Malta

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1.

SUMMARY

Malta is a non-Annex 1 Party to the Kyoto Protocol and does not therefore have a target for GHG emission reductions.

Malta does not report emission projections in their national report submitted to the European Commission under the Monitoring Mechanism, Decision 280/2004/EC or in the 1st national communication. The National Allocation Plan for Malta for 2008-2012 contains an emission projection for CO_2 only in the with measures scenario, for point emission sources which fall under the EU ETS. In Malta's case this is limited to the two power plants on the island.

CO_2 emissions for these power plants are projected to be 2.19 Mt CO_2 -eq. in 2010 . Comparing 2005 historic CO_2 emissions for the power sector to total emissions for all sectors and all gases in 2005, allows a correction factor to be calculated. This correction factor has been applied to the 2010 projection for the power sector to estimate total projected emissions for all sectors and gases in 2010. The result is total projected emissions of 3.5 Mt CO_2 -eq. in 2010.

Malta has implemented a number of policies in order to reduce the relatively high rate of emissions per unit of GDP. Malta has implemented a number of policies in order to reduce the relatively high rate of emissions per unit of GDP. Measures expected to lead to reductions include energy efficiency improvements for the power generation, consumption and water processing sectors. An increase in an alternative source of fossil fuel and a higher percentage of RES are also planned in order to reduce emissions further. The possibility of linking Malta to the European grid could also yield a positive effect on reducing emissions further.

2. GHG PROJECTIONS AND PROGRESS TO KYOTO TARGETS

Malta ratified the UNFCCC as a non-Annex I Party on 17 March 1994, and the Kyoto Protocol in the same capacity on 11 November 2001. Hence it has no targets for emission reduction over the 2008-2012 period.

Table 1 shows, for all gases and main sectors:

- GHG emission projections for the "with existing measures" (WEM) scenario as reported by Malta;
- Historic emissions (in the "reference year") as reported together with projections. For Malta the reference year is 2005.

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)	2.0	2.2	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	2.0	2.2	NE
Energy supply	2.0	2.2	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	2.0	2.2	NE
Energy – industry, construction	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Energy – other (commercial, residential, agriculture)	NE	NE	NE	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	NE	NE	NE
Industrial processes	NE	NE	NE	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	NE	NE	NE
Agriculture	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Other	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Total (excl. LULUCF)	2.0	2.2	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	2.0	2.2	NE

Key:
Reference year: base-year under the Kyoto Protocol (2005 for all gases).
WEM: 'with existing measures' projection

WAM: 'with additional measures' projection

Source: National Allocation Plan for Malta for 2008-2012, Malta Environment and Planning Authority, 27.09.2006 and EEA green house gas data viewer, http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=455, accessed 4 July 2008.

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 scenario. 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].

Table 2. Summary of projections by sector and by gas in 2010 compared to 1990 emissions (Mt CO_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)	1.5	NE	NE	NE	NE	NE	0.0	NE	NE	NE	NE	NE	1.5	NE	NE
Energy supply	1.4	2.2	NE	NE	NE	NE	0.0	NE	NE	NE	NE	NE	1.4	2.2	NE
Energy – industry, construction	0.1	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.1	NE	NE
Energy – other (commercial, residential, agriculture)	0.1	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.1	NE	NE
Transport (energy)	0.3	NE	NE	0.0	NE	NE	0.0	NE	NE	NE	NE	NE	0.3	NE	NE
Industrial processes	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.0	NE	NE
Waste	NE	NE	NE	0.3	NE	NE	0.0	NE	NE	NE	NE	NE	0.3	NE	NE
Agriculture	NE	NE	NE	0.1	NE	NE	0.0	NE	NE	NE	NE	NE	0.1	NE	NE
Other	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.0	NE	NE
Total (excl. LULUCF)	1.8	NE	NE	0.3	NE	NE	0.0	NE	NE	NE	NE	NE	2.2	3.5	NE

Key:
WEM: 'with existing measures' projection
WAM: 'with additional measures' projection

Source: National Allocation Plan for Malta for 2008-2012, Malta Environment and Planning Authority, 27.09.2006 and EEA green house gas data viewer, http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=455, accessed 4 July 2008.

[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 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	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Energy supply	100	162.2	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	161.7	NE
Energy – industry, construction	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Energy – other (commercial, residential, agriculture)	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Transport (energy)	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Industrial processes	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Waste	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Agriculture	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE
Other	100	NE	NE		NE	NE		NE	NE		NE	NE		NE	NE
Total (excl. LULUCF)	100	NE	NE	100	NE	NE	100	NE	NE	100	NE	NE	100	161.9	NE

Key:
WEM: 'with existing measures' projection
WAM: 'with additional measures' projection

Source: National Allocation Plan for Malta for 2008-2012, Malta Environment and Planning Authority, 27.09.2006 and EEA green house gas data viewer, http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=455, accessed 4 July 2008.

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

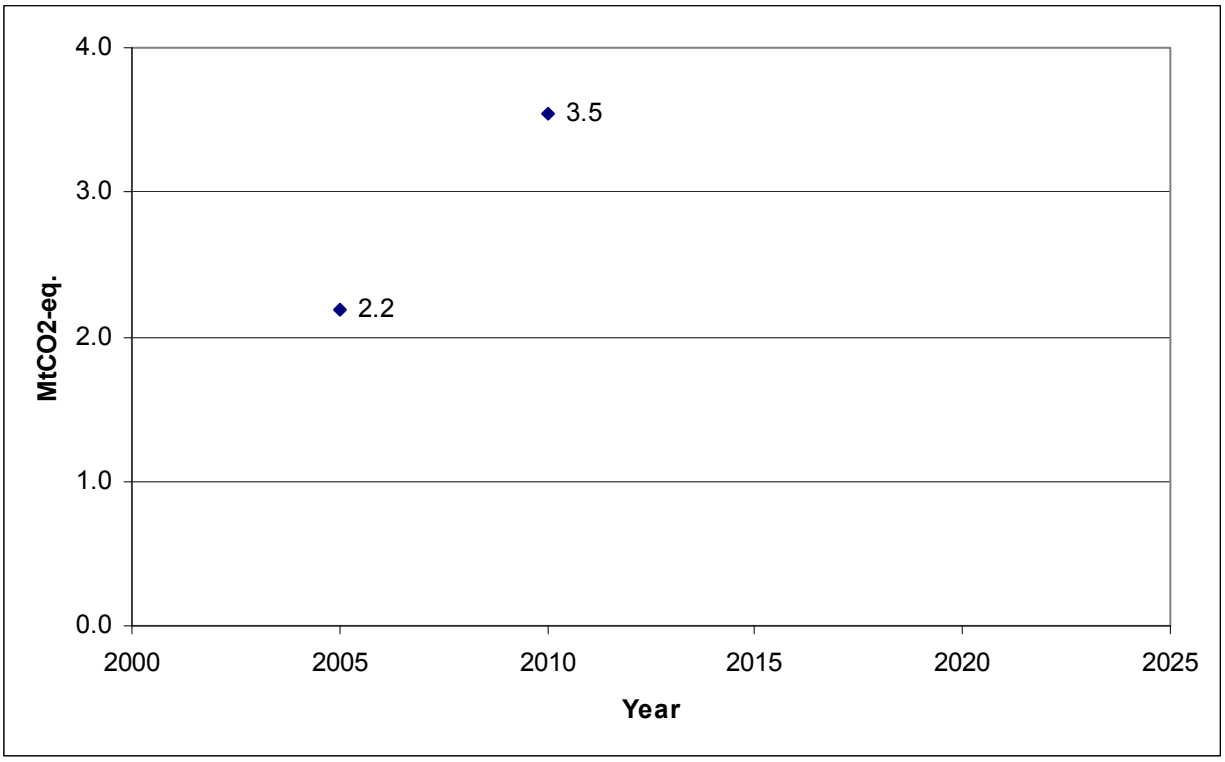
	Unit	Base-year emissions under the Kyoto Protocol	2010 projections 'with existing measures'	2010 projections 'with additional measures'
Total GHG emissions (excluding LULUCF)	Mt CO_2-eq.	N.A.	3.5	NE
	Index (base-year emissions = 100)	100	NA	NA

Source: National Allocation Plan for Malta for 2008-2012, Malta Environment and Planning Authority, 27.09.2006 and EEA green house gas data viewer, http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=455, accessed 4 July 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 existing measures" scenario.

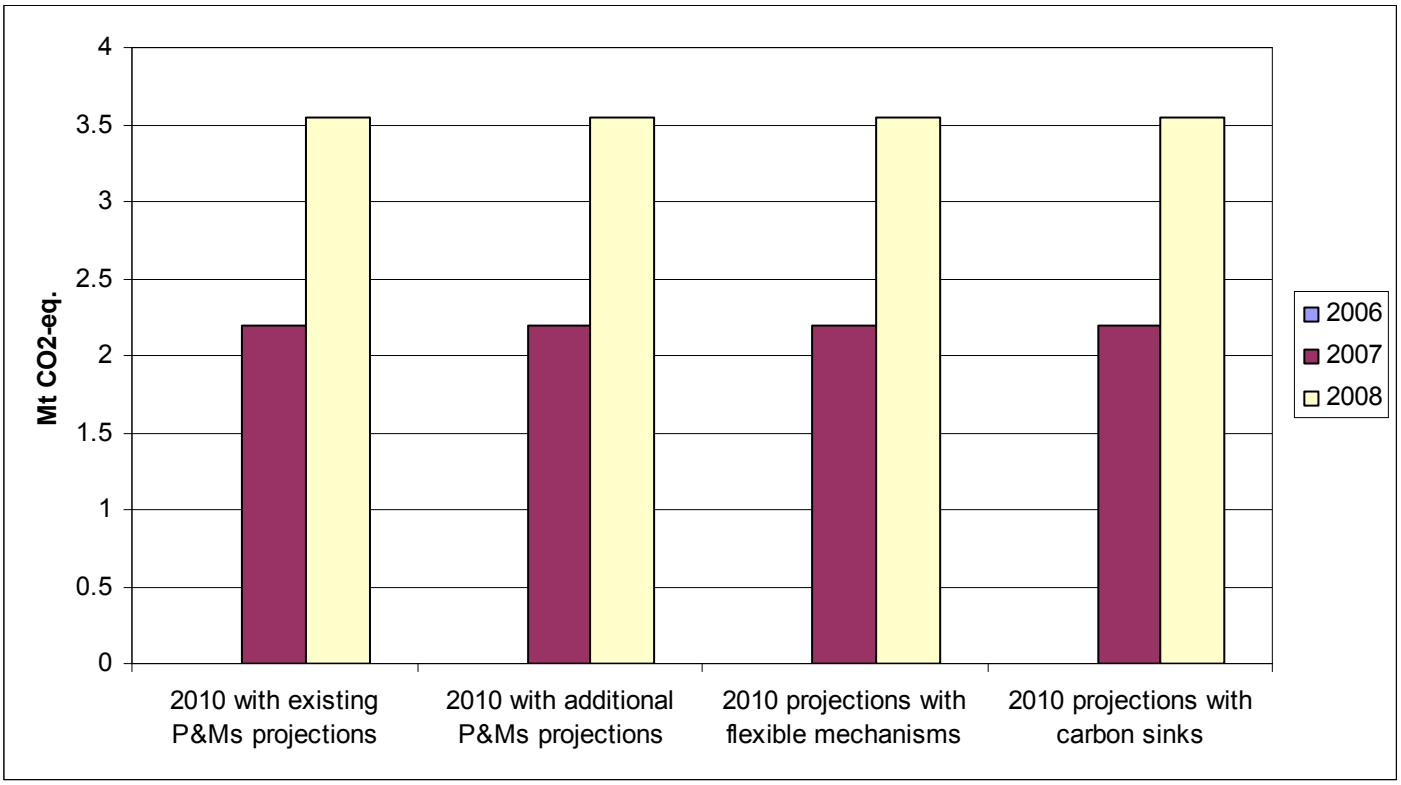
No information was provided by Malta on greenhouse gas projections (excluding sinks and flexible mechanisms) in 2015 and 2020.

Figure 1. Greenhouse gas projections in 2010, 2015 and 2020 (Mt CO_2 –eq.)



Source: National Allocation Plan for Malta for 2008-2012, Malta Environment and Planning Authority, 27.09.2006 and EEA green house gas data viewer, http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=455, accessed 4 July 2008.

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



Sources: for 2007 and 2008: National Allocation Plan for Malta for 2008-2012, Malta Environment and Planning Authority, 27.09.2006 and EEA green house gas data viewer, http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=455, accessed 4 July 2008.

3. CLIMATE CHANGE MITIGATION POLICIES AND MEASURES

Malta's Monitoring Mechanism submission only includes quantification of the effects of a few of the listed Policies and Measures (PAMs). Additionally there are no 'with additional measures' or 'without measures' projections available to calculate overall emissions savings from, hence the information below is only partial and may not be representative of the overall impacts of PAMs.

Table 5. Summary of the effect of policies and measures included in the 2010 projections (Mt CO_2 –eq.)

	Top down calculation		Bottom Up calculation	
	Existing Measures	Planned Measures	Existing Measures	Planned Measures
Energy (total, excluding transport)[2]	NE	NE	0.3	NE
Energy supply	NE	NE	0.3	NE
Energy – industry, construction	NE	NE	NE	NE
Energy – other (commercial, residential, agriculture)	NE	NE	NE	NE
Transport (energy)	NE	NE	0.0	NE
Industrial processes	NE	NE	NE	NE
Waste	NE	NE	NE	NE
Agriculture	NE	NE	NE	NE
Cross-sectoral	NE	NE	0.02	NE
Total (excluding LULUCF)	NE	NE	0.3	NE

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: National Allocation Plan for Malta for 2008-2012, Malta Environment and Planning Authority, 27.09.2006; Malta's Monitoring Mechanism submission, May 2007.

[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 ($kt CO_2$–eq.)		Costs (EUR/t)
					2010	2020	
Agriculture	Code of good agricultural practice	Information, Regulatory	CH4, CO_2	implemented			
Cross-cutting	Emission trading sheme (LN 140 of 2005 European Community greenhouse gas emission trading sheme regulation)	Economic, Regulatory	CO_2	implemented			
Cross-cutting	Ambient air quality assessment and management	Regulatory		implemented			
Cross-cutting	National emission ceillings	Regulatory		implemented			
Cross-cutting	Integrated pollution prevention control	Regulatory	CH4, CO_2, HFC, N2O, PFC, SF6	implemented			
Energy consumption	Improve efficiency of power generation	Other	CO_2	implemented		302	
Energy consumption	Product standards for energy efficiency	Other, Regulatory	CO_2	implemented			
Energy consumption	Energy performance of buildings	Other, Regulatory	CO_2	implemented			
Energy consumption	Energy saving and leakage control in water production	Other	CO_2	implemented		20	
Energy supply	Increase in price of electricty	Fiscal	CO_2				
Energy supply	Integration of renewables (LN 186 of 2004 Promotion of electricity produced from renewable sources regulation)	Fiscal, Other	CO_2	implemented			
Energy supply	Use of low sulphur fuel (LN 159 of 2002 Reductions in the sulphur content of certian liquid fuels regulations)	Other		implemented			
Energy supply	Emission limit values for large combustion plants (LN 329 of 2002 Limitations of emissions of certain pollutants into the air from large combustion plants regulations)	Regulatory	CO_2	implemented			
Forestry	Afforestation	Other	CO_2	implemented			

Sector	Name	Type	GHG	Status	Estimated savings ($ktCO_2$–eq.)		Costs (EUR/t)
					2010	2020	
Transport	Increase in fuel prices	Fiscal	CO_2			Cluster value	
Transport	Improvement of public transport, management of parking practices, better traffic management	Regulatory	CO_2	implemented		Cluster value	
Transport	Promotion of more efficient vehicles	Information	CO_2	implemented			
Transport	Use of alternative fuels	Fiscal, Other	CO_2	implemented			
Transport	Use of hybrid and electric traction	Fiscal, Other	CO_2	implemented			
Transport	Reduction of sulphur content of fuels used in road transport	Regulatory		implemented			
Waste	Waste water treatment	Other	CO_2	implemented			
Waste	Reducing landfilling of biodegradable waste and prevention of release of gases into the atmosphere from landfilled waste	Other, Regulatory	CH4	implemented			
Transport	Combined emission reduction of MT-TRA-01, MT-TRA-02, MT-TRA-03	Fiscal, Regulatory	CO_2	implemented		20	

Source: Öko Institut, (accessed 15 June 2008), ECCP Policies and Measures database, http://www.oeko.de/service/pam/index.php

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 supply	Use of natural gas as main fuel	Other	CO_2	planned		489	
Energy supply	Connection to European electricity grid	Other	CO_2	planned			
Energy supply	Use of combined heat and power	Other	CO_2	planned			
Cross-cutting	Consideration of climate change issues in policy making and in environmental impact assessments	Regulatory	CH4, CO_2, HFC, N2O,	planned			

Sector	Name	Type	GHG	Status	Estimated savings ($ktCO_2$–eq.)		Costs (EUR/t)
					2010	2020	
			PFC, SF6				
Transport	Introduction of taxes based on vehicle specifications	Fiscal	CO_2	planned		Cluster value	
Waste	Mechanical biological treatment plants for solid waste	Other	CH4	planned			
Energy supply, Waste	Use of agricultural waste for energy generation	Other	CH4	planned			
Energy supply, Waste	Treatment of sewage sludge for energy generation	Other	CH4	planned			

Source: Öko Institut, (accessed 15 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		
Existing national policies and measures **reinforced** by CCPM		
New national policies and measures implemented after CCPM was adopted		
Status of national policy or measure **not reported**	Kyoto Protocol project mechanisms 2004/101/EC	Cross-cutting
	Emissions trading 2003/87/EC	Cross-cutting
	Integrated pollution prevention and control 96/61/EC	Cross-cutting
	Promotion of cogeneration 2004/8/EC	Energy supply
	Promotion of electricity from RE sources 2001/77/EC	Energy supply
	Taxation of energy products 2003/96/EC	Energy supply
	Internal electricity market 2003/54/EC	Energy supply
	Internal market in natural gas 98/30/EC	Energy supply
	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
	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
	Promotion of biofuels for transport 2003/30/EC	Transport
	Integrated European railway area (COM(2002)18 final)	Transport
	Transport modal shift to rail 2001/12/EC etc.	Transport
	Consumer information on cars 1999/94/EC	Transport
	Agreement with car manufacturers ACEA etc.	Transport
	Marco Polo programme on freight transport	Transport
	HFCs in mobile air conditioning 2006/40/EC	Transport
	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 (795/2004)	Agriculture
	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
	Landfill directive 1999/31/EC	Waste
	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.

Malta reported no information on whether the national measures or policies were implemented before or after the CCPMs, nor whether reinforced by CCPMs.

4. METADATA

Sources of information

Malta's national report submitted to the European Commission under Article 3(2) of the Monitoring Mechanism Decision 280/2004/EC. May 2007.

First National Communication of Malta to the United Nations Framework Convention on Climate Change, Ministry for Rural Affairs and the Environment, University of Malta, April 2004.

National Allocation Plan for Malta for 2008-2012, Malta Environment and Planning Authority, 27.09.2006.

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

EEA green house gas data viewer, http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=455, accessed 4 July 2008.

Kyoto base-year emissions

Malta is a non-Annex 1 Party to the Kyoto Protocol and does not therefore have a target for GHG emission reductions.

Table 1 presents projections reference year emissions (see below).

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	+++	Presented for all measures
Objectives of policies	++	Presented for all measures
Types of policies		
Which greenhouse gases?	+	Emission scenarios are only available for CO_2 in the with measures scenario, and then only for point emission sources which fall under the EU ETS
Status of Implementation	++	Provided for all measures but limited to "planned" and "implemented"
Implementation body	+	Provided for a few measures
Quantitative assessment of emission reduction effect and cost of policies	o	Not discussed
Interaction with other national and EU level policies	o	Not discussed
Measures implementing community legislation	o	Not discussed
Arrangements for flexible mechanisms	o	Not discussed
Balance between domestic action and flexible mechanisms	o	Not discussed

Table 10. Information provided on projections

Category of Information	Level of information provided	Comments
Projection scenarios	+	Not presented for any measure
Policies included in each projection	o	Not discussed
Expressed relative to base year	+	See below
Starting year	+	No information on emissions is available between 1990 and 1992, hence the base year emissions are taken from historical emissions data for 1993, provided by EneMalta (the Maltese electricity operator).
Split of projections	+	None
Presentation of results	+	Tables provided, but given the paucity of data the presentation substance is somewhat poor
Description of methodologies (approach, model and assumptions)	o	Not discussed

Sensitivity analysis	o	Not discussed
Discussion of uncertainty	o	Not discussed
Details of parameters and assumptions	o	Not discussed
Indicators for projections	o	Not discussed

Parameters for projections are presented in Table 11. Malta provided no information on mandatory or recommended parameters.

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)	NE	NE	NE	NE	NE
Population (value at given years or annual growth rate and base year)	NE	NE	NE	NE	NE
International coal prices at given years in euro per tonne or GJ (Gigajoule)	NE	NE	NE	NE	NE
International oil prices at given years in euro per barrel or GJ	NE	NE	NE	NE	NE
International gas prices at given years in euro per m3 or GJ	NE	NE	NE	NE	NE
Assumptions for the energy sector					
Total gross inland consumption (PJ) (split by oil, gas, coal, renewables, nuclear, other)	NE	NE	NE	NE	NE
6a. - Oil (fossil)	NE	NE	NE	NE	NE
6b. - Gas (fossil)	NE	NE	NE	NE	NE
6c. – coal	NE	NE	NE	NE	NE
6d. – Renewables	NE	NE	NE	NE	NE
6e. - Nuclear (IEA definition for energy calc.)	NE	NE	NE	NE	NE
6f. Net Electricity import (-+)	NE	NE	NE	NE	NE
Total electricity production by fuel type (oil, gas, coal, renewables, nuclear, other)	NE	NE	NE	NE	NE
10. – Renewable	NE	NE	NE	NE	NE
12. - Other	NE	NE	NE	NE	NE
Energy demand by sector split by fuel (delivered)	NE	NE	NE	NE	NE
14. Industry (Includes cogeneration)	NE	NE	NE	NE	NE
16. Residential (Includes residential, tertiary and agriculture)	NE	NE	NE	NE	NE
17. Transport (Includes military, off road)	NE	NE	NE	NE	NE
Assumptions on weather parameters, especially heating or cooling degree days	NE	NE	NE	NE	NE
Assumptions for the industry sector	NE	NE	NE	NE	NE
For Member States using macroeconomic models:	NE	NE	NE	NE	NE
19. Gross value-added total industry, Bio Euro (EC95) 2000	NE	NE	NE	NE	NE

The share of the industrial sector in GDP and growth rate	NE	NE	NE	NE	NE
For Member States using other models:	NE	NE	NE	NE	NE
The production index for industrial sector	NE	NE	NE	NE	NE
Assumptions for the transport sector	NE	NE	NE	NE	NE
For Member States using macroeconomic models:	NE	NE	NE	NE	NE
The growth of transport relative to GDP	NE	NE	NE	NE	NE
For Member States using other models:	NE	NE	NE	NE	NE
24b. Number of kilometres by passenger cars, Mkm	NE	NE	NE	NE	NE
25b. Freight transport (all modes), Mtkm	NE	NE	NE	NE	NE
The growth of passenger person kilometres	NE	NE	NE	NE	NE
The growth of freight tonne kilometres	NE	NE	NE	NE	NE
Assumptions for buildings (in residential and commercial or tertiary sector)	NE	NE	NE	NE	NE
For Member States using macroeconomic models:	NE	NE	NE	NE	NE
The level of private consumption (excluding private transport)	NE	NE	NE	NE	NE
The share of the tertiary sector in GDP and the growth rate	NE	NE	NE	NE	NE
For Member States using other models:	NE	NE	NE	NE	NE
The rate of change of floor space for tertiary buildings and dwellings	NE	NE	NE	NE	NE
The number of dwellings and number of employees in the tertiary sector	NE	NE	NE	NE	NE
Assumptions in the agriculture sector	NE	NE	NE	NE	NE
For Member States using macroeconomic models:	NE	NE	NE	NE	NE
The share of the agriculture sector in GDP and relative growth	NE	NE	NE	NE	NE
For Member States using other models:	NE	NE	NE	NE	NE
Livestock numbers by animal type (for enteric fermentation beef, cows, sheep, for manure management pigs and poultry)	NE	NE	NE	NE	NE
33. Total Cattle	NE	NE	NE	NE	NE
33a. Dairy cattle	NE	NE	NE	NE	NE
33b. Non-dairy cattle	NE	NE	NE	NE	NE
34. Sheep	NE	NE	NE	NE	NE
35. Swine	NE	NE	NE	NE	NE
36. Poultry	NE	NE	NE	NE	NE
37. Other, buffalo	NE	NE	NE	NE	NE
The area of crops by crop type	NE	NE	NE	NE	NE
Emissions factors by type of livestock for enteric fermentation and manure management (t)	NE	NE	NE	NE	NE
40. Enteric fermentation Dairy cattle	NE	NE	NE	NE	NE
41. Enteric fermentation Non-dairy cattle	NE	NE	NE	NE	NE
42. Enteric fermentation sheep	NE	NE	NE	NE	NE

43. Manure management Dairy cattle	NE	NE	NE	NE	NE
44. Manure management Non-dairy cattle	NE	NE	NE	NE	NE
45. Manure management sheep	NE	NE	NE	NE	NE
46. Manure management Swine	NE	NE	NE	NE	NE
47. Manure management Poultry	NE	NE	NE	NE	NE
Assumptions in the waste sector					
Waste generation per head of population or tonnes of municipal solid waste	NE	NE	NE	NE	NE
The organic fractions of municipal solid waste	NE	NE	NE	NE	NE
51. Municipal solid waste disposed to landfills	NE	NE	NE	NE	NE
52. Municipal solid waste disposed incinerated	NE	NE	NE	NE	NE
53. Municipal solid waste disposed composted	NE	NE	NE	NE	NE
Municipal solid waste disposed to landfills, incinerated or composted (in tonnes or %)	NE	NE	NE	NE	NE
Assumptions in the forestry sector					
Forest definitions	NE				
Areas of:	NE	NE	NE	NE	NE
managed forests	NE	NE	NE	NE	NE
unmanaged forests	NE	NE	NE	NE	NE

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