Italy

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1.

SUMMARY

The latest greenhouse gas projections for Italy are presented in the May 2008 Monitoring Mechanism (MM) submission.

Italy's Kyoto commitment is a 6.5% reduction in greenhouse gas emissions relative to the base year, an implied target of 483.3 Mt CO_2-eq. The net effect of the sectoral emissions projections is an overall increase in emissions to 555.4 MtCO_2-eq. in the "with existing measures" scenario, 7.5% above base year emissions, and 538.9 MtCO_2-eq. in the "with additional measures" scenario, 4.3% above base year emissions.

Including the effect of additional measures, flexible mechanisms and carbon sinks, Italy's emissions are projected to be 4.6% below the base year, meaning that it would not meet its Kyoto target of a 6.5% reduction. The 2008 figures represent an increase in the gap to target reported in 2006 and 2007. Italy states that the additional measures needed to close this gap are still under investigation by the competent institutions and they will be included in the forthcoming national strategy to mitigate climate change.

A split by gas was provided only for CO_2 for the "with existing measures" and "with additional measures" projections, so it is possible to comment on projected trends by gas for CO_2 only. In terms of sectoral projections, the greatest emission increase is projected in the energy sector. The subsector that presents the biggest increase is transport, where CO_2 emissions are projected to increase by around 30% in the "with existing measures" projection and 27% in the "with additional measures" projection.

The 2008 MM submission provides a good level of detail on policies and measures and quantification of their effect in terms of expected emission reductions. Future reporting would benefit from including summary tables of "without measures", "with existing measures" and "with additional measures" projections (as provided in the Excel submission) as well as a summary table showing the base year, Kyoto target and progress to target. The reporting of projections could also be improved by providing a split by gas, and subsectoral breakdowns for the energy sector (energy supply, transport etc) for non-CO_2 gases and total emissions.

2. GHG PROJECTIONS AND PROGRESS TO KYOTO TARGETS

Base-year emissions of greenhouse gases for Italy are calculated using 1990 emissions for all gases. The 2008 MM submission provides "without measures", "with existing measures" and "with additional measures" projections for the years 2005, 2010, 2015 and 2020.

Italy's projected emission increases in 2010 are largely driven by the energy sector. Emissions are projected to increase by 50% in the "with existing measures" scenario and 45% in the "with additional measures" scenario. However only a partial analysis of the energy projections is possible as subsectoral breakdowns (energy supply, transport etc) were provided for CO_2 only. The subsector that presents the biggest increase is transport, where CO_2 emissions are projected to increase by around 30% in the "with existing measures" projection and 27% in the "with additional measures" projection. Other energy subsectors projected to increase are energy supply and energy – other (commercial, residential, agriculture), both with increases in CO_2 emissions of close to 10% in the "with existing measures" scenario.

Emissions from the industrial processes sector are also projected to increase, by around 11% in 2010, while the agriculture and waste sectors are projected to decrease by around 10% and 16% respectively. Policies and measures contributing to the decrease are described in section 3.

The net effect of the sectoral emissions projections is an overall increase in emissions to 555.4 $MtCO_2$-eq. in the "with existing measures" scenario, 7.5% above base year emissions, and 538.9 $MtCO_2$-eq. in the "with additional measures" scenario, 4.3% above base year emissions, compared with the Kyoto target of a 6.5% reduction.

The following 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 Italy;
- Historic emissions (in the "reference year") as reported together with projections. For Italy the reference year is the Kyoto base-year, 1990 for all gases.

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 data[1].

In the case of Italy where the projections are recent enough to be consistent with the latest inventory figures, the correction factor is negligible, at 1.000093. However it has still been applied to the data in Table 2 to provide consistency across all countries.

[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).

Table 1. Summary of reported projections by sector and by gas in 2010 (Mt CO_2–eq.)

	Carbon dioxide			Methane			Nitrous oxide			F-gases			Total		
	Reference year	2010 WEM	2010 WAM	Reference year	2010 WEM	2010 WAM	Reference year	2010 WEM	2010 WAM	Reference year	2010 WEM	2010 WAM	Reference year	2010 WEM	2010 WAM
Energy (excl. transport)	303.9	314.6	302.9	8.0	NE	NE	3.5	NE	NE	NA	NA	NA	315.5	NE	NE
Energy (incl. transport)	405.4	446.5	431.8	8.8	NE	NE	5.2	NE	NE	NA	NA	NA	419.4	461.1	446.4
Energy supply	137.4	150.3	142.4	7.6	NE	NE	0.5	NE	NE	NA	NA	NA	145.5	NE	NE
Energy – industry, construction	88.9	79.2	77.3	0.1	NE	NE	1.5	NE	NE	NA	NA	NA	90.6	NE	NE
Energy – other (commercial, residential, agriculture)	77.5	85.1	83.3	0.3	NE	NE	1.5	NE	NE	NA	NA	NA	79.3	NE	NE
Transport (energy)	101.5	131.9	128.9	0.8	NE	NE	1.7	NE	NE	NA	NA	NA	104.0	NE	NE
Industrial processes	27.3	28.5	28.5	0.1	NE	NE	6.7	NE	NE	2.5	NE	NE	36.5	40.7	39.3
Waste	0.5	0.1	0.1	15.4	NE	NE	2.0	NE	NE	NA	NA	NA	17.9	15.0	15.0
Agriculture	0.0	0.0	0.0	17.2	NE	NE	23.4	NE	NE	NA	NA	NA	40.6	36.6	36.1
Other	1.6	1.2	1.2	0.0	NE	NE	0.8	NE	NE	NA	NA	NA	2.4	1.9	1.9
Total (excl. LULUCF)	434.778	476.3	461.6	41.6	NE	NE	38.0	NE	NE	2.5	NE	NE	516.9	555.4	538.9

Key:
Reference year: base-year under the Kyoto Protocol (1990 for all gases).
WEM: 'with existing measures' projection
WAM: 'with additional measures' projection

Source: Italy's Monitoring Mechanism submission, 2008.

Table 2. Summary of projections by sector and by gas in 2010 compared to 1990 emissions ($MtCO_2$-eq.)

	Carbon dioxide			Methane			Nitrous oxide			F-gases			Total		
	1990	2010 WEM	2010 WAM	1990	2010 WEM	2010 WAM	1990	2010 WEM	2010 WAM	1990	2010 WEM	2010 WAM	1990	2010 WEM	2010 WAM
Energy (excl. transport)	303.9	314.6	302.9	8.1	NE	NE	3.5	NE	NE	NA	NA	NA	315.5	NE	NE
Energy (incl. transport)	405.4	446.5	431.9	8.8	NE	NE	5.2	NE	NE	NA	NA	NA	419.4	461.1	446.5
Energy supply	137.4	150.3	142.4	7.6	NE	NE	0.5	NE	NE	NA	NA	NA	145.6	NE	NE
Energy – industry, construction	88.9	79.2	77.3	0.1	NE	NE	1.5	NE	NE	NA	NA	NA	90.6	NE	NE
Energy – other (commercial, residential, agriculture)	77.5	85.1	83.3	0.3	NE	NE	1.5	NE	NE	NA	NA	NA	79.3	NE	NE
Transport (energy)	101.5	131.9	128.9	0.8	NE	NE	1.7	NE	NE	NA	NA	NA	104.0	NE	NE
Industrial processes	27.3	28.5	28.5	0.1	NE	NE	6.7	NE	NE	2.5	NE	NE	36.5	40.7	39.3
Waste	0.5	0.1	0.1	15.4	NE	NE	2.0	NE	NE	NA	NA	NA	17.9	15.0	15.0
Agriculture	0.0	0.0	0.0	17.2	NE	NE	23.4	NE	NE	NA	NA	NA	40.6	36.6	36.1
Other	1.6	1.2	1.2	0.0	NE	NE	0.8	NE	NE	NA	NA	NA	2.4	1.9	1.9
Total (excl. LULUCF)	434.8	476.3	461.7	41.6	NE	NE	38.0	NE	NE	2.5	NE	NE	516.9	555.4	538.9

Key:
WEM: 'with existing measures' projection
WAM: 'with additional measures' projection
The Total columns for WEM and WAM projections show Energy **including** transport, as a subsectoral breakdown of the energy sector was not provided.

Source: Italy's Monitoring Mechanism submission, 2008 and Annual greenhouse gas inventory 1990 – 2006 and inventory report, 2008.

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

	Carbon dioxide			Methane			Nitrous oxide			F-gases			Total		
	1990	2010 WEM	2010 WAM	1990	2010 WEM	2010 WAM	1990	2010 WEM	2010 WAM	1990	2010 WEM	2010 WAM	1990	2010 WEM	2010 WAM
Energy (excl. transport)	100	103.5	99.7	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Energy (incl. transport)	100	110.1	106.5	100	NE	NE	100	NE	NE	100	NE	NE	100	109.9	106.4
Energy supply	100	109.4	103.6	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Energy – industry, construction	100	89.0	86.9	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Energy – other (commercial, residential, agriculture)	100	109.8	107.4	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Transport (energy)	100	130.0	127.1	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Industrial processes	100	104.5	104.5	100	NE	NE	100	NE	NE	100	NE	NE	100	111.4	107.6
Waste	100	23.1	23.1	100	NE	NE	100	NE	NE	100	NE	NE	100	83.7	83.7
Agriculture	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	90.3	89.1
Other	100	75.1	75.1	100	NE	NE	100	NE	NE	100	NE	NE	100	81.0	81.0
Total (excl. LULUCF)	100	109.6	106.2	100	NE	NE	100	NE	NE	100	NE	NE	100	107.5	104.3

Key:
WEM: 'with existing measures' projection
WAM: 'with additional measures' projection
The Total columns for WEM and WAM projections show Energy **including** transport, as a subsectoral breakdown of the energy sector was not provided.

Source: Italy's Monitoring Mechanism submission, 2008 and Annual greenhouse gas inventory 1990 – 2006 and inventory report, 2008.

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

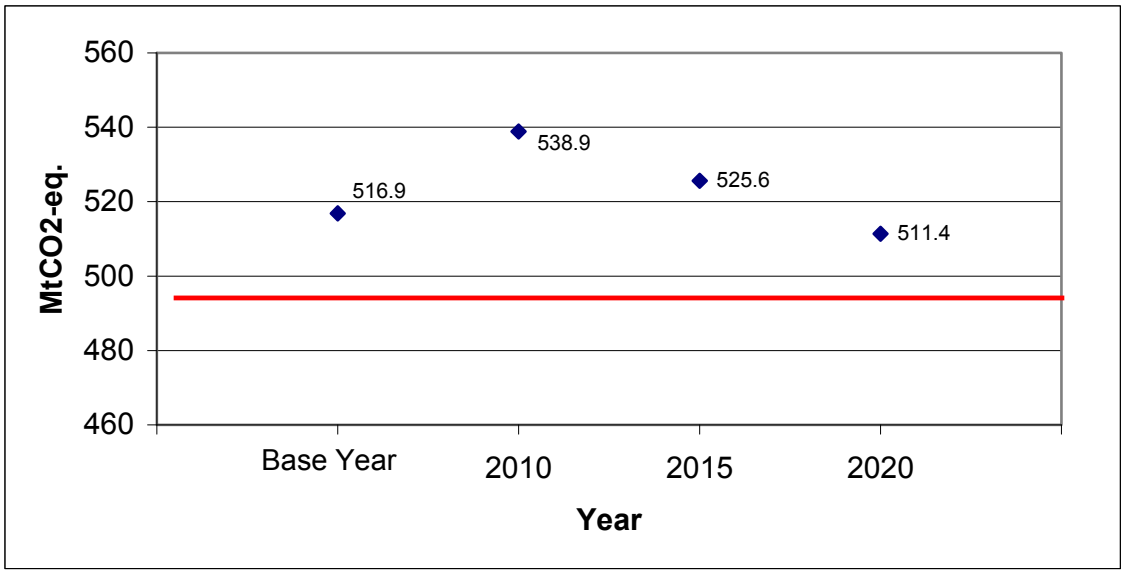
	Unit	Base-year emissions under the Kyoto Protocol	2010 projections 'with existing measures'	2010 projections 'with additional measures'
Total GHG emissions (excluding LULUCF)	Mt CO_2-eq.	516.9	555.4	538.9
	Index (base-year emissions = 100)	100	107.5	104.3

Source: Italy's Monitoring Mechanism submission, 2008 and Annual greenhouse gas inventory 1990 – 2006 and inventory report, 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 presents the "with additional measures" scenario.

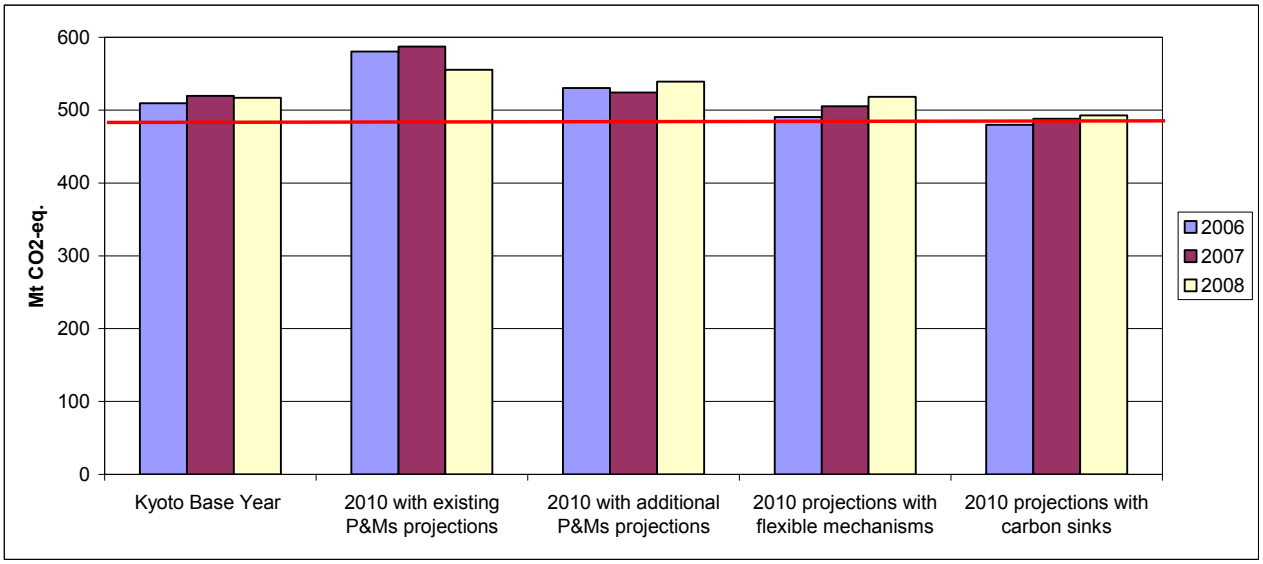
The red lines in Figure 1 and 2 indicate the Kyoto target of 483.3 Mt CO_2-eq., based on the revised Kyoto base year, 2008.

Figure 1. Greenhouse gas projections in 2010, 2015 and 2020 (Mt CO2–eq.)



Source: Italy's Monitoring Mechanism submission, 2008

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



Sources: For 2006 data: Italy's 2005 Monitoring Mechanism submission and 3rd National Communication. 2007 data: Italy's Demonstrable Progress Report, 2006. 2008 data: Italy's Monitoring Mechanism submission, 2008.

3. CLIMATE CHANGE MITIGATION POLICIES AND MEASURES

Italy's 2008 MM submission describes and quantifies emission reductions for most policies and measures (PAMs), covering all sectors.

The PAM projected to deliver the greatest savings in 2010 is the emission trading cap for the period 2008-2012 (24.15 Mt), shown as an existing cross-sectoral measure in the bottom up calculations. In terms of planned measures, the greatest savings are projected to come from a range of energy supply PAMs (7.9 Mt), particularly new supporting systems for renewable energy and White Certificates for CHP.

The domestic PAMs quantified in Table 5 will be used to deliver a large proportion (80%+) of the emission reductions required to meet the Kyoto target, due to Italy's decision to cap at 20% the contribution from flexible mechanisms.

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)[2]	29.8	14.6	3.2	11.7
Energy supply	NE	NE	0.4	7.9
Energy – industry, construction	NE	NE	0.0	1.9
Energy – other (commercial, residential, agriculture)	NE	NE	2.8	1.8
Transport (energy)	NE	NE	2.4	3.0
Industrial processes	0.0	1.4	0.0	1.4
Waste	1.8	0.0	1.8	0.0
Agriculture	0.0	0.5	0.0	0.5
Cross-sectoral	0.0	0.0	24.2	0.0
Total (excluding LULUCF)	31.6	16.5	31.6	16.5

Note: The effects of measures detailed above are calculated firstly by determining the difference between total projections in each scenario ("without measures" minus "with existing measures", and "with existing measures" minus "with additional measures") and secondly by summing the reported effect of individual measures.

Source: Italy's Monitoring Mechanism submission, 2008

[2] In the top down calculations, the energy total includes transport as no subsectoral breakdown was provided.

Table 6. Detailed information on Existing Policies and measures

Sector	Name	Type	GHG	Status	Estimated savings ($ktCO_2$–eq.)		Costs (EUR/t)
					2010	2020	
Agriculture	Common Agricultural Policy	Regulatory	CH4, N20	implemented	NE	NE	NE
Agriculture	Code of good agricultural practice	Regulatory	N2O		NE	NE	NE
Agriculture	Collection and use of biogas from animal waste	Regulatory	CH4	implemented	NE	NE	NE
Cross-cutting	EU -ETS	Economic	CO2	implemented	24150	NE	NE
Cross-cutting	Use of the kyoto mechanism	Economic	CH4, CO2, HFC, N2O, PFC, SF6	implemented	NE	NE	NE
Cross-cutting	White Certificates (Decrees 20 July 2004)	Economic	CO2	implemented	NE	NE	NE
Cross-cutting	Interregional Operational Plan Renewable energy and energy efficiency	Economic, Regulatory	CO2	implemented	NE	NE	NE
Cross-cutting	Regional Energy Plans	Planning	CO2	implemented	NE	NE	NE
Cross-cutting	Use of the Kyoto mechanism	Economic	CH4, CO2, HFC, N2O, PFC, SF6	implemented			
Energy consumption	Building Regulation (Decree 27 July 2005)	Regulatory	CO2	implemented	660	2860	NE
Energy consumption	Building Regulation (Legislative decree 192/05 as amended by legislative decree 311/06)	Regulatory	CO2	implemented	660	2860	NE
Energy consumption, Industrial Processes	Law 10 of 1991	Planning	CO2		400	400	NE
Energy consumption	Replacement of low efficiency motors and inverters (Budget law 2007)	Fiscal	CO2	implemented	3600	3600	NE
Energy consumption	Energy efficiency in buildings (Budget Law 2007)	Economic	CO2	implemented	1320	2460	NE
Energy consumption	Fund for new buildings (Art 351 - 352 of Budget law 2007)	Regulatory	CO2	implemented	NE		NE
Energy consumption	Fund for energy efficiency and fuel poverty (Art 353 - 364 of Budget law 2007)	Fiscal	CO2	implemented	NE		NE
Energy supply	Feed-In Tariffs (Decree CIP 6/92)	Economic, Regulatory	CO2	expired	14100	15200	NE

Sector	Name	Type	GHG	Status	Estimated savings ($ktCO_2$–eq.)		Costs (EUR/t)
					2010	2020	
Energy supply	CCGT (Decree 4 August 1999)	Regulatory	CO2	implemented	16500	16500	NE
Energy supply	Green Certificates (Legislative Degree 79/99)	Economic, Regulatory	CO2	implemented	6000	6000	NE
Energy supply	PV systems (Decree 28 July 2005 as amended by decree 6 February 2006)	Economic, Regulatory	CO2	implemented	190	640	NE
Energy supply	Green Certificates (Legislative decree 387/2003 of December 2003)	Economic, Regulatory	CO2	implemented	NE		NE
Energy supply	Green Certificates and CHP (Law 239 of 23 August 2004/05/06)	Economic, Regulatory	CO2	expired	NE		NE
Energy supply	White Paper for Renewables	Economic, Regulatory	CO2		NE		NE
Energy supply	Green Certificates (Legislative decree 152/06)	Economic, Regulatory	CO2	implemented	NE		NE
Energy supply	Green Certificates (Decree 24 October 2005)	Economic, Regulatory	CO2	implemented	NE		NE
Energy supply	PV systems (Decree 19 February 2007)	Economic, Regulatory	CO2	implemented	190	640	NE
Energy supply	PV systems (Budget Law 2007)	Regulatory	CO2	implemented	190	640	NE
Energy supply	Simplification of authorisation procedures (Law 55 of 9 April 2002)	Regulatory	CO2	implemented	NE		NE
Energy supply	Simplification of authorisation procedures (Law 239 of 23 August 2004)	Regulatory	CO2	implemented	NE		NE
Energy supply	Rotation Fund (Art. 1110 - 1115 of Budget Law 2007)	Regulatory, Research	CO2	implemented	NE		NE
Forestry	Forestry	Regulatory	CO2	implemented	10200		NE
Forestry	Forestry	Regulatory	CO2	implemented	Cluster value	Cluster value	NE
Forestry	Forestry	Regulatory	CO2	implemented	Cluster value	Cluster value	NE
Transport	Biofuels	Fiscal, Regulatory	CO2	implemented	2390	2170	NE
Transport	Sustainable Mobility Fund (Art. 1122 of Budget law 2007)	Economic, Education, Information,	CO2	implemented	NE		NE

Sector	Name	Type	GHG	Status	Estimated savings ($ktCO_2$–eq.)		Costs (EUR/t)
					2010	2020	
		Regulatory					
Waste	Separate collection	Regulatory	CH4	implemented	1800	2700	NE
Forestry	Combined emission reduction of IT-LUC-02, IT-LUC-03	Regulatory	CO2	implemented	15100		NE

Source: Öko Institut, (accessed 24 June 2008), ECCP Policies and Measures database, http://www.oeko.de/service/pam/index.php and Monitoring Mechanism submission, July 2008 update.

Table 7. Detailed information on Planned Policies and measures

Sector	Name	Type	GHG	Status	Estimated savings ($ktCO_2$–eq.)		Costs (EUR/t)
					2010	2020	
Energy consumption	End use efficiency and energy services in the Civil sector	Regulatory	CO2	planned	Cluster value	Cluster value	
Agriculture	Reduction in the use of nitrogen fertilizers	Regulatory	N2O	planned	250.00	490.00	
Agriculture	Animal Storage	Regulatory	CH4	planned	250.00	490.00	
Energy consumption	White Certificates in the Industry sector	Economic, Regulatory	CO2	planned	Cluster value	Cluster value	
Energy consumption	White Certificates in the Industry sector	Economic, Regulatory	CO2	planned	Cluster value	Cluster value	
Energy consumption	End use efficiency and energy services in the Industry sector	Regulatory	CO2	planned	Cluster value	Cluster value	
Energy consumption	Energy use in machinery	Regulatory	CO2	planned	Cluster value	Cluster value	
Energy consumption	Replacement of low efficiency motors and inverters	Regulatory	CO2	planned	Cluster value	Cluster value	
Energy consumption	White Certificates in the Civil Sector	Economic, Regulatory	CO2	planned	600	4420	
Energy consumption	White Certificates in the Civil Sector	Economic, Regulatory	CO2	planned	600	4420	

Sector	Name	Type	GHG	Status	Estimated savings ($ktCO_2$–eq.)		Costs (EUR/t)
					2010	2020	
Energy consumption	Energy efficiency standards	Regulatory	CO2	planned	Cluster value	Cluster value	
Energy consumption	Energy efficiency in buildings	Regulatory	CO2	planned		9110	
Energy consumption	End use efficiency and energy services in the Civil sector	Regulatory	CO2	planned	Cluster value	Cluster value	
Energy consumption	Combined emission reduction of IT-ENC-04, IT-ENC-20	Regulatory	CO2	planned	600	4420	
Energy consumption	Combined emission reduction of IT-ENC-11, IT-ENC-12, IT-ENC-13, IT-ENC-14, IT-ENC-15	Economic, Regulatory	CO2	planned	930	9500	
Energy supply	Combined emission reduction of IT-ENS-19, IT-ENS-20	Economic, Regulatory	CO2	planned	1650	9330	
Energy supply	New supporting systems for renewable energy sources	Economic, Regulatory	CO2	planned	6290	24680	
Energy supply	White Certificates for CHP (Legislative decree 20/07)	Economic, Regulatory	CO2		Cluster value	Cluster value	
Energy supply	White Certificates for CHP	Economic, Regulatory	CO2	planned	Cluster value	Cluster value	
Energy supply	Cement production	Regulatory	CO2	planned	400	1200	
Industrial Processes	Reduction of N2O emissions from the production of nitric acid	Regulatory	N2O	planned	1400	1570	
Energy consumption	Aluminium production	Regulatory	CO2, HFC, PFC	planned	600	800	
Transport	Fleet update	Economic, Regulatory	CO2	planned	2960	4400	
Transport	Measures for new infrastructures in public transport	Regulatory	CO2	planned		4500	
Transport	Biofuels	Fiscal, Regulatory	CO2	planned		8690	
Transport	Fleet update	Economic, Regulatory	CO2	planned		4700	
Waste	Biodegradable waste	Regulatory	CH4	planned		4400	

Source: Öko Institut, (accessed 24 June 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	Agreement with car manufacturers ACEA etc.	Transport
Existing national policies and measures **reinforced** by CCPM	Taxation of energy products 2003/96/EC	Energy supply
	Directives on energy labelling of appliances	Energy consumption
New national policies and measures implemented after CCPM was adopted	Emissions trading 2003/87/EC	Cross-cutting
	Promotion of cogeneration 2004/8/EC	Energy supply
	Promotion of electricity from RE sources 2001/77/EC	Energy supply
	Energy performance of buildings 2002/91/EC	Energy consumption
	Promotion of biofuels for transport 2003/30/EC	Transport
	Transport modal shift to rail 2001/12/EC etc.	Transport
	Landfill directive 1999/31/EC	Waste
Status of national policy or measure **not reported**	Kyoto Protocol project mechanisms 2004/101/EC	Cross-cutting
	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
	Ecodesign requirements for energy-using products 2005/32/EC	Energy consumption
	End-use efficiency and energy services 2006/32/EC	Energy consumption
	Eco-management & audit scheme (EMAS) EC 761/2001	Energy consumption
	Energy labelling for office equipment 2422/2001	Energy consumption
	Efficiency fluorescent lighting 2000/55/EC	Energy consumption
	Efficiency of hot water boilers 92/42/EEC	Energy consumption
	Motor challenge, voluntary EC programme	Energy consumption
	Integrated European railway area (COM(2002)18 final)	Transport
	Consumer information on cars 1999/94/EC	Transport
	Marco Polo programme on freight transport	Transport
	HFCs in mobile air conditioning 2006/40/EC	Industrial Process
	F-gas regulation (842/2006)	Industrial Process
	Support under CAP (1782/2003)	Agriculture
	Support under CAP - amendment (1783/2003)	Agriculture
	Rural development support and CAP(2603/1999, 1698/2005 and 1290/2005)	Agriculture
	Support scheme for energy crops under CAP	Agriculture

	(795/2004)	
	Support for rural development from EAGGF (1257/1999)	Agriculture
	Pre-accession measures for agriculture and rural development (1268/1999)	Agriculture
	Nitrates directive 91/676/EEC	Agriculture
	Packaging and packaging waste (94/62/EC, 2004/12/EC, 2005/20/EC)	Waste
	Directive on waste 2006/12/EC	Waste

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

In Italy, one national transport PAM (Agreement with car manufacturers) was in place before the related CCPM, and two national energy PAMs were reinforced by CCPMs (Taxation of energy products and Directives on energy labelling of appliances). Seven CCPMs provided the impetus for the adoption of national PAMs in a range of sectors.

For all other CCPMs, the majority of policies, Italy has not reported the status of national implementation so it is difficult to comment on their impact. However the Monitoring Mechanism submission (2008) states:

"In Italy all CCPM's have a remarkable impact and can be considered as a base issue for national policies. …The benefits of CCPM's are quite high in the civil and transport sectors. …In our national legislative framework [it would have been] almost impossible to implement emission saving policies in these sectors without a link to an EU directive. The adoption and wide spread success of energy labeling in appliances is an example of those policies. …CCPM's give an important contribution improving the 'level playing field' and addressing competitive distortions which might otherwise result from unilateral introduction of policies.

Italy has an historical tradition in energy efficiency in the energy and industrial sectors and a quite high use of renewable sources compared to EU average. …[The] EU framework gives in any case a stimulus to extend and improve some policies, as the use of renewables in the electricity generation."

4. METADATA

Sources of information

Italy's national report submitted to the European Commission under Article 3(2) of the Monitoring Mechanism, Decision 280/2004/EC. Report and Excel template, May 2008 (version 3); revised July 2008 (version 4) and September 2008 (version 5).

Italy's Annual greenhouse gas inventory 1990 - 2006 and inventory report, 16 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 all gases.

Kyoto base-year emissions have now been reviewed and set for all EEA countries, except Croatia. Croatia's Kyoto base year is currently undergoing a review procedure by UNFCCC and is therefore subject to change.

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 o (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 projections is 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	+++	Clearly identified
Objectives of policies	+++	Mostly described
Types of policies	+++	Specified
Which greenhouse gases?	+++	Covers all gases; specifies which gas or gases per PAM
Status of Implementation	+++	Clear for almost each PAM: planned, adopted, implemented, expired
Implementation body	+++	Provided
Quantitative assessment of emission reduction effect and cost of policies	++	Most PAMs quantified, either individually or together ('cluster values').
Interaction with other national and EU level policies	+++	Annex 1 of Italy's MM 2008 describes the linkages between national PAMs and CCPM's
Measures implementing community legislation	+++	Details on which national policies are implementing individual pieces of EU legislation.
Arrangements for flexible mechanisms	+++	Clearly described
Balance between domestic action and flexible mechanisms	+++	Describes flexible mechanisms up to a cap of 20% of the emission reductions to meet the Kyoto target.

Table 10. Information provided on projections

Category of Information	Level of information provided	Comments
Projection scenarios	+++	"Without measures", "with existing measures" and "with additional measures".
Policies included in each projection	+++	Clearly identified
Expressed relative to base year	+++	Provided in Italy's MM Excel submission
Starting year	+++	Starting year for projections (2004) provided
Split of projections	+	Projections not provided for non-CO2 gases or for energy subsectors
Presentation of results	++	Not clear/consistent MM Excel and report submissions (e.g. presentation of WOM, WEM, WAM).

Description of methodologies (approach, model and assumptions)	++	Good description for the energy sector, limited information for other sectors.
Sensitivity analysis	++	Two scenarios are presented
Discussion of uncertainty	++	Description and some quantification of uncertainty
Details of parameters and assumptions	++	Mandatory but no recommended parameters
Indicators for projections	+++	Provided

Parameters for projections are presented in Table 11. Italy's 2008 MM submission provides a quite substantial number of parameters, as well as detailed breakdowns for the agriculture (livestock numbers and emissions factors) and waste (solid waste disposed to landfills) sectors.

No recommended parameters are 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)	1229.58	1321.29	1429.64	1543.4079	Value (Euro 2000 basis)
Population (value at given years or annual growth rate and base year)	58227.75	58530.8	58471	58123.359	Thousand People
International coal prices at given years in euro per tonne or GJ (Gigajoule)	1.87	2.03	1.98	1.98	€ per tonne or GJ (Gigajoule)
International oil prices at given years in euro per barrel or GJ	41	60.7	57.1	57.1	€ per barrel
International gas prices at given years in euro per m3 or GJ	4.86	6.36	6.11	6.11	€ per GJ
Assumptions for the energy sector					
Total gross inland consumption (PJ) (split by oil, gas, coal, renewables, nuclear, other)	7822.281	7908.12	8645.8	9043.7774	Petajoule (PJ)
6a. - Oil (fossil)	3566.442	3361.43	3230.06	3189.1696	Petajoule (PJ)
6b. - Gas (fossil)	2977.711	3051.45	3785.96	4112.288	Petajoule (PJ)
6c. – coal	712.8699	692.661	709.083	720.9032	Petajoule (PJ)
6d. – Renewables	565.2584	802.576	920.698	1021.4166	Petajoule (PJ)
6e. - Nuclear (IEA definition for energy calc.)	0	0	0	0	Petajoule (PJ)
6f. Net Electricity import (-+)	452.4578	537.274	482.152	404.01872	Petajoule (PJ)
Total electricity production by fuel type (oil, gas, coal, renewables, nuclear, other)	283748	316900	365900	404700	Gwhe
10. – Renewable	49655	68900	74900	83700	Gwhe
12. - Other	234093	248000	291000	321000	Gwhe
Energy demand by sector split by fuel (delivered)	5631.8	5666.6	6223.5	6505.7	Petajoule (PJ)
14. Industry (Includes cogeneration)	1721.5	1551.8	1862.5	1957.5	Petajoule (PJ)
16. Residential (Includes residential, tertiary and agriculture)	2056.4	2168.4	2274.6	2344.7	Petajoule (PJ)
17. Transport	1853.9	1946.4	2086.4	2203.5	Petajoule

(Includes military, off road)					(PJ)
Assumptions on weather parameters, especially heating or cooling degree days	NE	NE	NE	NE	no assumption made, average climate
Assumptions for the industry sector					
For Member States using macroeconomic models:					
19. Gross value-added total industry, Bio Euro (EC95) 2000	278.6	298	320	335	Value (Euro 2000 basis)
The share of the industrial sector in GDP and growth rate	26.50%	26.30%	26.20%	26.10%	%
For Member States using other models:					
The production index for industrial sector	NA	NA	NA	NA	
Assumptions for the transport sector					
For Member States using macroeconomic models:					
The growth of transport relative to GDP	NE	NE	NE	NE	
For Member States using other models:					
24b. Number of kilometres by passenger cars, Mkm	398900	424793	453530	458755	Mkm
25b. Freight transport (all modes), Mtkm	373200	403000	450000	480000	Mtkm
The growth of passenger person kilometres	NE	NE	NE	NE	
The growth of freight tonne kilometres	NE	NE	NE	NE	
Assumptions for buildings (in residential and commercial or tertiary sector)					
For Member States using macroeconomic models:					
The level of private consumption (excluding private transport)					
The share of the tertiary sector in GDP and the growth rate	65.40%	66.40%	68.30%	69.60%	%
For Member States using other models:					
The rate of change of floor space for tertiary buildings and dwellings					
The number of dwellings and number of employees in the tertiary sector	22320.4	23227.6	24171.7	24905.611	numers of housholds
Assumptions in the agriculture sector					
For Member States using macroeconomic models:					
The share of the agriculture sector in GDP and relative growth	2.90%	2.75%	2.70%	2.60%	%
For Member States using other models:					
Livestock numbers by animal type (for enteric fermentation beef, cows, sheep, for manure management pigs and poultry)					
33. Total Cattle	6251.925	6093.53	5837.26	5570.299	1000 head
33a. Dairy cattle	1842.004	1743.32	1729.11	1717.9	1000 head
33b. Non-dairy cattle	4409.921	4350.21	4108.15	3852.399	1000 head
34. Sheep	7954.167	7875.73	7669.22	74306.682	1000 head
35. Swine	9201	9425.04	9800.05	9928.38	1000 head

36. Poultry	188595	112.895	195779	200302.84	1000 head
37. Other, buffalo	205.093	253.566	285.488	319.583	1000 head
The area of crops by crop type	NE	NE	NE	NE	
Emissions factors by type of livestock for enteric fermentation and manure management (t)					
40. Enteric fermentation Dairy cattle	112.8954	116.941	114.855	116.13174	Tonnes CO2e / Thousand Head
41. Enteric fermentation Non-dairy cattle	46.40024	46.4002	46.4002	46.40024	Tonnes CO2e / Thousand Head
42. Enteric fermentation sheep	8	8	8	8	Tonnes CO2e / Thousand Head
43. Manure management Dairy cattle	15.04447	15.0445	15.0445	15.04447	Tonnes CO2e / Thousand Head
44. Manure management Non-dairy cattle	7.781394	7.78139	7.78139	7.7813942	Tonnes CO2e / Thousand Head
45. Manure management sheep	0.217513	0.21751	0.21751	0.2175134	Tonnes CO2e / Thousand Head
46. Manure management Swine	7.885699	7.8857	7.8857	7.8856988	Tonnes CO2e / Thousand Head
47. Manure management Poultry	0.082224	0.08222	0.08222	0.0822236	Tonnes CO2e / Thousand Head
Assumptions in the waste sector					
Waste generation per head of population or tonnes of municipal solid waste	31676.62	34205.5	34602.8	35000	kt
The organic fractions of municipal solid waste					
51. Municipal solid waste disposed to landfills	0.5438	0.39306	0.28875	0.227789	%
52. Municipal solid waste disposed incinerated	0.1017	0.1464	0.1697	0.193	%
53. Municipal solid waste disposed composted	0.0951	0.154	0.256	0.355	%
Municipal solid waste disposed to landfills, incinerated or composted (in tonnes or %)	17225.74	13444.8	9991.55	7972.615	kt
Assumptions in the forestry sector					
Forest definitions	The forest definition adopted by Italy agrees with the Food and Agriculture Organization of the United Nations definitions, therefore the threshold values for tree crown cover, land area and tree height are applied: a. a minimum area of land of 0.5 hectares; b. tree crown cover of 10 per cent; c. minimum tree height of 5 meters.				
Areas of:					
managed forests	11026262	1.2E+07	NE	NE	Hectares

unmanaged forests	NE	NE	NE	NE	Hectares

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	NE	NE	NE	NE	NE
Comparison projected data with official forecasts	NE	NE	NE	NE	NE
Assumptions for the energy sector	NE	NE	NE	NE	NE
National coal, oil and gas energy prices per sector (including taxes)	NE	NE	NE	NE	NE
National electricity prices per sector as above (may be model output)	NE	NE	NE	NE	NE
Total production of district heating by fuel type	NE	NE	NE	NE	NE
Assumptions for the industry sector	NE	NE	NE	NE	NE
Assumptions fluorinated gases:	NE	NE	NE	NE	NE
Aluminium production and emissions factors	NE	NE	NE	NE	NE
Magnesium production and emissions factors	NE	NE	NE	NE	NE
Foam production and emissions factors	NE	NE	NE	NE	NE
Stock of refrigerant and leakage rates	NE	NE	NE	NE	NE
For Member States using macroeconomic models:	NE	NE	NE	NE	NE
Share of GDP for different sectors and growth rates	NE	NE	NE	NE	NE
Rate of improvement of energy intensity (1990 = 100)	NE	NE	NE	NE	NE
For Member States using other models:	NE	NE	NE	NE	NE
Index of production for different sectors	NE	NE	NE	NE	NE
Rate of improvement or index of energy efficiency	NE	NE	NE	NE	NE
Assumptions for buildings (in residential and commercial / tertiary sector)	NE	NE	NE	NE	NE
For Member States using macroeconomic models:	NE	NE	NE	NE	NE
Share of tertiary and household sectors in GDP	NE	NE	NE	NE	NE
Rate of improvement of energy intensity	NE	NE	NE	NE	NE
For Member States using other models:	NE	NE	NE	NE	NE
Number of households	NE	NE	NE	NE	NE
Number of new buildings	NE	NE	NE	NE	NE
Rate of improvement of energy efficiency (1990 = 100)	NE	NE	NE	NE	NE
Assumptions for the transport sector	NE	NE	NE	NE	NE
For Member States using econometric models:	NE	NE	NE	NE	NE
Growth of transport relative to GDP split by passenger and freight	NE	NE	NE	NE	NE
Improvements in energy efficiency split by vehicle type	NE	NE	NE	NE	NE
Improvements in energy efficiency split by vehicle type, whole fleet/new cars	NE	NE	NE	NE	NE
Rate of change of modal split (passenger and freight)	NE	NE	NE	NE	NE
Growth of passenger road kilometres	NE	NE	NE	NE	NE
Growth of passenger rail kilometres	NE	NE	NE	NE	NE
Growth of passenger aviation kilometres	NE	NE	NE	NE	NE
Growth of freight tonne kilometres on road	NE	NE	NE	NE	NE
Growth of freight tonne kilometres by rail	NE	NE	NE	NE	NE
Growth of freight tonne kilometres by navigation	NE	NE	NE	NE	NE
Assumptions for the agriculture sector	NE	NE	NE	NE	NE
For Member States using econometric models:	NE	NE	NE	NE	NE
Agricultural trade (import/export)	NE	NE	NE	NE	NE
Domestic consumption (e.g. milk/beef consumption)	NE	NE	NE	NE	NE
For Member States using other models:	NE	NE	NE	NE	NE

Development of area of crops, grassland, arable, set-aside, conversion to forests etc	NE	NE	NE	NE	NE
Macroeconomic assumptions behind projections of agricultural activity	NE	NE	NE	NE	NE
Description of livestock (e.g. by nutrient balance, output/animal production, milk production)	NE	NE	NE	NE	NE
Development of farming types (e.g. intensive conventional, organic farming)	NE	NE	NE	NE	NE
Distribution of housing/grazing systems and housing/grazing period	NE	NE	NE	NE	NE
Parameters of fertiliser regime:	NE	NE	NE	NE	NE
Details of fertiliser use (type of fertiliser, timing of application, inorganic/organic ratio)	NE	NE	NE	NE	NE
Volatilisation rate of ammonia, following spreading of manure on the soil	NE	NE	NE	NE	NE
Efficiency of manure use	NE	NE	NE	NE	NE
Parameters of manure management system:	NE	NE	NE	NE	NE
Distribution of storage facilities (e.g. with or without cover):	NE	NE	NE	NE	NE
Nitrogen excretion rate of manures	NE	NE	NE	NE	NE
Methods of application of manure	NE	NE	NE	NE	NE
Extent of introduction of control measures (storage systems, manure application), use of best available techniques	NE	NE	NE	NE	NE
Parameters related to nitrous oxide emissions from agricultural soils	NE	NE	NE	NE	NE
Amount of manure treatment	NE	NE	NE	NE	NE