

Italy

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1. SOURCES OF INFORMATION

Italy's Report on Demonstrable Progress under Article 3.2 of the Kyoto Protocol submitted to the UNFCCC on 11 November 2006.

Italy's National Allocation Plan for 2008-2012 (undated, followed by Commission Decision on 15 May 2007).

The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat), EEA Technical report No 10/2006.

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

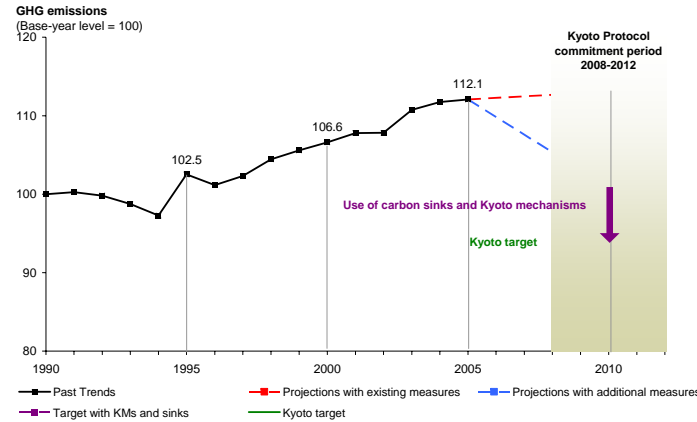
Base-year emissions

Base-year emissions of greenhouse gases are calculated using 1990 emissions for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) and 1995 emissions for fluorinated gases (SF₆, HFCs and PFCs).

Base-year data is as reported by Member States in the sources noted above. Base year data is consistent with data reported in *The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat)*, EEA Technical report No 10/2006. This data is currently undergoing a review procedure by UNFCCC and is therefore subject to change.

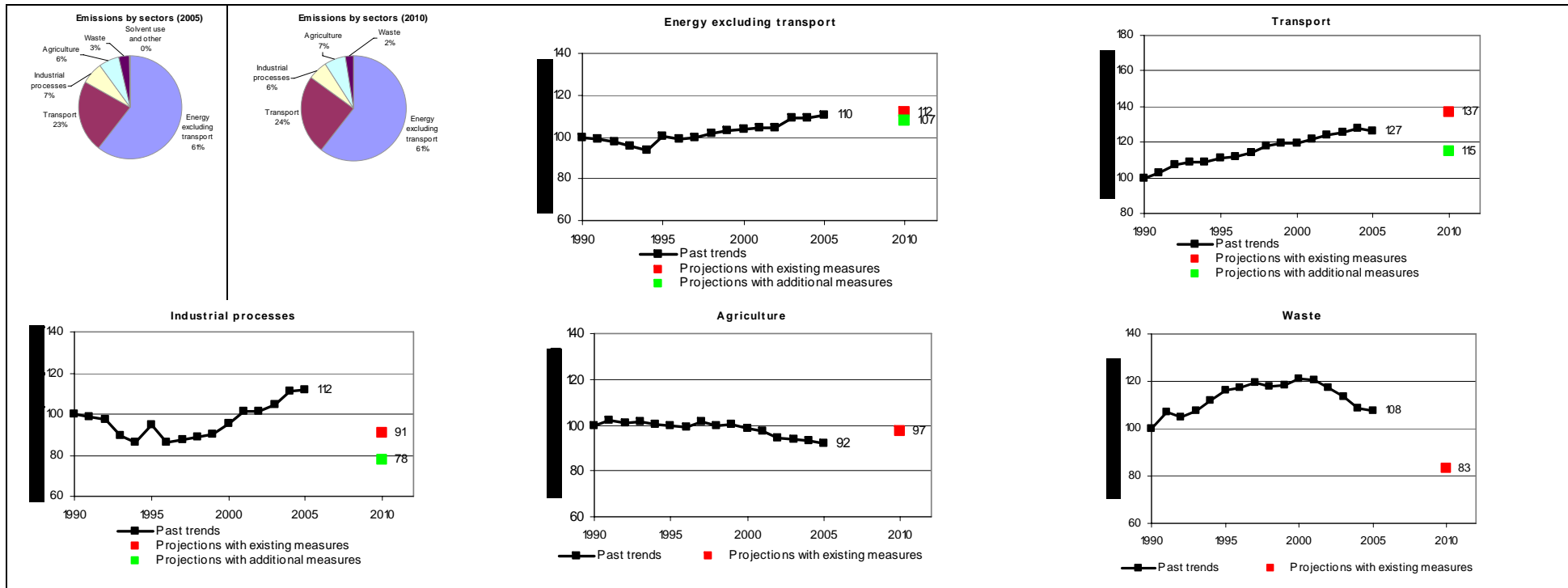
2. SUMMARY

ITALY	
Share in total EU-15 GHG emissions 2005	13.9 %
Emissions base year (initial report)	519.5 Mt
Emissions 2005	582.2 Mt
Emissions base year (for projections)	519.5 Mt
Projections 2010 with existing measures	587.3 Mt
Projections 2010 with additional measures	524.0 Mt
Kyoto target (absolute)	485.7 Mt
Kyoto target (% from base year)	- 6.5 %
Change base year to 2005	+ 12.1 %
Change 2004-05	+ 0.3 %
Change base year to 2010 with existing measures	+ 13.1 %
Change base year to 2010 with additional measures	+ 0.9 %
Distance to linear target path 2005	+11.8 (+17.0) index points
Use of Kyoto mechanisms	19.0 Mt
Sinks (Articles 3.3 and 3.4)	16.7 Mt
Emissions in 1990 (Article 3.7)	n.a.

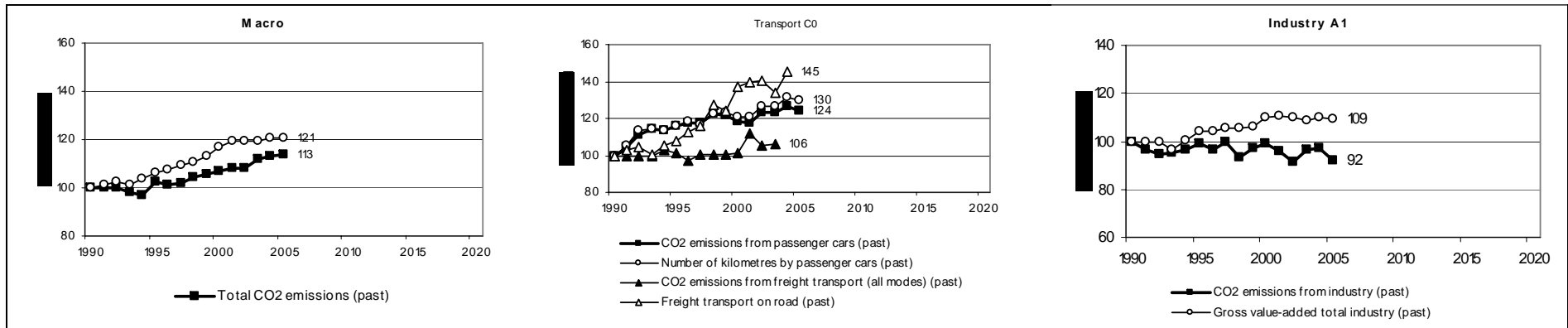


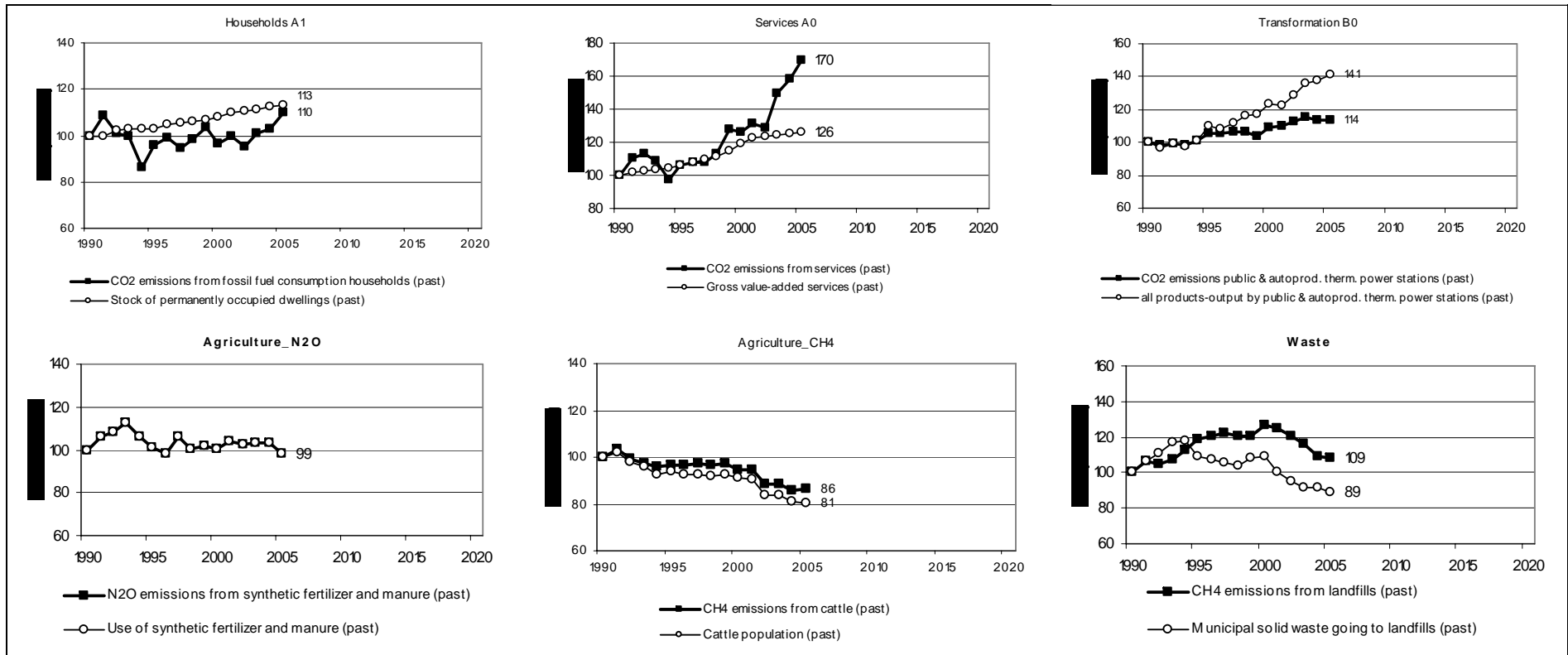
Past emissions: Italy's GHG emissions were 0.3 % above those of 2004 and 12.1 % above base-year levels in 2005. Increases in the last year were mainly due to emission increases in fossil fuel combustion in commercial/institutional and residential sectors. Relevant decreases are reported in fossil fuel consumption from manufacturing industries. Between 1990 and 2005, fossil fuel combustion in road transport, electricity and heat production, and consumption of halocarbons are the largest contributor to emission increases.

Emission projections: Emissions in 2005 were below the level projected in the 'with measures' scenario for 2010. Italy will not reach its Kyoto target of -6.5% with existing and additional measures. Italy plans to purchase 19.0 million tonnes of Kyoto units for each year of the commitment period. Additionally, it intends to make use of carbon sinks according to Article 3.3 and 3.4 of 16.7 million tonnes. Compared to last year projections are changed most for the sector industrial processes.



3. REPORTED INDICATORS





ITALY

Priority Indicators		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Macro	Total CO ₂ emissions, kt	434,782	434,226	433,893	427,711	420,709	445,712	439,195	443,434	454,391	459,386	463,607	469,298	471,144	486,618	490,933	493,372
	GDP, Bio Euro (EC95)	1,017	1,033	1,041	1,032	1,054	1,084	1,092	1,112	1,128	1,150	1,191	1,212	1,217	1,217	1,230	1,230
Macro B0	CO ₂ emissions from energy consumption, kt	402,038	401,988	401,172	397,786	391,883	415,157	411,217	415,139	426,221	431,922	435,394	440,435	442,551	456,478	460,496	462,894
	GDP, Bio Euro (EC95)	1,017	1,033	1,041	1,032	1,054	1,084	1,092	1,112	1,128	1,150	1,191	1,212	1,217	1,217	1,230	1,230
Transport C0	CO ₂ emissions from passenger cars, kt	56,070	58,368	62,249	64,235	63,577	65,113	65,913	65,926	68,532	68,407	66,251	66,090	69,052	69,277	70,997	69,792
	Number of kilometres by passenger cars, Mkm	298,007	313,683	337,256	340,420	337,301	345,903	351,776	348,666	365,370	366,944	360,658	360,583	378,065	377,419	390,538	386,004
Industry A1	CO ₂ emissions from industry, kt	88,937	85,985	84,303	84,766	85,541	87,823	85,608	88,673	82,778	86,493	87,889	85,138	81,109	86,005	86,116	81,960
	Gross value-added total industry, Bio Euro (EC95)	260	260	259	251	260	270	270	274	275	275	285	286	286	282	286	284
Households A1	CO ₂ emissions from fossil fuel consumption households, kt	51,990	56,465	52,451	51,910	44,804	49,970	51,517	49,236	51,317	53,700	50,063	51,706	49,343	52,408	53,362	57,161
	Stock of permanently occupied dwellings, 1000	19,736	19,736	20,152	20,334	20,351	20,351	20,628	20,869	20,910	21,034	21,353	21,653	21,777	21,992	22,210	22,320
Services A0	CO ₂ emissions from fossil fuel consumption in commercial and institutional sector, kt	16,171	17,864	18,269	17,594	15,767	17,219	17,490	17,372	18,308	20,703	20,378	21,216	20,836	24,238	25,544	27,431
	Gross value-added services, Bio Euro (EC95)	571	580	586	589	594	607	615	628	638	654	682	701	706	710	715	719
Transformation B0	CO ₂ emissions from public and autoproducer thermal power stations, kt	128,535	126,313	127,835	126,846	129,345	135,701	135,367	136,282	137,205	133,619	140,463	140,978	145,398	148,052	145,844	146,330
	All products - output and autoproducer thermal power stations, PJ	642	623	636	627	649	705	696	721	746	750	791	787	829	871	883	907
Additional Priority Indicators		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Transport D0	CO ₂ emissions from freight transport on road, kt	24,185	24,178	24,149	24,035	24,813	24,500	23,473	24,225	24,252	24,265	24,490	27,081	25,508	25,690	24,869	24,534
	Freight transport on road, Mtkm	153,154	157,244	159,821	153,825	161,170	165,291	172,633	177,536	194,727	189,802	209,627	213,569	214,641	204,503	222,508	212,999
Industry A1.1	Total CO ₂ emissions from iron and steel, kt	24,353	23,681	23,625	24,220	23,802	23,994	21,368	22,218	20,588	18,196	19,492	18,876	16,710	18,331	18,255	16,957
	Gross value-added - iron and steel industry, Bio Euro (EC95)	6	6	6	6	8	8	7	8	8	8	8	7	7	8	7	7
Industry A1.2	Energy related CO ₂ emissions chemical industries, kt	20,052	18,647	17,106	17,552	16,759	18,059	16,821	17,005	15,950	14,973	13,512	12,754	12,195	12,481	12,717	12,175
	Gross value-added - chemical industry, Bio Euro (EC95)	15	15	15	15	16	16	16	17	17	18	17	16	17	16	17	16
Industry A1.3	Energy related CO ₂ emissions - glass pottery and building materials industry, kt	21,372	20,475	19,698	17,861	17,540	18,606	18,396	19,136	19,557	23,636	24,453	22,911	22,111	24,761	25,639	24,603
	Gross value added - glass pottery and building materials industry, Bio Euro (EC95)	11	11	11	10	11	11	11	11	11	12	12	13	13	12	12	13
Industry C0.1	Total CO ₂ emissions from iron and steel, kt	24,353	23,681	23,625	24,220	23,802	23,994	21,368	22,218	20,588	18,196	19,492	18,876	16,710	18,331	18,255	16,957
	Production of oxygen steel	10,365	10,467	10,338	10,774	10,950	11,664	10,200	10,823	10,519	10,532	10,929	10,072	9,376	10,016	10,720	11,688
Industry C0.2	Energy related CO ₂ emissions from glass, pottery and building materials, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cement production, kt	42,414	42,313	43,019	35,642	34,498	35,432	34,903	35,214	36,963	38,337	41,119	41,943	43,516	45,391	47,125	47,306

Supplementary Indicators		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Transport B0 (diesel)	CO ₂ emissions of diesel-driven cars, kt	14,934	14,520	14,892	14,754	12,543	12,002	12,267	12,087	13,886	15,362	16,283	16,725	21,209	23,610	28,274	30,518
	Number of km, of diesel-driven passenger cars, Mio km	78,255	76,048	77,974	77,649	66,067	63,901	65,775	65,216	76,130	85,177	91,374	94,368	120,529	134,784	162,319	175,566
Transport (B0) (petrol)	CO ₂ emissions of petrol-driven cars, kt	37,115	39,974	43,801	45,605	46,882	48,683	49,123	49,255	50,032	48,958	45,705	45,203	43,911	42,047	39,411	36,193
	Number of km, of petrol-driven passenger cars, Mio km	196,466	215,204	238,646	240,342	247,339	256,471	259,951	257,065	262,750	258,350	244,913	242,485	235,177	222,089	209,446	193,008
Transport C0	CO ₂ emissions from passenger cars, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Passenger transport by cars, Mpkm	521,989	534,226	553,830	583,446	594,014	604,843	615,826	631,573	636,603	594,378	590,248	600,429	616,000	628,203	635,937	626,046
Transport E1	CO ₂ emissions from domestic air transport, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Domestic air passenger, Mio	47	45	50	52	55	59	64	70	76	80	90	88	91	100	107	107
Industry A1.4	Energy related CO ₂ emissions food industry, kt	3,853	4,703	5,028	4,503	4,868	5,062	5,078	5,092	5,535	6,847	6,244	6,770	6,789	6,798	6,898	6,550
	Gross Value Added food, drink and tobacco industry, Mio EUR (EC95)	25,380	26,110	27,687	28,476	28,543	27,961	27,894	28,175	28,573	28,345	29,921	28,900	29,263	28,999	28,580	28,179
Industry A1.5	Energy related CO ₂ emissions - paper and printing industry, kt	3,076	3,849	3,643	3,619	4,041	4,163	4,275	4,447	4,594	4,115	4,216	4,312	4,369	4,464	4,615	4,636
	Gross value added paper and printing industry, Mio EUR (EC95)	11,979	11,961	12,414	12,418	12,922	12,883	12,686	12,649	13,031	13,234	13,628	13,694	13,442	13,045	13,194	13,411
Households A0	Surface area of permanently occupied dwellings, Mio m ²	51,990	56,465	52,451	51,910	44,804	49,970	51,517	49,236	51,317	53,700	50,063	51,706	49,343	52,408	53,362	57,161
	Specific CO ₂ emissions of households for space heating, t/m ²	1,895	1,895	1,935	1,953	1,954	1,954	1,981	2,004	2,008	2,020	2,051	2,079	2,091	2,112	2,133	2,143
Services B0	CO ₂ emissions from space heating in commercial and institutional, kt	16,171	17,864	18,269	17,594	15,767	17,219	17,490	17,372	18,308	20,703	20,378	21,216	20,836	24,238	25,544	27,431
	Surface area of services buildings, Mio m ²	554	554	560	566	573	579	586	595	604	613	622	631	631	631	631	631
Transformation D0	CO ₂ emissions from public thermal power stations, kt	111,964	109,271	111,115	109,916	112,945	120,646	121,905	118,452	114,969	112,303	114,381	119,670	124,845	126,912	126,429	124,630
	All products output by public thermal power stations, PJ	576	558	570	562	582	632	629	638	646	649	653	697	721	759	785	809
Transformation E0	CO ₂ emissions from autoproducer, kt	16,571	17,042	16,720	16,929	16,400	15,055	13,462	17,830	22,237	21,317	26,082	21,309	20,553	21,140	19,415	21,700
	All products output by autoproducer thermal power stations, PJ	67	65	66	65	68	73	68	82	95	91	134	103	101	102	85	85
Transformation	CO ₂ emissions from classical power production, kt	128,535	126,313	127,835	126,846	129,345	135,701	135,367	136,282	137,205	133,619	140,463	140,978	145,398	148,052	145,844	146,330
	All products output by public and autoproducer power stations, PJ	768	786	802	791	823	854	862	887	913	933	972	979	996	1,031	1,066	1,069
Transport	CO ₂ emissions from transport, kt	101,461	104,331	108,652	110,378	110,205	112,005	113,188	114,912	118,723	119,994	120,458	122,761	124,883	126,202	128,353	126,891
	Total final energy consumption from transport, PJ	1,459	1,505	1,565	1,595	1,595	1,635	1,646	1,681	1,726	1,757	1,768	1,791	1,816	1,857	1,898	1,877
Industry	Energy related CO ₂ emissions paper and printing industries, kt	3,076	3,849	3,643	3,619	4,041	4,163	4,275	4,447	4,594	4,115	4,216	4,312	4,369	4,464	4,615	4,636
	Physical output of paper, kt	6,180	6,389	6,731	6,811	7,398	7,485	7,621	8,171	8,390	8,686	9,131	8,956	9,356	9,491	9,667	9,999
Industry	CO ₂ emissions from the industry sector	88,937	85,985	84,303	84,766	85,541	87,823	85,608	88,673	82,778	86,493	87,889	85,138	81,109	86,005	86,116	81,960
	Total final energy consumption from industry, PJ	1,525	1,487	1,470	1,442	1,490	1,541	1,513	1,556	1,586	1,637	1,681	1,696	1,655	1,714	1,732	1,718
Households	CO ₂ emissions from households, kt	51,990	51,990	56,465	52,451	51,910	44,804	49,970	51,517	49,236	51,317	53,700	50,063	51,706	49,343	52,408	53,362
	Total final energy consumption from households, PJ	983	1,075	1,021	1,021	920	1,003	1,037	1,006	1,052	1,097	1,040	1,073	1,028	1,104	1,125	1,187

4. OVERVIEW OF CCPM IMPLEMENTATION IN ITALY

Table 1. Information provided on the implementation of policies and measures

Sector	CCPM	Status
Cross-cutting	Kyoto Protocol project mechanisms 2004/101/EC	
Cross-cutting	Emissions trading 2003/87/EC	N
Cross-cutting	Integrated pollution prevention and control 96/61/EC	
Energy supply	Promotion of cogeneration 2004/8/EC	N
Energy supply	Taxation of energy products 2003/96/EC	R
Energy supply	Internal electricity market 2003/54/EC	
Energy supply	Promotion of electricity from RE sources 2001/77/EC	N
Energy supply	Internal market in natural gas 98/30/EC	
Energy supply	Emissions from large combustion plants 88/609/EEC	
Energy consumption	Directives on energy labelling of appliances	R
Energy consumption	End-use efficiency and energy services 2006/32/EC	
Energy consumption	Ecodesign requirements for energy-using products 2005/32/EC	
Energy consumption	Energy performance of buildings 2002/91/EC	N
Energy consumption	Eco-management & audit scheme (EMAS) EC 761/2001	
Energy consumption	Energy-efficiency labelling for office equipment Regulation No. 2422/2001	
Energy consumption	Efficiency fluorescent lighting 2000/55/EC	
Energy consumption	Efficiency of hot water boilers 92/42/EEC	
Transport	Environmental performance freight transport (Marco Polo Programme)	
Transport	Motor challenge, voluntary EC programme	
Transport	Promotion of biofuels for transport 2003/30/EC	N
Transport	Integrated European railway area (2nd + 3rd Railway package) (COM(2002)18 final)	
Transport	Transport modal shift to rail 2001/12/EC etc.	N
Transport	Consumer information on cars 1999/94/EC	
Transport	Agreement with car manufacturers ACEA etc.	B
Industrial Process	F-gas regulation (Regulation No 842/2006)	
Industrial Process	Industrial Process: HFC emissions from air conditioning in motor vehicles 2006/40/EC	
Agriculture	Support under CAP (1782/2003)	
Agriculture	Support under CAP - amendment (1783/2003)	
Agriculture	Nitrates 91/676/EEC	
Agriculture	Transition to rural development support No 2603/1999	
Agriculture	Agricultural production methods compatible with environment Regulation (EEC) No 2078/92	
Agriculture	Aid scheme for forestry measures in agriculture (Regulation (EEC) No 2080/92)	
Agriculture	Emission by engines to power agricultural or forestry 2000/25/EC	
Agriculture	Pre-accession measures for agriculture and rural development Regulation (EC) No 1268/1999	
Waste	Directive on waste 2006/12/EC	

Waste	Landfill directive 1999/31/EC	N
Waste	Packaging and packaging waste (Directive 94/62/EC, 2004/12/EC, 2005/20/EC)	

Legend

New national PAM implemented after CCPM was adopted

Existing national PAM **re-enforced** by CCPM

National PAM already in force **before** CCPM was adopted

Not reported

N
R
B

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

5. COMPLETENESS OF REPORTING

Table 2. Information provided on policies and measures

Information provided	Level of information provided	Comments
Policy names	+++	Clearly identified
Objectives of policies	++	Mostly described
Which greenhouse gases?	+++	Covers all gases; specifies which gas or gases per PAM
Status of Implementation	++	Status ('Implemented' or 'planned') is specified for most PAMs.
Implementation body specified	++	Specified for some PAMs.
Quantitative assessment of implementation	+++	Almost all PAMs quantified, either individually or together ('cluster values' in Table 5).
Interaction with other policies and measures discussed	0	Not discussed.

Table 3. Information provided on projections

Category of Information	Level of information provided	Comments
Scenarios considered		"With measures" and "with additional measures".
Expressed relative to base year	+++	Relative to 1995 for F-gases, 1990 for other gases.
Starting year	2005	Starting year for projections
Split of projections	++	"With measures" split by sector but not by gas. No splits for "with additional measures". Projection time series: 2005, 2010, 2015, 2020.
Presentation of results	+++	Clear, both tables & graphs
Description of model (level of detail, approach and assumptions)	+	Limited information provided
Sensitivity analysis (key inputs to model / high, central and low projections scenarios / robustness of model)	0	Not provided
Discussion of uncertainty	0	Not provided
Details of parameters and assumptions	+	Limited information provided

6. ASSESSMENT OF POLICIES AND MEASURES

Table 4. Summary of the effect of policies and measures included in the 2010 projections (Mt CO₂-eq.)

	With measures	With additional measures
Energy (total, excluding transport)	85.0	31.6
Energy supply	71.3	16.5
Energy – industry, construction	4.1	10.1
Energy – other (commercial, residential, agriculture)	9.6	5.0
Transport (energy)	8.5	19.5
Industrial processes	9.2	1.4
Waste	0	0
Agriculture	0	0
Cross-sectoral	0	0
Total (excluding LULUCF)	102.7	52.8

The total effect of policies and measures in the “with additional measures” scenario is given as 52.8 MtCO₂-eq. in both the NAP and in Table S.1/3.1 of the DPR, rather than the sum of the effect per sector (52.5 MtCO₂-eq.).

Table 5. Detailed information on policies and measures

(Where no projection scenario information was reported for a policy or measure, the status field was used to decide which projection scenario it should be included in. A status of implemented, adopted, expired or a blank field was assumed to belong to the “with measures” projection. If the status is reported as planned the policy or measure is included in the “with additional measures” projection scenario)

Policies and measures in the “with measures” projection

Sector	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction			Costs
						[kt CO ₂ eq. p.a.]			[EUR/t]
						2005	2010	2020	
Cross-cutting	WM	EU -ETS	Economic	CO ₂	implemented				
			Regulatory						
Cross-cutting	WM	Use of the kyoto mechanism	Economic	CH ₄ CO ₂ HFC N ₂ O PFC SF ₆	implemented				
Energy supply	WM	Ministerial Decree 12 July, 1990	Regulatory	CO ₂		10,200	10,200	10,200	
Energy supply	WM	Decree CIP 6/92	Economic	CO ₂		11,000	14,100	15,200	
			Regulatory						
Energy supply	WM	Law 481 of 14th November 1995	Economic	CO ₂		2,100	2,100	2,100	
			Regulatory						
Energy supply	WM	Decree 4 August 1999	Regulatory	CO ₂		9,400	16,500	16,500	

Sector	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction			Costs
						[kt CO ₂ eq. p.a.]			[EUR/t]
						2005	2010	2020	
Energy supply	WM	Decree of 11 November, 1999	Economic	CO ₂		3,000	6,000	6,000	
			Regulatory						
Energy supply	WM	Decree n. 106 of 29 March 2001	Economic	CO ₂			120	120	
			Regulatory						
Energy supply	WM	Decree 28 July 2005	Economic	CO ₂					
Energy supply	WM	Legislative decree 387/2003 of December 2003	Economic	CO ₂					
			Regulatory						
Energy supply	WM	Law 239 of 23 August 2004/05/06	Regulatory	CO ₂		7,000	19,900	19,900	
Energy supply	WM	Decree of 29 September 1995	Economic	CO ₂	implemented	2,400	2,400	2,400	
Energy supply	WM	Ministerial Decree 12 July, 1990	Regulatory	CO ₂		2,400	2,400	2,400	
Industrial Processes									
Energy supply	WM	Decree 29, September 1995	Regulatory	CO ₂		1,300	1,300	1,300	
Industrial Processes									
Energy consumption	WM	Art 31 of Law 449/97	Fiscal	CO ₂	implemented	2,000	2,000	2,000	
Energy consumption	WM	Ministerial Decrees 20 July 2004	Economic	CO ₂		2,000	6,300	6,300	
Energy consumption	WM	Decree 27 July 2005	Economic	CO ₂	implemented		1,300	1,300	
			Regulatory						

<u>Sector</u>	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction [kt CO ₂ eq. p.a.]			<u>Costs</u>
						2005	<u>2010</u>	2020	<u>[EUR/t]</u>
Energy consumption Industrial Processes	WM	Law 10 of 1991	Planning Regulatory	CO ₂		400	400	400	
Transport	WM	Law 194/98	Economic Regulatory	CO ₂		Cluster value	Cluster value	Cluster value	
Transport	WM	Decree of 17 February 2000	Economic Regulatory	CO ₂		Cluster value	Cluster value	Cluster value	
Transport	WM	Voluntary agreement between the Ministry of the Environment, Fiat, Unione Petrolifera and FederMetano	Voluntary/ negotiated agreement	CO ₂	implemented	Cluster value	Cluster value	Cluster value	
Transport	WM	Voluntary agreement between the Ministry of Environment, the Ministry of Industry, the Ministry of Finance, the Ministry for Agricultural and local authorities	Voluntary/ negotiated agreement	CO ₂	implemented	Cluster value	Cluster value	Cluster value	
Transport	WM	Decree of 21 December 2001	Economic	CO ₂		Cluster value	Cluster value	Cluster value	

Sector	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction [kt CO ₂ eq. p.a.]			Costs
						2005 Cluster value	2010 Cluster value	2020 Cluster value	[EUR/t]
Transport	WM	Voluntary agreement between FIAT and the Ministry of Environment	Voluntary/ negotiated agreement	CO ₂	implemented				
Transport	WM	Law N. 140 of 11 May 1999	Economic	CO ₂		Cluster value	Cluster value	Cluster value	
Transport	WM	Regulation and control of town centres	Planning	CO ₂	implemented	200	1,000	2,800	
Transport	WM	Cycle and motorcycle mobility		CO ₂	implemented		200	500	
Transport	WM	Law 403 of 14 October 1999	Planning	CO ₂	implemented	Cluster value	Cluster value	Cluster value	
Transport	WM	Law 454 of 23 December 1997 and law 27 of 18 February 2000	Economic Planning	CO ₂		Cluster value	Cluster value	Cluster value	
Transport	WM	Transport infrastructure		CO ₂	implemented	500	1,800	4,200	
Transport		Combined emission reduction of IT-TRA-01 IT-TRA-02 IT-TRA-03 IT-TRA-04	Economic Regulatory Voluntary/ negotiated agreement	CO ₂	implemented	4300	4600	4800	

Sector	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction [kt CO ₂ eq. p.a.]			Costs
						2005	2010	2020	[EUR/t]
		IT-TRA-05 IT-TRA-06 IT-TRA-07							
Transport		Combined emission reduction of IT-TRA-10 IT-TRA-11	Economic Planning	CO ₂	implemented	1100	900	900	
Energy supply Industrial Processes	WM	Ministerial Decree 12 July, 1990	Regulatory	CO ₂		2,400	2,400	2,400	
Energy supply Industrial Processes	WM	Decree 29, September 1995	Regulatory	CO ₂		1,300	1,300	1,300	
Energy consumption Industrial Processes	WM	Law 10 of 1991	Planning Regulatory	CO ₂		400	400	400	
Industrial Processes	WM	Reduction of N₂O emissions from the production of adipic acid	Regulatory	N ₂ O	implemented		6,350	7,160	
Industrial Processes	WM	Implementation of EU legislation on F-gases	Regulatory	HFC PFC SF ₆	implemented		2,800	2,800	
Agriculture	WM	Common Agricultural Policy	Regulatory	CH ₄ N ₂ O	implemented				
Agriculture	WM	Code of good agricultural practice	Regulatory	N ₂ O					
Waste	WM	National Waste Management Act (Decree 22/97)	Regulatory	CH ₄ CO ₂	implemented				

Sector	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction			Costs
						[kt CO ₂ eq. p.a.]			[EUR/t]
						2005	2010	2020	
Waste	WM	Implementation of EU Landfill directive	Regulatory	CH ₄	implemented				

Policies and measures in the “with additional measures” projection

Sector	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction			Costs
						[kt CO ₂ eq. p.a.]			[EUR/t]
						2005	2010	2020	
Energy supply	WAM	Small and medium side CHP plants	Economic	CO ₂	planned		8,000	8,000	
Energy supply	WAM	Increase of power from renewables	Economic	CO ₂	planned		5,500	5,500	
Energy supply	WAM	Promoting waste to-energy schemes in industrial installations	Economic	CO ₂	planned		3,000	3,000	
Industrial Processes									
Energy consumption	WAM	Extension of the decrees introducing energy efficiency targets in final energy uses		CO ₂	planned		6,500	6,500	
Energy consumption	WAM	Enforcement of EU Directive 2002/91/CE		CO ₂	planned		5,000	5,000	
Energy consumption	WAM	Replacement of existing electrical engines	Regulatory	CO ₂	planned		3,600	3,600	
Industrial Processes									
Transport	WAM	Elimination of vehicles built before 1996 with emission over 145 g CO₂/km		CO ₂	planned		9,000	9,000	
Transport	WAM	Use of biofuels	Regulatory	CO ₂	planned		6,000	6,000	

Transport	WAM	Measures for new infrastructures in public transport		CO ₂	planned	4,500	4,500
Energy consumption	WAM	Replacement of existing electrical engines	Regulatory	CO ₂	planned	3,600	3,600
Industrial Processes							
Energy supply	WAM	Promoting waste to-energy schemes in industrial installations	Economic	CO ₂	planned	3,000	3,000
Industrial Processes							
Industrial Processes	WAM	Reduction of N₂O emissions from the production of nitric acid		N ₂ O	planned	1,400	1,570
Agriculture	WAM	Reduction in the use of nitrogen fertilizers	Regulatory	N ₂ O	planned		
Agriculture	WAM	Collection and use of biogas from animal waste	Regulatory	CH ₄	planned		
Waste	WAM	100% of biodegradable waste pre-treated		CH ₄	planned		1,700

Source: Öko Institut, (accessed 13th June 2007), ECCP Policies and Measures database, <http://www.oeko.de/service/pam/index.php>

7. EVALUATION OF PROJECTIONS

Table 6. Summary of projections by gas in 2010 (Mt CO₂-eq.)

	Base-year	With measures	With additional measures
Carbon dioxide (excl. LULUCF)	NE	NE	NE
Methane	NE	NE	NE
Nitrous oxide	NE	NE	NE
HFCs	NE	NE	NE
PFCs	NE	NE	NE
SF ₆	NE	NE	NE
Total (excl. LULUCF)	519.5	587.3	524.0
% change relative to base year (excl. LULUCF)		13.1%	0.9%

Source: Table S.1/3.1 of the DPR. The contribution of "With additional measures" is stated as 52.8 MtCO₂-eq. - it is assumed that this refers to a reduction of 52.8 MtCO₂-eq. from the "With measures" scenario rather than the base year. The 10.5 MtCO₂-eq. contribution of EU ETS was not assigned to either "With measures" or "With additional measures" in the DPR; it has been included in the "With additional measures" scenario here.

Table 7. Summary of projections (6 gas basket) by sector in 2010 (Mt CO₂-eq.)

	Base-year	with measures	% change relative to base-year	with additional measures	% change relative to base-year
Energy (total, excluding transport)	318.9	356.4	12%	NE	NA
Energy supply	136.2	174.3	28%	NE	NA
Energy – industry, construction	90.7	89.4	-1%	NE	NA
Energy – other (commercial, residential, agriculture)	92.0	92.7	1%	NE	NA
Transport (energy)	104.0	142.0	37%	NE	NA
Industrial processes	38.9	35.3	-9%	NE	NA
Waste	17.1	14.2	-17%	NE	NA
Agriculture	40.6	39.4	-3%	NE	NA
Total (excl. LULUCF)	519.5	587.3	13%	524.0	1%

Table 8. Summary of projections by sector and by gas in 2010 (Mt CO₂-eq.) compared to base-year emissions

A split by gas was not provided in the DPR.

	Carbon dioxide			Methane			Nitrous oxide			F-gases (SF ₆ , HFCs and PFCs)		
	Base-year	With measures	With additional measures	Base-year	With measures	With additional measures	Base-year	With measures	With additional measures	Base-year	With measures	With additional measures
Energy (excl. transport)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Transport (energy)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Industrial processes	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Waste	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Agriculture	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Total (excl. LULUCF)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Figure 1. Share by sector of 2010 greenhouse gas emissions according to the “with measures” projection

Table 9. Summary of projections (6 gas basket) in 2010, 2015 and 2020 (Mt CO₂-eq.)

	Base year*	2010	2010, % of base year level	2015	2015, % of base year level	2020	2020, % of base year level
Total (excluding LUCF)	519.5	524.0	100.9%	616.1	118.6%	651.8	125.5%

* Base year is 1990 for all gases except 1995 for F-gases

Table 9 presents the best case projections available for 2010, 2015 and 2020. For 2010 this is the "with additional measures" projection; for 2015 and 2020 the "with measures" projection. Projections exclude LULUCF and flexible mechanisms.

Source: Table 2.2 of DPR.

Table 10. Assessment of the target (6 gas basket), with a comparison of 2010 projections in 2005, 2006 and 2007 national reports

	Emissions in MtCO ₂ -equiv., excluding LULUCF			
	2010 projections from 2005	2010 projections from 2006	2010 projections from 2007	2010 projections from 2007 % of base-year level
Base year emissions used for projections	509.4	509.4	519.5*	100%
Kyoto Commitment/burden sharing	476.3	476.3	485.7	-6.5%
With existing P&Ms projections	580.4	580.4	587.3	113.1%
Gap (-ve means overachievement of target)	104.1	104.1	101.6	19.6%
With additional P&Ms projections ¹	530.1	530.1	524.0	100.9%
Remaining gap	53.8	53.8	38.3	7.4%
Effect of flexible mechanisms	39.6	39.6	19.0	3.7%
Remaining gap (with use of flexible mechanisms)	14.2	14.2	19.3	3.7%

Above table excludes LULUCF. LULUCF will be covered in the main report, based on the questionnaire submissions.

Sources for 2005 and 2006 data are Italy's 2005 Monitoring Mechanism submission and 3rd National Communication.

* Base year data is consistent with data reported in *The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat)*, EEA Technical report No 10/2006 (519.464MtCO₂-eq). This data is currently undergoing a review procedure by UNFCCC and is therefore subject to change.

¹ For 2005 and 2006 projections this includes "with approved additional measures" and "with other additional measures".

Table 11. Comparison with projections for the trading sector (EU ETS)

	DPR projections	NAP 2 projections	Difference
Energy sector	356.40	357.50	--
Energy sector included in EU ETS	--	177.23	--
Industry sector	35.3	34.2	--
Industry sector included in EU ETS	--	56.01	--
Total Energy & Industry	391.7	391.7	100.0%

^a Included are all GHG emissions from the "Energy (total, excluding transport)" sector

^b Included are all GHG from "Energy generation" (which includes energy use by industry), "Commercial and institutional, Residential and Agricultural energy use" and "All other sectors"

^c Included are CO₂ emissions from the ETS sectors "Combustion installations", "Mineral oil refineries" and "Coke ovens"

^d Included are all GHG emissions from the sector "Industrial processes"

^e Included are all GHG emissions from the sector "Industrial processes"

^f Included are CO₂ emissions from the "Industry" ETS sectors (all except those in ^c).

Table 11 provides a comparison of projections in the Demonstrable Progress Report (DPR) and National Allocation Plan (NAP). The projections for the "Energy" and "Industry" sectors combined are the same in the DPR and NAP, and for all greenhouse gases combined, the base year and "with measures" scenario projection without the contribution of the EU ETS are also the same.

The small differences between "Energy" and "Industry" are due to the assigning of sectors as follows: For the Energy sector, GHG totals per sector are only given in summary table III of the NAP, where 'All other sectors' includes six sectors, some of which are additional to the energy sector reported in the DPR. Hence there is a higher total for the Energy sector in the NAP.

The Industry sector totals are also slightly different between the DPR (which includes Solvents) and the NAP (which does not - Solvents are included in 'All other sectors').

8. DESCRIPTION OF MODELLING APPROACH

Overview of modelling approach

The DPR does not describe the modelling approach for projections in the different sectors, although it does provide limited information about the modelling of constituent components of some sectors (for example, “forecasts of energy consumption were done using the CEPRIG model”).

Sensitivity analysis

Not described in the DPR.

Details of the uncertainty assessment

Not described in the DPR.

9. PROJECTION INDICATOR REPORTING

Not provided in the DPR.

10. REPORTING OF PARAMETERS ON PROJECTIONS

The mandatory and recommended parameters were not reported in the DPR. However the report does provide the following table of sectoral growth rates in the Industrial sector:

	2005	2006 - 2007	2008 - 2010	2011 - 2015	2016 - 2020
A. Mineral Products					
1. Cement Production	1,90%	1,90%	0,50%	0,50%	0,50%
2. Lime Production	2,00%	2,00%	0,50%	0,50%	0,50%
3. Limestone and Dolomite Use	0,80%	0,80%	0,50%	0,50%	0,50%
4. Soda Ash Production and Use	1,20%	1,20%	1,20%	1,20%	1,20%
7. Other					
Glass Production (decarbonising)	2,50%	2,50%	1,20%	1,20%	1,20%
B. Chemical Industry					
1. Ammonia Production	1,20%	1,20%	1,20%	1,20%	1,20%
2. Nitric Acid Production	1,20%	1,20%	1,20%	1,20%	1,20%
3. Adipic Acid Production	1,20%	1,20%	1,20%	1,20%	1,20%
5. Other					
Carbon Black	0,60%	0,60%	0,60%	0,60%	0,60%
Ethylene	0,60%	0,60%	0,60%	0,60%	0,60%
Dichloroethylene	0,60%	0,60%	0,60%	0,60%	0,60%
Styrene	0,60%	0,60%	0,60%	0,60%	0,60%
Titanium dioxide	1,20%	1,20%	1,20%	1,20%	1,20%
Propylene	0,60%	0,60%	0,60%	0,60%	0,60%
Caprolactame	1,20%	1,20%	1,20%	1,20%	1,20%
C. Metal Production					
1. Iron and Steel Production					
Steel	0,90%	0,90%	0,80%	0,80%	0,80%
Pig Iron	0,90%	0,90%	0,80%	0,80%	0,80%
Sinter	0,90%	0,90%	0,80%	0,80%	0,80%
2. Ferroalloys Production	1,80%	1,80%	1,80%	1,80%	1,80%
3. Aluminium Production	0,20%	0,20%	0,20%	0,20%	0,20%

Table 12. Indicators for projections to monitor and evaluate progress with policies and measures (2005/166/EC) Annex III

N°	Eurostat Sectors	Indicator	2005 2010 2015 2020				Numerator/denominator	2005 2010 2015 2020			
1	Macro	CO ₂ intensity of GDP, t/Euro million					Total CO ₂ emissions, kt GDP, bio Euro (EC95)				
2	Transport C0	CO ₂ emissions from passenger cars, kt Number of kilometres by passenger cars, Mkm									
3	Transport D0	CO ₂ emissions from freight transport (all modes), kt Freight transport (all modes), Mtkm									
4	Industry A1	Energy related CO ₂ intensity of industry, t/Euro million					CO ₂ emissions from fuel consumption industry, kt Gross value-added total industry, Bio Euro (EC 95)				
5	Households A1	Specific CO ₂ emissions of households, t/dwelling					CO ₂ emissions from fossil fuel consumption households, kt Stock of permanently occupied dwellings, 1000				
6	Services A0	CO ₂ intensity of the services sector, t/Euro million					CO ₂ emissions from fossil fuel consumption services, kt gross value-added services, bio Euro (EC95)				
7	Transformation B0	Specific CO ₂ emissions of public and autoproducer power plants, t/TJ					CO ₂ emissions from public and autoproducer thermal power stations, kt all products-output by public and autoproducer thermal power stations, PJ				
8	Agriculture	Specific N ₂ O emissions of fertilizer and manure use, kg/kg					N ₂ O emissions from synthetic fertilizer and manure use, kt use of synthetic fertiliser and manure, kt nitrogen				
9	Agriculture	Specific CH ₄ emissions of cattle production, kg/head					CH ₄ emissions from cattle, kt cattle populations, 1000 head				
10	Waste	Specific CH ₄ emissions from landfills, kt/kt					CH ₄ emissions from landfills, kt				

Table 13. List of parameters on projections (Annex IV of Implementing Provisions¹)

1. Mandatory parameters on projections	2005	2010	2015	2020
Assumptions for general economic parameters				
GDP (value at given years or annual growth rate and base year)				
Population (value at given years or annual growth rate and base year)				
International coal prices at given years in euro per tonne or GJ (Gigajoule)				
International oil prices at given years in euro per barrel or GJ				
International gas prices at given years in euro per m3 or GJ				
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)				
Energy demand by sector split by fuel (delivered)				
Assumptions on weather parameters, especially heating or cooling degree days				
Assumptions for the industry sector				
<i>For Member States using macroeconomic models:</i>				
The share of the industrial sector in GDP and growth rate				
<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				
The growth of freight tonne kilometres				
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				
<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				
<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)				
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				
The organic fractions of municipal solid waste				

¹ Commission Decision of 10 February 2005 laying down rules implementing Decision No 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol

1. Mandatory parameters on projections	2005	2010	2015	2020
Municipal solid waste disposed to landfills, incinerated or composted (in tonnes or %)				
Assumptions in the forestry sector				
Forest definitions				
Areas of:				
managed forests				
unmanaged forests				

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

2. Recommended parameters on projections	2005	2010	2015	2020
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				
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				

11. COUNTRY CONCLUSIONS

Greenhouse gas projections for Italy are presented in the Demonstrable Progress Report (DPR). These have also been compared with the more limited information about projections in Italy's National Allocation Plan (NAP).

Italy's Kyoto commitment is a 6.5% reduction in greenhouse gas emissions relative to the base year, an implied target of 485.7 MtCO₂-eq. Emissions are projected to be 13.1% above the base year levels in 2010 for the "with measures" scenario. For the "with additional measures" scenario, emissions are projected to be 0.9% above the base year. Including the effect of flexible mechanisms, Italy is projected to exceed its Kyoto target by 19.3 MtCO₂-eq. This represents an increase in the gap to target reported in 2005 and 2006 (14.2 MtCO₂-eq).

The DPR generally provides a good level of detail about and quantification of the policies and measures. However the reporting could be improved by providing a split by gas for the "with measures" projections and by gas and sector for the "with additional measures" projections, and by reporting sensitivity and uncertainty analyses.