

France

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1. SUMMARY

This country profile is mainly based on the submission 2007.

The French Report 2007 includes comprehensive information on policies and measures as well as projections. Compared to the information provided in the 4th national communication the level of detail has decreased, especially estimated emission reductions of individual measures are lacking. The information on projections by sector and gas is incomplete, but national totals seem to include all sectors and gases.

With the policies and measures included in the 'with existing measures' (WEM) scenario France will not be able to meet its burden sharing commitment of stabilising 1990 emissions by 2010 completely. The gap comprises about 1% of base year emissions; an overachievement of the target by 3.4 % is projected in the 'with additional measures' (WAM) scenario. France has started to implement institutional steps necessary for using the Kyoto mechanisms but intends to meet its Kyoto target through domestic action alone. France encourages French companies to participate in JI and CDM projects and estimates this engagement with 15.3 Mt reductions in 2010 within the EU emission trading. Emission trading is not included in the 'with existing measures' scenario but in 'with additional measures' scenario. In the 4th National Communication (NC) reductions from EU-ETS are estimated to be 3.2 Mt. With these reductions France could achieve its target without the need for adopting new measures, provided that existing measures and EU-ETS deliver as estimated in the projections.

Changes compared to previous projections:

In the year 2006 the gap between burden sharing commitment and WEM scenario was estimated at 35 Mt CO₂-eq. for 2010. In the WAM variant emissions were projected to meet the Kyoto commitment exactly. The 2007 projections estimate a gap of 5 Mt (1%) in the WEM scenario and an overachievement of 19 Mt (3.4%) in the WAM scenario for 2010.

2. GHG PROJECTIONS AND PROGRESS TO KYOTO TARGETS

The Kyoto base year is 1990 for all gases.

The French Report 2007 provides WEM and WAM scenarios, but no 'without measures' (WOM) scenario. It gives only some general explanations on the modelling approach applied. For the final energy demand by sector a technical-economic model has been used. The effects of the EU emissions trading system are not included in the model but simulated based on different CO₂ price assumptions. Starting year for the projections is 2005. Non-energy related projections are based on expert

judgements of each administration concerned by the field studied. These are also completed by information from business associations. Population assumptions are given excluding overseas territories and departments although the emission projections include overseas departments.

In the year 2006 the gap between burden sharing commitment and the WEM scenario was estimated at 35 Mt CO₂-eq. for 2010. In the WAM variant emissions were projected to meet the Kyoto commitment exactly. The 2007 projections estimate a gap of 5 Mt (1%) in the WEM scenario and an overachievement of 19 Mt (3.4%) in the WAM scenario for 2010. However, sectoral projections lack completeness, since some essential figures are missing, e.g. for industrial processes (only F-gases quantified) and energy (industry and construction) or methane and nitrous oxide (only agriculture quantified).

Projections for 2015 and 2020 are provided, but also have to cope with missing data. The respective values of CO₂-eq. are projected to remain at 5 Mt (1%) in the WEM scenario and drop to 44Mt (7.8%) and 70 Mt (12.4%) in the WAM scenario below 1990 levels.

Table 1 shows, for all gases and main sectors:

- GHG emission projections for the two scenarios “with existing measures” (WEM) and “with additional measures” (WAM), as reported by France;
- Historic emissions (in the “reference year”) as reported together with projections. For France, the reference year is 1990.

Table 2 shows, for all gases and main sectors:

- 1990 GHG emissions as reported in the latest (2008) GHG emissions inventory (1990-2006);
- Adjusted GHG emission projections for the WEM and WAM scenarios. This adjustment of the projections reported in Table 1 is carried out to allow consistency and comparability between projections and the latest (2008) GHG inventory data¹. In the case of France, the correction factor is very small (0.9987).

¹ The adjustment consists in applying an adjustment factor to projections from Table 1. This factor is the ratio between total emissions in the reference year as reported in the 2008 GHG inventory report (or, if the reference year is the base-year under the Kyoto Protocol, in the report of the review of the initial report under the Kyoto Protocol) and total emissions in the reference year as reported by the country with projections (Table 1).

France

Table 1. Summary of reported projections by sector and by gas in 2010 (Mt CO₂-eq.)

	Carbon dioxide			Methane			Nitrous oxide			F-gases (SF ₆ , HFCs and PFCs)			Total		
	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures
Energy (excl. transport)*	242.5	257.9	246.9	NE	NE	NE	NE	NE	NE	NE	NE	NE	242.5	257.9	246.9
Energy supply	153.0	148.0	142.0	NE	NE	NE	NE	NE	NE	NE	NE	NE	153.0	148.0	142.0
Energy – industry, construction	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.0	0.0	0.0
Energy – other (commercial, residential, agriculture)	83.0	105.0	102.0	NE	NE	NE	NE	NE	NE	NE	NE	NE	83.0	105.0	102.0
Transport (energy)	122.5	143.1	136.1	NE	NE	NE	NE	NE	NE	NE	NE	NE	122.5	143.1	136.1
Industrial processes	NE	NE	NE	NE	NE	NE	NE	NE	NE	9.3	22.6	18.9	9.3	22.6	18.9
Waste**	3.9	6.1	5.5	NE	NE	NE	NE	NE	NE	NE	NE	NE	3.9	6.1	5.5
Agriculture	NE	NE	NE	44.0	39.3	38.2	62.0	51.0	49.0	NE	NE	NE	106.0	90.3	87.2
Other	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.0	0.0	0.0
Total (excl. LULUCF)*	368.9	407.1	388.5	44.0	39.3	38.2	62.0	51.0	49.0	9.3	22.6	18.9	564.0	569.0	545.0

NE = not estimated

* reported sub-/total does not equal sum of subdivisions

** N₂O emissions included in CO₂ from waste

Source: Based on France's MM submission, March 2007

France

Table 2. Summary of projections by sector and by gas in 2010 compared to 1990 emissions (Mt CO₂-eq.)

	Carbon dioxide			Methane			Nitrous oxide			F-gases (SF ₆ , HFCs and PFCs)			Total		
	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures
Energy (excl. transport)*	249.1	257.6	246.6	11.3	NE	NE	2.8	NE	NE	0.0	NE	NE	263.3	257.6	246.6
Energy supply	70.7	147.8	141.8	7.2	NE	NE	0.6	NE	NE	0.0	NE	NE	78.5	147.8	141.8
Energy – industry, construction	84.8	NE	NE	0.1	NE	NE	0.8	NE	NE	0.0	NE	NE	85.8	0.0	0.0
Energy – other (commercial, residential, agriculture)	93.7	104.9	101.9	4.0	NE	NE	1.3	NE	NE	0.0	NE	NE	99.0	104.9	101.9
Transport (energy)	118.0	142.9	135.9	0.4	NE	NE	0.5	NE	NE	0.0	NE	NE	118.8	142.9	135.9
Industrial processes	22.0	NE	NE	0.0	NE	NE	24.4	NE	NE	10.0	22.6	18.9	56.4	22.6	18.9
Waste**	2.3	6.1	5.5	12.1	NE	NE	1.4	NE	NE	0.0	NE	NE	15.8	6.1	5.5
Agriculture	0.0	NE	NE	44.5	39.3	38.2	62.7	50.9	48.9	0.0	NE	NE	107.2	90.2	87.1
Other***	1.8	NE	NE	0.0	NE	NE	0.1	NE	NE	0.0	NE	NE	1.9	0.0	0.0
Total (excl. LULUCF)	393.2	406.6	388.0	68.3	39.3	38.2	91.9	50.9	48.9	10.0	22.6	18.9	563.3	568.3	544.3

* reported sub-/total does not equal sum of subdivisions

** N₂O emissions included in CO₂ from waste

Source: Based on France's MM submission, March 2007

France

Table 3: Summary of projections by sector and by gas in 2010 compared to 1990 emissions (index 100 = reference year)

	Carbon dioxide			Methane			Nitrous oxide			F-gases (SF6, HFCs and PFCs)			Total		
	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures	Reference year emissions	With existing measures	With additional measures
Energy (excl. transport)*	100	103.4	99.0	100	NE	NE	100	NE	NE	100	NE	NE	100	97.8	93.7
Energy supply	100	209.2	200.7	100	NE	NE	100	NE	NE	100	NE	NE	100	188.3	180.7
Energy – industry, construction	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	0.0	0.0
Energy – other (commercial, residential, agriculture)	100	111.9	108.7	100	NE	NE	100	NE	NE	100	NE	NE	100	105.9	102.9
Transport (energy)	100	121.2	115.2	100	NE	NE	100	NE	NE	100	NE	NE	100	120.3	114.4
Industrial processes	100	NE	NE	100	NE	NE	100	NE	NE	100	226.3	189.3	100	40.0	33.5
Waste**	100	265.5	239.3	100	NE	NE	100	NE	NE	100	NE	NE	100	38.6	34.8
Agriculture	100	NE	NE	100	88.3	85.8	100	81.2	78.0	100	NE	NE	100	84.1	81.3
Other***	100	NE	NE		NE	NE		NE	NE		NE	NE		0.0	0.0
Total (excl. LULUCF)	100	103.4	98.7	100	57.5	55.9	100	55.4	53.3	100	226.3	189.3	100	100.9	96.6

* reported sub-/total does not equal sum of subdivisions

** N₂O emissions included in CO₂ from waste

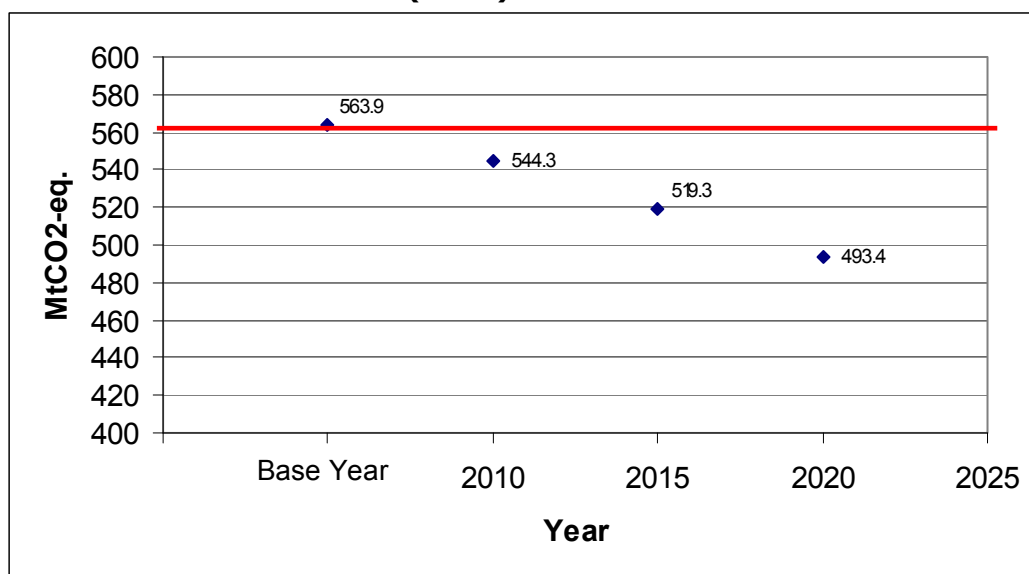
Source: Based on France's MM submission, March 2007

Table 4. Summary of projections in 2010 compared to base year emissions under the Kyoto Protocol

	Unit	Base-year emissions under the Kyoto Protocol	2010 projections 'with existing measures'	2010 projections 'with additional measures'
Total GHG emissions (excluding LULUCF)	Mt CO ₂ -eq.	563.3	568.3	544.3
	Index (base-year emissions = 100)	100	100.8	96.5

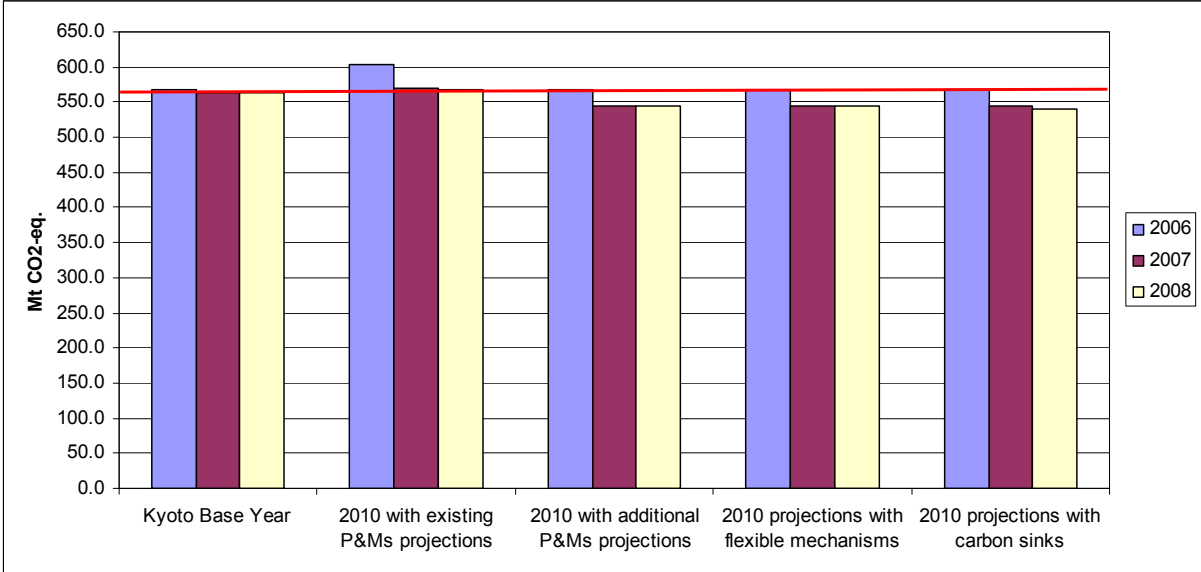
Source: France's MM submission, March 2007, and Annual greenhouse gas inventory 1990 – 2006, April 2008.

In Figure 1, the same correction factor used in Table 2 has been applied to the projections for 2010, 2015 and 2020.

Figure 1. Greenhouse gas projections in 2010, 2015 and 2020 (Mt CO₂-eq.) – 'with additional measures' (WAM) scenario

Source: Based on France's MM submission, March 2007

Figure 2. Comparison of 2010 projections reported in 2006, 2007 and 2008



Source: For 2006 data: French 4th National Communication to the UNFCCC ; 2007 data: Source: Based on France’s MM submission, March 2007; 2008 data: see 2007 and Questionnaire on the use of the Kyoto Protocol mechanisms and of sinks (2008)

3. CLIMATE CHANGE MITIGATION POLICIES AND MEASURES

No comparison of existing measures is possible between the top-down and bottom-up approaches since some essential figures are missing in the 2007 report. The largest emission reduction named in the policies and measures (PAMs) (total: 79.4 Mt CO₂-eq.) result from industrial processes (38.3 Mt/ 48%), transport (energy) (16.7 Mt/ 21%) and waste (14.4 Mt/ 18%).

Subject to the missing data in the top-down approach as well as the lacking quantification of several PAMs in the bottom-up one, however, a comparison of planned measures reveals that reductions named in the former approach (25.4 Mt CO₂-eq.) amount to two thirds of the latter (36.9 Mt). The highest emission reduction of planned PAMs is assumed to derive from transport (energy) (10.1 Mt/ 27%), energy supply (6.7 Mt/ 18%), industrial processes (6.2 Mt/ 17%) and energy (other) (6.1 Mt/ 17%).

Table 5. Summary of the effect of policies and measures included in the 2010 projections (Mt CO₂-eq.)

	Top down calculation		Bottom Up calculation	
	Existing Measures	Planned Measures	Existing Measures	Planned Measures
Energy (total, excluding transport)*	NE	11.0	2.1	12.8
Energy supply	NE	6.0	NE	6.7
Energy – industry, construction	NE	0.0		
Energy – other (commercial, residential, agriculture)	NE	3.0	2.1	6.1
Transport (energy)	NE	7.0	16.7	10.1
Industrial processes	NE	3.7	38.3	6.2
Waste**	NE	0.6	14.4	0.1
Agriculture	NE	3.1	0.9	4.8
Cross-sectoral	NE	0.0	7.0	2.9
Total (excluding LULUCF)	NE	25.4	79.4	36.9

* reported sub-/total does not equal sum of subdivisions

** N₂O emissions included in CO₂ from Waste

Note: The effects of measures detailed above are calculated firstly by determining the difference between total projections in each scenario and secondly by summing the reported effect of individual measures.

Source: Based on France's MM submission, March 2007

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Table 6. Detailed information on Existing Policies and measures

Sector	Name	Type	GHG	Status	Absolute Reduction			Costs [EUR/t]
					[kt CO ₂ -eq. p.a.]			
					2005	2010	2020	
Agriculture	1st campaign for fine-tuning of tractors and agriculture engines	Economic	CO ₂	expired			details	
Agriculture	Information programme on energy consumption	Information	CO ₂	implemented			details	
Agriculture	Improved application of nitrogen fertiliser	Regulatory	N ₂ O	implemented			details	
Agriculture	Agreement for environmental wood construction	Voluntary/ negotiated agreement	CO ₂	implemented		900		
Agriculture	Decree for obligatory minimum share of wood use in construction	Regulatory	CO ₂	implemented			details	
Agriculture	Structuring of supply with fuel wood	Economic	CO ₂	expired				
Energy supply								
Cross-cutting	Information campaign- "Faison vite ca chauffe"	Information	CO ₂	implemented			details	
Cross-cutting	Section "Climat-énergie" in contracts of the project	Economic	CH ₄				details	
Energy consumption	"State-Regions 2007-2012"		CO ₂					
Energy supply			HFC					
			N ₂ O					
			PFC					

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			SF ₆		
Cross-cutting	European Emission trading, National Allocation Plan	Economic	CO ₂	implemented	3 200
Energy supply Industrial Processes					
Cross-cutting Energy consumption	Certificates for energy savings	Economic Regulatory	CO ₂		2 400
Cross-cutting	Wood energy plan	Economic	CO ₂	implemented	1 400
Energy supply Cross-cutting	Research program for new energy technologies	Information Research	CO ₂	implemented	
Energy supply					
Energy consumption	Labelling of electric household appliances	Information	CO ₂	implemented	
Energy consumption	FACE (Fonds d'amortissement des charges d'électrification)	Economic	CO ₂	implemented	details
Energy consumption Industrial Processes	Energy audits	Information	CO ₂	implemented	details

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Energy consumption	Subsidies for energy audits of buildings	Information	CO ₂	implemented	Cluster value
Energy consumption	Energy information points		CO ₂	implemented	Cluster value
Energy consumption	Thermal Regulation RT 2000	Regulatory	CO ₂	implemented	600
Energy consumption	Energy label (HPE, THPE) and environment label (HQE)	Voluntary/ negotiated agreement	CO ₂	implemented	500
Energy consumption	Reduced VAT rate of 5,5% for energy saving equipment	Fiscal	CO ₂	implemented	details
Energy consumption	Efficiency requirements for new hot-water boilers	Regulatory	CO ₂	implemented	300
Energy consumption	Subsidies for thermal energy from renewables (tax credits, subsidies from Solar Plan and Wood Plan)	Economic	CO ₂	expired	600

Fiscal

France

Energy consumption	Funds like FIDEME, FOGIME	Economic	CO ₂	implemented	
Energy consumption	Operation program for technical and energetic improvement		CO ₂	implemented	details
Energy consumption	ANAH (National Agency for improvement of living conditions)	Economic	CO ₂	implemented	details
		Information			
Energy supply	"Wind energy" Plan	Economic	CO ₂	expired	40
Energy supply	"Solar energy" Plan	Economic	CO ₂	expired	details
Energy supply	Contracts for cogeneration and exemption "TICGN"	Economic	CO ₂	implemented	details
Energy supply	Technology change for nuclear enrichment	Other	CO ₂	planned	
Energy supply	Use of geothermal energy	Economic	CO ₂	implemented	
Energy supply	Electricity generation by windpower	Economic	CO ₂	implemented	
Energy supply	Extension of nuclear electricity generation	Other	CO ₂	implemented	
Energy supply	Renewable electricity	Economic	CO ₂	implemented	

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	generation	Regulatory				
Industrial Processes	Wood energy plan (industry)	Economic	CO ₂	expired		400
Industrial Processes	Regulation of N2O emissions from industrial processes	Information Regulatory	N ₂ O	implemented		Cluster value
Industrial Processes	General tax on polluting activities - N2O	Fiscal	N ₂ O	implemented		Cluster value
Industrial Processes	Voluntary agreement AERES: N2O commitment	Voluntary/ negotiated agreement	N ₂ O	implemented		Cluster value
Industrial Processes	Regulation of installations of HFC >2 kg	Regulatory	HFC	implemented		details
Industrial Processes	Progress commitment AERES	Regulatory Voluntary/ negotiated agreement	PFC HFC PFC	implemented		3 300

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Industrial Processes	Sectoral progress commitment 1996 and 1997: glas, iron industry, aluminium, magnesium foundries, AERES	Regulatory	CO ₂	implemented	5 000
		Voluntary/ negotiated agreement	HFC		
			PFC		
Industrial Processes	Convention RTE, GIMELEC, ADEME	Voluntary/ negotiated agreement	SF ₆	implemented	1 100
Industrial Processes	Voluntary agreement WSC	Voluntary/ negotiated agreement	SF ₆	implemented	2 800
Transport	Development of TGV network	Other	CO ₂	implemented	details
Transport	Promotion for cultivation of energy plants within the PAC	Economic	CO ₂	implemented	details
Transport	Voluntary agreement of automobile manufacturers (ACEA, JAM, KAMA)	Voluntary/ negotiated agreement	CO ₂	implemented	details
Transport	Labelling of fuel consumption and CO₂ emissions of cars	Regulatory	CO ₂	implemented	200
Transport	Speed control	Regulatory	CO ₂	implemented	3 000
Transport	Technical control of low-weight vehicles	Regulatory	CO ₂	implemented	details

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Transport	Development of TCSP (public transport) and TER (regional express train)	Economic	CO ₂	implemented	details
Transport	Plan for freight transport with rail	Economic	CO ₂		100
Transport	Establishment of AFITF: readjustment on financing for public transport	Economic	CO ₂		details
Transport	Privilege of non-road transport infrastructure	Planning	CO ₂	implemented	
Waste	Limitation of waste landfilling	Regulatory	CH ₄	implemented	Cluster value
Waste	Obligation to capture methane from landfills	Regulatory	CH ₄	implemented	Cluster value
Industrial Processes	Combined emission reduction of FR-IND-03 FR-IND-04 FR-IND-05	Fiscal Regulatory Voluntary/ negotiated agreement	N ₂ O	implemented	25 700
Energy consumption	Combined emission reduction of FR-ENC-08 FR-ENC-09	Information	CO ₂	implemented	100
Waste	Combined emission reduction of FR-WAM-01 FR-WAM-02	Regulatory	CH ₄	implemented	14 400

Source: Öko-Institut, (accessed 26/06/2008), ECCP Policies and Measures database, <http://www.oeko.de/service/pam/index.php>

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Table 7. Detailed information on Planned Policies and measures

Sector	Name	Type	GHG	Status	Absolute Reduction [kt CO ₂ -eq. p.a.]			Costs [EUR/t]
					2005	2010	2020	
Agriculture	Additional campaign for fine-tuning of tractors and agriculture engines	Economic	CO ₂				500	
Agriculture	Encouragement for biogas recovery	Economic	CH ₄	planned			900	
Agriculture	Improved use of nitrogen fertilisers and additional cultivation areas for biomass and biofuels		N ₂ O	implemented				details
Agriculture	Integration of sequestration capacity of forests and agricultural soils	Regulatory	CO ₂	implemented				
Agriculture	Anaerobic treatment of manure	Research	CH ₄				500	
Agriculture	Energetic valorisation of biomass	Regulatory	CO ₂	planned			3 000	
Agriculture	Agro-environmental measures	Economic	N ₂ O					
Energy consumption	Ecodesign Directive and general energy efficiency labelling	Regulatory	CO ₂					Cluster value
Energy consumption	Sustainable air conditioning	Regulatory	CO ₂					Cluster value
Energy consumption	New Thermal Regulation RT 2005 and following RT 2010, RT 2015	Regulatory	CO ₂				600	

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Energy consumption	Directive for energy efficiency of buildings (DPE, inspection of central heating boilers, existing regulation)	Regulatory	CO ₂		600
Energy consumption	Modernization subsidies by ANAH are bound to energy efficiency improvements	Economic	CO ₂	implemented	details
Energy consumption	Renovation ANRU (Agence nationale pour la rénovation urbaine)	Economic	CO ₂	implemented	300
Energy consumption	Enhancement of tax reductions for renewable energies	Fiscal	CO ₂	implemented	Cluster value
Energy consumption	Enhancement of tax reductions for central heating boilers and insulation	Fiscal	CO ₂	implemented	Cluster value
Cross-cutting	Certificates for energy economy (part "heating")	Regulatory	CO ₂	implemented	1 000
Energy consumption					
Energy consumption	Savings for sustainable development for loans for renovation works in existing buildings	Economic	CO ₂	implemented	700

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Energy consumption	Credit for energy performance of branch office	Economic	CO ₂	implemented	
Energy supply	Possibility of nuclear option (EPR Flamanville)	Other	CO ₂	planned	
Cross-cutting	Certificates for energy saving (electricity part)	Economic	CO ₂	implemented	Cluster value
Energy supply	Feed-in tariffs and purchase obligation	Regulatory	CO ₂	implemented	Cluster value
Energy supply	Tender for multi-year investment (wind and biomass)	Economic	CO ₂	implemented	Cluster value
Energy supply	Green certificates for electricity from renewable energies	Voluntary/ negotiated agreement	CO ₂	implemented	details
Energy supply	Waste plan (Waste incineration with energy recovery)	Information	CO ₂	implemented	500
Energy supply	Development of the use of renewable thermal energy	Economic	CO ₂	implemented	
Energy supply	VAT of 5.5% for energy from wood	Fiscal	CO ₂	implemented	
Energy consumption	Tax on CO₂	Fiscal	CO ₂	planned	
Industrial Processes	Application of European recycling Directives DEEE, VHU	Regulatory	HFC	implemented	Cluster value
Industrial Processes	Reglementation of installations of HFC <2 kg	Regulatory	HFC	planned	Cluster value

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Industrial Processes	Project for European regulation on F-gases	Regulatory	HFC	planned	Cluster value
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PFC
SF₆

Industrial Processes	Project of European Directive on F-gases	Regulatory	HFC	planned	Cluster value
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Cross-cutting	European Emission Trading, National Allocation Plan	Regulatory	CO ₂	implemented	1 900
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Industrial Processes

Industrial Processes	Inclusion of N₂O into the European Emission Trading Scheme	Regulatory	N ₂ O	planned	2 600
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Cross-cutting	Participation in project-based flexible mechanisms	Economic		planned	
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Industrial Processes

Industrial Processes	Creation of an action group for CO₂ reduction	Information	CO ₂	implemented	
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Transport	Consumption tax exemption for biofuels - enhancement of use of biofuels	Fiscal	CO ₂	implemented	Cluster value
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Transport	TGAP (General tax for polluting activities) biofuels	Fiscal	CO ₂	implemented	Cluster value	
Transport	Tax incentives for clean vehicles	Fiscal	CO ₂	implemented	details	
Transport	Registration tax based on CO2 emissions	Regulatory	CO ₂		100	
Transport	Assistance for relocation plans of companies, carbon balance for logistic	Information	CO ₂	implemented	details	
Transport	Ecodriving	Information	CO ₂	implemented	600	
Transport	Enhancement of agreements of ACEA, JAMA, KAMA	Regulatory	CO ₂	planned		
Transport	Extension of energy label CO2	Information	CO ₂	planned		
Waste	Waste plan	Information	CH ₄	implemented	100	1 600
Cross-cutting	Combined emission reduction of	Economic	CO ₂	implemented	3 000	
Energy consumption	FR-ENC-05	Regulatory				
Energy supply	FR-ENC-06 FR-ENS-09					
Industrial Processes	Combined emission reduction of	Regulatory	HFC	implemented	3 600	
	FR-IND-11		PFC	planned		
	FR-IND-12		SF ₆			
	FR-IND-13					
	FR-IND-14					
Transport	Combined emission reduction of	Fiscal	CO ₂	implemented	9 400	
	FR-TRA-11					
	FR-TRA-12					

France

Energy consumption	Combined emission reduction of FR-ENC-19 FR-ENC-20	Fiscal	CO ₂	implemented	900
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Source: Öko-Institut, (accessed 26/06/2008), ECCP Policies and Measures database, <http://www.oeko.de/service/pam/index.php>

Table 8. Status of national policies and measures (PAM) in relation to European common and coordinated policies and measures (CCPM)

Status	CCPM	Sector	
National policies and measures already in force before CCPM was adopted	Promotion of cogeneration 2004/8/EC	Energy supply	
	Taxation of energy products 2003/96/EC	Energy supply	
	Transport modal shift to rail 2001/12/EC etc.	Transport	
	Landfill directive 1999/31/EC	Waste	
Existing national policies and measures reinforced by CCPM	Promotion of electricity from RE sources 2001/77/EC	Energy supply	
	Promotion of biofuels for transport 2003/30/EC	Transport	
	Agreement with car manufacturers ACEA etc.	Transport	
	Support under CAP (1782/2003)	Agriculture	
	Support under CAP - amendment (1783/2003)	Agriculture	
	Nitrates directive 91/676/EEC	Agriculture	
	Kyoto Protocol project mechanisms 2004/101/EC	Cross-cutting	
New national policies and measures implemented after CCPM was adopted	Emissions trading 2003/87/EC	Cross-cutting	
	Directives on energy labelling of appliances	Energy consumption	
	Ecodesign requirements for energy-using products 2005/32/EC	Energy consumption	
	Energy performance of buildings 2002/91/EC	Energy consumption	
	End-use efficiency and energy services 2006/32/EC	Energy consumption	
	Eco-management & audit scheme (EMAS) EC 761/2001	Energy consumption	
	Efficiency of hot water boilers 92/42/EEC	Energy consumption	
	Consumer information on cars 1999/94/EC	Transport	
	HFCs in mobile air conditioning 2006/40/EC	Transport	
	Directive on waste 2006/12/EC	Waste	
	Status of national policy or measure not reported	Integrated pollution prevention and control 96/61/EC	Cross-cutting
		Internal electricity market 2003/54/EC	Energy supply
		Internal market in natural gas 98/30/EC	Energy supply
		Energy labelling for office equipment 2422/2001	Energy consumption
		Efficiency fluorescent lighting 2000/55/EC	Energy consumption
		Integrated European railway area (COM(2002)18 final)	Transport
Marco Polo programme on freight transport		Transport	
Motor challenge, voluntary EC programme		Energy consumption	
F-gas regulation (842/2006)		Industrial Process	
Rural development support and CAP(2603/1999, 1698/2005 and 1290/2005)		Agriculture	
Support scheme for energy crops under CAP (795/2004)		Agriculture	
Support for rural development from EAGGF (1257/1999)		Agriculture	
Pre-accession measures for agriculture and rural development (1268/1999)		Agriculture	
Packaging and packaging waste (94/62/EC, 2004/12/EC, 2005/20/EC)		Waste	

Source: MS responses to the CCPMs questionnaire, 2005. Personal communications.

France has implemented PAMs, particularly on energy consumption, mainly after the adoption of CCPM. Nearly half the same amount of PAMs was in each case implemented before and re-enforced by CCPM. However,

France

the status of a third of the number of national PAMs relating to CCPM has not been reported.

4. METADATA

Sources of information

- Rapport de la France. Au titre du paragraphe 2 de l'article 3 de la décision n°280/2004/CE du Parlement européen et du Conseil du 11 février 2004 relative au mécanisme pour surveiller les émissions de gaz à effet de serre dans la communauté et mettre en ouvre le Protocol de Kyoto. Actualisation mars 2007 (France's MM submission)
- Overview of CCPM implementation in MS
- French 4th National Communication to the UNFCCC, 7 July 2006
- Questionnaire on the use of the Kyoto Protocol mechanisms and of sinks in meeting the Kyoto targets (2008)
- French National Inventory Submission to the UNFCCC, 10 April 2008

Base-year emissions from the UNFCCC website,
http://unfccc.int/ghg_data/kp_data_unfccc/base_year_data/items/4354.php

European Climate Change Programme (ECCP), Database on Policies and Measures in Europe,
<http://www.oeko.de/service/pam/index.php>

Kyoto base-year emissions

Kyoto base-year emissions are presented throughout, except Table 1 which presents projections reference year emissions (see below). Kyoto base year emissions of greenhouse gases were calculated using 1990 emissions for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) as well as 1990 emissions for fluorinated gases (SF₆, HFCs and PFCs).

Kyoto base-year emissions have now been reviewed and set for all EEA countries, except Croatia.

Projections reference year emissions

Projections reference year emissions are presented in Table 1.

Projections reference year emissions are defined as projections-consistent emissions data for a given historic year, as chosen by the Member State. Inventory recalculations from year to year may mean that latest inventory data cannot be compared with projections based on older inventory data. Where such an inconsistency has arisen, MS projections have been corrected by applying the following formula, in Table 2:

Corrected projection = reported projections * latest inventory total GHG emissions / Table 1 reported total GHG emissions for the same reference year

Quality of Reporting

Member State reporting in the sources detailed above was assessed semi-qualitatively. Scoring was attributed according to the level of detail and clarity: from 0 (representing not reported) to +++ (representing very detailed and/or clear reporting). Guidance used for this assessment included the reporting requirements laid down in:

- EU legislation: Monitoring Mechanism (280/2004/EC) and Implementing Provisions (2005/166/EC)
- UNFCCC reporting guidelines for national communications available in English, French, Spanish ("Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications - FCCC/CP/1999/7")

The following tables detail reporting considered to be best practice for the purposes of this assessment.

Information provided	Example of good practice
Policy names	Clear names and description provided with unique identifier.
Objectives of policies	Good description of objectives
Types of policies	Type of policy instrument specified e.g. regulatory, fiscal
Which greenhouse gases?	Specifies which gases each PAM affects
Status of Implementation	Clear for each PAM: planned, adopted, implemented, expired
Implementation body	Clear which authorities are responsible for implementation
Quantitative assessment of emission reduction effect and cost of policies	Almost all PAMs are actually quantified. Total effect of all PAMs specified. WOM projection provided.
Interaction with other national and EU level policies	Detailed discussion and analysis of policy interactions.
Measures implementing community legislation	Report details which national policies are implementing individual pieces of EU legislation.
Arrangements for flexible mechanisms	Details arrangements for use of flexible mechanisms.
Balance between domestic action and flexible mechanisms	Regarding reductions required to meet Kyoto target, details proportion to result from domestic action and flexible mechanisms.

Category of Information	Example of good practice
Projection scenarios	"With existing measures" and "with additional measures" projections required, "without measures projection" optional.
Policies included in each projection	Clear presentation of the policies included in each projections scenario.
Expressed relative to historic reference year data	Projections are presented alongside consistent historic emissions.
Starting year	Starting year and emissions used as basis for for projections is

France

	detailed.
Split of projections	Projection split by all 6 gases (or F-gases together), all sectors and years
Presentation of results	Clear, both tables and graphs provided and/or used excel reporting template.
Description of methodologies	Description of approach, model and assumptions
Sensitivity analysis	Was an analysis carried out to determine the sensitivity of projections to variance in the input parameters? Are high medium and low scenarios presented?
Discussion of uncertainty	Is an uncertainty range for the projections provided?
Details of parameters and assumptions	Are parameters as required under Monitoring Mechanism 280/2004/EC reported?
Indicators for projections	Are indicators for projections as required under Monitoring Mechanism 280/2004/EC reported?

Table 9. Information provided on policies and Kyoto flexible mechanisms

Information provided	Level of information provided	Comments
Policy names	++	Policies are distinguished partly by long names, measures are partly merged under one measure name.
Objectives of policies	+++	In most cases a good description of the objectives.
Types of policies	+++	
Which greenhouse gases?	+++	All
Status of Implementation	+++	
Implementation body	++	The ministries and other bodies in charge are mentioned.
Quantitative assessment of emission reduction effect and cost of policies	+	Nearly no emission reductions for individual measures quantified for 2010. No figures for 2020. Implementation assessment sometimes given with other quantitative information.
Interaction with other national and EU level policies	+	Partly addressed.
Measures implementing community legislation	+	
Arrangements for flexible mechanisms	+++	No use of flexible mechanisms
Balance between domestic action and flexible mechanisms	+++	No use of flexible mechanisms

Table 10. Information provided on projections

Category of Information	Level of information provided	Comments
Projection scenarios	++	Distinction is made between the following scenarios With existing measures (measures that have been adopted before 1 January

France

		2004) With additional measures (measures included in Climate Plan or adopted before 1 October 2005 but after 1 January 2007)
Policies included in each projection	+++	Clear presentation of the policies included in each projections scenario.
Expressed relative to historic reference year data	+++	Absolute figures.
Starting year	2005	
Split of projections	+	Poor disaggregation by GHG and sectors
Presentation of results	++	Tables and figures given, units are lacking sometimes
Description of methodologies	++	The use of the different models is described in principle.
Sensitivity analysis	0	No discussion of sensitivity /uncertainty analysis.
Discussion of uncertainty	0	No discussion of sensitivity /uncertainty analysis.
Details of parameters and assumptions	++	The main assumptions are stated in the French report 2007.
Indicators for projections	++	Most indicators reported

Table 11. Parameters for Projections

1. Mandatory parameters on projections	2005	2010	2015	2020	Units
Assumptions for general economic parameters					
GDP (value at given years or annual growth rate and base year)		1.9		2.3	%/y (2005)
Population (value at given years or annual growth rate and base year)		62.3		64.9	Millions (2005)
International coal prices at given years in euro per tonne or GJ (Gigajoule)		44.4		46.5	€ (2005)/tonne
International oil prices at given years in euro per barrel or GJ		39.7		38.7	€ (2005)/barrel
International gas prices at given years in euro per m3 or GJ		4.6		4.5	€ (2005)/Mbtu
Assumptions for the energy sector					
Total gross inland consumption (PJ) (split by oil, gas, coal, renewables, nuclear, other)					
Total electricity production by fuel type (oil, gas, coal, renewables, nuclear, other)		583		627	TWh
Nuclear		430		442	TWh
Hydro		70		70	TWh
Windpower		10		20	TWh
Decentralised		20		30	TWh
Thermal		53		65	TWh
Coal		30		32	TWh
Gas		18		30	TWh
Energy demand by sector split by fuel (delivered)					
Assumptions on weather parameters, especially heating or cooling degree days					
Assumptions for the industry sector					

France

<i>For Member States using macroeconomic models:</i>					
The share of the industrial sector in GDP and growth rate		NE; 1.6		NE; 2.2	%/y
<i>For Member States using other models:</i>					
The production index for industrial sector					
Assumptions for the transport sector					
<i>For Member States using macroeconomic models:</i>					
The growth of transport relative to GDP					
<i>For Member States using other models:</i>					
The growth of passenger person kilometres		635		730	Gveh. km
The growth of freight tonne kilometres		349		427	Gt km
Assumptions for buildings (in residential and commercial or tertiary sector)					
<i>For Member States using macroeconomic models:</i>					
The level of private consumption (excluding private transport)					
The share of the tertiary sector in GDP and the growth rate		NE; 2,1		NE; 2.8	%/y (2005)
<i>For Member States using other models:</i>					
The rate of change of floor space for tertiary buildings and dwellings					
The number of dwellings and number of employees in the tertiary sector					
Assumptions in the agriculture sector					
<i>For Member States using macroeconomic models:</i>					
The share of the agriculture sector in GDP and relative growth		NE; 1.8		NE; 1.3	%/y (2005)
<i>For Member States using other models:</i>					
Livestock numbers by animal type (for enteric fermentation beef, cows, sheep, for manure management pigs and poultry)					
Dairy cattle		3 691		3 691	thousand
Non-dairy cattle		15 454		15 454	thousand
Swine		10 791		10 791	thousand
Sheep		8 748		8 748	thousand
Goats		1 223		1 223	thousand
Poultry		249 570		226 966	thousand
Horses and asses		458		458	thousand
The area of crops by crop type					
Emissions factors by type of livestock for enteric fermentation and manure management (t)					
Assumptions in the waste sector					
Waste generation per head of population or tonnes of municipal solid waste		86.9		101	Mt
The organic fractions of municipal solid waste					
Municipal solid waste disposed to landfills, incinerated or composted (in tonnes or %)		47		54.6	Mt
Assumptions in the forestry sector					
Forest definitions					
Areas of:					
managed forests					
unmanaged forests					

2. Recommended parameters on projections	2005	2010	2015	2020	Units
Assumptions for general economic parameters					
GDP growth rates split by industrial sectors in relation to 2000					

France

Comparison projected data with official forecasts					
Assumptions for the energy sector					
National coal, oil and gas energy prices per sector (including taxes)					
National electricity prices per sector as above (may be model output)					
Total production of district heating by fuel type					
Assumptions for the industry sector					
Assumptions fluorinated gases:					
Aluminium production and emissions factors					
Magnesium production and emissions factors					
Foam production and emissions factors					
Stock of refrigerant and leakage rates					
<i>For Member States using macroeconomic models:</i>					
Share of GDP for different sectors and growth rates					
Rate of improvement of energy intensity (1990 = 100)					
<i>For Member States using other models:</i>					
Index of production for different sectors					
Rate of improvement or index of energy efficiency					
Assumptions for buildings (in residential and commercial / tertiary sector)					
<i>For Member States using macroeconomic models:</i>					
Share of tertiary and household sectors in GDP					
Rate of improvement of energy intensity					
<i>For Member States using other models:</i>					
Number of households					
Number of new buildings					
Rate of improvement of energy efficiency (1990 = 100)					
Assumptions for the transport sector					
<i>For Member States using econometric models:</i>					
Growth of transport relative to GDP split by passenger and freight					
Improvements in energy efficiency split by vehicle type					
Improvements in energy efficiency split by vehicle type, whole fleet/new cars					
Rate of change of modal split (passenger and freight)					
Growth of passenger road kilometres					
Growth of passenger rail kilometres					
Growth of passenger aviation kilometres					
Growth of freight tonne kilometres on road					
Growth of freight tonne kilometres by rail					
Growth of freight tonne kilometres by navigation					
Assumptions for the agriculture sector					
<i>For Member States using econometric models:</i>					
Agricultural trade (import/export)					
Domestic consumption (e.g. milk/beef consumption)					
<i>For Member States using other models:</i>					
Development of area of crops, grassland, arable, set-aside, conversion to forests etc					
Macroeconomic assumptions behind projections of agricultural activity					
Description of livestock (e.g. by nutrient balance, output/animal production, milk production)					
Development of farming types (e.g. intensive conventional, organic farming)					
Distribution of housing/grazing systems and housing/grazing period					

France

Parameters of fertiliser regime:					
Details of fertiliser use (type of fertiliser, timing of application, inorganic/organic ratio)					
Volatilisation rate of ammonia, following spreading of manure on the soil					
Efficiency of manure use					
Parameters of manure management system:					
Distribution of storage facilities (e.g. with or without cover):					
Nitrogen excretion rate of manures					
Methods of application of manure					
Extent of introduction of control measures (storage systems, manure application), use of best available techniques					
Parameters related to nitrous oxide emissions from agricultural soils					
Amount of manure treatment					