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2nd biennial report of France under the United Nations Framework Convention on Climate Change

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RÉPUBLIQUE FRANÇAISE

Ministère
de l'Écologie,
du Développement
durable
et de l'Énergie

Ministry of Ecology, Sustainable Development and Energy

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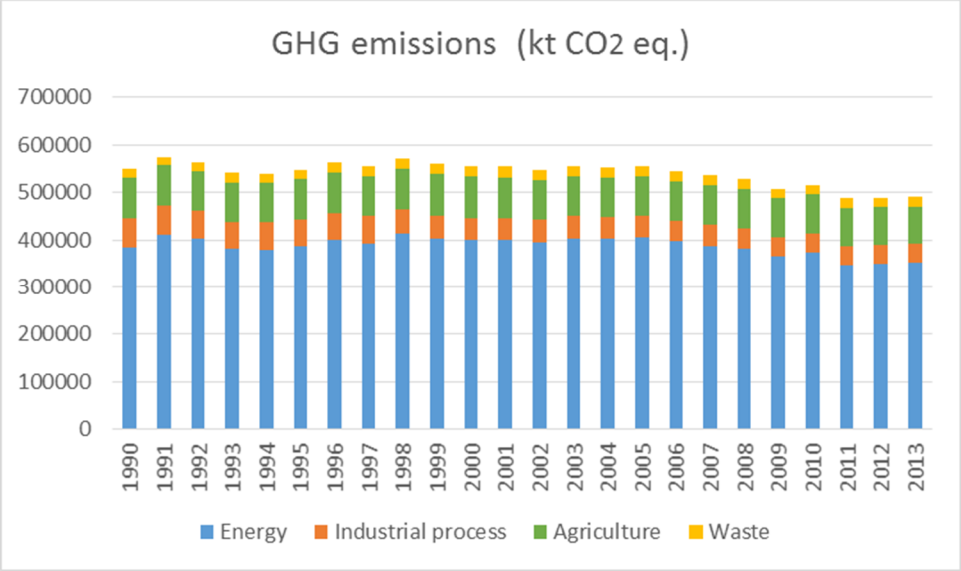
I - Inventory of greenhouse gas emissions

I.1 - Change since 1990

- **Emissions for the Convention framework (1990-2013)**

France's greenhouse gas emissions in ktCO2eq (Convention framework)



Source: 2015 Submission, CRF format, Convention framework, CITEPA/MEDDE

Within the convention framework (i.e. mainland France and all Overseas Territories), GHG emissions were 497.8 MtCO2eq in 2013. Emissions fell by 10.2% between 1990 and 2013. These reductions are analysed each year in the National Inventory Reports (NIRs). The downward trend in GHG emissions since 1990 is largely explained by better industrial processes and mitigation policies in all sectors of activity (see section III, which provides a detailed description and assessment of the corresponding policies and measures). These policies have out-paced the upward trend related to population increase, as well as the upward trend in economic activity in the 2000s. Total emissions (excluding LULUCF) per capita fell by 21% between 1990 and 2013. When correlated with gross domestic product (GDP), emissions fell by 55%.

Following a period of significant reduction between 2005 and 2009, due in particular to the establishment of the ETS market, energy efficiency policies and the economic crisis of 2008, GHG emissions remained stable between 2011 and 2013. This stability between 2011 and 2013 is due to specific climate factors occurring during the three years (in particular, the extremely mild temperatures recorded in 2011 and lower-than-average temperatures in 2013).

Initial estimates for 2014 indicate a significant reduction, with estimated GHG emissions standing at 461.1 MtCO2eq, i.e. **a 7.4% reduction in 2014** compared with 2013. Around 50% of this reduction may be attributed to extremely mild climate conditions in 2014, with the remaining reduction reflecting the overall downward trend initiated in 2005.

- **Emissions for the Kyoto framework (1990-2013)**

In 2013, France's total emissions stood at 491.9 MtCO2eq, compared with 491.2 MtCO2eq in 2011, and 490.8 MtCO2eq in 2012. These figures cover Mainland France and Overseas Departments (Kyoto Protocol framework).

Table 1 *summary* is copied below. Other tables are available in the submission made via the United Nations Framework Convention on Climate Change (UNFCCC) software.

Table 1. Emission by sectors in 2013 for Convention framework: summary 2

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 [1]	CH_4	N_2O	HFCs	PFCs	SF_6	Unspecified mix of HFCs and PFCs	NF_3	Total
	CO_2 equivalent (kt)								
Total (net emissions) [1]	323 487,83	60 964,83	44 711,76	19 780,82	657,61	580,94	NA,NO	10,63	450 194,41
1. Energy	349 577,07	3 039,36	4 027,45						356 643,88
A. Fuel combustion (sectoral approach)	346 459,12	1 977,41	4 013,14						352 449,67
1. Energy industries	52 588,17	28,29	365,27						52 981,74
2. Manufacturing industries and construction	66 176,46	175,31	523,54						66 875,31
3. Transport	131 437,92	194,76	1 504,01						133 136,68
4. Other sectors	96 256,58	1 579,05	1 620,32						99 455,94
5. Other	NO	NO	NO						NO
B. Fugitive emissions from fuels	3 117,95	1 061,95	14,32						4 194,21
1. Solid fuels	NA,NO	19,56	NO						19,56
2. Oil and natural gas	3 117,95	1 042,38	14,32						4 174,65
C. CO_2 transport and storage	NO								NO
2. Industrial processes and product use	18 539,73	51,73	985,70	19 780,82	657,61	580,94	NA,NO	10,63	40 607,16
A. Mineral industry	11 607,86								11 607,86
B. Chemical industry	2 640,71	50,96	853,03	128,87	3,27	NA,NO	NA,NO	NA,NO	3 676,85
C. Metal industry	3 563,37	0,77	NA	NA,NO	97,73	92,19	NA,NO	NA	3 754,05
D. Non-energy products from fuels and solvent use	727,79	NE,NA,NO	NE,NA,NO						727,79
E. Electronic Industry				6,42	78,58	4,51	NA,NO	10,63	100,15
F. Product uses as ODS substitutes				19 645,42					19 645,42
G. Other product manufacture and use	NA	NA	132,67	0,11	478,03	484,23	NA	NA	1 095,04
H. Other	NA	NA	NA						NA
3. Agriculture	1 857,77	39 178,34	38 596,58						79 632,69
A. Enteric fermentation		33 349,52							33 349,52
B. Manure management		5 632,26	2 618,34						8 250,60
C. Rice cultivation		168,33							168,33
D. Agricultural soils		NO	35 969,53						35 969,53
E. Prescribed burning of savannas		NO	NO						NO
F. Field burning of agricultural residues		28,22	8,72						36,94
G. Liming	862,12								862,12
H. Urea application	995,65								995,65
I. Other carbon-containing fertilizers	NO								NO
J. Other	NO	NO	NO						NO
4. Land use, land-use change and forestry [1]	-48 007,28	1 323,81	117,23						-46 566,24
A. Forest land	-66 357,88	699,43	62,35						-65 596,10
B. Cropland	20 766,26	157,98	37,14						20 961,38
C. Grassland	-11 221,62	167,60	13,73						-11 040,29
D. Wetlands	-2 195,03	9,12	0,75						-2 185,17
E. Settlements	12 549,66	65,93	3,26						12 618,84
F. Other land	0,16	NO	NO						0,16
G. Harvested wood products	-1 652,60								-1 652,60
H. Other	103,76	223,77	NA						327,53
5. Waste	1 520,54	17 371,59	984,79						19 876,92
A. Solid waste disposal	NA	14 873,67							14 873,67
B. Biological treatment of solid waste		248,03	469,81						717,83
C. Incineration and open burning of waste	1 520,54	28,69	49,46						1 598,68
D. Waste water treatment and discharge		2 221,21	465,53						2 686,74
E. Other	NO	NO	NO						NO
6. Other ***(as specified in summary 1.A)***									
Memo items: [2]									
International bunkers	23 549,42	18,50	213,69						23 781,60
Aviation	16 171,62	1,90	157,16						16 330,68
Navigation	7 377,80	16,60	56,53						7 450,92
Multilateral operations	0,90	NE	NE						0,90
CO_2 emissions from biomass	63 004,91								63 004,91
CO_2 captured	NO								NO
Long-term storage of C in waste disposal sites									
Indirect N_2O			NO						
Indirect CO_2 [3]	1 005,08								

Total CO_2 equivalent emissions without land use, land-use change and forestry	**496 760,65**
Total CO_2 equivalent emissions with land use, land-use change and forestry	**450 194,41**
Total CO_2 equivalent emissions, including indirect CO_2, without land use, land-use change and forestry	**497 765,74**
Total CO_2 equivalent emissions, including indirect CO_2, with land use, land-use change and forestry	**451 199,50**

(1) For carbon dioxide (CO_2) from land use, land-use change and forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for

(2) See footnote 7 to table Summary 1.A.

(3) In accordance with the UNFCCC Annex I inventory reporting guidelines, for Parties that decide to report indirect CO_2, the national totals shall be provided with and without indirect CO_2.

I.2 - The national system

France has not changed its national inventory system since the last biennial report. The French national inventory system complies with article 5.1 of the Kyoto Protocol (for more details see the description in the NIR for 2014 and 2015). It is based on the regulatory provisions of the 2011 decree governing the French national system for air emissions inventories and audits (SNIEBA).

Concerning the French national register, no changes have been made since the last biennial report. The French deposits and consignment fund (Caisse des Dépôts et Consignations) was designated holder of the French national register in 2004 by Decree no. 2004-1412, and was given responsibility for developing information systems to use the register and taking care of system security.

Since the migration to the European Union register in June 2012, the European Commission is now responsible for supplying, maintaining and securing the national register information system concerning the commitments of European Member States as Parties to the Kyoto Protocol and to the Convention, and as participants in the European Union Emissions Trading System (EU ETS Register).

II - Quantified emissions reduction targets

II.1 - Presentation of the objective, gases and sectors covered

At European level

In 2010, the EU committed to reducing its GHG emissions by 20%, compared with 1990 levels, by 2020, with a view to contributing to attainment of the UNFCCC's ultimate objective: "to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"[1], or, in other words, to hold the increase in global average temperature to below 2°C above pre-industrial levels (FCCC/CP/2010/7/Add.1). The EU also committed to achieving a reduction in excess of this target, up to 30%, provided that other developed countries also commit to making comparable emissions reductions and that developing countries contribute in a manner commensurate with their respective responsibilities and capacities. This proposal was reiterated in the submission to the UNFCCC made by the EU-28 and Iceland, on 30 April 2014[2].

Since this Convention target was submitted by the EU-28, rather than by each of its Member States, there are no specific Convention targets for individual Member States.. For this reason, France, as a member of the EU-28, has a quantified emissions reduction target that is identical to the targets of all other Member States.

Under the Climate and Energy Package, the EU has established a set of internal rules governing implementation of this target for 2020 under the framework of the Convention. The Climate and Energy Package introduces a clear approach for achieving a 20% reduction in total GHG emissions compared with 1990 levels, which equates to a 14% reduction in relation to 2005 levels. This 14% reduction target is divided into two sub-targets, one for ETS sectors (covered by the EU emission allowance trading system) and another for non-ETS sectors (EU, 2009[3]).

By virtue of the revised EU ETS directive[4], there is now a single EU ETS threshold covering all EU Member States and the three participating non-Member States (Norway, Iceland and Lichtenstein), i.e. there are no separate thresholds for individual countries. Annual thresholds have been set for the quotas allocated to sectors covered by the EU ETS for the period 2013-2020. These thresholds fall by 1.74% per year, from the average quotas allocated by Member States during the second trading period (2008-2012). The annual thresholds include interim emissions reduction targets in the sectors covered by the EU ETS, for each year up to 2020. For more details about the EU ETS and information about the use of market mechanisms in the EU ETS, refer to the European biennial report (chapter 4.2.2).

Emissions not covered by the EU ETS are handled under the "effort sharing decision" (ESD)[5]. The ESD covers emissions from all sources not covered by the EU ETS, except for emissions from international maritime transport and international and domestic air transport (which have been included in the EU ETS since 1 January 2012), and emissions and absorptions from land use, land-use change and forestry (LULUCF). The ESD therefore covers a wide variety of small-scale emitters across a wide range of sectors: transport (primarily road transport), building and construction (especially heating), services, small industrial

[1] *https://unfccc.int/essential_background/convention/items/6036.php*
[2] *http://ec.europa.eu/clima/policies/international/negotiations/docs/eu_submission_20140430_en.pdf*
[3] *Directive 2009/29/EC of 23/04/2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community.*
[4] *Directive 2009/29/EC of 23/04/2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community.*
[5] *Decision no. 406/2009/EC*

facilities, fugitive emissions from the energy sector, F-gas emissions, agriculture and waste. The sources currently account for approximately 60% of total GHG emissions in the European Union..

While the EU ETS target must be attained by the EU as a whole, the ESD target has been divided into national targets, for individual attainment by each Member State. The ESD decision sets national emissions targets for 2020, expressed as a percentage reduction compared with 2005 levels. These reductions have been translated into annual reduction targets for the 2013-2020 period[6], expressed in terms of "annual emission allocations" (AEAs). France's AEA for 2013 stands at 394,076,347, and the country's target is to reduce this to 359,293,095 by 2020. In 2013, verified emissions from fixed installations covered by the EU ETS stood at 115,477 tCO2eq. With total GHG emissions standing at 491,191,869 tCO2eq (excluding LULUCF) in 2013, emissions covered by the EU ETS accounted for 23%.

A harmonised monitoring process has been established for all EU Member States, via the Regulation on a mechanism for monitoring and reporting GHG emissions[7]. Flexible mechanisms may be employed within the framework of the EU ETS and the ESD (for details of Emission Reduction Units (ERUs) and Certified Emission Reductions (CERs) within the framework of the EU ETS, see the European Union's biennial report).

Under the ESD, Member States are allowed to employ flexible clauses to meet their annual obligations, with a limit of 3% imposed on the use of project-based credits for each Member State. If these credits are not used, the unused portion for a given year may be transferred to other Member States or kept in reserve for use by the same Member States until 2020.

In October 2014, the European Council also agreed on the key components of the EU's 2030 climate and energy framework:

• A binding, internal target to cut greenhouse gas emissions by at least 40% by 2030 compared with 1990 levels. This binding target has been submitted to the UNFCCC as the European Union's Intended Nationally Determined Contribution. It is based on a 43% reduction in EU ETS emissions compared with 2005 levels, and a 30% reduction in non-EU ETS emissions compared with 2005 levels. These global reductions will be divided among Member States.

• A binding target to attain a renewable energy share of at least 27% by 2030.

• A non-binding target to improve energy efficiency by at least 27% by 2030. This target will be revised in 2020, with a view to establishing a target of 30%.

The Commission proposed a revision of the EU ETS Directive in July 2015, and the proposal is currently under discussion among the European institutions. Legislative proposals will also be put forward for non-EU ETS sectors. The Commission is also implementing the initiatives set out in the Energy Union Framework Strategy, including forthcoming proposals on renewable energy and energy efficiency.

■ At national level

In 2015, France introduced a new Energy Transition for Green Growth Bill. This draft law and its related action plans are designed to give France the means to make a more effective contribution to tackling

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[6] *Commission Decision of 26 March 2013 on determining Member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and of the Council.*
Commission Implementing Decision no. 2013/634/EU of 31/10/2013 on the adjustments to Member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and of the Council.

[7] *Regulation (EU) No 525/2013 of the European Parliament and of the Council of 21 May 2013 on a mechanism for monitoring and reporting greenhouse gas emissions and for reporting other information at national and Union level relevant to climate change and repealing Decision No 280/2004/EC*

climate change while increasing its energy independence by striking a better balance in its energy mix. The law sets out three reduction targets for France:

- to reduce GHG emissions by 40% by 2030, compared with 1990 levels
- to reduce final energy consumption by 50% by 2050 in relation to the 2012 benchmark, while aiming to achieve an intermediate target of 20% in 2030
- to increase the share of renewable energies to 32% of final energy consumption by 2030 and to 40% of electricity generation.

The Energy Transition for Green Growth Law was adopted on 17 August 2015.

GHG emissions trends are a key indicator for quantifying progress by 2020. The target of reducing emissions by 20% between 1990-2020 refers exclusively to emissions from the EU-28 as a whole. EU-28 GHG emissions are calculated by adding together the GHG emissions of all Member States.

Table 2(a) FRA_BR2_v0.2

Description of quantified economy-wide emission reduction target: base year[a]

Party	*France*	
Base year / base period	1990	
Emission reduction target	% of base year/base period 20.00	% of 1990 [b] 20.00
Period for reaching target	BY-2020	

a Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.

b Optional.

Comments : ETS sectors targets (emissions from stationary installations): Start in 2013 based on yearly reduction equal to 1.74% of the average allocation in the period 2008-2012, extrapolated starting in 2010 and leading to a -21% GHG reduction compared to 2005 in 2020
ESD sectors targets (sectors not included in the EU ETS such as transports, buildings, services, agriculture and waste) : Members state specific targets start in 2013 based on average emissions 2008 to 2010 and lead to a collective reduction of around -10% compared to 2005 in 2020.

Table 2(b) FRA_BR2_v0.2

Description of quantified economy-wide emission reduction target: gases and sectors covered[a]

Gases covered		*Base year for each gas (year):*
CO_2		1990
CH_4		1990
N_2O		1990
HFCs		1990
PFCs		1990
SF_6		1990
Other Gases (specify)		
Sectors covered[b]	Energy	Yes
	Transport[f]	Yes
	Industrial processes[g]	Yes
	Agriculture	Yes
	LULUCF	No
	Waste	Yes
	Other Sectors (specify)	

Table 2 (c)
Description of quantified economy-wide emission reduction target: global warming potential values (GWP)a

Gases	*GWP values* [b]
CO_2	4nd AR
CH_4	4nd AR
N_2O	4nd AR
HFCs	4nd AR
PFCs	4nd AR
SF_6	4nd AR
Other Gases (specify)	

Abbreviations: GWP = global warming potential

[a] Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.

[b] Please specify the reference for the GWP: Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) or the Fourth Assessment Report of the IPCC.

The GWPs used to convert the GHG quantities expressed in CO2 equivalent are taken from the IPCC's fourth report on Climate Convention decisions.

The LULUCF sector is considered a sink for the whole 1990-2020 period in the European Union and France.

It is not taken into account in the 2020 targets of the European Union under the Convention, and therefore France, but a European decision was adopted for this sector on 8 July 2013. This requires action plans to be drawn up to provide information on the projects set up to reduce emissions and increase absorptions and protect carbon stores.

Table 2(d) FRA_BR2_v0.2

Description of quantified economy-wide emission reduction target: approach to counting emissions and removals from the LULUCF sector[a]

Role of LULUCF	LULUCF in base year level and target	Excluded

Abbreviation: LULUCF = land use, land-use change and forestry.

[a] Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.

II.2. Use of market mechanisms

Flexible mechanisms are used both by operators within the EU ETS and by governments to attain the ESD targets set out previously (see the European Union's biennial report for more information about the use of these mechanisms in the EU ETS).

At present, it is not possible to quantify the use of flexible mechanisms under the ESD. Since the compliance assessment for the first year of the ESD (2013) will not take place until 2016, no information about the use of units for 2013 will be available until 2016. As such, it is not possible to provide quantitative data concerning the use of flexible mechanisms in table 4b.

France does not currently intend to use flexible mechanisms within the framework of the ESD.

Table 2(e)I FRA_BR2_v0.2

Description of quantified economy-wide emission reduction target: market-based mechanisms under the Convention[a]

Market-based mechanisms under the Convention	*Possible scale of contributions (estimated kt CO_2 eq)*
CERs	0.00
ERUs	0.00
AAUs[i]	0.00
Carry-over units[j]	0.00
Other mechanism units under the Convention (specify)[d]	

Abbreviations:
AAU = assigned amount unit,
CER = certified emission reduction,
ERU = emission reduction unit.

[a] Reporting by a developed country Party on the information specified in the common tabular format does not prejudge the position of other Parties with regard to the treatment of units from market-based mechanisms under the Convention or other market-based mechanisms towards achievement of quantified economy-wide emission reduction targets.

[d] As indicated in paragraph 5(e) of the guidelines contained in annex I of decision 2/CP.17 .

[i] AAUs issued to or purchased by a Party.

[j] Units carried over from the first to the second commitment periods of the Kyoto Protocol, as described in decision 13/CMP.1 and consistent with decision XX/CMP.8.

III - Progress achieved in meeting quantified objectives and relevant information

III.1 - Mitigation measures and their effects

Institutional foundations

The French Ministry of Ecology, Sustainable Development and Energy (MEDDE) covers many of the sectors concerned by climate change combat efforts. Its aim is to respond to the environmental and climate issues of the 21st century. Within MEDDE, coordination and organisation of domestic policy to combat climate change fall under the responsibility of the Directorate General for Energy and Climate (DGEC).

This applies to both the greenhouse gas emissions mitigation policies for which there is a dedicated unit within the directorate and to the adaptation policy, which is managed by a dedicated observatory attached to the DGEC – the French National Observatory on the Effects of Global Warming (ONERC). This observatory was created on 21 February 2001 at the initiative of the French parliament, with responsibility for collecting and disseminating information on global warming and extreme weather phenomena and producing and managing the national strategy and the national adaptation plan at national level.

The national climate policy also relies on the contribution of other ministries, including the Ministry of Agriculture, Food and Forestry, the Ministry of the Economy, Industry and Digital Data, the Ministry of Higher Education and Research and the Ministry of Housing, Territorial Equality and Rural Policy.

The role of local authorities in climate policy implementation has also been strengthened on a gradual basis. Regional planning, sustainable development and territorial equality plans (SRADDETs), which will incorporate the existing regional climate, air and energy plans, will be developed by regions in conjunction with their respective local authorities. These SRADDETs will set out the medium-term and long-term strategies and objectives for each region, focusing on aspects such as combating climate change, and will be aligned with national objectives. The Energy Transition for Green Growth Law requires inter-municipal bodies with a population exceeding 20,000 people to produce territorial energy, air and climate plans (PCAETs). Eventually, the majority of France will be covered by PCAETs, whereas previously only local authorities with a population exceeding 50,000 were required to produce a territorial climate and energy plan (PCET). In producing their PCAETs, inter-municipalities must define a short-term, medium-term and long-term vision of their territory, aligned with national and regional strategies and guidelines.

Calls for projects are launched regularly to support the initiatives of the most committed territories. These include “positive-energy regions for green growth”, “zero waste, zero wastage regions”, etc.

The foundations of climate policy

France’s Climate Policy, as expressed in action plans since 1995 and then defined in an integrated approach in the French National Programme for Tackling Climate Change (2000), is based on two pillars: mitigation (reduction of GHG emissions, a policy subsequently supported through the regular publication of Climate Plans in 2004, 2006, 2009, 2011 and 2013) and adaptation (with the publication of an initial national adaptation strategy in 2006 and an initial national action plan covering the period 2011-2015, with an implementation evaluation currently ongoing). It is aligned with the National Strategy for the Environmental Transition towards Sustainable Development, adopted by the Council of Ministers on 4 February 2015.

In order to strengthen the greenhouse gas emissions mitigation policy, the Energy Transition for Green Growth Law (adopted on 17 August 2015) confirms France's objective of reducing its emissions by 75% by 2050 compared with 1990 levels, introduces an interim reduction target of 40% by 2030, and required the country to publish, by decree, a national low-carbon strategy (SNBC[8]). The SNBC helps the coordination of the implementation of the transition towards a low-carbon economy and will be updated every 4-5 years. One of the mechanisms underpinning this strategy is the use of carbon budgets, which set national greenhouse gas emissions limits. The first three carbon budgets have been published at the same time as the strategy, and cover the periods 2015-2018, 2019-2023 and 2024-2028 (decree n° 2015-1491 of November 18, 2015[9])..

This strategy features two major ambitions: to redirect investment in favour of the energy transition and to place the carbon footprint reduction strategy at the heart of economic decision-making.

Implementation of the strategies and guidelines in the SNBC should help to deliver energy savings across all sectors, develop renewable energy sources, move towards a bio-economy (recovery of wood and agricultural waste) and amplify the circular economy (eco-design, reuse and recycling).

Inter-ministerial work on developing the SNBC began in autumn 2014, and an information and policy committee was established in February 2015, involving all interested stakeholders represented in the National Council on the Environmental Transition (CNTE, gathering elected representatives, representatives of businesses, unions, conservation organisations and consumers). The project has been subjected to broad consultations before its publication. It includes the consultation of a committee of independent experts for the energy transition, representatives of local authorities of the national council for the evaluation of regulations, and of stakeholders in general within the CNTE and an open consultation of the public by internet. All the position raised during this process and a synthesis of how they were taken into account is available on-line[10].

This strategy complies with Decision 1/CP.16 (2010)[11], under which all developed countries Party to the UNFCCC (United Nations Framework Convention on Climate Change) are required to develop a low-carbon development strategy setting out and evaluating the policies and measures that may contribute to attainment of the national long-term climate change mitigation objectives and with the dispositions of Article 4, paragraph 19 of the Paris Agreement adopted during COP21.

From a budgetary point of view, all public policies which contribute to climate change adaptation and mitigation are stated in the cross-sector "Climate" policy document (DPT), which is appended to the Finance Bill each year[12]. In future, the Energy Transition for Green Growth Law includes provisions for another appendix to the Finance Bill, covering an assessment of private-sector funding in favour of the energy transition.
Environmental conferences, organised every year since 2012, which enable negotiations to be held at the highest level with all stakeholders, are also an opportunity to make improvements to the national policy on climate change.

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[8] *http://www.developpement-durable.gouv.fr/IMG/pdf/SNBC_Strategie_Nationale_Bas_Carbone_France_2015.pdf*
http://www.developpement-durable.gouv.fr/Strategie-nationale-bas-carbone.html
[9] *http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000031493783*
[10] *http://consultations-publiques.projet.i2/IMG/pdf/SNBC_Strategie_Nationale_Bas_Carbone_Synthese_des_consultations.pdf*
[11] *http://unfccc.int/resource/docs/2010/cop16/fre/07a01f.pdf*
[12] *http://www.performance-publique.budget.gouv.fr/sites/performance_publique/files/farandole/ressources/2016/pap/pdf/DPT/DPT2016_climat.pdf*

The first of these environmental conferences was held in September 2012. It led in particular to the launch of a great national energy transition debate. Discussions across the whole of France during the first half of 2013 contributed to this public debate, revealing a shared awareness of investments needed today in order to change the French energy mix over the course of the next few decades, in line with French international commitments, particularly those under the framework of the Convention (see chapter II). The Energy Transition for Green Growth Law is a result of this process. The 2014 environmental conference included a climate component and a transport and sustainable mobility component. As a result, robust measures were taken in favour of mitigating greenhouse gas emissions. One of the flagship decisions signalling France's commitment to redirecting investment towards the energy transition to a low-carbon economy is the withdrawal of export aid for coal-fired power stations, as confirmed by the Prime Minister on 10 September 2015.

Main policies and measures

Those policies and measures included in the "with existing measures" scenario (detailed in section IV of this report) are indicated with an asterisk.

Transport

In 2013, the transport sector accounted for 27.6% of France's GHG emissions. The challenge is particularly important for road transport, which alone represents nearly 92% of transport sector emissions.

The measures implemented in this sector focus primarily on improving energy efficiency in new road transport vehicles, encouraging the development of low-emission vehicles (particularly electric and rechargeable hybrid vehicles), supporting modal shift and encouraging the development of biofuels.

The energy efficiency of passenger cars has increased substantially since 2007, due to a number of major measures:

- **CO2 labelling*** was made compulsory in 2006 for all new passenger cars offered for sale. The aim of this initiative is to raise awareness of vehicle emissions among potential buyers.
- Creation of the **bonus-malus (reward/penalty) system*** in late 2007, which has helped to encourage the replacement of older vehicles with new cars and has contributed to a significant reduction in average CO_2 emissions from passenger cars. The introduction of grants to purchase low-emission vehicles and increased taxation on high-emission vehicles has helped to bring down average CO_2 emissions from new passenger cars from 149 gCO_2/km in 2007 to 113 gCO_2/km in 2014. The amounts and thresholds are reviewed on a regular basis with a view to improving the performance of the system.
- At European level, **Regulation 443/2009*** required car manufacturers to reduce average emissions among new vehicles to 130 gCO_2/km, on a gradual basis, at a rate of 65% of all new vehicles sold in 2012, 74% in 2013, 80% in 2014 and 100% in 2015. The regulation also establishes a mechanism of penalties if these emissions limits are exceeded. Sending a signal to the industry for subsequent production cycles, it defines an emissions target of 95 gCO_2/km for 2020. **Regulation 333/2014** confirmed this target and set out the procedures by which manufacturers may attain the target.
- For light utility vehicles, **Regulation 510/2011*** requires manufacturers to reduce average emissions among new vehicles to 175 gCO_2/km, on a gradual basis, between 2014 and 2017. An average emissions target of 147 gCO_2/km has been set for 2020.

A range of measures have been taken to support the deployment of electric and rechargeable hybrid vehicles:

- the **first National Plan for the Development of Electric and Hybrid Vehicles*** was presented in October 2009 ("charging infrastructure" call for projects, creation of a dedicated battery sector, introduction of a "super reward" scheme, purchase of electric vehicles by the government, standardisation of charging sockets, etc.).

- The **"Vehicle Plan"*** was introduced in July 2012 to provide additional support for the sector. This plan includes measures to encourage research and innovation in the clean vehicle sector, and to strengthen the environmental reward/penalty scheme. Government departments are now required to ensure that at least 25% of all new passenger cars and light utility vehicles purchased are electric or hybrid vehicles.

- The **Energy Transition for Green Growth Law** of 17 August 2015 strengthens the low-emission vehicle acquisition targets (to be defined in a decree scheduled for the end of 2015) in government and local authority vehicle fleets, and in taxi and hire care fleets. It also extends the charging point pre-equipment and equipment obligations for public and private buildings, with a target of 7 million charging points in 2030. A specific assistance scheme for the installation of charging points (energy transition tax credit) has been established. The reward system for replacing high-polluting vehicles with greener vehicles, as set out by the law, has been in place since 1 April 2015, with a view to accelerating the replacement of old diesel vehicles.
- Furthermore, the **reward scale was revised on 1 January 2015**. Grants are now reserved exclusively for new vehicles with emissions of less than 60 gCO_2/km, the current emissions level of a rechargeable hybrid vehicle or an electric vehicle, which are the only types of vehicle capable of achieving such low emissions levels. Finally, since 1 April 2015, the reward for the purchase of an electric vehicle and the conversion bonus may be added together, up to a total of €10,000.

These various measures have already led to a gradual increase in electric vehicle sales. In 2014, a total of 10,567 electric passenger cars were registered in France, an increase of 20% on the 2013 figure. This upward trend has continued in 2015, with around 12,000 electric passenger cars newly registered in the country in the first nine months of the year (an increase of 70% on the first nine months of 2014).

Efforts to support the development of biofuels include the introduction of **incorporation targets*** (targets of 7.7% for the diesel sector and 7% for the petrol sector in 2014, and renewed in 2015) and incentive-based fiscal measures, including the **General Tax on Polluting Activities*** (TGAP), which penalises operators selling biofuels at a level below the incorporation target. These measures will help to comply with the European target of 10% renewable energy in the transport sector by 2020 (Directive 2009/28/EC). The **Energy Transition for Green Growth Law** of 17 August 2015 strengthens this target, with a requirement that, by 2030, 15% of final fuel consumption in the transport sector must come from renewable sources.

Efforts to encourage modal shift towards low-emission modes of transport involve improving the provision of non-road forms of transport and strengthening the corresponding infrastructure. Article 13 of French law no. 2009-967 of 3 August 2009 provides for a **dedicated-lane public transport development programme***, under which dedicated-lane public transport systems will be extended to 1,800 km outside the Ile-de-France region (compared with 329 km in 2008).

By 2030, 1,200 km of new **high-speed rail lines*** are expected to be built. A total of 700 km of high-speed rail lines should come into service by 2020 (CNM, BPL, SEA and LGV Est Européenne), including connections. Then, in line with the decisions of the Mobility 21 Commission, a further 500 km of high-speed rail lines are expected to be built.

Other political efforts to support modal shift include improving transport service user information. Since 1 October 2013, passenger and goods transport or removal service providers have been required to supply **information on the CO_2 emissions*** caused by their services. The **Energy Transition for Green Growth Law** of 17 August 2015 extends this information obligation from CO2 to all greenhouse gas emissions.

Transport professionals are also committed to voluntary agreements, including the "**Objective CO_2, the carriers' commitment**"* programme.

Finally, **Directive 2006/40/EEC*** targets F-gas emissions from vehicles, capping the GWP of refrigerant fluids used in vehicle air-conditioning systems at 150.

Residential and tertiary sector

This sector accounted for 20.1% of France's total GHG emissions in 2013 (direct emissions calculation) and therefore poses a major challenge. The measures adopted in the sector are designed to improve the energy efficiency of new and existing buildings, and to encourage the use of renewable energy equipment.

Under **the Thermal Regulation 2012***, all new buildings must be low-energy buildings from 2013. Preparatory work on **the Thermal Regulation 2020**, which is currently ongoing, will set out the framework governing future "high environmental performance" and "positive energy" buildings.

A range of measures have already been taken under the **Housing Energy Renovation Plan (PREH)***, which was launched in September 2013 and covers existing buildings. The aim of these measures is to meet the target of renovating 500,000 homes per year by 2017, and reducing energy consumption in buildings by 38% by 2020. The PREH focuses on three areas of action: educating households to trigger the decision to renovate, financing renovation, and mobilising professional sectors. The financing measures and schemes include:

- **The 0% interest eco-loan** (Eco-PTZ)* and the **Energy Transition Tax Credit** (CITE)*, which are designed to encourage individuals to undertake work on their homes to improve its energy performance, such as improved insulation, the installation of renewable energy equipment and the replacement of heating systems. Under certain conditions, these two schemes may be combined.

- **The National Housing Agency** (ANAH) provides **financial grants*** to support thermal renovation work in privately owned homes for owner-occupiers, landlords and flat owners' associations, on a means-tested basis. **The "Habiter Mieux" (living better) programme***, launched in 2011, supplemented the traditional assistance schemes provided by ANAH, for low-income and very low-income households.

- **The eco-loan for social housing** (Eco-PLS)*, which is intended for social landlords, should help to accelerate energy renovation work on the least energy-efficient social housing stock. The aim is to renovate 120,000 social homes by 2017, in line with the targets set out in the PREH and reflected in the Energy Transition for Green Growth Law.

There are several other financing schemes in addition to these measures, including **energy saving certificates*, reduced VAT rates***, etc. Efforts to achieve these targets will also be supported through calls for projects, particularly by ADEME (**Heat Fund*, see section on cross-sector measures**).

The **Energy Transition for Green Growth Law** of 17 August 2015 also provides fresh impetus, with section II of the law entirely dedicated to improving energy performance in the construction sector. This

new law strengthens the current requirements for both new and existing buildings. It sets a target of completing energy renovation work on 500,000 homes per year from 2017, at least half of which must be occupied by low-income households. The aim of this target is to reduce fuel poverty by 15% by 2020. It also sets a target of completing energy renovation work on the least energy-efficient private homes (primary energy consumption in excess of 330 kWh/m²/year) by 2025.

The various measures set out in the Energy Transition for Green Growth Law include **the constructability bonus** for new buildings, and the **thermal renovation obligation** for existing buildings during major building work (façade renovations, re-roofing, etc.), subject to certain (primarily financial) conditions.

Energy sector

In 2013, the energy sector accounted for 11.6% of France's greenhouse gas emissions.

Efforts to reduce emissions in this sector include:

- **Support for renewable energy in the electricity mix**. The principal support mechanisms are feed-in tariffs* (hydro, geothermal, wind, solar, cogeneration, household waste, biomass, biogas and methanisation), and calls for tender* (off-shore wind, solar photovoltaic, etc.).
- The capping of power plant and refinery emissions via the **EU Emissions Trading Scheme*** (see section on cross-sector measures).

Manufacturing sector

The manufacturing sector accounted for 18.0% of France's total emissions in 2013.

Measures taken in relation to this sector include:

- The capping of emissions from high-polluting industrial facilities, via the **EU Emissions Trading System*** (see cross-sector measures).
- The development of renewable energy in heat production, through the support of the **Heat Fund *** (see cross-sector measures).
- Improvements in energy efficiency, through the completion of **energy audits**, which will be compulsory every four years for large companies from December 2015.
- Waste heat recovery: a **cost/benefit analysis is obligatory for installations that generate waste heat*** in application of article 14 of the Energy Efficiency Directive (2012/27/EU), in order to evaluate opportunities for recovering this waste heat through a district heating or cooling network.

Agriculture

In 2013, agriculture accounted for 16.2% of France's gross emissions (excluding LULUCF in the combustion component of agriculture), and 18.7% if combustion in agriculture is taken into account.

There are various plans, programmes and measures that seek to reduce these emissions. These are:

- **The agro-ecological project** *, which seeks consistency between the triple environmental performance (in particular climate), social and economic, through participation in a comprehensive and systematic review of each farm, using positive interactions in biological systems agricultural support to autonomy and resilience of farms by the closure of the bio-chemical cycles (work on surfaces in rotation and cover crops, reduce dependence on inputs, improvement of soil fertility, development of synergies between livestock and cultures, management of organic waste, etc.).

- **The Farm Energy Performance Plan (PPE)*,** completed in 2013, which aimed to support investment to reduce energy consumption or produce renewable energy;

- The **Competitiveness and Adaptation Plan for Farms***. This plan followed on from the PPE, and also includes support for investment:

o for livestock farming: pit coverage and improved manure management

o for arable farming: reduction in the use of mineral fertilisers, and the purchase of farming method modernisation equipment (thereby reducing tillage)

o in terms of energy challenges: purchasing equipment to deliver energy savings or produce renewable energy

o investment in developing leguminous crop farming and fodder independence

- The **energy saving certificates*** (CEE) scheme (see section on cross-sector measures), which is designed to encourage the installation of hot water tanks, milk pre-cooling systems, heat pumps in agricultural greenhouses, and biomass heating plants ;

- The **Methane Energy and Nitrogen Autonomy Plan** (EMAA)*, launched in 2013, which supports improved livestock manure management and the production of renewable energy (biogas), and encourages the recovery of sludge for use as a soil fertiliser (thereby replacing nitrogen-based mineral fertilisers with organic fertilisers) ;

- **Measures to support agroforestry*** ;

- The **Ambition Bio*** plan, designed to support organic farming ;

- The **Plant Protein Plan***, which seeks to support the development of plant protein-rich crops and to reduce the use of nitrogen-based fertilisers and the reliance on imported fodder for livestock ;

- The recovery of organic materials from waste* (see waste section) that reduces the contribution of nitrogen fertilizers and reduce methane emissions during their decomposition.

The **revised Common Agricultural Policy (CAP) 2014-2020**, now gives greater consideration to climate change and greenhouse gas emissions reduction issues, through “greening” of the first pillar and strengthening of the second pillar. Furthermore, the regionalisation of the second pillar also provides greater room for manoeuvre in terms of implementing initiatives tailored to specific local challenges.

The conditionality of the CAP and the implementation of Good Agricultural and Environmental Conditions (GAECs) relate to both direct support and rural development, in a cross-sector manner. These conditions require farms to maintain buffer strips along water courses, to ensure sufficient soil coverage (which helps to limit erosion, maintain carbon stock in soils among other benefits), to refrain from burning crop residues, and to retain specific topographical features such as hedges.

The “greening” of the CAP is intended to boost the retention of permanent meadows, the diversification of crop rotations, and the establishment or conservation of areas of ecological interest (hedges, isolated trees, etc.).

The second pillar of the CAP, meanwhile, includes Agri-Environment-Climate Measures (AECMs), including Systems AECMs. These aim to (i) maintain existing practices for extensive/limited-intensity grazing systems and support the return of organic material to the soil; (ii) maintain or change existing practices for crop-livestock farming systems with limited inputs; and (iii) change existing practices for field crop systems and strengthen soil carbon storage capacity.

The land use and forestry/timber sector

The land use and forestry sector is a carbon sink. For 2013, it has therefore been counted as a negative emission, offsetting 9.5% of national greenhouse gas emissions (without considering additional emission reductions in the rest of the economy through the use of wood as a material or energy source).

There are various plans, programmes and measures designed to capitalise on the mitigation potential offered by this sector (reducing emissions, increasing substitution effects or optimising carbon storage). These include:

- The extension and revision of the **Measure to Encourage Fiscal Development in the forestry sector* (DEFI)**, under which forest owners are encouraged to manage their forests in a sustainable manner, including the creation of producer organisations, through a more favourable tax credit rate. The aim of this measure is to improve forest management and achieve multiple benefits, including a reduction in the over-exploitation of certain forests, improved resilience to storm risks, and greater mobilisation of timber.

- The creation of the **Forest and Insurance Investment Account*** (CIFA), through which forest owners are encouraged to take out insurance against storm risks, and to put aside savings to fund prevention activities, clean-up work (where applicable), and the reconstitution of damaged populations. The overall aim is to improve resilience to climate change and to maintain carbon sequestration in forests.

- The launch of **Forest Economic and Environmental Interest Groups** (GIEEFs), which are designed to galvanise sustainable private forest management across a coherent territory, and enable forest owners to come together to improve timber mobilisation.

- The adoption of the **Future Law for Agriculture, Food and Forests** (LAAF), published on 14 October 2014, which created the Strategic Fund for Forestry and Timber (FSFB) to fund the forestry policy. This fund can be used to finance various actions designed to establish forests as multi-functional spaces.

- The **National Action Plan for the Future of the wood processing sector* (PNAA)**, which is designed to strengthen the activities of businesses operating in this sector.

- Support for the **Xylofutur and Fibres-Energivie competitive clusters*** (the latter being a merger of the Fibres and Alsace-Energivie clusters), which are designed to boost the development of wood products by supporting diversification in response to market demand and encouraging competitiveness, performance and repositioning among businesses operating across this sector.

- The introduction of the **“biosourced buildings” label***, which gives greater visibility to projects that make significant use of materials of plant and animal origin (wood, hemp, straw, wool, feathers, etc.).

- The "**Timber Industry**" plan, launched in September 2014 by the President of the French Republic, which seeks to promote the use of wood in the construction industry and the development of high-rise wooden buildings.

- The new **Wood Construction Techniques Action Plan**, initiated by the Ministry for Housing, which contains measures to encourage professional training, building renovation work (thermal insulation and extension), and the use of broadleaf wood in the construction sector.

- Businesses operating in the timber sector also have access to a "**Sawmill Financing Fund**"*, managed by Bpifrance, as well as dedicated participatory loans for the timber sector, which can be used to fund the development or expansion of businesses in the sector, support investment in competitiveness and growth initiatives, and strengthen their capital.

The government has also established a number of instruments to support renewable energy production from agricultural or forest biomass, since the use of biomass as a replacement energy source for fossil fuels can help to reduce greenhouse gas emissions across various sectors. These instruments include:

- The renewable **Heat Fund***, managed by ADEME, totalling €1.067 billion over the 2009-2013 period. This fund was primarily used to finance biomass combustion plants (both solid and gas) and heating networks used to distribute the heat generated in these plants.

- **Calls for tender*** for the construction of biomass cogeneration plants.

- **Feed-in tariffs for electricity*** produced from solid biomass or biogas, and for biomethane fed into the natural gas network.

- The **Energy Transition Tax Credit***, which is primarily intended to support the purchase of energy-efficient biomass heating equipment.

Finally, the LAAF (Future Law for Agriculture, Food and Forests, no. 2014-1170 of 13 October 2014) and the ALUR Law (Law on Access to Housing and Town Planning Reform, no. 2014-366 of 24 March 2014) created a range of schemes and mechanisms to reduce soil sealing on agricultural land and in forests (including the creation of a Departmental Committee for the Preservation of Natural, Agricultural and Forest Spaces, and initiatives to encourage more dense urban housing to combat urban sprawl). These measures are helping to preserve carbon stocks in the soil.

Waste treatment

Excluding incineration with energy recovery, this sector accounted for 4.0% of greenhouse gas emissions in 2013.

The **Energy Transition for Green Growth Law** promotes the circular economy, from product design to recycling. This includes treating waste as close as possible to where it was produced, banning single-use plastic bags from 1 January 2016, combating food waste, conducting "Zero Waste, Zero Wastage" calls for projects, and penalising planned obsolescence. The law sets the following objectives:

- To avoid producing waste through prevention and re-use. Under the French and European waste management models, prevention is the top priority in terms of waste management policy. The aim is to offset the effects of population growth and economic growth through prevention initiatives and, by

2020, to achieve a 10% reduction in household and similar wasted produced per capita (compared with 2010 levels), and to stabilise waste from economic activities (again compared with 2010 levels).
- To increase the ratio between GDP and domestic consumption of materials by 30% by 2030 (compared with 2010 levels).
- To reduce the quantity of non-recyclable manufactured products on the market by 50% before 2020.
- To increase the recovery of unavoidable waste materials by directing 55% of non-hazardous, non-inert waste (by mass) to recovery systems in 2020, and 65% (by mass) in 2025.
- To transform unavoidable waste not suitable for material recovery into energy.
- To reduce landfilling by 30% in 2020, then by 50% in 2025 (compared with 2010 levels).

The Waste Reduction and Recovery Plan 2025 supplements the provisions of the Energy Transition for Green Growth Law. The objectives of the plan are as follows:
- **To halve the quantity of non-hazardous, non-inert waste burned without energy recovery*** compared with 2010 levels (25% reduction in 2020), and to eliminate incineration without energy recovery by 2025.
- **To make biowaste recovery compulsory** for high-volume business producers*.
- **To make the sorting of glass, paper/cardboard, plastic, metal and wood waste compulsory**.
- **To recover rejected sorted waste**.
- **To deploy existing "extended producer responsibility" (ERP) sectors*.** These sectors impose greater financial and/or material responsibility on producers in terms of the management of final or intermediate-level waste generated by the products that they manufacture, import or distribute. New sectors that promote recycling entered their operational phase in 2013 (furniture, dispersed hazardous waste).
- **To recover organic household waste**.
- **To extend the use of sorting instructions on packaging**.

Cross-sector measures

Some policies and measures have an impact on several sectors. These are as follows:

- The **energy saving certificates (CEE) system***, which is one of the policy instruments used by France to control energy demand. The system is underpinned by a three-year obligation on energy suppliers to achieve energy savings, and is enforced by the public authorities. Energy suppliers are encouraged to promote energy efficiency to their customers (households, local authorities and businesses). These actions may be conducted across all sectors (residential, tertiary, industrial, agricultural, transport, etc.), focusing on both the assets of eligible parties, or third parties that they have encouraged to make energy savings.

- The **Heat Fund***, which supports heat production from renewable energy sources (biomass, geothermal, solar, biogas and energy recovery) in the collective housing, tertiary, agricultural and industrial sectors. The Energy Transition for Green Growth Law of 17 August 2015 includes provisions to **double the value of the Heat Fund**, increasing the total funding available to €420 million per year by 2017.

- The **EU Emissions Trading System (EU ETS)***, which, since 2005, has imposed an emissions cap on around 12,000 industrial installations in various sectors such as electricity generation, heat networks, steel, cement, refinery, glass and paper, accounting for more than 40% of European greenhouse gas emissions. This system is currently in its third phase.

- The **carbon component of the energy taxation scheme***, introduced by the 2014 Finance Law. This taxation scheme, which is progressive and proportional to the CO_2 content of fossil fuels, is designed

to encourage energy efficiency initiatives and the development of low-carbon solutions in the road transport and construction sectors. The Carbon component rate, initially set at €7 per tCO_2 in 2014, will rise to €22 per tCO_2 in 2016. Furthermore, the Energy Transition for Green Growth Law of 17 August 2015 set target values of €56 per tCO_2 for 2020 and €100 per tCO_2 for 2030.

- **European Regulation no. 842/2006 (the "F-Gas" Regulation)*** introduced a series of measures to reduce emissions of F-gases used as refrigerant fluids in the manufacturing, tertiary and residential sectors (including an obligation to verify the tightness of fixed installations; the recovery of fluids at the end of the equipment's lifespan; and certification for personnel authorised to commission, maintain and drain such equipment). **Regulation no. 517/2014 (the "F-Gas II" Regulation)** of 16 April 2014 further strengthened these measures. This Regulation includes a quota system for the gradual reduction of HFCs sold; bans on the sale of products and equipment containing F-gases exceeding a certain GWP; and a ban on the maintenance of refrigeration installations containing fluids with a GWP in excess of 2,500 from 1 January 2020.

Policy and measure impact assessment

In order to assess the impact of policies and measures the French Ministry of Ecology, Sustainable Development and Energy (MEDDE) has developed its own tool. This tool (known as SceGES for *Scénarisation des Emissions de GES* or GHG emissions scenario writing) is used to conduct an assessment in relation to a "business as usual scenario", by changing technical input data (e.g. changes in road traffic, housing stock, building insulation) in accordance with planned policies and measures. Assessments made using SceGES are based on three principles:

- Methodologies used for calculating emissions are compatible with those used for carrying out the French national inventory.

- These calculation methodologies are updated at the same time as those of the French national inventory, to ensure consistency of assessments over time.

- Emission calculations are based on the most detailed possible description of technical data in the majority of sectors (description of the housing stock according to year of construction, description of the vehicle stock according to engine capacity, vehicle age, rate of car ownership, description of the livestock in agriculture, etc.).

Summary table: policies and measures

Table CTF 3 contains a detailed overview of the majority of the policies and measures presented above, along with the estimated mitigation impact of these policies and measures, where available.

Table 3 FRA_BR2

Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects

Note: See footnotes at the bottom of the table.

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
- All measures aimed at reducing emissions from new, internal-combustion passenger cars*	Transport	CO2	Energy efficiency in the road transport sector by passenger cars	Fiscal, regulatory, information	Implemented	European Regulation no. 443/2009 requires car manufacturers to reduce average CO2 emissions among new vehicles to 130 gCO2/km by 2015, on a gradual basis. It also set a target of 95 gCO2/km in 2020. Other measures have been implemented at national and European level to promote the purchase of new fuel-efficient vehicles. Examples include CO2 labelling for passenger cars, under which the CO2 emissions of new vehicles must be displayed in points of sale, and the “environmental reward/penalty” scheme introduced in France in January 2008.	2008	Ministry of the Economy; Ministry of Ecology, Sustainable Development and Energy	1,613	5,356	8,040	9,812	10,258
CO2 emissions performance standards for new light utility vehicles*	Transport	CO2	Energy efficiency in the road transport sector by light utility vehicles	Regulatory	Implemented	European Regulation no. 510/2011 requires manufacturers to reduce average emissions among new light utility vehicles to 175 gCO2/km, on a gradual basis, between 2014 and 2017. An average emissions target of 147 gCO2/km has also been set for 2020.	2011	Ministry of Ecology, Sustainable Development and Energy	0	231	418	521	539

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
National plans for the development of electric and hybrid vehicles*	Transport	CO2	Increase in the number of electric and hybrid vehicles in the total vehicle fleet	Fiscal, regulatory, research	Implemented	The first National Plan for the Development of Electric and Hybrid Vehicles was presented in October 2009. The plan included a "charging infrastructure" call for projects, creation of a dedicated battery sector, introduction of a "super reward" scheme, purchase of electric vehicles by the government, standardisation of charging sockets, etc. The "Vehicle Plan" was introduced in July 2012 to provide additional support for the sector. This plan includes measures to encourage research and innovation in the clean vehicle sector, and to strengthen the environmental reward/penalty scheme. Government departments are also now required to ensure that at least 25% of all new passenger cars and light utility vehicles purchased are electric or hybrid vehicles.	2009	Ministry of Ecology, Sustainable Development and Energy	0	1,461	2,030	2,155	2,398
New measures to support the development of electric and hybrid vehicles (Energy Transition for Green Growth Law of 2015)	Transport	CO2	Increase in the number of electric and hybrid vehicles in the total vehicle fleet	Fiscal, regulatory	Adopted	The Energy Transition for Green Growth Law of 17 August 2015 strengthens the low-emission vehicle acquisition targets in government, public institution and local authority vehicle fleets, imposes an obligation to install charging points in all public and private buildings (with a target of 7 million charging points in 2030), and sets out plans for a reward system for replacing high-polluting vehicles with greener vehicles. The reward for the purchase of an electric vehicle and the conversion bonus may now be added together, up to a total of €10,000.	2015	Ministry of Ecology, Sustainable Development and Energy	0	1,938	2,756	2,940	3,275

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Calls for projects for dedicated-lane public transport systems*	Transport	CO2	Modal shift from car to more energy-efficient public transport services (metro, tram, bus rapid transit) for urban journeys	Other	Implemented	Three calls for projects were launched in 2008, 2011 and 2013, for transport authorities with a metro, tram or bus rapid transit project. A total of 230 projects were selected, representing total public investment of €17.2 billion, including a €1.85 billion government grant.	2008	Ministry of Ecology, Sustainable Development and Energy	0	340	340	340	340
Development of high-speed rail lines*	Transport	CO2	Modal shift from car or air to high-speed rail for inter-urban journeys	Other	Implemented	There are plans to build 1,200 km of new high-speed rail lines by 2030 (700 km between now and 2020, and 500 km between 2020 and 2030).	2011	Ministry of Ecology, Sustainable Development and Energy				480	
General Tax on Polluting Activities (TGAP) to encourage the introduction of biofuels*	Transport	CO2	Encouraging the integration and distribution of biofuels	Fiscal	Implemented	The General Tax on Polluting Activities (TGAP) is designed to encourage the incorporation and distribution of biofuels by penalising operators selling biofuels at a level below the incorporation target. The tax rate increases each year, and is subsequently reduced by the proportion of biofuels sold, as a percentage of total energy.	2005	Ministry of the Economy					
Reduction of emissions relating to vehicle air-conditioning systems*	Transport	HFC	Lowering the GWP of F-gases used in vehicle air-conditioning systems	Regulatory	Implemented	Directive 2006/40/EEC of 17 May 2006 established a gradual ban on the use of F-gases with a GWP in excess of 150 in motor vehicle air-conditioning systems. Since 1 January 2011, the air-conditioning systems in all new vehicle types must now use a refrigerant fluid with a GWP of less than 150. From 1 January 2017, this ban will be extended to all new vehicles.	2006	Ministry of Ecology, Sustainable Development and Energy	0	937	2,322	2,828	2,177

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
"Objective CO2, the carriers' commitment" charter*	Transport	CO2	Reduction of CO2 emissions relating to road transport (freight and passengers)	Other	Implemented	The CO2 charter is a voluntary initiative, under which signatory carriers make a three-year commitment – with methodological support from the public authorities – to attaining an overall CO2 emissions reduction target. This is achieved by implementing an action plan that covers four aspects, the vehicle, the fuel, the driver and transport flow organisation.	2008	Ministry of Ecology, Sustainable Development and Energy					
Support for renewable electrical energy*	Energy	CO2	Increasing the percentage of electricity generated from renewable sources	Economic	Implemented	In terms of renewable electricity, the principal support mechanisms are feed-in tariffs (hydro, geothermal, wind, solar, cogeneration, household waste, biomass, biogas and methanisation), and calls for tender (off-shore wind, solar photovoltaic, etc.). The government has also introduced an ambitious policy to support the wind sector through simplification of the permit issuing process.	2011	Ministry of Ecology, Sustainable Development and Energy		2,975	5,612	8,312	10,585
Thermal Regulation 2012*	Residential	CO2	Energy efficiency in new buildings	Regulatory	Implemented	The Thermal Regulation (RT) 2012 strengthens the provisions of the previous Thermal Regulation (RT 2005) in terms of the thermal performance of new buildings. It applies to all new buildings for which the building permit was filed after 1 January 2013. These buildings must have primary energy consumption of below 50 kWhPE/m²/year on average.	2013	Ministry of Ecology, Sustainable Development and Energy		3,460	6,040	8,660	11,280

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Strengthening of the Thermal Regulation by 2020	Residential	CO2	Energy efficiency in new buildings	Regulatory	Planned	The future Thermal Regulation, which will be applied by 2020, will set out the regulatory framework governing “high environmental performance” and “positive energy” buildings.	2020	Ministry of Ecology, Sustainable Development and Energy					
The 0% interest eco-loan and the energy transition tax credit*	Residential	CO2	Encouraging expenditure on building renovation	Economic, fiscal	Implemented	Since 2005 and the Programme Law setting the directions for energy policy, private individuals have been able to benefit from a Sustainable Development Tax Credit (CIDD) for the purchase of the most efficient materials or equipment in terms of saving energy or generating renewable energy. Since this mechanism was introduced, the list of eligible equipment and the corresponding tax credit rates have been revised regularly, with a view to accelerating the pace of thermal renovation work and encouraging the use of high-performance technologies. Now known as the Energy Transition Tax Credit (CITE), the system was once again strengthened in 2015, with changes to the list of eligible equipment and applicable rates. The 0% interest eco-loan (Eco-PTZ) was introduced on 1 April 2009 and is aimed at owner-occupiers or landlords of homes built before 1990, to fund major renovation work. It may be combined with the CITE, on a means-tested basis.	2005	Ministry of the Economy; Ministry of Ecology, Sustainable Development and Energy		7,200	7,200	7,100	7,100

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
The Eco-Loan for Social Housing (Eco-PLS)*	Residential	CO2	Renovation of social housing stock	Economic	Implemented	The Eco-PLS, introduced in 2009, is designed to fund energy renovation work on the least energy-efficient social housing stock. The aim is to renovate 120,000 social homes per year by 2017, and the interest rate applicable to the Eco-PLS was reduced from August 2013 to better reflect the needs of social landlords, based on the condition of their housing stock. The eligibility conditions for class D dwellings were also relaxed.	2009	Ministry of Ecology, Sustainable Development and Energy					
National Housing Agency assistance to combat fuel poverty*	Residential	CO2	Combating fuel poverty and improving energy efficiency among low-income households	Economic	Implemented	The National Housing Agency (ANAH) helps owner occupiers below a certain income threshold and landlords to conduct work to improve their accommodation. The "Habiter mieux" (living better) programme, managed by ANAH, allocates additional assistance to low-income and very low-income owner-occupiers conducting work that will deliver energy savings of at least 25%. The threshold stands at 35% for landlords. The programme also includes specific support for project owner assistance. The programme is expected to support 185,000 renovation projects between 2015 and 2017.	2010	National Housing Agency					

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Housing Energy Renovation Plan (PREH)*	Residential	CO2	Energy efficiency in existing buildings	Information, economic	Implemented	The PREH sets out a series of measures designed to achieve a target of 500,000 energy renovation projects per year in the residential building sector. The plan features three complementary areas of action: providing support and advice to individuals to encourage them to undertake renovation work; funding the renovation work and providing assistance, tools and innovative solutions; and mobilising professionals to ensure that the renovation work is completed to the best possible standard.	2014	Ministry of Housing, Territorial Equality and Rural Policy					
Thermal renovation obligation for existing buildings during major building work (façade renovations, re-roofing, etc.)	Residential	CO2	Energy efficiency in existing buildings	Regulatory	Adopted	The Energy Transition for Green Growth Law of 17 August 2015 includes provisions to introduce new obligations for project owners, under which they will be required to conduct energy efficiency work at the same time as major maintenance work. The insulation obligation relates primarily to major work on the building envelope, with a set of technical, architectural and economic criteria used to determine whether the energy renovation obligation applies.	2015	Ministry of Ecology, Sustainable Development and Energy					

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Optimisation of agricultural practices*	Agriculture	N2O, CO2	Reducing the use of mineral fertilisers, reducing tillage, reducing energy consumption, developing leguminous crop farming (atmospheric nitrogen fixation)	Economic	Implemented	The Competitiveness and Adaptation Plan for Farms, which covers the 2014-2020 period and succeeds the Farm Energy Performance Plan (2009-2013), was launched in June 2014 by the Ministry of Agriculture. This plan includes provisions to: - grant investment assistance to reduce the use of mineral fertilisers, and to support purchase of farming method modernisation equipment (thereby reducing tillage) - support the purchase of equipment to deliver energy savings or produce renewable energy - support investment in developing leguminous crop farming and fodder independence.	2009	Ministry of Agriculture					
Support for agricultural methanisation*	Agriculture	CH4, CO2	Reducing CH4 emissions from the agricultural sector and performing energy recovery	Economic	Implemented	The Competitiveness and Adaptation Plan for Farms, like its predecessor (the Farm Energy Performance Plan), also aims to support renewable energy generation by financing the purchase of equipment such as biogas plants. As well as offering initial investment assistance, the agricultural methanisation support mechanism also includes guaranteed feed-in tariffs for electricity produced from biogas, and for biomethane fed into the natural gas network.	2014	Ministry of Agriculture	178	730	1,125	1,519	1,914

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Strengthening support for agricultural methanisation	Agriculture	CH4, CO2	Reducing CH4 emissions from the agricultural sector and performing energy recovery	Economic	Implemented	The Methane Energy and Nitrogen Autonomy (EMAA) plan was implemented in 2014 to supplement existing agricultural methanisation support mechanisms. It includes measures to optimise the feed-in tariff for electricity produced from biogas, to simplify the administrative procedures surrounding the development of methanisation projects, and to provide more support for project initiators and sector development efforts.	2014	Ministry of Agriculture		841	1,305	1,769	2,233
Regulation no. 842/2006 on the reduction of F-gas emissions*	Cross-sector: industry, tertiary, residential	HFCs, PFCs, SF6	Reducing F-gas emissions, limiting fugitive emissions	Regulatory	Implemented	Regulation no. 842/2006 (“F-Gas” Regulation) seeks to reduce emissions of F-gases used as refrigerant fluids in equipment in the following sectors: domestic refrigeration, commercial refrigeration, refrigerated transport, industrial refrigeration, chillers, air-conditioning systems, residential heat pumps and vehicle air-conditioning systems. These measures include an obligation to verify the tightness of fixed installations; the recovery of fluids at the end of the equipment’s lifespan; and certification for personnel authorised to commission, maintain and drain such equipment.	2006	Ministry of Ecology, Sustainable Development and Energy	3,415	7,890	12,269	15,279	17,795

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Regulation no. 517/2014 on the reduction of F-gas emissions	Cross-sector: industry, tertiary, residential	HFCs, PFCs, SF6	Reducing F-gas emissions, limiting fugitive emissions, reducing the GWP of F-gases used	Regulatory		Regulation no. 517/2014 ("F-Gas II" Regulation) of 16 April 2014 includes a quota system for the gradual reduction of HFCs sold (expressed in CO2 equivalent); bans on the sale of products and equipment containing F-gases exceeding a certain GWP; and a ban on the maintenance of refrigeration installations containing fluids with a GWP in excess of 2,500 from 1 January 2020.	2014	Ministry of Ecology, Sustainable Development and Energy	0	8,922	17,445	22,792	25,726
The European Union Emissions Trading System (EU ETS)*	Cross-sector: energy, industry	CO2, N2O, PFCs	Reducing GHG emissions from high emission plants (mainly power stations and industry)	Economic	Implemented	The EU ETS (governed by Directive no. 2003/87/EC) has, since 2005, imposed an emissions cap on around 12,000 industrial installations in various sectors such as electricity generation, heat networks, steel, cement, refinery, glass and paper. Each year, these plants must surrender a number of allowances equal to their verified emissions for the previous year. The first EU ETS period lasted for three years (2005-2007), and was followed by a subsequent five-year period (2008-2012). For the third period (2013-2020), a new mechanism has been established to extend the scope of the system and amend the quota allocation procedures. The aviation sector was included in the EU ETS system in 2012.	2005	Ministry of Ecology, Sustainable Development and Energy	940	2,000	2,880	6,032	12,785

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Statutory energy audit	Cross-sector: industry, tertiary	CO2	Energy audit of large company activities	Regulatory, information	Implemented	Directive no. 2012/27/EU of 25 October 2012 (“Energy Efficiency” Directive) requires all large companies to undergo an energy audit of their activities, every four years. The first audits must be completed before 5 December 2015. This obligation applies to companies with more than 250 employees, or with annual turnover in excess of €50 million, or with a balance sheet in excess of €43 million. The energy audit will provide an opportunity to identify potential areas for energy savings among the largest business consumers (tertiary and industrial).	2015	Ministry of Ecology, Sustainable Development and Energy					

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Energy saving certificates*	Cross-sector: residential/tertiary, industry, agriculture, transport	CO2	Promotion of energy saving operations by energy providers	Economic	Implemented	The energy saving certificates (CEE) system was established by French Law no. 2005-781 of 13 July 2005. This system is underpinned by a multi-year obligation on energy suppliers to achieve energy savings, and is enforced by the public authorities. CEEs are allocated to eligible parties that have contributed to energy-saving operations. At the end of each period, the energy suppliers covered by the system must provide evidence that they have fulfilled their obligations, by demonstrating that they hold certificates up to a value corresponding with these obligations. Failing that, they will be subject to a full and final settlement penalty of €0.02 per missing kWh. The national energy savings target for the first period of the system (2006-2009) was set at 54 TWh (cumulative and updated). The statutory obligation for the second period (2011-2014) stood at 460 TWh (cumulative and updated). The third period commenced on 1 January 2015, for a period of three years, with energy savings target of 700 TWh (cumulative and updated).	2006	Ministry of Ecology, Sustainable Development and Energy	11,860	18,584	16,499	11,439	6,797

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035
Heat Fund to support the development of thermal renewable energy*	Cross-sector: industry, tertiary, residential, agriculture	CO2	Increasing the percentage of heat produced from renewable sources	Economic	Implemented	The Heat Fund was created in 2008. Its purpose is to support heat production from renewable energy sources (biomass, geothermal, solar, biogas and energy recovery) in the collective housing, tertiary, agricultural and industrial sectors. The Heat Fund was allocated a total of €1.202 billion for the 2009-2014 period (i.e. an average of €200 million per year), to support around 3,200 projects and total production of 1.5 Mtoe per year. The "with existing measures" scenario is based on an assumption that the annual value of the fund will remain at this level until 2020.	2009	Environment and Energy Management Agency (ADEME)	3,010	9,990	11,990	11,990	11,990
Doubling the value of the Heat Fund by 2017	Cross-sector: industry, tertiary, residential, agriculture	CO2	Increasing the percentage of heat produced from renewable sources	Economic	Adopted	The Energy Transition for Green Growth Law of 17 August 2015 sets a target of 32% renewable energy by 2030. The annual Heat Fund budget will be doubled to €420 million per year by 2017, with a view to meeting this target. An assumption has been made that the Heat Fund will then remain at this level until 2035.	2015	Environment and Energy Management Agency (ADEME)		13,370	23,360	33,350	43,330
Carbon component of the energy taxation scheme*	Cross-sector: residential/tertiary, transport	CO2	Encouraging energy efficiency initiatives and the development of low-carbon solutions in the road transport and construction sectors	Fiscal	Implemented	Article 32 of the Finance Law for 2014 introduces a carbon component into domestic taxes on the consumption of fossil fuel products. This component is progressive and proportional to the CO2 content of the products concerned. The carbon component is set at €7 per tCO2 in 2014, €14.5 per tCO2 in 2015, and €22 per tCO2 in 2016.	2014	Ministry of the Economy		3,773	3,565	3,362	3,217

Name of mitigation action[a]	Sector(s) affected[b]	GHG(s) affected	Objective and/or activity affected	Type of instrument[c]	Status of implementation[d]	Brief description[e]	Start year of implementation	Implementing entity or entities	Estimate of mitigation impact (not cumulative, in kt CO2 eq)[e]				
									2013	2020	2025	2030	2035

Abbreviations:

GHG = greenhouse gas;

LULUCF = land use, land-use change and forestry.

[a] An asterisk (*) has been used to indicate that a mitigation action is included in the 'with measures' projection.

[b] To the extent possible, the following sectors should be used: energy, transport, industry/industrial processes, agriculture, forestry/LULUCF, waste management/waste, other sectors, cross-cutting, as appropriate.

[c] To the extent possible, the following types of instrument should be used: economic, fiscal, voluntary agreement, regulatory, information, education, research, other.

[d] To the extent possible, the following descriptive terms should be used to report on the status of implementation: implemented, adopted, planned.

[e] Optional year or years deemed relevant by the Party.

Minimising adverse effects on developing countries due to implementation of policies and measures

Each year, France implements a large number of technology transfer and capacity building projects in developing countries. These projects, which help to minimise the adverse effects of these policies and measures, are presented in detail in this biennial report, and in each annual national inventory report.

In addition to transferring technology and expertise, France helps developing countries to improve and enhance their climate change observation systems through its climate observation network as well as its research and cooperation projects (see chapter VIII of the sixth French national communication).

Furthermore, considerations relating to the potential impact of policies and measures on developing countries form an integral part of impact studies and impact assessments for EU legislative proposals and commercial agreements, such as specific climate action proposals or cross-border measures in sectors such as energy, transport, industry and agriculture.

In the process of adopting European policies, Europe has set up a system to estimate the positive and negative impacts of its policies, including effects on other countries, as part of impact studies. These impact studies play a key role in the final decision-making process for European policies and measures. The studies help to minimise the negative impacts of European policies on developing countries and thus ensure that French legislative provisions resulting from European Law meet the commitment taken as part of the Kyoto Protocol, in accordance with article 3.14. All these impact studies are available to the public on the following website:

http://ec.europa.eu/smart-regulation/impact/ia_carried_out/cia_2014_en.htm

As well as implementing bilateral programs with various developing countries, the EU also participates in regional initiatives covering aspects such as economic diversification, renewable energies and energy efficiency, or socio-economic issues. Examples include the Global Climate Change Alliance, the Mediterranean Solar Plan, and the development of dedicated funds to support clean energy generation in developing countries and countries in transition.

The table on the next page lists the estimated direct and indirect effects of some of France's climate policies and measures.

Direct and indirect effects of France's main climate policies and measures on developing countries

	Direct effects			Indirect effects		
Measure	**Social**	**Environmental**	**Economic**	**Social**	**Environmental**	**Economic**
EU ETS			Potentially positive economic effect on countries outside the European Union in the case of the competitiveness difference caused by the introduction of a price signal on carbon for European economic activities		Positive - Incentive for international firms under the EU ETS to develop more environmentally efficient processes with the potential for transfer to developing countries	
CDM	Positive effect of potential maintenance or creation of local jobs in developing countries hosting projects	Positive as it enables low-carbon technologies to be implemented in developing countries	Positive effect of foreign investment in the development of infrastructures in developing countries		Negative - Potential incentive for developing countries not to develop infrastructures producing lower emissions in order to generate greater environmental additionality in CDM projects	
Biofuel development	Positive effect of potential maintenance or creation of jobs in exporting developing countries	Positive effect provided sustainability criteria (European case) are implemented, particularly in relation to land use change	Positive effect on biofuel imports from developing countries		Negative effect on deforestation and food resources But implementation of biofuel sustainability criteria by means of agreements between the European Commission and developing countries	Effect of reducing demand for oil and potentially less pressure on fossil fuel prices
Promotion of energy efficiency	Positive effect of potential maintenance or creation of jobs in exporting developing countries		Positive effect on imports from developing countries for energy efficiency generation equipment		Improved air quality in developing countries	Effect of reducing demand for oil and potentially less pressure on fossil fuel prices
Promotion of renewable energies	Positive effect of potential maintenance or creation of jobs in exporting developing countries		Positive effect on imports from developing countries for renewable energy production equipment		Improved air quality in developing countries	Effect of reducing demand for fossil fuels and potentially less pressure on fossil fuel prices

Regulation in favour of low-emission vehicles (emissions regulation, vehicle labelling, vehicle reward/penalty scheme)	Positive effect of potential maintenance or creation of jobs in exporting developing countries		Promotes imports of low-emission vehicles from developing countries			Increased demand for raw materials (steel) and potential increased pressure on their price Effect of reducing demand for fossil fuels and potentially less pressure on fossil fuel prices
Reform of the Common Agricultural Policy	Positive effect of potential maintenance or creation of jobs in exporting developing countries		Potentially positive economic effect by increasing demand in this sector Positive effect on the quality of products from developing countries			

III.2 - Estimate of emissions reductions and absorptions from activities relating to land use, land use change and forestry

France's GHG emissions results, as detailed in part I, are included in table 4 of this report.

LULUCF sector emissions are not included in the Convention target and, as such, are not included in tables 4 and 4(a).

IV - Projections of greenhouse gas emissions

Between September 2014 and July 2015, France conducted a forward-looking scenario development exercise. The aim of this exercise was to ensure that the country is able to report projected greenhouse gas emissions for 2035, with an interim figure every five years (i.e. for 2015, 2020, 2025, 2030 and 2035), pursuant to European Regulation no. 525/2013.

For the purposes of this report, the scenario presented is a "with existing measures" (WEM) scenario, incorporating all measures adopted and implemented as at 1 January 2014.

The following macro-economic and demographic assumptions have been used for all scenarios:

- International import prices for fossil fuels (gas, oil and coal): source: IEA, "New Policies" scenario
- Carbon pricing in the EU ETS: €10 per tCO_2e in 2020, €35 per tCO_2e in 2030.
- Population: 70.4 million in 2030.
- Average annual GDP growth rate: 1.6% from 2016-2020, 1.9% from 2021-2025, 1.7% from 2026-2030.
- Non-ETS CO_2 pricing: carbon component of the TICPE: €14.5 per tCO_2 in 2015, then €22 per tCO_2 between 2016 and 2030.

Table 5: **Summary of key variables and assumptions used in the projections analysis**[a]

Key underlying assumptions		*Historical*[b]						Projected			
Assumption	*Unit*	*1990*	*1995*	2000	2005	2010	2011	2015	2020	2025	2030
Population	thousands			58860		62880		67244	68891	70423	71892
International gas price	EUR2010/GJ					5,9		7,7	9,5	9,1	10
International oil price	EUR2010/GJ					9,3		11,9	13,7	13,8	14,4
International coal price	EUR2010/GJ					2,5		2,3	3,2	3,35	3,4
GDP growth rate	%					1.50	1.70	1,6	1,9	1,7	1,6

All measures outlined in section III-1 and marked with an asterisk are included in the WEM scenario.

In addition to the description of the measures, supplementary information about the WEM scenario in 2020 and 2030, for the main sectors, is provided below:

Transport:

- In the WEM scenario, passenger traffic for all terrestrial modes of transport rises by 11% between 2010 and 2030, largely tracking the population growth rate (+9% over the same period). The rise in traffic stands at 9% for passenger cars and 28% for rail. Freight traffic continues to rise rapidly, with an annual growth rate of +1.7% for road traffic and +4.2% for rail traffic between 2010 and 2030. The commissioning of new infrastructure (including 380 km of tram lines and 620 km of bus rapid transit lines) helps to boost urban public transport.
- Electric vehicles account for 3.9% of new registrations each year in 2020 and in 2030. There are 570,000 electric vehicles on the road in 2020, and 1,150,000 in 2030. Rechargeable hybrid vehicles account for 4.5% of new registrations each year in 2020, and 5.5% in 2030. There are 620,000 rechargeable hybrid vehicles on the road in 2020, and 1,540,000 in 2030.

- In terms of vehicle performance, the WEM scenario includes significant improvements in the performance of passenger cars and light utility vehicles by 2020, through implementation of European Regulation no. 443/2009 on CO_2 emissions for new vehicles, and the continued application of the domestic reward/penalty scheme. The theoretical target of 95 gCO_2/km is 95% attained in 2020, but a discrepancy between actual emissions and laboratory-measured emissions is taken into account. Consumption per new passenger car falls by 11% between 2010 and 2020. Beyond 2020, average emissions of new passenger cars remain relatively stable (with average consumption of 5.3 l/100 km for petrol cars and 4.6 l/100 km for diesel cars in 2030).
- In the freight transport sector, the modal share of rail and river transport rises to 15.9% in 2020 and 18.7% in 2030. The HGV load factor increases by 7% between 2010 and 2030.

Buildings:

- All new buildings (residential and tertiary) comply with the Thermal Regulation 2012 ("RT 2012") from 2015 onwards and throughout the projection period. However, there is no subsequent improvement in construction standards (the forthcoming RT 2020 is not included in the WEM scenario).
- In terms of thermal renovation of homes, the public assistance and incentive schemes (tax credit, reduced-rate loan, thermal renovation grants for low-income households) stop in 2015 under the WEM scenario. Only the Eco-PLS (reduced-rate loan for social housing renovation) continues to apply, at its current rate, until 2020. A total of 4% of single-family houses built prior to 1975 have undergone extensive thermal renovation work by 2020, rising to 6% by 2030. For single-family houses built after 1975, the respective figures are 3% in 2020 and 4% in 2030. In terms of privately owned multi-occupancy blocks (irrespective of their date of construction), a total of 2% have undergone extensive thermal renovation work by 2020, rising to 4% by 2030. A total of 13% of social housing stock built prior to 1975 has undergone extensive thermal renovation work by 2020, rising to 14% by 2030. For social housing stock built after 1975, the respective figures are 9% in both 2020 and 2030. In the tertiary sector, meanwhile, 10% of all buildings have undergone "medium-level" renovation work by 2020, rising to 20% in 2030.

Industry: Industrial production is determined by the macro-economic environment (1.9% annual growth in industrial value-added between 2015 and 2030). This has a direct impact on energy consumption and greenhouse gas emissions. However, the scenario also includes an upward trend in industrial energy efficiency, thereby offsetting the initial effect and resulting in relatively stable energy consumption in the industrial sector between 2015 and 2030. No assumption has been made about waste heat recovery in this sector.

Agriculture and forestry: In the WEM scenario, total cattle livestock numbers remain relatively stable between 2015 and 2030, while the productivity of dairy cattle increases by 17%. Protein crop coverage falls by 35%. Mineral nitrogen use per hectare remains stable. Total organic nitrogen deliveries remain stable.

Waste management and treatment: The landfill biomethane capture rate rises from 43% in 2015 to 50% in 2030. The proportion of this captured biomethane that is recovered remains stable at 66% between 2015 and 2030.

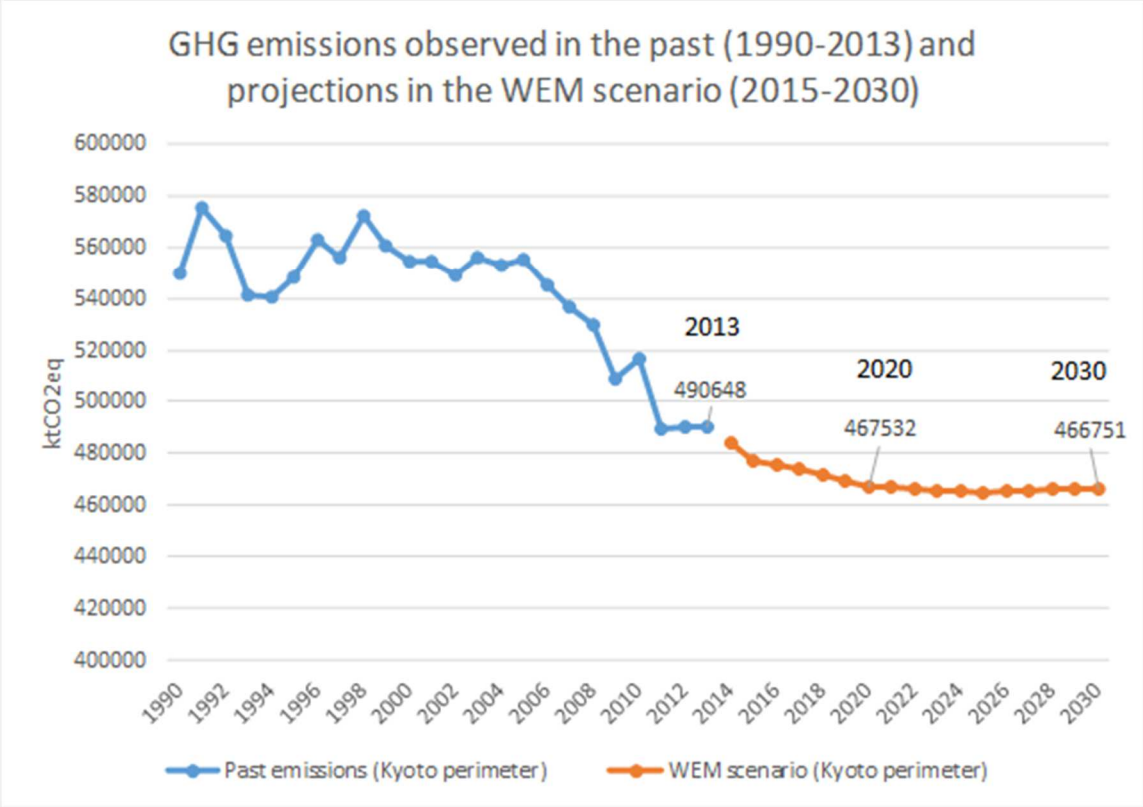
F-gases: Regulation 842/2006 (F-Gas) concerning fluorinated greenhouse gases, and Directive 2006/40/EC (vehicle air-conditioning systems) and the resulting French regulations (art. R 543-75 *et seq*. and art. R 543-99 of the French Environment Code) are taken into account.

Renewable energy: The Heat Fund remains at the 2013-2014 level until 2020, and then stops. Renewable energy is expected to account for 9% of total energy consumption in the transport sector in 2030. Renewable electrical energy is expected to continue developing at its current pace.

In the WEM scenario, the Kyoto framework emissions (i.e. Mainland France and Overseas Departments and Regions) are as follows:

- excluding LULUCF:
  - 477,564 $ktCO_2eq$ in 2015
  - 467,532 $ktCO_2eq$ in 2020
  - 465,150 $ktCO_2eq$ in 2025
  - 466,751 $ktCO_2eq$ in 2030
- including LULUCF:
  - 423,767 $ktCO_2eq$ in 2015
  - 405,935 $ktCO_2eq$ in 2020
  - 397,066 $ktCO_2eq$ in 2025
  - 392,309 $ktCO_2eq$ in 2030.

Projected GHG emissions (in $ktCO_2eq$) for France (Kyoto framework) between 1990 and 2013 (past observed emissions as recorded in the inventories) and between 2015 and 2030 (in the WEM scenario).



The section below details emissions for the Kyoto framework, reflecting the framework included in the European Union's biennial report.

Table 6: Informations on observed emissions and projections for WEM scenario

	GHG emissions and removals[b] *(kt CO_2 eq)*							GHG emission projections (kt CO_2 eq)	
	Base year (1990)	1990	1995	2000	2005	2010	2013	2020	2030
Sector[d,e]									
Energy	384 769,95	384 769,95	386 152,74	399 366,81	405 896,23	372 763,03	351 118,12	329 880	334,84
Transport	IE	IE	IE	IE	IE	IE	IE	IE	IE
Industry/industrial processes	60 939,77	60 939,77	57 472,90	46 597,68	46 006,71	41 791,41	40 231,78	41 100	37 240
Agriculture	86 390,61	86 390,61	83 757,32	86 771,50	81 100,99	80 594,44	79 210,54	78 400	78 460
Forestry/LULUCF	-37 611,37	-37 611,37	-36 343,55	-33 623,92	-49 120,95	-39 469,75	-46 672,93	-61 600	-74 440
Waste management/waste	17 262,91	17 262,91	20 462,03	21 703,98	21 860,29	21 298,36	19 630,35	18150	16 210
Other (specify)									
Gas									
CO_2 emissions including net CO_2 from LULUCF	359 070,18	359 070,18	357 793,71	377 903,80	372 645,64	347 755,19	317 607,00	282 640	275 270
CO_2 emissions excluding net CO_2 from LULUCF	398 175,31	398 175,31	398 169,70	413 495,17	423 313,77	388 743,81	365 717,17	345 750	351 220
CH_4 emissions including CH_4 from LULUCF	70 065,69	70 065,69	74 326,54	71 339,23	65 028,81	63 783,75	60 459,42	58 640	57 140
CH_4 emissions excluding CH_4 from LULUCF	68 746,75	68 746,75	70 421,86	69 499,45	63 609,81	62 395,39	59 138,45	57 260	55 760
N_2O emissions including N_2O from LULUCF	70 788,92	70 788,92	71 724,39	59 612,99	51 812,52	46 136,20	44 498,78	44 480	44 190
N_2O emissions excluding N_2O from LULUCF	70 614,11	70 614,11	71 596,62	59 485,31	51 684,35	46 005,69	44 382,51	44 350	44 060
HFCs	4 402,20	4 402,20	1 931,94	6 575,23	13 120,04	17 815,11	19 704,73	19 020	14 610
PFCs	5 190,39	5 190,39	3 069,28	2 985,41	1 748,25	605,29	657,61	570	500
SF_6	2 218,00	2 218,00	2 629,03	2 379,51	1 356,74	849,82	579,71	570	580
Other (NF3)	16,48	16,48	26,54	19,89	31,27	32,13	10,63	10	10
Total with LULUCF[f]	511 751,87	511 751,87	511 501,44	520 816,06	505 743,27	476 977,49	443 517,88	405 930	392 310
Total without LULUCF	**549 363,24**	**549 363,24**	**547 844,99**	**554 439,98**	**554 864,22**	**516 447,24**	**490 190,80**	**467 530**	**466 750**

V - Assistance provided to developing countries in the form of financial resources, technology and capacity building

At its meeting of 31 July 2013, the Interministerial Committee for International Cooperation Development (CICID) confirmed that combating climate change was one of France's development priorities.

France provides financial aid and technological cooperation through a number of bilateral and multilateral channels, particularly through development aid. France's funding and technology transfer projects operate at a number of levels and involve numerous stakeholders, multilateral and national institutions, local authorities, and the private sector.

In total, France provided more than €2.24 billion (approx. US$2.98 billion) of public funds in 2013, and almost €2.77 billion (approx. US$3.7 billion) in 2014, to climate change for adaptation and mitigation in developing countries.

The calculation methodologies used to produce the figures contained in this report are explained in the appendix II.

V.1 - Development aid - bilateral cooperation

France is a major player in bilateral development aid in the climate sector, with a very extensive sphere of influence, a recognised level of expertise and substantial financial commitment.

This development aid is delivered primarily through the French Development Agency (AFD), as well as via the French Global Environment Facility (FFEM), the Private Sector Aid and Studies Fund (FASEP), and concessional Treasury loans.

AFD is the key operator of French bilateral development aid and a high-impact public financial stakeholder that has been working on "climate and development" issues for more than 10 years. In total, between 2005 and 2014, AFD has disbursed around €18 billion to support development projects with joint mitigation and/or adaptation benefits (including €2.9 billion in 2014 alone). It has a highly ambitious "climate-development" action plan for 2012-2016, based on three pillars: a set of quantified annual "climate" targets (50% of its activity in developing countries, and 30% for Proparco, its private sector subsidiary); a systematic climate impact assessment system for all projects that it funds; and a selection policy based on climate impact.

The FFEM is a bilateral public fund created in 1994. It is one of the key instruments used to support France's environmental cooperation and development policy. The FFEM receives a fresh injection of funds every four years. It was allocated a total of €95 million for the 2011-2014 period, with a target of disbursing at least 35% of its funds on climate change activities. The most recent injection of funds came at the end of 2014, with €90 million allocated for the 2015-2018 period. During this period, it will focus 35% of its funding on climate change, of which 50% will be targeted at specific adaptation actions.

Moreover, the General Directorate of the Treasury of the Ministry of the Economy and Finance, via the French Private Sector Aid and Studies Fund (FASEP), funds preparatory studies for infrastructure projects targeted at foreign recipients and conducted by French design offices. In order to encourage technical cooperation with emerging countries in the environment sector it was decided, in May 2009, to set up the

"Innovation Verte" (green innovation) FASEP to support pilot projects implementing innovative environmental technologies. Some 20 projects of this type have been implemented since this date.

The fund primarily covers sustainable development and climate change sectors (public transport, water and environment, renewable energies, etc.). Total FASEP disbursements for climate change-related projects stood at €2.6 million in 2014 and €1.8 million in 2013.

The concessional Treasury loans scheme (formerly known as the Emerging Markets Reserve (RPE), reorganised on 1 January 2015) is a State-to-State highly concessional loan system (gift component of at least 35% compared with a reference market rate; the rules are set by the OECD's arrangement on officially supported export credits). This public development loan finances infrastructure projects in emerging countries, mainly in the transport, water, environment and urban development fields. In 2014, total of €108 million was disbursed to climate change-related projects, compared with €98.4 million in 2013.

For the first time, France has estimated private climate finance mobilised through its public funding and projects in developing countries, for the years 2013 and 2014.

Total estimated private finance mobilised stood at approximately €596 million (US$791 million) in 2013, and €681 million (US$904 million) in 2014.

The calculation methodologies used to produce the figures contained in this report are explained in the appendix II.

V.2 - Development aid - multilateral cooperation

For several years France has strengthened its international projects in this area and has also mobilised large and growing funds for tackling climate change in developing countries through the main climate funds. Its and is one of the world's five biggest contributors to climate projects.

It was one of the countries behind the creation of the Global Environment Facility (GEF), the main multilateral instrument for protection of the global environment. France provided its fifth contribution to the GEF for the 2011-2014 period, with a contribution of €215.5 million (including €75 million dedicated specifically to financing early action for sustainable forest management).

A large part of France's action is devoted to its participation in development banks and multilateral development funds, such as the International Development Association (IDA) (the World Bank's concessional fund), the African Development Fund (ADF) (the African Development Bank's concessional fund), and the Asian Development Fund (ADF). These banks and funds devote a considerable amount of their resources to combating the effects of climate change.

Looking to the future, France has committed to contributing US$1 billion to the Green Climate Fund for the 2015-2018 period, and has already converted the majority of this amount into an effective contribution. In 2015, it also made a €5 million contribution to the Adaptation Fund.

France will remain the fifth-largest contributor to the GEF, providing US$300 million of funding for the sixth period (mid-2014 to mid-2018). Over this period, the GEF plans to devote a total of US$1.26 billion to tackling climate change.

In addition to these two contributions, the President of the French Republic also announced, at the United Nations General Assembly in 2015, that France will make a gradual and significant increase in its climate

funding, up to €5 billion per year in 2020, and that it will increase its adaptation grants to more than €370 million per year.

Table 7 – Summary of provision of financial and technology support to developing countries in 2013 and 2014

Allocation channels	Climate-specific in euros			Climate-specific in dollars		
	Mitigation	Adaptation	Cross-cutting	Mitigation	Adaptation	Cross-cut-ting
2013						
Total contributions through multilateral channels	-	-	***10,875,200***	-	-	***14,438,662***
Multilateral climate change Funds	-	-	-	-	-	0
Total contributions through bilateral, regional and other channels	***1,641,670,415***	***380,500,631***	***213,801,978***	***2,179,594,284***	***505,178,745***	***283,858,176***
TOTAL climate specific	***1,641,670,415***	***380,500,631***	***224,677,178***	***2,179,594,284***	***505,178,745***	***298,296,837***
2014						
Total contributions through multilateral channels	**-**	**-**	***10,875,200***	**-**	**-**	***14,429,083***
Multilateral climate change Funds	-	-	10,875,200	-	-	14,429,083
Total contributions through bilateral, regional and other channels	***2,232,149,678***	***279,138,362***	***245,032,419***	***2,961,589,064***	***370,357,386***	***325,106,036***
TOTAL climate specific	***2,232,149,678***	***279,138,362***	***255,907,619***	***2,961,589,064***	***370,357,386***	***339,535,119***

Table 7.a - Provision of financial and technology support to developing countries in 2013 and 2014: contribution through multilateral channels

	Core/general		Climate-specific						
Donor Funding	**Euros**	**USD**	**Euros**	**USD**	**Status**	**Fund-ing source**	**Finan-cial in-stru-ments**	**Type of support**	**Sector**
Multilateral climate change funds									
Global Environment Facility in 2013	33,985,000	45,120,818	10,875,200	14,438,662	Pro-vided	ODA	Grant	Cross-cut-ting	Cross-cutting
Global Environment Facility in 2014	33,985,000	45,090,885	10,875,200	14,429,083	Pro-vided	ODA	Grant	Cross-cut-ting	Cross-cutting

Table 7.b. Provision of public financial support: contribution through bilateral, regional and other channels in 2013 and 2014

2013							
	Climate specific						
Donor Fund-ing in 2013	**Euros**	**Dollars**	**Status**	**Fund ing sour ce**	**Financial instru-ments**	**Type of sup-port**	**Sector**
AFD - Africa	20,000,000	26,553,372	Committed	ODA	Concessional loan	Adaptation	Agriculture and natural re-sources
AFD - Africa	80,000,000	106,213,489	Committed	ODA	Concessional loan	Adaptation	Urban infrastructure
AFD - Africa	3,600,000	4,779,607	Committed	ODA	Concessional loan	Adaptation	Water resources
AFD - Africa	256,500,000	340,546,999	Committed	ODA	Concessional loan	Mitigation	Energy
AFD - Africa	3,830,140	5,085,157	Committed	ODA	Grant	Adaptation	Agriculture and natural re-sources
AFD - Africa	3,900,000	5,177,908	Committed	ODA	Grant	Adaptation	Water resources
AFD - Africa	2,000,000	2,655,337	Committed	ODA	Grant	Cross-cutting	Agriculture and natural re-sources
AFD - Africa	3,000,000	3,983,006	Committed	ODA	Grant	Mitigation	Energy
AFD - Africa	1,500,000	1,991,503	Committed	ODA	Grant	Mitigation	Forestry
AFD - Africa	88,000,000	116,834,838	Committed	ODA	Concessional loan	Adaptation	Urban infrastructure
AFD - Africa	100,000,000	132,766,861	Committed	ODA	Concessional loan	Mitigation	Transport
AFD - Africa	102,398,496	135,951,269	Committed	OOF	Non concessional loan	Mitigation	Energy
AFD - Latin America	664,998	882,897	Committed	ODA	Grant	Adaptation	Agriculture and natural re-sources
AFD - Latin America	53,000,000	70,366,437	Committed	ODA	Concessional loan	Adaptation	Water resources
AFD - Latin America	300,000,000	398,300,584	Committed	ODA	Concessional loan	Mitigation	Transport
AFD - Latin America	10,419,768	13,833,999	Committed	OOF	Non concessional loan	Adaptation	Urban infrastructure
AFD - Latin America	36,734,994	48,771,899	Committed	OOF	Non concessional loan	Cross-cutting	Agriculture and natural re-sources
AFD - Latin America	30,000,000	39,830,058	Committed	OOF	Non concessional loan	Cross-cutting	Urban infrastructure
AFD - Latin America	84,836,925	112,635,322	Committed	OOF	Non concessional loan	Mitigation	Energy
AFD - Asia	91,995,725	122,139,837	Committed	ODA	Concessional loan	Adaptation	Water resources
AFD - Asia	20,000,000	26,553,372	Committed	ODA	Concessional loan	Cross-cutting	Climate policy

AFD - Asia	42,880,000	56,930,430	Committed	ODA	Concessional loan	Mitigation	Energy
AFD - Asia	8,000,000	10,621,349	Committed	ODA	Grant	Adaptation	Agriculture and natural resources
AFD - Asia	3,300,000	4,381,306	Committed	ODA	Grant	Adaptation	Water resources
AFD - Asia	50,000,000	66,383,431	Committed	ODA	Concessional loan	Cross-cutting	Agriculture and natural resources
AFD - Asia	75,066,984	99,664,079	Committed	ODA	Concessional loan	Cross-cutting	Water resources
AFD - Asia	351,900,369	467,207,075	Committed	ODA	Concessional loan	Mitigation	Energy
AFD - Asia	180,000,000	238,980,351	Committed	ODA	Concessional loan	Mitigation	Transport
AFD - Asia	20,699,625	27,482,242	Committed	OOF	Non concessional loan	Mitigation	Energy
AFD - Mediterranean	60,000,000	79,660,117	Committed	ODA	Concessional loan	Mitigation	Urban infrastructure
AFD - Mediterranean	10,500,000	13,940,520	Committed	ODA	Grant	Adaptation	Water resources
AFD - Mediterranean	2,000,000	2,655,337	Committed	ODA	Grant	Mitigation	Energy
AFD - Mediterranean	1,300,000	1,725,969	Committed	ODA	Grant	Mitigation	Transport
AFD - Mediterranean	120,000	159,320	Committed	ODA	Grant	Mitigation	Urban infrastructure
AFD - Mediterranean	30,000,000	39,830,058	Committed	ODA	Concessional loan	Mitigation	Energy
FFEM - Palestinian territories	1,000,000	1,327,669	Committed	ODA	Grant	Mitigation	Energy
FFEM - Mediterranean	1,500,000	1,991,503	Committed	ODA	Grant	Adaptation	Agriculture
FFEM - Africa	1,500,000	1,991,503	Committed	ODA	Grant	Mitigation	Energy
FFEM - Dominican Republic	400,000	531,067	Committed	ODA	Grant	Mitigation	Energy
FFEM - Cambodia	430,000	570,898	Committed	ODA	Grant	Mitigation	Energy
FFEM - India	400,000	531,067	Committed	ODA	Grant	Adaptation	Energy
FFEM - Kenya	200,000	265,534	Committed	ODA	Grant	Mitigation	Energy
FFEM - Benin	1,200,000	1,593,202	Committed	ODA	Grant	Adaptation	Cities
FFEM - Morocco	1,000,000	1,327,669	Committed	ODA	Grant	Mitigation	Energy
RPE - Indonesia	32,000,000	42,485,396	committed	ODA	Concessional loan	Mitigation	Transport
RPE - Ecuador	2,600,000	3,451,938	committed	ODA	Concessional loan	Mitigation	Transport
FASEP - Indonesia	574,000	762,082	committed	ODA	Grant	Mitigation	Geothermal
FASEP - Bolivia	377,000	500,531	committed	ODA	Grant	Mitigation	Geothermal
RPE - Tunisia	63,800,000	84,705,258	committed	ODA	Concessional loan	Mitigation	Transport
FASEP - Indonesia	74,000	98,247	committed	ODA	Grant	Mitigation	Sustainable urban design
FASEP - Haiti	95,000	126,129	committed	ODA	Grant	Mitigation	Solar Energy
FASEP - Tunisia	349,000	463,356	committed	ODA	Grant	Mitigation	Tidal Energy
FASEP - Lebanon	136,000	180,563	committed	ODA	Grant	Mitigation	Renewable energy/capacity building
FASEP - Bangladesh	190,000	252,257	committed	ODA	Grant	Adaptation	Water

2014							
	Climate specific						
Donor funding in 2014	Euros	Dollars	Status	Funding source	Financial instruments	Type of support	Sector
AFD - Africa	36,900,000	48,958,472	Committed	ODA	Concessional loan	Adaptation	Agriculture, forestry and natural resources
AFD - Africa	62,000,000	82,260,846	Committed	ODA	Concessional loan	Adaptation	Climate risk prevention
AFD - Africa	7,284,000	9,664,323	Committed	ODA	Concessional loan	Adaptation	Water resources
AFD - Africa	56,166,056	74,520,441	Committed	ODA	Concessional loan	Cross-cutting	Urban infrastructure
AFD - Africa	57,909,645	76,833,813	Committed	ODA	Concessional loan	Mitigation	RE/EE credit line
AFD - Africa	87,000,000	115,430,543	Committed	ODA	Concessional loan	Mitigation	Renewable energy
AFD - Africa	56,000,000	74,300,119	Committed	ODA	Concessional loan	Mitigation	Transmission lines
AFD - Africa	120,000,000	159,214,542	Committed	ODA	Concessional loan	Mitigation	Urban infrastructure
AFD - Africa	50,000,000	66,339,392	Committed	ODA	Concessional loan	Mitigation	Urban transport
AFD - Africa	20,740,000	27,517,580	Committed	ODA	Grant	Adaptation	Agriculture, forestry and natural resources
AFD - Africa	2,200,000	2,918,933	Committed	ODA	Grant	Adaptation	Climate risk prevention
AFD - Africa	7,500,000	9,950,909	Committed	ODA	Grant	Mitigation	Agriculture, forestry and natural resources
AFD - Africa	2,500,000	3,316,970	Committed	ODA	Grant	Mitigation	Renewable energy
AFD - Africa	14,697,237	19,500,115	Committed	OOF	Non concessional loan	Mitigation	Renewable energy
AFD - Latin America	43,505,037	57,721,954	Committed	ODA	Concessional loan	Adaptation	Water resources
AFD - Latin America	154,366,363	204,811,414	Committed	ODA	Concessional loan	Cross-cutting	Urban infrastructure
AFD - Latin America	150,400,000	199,548,892	Committed	ODA	Concessional loan	Mitigation	RE/EE credit line
AFD - Latin America	120,500,000	159,877,936	Committed	ODA	Concessional loan	Mitigation	Urban transport
AFD - Latin America	11,059,325	14,673,379	Committed	OOF	Non concessional loan	Adaptation	Water resources
AFD - Latin America	100,000,000	132,678,785	Committed	OOF	Non concessional loan	Mitigation	Energy efficiency
AFD - Latin America	223,697,785	296,799,502	Committed	OOF	Non concessional loan	Mitigation	RE/EE credit line
AFD - Latin America	97,437,063	129,278,311	Committed	OOF	Non concessional loan	Mitigation	Renewable energy
AFD - Asia	5,400,000	7,164,654	Committed	ODA	Concessional loan	Adaptation	Agriculture, forestry and natural resources
AFD - Asia	57,000,000	75,626,907	Committed	ODA	Concessional loan	Adaptation	Climate risk prevention
AFD - Asia	12,000,000	15,921,454	Committed	ODA	Concessional loan	Cross-cutting	Agriculture, forestry and natural resources
AFD - Asia	20,000,000	26,535,757	Committed	ODA	Concessional loan	Cross-cutting	Climate policy
AFD - Asia	50,000,000	66,339,392	Committed	ODA	Concessional loan	Mitigation	Energy efficiency
AFD - Asia	4,481,625	5,946,166	Committed	ODA	Concessional loan	Mitigation	RE/EE credit line
AFD - Asia	41,500,000	55,061,696	Committed	ODA	Concessional loan	Mitigation	Renewable energy
AFD - Asia	121,591,981	161,326,763	Committed	ODA	Concessional loan	Mitigation	Transmission lines
AFD - Asia	315,805,047	419,006,298	Committed	ODA	Concessional loan	Mitigation	Urban transport

AFD - Asia	2,500,000	3,316,970	Committed	ODA	Grant	Cross-cutting	Agriculture, forestry and natural resources
AFD - Asia	775,000	1,028,261	Committed	ODA	Grant	Mitigation	Agriculture, forestry and natural resources
AFD - Asia	25,000	33,170	Committed	ODA	Grant	Mitigation	RE/EE credit line
AFD - Asia	144,477,320	191,690,753	Committed	OOF	Non concessional loan	Mitigation	RE/EE credit line
AFD - Asia	23,434,838	31,093,058	Committed	OOF	Non concessional loan	Mitigation	Renewable energy
AFD - Mediterranean	30,000,000	39,803,635	Committed	ODA	Concessional loan	Adaptation	Water resources
AFD - Mediterranean	70,000,000	92,875,149	Committed	ODA	Concessional loan	Mitigation	Fuel switch and other
AFD - Mediterranean	100,000,000	132,678,785	Committed	ODA	Concessional loan	Mitigation	Renewable energy
AFD - Mediterranean	56,859,635	75,440,673	Committed	ODA	Concessional loan	Mitigation	Urban transport
AFD - Mediterranean	50,500,000	67,002,786	Committed	OOF	Non concessional loan	Mitigation	Fuel switch and other
AFD - Mediterranean	5,000,000	6,633,939	Committed	OOF	Non concessional loan	Mitigation	RE/EE credit line
AFD - Mediterranean	38,399,242	50,947,647	Committed	OOF	Non concessional loan	Mitigation	Renewable energy
AFD - Multi-country	500,000	663,394	Committed	ODA	Grant	Adaptation	Agriculture, forestry and natural resources
AFD - Multi-country	3,675,660	4,876,821	Committed	ODA	Grant	Mitigation	Agriculture, forestry and natural resources
FFEM - Africa	1,200,000	1,592,145	Committed	ODA	Grant	Mitigation	Agriculture
FFEM - Africa (Cameroun)	500,000	663,394	Committed	ODA	Grant	Mitigation	Energy
FFEM - Asia (Indonesia)	500,000	663,394	Committed	ODA	Grant	Mitigation	Energy
FFEM - Africa (Kenya)	500,000	663,394	Committed	ODA	Grant	Mitigation	Energy
FFEM - Latin America (Argentina)	1,000,000	1,326,788	Committed	ODA	Grant	Adaptation	Cities
FFEM - Africa (Madagascar)	1,065,000	1,413,029	Committed	ODA	Grant	Mitigation	Energy
FFEM - Africa (Guinea)	1,000,000	1,326,788	Committed	ODA	Grant	Mitigation	Energy
FFEM - Africa	2,000,000	2,653,576	Committed	ODA	Grant	Mitigation	Energy
FFEM - Latin America (Mexico)	1,550,000	2,056,521	Committed	ODA	Grant	Adaptation	Cities
FFEM - Africa (Senegal)	500,000	663,394	Committed	ODA	Grant	Mitigation	Energy
FASEP - Asia	387,600	514,263	committed	ODA	Grant	Mitigation	Sustainable urban planning
RPE - Asia	5,280,000	7,005,440	committed	ODA	Concessional loan	Mitigation	transport
RPE - Mediterranean	68,800,000	91,283,004	committed	ODA	Concessional loan	Mitigation	Transport
FASEP - Asia	90,000	119,411	committed	ODA	Grant	Mitigation	Transport
FASEP - Africa	498,000	660,740	committed	ODA	Grant	Mitigation	Renewable energy
FASEP - Mediterranean	62,400	82,792	committed	ODA	Grant	Mitigation	Energy efficiency
RPE -Asia	34,000,000	45,110,787	committed	ODA	Concessional loan	Mitigation	Transport
FASEP - Latin America	800,000	1,061,430	committed	ODA	Grant	Mitigation	Sustainable urban planning
FASEP - Asia	799,600	1,060,900	committed	ODA	Grant	Mitigation	Sustainable urban planning

V.3 - Technological cooperation

In addition to bilateral and multilateral development aid channels, France is also involved in many international projects and forums which generate extensive technological cooperation with a large number of stakeholders. This cooperation is intended as a transfer, in the broad sense, of the know-how, methods or tools necessary for implementing low-carbon transition technologies.

Since the sixth French national communication the technological situation has changed a great deal. Low-carbon sectors have been developed and deployed on a large scale especially in the renewable and energy efficiency energy sector. More and more countries want to implement these technologies, in the North and in the South, as the number of countries with a renewable energy production target is estimated at 164[13], half of which are developing countries.

Bilaterally, this cooperation is carried out through work with Africa in particular, but also large emerging countries such as Brazil, Indonesia and China. This particularly consists of strategic cooperation in the renewable energy and energy efficiency sector.

In this public policy implementation phase, the private sector and decentralised cooperation play a particularly important role as operational stakeholders in developing the necessary capacities on the ground to implement low-carbon projects that support these technological transfers. French businesses and local authorities are particularly active in this area and are developing mature and innovative projects in an increasing number of countries. On 21 May 2015, Laurent Fabius, France's Minister of Foreign Affairs and International Development, and Matthias Fekl, Secretary of State for Foreign Trade, Tourism and Expats, appointed Jean Ballandras, Company Secretary of Akuo Energy, as the government's "Renewable Energy" Export Ambassador. He will be responsible for promoting the French renewable energy sector abroad and for accelerating the deployment of practical solutions on the ground. This action will help to strengthen technological cooperation with various countries in the renewable energy field.

Multilaterally, France's technological cooperation is made through large international energy partnerships such as the International Energy Agency (IEA) and especially within the IEA's international low-carbon technologies platform set up in October 2010, the CEM (Clean Energy Ministerial) initiative and the IPEEC (International Partnership for Energy Efficiency Cooperation). In the wider context of making the SE4All (Sustainable Energy for All) scheme operational, the increasing potential of the IRENA (International Renewable Energy Agency), a recent agency with a strong vocation of providing support to countries, to which France is the sixth largest contributor, is worthy of note. Extensive multilateral treaties should also be mentioned. The most important of these is the United Nations Framework Convention on Climate Change (UNFCCC) which supports and speeds up technological transfers and experience sharing. It has created a mechanism for technology transfer to support developing countries in mitigating and adapting to climate change, which it is the process of putting into operation. The work of UNEP (United Nations Environment Programme) and FAO (Food and Agriculture Organization) also encourages the sharing of experience and tools required for low-carbon transition.

Technological cooperation as represented in table CTF 8 should be understood in the broad sense, and includes transfers of the necessary knowledge, methods or tools for implementing low-carbon transition technologies. Table CTF 8 presented here is not intended to be exhaustive, but aims to show, by means of a few examples, how French public and private sectors have taken up the issues at all levels. This generates extensive technological cooperation going beyond the traditional bilateral and multilateral development aid channels.

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Table 8: Provision of technology development and transfer support[a,b]

Recipient country and/or region	Targeted area	Measures and activities related to technology transfer	Sector[c]	Source of the funding for technology	Activities undertaken by	Status	Additional information[d]
Kazakhstan	Mitigation	A French industrial consortium has been carrying out a project in Kazakhstan since 2011 to supply turnkey factories for the whole photovoltaic production chain. This structural industrial programme was possible because of financial support from the State through a FASEP programme allocated to CEIS and scientific and institutional support from CEA, a public research organisation.	Energy, Industry	Private and Public	Public	Implemented	The photovoltaic production factories are vertically integrated. With total capacity of 60 MW, the various production technologies (wafer, cell and module) were transferred by French companies ECM Technologie and SEMCO Engineering, under the coordination of the CEIS. This project amounting to a total amount of €165 million includes the supply of equipment made in France by a dozen SMEs as well as the transfer of technology and know-how by these companies. In addition, a training component was provided in France to train operational Kazakh teams at the forefront of the technology. The first production phases have started and consequently Kazakhstan is now considered an industrial producer of photovoltaic panels.
Chile	Mitigation	The Research Department of Engie is supporting a pilot concentrated solar power facility, with the aim of really capitalising on this experiment. This initiative reinforces local development and innovation.	Energy	Private	Private	Implemented	This 2.5 MW global pilot project called EOS I, consists of injecting steam produced from a concentrated solar power plant directly into a high pressure turbine of an existing coal-fired electricity production unit at Mejillones, in the north of Chile. This technology enables 800 kg of coal per second to be saved in this 2.5 MW unit.
Chile	Mitigation	DCNS, a global leader in marine renewable energy, heads an international consortium selected to build a marine renewable energy research centre in Chile.	Energy	Private	Private and Public	Implemented	The consortium includes ENDESA, one of Chile's leading energy providers, as well as Chilean universities, institutes, leading research centres and technology developers. In October 2014, it was selected by CORFO (Corporación de Fomento de la Producción), the Chilean government's economic development body, to establish an international marine renewable energy research centre in Chile, under the name MERIC (Marine Energy Research and Innovation Centre).
Brazil	Mitigation	Tractebel, a subsidiary of the Engie group, in collaboration with the Institute of Research of the University of Rio de Janeiro, the National Agency of Electrical Energy, and Brazilian businesses, is developing a prototype wave energy converter	Energy	Private	Private and Public	Implemented	While this project demonstrates that it is possible to capture wave energy, more research is still needed to improve the technology and bring it to maturity.
Brazil	Adaptation	The Local Climate and Energy Adaptation Plan is co-funded by AFD, ADEME and the	Other (cross-sector)	Public	Public	In progress	Based on the PACE model adopted by Rio Grande do Sul, the Minas Gerais State authority adopted its PCET in September 2013, through a decentralised cooperation process (AFD, ADEME and

		Nord Pas de Calais Region. One of the components of the PCET focuses on the development of renewable energies in the Minas Geiras region.					the Nord Pas de Calais Region). In November 2013, ADEME, FEAM and the Nord Pas de Calais Region signed a cooperation agreement relating to support for the development of a comprehensive, integrated climate strategy. This project covers the completion of a GHG emissions and territorial vulnerability assessment, and the development of a PCET devoted to climate change adaptation and emissions reduction. The plan is expected to lead to the implementation of various practical actions.
Indonesia	Mitigation	Indonesian group PT Pertamina and French company Akuo Energy signed a memorandum of understanding in February 2015, covering the development and deployment of new power plants in Indonesia, based exclusively on renewable energies. The aim is to achieve a total operational portfolio of 560 MW.	Energy	Private	Private	Implemented	The aim of the partnership is to jointly build and deploy fully integrated business lines covering wind, solar and ocean thermal energy (OTE). DCNS will act as Akuo Energy's industrial partner for OTE deployment.
Indonesia	Mitigation	Engie is deploying its geothermal expertise in Indonesia.	Energy, Industry	Private	Private	In progress	Engie is developing three projects (in Muara Labuh, Rajabasa and Rantau Dedap), in conjunction with local company PT Suprem Energy. Located on the island of Sumatra, these projects account for total power output of 680 MW. The plants will be operational in 2016.
India	Mitigation	A number of French solar companies operate in the Indian market. These include EDF Energies Nouvelles, which entered the Indian photovoltaic market in December 2013 via a joint venture with a local partner (ACME Cleantech, 50%) and a French partner (EREN, 25%).	Energy	Private	Private and Public	Implemented	ACME Solar is one of the most active and successful operators in the local market, with 30 MWp in operation, 150 MW commissioned in July (NSM and Odisha) and around 420 MW in the pipeline via several successful, highly competitive tender bids with multiple Indian States.
Eau	Mitigation	In partnership with other companies, Total is participating in the Shams Power Company joint venture which, in March 2013, constructed and developed Shams 1, the world's largest operational concentrated solar power station, using parabolic mirrors.	Energy	Private	Private	Implemented	This solar power station with 100 MW capacity will supply 20,000 homes in the United Arab Emirates (UAE) and save about 175,000 tonnes of CO2 per year. Integrating the most recent cylindrical-parabolic technologies and a dry cooling system which significantly reduces water consumption, Shams 1 illustrates the effectiveness of collaboration between the various companies in bringing about large-scale environmentally friendly energy solutions that meet the world's growing energy demands and contribute towards the diversification of energy mixes. Total's contribution to this project stands at 20%, with Abengea Solar and Masdar contributing 20% and 60% respectively.
Algeria	Mitigation	French company Vincent Industrie and Algerian firm	Energy, Industry	Private	Private	In progress	The NICE technology was developed in partnership with Apollon Solar and Vincent Industrie, which specialises in the

		Aurès Solar (in which Vincent Industrie holds a 49% stake) are developing a production plant that will manufacture ultra-high-yield solar panels, using NICE (New Industrial solar Cell Encapsulation) technology, in Batna. This €10 million project will be capable of producing 25 MW of NICE solar panels each year (approximately 100,000 panels).					production of automated equipment and machines. The solar panel production line will be installed in the Ain Yagout industrial zone in Batna. The project will be conducted in the first half of 2015.
Morocco	Mitigation	Engie has developed the largest wind farm in Africa, in partnership with Moroccan energy firm Nareva. The Tarfaya wind farm is designed to supply electricity to Morocco's National Office of Electricity and Drinking Water (ONEE).	Energy, Industry	Private	Private	Implemented	The wind farm was built by Tarfaya Energy Company (TAREC), a joint venture in which both partners have a 50% stake. It was commissioned in Tarfaya on 8 December 2014. The wind farm has 130 wind turbines, each producing 2.3 MW, with a total power output of 301 MW. Total investment in the project stood at approximately €450 million, and the loan was provided by a consortium of three Moroccan banks. The funding package was finalised in December 2012.
Gabon	Mitigation	Redevelopment of the "Anguille" offshore drilling platform, opened in 1966 and owned by Total Gabon (75% by Gabon law, in which Total Group holds a 58% stake, and 25% by the government of Gabon)	Energy, Industry	Private	Private	Implemented	This project will significantly reduce GHG emissions from the gas flare. During the first two phases of the project, a significant volume of the work was conducted by Gabonese companies. The third phase involved the installation of a low-pressure gas turbine for the neighbouring "Torpille" platform. The Gabonese teams benefited from Total's expertise in limiting gas flare burning. The Gabonese firms will be responsible for day-to-day operation of the platform.
Africa	Mitigation and Adaptation	The French Global Environment Facility (FFEM) (€1.5 million) and the French Development Agency (ADF) (€1.5 million) fund Africa4Climate, a support programme for the definition of low-carbon climate resilient development strategies, created in 2012 for a period of four years. This programme includes a technology transfer section and a marked adaptation component.	Other (cross-sector)	Public	Public	Implemented	The low-carbon climate resilient development strategy aims to create an integrated global framework, enabling an overall view of the priority fields to be obtained and synergies created between them. The programme initially focuses on four countries: Uganda, Benin, Gabon and Kenya, and will subsequently be extended to other countries. In each target country the project will include a basic technology identification and institutional structuring phase, a technical assistance programme and predefined capacity building implementation phase and a capitalisation phase.
Africa	Adaptation and Mitigation	Creation of six decentralised service companies (SSDs)	Other (cross-sector)	Private and Public	Private	Implemented	The aim of the project is to sell decentralised energy services, to improve the daily lives of rural households, and to

		in five countries (South Africa, Botswana, Mali, Morocco and Senegal) by EDF, with the support of ADEME. The aim of this project is to ensure the viability of electrification projects in rural areas, and to secure their long-term productivity. These projects have been supplying electricity to more than 450,000 people since 2013.					deliver health and environmental improvements. The SSD installs and maintains electricity installations within communities of 60 to 150,000 people. The key strength of the SSD is its ability to integrate with the local community, working with local businesses and personnel. EDF intends to extend this type of project to cover an additional 1 million people (mainly in Africa and Asia) over the next five years.
Africa, Asia	Mitigation and/or Adaptation	In June 2015, France and China adopted a joint declaration on Franco-Chinese partnerships in third markets. A number of projects will be implemented within this framework, with a particular emphasis on global climate change projects. Implementation of this declaration should provide an opportunity to demonstrate the capacities of both countries to deploy innovative climate funding mechanisms.	Energy	Private and Public	Private and Public	In progress	In particular, the declaration mentions the following sectors: renewable energy, energy efficiency, and natural disaster prevention, warning and reduction. New projects will be identified in the coming months in the run-up to the COP21 conference, and the project funding procedures will be subject to specific discussions between France and China.
Indian Ocean islands	Adaptation	The French Global Environment Facility (FFEM), the French Ministry of Foreign Affairs, the French Development Agency (AFD) and the Reunion Region funded the ACClimate project (€1.7 million), which addressed adaptation to climate change in the islands of the Indian Ocean.	Other (cross-sector)	Public	Public	Implemented	Launched in 2008, at the initiative of member countries of the Indian Ocean Commission, ACClimate was the first project of its kind in the south-west Indian Ocean. Its main aims were to: - better understand climate changes at the regional scale - identify vulnerabilities to the impacts of climate change - draw up a regional adaptation strategy which enables these vulnerabilities to be reduced. The project was completed on 31 December 2012. The IOC Council has adopted a framework document covering the regional climate change adaptation strategy. The IOC Secretary General, Jean-Claude l'Estrac, has issued a formal request for funding to secure the long-term viability of these actions.
World	Mitigation	France is a founding member of the International Energy Agency (IEA), and its headquarters are based in Paris. In particular, the IEA supports and accelerates technology transfer, as well as experience-sharing	Energy	Public	Public	Implemented	Founded in the OECD in 1974, after the first oil crisis, its initial mission was to coordinate the measures to be taken in time of oil supply crises. While this mission is still one of its core activities, its mandate has steadily grown to include energy security, sustainable economic development and more recently, climate issues. The IEA makes it easier to coordinate the energy policies used by its 29 member countries to ensure their citizens are

		in the fields of energy and energy efficiency.					supplied with clean, reliable energy at affordable prices. The IEA is the reference organisation in the energy sector and every year it produces the reference report on energy matters at world level, the World Energy Outlook (WEO).
World	Mitigation and Adaptation	Through human and financial support and improved cooperation, France is actively working within IRENA (International Renewable Energy Agency) to facilitate energy transition to low-carbon growth in developing countries. France is the sixth largest contributor to the Agency (US$1.4 million in 2012).	Energy	Public	Public	Implemented	The increased power of the agency, created in 2009 and now comprising a hundred members, is worthy of mention. The agency aims to operate by providing a support platform for countries wishing to implement renewable energies. It enables tools to be developed and shared that encourage the deployment of renewable energies on a large scale and in all countries. Its specific support for developing countries, including the least developed and small islands, is considered a priority by France. The work of this Agency now fits into the unifying framework of the Sustainable Energy for All (SE4All) measure proposed by the Secretary General of the United Nations. Pursuing three major objectives for low-carbon development, this broad initiative has catalysed action by offering a common framework and greater visibility to these issues. France is actively participating in this initiative, directly by providing human support or by mobilising its cooperation stakeholders on the ground, or indirectly through the work of the European Union and the financial facility put in place. France considers access to energy very important and supports this issue through its cooperation projects.
World	Mitigation and Adaptation	France is one of the main financiers of the United Nations Environment Programme (UNEP). This programme helps to spread technologies and know-how for tackling climate change by means of several programmes, such as the 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP). UNEP also hosts the Climate Technology Centre and Network, which is the operational arm of the UNFCCC Technology Mechanism.	Other (cross-sector)	Public	Public	Implemented	UNEP's main objectives are: - To promote international cooperation in the environment sector and recommend policies geared in this direction. - To study the world environmental situation to ensure that problems of international scale in this area are the subject of appropriate examination by governments. - To manage the resources of the Environment Fund, which funds UNEP's work. It should be noted that France is the fourth-largest contributor to these funds, with an annual contribution of US$5,850,000 in 2012. With regard to the 10YFP, France was actively involved in the development of this framework and led one of the seven working groups of the Marrakech Process (sustainable tourism). France currently holds the Vice-Presidency of the Global Partnership for Sustainable Development (2013-2015), after holding the Presidency for two years. France is also involved in other 10YFP programmes, especially those relating to consumer information and sustainable buildings.

[a] To be reported to the extent possible.

[b] The tables should include measures and activities since the last national communication or biennial report.

[c] Parties may report sectoral disaggregation, as appropriate.

[d] Additional information may include, for example, funding for technology development and transfer provided, a short description of the measure or activity and co-financing arrangements.

V.4 - Capacity building

The thematic spectrum of France's technology transfer has expanded over the years. The second biennial report provides an opportunity to highlight progress achieved in terms of discussion and communication surrounding climate change mitigation and adaptation frameworks and tools.

Climate change adaptation

France is involved in various projects in which it shares its adaptation policy planning experience with developing countries. France had its own adaptation strategy since 2006, and a national adaptation plan was published in 2011. Evaluation of the national plan was conducted in 2015.

France has participated in several projects including one on the islands of the Indian Ocean, particularly following the ACClimate project, which aimed to improve its members' capacity to adapt to climate change. Based on the studies conducted, a regional adaptation strategy was developed jointly by Acclimate and IOC member countries[14]. The strategy was approved at the 28th meeting of the IOC Council of Ministers in January 2013. The cooperation project continues, with the aim of establishing a data-sharing network between countries in the western Indian Ocean (see: http://www.acclimate-oi.net/).

The Africa4Climate project was launched in 2012, and received a three-year budget of €3 million from AFD and FFEM. The project seeks to strengthen the capacities of four African countries, enabling them to incorporate climate change into their national policies. This project is particularly innovative in the use of international and national experts to support local partners. Since the launch of the project, Expertise France has mobilised around 30 experts specialising in the analysis and integration of climate change causes and impacts. The aim of the Africa4Climate project is to build links between local initiatives and to provide authorities with the tools and skills they need to incorporate climate change issues into their action. Africa4Climate may be adapted in other countries in the longer term.

Preparation of Intended Nationally Determined Contributions (INDCs)

Another example is the provision of support in the preparation of Intended Nationally Determined Contributions (INDCs). This facility, implemented in 2015 prior to the COP21 conference, focuses on island states and African countries. It has so far provided technical assistance and capacity building to national partner institutions, in their efforts to prepare their INDCs. Around 30 countries have so far benefited from capacity building.

Establishment of a national reporting system (GHG inventory, projections, preparation of NAMAs)

Since 2014, France has been technically and financially involved in the activities of the "Francophone Cluster", working with Belgium and Germany to fund capacity building workshops for French-speaking developing countries. The Francophone Cluster is an initiative of the International Partnership on Mitigation and MRV. It was created in 2013. Its purpose is to share information, expertise and experience between French-speaking partners (both developed and developing countries), covering GHG inventories, NAMAs, the MRV process and the formulation of INDCs. Various workshops were held between 2013 and 2015 (see http://mitigationpartnership.net/cluster-francophone), and a fringe event was held during the COP21 in Paris to present feedback from these workshops.

[14] *The Indian Ocean Commission (IOC) is an intergovernmental regional cooperation organisation with five Member Countries: Union of Comoros, France (Reunion), Mauritius, Madagascar and the Seychelles.*

Examples of capacity building initiatives are presented in table 9.

Table 9: provision of capacity building support

Recipient country/ region	Targeted area	Programme or project title	Description of programme or project [b,c]
Benin, Gabon, Uganda, Kenya	Mitigation, adaptation, INDC	Africa4Climate	Support for the development and implementation of low-carbon climate resilient development strategies in Africa, funded by AFD and FFEM and implemented by Expertise France.
South Pacific	Adaptation	Climate Change Week 2015	Feedback and testimonials on implementation of the national adaptation policy.
Western Indian Ocean	Adaptation	Indian Ocean Commission	Support from ONERC in 2014 on the definition of a data-sharing network in the western Indian Ocean, involving all national delegations in the region.
Africa	Multiple Areas	AMMA	In relation to GCOS in Africa, AMMA's international experience has been extended since 2010. AMMA-CATCH, the observation system for long-term monitoring of the impacts of the monsoon in West Africa, has been retained. It was initiated by the MESR (French Ministry for Higher Education and Research) and receives support from the IRD (French Institute for Development Research) and INSU (French National Institute for Universal Science). The data collection process continues in 2015.
Mediterranean Basin	Multiple Areas	MISTRALS	Launched in 2008 and expected last until 2020, the area covered by MISTRALS was extended in 2010. This is an international meta-programme of basic interdisciplinary and systematic research and observations dedicated to understanding how the environment in the Mediterranean Basin operates and develops under the pressure of global human-generated change in order to predict future change. In addition to an academic purpose, MISTRALS is also intended to transform the research objectives and results into concepts and data accessible to decision-makers, regional stakeholders and managers, in order to identify national and transnational needs and to respond to societal, environmental and economic issues for the sustainable development of countries and populations sharing the Mediterranean sphere. http://www.mistrals-home.org/spip/spip.php?rubrique39
Africa, SIDS	Mitigation, Adaptation	French INDC preparation facility	Preparation of INDCs for around 30 countries
Africa	Mitigation	Francophone Cluster	Training on NAMAs, GHG inventories and INDCs – three workshops (2013, 2014, 2015)
Southern Europe, Mediterranean Basin, Europe, Vietnam	Adaptation	Bilateral and multilateral cooperation	The French National Observatory on the Effects of Global Warming has participated in various projects: - The adaptation steering group set up by the European Commission to develop a community strategy for adaptation to climate change (2013-2014-2015) - The work of the European Environment Agency: - Updating of the Climate-ADAPT platform - Participation in drafting thematic reports

Recipient country/ region	Targeted area	Programme or project title	Description of programme or project [b,c]
			- Multilateral meeting with other European countries to share public policy adaptation evaluation experience (Copenhagen, 2015) - Multiple presentations at seminars and conferences organised in the run-up to the COP21 conference, including Oslo, Prague, Sofia, Bucharest, Zagreb, Algiers, etc. - Hosting of delegations from countries such as Bosnia, Japan and Turkey - Multilateral dialogue with countries of the Alpine arc in the context of the Alpine Convention (Vienna, 2013, 2014 and 2015) - Poland-France bilateral workshop on adaptation policies (Warsaw, 2014) - Joint Presidency of the Franco-Chinese high-level expert group on climate change (Paris June 2014, Beijing April 2015) Météo-France and the Ministries concerned participate in work to implement the global framework for climate services as part of the WMO.

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Appendix II: Financial calculation methodology

Annex – Methodologies for the reporting of France's climate finance in the second biannual report, 2013-2014 data

1) Methodologies for the reporting

a. Definition

- **Currency exchange rates**: Data is reported in euros and dollars. Official OECD currency exchange rate for each relevant year.
- **Sectors:** France's reporting is based as closely as possible on the DAC definitions. The sectors were determined at project level for bilateral contributions (each institution/instrument might use a slightly different methodology).
- **Climate relevant, adaptation and mitigation**: For multilateral reporting, DAC definitions are used. For bilateral contributions, this was done at project level (each institution/instrument uses a slightly different methodology). Indeed, the French Development Agency (AFD), representing the major part of France's bilateral climate commitments, has developed a robust methodology to determine whether a project is climate-relevant and whether its activities are mitigation, adaptation or cross-cutting. This methodology is also applied for adaptation and mitigation by the French Global Environment Fund (FFEM).

AFD defines a "climate" project as a development project with one or more of the following three types of co-benefits with regard to climate issues : (i) mitigation, (ii) adaptation, (iii) support for the implementation of climate policies.

A project contributes to mitigation when the emission reductions it brings about are higher than the emissions it generates during its lifespan. A project is recognized as a "climate/mitigation" project when: (1) either the estimation of its carbon footprint shows that it reduces or avoids (for renewable energy projects) GHG emissions; (2) or, if the carbon footprint cannot be estimated when the commitment is approved, this financing is devoted to actions which contribute to mitigation (studies, capacity building and intermediated bank credit lines for renewable energy and energy efficiency projects).

Projects (or project components) which limit the vulnerability of goods, persons and ecosystems to the consequences of climate change are considered as contributing to adaptation. For a project to be recognized as a "climate/adaptation" project, the analysis must demonstrate that it potentially contributes to reducing the vulnerability to climate change identified in the project area. A comparative analysis is conducted for this including (i) a study of the vulnerabilities to climate change in the project's geographical area (ii) an analysis of the activities planned by the project in light of a positive list of actions that can contribute to reducing vulnerability or to strengthening the resilience of communities, goods or ecosystems to climate change.

There are three possibilities for the recognition of budget support and sector-specific aid: (1) Budget support specifically for the climate (climate loans or support for national climate plans) is 100% recognized; (2) For the other budget support or for the support for local authorities, the methodology used aims to reflect the content of the political and sector-specific dialogue with the counterpart (joint monitoring of in-

dicators) and the impacts on the fight against climate change from the integrated approach that this promotes. This method is based on a proportional accounting of the climate monitoring indicators compared to all the indicators in the monitoring matrix for the public policies implemented. It is backed up by a positive list of actions which, by their nature, are considered to have a climate co-benefit; (3) In the absence of standardized indicators shared with the counterpart to monitor its public policies, there is the possibility to take into account up to 40% of the financing provided there is a cross-cutting "climate" activity that allows the dynamics underlying the action of the local authority or government to be apprehended.

For the 2 other instruments, FASEP and concessional loans from the French Treasury (ex-RPE), France has intended to identify projects matching the RIO marker of the OECD Creditor reporting system (CRS) data base, that suggests to use the MDB/IDFC positive list to identify which projects can be counted as mitigating climate change is used. For adaptation the AFD/FFEM methodology is used as a framework, as it is not possible, at least at this stage, to conduct a thorough analysis of the actual vulnerability of the geographical area. Once the review of the projects is made, the amount considered as climate financing is counted as 100% of the commitment if the RIO marker is flagged as "principal" and 40% if flagged as "significant".

- **Double counting:** We have made a risk assessment and identified at this stage that the only risk of double counting concerned the delegated funds from the European Union to AFD, which we excluded from our reporting.

- **Definition of recipients:** We have taken into account OECD-DAC ODA eligible recipients excluding Annex I countries (Turkey, Ukraine and Belarus).

- **Financing source:** France distinguished flows recordable as ODA from flows recordable as OOF according to DAC definitions.

b. Core-general/Climate specific (for multilateral channels)

- **Climate specific:** France reported on multilateral climate-specific contributions, taking into account only the contributions to multilateral climate funds or environment funds with dedicated climate activity. For the purposes of this report, we did not report our core contributions to multilateral development banks. For the GEF, the amount provided has been multiplied by 32%, which is the percentage corresponding to the programming for the climate change focal area for the 2011-2014 period.

c. Provided/committed/pledged

We reported on the money provided (disbursements) for multilateral entities and committed for bilateral projects: board approval commitment for the AFD flows and FFEM instruments; and financial closure for the RPE/FASEP (commitment according to the DAC definition). We think this gives the clearest view of the state of our contributions to climate change. Please also note that the 1bn dollar pledge made by France for the 2015-2018 period to the GCF has not been reflected in the tables and that the Adaptation Fund contribution made at the beginning of 2015 is not reflected either.

d. Level of detail

For bilateral reporting, France reported to the finest detail level possible considering the information available and the specific processes of each institution. This level of detail ranges from a regional approach for some instruments (AFD) to a project level detail for the French Fund for the Global Environment (FFEM) and the French Treasury (FASEP and RPE instruments).

e. Technology transfer and capacity building

Technology transfer and capacity building are embedded in the activities of multilateral funds and also in the projects and programmes bilaterally undertaken. Some technology projects and programmes are included in the tables below, within the finance provided to developing countries, as these are cross-cutting issues embedded in the different bilateral instruments' activities and project financing.

f. Private finance

France has commissioned a study so as to identify the private finance leveraged towards mitigation and adaptation activities in developing countries and policies/measures/actions that promote the scaling up of private investment.

This study aimed to quantify the mobilisation by French public actions of private climate finance during the period 2013-2014 in developing countries.

The work is limited to the French bilateral instruments of AFD, FFEM, French Treasury (FASEP and RPE). It is important to note that it was possible to measure private climate finance for the public actions by AFD, Proparco and FFEM. Based on data collected on RPE-FASEP, it was not possible to measure private mobilisation by these instruments. For the credit lines of the AFD and Proparco, there was no data on actual figures, but it was possible to make an estimation. Guarantees were not included.

Key methodological choices

- **Definitions:**
    - Categorization of actors based on >50% public ownership according to OECD-DAC definition, with a filter extracting out French state-owned enterprises acting as "prudent investors"
    - 100% of finance deployed by these institutions are considered public finance
    - No apportioning - 100% of the finance provided by the entity recorded either as public or as private (applying the first point)
- **Classifying developed and developing countries:**
    - Use existing UNFCCC Annex I, non-Annex I, Annex II categories
- **Assigning a geographical origin to finance:**
    - Geographical origin is assigned using the concept of "residence" where possible, based on the transactor's centre of economic interest (rather than nationality or legal criteria), as defined in the OECD work on FDIs (Foreign Direct Investments).
    - Pro rata if multiple country ownership
    - All private climate finance flows count (incl. domestic), but distinguish that originating from Annex I countries
- It was not always possible to make a distinction between **private finance originating from Annex I countries and Non-Annex I countries**. It was possible for the budget lines of FFEM and AFD, excluding the credit lines. **Types of public interventions:**
    - We distinguish between Policy and Project preparation and support. Only the project support (project finance) is included in the calculations

- **Specific instruments:**
    - Credit lines: a dedicated methodology is developed for credit lines based on assumptions
    - Impact of TA or grants for policy support of project preparation are not included in the numbers.
    - Guarantees not included either.
- **Currency and conversion:**
    - USD – OECD conversion rate methodology
- **Point of measurement:**
    - AFD and Proparco: board approval
    - FFEM: board approval and disbursement
    - RPE-FASEP: board approval and disbursement
- **Value of public interventions:**
    - All instruments are calculated at face value.
- **Boundaries and value of total private finance**
    - Include all private finance (co-financing) within the scope of a particular project (and apply pro-rata, based on the share of the French public finance in the total amount of public finance for the project)
- **Data availability:**
    - Collect data at project-level.
    - For credit lines proxies are used.
    - Review period: **2013-2014** (limited due to data collection constraints)
- **Causality:** all private finance identified (co-financing) is assumed to have been mobilised by the public intervention. When other public donors involved it is attributed pro-rata based on the share of the French public finance in the total amount of public finance for the project.

For credit lines, there are three options possible to determine public or private status for local banks:

a. To follow the OECD definition of >50% public ownership and treat all banks with over 50% public share-holders as public finance

b. As all these local banks (public or not, development bank or not) operate under strict commercial rules similar to private banks we calculate all of it as private finance

c. To make a difference between local public development banks as public finance because of the explicit public development goal but the other local banks (even when >50% publicly owned) as private local finance.

For the purposes of this report, the numbers presented are following the first option, more conservative.

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