehicles	
	Plan for the development of rechargeable electric and hybrid cars	1 720
	General tax on polluting activities (TGAP) for petrol and diesel	
	Partial tax exemption on sales of biofuels	
	Regulation of emissions from air conditioning in motor vehicles	550
	Inclusion of aviation in the EU ETS	
Industrial sectors	Implementation of the EU ETS	
	Regulations limiting emissions of fluorinated refrigerant gases	7 170
	Limitations on energy consumption (EU industrial emissions directive (2010/75/EC))	
	Energy performance diagnostics by the Environment and Energy Management Agency	
Agriculture	More rational use of mineral fertilizers and other agroecological measures:	
	Fifth Nitrates National Action Plan (2013)	
	Investments in precision agriculture	
	National plan to develop nitrogen-fixing crops (2010–2013)	
	Methane recovery and use scheme	950
	Measures aimed at reducing energy consumption by tractors and other agricultural machinery	110

Sectors affected	*List of key policies and measures*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*
	Covering of soils in autumn and winter	
	Financial support to protect permanent pastures and develop agroforestry	
Forestry	Development of sustainable timber use and the labelling of bio-sourced buildings	
	Biomass plan (2007–2010): Development of biomass energy by the substitution of fossil fuels by wood, using high-performance equipment	
Waste management	Prevention of waste production:	
	Local prevention programmes, covering two thirds of the French population by the end of 2012	2 020[a]
	Environment and Energy Management Agency's support for implementation of trial pricing incentives	
	Campaigns to reduce food waste	
	Development of sectors with wider producer responsibility	
	National Waste Prevention Plan 2014–2020 (planned)	
	Methane recovery in landfills	

Note: The estimates of avoided greenhouse gas emissions (mitigation impact) given for some measures are reductions in carbon dioxide or carbon dioxide equivalent for 2020, relative to a scenario in which those measures are not implemented.

[a] For combined measures.

3. Policies and measures in the energy sector

47. Between 1990 and 2011, GHG emissions from the energy sector decreased by 10.0 per cent (38,518.5 kt CO_2 eq), mainly owing to: (i) decreases in emissions from manufacturing industries and construction (25.2 per cent), owing to a general decrease in energy consumption, accentuated by the 2008 economic crisis, and an increased use of natural gas and biomass to substitute for other conventional fossil fuels; (ii) decreases in emissions in energy industries (17.6 per cent), owing to an increased share of natural gas and biomass and a decreased use of solid fossil fuels; and (iii) decreases in emissions in the residential and commercial buildings sector (10.7 per cent), owing to an increased share of natural gas used. The decreases were partially offset by an increase in emissions from transport, mainly from road transportation (9.1 per cent).

48. ***Energy supply***. The national circumstances for France result in emissions from electricity production comprising only a small share of GHG emissions from energy, because the majority of electricity is produced from nuclear power, with a growing share produced from hydropower. Emissions from the energy industries sector (electricity generation, urban heating, oil refining and solid mineral fuel transformation) were 52,961.3 kt CO_2 eq in 2011, constituting 10.9 per cent of France's total GHG emissions, a smaller share than in most other countries. Thus, efficiency measures targeted at electricity end users may lead to a smaller amount of reductions compared to other EU countries owing to France's national circumstances.

49. The NC6 highlights several PaMs to reduce GHG emissions from power generation, notably the following: feed-in tariffs for electricity from renewable energy sources; obligations for electricity suppliers to purchase electricity produced by renewable energy sources; and extension of the EU ETS to the power generation sector. The ERT noted some related research, namely under the Future Investments Fund, which includes demonstration projects on the integration of renewables into the grid and investigates measures to reduce

peak electricity demand. Research on carbon capture and storage has also been launched in France.

50. ***Renewable energy sources***. France aims to bring the share of renewable energy in the country's primary energy supply to at least 23 per cent by 2020, through an increase of 21 Mtoe in annual renewable energy production compared with 2005, with 27 per cent of electricity produced from renewable energy sources, as stipulated in the National Renewable Energy Action Plan. Implemented measures should enable renewable energy production to be doubled in 12 years (2008–2020), including increasing the contribution from wood by more than 45.0 per cent, and changing the scale of solar power and heating networks. The latest estimates of the impact of PaMs indicate that the measures could result in the following avoided GHG emissions in 2020, compared with a scenario where measures are not in place: 8,290 kt CO_2 eq through wind power, 1,460 kt CO_2 eq through hydroelectric power, 2,300 kt CO_2 eq through biomass and 800 kt CO_2 eq through solar photovoltaic panels.

51. The NC6 highlighted several PaMs aimed at achieving these ambitious targets, notably the following: the Renewable Heat Fund, aiming to promote the production of 5.5 Mtoe of renewable heat by 2020 and to avoid 2,700 kt CO_2 emissions annually from 2015 up to 6,600 kt CO_2 in 2020 (the Fund was set up in 2008 with a budget of EUR 1.2 billion for the period 2009–2013 to promote the use of renewable and recovered heat, including solar thermal, biomass and geothermal energy); sustainable development tax credits (available to individuals for the purchase of renewable energy equipment); and a combination of feed-in tariffs and tendering procedures for renewable electricity and heat (see para. 49). The legislative framework has been changed to improve administrative procedures, enable the pre-selection of sites for offshore wind power, simplify permit procedures for onshore wind, and encourage local and public authorities to install solar panels. Existing hydroelectric plants will also be modernized via a tendering process that will select operators based on energy efficiency and water quality improvement criteria.

52. In its NC6, France identifies a number of challenges for PaMs aimed at renewable energy development, including the need for significant public spending and the need for close coordination between the ministries and the operators when identifying profitable projects.

53. ***Energy efficiency***. In 2005, France adopted the Energy Policy Orientation Law, which set energy intensity improvement targets of a reduction in energy intensity of 2.0 per cent per year starting in 2015 and by an average of 2.5 per cent per year during 2015–2030. Financial, market-based and regulatory PaMs will help achieve these targets.

54. The main market-based measure to achieve the targets is the energy efficiency certificate scheme (white certificate scheme), which was launched in 2006 and is now in its second period of obligation (2011–2014). This period has the objective of cumulative energy savings of 460 TWh through individual targets for energy suppliers (e.g. electricity, gas, domestic fuel oil and liquefied petroleum gas), which implies a reduction of annual energy consumption of about 40 TWh in the short term, or about 2 per cent of France's final energy consumption, mainly through operations targeting the residential and commercial buildings sector. The second period of the scheme also includes activities related to suppliers of automotive fuels. The scheme is considered to be cost-efficient as well as effective due to the freedom given to energy suppliers to define the most appropriate actions for saving energy and their ability to trade certificates. The target for the third period (2015–2017) will be 660 TWh. France estimates that GHG emissions of 6,200 kt CO_2 eq will be avoided in 2020 through this measure.

55. Additional information was provided by France to the ERT on the latest developments regarding the implementation of the EU energy efficiency directive. In June

2014, the French target will be set to 131.4 Mtoe of final energy consumption in 2020 (17.4 per cent reduction compared with the baseline), which will be coordinated with a new, more ambitious period of energy efficiency certificates. The measures to achieve the target will include compulsory energy audits for companies, a long-term strategy for buildings, and comprehensive assessment of the potential for combined heat and power and of the energy efficiency of gas and electricity infrastructure. Among the challenges is the ability of the sectors to adapt.

56. The progressive withdrawal of incandescent light bulbs over the period 2010–2012, limitation of standby mode on appliances, reduction in street and office lighting, and improved performance of electrical chargers and external power supplies are examples of energy efficiency advances that have been achieved through the implementation of the EU eco-design directive (working plans of 2008–2009 and 2009–2013). Energy labelling will add to these measures by helping to direct the consumer to the lowest-carbon products. The range of products subject to such requirements is being steadily expanded (in 2011 and 2012 European regulations defined the rules to be applied to air-conditioning units and tumble-driers). It is estimated that the phasing out from the market of incandescent light bulbs alone will deliver 4,050 kt CO_2 eq in avoided emissions in 2020.

57. ***Residential and commercial sectors***. Reduction in energy consumption and GHG emissions from buildings in the residential and commercial sectors is one of the priorities for French climate policy. The residential and commercial buildings sectors accounted for 17.5 per cent of total national GHG emissions in 2011, from which roughly two thirds came from the residential sector and one third from the commercial sector. Improvements to the energy efficiency of existing housing stock, new thermal standards for new buildings and the use of a greater share of low-carbon energy sources have been able to compensate for the greater nominal surface area of housing, which increased from 32 m^2 to 36 m^2 per person between 1999 and 2011, and for the increase in the number of homes (an increase of 10.0 per cent over the same period).

58. France has established ambitious medium-term targets for both existing buildings (38 per cent reduction in energy consumption in 2020 compared with 2007) and new buildings (all new buildings to be positive energy buildings by 2020) and has introduced a package of regulatory, financial and information measures to deliver these targets. The investment plan for housing (2013) anticipates carrying out 500,000 thermal renovations per year by 2017 and renovation of the 900,000 social housing units that consume the greatest amount of energy between 2013 and 2020.

59. The target for existing buildings is planned to be achieved through financial incentive measures such as the zero-rate eco-loan, the sustainable development tax credit and reduced value-added tax (VAT) (5.5 per cent rather than 10 per cent, from 2014) for renovation work and/or purchase of the most energy-efficient materials or equipment. From 1 July 2014, the main support measures (zero-rate eco-loan and sustainable development tax credit) are subject to eco-conditionality criteria. In addition, while energy performance audits have been mandatory since 2007 for the rental or sale of residential buildings, a decree in 2010 made it mandatory for energy efficiency certificates to be displayed in real estate agencies from 2011, and a national database has been created with information from the energy efficiency certificates.

60. To facilitate the attainment of the target for new buildings, along with increased tax credits for the purchase of low energy consuming new houses, additional measures have been introduced, including a new regulation on the energy performance of new buildings (Thermal Regulation on Energy Performance 2012), which requires all new buildings to meet the specifications of 50 kWh^{-1} m^{-2} per for heating, hot water, cooling and lighting. It is estimated that 3,550 kt CO_2 eq of emissions will be avoided annually by 2020 as a result of this measure.

61. A number of challenges have been identified in connection with the ambitious target to reduce energy consumption in existing buildings by 38 per cent between 2007 and 2020, in particular the need to keep up the necessary building renovation pace over the whole period and to maintain a strong set of incentives to support it through the 2013 investment plan for housing. Among all the implemented measures, the sustainable development tax credit is estimated to have the most significant impact, with 3,760 kt CO_2 eq of emissions avoided in 2020 (compared with 330 kt CO_2 eq of annual emissions avoided through zero-rate eco-loans). The effect of the Thermal Regulation on Energy Performance is estimated to be 1,240 kt CO_2 eq of emissions avoided in 2020.

62. ***Transport sector***. The transport sector is the highest-emitting sector in France, accounting for 27.2 per cent of total national GHG emissions in 2011. Transport emissions increased by 9.1 per cent between 1990 and 2011 (from 121,215.3 to 132,268.9 kt CO_2 eq). After peaking in 2002, transport emissions decreased until 2009, with the economic downturn accentuating the drop, and then increased slightly over 2010–2011. A total of about 95 per cent of emissions in the transport sector in 2011 came from road transportation, 57 per cent of which was from cars alone.

63. The mitigation policies in the French transport sector are organized around three axis: favouring modes of transport that emit less GHGs, encouraging the use of energy with lower emissions over conventional fuel and improving the energy efficiency of road vehicles. France has set the target of reducing its GHG emissions in the transport sector to the same level as in 1990. A national target of 120 g CO_2 per km by 2020 has been defined for the national car fleet. The EU has set legally binding objectives for manufacturers to cut CO_2 emissions from new cars, with a first stage of reduction to 130 g CO_2 per km progressively applicable from 2012 to 2015 and a target of 95 g CO_2 per km in 2020. There is also a national target of increasing the non-air, non-road share of freight transport to 25 per cent by 2022 (modal shift to using railway infrastructure and inland waterways); a target to increase the share of biofuels in motor fuel to 10 per cent by 2015; and a target to increase the share of renewable energy sources in transport other than biofuels to 1.5 per cent by 2020.

64. The modal shift in transport is being implemented through the new National Plan for Sustainable Mobility (2013), which anticipates an annual investment of EUR 5 billion for the improvement of existing networks and for projects with greater priority, such as the development of railway infrastructure. Planned measures also include the pay per kilometre eco-tax on heavy vehicles for use of the main non-conceded road network, which will enable the external costs of road transport to be better managed. The ERT was informed that introduction of the tax was planned for January 2014 but was temporarily suspended due to public protests.

65. The package of PaMs to promote the efficiency of passenger cars includes CO_2 labelling for passenger cars, a feebate scheme to encourage low CO_2 vehicle purchases and regulation of emissions from air conditioning in motor vehicles. The feebate scheme commenced in January 2008 and provides an incentive to purchasers of low-emitting vehicles (less than 105 g CO_2 per km in 2013) and introduces a higher registration tax on high-emitting vehicles (more than 135 g CO_2 per km in 2013). It is estimated that the package of measures for the promotion of the energy efficiency of passenger cars, which has proved to be very successful, will deliver 9,200 kt CO_2 of avoided emissions in 2020.

66. With regard to development of biofuels, France, as part of its European commitments, has a targeted biofuels take-up rate of 7 per cent in transport from 2010. To help achieve this target, the general tax on polluting activities (TGAP) was introduced in 2005 and must be paid by operators failing to meet the set target. From 1 January 2012, only biofuels meeting sustainability criteria can be taken into account for calculating the deduction from the TGAP rate. Partial exemption from the consumption tax compensates

for the extra costs of producing biofuels compared with fossil fuels. The ex post impact of all the bioethanol and biodiesel consumption in 2009 was 6,300 kt CO_2 avoided. As of the time of this review, the 2015 target of France (10 per cent share of biofuel) has been almost achieved.

67. The main challenges identified for the key PaMs in the transport sector include implementation of the ambitious transport investment plan, strengthening of the freight modal shift, the future of the eco-tax for heavy vehicles, public awareness and behavioural changes by the public.

68. With regard to the PaMs in aviation, France reports the inclusion of aviation in the EU ETS as of 2012. At the national level, France signed an agreement in 2008 with all airlines operating in France that summarized various environment-related voluntary commitments. According to this agreement, Air France-KLM, for example, committed to reduce fuel consumption to 3.7 litres per passenger per 100 km by 2012.

69. ***Industrial sector***. There appear to be fewer PaMs to reduce GHG emissions from fuel consumption in the industrial sector in France compared with other sectors. The EU ETS, which is now in its third period of implementation (2013–2020), is the major PaM to reduce CO_2 emissions from this sector. Compared with the first two periods, the EU ETS now includes provisions for auctioning about 50 per cent of allowances and no longer provides free allowances to the power sector. In addition, implementation of the European directives on integrated pollution prevention and control and on industrial emissions promotes more rational and efficient energy consumption in industry.

4. Policies and measures in other sectors

70. Between 1990 and 2011, GHG emissions from industrial processes (including solvent and other product use), agriculture and waste decreased by 18.3 per cent (31,940.42 kt CO_2 eq), mainly owing to emission reductions in industrial processes and agriculture. The trend in GHG emissions from industrial processes showed notable decreases, which were partly offset by increases in emissions from the waste sector. The sector sections below have more detail.

71. ***Industrial processes***. Between 1990 and 2011, GHG emissions from the industrial processes sector decreased by 38.7 per cent (30,727.76 kt CO_2 eq), mainly owing to the reduction in N_2O emissions from adipic acid production; improvement in efficiency of the chemical industry; and general contraction and stabilization of industrial activity due to economic recession.

72. The ERT noted that N_2O emissions from industrial processes decreased by 94.9 per cent during 1990–2011 owing mainly to technological changes in the production of adipic acid (the majority of reductions occurred during 2005–2011 as emissions dropped by 81.8 per cent). This technological change in recent years was to some extent driven by domestic joint implementation projects and by the inclusion of N_2O emissions from the production of nitric acid and adipic acid in the EU ETS from 2013 (along with SF_6 and PFCs).

73. Emissions of HFCs used in refrigeration and air-conditioning equipment increased from 85.4 kt CO_2 eq in 1990 to 11,674.8 kt CO_2 eq in 2011 as a result of the substitution of the chlorofluorocarbons controlled by the Montreal Protocol. In accordance with the European Regulation (842/2006) on certain fluorinated gases (F-gases), France introduced regulations aimed at limiting emissions of these gases into the atmosphere in 2007. These regulations include imposing air-tightness tests for refrigeration and air-conditioning equipment, recovering fluids at the end of the equipment's life, and ensuring a minimum level of personnel skills for the installation, maintenance and changing of these fluids. These regulations were supplemented by Decree no. 2011-396 laying out provisions on the use of F-gases other than for refrigeration and air conditioning and implementing

certification schemes and annual declaration systems for flows of F-gases. It is estimated that these two measures will deliver 7,170 kt CO_2 eq of avoided emissions in 2020. During the review, the ERT was informed about an additional forthcoming F-gas regulation at the EU level, which anticipates reduction in F-gas emissions by two thirds by 2030 (compared with 2005) and which has been actively supported by France.

74. Although PFC emissions decreased by 90.0 per cent during 1990–2011, the NC6 does not report on PaMs targeted at the reduction of these emissions. The ERT encourages France to elaborate on how its PaMs influence PFC emission trends in its next NC.

75. ***Agriculture***. Between 1990 and 2011, GHG emissions from the agriculture sector decreased by 8.2 per cent (8,228.40 kt CO_2 eq), mainly owing to reductions in N_2O emissions from agricultural soils owing to the decreased use of synthetic fertilizer and the decrease in CH_4 emissions from enteric fermentation due to the decline in the populations of cattle and sheep and better manure management.

76. PaMs targeted at the reduction of N_2O emissions from agricultural soils include the Fifth Nitrates National Action Plan (2013), investments in precision agriculture (5,300 projects in 2007–2011) and the national plan to develop nitrogen-fixing crops (2010–2013), which provides support for the development of improved crop practices (pasturage systems, re-launching the cultivation of legumes, planting hedges, promoting limits on the use of fertilizers and pesticides, and enhancement of the carbon stock in soils).

77. The main policy or measure targeted at the reduction of CH_4 emissions from the agriculture sector is support for the implementation of CH_4 recovery from manure storage on farms for heat and electricity use (31,000 projects funded in 2007–2011). The Methane Recovery and Use Scheme (2013) defines an objective of 1,000 digesters to be operational in 2020. France estimates that these practices will result in 950 kt CO_2 eq of avoided emissions in 2020.

78. ***LULUCF***. The LULUCF sector was a net removal of 44,506.94 kt CO_2 eq in France in 2011 and net GHG removal increased by 95.3 per cent since 1990. The trend was mainly owing to the decrease in wood harvesting and increase in the biomass annual increment (increased productivity of forests). The bulk of removals occurred in forest land (64,899.72 kt CO_2 eq).

79. In the NC6, the main PaMs outlined for the forestry sector focused on three axis: sustainability of carbon stores in forests and their mobilization, carbon storage in wood products, and the substitution of fossil fuels by wood, using high-performance equipment.

80. Carbon storage in wood products, which represents 3,000–4,000 kt CO_2 eq annually, is likely to increase with the development of green technologies and in particular the use of wood in the construction of buildings, encouraged by schemes such as the bio-sourced building label (operational from 2013). The wood construction framework agreement anticipates bringing the use of wood up to 12.5 per cent in building construction, while Decree no. 2010-273 establishes a minimum use of 20 dm^3/m^2 of wood in new buildings. Enhancing the harvesting of wood is promoted through support for investment in the modernization of sawmills (95 loans granted for EUR 14 million since 2011).

81. Wood is the primary renewable energy source in the energy mix in France and it accounted for 41.0 per cent of final energy produced from renewable sources in 2011. The development of wood as renewable energy is based on the use of co-products of timber and wood wastes and was supported by the Biomass Plan in 2007–2010. The Renewable Heat Fund, managed by the Environment and Energy Management Agency since 2009, provides investments in heat from biomass. Its increased use is planned to contribute significantly to the national target of 23 per cent of primary energy production from renewable sources in 2020. During the review, the ERT was informed that, as of March 2014, 5,000 plants using

biomass energy were established with a combined production capacity of 1,600 ktoe per year.

82. ***Waste management***. Between 1990 and 2011, GHG emissions from the waste sector increased by 1.2 per cent (153.2 kt CO_2 eq), mainly owing to the increase in CH_4 emissions from landfills due to the quantities of solid waste disposed on managed waste disposal sites, and the increase in CH_4 and N_2O emissions from composting and the production of biogas. The trend in total emissions from waste is influenced by the volume of consumption, which is driven by the state of the economy. As such, GHG emissions increased gradually until 2000 and decreased thereafter until 2011.

83. The main PaMs in the waste sector are financial incentives for households and landfill operators, information campaigns and research. Measures to reduce emissions target the reduction of waste generation per capita through incentives for recycling and composting, as well as the improvement of efficiency in waste incineration. It is expected that these measures will result in emission avoided from the waste sector of 2,020 kt CO_2 eq per year by 2020.

84. During the review, the ERT was informed about the update of the National Waste Prevention Plan (2014–2020), which anticipates halving food waste by 2025 and reducing domestic and similar waste by 7 per cent between 2010 and 2020. The updated plan covers 55 actions grouped in 13 strategic axis, which include, among others, the extension of producer responsibility, the prevention of waste generation in the public sector and the prevention of food waste.

5. Policies and measures related to implementation of commitments under Article 2 of the Kyoto Protocol

85. France reported on its package of PaMs adopted, implemented and planned in achieving its commitment under the Kyoto Protocol.

86. The NC6 includes information on how France promotes and implements the International Civil Aviation Organization (ICAO) decisions to limit emissions from aviation. This includes the addition of aviation to the EU ETS as of 2012 for flights within the EU. However, the inclusion of international flights was suspended in April 2013, followed by the agreement by ICAO in October 2013 to develop a global market-based mechanism addressing international aviation emissions by 2016 to be implemented by 2020. Also at the European level, France provided a sizable contribution (EUR 200 million) to the development of the European air navigation system, which, among other things, aims to reduce emissions from intra-European flights by 6.0–12.0 per cent by 2012. At the national level, France signed an agreement in 2008 with all airlines operating in France that summarized various environment-related voluntary commitments. According to this agreement, Air France-KLM, for example, has committed to reduce fuel consumption to 3.7 litres per passenger per 100 km by 2012.

87. The NC6 does not include information required by the UNFCCC reporting guidelines on NCs on the steps taken to promote and/or implement decisions by the IMO to limit or reduce emissions of GHGs not controlled by the Montreal Protocol from marine bunker fuels. The ERT reiterates the recommendation that France report on steps taken to promote and/or implement decisions by IMO in its next NC.

88. In its NC6, France reported information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties. France reported in tabular format the direct and indirect adverse effects of its main national climate change PaMs on developing countries. This information is supplemented

by two examples of measures taken to reduce or avoid adverse effects, namely measures related to the EU 2020 climate and energy package that define sustainability criteria for biofuels consumed in France and that aim at preserving biodiversity and forests. Other measures are reported, such as those relating to PaMs implemented in the EU context, which have to undergo an impact assessment on other countries that is taken into account at the final decision-making stage. France reported that this process aims at minimizing the negative effects of EU PaMs implemented in France on developing countries. See also chapter III.B below.

C. Projections and the total effect of policies and measures, including information on supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

89. In its NC6, France presented well-organized and detailed information on the projections of its GHG emissions up to 2020 based on a bottom-up energy model, Med-Pro, using sector-specific assumptions. In addition, the NC6 provides references to source documents that include more detailed information on projections. The projections in NC6 are an update to those that were presented in the NC5.

1. Projections overview, methodology and key assumptions

90. The GHG emission projections provided by France in the NC6 include a 'without measures', a 'with measures' and a 'with additional measures' scenario until 2020, presented relative to actual inventory data, for 1990, 2005, 2010, 2015 and 2020.[7] Projections are presented on a sectoral basis, using to the extent possible the same sectoral categories used in the PaMs section, and on a gas-by-gas basis for all the following GHGs: CO_2, CH_4, N_2O, PFCs, HFCs and SF_6. Projections are also provided in an aggregated format for each sector as well as for a national total, using global warming potential values.

91. The NC6 does not include information required by the UNFCCC reporting guidelines on NCs on emission projections related to fuel sold to ships and aircraft engaged in international transport. The ERT reiterates the recommendation that France report to the extent possible projections related to fuel sold to ships and aircraft separately from the total in its next NC. Also, France did not provide details on how the models and approaches used in its projections account for overlaps or synergies that may exist between different PaMs, and it only partially reported the main differences in assumptions, methods used and results between projections in the NC6 and those in earlier NCs. The ERT therefore encourages France to improve the transparency and completeness of its reporting by including such information in its next NC. In addition, the ERT invites France to provide projections of the indirect GHGs carbon monoxide, nitrogen oxides and non-methane volatile organic compounds and sulphur oxides in its next NC.

92. During the review, France provided additional information, elaborating on its national system, GHG inventory, and assumptions, models and methods used in projections. The ERT commends France for offering supplementary information that contributed to the transparency of reporting, enhancing, therefore, the completeness of the reporting.

93. In its NC6, France provided the scenario definitions used for its projections, as follows: the 'with measures' scenario includes all PaMs that started their implementation

[7] Greenhouse gas emission projections and their analysis were reported against actual inventory data from the 2013 annual submission included in the Convention geographical boundaries before recalculations that resulted from the centralized review.

phase before 1 January 2012, while the 'with additional measures' scenario includes all PaMs adopted and planned after 1 January 2012 in addition to the PaMs in the 'with measures' scenario. In the 'without measures' scenario, France assumes that no PaMs were implemented since 1990. France has identified in its table of PaMs which ones are part of each scenario. This definition of scenarios is consistent with the definition presented in the NC5, which used 1 January 2008 as the cut-off date.

94. France reported on the methodology used for the projections in the NC6, which highlighted that all three scenarios are now prepared using the same methodology but that otherwise no change occurred between the NC5 and the NC6. The projections are based on an energy balance approach that was derived using a combination of two models in order to cover both the demand and the supply side of the energy system in France:

(a) Med-Pro, a commercial bottom-up energy demand model developed by Enerdata. This model simulates long-term final energy demand in France, based on a detailed description of energy consumption by each sector;

(b) POLES, a top-down partial equilibrium model jointly developed by Enerdata, the European Commission and the French National Centre for Scientific Research (CNRS). This model simulates the global energy system in the long term, using an annual recursive simulation process. The POLES model is not a forecasting macroeconomic model in the sense that variables such as GDP and global energy prices do not evolve endogenously but are used as input to the model. The energy balance is complemented with additional information on activity data from other sectors (e.g. agriculture, waste and energy) and provides a sound basis for the calculation of the national total GHG emissions.

95. For the preparation of the scenarios, France used updated assumptions for the period 2015–2020, following as much as possible the economic forecasts from the *Economic Outlook 2012* report by the Organisation for Economic Co-operation and Development (OECD). The NC6 reports that the 'with measures' and the 'with additional measures' scenarios were elaborated with a view to harmonizing the assumptions and methods used; for example, by using the same set of macroeconomic assumptions. For the NC6, the GDP growth rate has been set to vary between 1.0 and 2.1 per cent per year, with an average of 1.9 per cent over the 2010–2020 period. France acknowledges that this value is higher than those found in previous reports as the previous values did not take into account the retirement reform and the most recent demographic scenario, which points to faster population growth in France. The population growth rate has been set to 0.49 per cent (average) per year, and the oil price at USD 65 to USD 98 per barrel between 2010 and 2020, according to the International Energy Agency's *World Energy Outlook 2011*. These assumptions for the period 2015–2020 provide a reasonable basis for the projections.

2. Results of projections

96. France's Kyoto Protocol target for the first commitment period is to maintain its emissions at its base year level (i.e. a 0 per cent change). The average annual emissions level was established at 563,925.33 kt CO_2 eq per year for the period 2008–2012. For the period 2008–2011, France reported average annual GHG emissions of 511,362.31 kt CO_2 eq or 9.3 per cent below the base year; therefore, France is expected to meet its target and does not plan to use units from the Kyoto Protocol mechanisms for compliance (France does, however, plan to account for LULUCF activities under Article 3, paragraph 4 of the Kyoto Protocol).

97. For the second commitment period of the Kyoto Protocol, France is committed to achieving a 20 per cent emission reduction target compared with the base year level jointly with the other EU member States. At the time of the review, national targets for EU

member States for the second commitment period of the Kyoto Protocol were not yet decided.

98. In contributing to meeting the EU Kyoto Protocol second commitment period target and the Convention quantified economy-wide emission reduction target by 2020, France aims to achieve emission reductions in sectors covered by the EU ETS and sectors not covered by the EU ETS. Due to the fact that emissions from sectors covered under the EU ETS are regulated by EU legislation, there is no requirement to define a national target for these emissions. Within the context of the implementation of the ESD, each EU member State has an emission reduction target for emissions from sectors not covered under the EU ETS (excluding emissions and removals from LULUCF). France has a 2020 target of 14 per cent reduction in emissions from the sectors not covered under the EU ETS compared with the 2005 emissions level. Considering the existing and planned PaMs, France reported that it expects to meet the target and does not plan to use the Kyoto Protocol market-based mechanisms or accounting for LULUCF activities for compliance.

99. Overall, France's reported projections for 2020 show a decreasing emissions trend. Total emissions in 2020 are expected to be at a level that is 16.9 per cent and 23.5 per cent below the 1990 level in the 'with measures' and 'with additional measures' scenarios, respectively. On a gas-by-gas basis, France reported that CO_2 emissions in 2010 (start year for projections) were 391,570 kt CO_2 eq. According to the projections, CO_2 emissions will decrease to 339,560 kt CO_2 eq in 2020 in the 'with measures' scenario and they will decrease to 303,290 kt CO_2 eq in 2020 in the 'with additional measures' scenario.

100. Projected non-CO_2 emissions show a small decrease in 2020. While in 2010 the non-CO_2 emissions were reported to be 128,310 kt CO_2 eq, they will decrease to 123,690 kt CO_2 eq and 122,610 kt CO_2 eq in 2020 for the 'with measures' and the 'with additional measures' scenarios, respectively. Emissions of CH_4 will decrease from 52,710 kt CO_2 eq in 2010 to 48,510 kt CO_2 eq and 47,880 kt CO_2 eq in 2020 for the 'with measures' and the 'with additional measures' scenarios, respectively. Emissions of N_2O will remain at their 2010 level of about 58,900 kt CO_2 eq in 2020 in the 'with measures' and the 'with additional measures' scenarios.

101. France has presented sector-by-sector projections and in the 'with measures' scenario it is expected that emissions from the energy sector will account in 2020 for about 70.4 per cent of the total emissions, those from industrial processes 7.9 per cent, solvents and other product use 0.3 per cent, agriculture 18.9 per cent, and waste 2.5 per cent. These proportions are very similar to those for 2011, shown in table 3. For the 'with additional measures' scenario, these proportions in 2020 vary as follows: emissions from the energy sector will account for 67.7 per cent of the total emissions, those from industrial processes 8.8 per cent, solvents and other product use 0.3 per cent, agriculture 20.4 per cent, and waste 2.7 per cent.

102. According to the 'with measures' scenario, energy sector emissions will decrease from 377,360 kt CO_2 eq in 2010 to 326,550 kt CO_2 eq in 2020; in the 'with additional measures' scenario, emissions from this sector decrease to 288,870 kt CO_2 eq by 2020. This decreasing trend is influenced by the package of PaMs addressing the transport sector, the use of renewable energy, and energy efficiency in the residential and commercial buildings sector. The significant additional decrease in the 'with additional measures' scenario is mainly due to the strengthening of the Renewable Heat Fund and by a significant increase in the consumption of wind-derived electricity (see para. 51 above).

103. France also reported projections for the industrial processes sector, in which emissions in 2020 (36,440 kt CO_2 eq) slightly decrease from 2010 (37,800 kt CO_2 eq) in the 'with measures' scenario. In the 'with additional measures' scenario, however, emissions

would slightly increase again to 37,460 kt CO_2 eq, which reflects the fact that no specific PaMs are reported for the 'with additional measures' scenario.

104. For the agriculture sector, the NC6 reports that decreases in emissions occur in both the 'with measures' and the 'with additional measures' scenarios, from 90,340 kt CO_2 eq in 2010 to 87,700 kt CO_2 eq and 87,010 kt CO_2 eq in 2020, respectively. These reductions would be mainly achieved by the recovery of CH_4 resulting from manure management, reduction in the use of mineral (nitrate) fertilizers and reduction in energy consumption by tractors. No specific PaMs are reported for the 'with additional measures' scenario.

105. In 2010, GHG emissions from the waste sector were 13,290 kt CO_2 eq. The NC6 reports that for this sector, emissions would decrease to 11,390 kt CO_2 eq for both the 'with measures' and the 'with additional measures' scenarios. The main driver for this small decrease is expected to be the outcome of the local prevention programmes for the reduction of waste and recycling targeting two thirds of the French population.

106. The projected emission levels under different scenarios are presented in table 5 and the figure below. The ERT notes that achieving the 2020 emissions levels anticipated by France in the projections will be challenging. In fact, the NC6 provides information about sensitivity analysis performed by France. The realisation of France's ambitious 2020 projected emissions level hinges on two main points:

(a) The actual pace of thermal renovations of existing building stock over the whole period (see paras. 58 and 61 above);

(b) The actual shift in the share of non-air, non-road freight transport, with a 25.0 per cent target for 2022 (modal shift to railway infrastructure and inland waterways) (see paras. 63 and 64 above).

107. In addition, France has performed sensitivity analysis on the GDP growth rate and the coal and gas prices it has assumed for the 2015–2020 period. For the reference case, both the 'with measures' and the 'with additional measures' scenarios are based on a value of 2.1 per cent annual GDP growth rate over the 2015–2020 period (or 1.9 per cent over 2010–2020) and on energy prices from the International Energy Agency's *World Energy Outlook 2011*. In the alternative case, for the 'with measures' scenario, when a lower GDP growth assumption is used (1.6 per cent annually over the 2015–2020 period) the GHG emissions in 2020 are about 3,000 kt CO_2 eq lower than in the reference case; when higher coal and gas prices are used (scenario issued by the European Commission in September 2012), emissions in 2020 are about 11,000 kt CO_2 eq lower than in the reference case. In the alternative case for the 'with additional measures' scenario, the same changes in assumptions lead to values lower by 3,000 kt eq CO_2 and 10,000 kt eq CO_2 for changes in GDP growth rate and coal and gas prices, respectively. The NC6 does not report sensitivity analysis results for the 'without measures' scenario.

Table 5
Summary of greenhouse gas emission projections for France

	Greenhouse gas emissions (kt CO_2 eq per year)	*Changes in relation to the base year[a] level (%)*	*Changes in relation to the 1990 level (%)*
Kyoto Protocol base year[b]	563 925.33	0.0	1.1
Kyoto Protocol target for the first commitment period (2008–2012)	563 925.33	0.0	1.1
Kyoto Protocol target for the second commitment period (2013–2020)[c]	Not available yet		
Quantified economy-wide emission	Not available yet		

	Greenhouse gas emissions (kt CO_2 eq per year)	*Changes in relation to the base year[a] level (%)*	*Changes in relation to the 1990 level (%)*
reduction target under the Convention[d]			
Inventory data 1990 [e]	557 670.95	–1.1	0.0
Inventory data 2011 [e]	487 212.03	–13.6	–12.6
Average annual emissions for 2008–2011[e]	511 362.31	–9.3	–8.3
'Without measures' projections for 2020 [f]	688 790	22.1	23.5
'With measures' projections for 2020 [f]	463 650	–17.8	–16.9
'With additional measures' projections for 2020 [f]	426 730	–24.3	–23.5

Note: The changes in emissions are calculated using the exact (not rounded) values and may therefore differ from values calculated with the rounded numbers provided in the table.

[a] "Base year" in this column refers to the base year used for the target under the Kyoto Protocol.

[b] The Kyoto Protocol base year level of emissions is provided in the initial review report contained in document FCCC/IRR/2007/FRA.

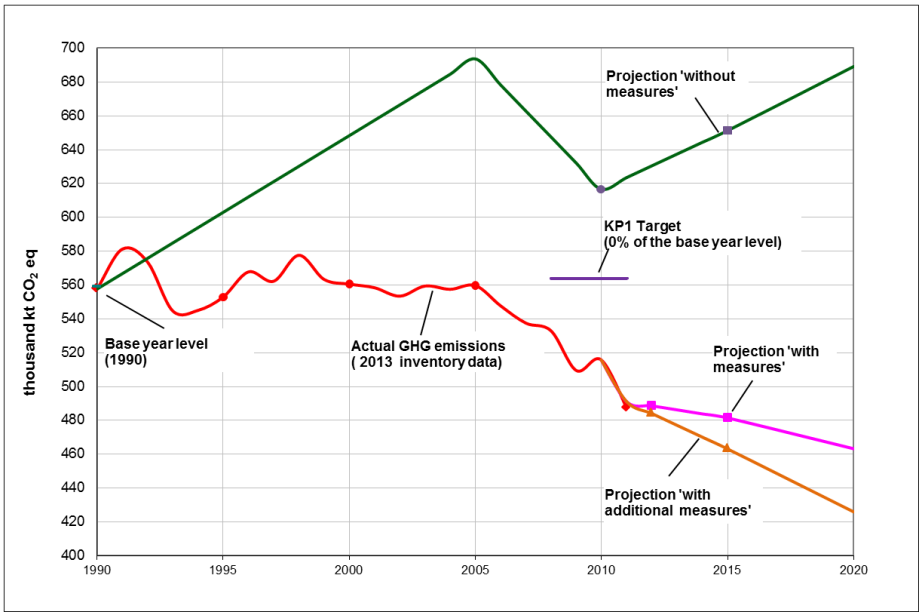
[c] The Kyoto Protocol target for the second commitment period (2013–2020) is a joint target for the European Union (EU) and its 28 member States and Iceland. The target is to reduce emissions by 20 per cent by 2020 compared with the base year (1990) level. At the time of the review, national targets for EU member States for the second commitment period of the Kyoto Protocol were not yet decided. The target for sectors not covered by the European Union Emissions Trading System is 14 per cent compared with 2005 for France under the European Union effort-sharing decision.

[d] Quantified economy-wide emission reduction target under the Convention is a joint target for the EU and its 28 member States. The target is to reduce emissions by 20 per cent by 2020 compared with the base year (1990) level. At the time of the review, 2020 national targets for EU member States under the Convention were not yet decided.

[e] France's 2013 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry.

[f] France's sixth national communication and first biennial report.

Greenhouse gas emission projections



Sources: (1) Data for the years 1990–2011: France's 2013 greenhouse gas inventory submission; the emissions are without land use, land-use change and forestry (LULUCF); (2) Data for the years 2011–2020: France's sixth national communication and/or first biennial report; the emissions are without LULUCF.

Note: The target for the second commitment period of the Kyoto Protocol is based on the 1990 GHG emissions level, excluding LULUCF. The initial assigned amount for the second commitment period will be established after the initial review for the second commitment period of the Kyoto Protocol.

Abbreviations: GHG = greenhouse gas, KP1 = first commitment period of the Kyoto Protocol.

3. Total effect of policies and measures

108. In the NC6, France presents the estimated total effect of implemented and adopted PaMs, in accordance with the 'with measures' scenario and the 'with additional measures' scenario, compared with a situation without such PaMs ('without measures' scenario). Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO_2 eq basis), in 1995, 2000, 2005, 2010, 2015 and 2020. The NC6 also presents relevant information on factors and activities for each sector for the years 1990 to 2020.

109. France reported that the total estimated effect of adopted and implemented PaMs in 2020 is 225,970 kt CO_2 eq in the 'with measures' scenario, and an additional 37,350 kt CO_2 eq is expected to result from additional measures implemented beyond 1 January 2012 as part of the 'with additional measures' scenario. Table 6 below shows that compared with the 'without measures' scenario, PaMs in the energy sector, followed by PaMs in the industrial processes sector and the waste management sector, are estimated to have the most effect. In fact, the emissions avoided in the energy sector represent about 40 per cent of the actual emissions from the energy sector in 1990 and the emissions avoided in the industrial processes sector represent about 110 per cent of the actual emissions from the industrial processes sector in 1990. Furthermore, it is interesting to note that relative to the GHG emissions level in 2011, the PaMs implemented in the energy sector (including transport), will contribute the most to reducing absolute emissions, followed by the effect of PaMs implemented in the agriculture and waste sectors (see paras. 102, 104 and 105 above).

110. The ERT noted that the GDP growth rates used for the projections and the estimation of the total effect of PaMs for the period 2010–2015 are not fully consistent with those reported by external sources such as the OECD, which report annual GDP growth rates that are lower. France acknowledges that its values are higher as the other values did not take into account the retirement reform and the most recent demographic scenario, which points to faster population growth in France. Over time, these higher values of GDP growth used by France lead to GDP values in 2020 that are noticeably higher than OECD values. The NC6 reports that to test the effect of the economic crisis, France has carried out sensitivity analysis on the economic growth assumptions over 2015–2020 to estimate the potential effects on the 'with measures' and 'with additional measures' scenarios, However, it is not clear how these higher growth values for 2010–2015 influence the trajectory of the GHG emissions in the three scenarios and the resulting total effect of PaMs.

111. The most effective PaMs and drivers behind GHG emission reductions are described in chapter II.B above. Table 6 provides an overview of the total effect of PaMs as reported by France.

Table 6
Projected effects of planned, implemented and adopted policies and measures in 2020

Sector	*Effect of implemented and adopted measures (kt CO_2 eq)*	*Relative value (% of 1990 emissions)*	*Effect of planned measures (kt CO_2 eq)*	*Relative value (% of 1990 emissions)*
Energy (including CO_2 from transport)	–152 970	–39.7	–37 680	–9.8

Sector	*Effect of implemented and adopted measures (kt CO_2 eq)*	*Relative value (% of 1990 emissions)*	*Effect of planned measures (kt CO_2 eq)*	*Relative value (% of 1990 emissions)*
Transport – CO_2	NA	NA	NA	NA
Industrial processes	–65 160	–110.1	1 020	1.7
Agriculture	0	0	–690	–0.7
Land-use change and forestry	0	0	0	0
Waste management	–7 760	–61.4	0	0
Solvents	–80	–3.8	0	0
Others	0	0	0	0
Total without LULUCF	**–225 970**	**–40.5**	**–37 350**	**–6.7**

Source: France's sixth national communication

Note: The total effect of implemented and adopted policies and measures is obtained by subtracting values for the 'without measures' scenario from the values for the 'with measures' scenario; the total effect of planned policies and measures is obtained by subtracting values for the 'with measures' from the 'with additional measures' scenario.

Abbreviation: NA = not available.

4. Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

112. France in its NC6 provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, although it did not elaborate on supplementarity as such. The ERT noted that France is not planning to make use of units under Articles 6 and 12 of the Kyoto Protocol other than those surrendered in the context of the EU ETS to meet its Kyoto Protocol target, as its emissions are well below the target.

D. Provision of financial resources and technology transfer to developing country Parties, including information under Articles 10 and 11 of the Kyoto Protocol

1. Finance, including "new and additional" resources and resources under Article 11 of the Kyoto Protocol

113. In its NC6, France provided information on the provision of support required under the Convention and its Kyoto Protocol. France provided details on measures taken to give effect to its commitments under Article 4, paragraphs 3, 4 and 5, of the Convention as required by the UNFCCC reporting guidelines on NCs and under Article 11 of the Kyoto Protocol, as required by the "Guidelines for the preparation of information required under Article 7 of the Kyoto Protocol".

114. The NC6 does not include information required by the UNFCCC reporting guidelines on NCs on which "new and additional" financial resources France has provided and a clarification of how it has determined such resources as being "new and additional".

115. During the review, France provided additional information, elaborating on the French approach to determine which financial resources are considered "new and additional". France informed the ERT that it considers all financial resources for each reporting year as being "new and additional" because double counting with previous reporting periods and between the different financing channels is avoided. The ERT reiterates the recommendation that France include this explanation in its next NC in order to clarify how the Party has determined such resources as being "new and additional".

116. France has reported information on the assistance it has provided to developing country Parties that are particularly vulnerable to the adverse effects of climate change to help them to meet the costs of adaptation to those adverse effects. In the NC6, France described steps for determining whether a project will contribute to adaptation. First, an analysis is carried out to determine the vulnerabilities in the geographical area of the project. This is then followed by an evaluation of how the activities anticipated by the project match actions that are deemed to contribute to reducing vulnerabilities or enhancing resilience to the impacts of climate change. Nevertheless, during the review the Ministry of Finance provided additional information, elaborating on the difficulties involved in identifying and reporting on financial resources used specifically for adaptation in developing countries.

117. Financial support for climate change activities are channelled in France through two Ministries (the Ministry of Foreign Affairs and the Ministry of Finance – General Directorate of the Treasury) using several bilateral and multilateral channels, particularly through official development assistance, including the French Development Agency (AFD), the French Global Environment Facility (FFEM), the Global Environment Facility (GEF) and other mechanisms for support. In the period 2009–2012, France provided financial support for climate change related programmes and projects to a large number of countries worldwide, in particular to countries in Africa and Asia. Mitigation (in particular through energy efficiency and transport) remained the major area for support, followed by adaptation, for which agriculture and the securing of water resources were the key areas of funding. Within the support provided, the most important instruments are loans, followed by grants.

118. The reporting of the ex ante assessment of climate change co-benefits of activities proposed for funding by AFD, the main operator in the French bilateral cooperation system, was particularly transparent, comprehensive and robust. The ERT commends France for its clear and transparent reporting on monitoring and tracking of the provision of financial support by AFD.

119. However, the methods and assumptions used by all other financing institutions to identify climate-specific finance information were not transparently described. During the review, France acknowledged the issue and the need to harmonize the methodologies used among the different French financing channels to identify climate-specific finance information. The ERT was informed that each bilateral instrument has its own methodology, which can differ marginally from the others, and that France plans to work on harmonizing these methodologies. The ERT encourages France to enhance the transparency of its reporting by providing information on the national approach, the underlying assumptions and the methodologies used for identifying and reporting information on climate-specific finance provided by organizations other than AFD; that is, how climate-specific finance is identified for all delivery mechanisms of support.

120. France has provided information on financial resources related to the implementation of the Convention provided through bilateral, regional and other multilateral channels. In particular, France has provided information on its yearly contribution to the GEF in accordance with its commitments to the fifth replenishment period. France is the fifth largest contributor to the GEF and committed to providing EUR 215 million (USD 276 million) over the period 2011–2014, which is a 57 per cent increase in the French contribution compared with the previous period (2007–2010) and represents 8.4 per cent of the fund's budget.

121. With regard to the most recent financial contributions to enhance the implementation of the Convention by developing countries, particular effort was made to

meet France's commitment to fast-start finance in relation to REDD-plus[8] resulting from the Copenhagen Accord. In fact, the FFEM enhanced its commitments and contributed to REDD-plus with EUR 29.6 million (USD 38.1 million) allocated for the protection of forests over the period 2011–2012.

122. France has specified that part of the 15 per cent of the revenues from the tax on financial transactions to be dedicated to development, health and climate will be allocated to the Green Climate Fund. The ERT commends France for the use of institutional channels related to the Convention and the effort made to meet France's commitment on fast-start finance resulting from the Copenhagen Accord. Table 7 summarizes information on financial resources provided to developing countries by France. The figures presented were not all identified by France as being climate-specific.

Table 7
Summary of information on financial resources for 2009–2012
(Millions of euros)

	Years of disbursement			
Allocation channel of public financial support	*2009*	*2010*	*2011*	*2012*
Official development assistance	9 049.17	9 751.90	9 347.62	9 358.69
Contributions through multilateral channels, including:				
World Bank	442.61	447.44	445.59	418.55
Regional banks	147.64	149.25	154.75	155.71
Sectoral funds	88.58	85.82	128.78	146.27
Contributions through bilateral, regional and other channels	2 831.00	2 767.72	2 363.87	2 620.17

2. Technology transfer, including information under Article 10 of the Kyoto Protocol

123. France has provided in its NC6 information on activities related to the transfer of technology. A review of reported information is also provided in chapter II.D.3 of the report of the technical review of the first biennial report.

124. The ERT noted that some information was not provided in the NC6, or was not described in a completely transparent manner. In particular, although France reported clearly on the activities undertaken by PROPARCO, the development financial institution partly owned by AFD that promotes private investment in developing countries to reach the United Nations Millennium Development Goals, it did not clearly distinguish between activities undertaken by the public and by the private sectors beyond the activities under the umbrella of PROPARCO. During the review, the ERT noted the efforts made and the challenges faced by France while seeking to make this distinction. In this context, the ERT recommends that France explore ways to distinguish in a more transparent and detailed manner activities undertaken by the private sector from those undertaken by the public sector. The ERT also invites France to better reflect in its reporting:

(a) All French programmes or actions undertaken to improve access to finance by the private sector in developing countries, including examples of successful partnerships with local companies in developing country Parties;

[8] Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.

(b) In what way private sector activities for transfer technologies are encouraged in France and how these activities help to meet the commitments under Article 4, paragraphs 3, 4 and 5, of the Convention.

125. France did not report explicitly on activities for financing access by developing countries to 'hard' or 'soft' environmentally sound technologies, although it is implicit in the NC6 that France undertakes such activities. The ERT recommends that France address this reporting requirement specifically and provide explicit references to activities for financing access by developing countries to 'hard' or 'soft' environmentally sound technologies in its next NC.

126. In addition, in its NC6 France did not report success and failure stories related to technology transfer. During the review, France informed the ERT that it does not systematically collect information on the performance of activities relating to the transfer of technology and is therefore not in a position to report on it. The ERT recommends that France explore ways to identify such success and failure stories and report them in its next NC.

127. France has reported in textual format on the steps taken by governments to promote, facilitate and finance the transfer of technology, and to support the development and enhancement of endogenous capacities and technologies of developing countries. In particular, incentives for the private sector to transfer technology to developing country Parties are in place through the Fund for Research and Assistance for the Private Sector. There are also initiatives supporting the internationalization of French companies, mainly small and medium-sized enterprises, some of them dealing with environmentally sound technologies. France also reported that he majority of the technologies actually transferred are a combination of renewable energy equipment and knowledge sharing, know-how and capacity-building in the areas of energy efficiency and renewable energy.

128. France's bilateral cooperation regarding technology transfer focuses mainly on Africa as well as countries such as Brazil and China. Regarding multilateral technological cooperation, France mainly establishes partnerships with large energy institutions such as the International Energy Agency and the International Renewable Energy Agency; it is also involved in broader scope projects such as the Sustainable Energy for All Initiative of the United Nations.

E. Vulnerability assessment, climate change impacts and adaptation measures

129. In its NC6, France has provided the required information on the expected impacts of climate change in the country and on adaptation options. Table 8 summarizes the information on vulnerability and adaptation to climate change presented in the NC6.

130. Climate change impacts are reported for many sectors in NC6. However, the ERT noted that information on impacts in other important sectors such as impacts on livestock, fisheries, energy, transport, tourism and infrastructure was not reported or was superficially covered. France reported that overall, the cost of the impacts of climate change could reach several billion euros per year if no adaptation measures were taken.

Table 8
Summary of information on vulnerability and adaptation to climate change

Vulnerable area	*Examples/comments/adaptation measures reported*
Agriculture and food	*Vulnerability*: crop yield will increase for areas at high latitudes (since the local

Vulnerable area	*Examples/comments/adaptation measures reported*
security	temperature will increase by less than 3 °C and the higher CO_2 concentration will have a positive effect on photosynthetic activity). Crop yields at lower latitudes will decrease. Viral, bacterial and parasitical diseases will emerge *Adaptation*: genetic research to enhance and conserve crop and fruit varieties is undertaken; long-term water management policies to improve the irrigation of small areas (capacity to store excess winter rainfall) are being assessed; crop pest and livestock disease warning system enhanced; improvement of climate risk insurance schemes
Biodiversity and natural ecosystems	*Vulnerability*: loss of biodiversity, reduced areas of coral ecosystems. An economic assessment of biodiversity losses based on the concept of ecosystem services, applied to coral ecosystems and non-goods services provided by forests, indicates a negative impact *Adaptation*: new forecast models for modification of biodiversity in line with the climatic scenarios and the economic evaluation of ecosystem services have been developed; strengthening of cross-border collaboration is planned
Coastal zones	*Vulnerability*: sea level will rise *Adaptation*: rolling back of the inland infrastructure is forecast; water evacuation systems, equipment for floodable areas, raising of foundations of buildings and reinforcing protection services are planned; sea level rise will be mainstreamed in coastal town and country planning documents
Tourism	*Vulnerability:* snowfalls will dramatically decrease at low altitudes, and to a lesser extent at higher altitudes. The maximum depth of accumulated snow will decrease at all altitudes. This will shorten the skiing season and will have a negative impact on the tourism industry in mountain areas *Adaptation*: implementation of research programme to anticipate local snow cover depletion; promotion of alternative recreational activities for winter tourism in mountain areas
Forests	*Vulnerability*: forest productivity is projected to increase until 2050 (due to a shorter cold period) and is projected to decrease in the long term (until 2100) (due to more frequent extreme weather events and the spread of the Mediterranean forest) *Adaptation*: changes in forestry management by harvesting appropriate species and amounts; research and observation on species robustness/resistance, as well as genetic improvements, is ongoing; management of protected forest areas; development of standards for and the promotion of wood use in construction
Human health	*Vulnerability:* the risk of heatwaves will increase distinctly. A number of pathologies are likely to be noted; for example, more than 10 million people in France are affected by pollen allergies or hay fever *Adaptation*: new climate-related risk factors monitored, such as pollen, fungi, insects and vector-borne diseases, and toxin-producing micro-organisms; solar ultraviolet radiation early warning system; heatwave management scheme; related health services will be upgraded
Water resources	*Vulnerability*: by 2020, water collection is expected to decrease by 20.0 per cent; shortage of 2 billion m^3 of water for industry, agriculture and drinking is expected by 2050. Disturbances to the hydrological cycle could be accompanied, in some circumstances, by more frequent and more intense flooding *Adaptation*: a leakage control programme for drinking water networks is under way; water-saving investment is expected to be co-financed by the government

131. ONERC,[9] established in 2001, coordinates the work of different ministries on vulnerability and adaptation. ONERC is responsible for collecting and disseminating

[9] Observatoire national sur les changements climatiques.

information on the results of studies and research on the risks related to global warming and extreme climatic events. Also, ONERC may provide recommendations on adaptation measures. In addition, the Ministry of Ecology, Sustainable Development and Energy coordinate an early warning system for extreme meteorological and hydrological events.

132. In 2006, France developed an adaptation strategy that aims at supporting adaptation measures in the pursuit of four objectives: maintaining public health and safety; preventing the risk of inequalities potentially caused by climate change; limiting the cost of adaptation; and tapping into opportunities emerging from any positive impacts of climate change. In addition, eight strategic directions have been identified in order to achieve these objectives, focusing on the development of scientific knowledge; strengthening of observation systems; information and stakeholder awareness-raising; promoting a local approach; financing adaptation actions; making use of legislative and regulatory tools; taking into account the specificities of overseas territories; and contributing to international cooperation.

133. In 2010, the Ministry of Sustainable Development commissioned an assessment of climatic conditions in France, the results of which are compiled in the report *The Climate of France in the 21st Century* that provides climatic benchmarks to inform development of measures for adapting to climate change. Furthermore, a broad consultation with different ministries, experts, civil society and other stakeholders was carried out in 2010, which identified measures for all sectors and around 200 recommendations. The national adaptation plan, published in July 2011, is based on scientific information and recommendations from public consultations, and includes 84 actions that roll out into 240 measures to be implemented between 2011 and 2015, covering 20 themes such as health, water, biodiversity, agriculture, forests, fishing and aquaculture, energy and industry, infrastructure, tourism, European and international actions as well as governance. The ERT noted that the reporting could be enhanced with a visual representation of interrelationships between measures to be implemented.

134. The NC6 reports that about 81 actions and 194 measures have so far been implemented and that a final evaluation of the implementation of the plan is scheduled in late 2015. The results of the evaluation will include recommendations on which the next planning exercise for adaptation will be based. The ERT noted that the reporting could be enhanced with more detailed information about the actions and measures implemented, and their results. The ERT encourages France to report more detailed information on its national adaptation plan and the results of the final evaluation in its next NC.

135. The ERT noted that France developed the DRIAS project, which is now fully operational and gives the public access to regional French climate scenarios on the impacts of climate change together with adaptation options. The ERT commends France for this initiative.

136. The NC6 provides extensive information on the cooperation of France with developing country Parties related to vulnerability and adaptation. The cooperation includes technical assistance for seasonal forecasts in West Africa and capacity-building in climate modelling through the African Centre of Meteorological Application for Development and its project African Early Warning and Advisory Climate Services in Africa. The ERT commends France for its transparent reporting on this issue.

F. Research and systematic observation

137. France has provided detailed information on its actions relating to research and systematic observation, and addressed both domestic and international activities, including the International Geosphere–Biosphere Programme, the Global Climate Observing System

(GCOS), and the Intergovernmental Panel on Climate Change (IPCC). The NC6 also reflects action taken to support related capacity-building in developing countries.

138. The ERT noted that the English abstract of the NC6 includes a concise description of how research activities are generally structured in France. The research community includes university teams, agencies, national research bodies and applied research bodies. Since 2005, research in France is based on a regional structure composed of competitiveness clusters in which businesses, laboratories and training establishments work together under performance contracts with the State and regional authorities. In 2010, France created the AllEnvi alliance that brings together research bodies working on the environment as well as the ANCRE alliance that groups bodies on energy.

139. France reported that research on climate change is at the centre of its research priorities. Research activities cover a wide range of topics, including climate modelling, monitoring, impact studies and technical research (e.g. energy research), with increasing importance being given to research on impacts and adaptation. A large part of the funding for research is directed at various research institutions, and additional funding is provided through Agence nationale de la recherche and through programmes of the National Institute for the Sciences of the Universe. France also substantially supports private research. France was strongly involved in international research efforts, including those for the IPCC Fifth Assessment Report and the Seventh Framework Programme in Europe.

140. With regard to systematic observation, the ERT noted that with various stations in its overseas territories, France maintains a wide network of climate observation sites, covering the atmospheric, oceanic and terrestrial domains, and collaborates in various international efforts, such as the Integrated Carbon Observation System. Data from this network are supplied to international data centres and are usually publicly available for non-commercial use.

141. France has reported on cooperation projects with developing countries on systematic observation. For example, through its participation in GCOS, France initiated and maintains the AMMA-CATCH observation system to monitor the long term impacts of the monsoon in West Africa. This system establishes collaboration at various levels with developing countries, ranging from support for individual researchers to long-standing collaboration between research groups. France also reported on the MISTRALS project, launched in 2008, which is an international interdisciplinary meta-programme of research and observation dedicated to understanding how the environment of the Mediterranean Basin behaves and evolves under the pressures of global human-generated change.

142. The ERT noted that France has continued its work on enhancing public access to climate change related information and data by opening the DRIAS portal that aims to collect and disseminate regional climate scenarios and related information relevant for decision makers (see para. 135).

G. Education, training and public awareness

143. In the NC6, France provided information on its actions relating to education, training and public awareness at both the domestic and international levels and for both mitigation and adaptation. With a centralized and prominent education system, France benefits from levers unavailable to some other, more decentralized countries. Sustainable development and environmental education and training have been on the French school curriculum since 2004. Since 2008, primary schools programmes in science, humanist culture and geography have included concepts of sustainable development to introduce pupils to “protection of the environment”. As a next step, climate and energy notions were

introduced in secondary schools in 2009. At higher levels of education, the theme of climate change is a popular topic as shown by enrolment numbers.

144. France reported that it has invested substantial effort in the field of training to have competent professionals in order to ensure a solid energy transition. Numerous training courses have been offered to professionals involved in the planning of activities related to building, energy and agriculture from the local to the national level in order for them to gain the necessary skills to steer the economy in a green direction.

145. The ERT noted that the public and stakeholders play a very important role in French climate change policymaking (see paras. 25, 42, 44, 132 and 133). For example, the recent Grenelle process involved over 30,000 people through the consultation process; the annual Environmental Conference, initiated in 2012, provides a platform for various stakeholders to meet and discuss implemented and planned climate change policies; and a broad consultation with different stakeholders was carried out in 2010, which led to about 200 recommendations being fed into the 2011 national adaptation plan.

146. Finally, the NC6 reported that public environmental awareness has been assessed on a regular basis by France; such monitoring attests to the enhancement in awareness of the population on the impacts of human activities on climate change. However, in a 2012 poll, pollution ranked third of a list of preoccupations in France, after unemployment and social inequality.

III. Summary of reviewed supplementary information under the Kyoto Protocol

A. Overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

147. Supplementary information provided by France under Article 7, paragraph 2, of the Kyoto Protocol in its NC6 is mostly complete and transparent. The supplementary information is located in different sections of the NC6. Table 9 provides an overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol as well as references to the NC6 chapters in which this information is provided.

148. France has not reported the following elements of the supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol: identification of steps taken to promote and/or implement any decisions by IMO in order to limit or to reduce GHG emissions not included in the Montreal Protocol from marine bunker fuels; and an explanation of the French approach to determine that the financial resources provided are "new and additional". The technical assessment of the information reported under Article 7, paragraph 2, of the Kyoto Protocol is contained in the relevant sections of this report. The ERT recommends that France include these reporting elements in its next NC.

Table 9
Overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

Supplementary information	*Reference to the sixth national communication*
National registry	Chapter III.D
National system	Chapter III.C
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Chapters III.D and IV.B.3

Supplementary information	*Reference to the sixth national communication*
Policies and measures in accordance with Article 2	Chapter IV.C
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	Chapter IV.B
Information under Article 10	Chapters III.C, IV.B, VI.C, VII, VIII and IX
Financial resources	Chapter VII.A, VII.B

B. Minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol

149. France reported the information requested in section H, "Minimization of adverse impacts in accordance with Article 3, paragraph 14", of the annex to decision 15/CMP.1 as a part of its 2013 annual GHG inventory submission and in the NC6. In its NC6, France reported information on how it strives to implement its commitments under Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention (see para. 88 above).

IV. Conclusions and recommendations

150. The ERT conducted a technical review of the information reported in the NC6 of France according to the UNFCCC reporting guidelines on NCs. The ERT concludes that the NC6 provides a good overview of the national climate policy of France. The information provided in the NC6 includes most elements of the supplementary information under Article 7 of the Kyoto Protocol, with the exception of information on: steps taken to promote and/or implement any decisions by IMO in order to limit or reduce GHG emissions not controlled by the Montreal Protocol; and an explanation of the French approach to determine that the financial resources provided are "new and additional".

151. France's emissions for 2011 covered under the Kyoto Protocol were estimated to be 12.6 per cent below its 1990 level excluding LULUCF and 17.2 per cent below including LULUCF. Emission decreases were mainly driven in the energy sector by: (i) decreases in emissions from manufacturing industries and construction (25.2 per cent), owing to a general decrease in energy consumption, accentuated by the 2008 economic crisis, and an increased use of natural gas and biomass that substituted for fossil fuels; (ii) decreases in emissions in energy industries (17.6 per cent), owing to an increased share of natural gas and biomass and a decreased use of solid fossil fuels; and (iii) decreases in emissions in the residential and commercial buildings sector (10.7 per cent), owing to an increased share of natural gas used. The decreases were partially offset by an increase in emissions from transport, mainly from road transportation (9.1 per cent). The other main drivers were the reduction in N_2O emissions from adipic acid production due to technological improvement; improvement in efficiency of the chemical industry; and the general contraction and stabilization of industrial activity due to the economic recession.

152. In the NC6, France presents GHG emission projections for the period from 2010 to 2020. Three scenarios are included: a baseline ('without measures') scenario; a 'with measures' scenario; and a 'with additional measures' scenario. Overall, France's reported projections for 2020 show a decreasing emissions trend and total emissions in 2020 are

expected to be at a level that is 16.9 per cent and 23.5 per cent below the 1990 level in the 'with measures' and 'with additional measures' scenarios, respectively.

153. Based on the comparison of the target and the average annual emissions for 2008–2011 in the first commitment period (2008–2012) of the Kyoto Protocol, France is on track to meet its Kyoto Protocol target for the first commitment period (to stabilize its emissions at the 1990 level). The NC6 contains information on how France's use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action. In order to meet its Kyoto Protocol target, France is not planning to make use of units under Articles 6 and 12 of the Kyoto Protocol other than those surrendered in the context of the EU ETS.

154. France participates in and contributes to the European Union target of 20 per cent emissions reduction in 2020 under the Convention and its Kyoto Protocol second commitment period. At the time of the review, national targets for EU member States under the second commitment period of the Kyoto Protocol and the Convention had not yet been decided. Sectors covered under the EU ETS have an EU-wide emissions cap and can purchase emission credits to offset GHG emissions. For the non-emissions trading scheme sectors (excluding LULUCF under the Kyoto Protocol), France has a 14 per cent emission reduction target by 2020 compared with the 2005 level. Considering the existing and planned PaMs, France expects to meet the target.

155. France reported on its PaMs adopted, implemented and planned in achieving its emission reduction commitments. The main frameworks for PaMs relating to climate change in France are the Climate Plan, the two Grenelle environment acts (2009 and 2010) and the EU 2020 climate and energy package. The Climate Plan (established in 2004 and updated every two years, with the latest update in 2013) includes France's actions for meeting its commitments. The Climate Plan is based on two pillars, mitigation and adaptation, and is linked to the National Strategy for Sustainable Development (2010–2013). In addition, the annual Environmental Conference, initiated in 2012, was followed in 2012 by a national debate on energy transition. The debate, which concluded in July 2013, will provide a framework for investments to be made over the coming years through the energy transition law to be adopted in 2015.

156. The key instruments to support national policy in the area of climate change, in particular with regard to the transport, residential and commercial buildings, and renewable energy sectors, combine regulatory, fiscal (both restricting and incentivizing), economic and information measures, with a focus on development of energy options that emit less and are more efficient. The feed-in tariff for electricity produced from renewable energy sources; the automobile feebate, CO_2 labelling of private vehicles and annual tax for company vehicles; the regulations limiting emissions of refrigerant F-gases; the Renewable Heat Fund; and the second phase of the energy efficiency certificate scheme are expected to be the PaMs resulting in the greatest amounts of avoided GHG emissions by 2020. The achievement of France's ambitious medium term PaMs objectives is a real challenge, which hinges on the actual pace of thermal renovations of existing building stock over the whole period and the actual shift in the share of non-air, non-road freight transport, with a 25 per cent target for 2022 (modal shift to railway infrastructure).

157. France is the fifth largest contributor to the GEF and committed to providing EUR 215 million (USD 276 million) over the period 2011–2014, which is about a 57 per cent increase in the French contribution from the previous period (2007–2010) and represents 8.4 per cent of the Fund's budget. With regard to fast-start finance resulting from the Copenhagen Accord, the FFEM contributed to REDD-plus activities in developing countries with EUR 29.6 million (USD 38.1 million) allocated for the protection of forests over the period 2011–2012. In addition, part of the 15 per cent of revenues from the tax on

financial transactions to be dedicated to development, health and climate will be allocated to the Green Climate Fund.

158. In 2006, France developed its adaptation strategy that supports measures to maintain public health and safety; prevent inequalities caused by climate change; limit the cost of adaptation to impacts of climate change; and benefit from positive effects of climate change. This strategy is implemented through the 2011 national adaptation plan which includes 84 actions that roll out into 240 measures to be implemented between 2011 and 2015, covering 20 themes such as health, water, biodiversity, agriculture, forests, fishing and aquaculture, energy and industry, infrastructure, tourism, European and international actions as well as governance.

159. Climate change research and observation is at the centre of priorities of French research. Research activities cover a wide range of topics, including climate modelling, monitoring, impact studies and technical research (e.g. energy research), with increasing importance being given to research on impacts and adaptation. France has continued its work on enhancing public access to climate change related information and data by opening the DRIAS portal that aims to collect and disseminate regional climate scenarios and related information relevant for decision makers. France also has collaboration at various levels with developing countries, ranging from support for individual researchers to long-standing collaboration between research groups. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol is provided by France in its 2013 annual GHG inventory submission and in the NC6.

160. With its centralized and prominent education system, France has the levers to give an important place to sustainable development and environmental education and training, which are part of its primary, secondary and higher level school curricula. France has also invested substantial effort in public awareness and in the field of training to have competent professionals in order to ensure a solid energy transition. Numerous training courses have been offered to professionals involved in the planning of activities related to building, energy; and agriculture from the local to the national level in order for them to gain the necessary skills to steer the economy in a green direction.

161. In the course of the review, the ERT formulated several recommendations relating to the completeness and transparency of France's reporting under the Convention and its Kyoto Protocol. The key recommendations[10] are that France:

(a) Improve completeness of reporting by including in the next NC the following information:

(i) How it believes its key PaMs are modifying longer term trends in GHG emissions and removals (para. 30);

(ii) Steps taken to promote and/or implement any decisions by IMO to limit or reduce emissions of GHGs not controlled by the Montreal Protocol from marine bunker fuels (paras. 87 and 148);

(iii) Projections related to fuel sold to ships and aircraft engaged in international transport, to the extent possible, separately from the total (para. 91);

(iv) How it has determined the financial resources provided as being "new and additional" (para. 115);

(v) Success and failure stories, where feasible, related to technology transfer (para. 126);

[10] The recommendations are given in full in the relevant sections of this report.

(b) Improve the transparency of reporting by including in the next NC the following information:

(i) Textual descriptions of PaMs organized by sector and subdivided by gas to reflect the information reported in the PaMs table (para. 29);

(ii) A clear distinction of technology transfer activities undertaken by the public and the private sector (para. 124);

(iii) Explicit references to activities for financing access by developing countries to 'hard' or 'soft' environmentally sound technologies (para. 125).

V. Questions of implementation

162. During the review, the ERT assessed the NC6, including supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol and reviewed information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol, with regard to timeliness, completeness, transparency and adherence to the reporting guidelines on NCs. No question of implementation was raised by the ERT during the review.

Annex

Documents and information used during the review

A. Reference documents

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications". FCCC/CP/1999/7. Available at <http://unfccc.int/resource/docs/cop5/07.pdf>.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories". FCCC/CP/1999/7. Available at <http://unfccc.int/resource/docs/cop5/07.pdf>.

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

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

"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 23/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=20>.

FCCC/SBI/2011/INF.1. Compilation and synthesis of fifth national communications. Executive summary. Note by the secretariat. Available at <http://unfccc.int/resource/docs/2011/sbi/eng/inf01.pdf>.

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

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Sixth national communication of France. Available at <http://unfccc.int/files/national_reports/non-annex_i_natcom/submitted_natcom/application/pdf/rapport_complet__6nc-fr[1].pdf>.

First biennial report of France. Available at <http://unfccc.int/national_reports/biennial_reports_and_iar/submitted_biennial_reports/items/7550.php>.

2013 GHG inventory submission of France. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/7383.php>.

2014 GHG inventory submission of France. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php>.

Trends and projections in Europe 2013 – Tracking progress towards Europe's climate and energy targets until 2020. Available at <http://www.eea.europa.eu/publications/trends-and-projections-2013>.

B. Additional information provided by the Party

Responses to questions during the review were received from Mr. Julien Rude and Mr. Gilles Croquette (Ministry of Ecology, Sustainable Development and Energy), including additional material on updated policies and measures, greenhouse gas projections, the national registry and recent climate policy developments in France.