

Slovenia

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1. SUMMARY

Under the Kyoto Protocol Slovakia has committed to reduce its GHG emissions by 6% as compared with the base year. The base year for Slovenia is 1986 for CO₂, CH₄ and N₂O and 1995 for the fluorinated gases. In absolute terms Slovenia's Assigned Amount is 20.354 Mt CO₂ eq. On average the country's annual target is 18.7 Mt CO₂ eq.

In March 2007 Slovenia has submitted a detailed report pursuant to the Article 3(2) of the Decision No 280/2004/EC on the mechanism for monitoring Community GHG emissions and the implementation of the Kyoto Protocol (hereafter MM 2007). According to the latest GHG projections in the report, the country does not meet its Kyoto target in both under the With Measures (above with 16%) and With Additional Measures scenarios (above with 6.4%).

In 2010 the calculated projections compared to the base year under the WEM scenario are estimated to be 21.7 Mt CO₂ eq., or 106.3% as compared to the base year, while under the WAM scenario the projections are estimated to be 19.9 Mt CO₂ eq., or 97.5%.

However, one more fact should be taken into consideration when assessing the compliance of Slovenia. According to the Decision 11/CP.7 of the Conference of Parties to the UN Framework Convention on Climate Change, in order to achieve the Kyoto target, Slovenia can use sinks of CO₂ emissions provided by increasing wood biomass in forests, in the amount of 1.32 Mt CO₂ eq. The projections from the Forestry Institute of Slovenia on the emission sink for CO₂ indicate that the actual sink from increasing wood biomass in forests will amount in 2010 to 5.8 Mt CO₂, which is 4.3 times higher than the permitted sinks.

Slovenia's MM 2007 report is very detailed in the Policies and Measures part. The PAMs are described in precise details for every sector, their reduction effect is provided for the first commitment period as well as for the year 2010. The reduction effect of the implemented and planned PAMs is not calculated for the year 2020.

Slovenia had introduced several PAMs before the relevant CCPMs have been adopted. The status of a number of PAMs vis-à-vis the relevant CCPMs is missing.

Information on methodologies used for calculating projection is provided and described for all sectors in detail. Uncertainty analysis was carried out, uncertainty factor was calculated only for the agricultural sector. Sensitivity analysis was carried out for two economic growth scenarios and three implemented measures scenarios.

2. GHG PROJECTIONS AND PROGRESS TO KYOTO TARGETS

For Slovenia the Kyoto base year is 1986 CO₂, CH₄ and N₂O is 1986 and for F gases ((PFC, HFC and SF₆) is 1995.. The projections reference year is 1986. For the emission projections only two scenarios were considered, i.e. the WEM and WAM. The projection calculations are made for all sectors and for all six gases.

Under the WEM scenario the emissions have decreased between the base year and 2005, but from 2005 and onwards the emissions increase drastically, especially in the Energy and Transport sector. As a result, Slovenia will not meet its Kyoto target under the WEM scenario. Moreover, it will even exceed the level of the base year. In case of the WAM scenario, emissions for all years 2005, 2015, and 2020 will be under the base year level, but still above the Kyoto target.

Regarding the modelling methodology, different approaches have been used for different sectors. For the Energy sector a set of different models were used, where the main tool is a reference energy ecological model called REES-SLO. This model was created by the MESAP. Besides the REES-SLO model (which comprises other models), a market penetration of energy-saving final use technology assessment model (PET-SLO), a simulation of an electrical load curves model (ELAM-SLO) and a model for calculating the electricity generation balance in a free market (ELBIVIM) were used. For the Transport sector the COPERT model was used. The projections from the industrial processes sector were calculated on the basis of the projected industrial production growth, using different emission factors for different activities. Solid waste, waste water and agricultural emission projections were made by using IPCC methodology.

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 the Slovenia;
- Historic emissions (in the “reference year”) as reported together with projections.

For Slovenia the reference year is 1986 and the Kyoto base-year: 1986 for CO₂, CH₄ and N₂O, and 1995 for fluorinated gases (F-gases)].

Table 2 shows, for all gases and main sectors:

- 1990 GHG emissions as reported in the latest (2008) GHG emissions inventory (1990-2006);

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- Adjusted GHG emission projections for the WEM and WAM scenarios. This adjustment of the projections reported in Table 1 is carried out to allow consistency and comparability between projections and the latest (2008) GHG inventory data¹.

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

	Carbon dioxide			Methane			Nitrous oxide			F-gases (SF ₆ , HFCs and PFCs)			Total		
	Reference year	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)	13.2	11.9	11.0	0.6	0.4	0.4	0.1	0.1	0.1	0.0	0.0	0.0	13.9	12.4	11.5
Energy supply	6.7	6.8	6.1	0.4	0.3	0.3	0.0	0.0	0.0	NE	NE	NE	7.1	7.1	6.4
Energy – industry. construction	4.4	2.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	NE	NE	NE	4.4	2.5	2.4
Energy – other (commercial, residential, agriculture)	2.1	2.6	2.6	0.2	0.1	0.1	0.1	0.1	0.1	NE	NE	NE	2.4	2.8	2.8
Transport (energy)	2.0	4.7	4.2	0.0	0.0	0.0	0.0	0.2	0.2	NE	NE	NE	2.0	4.9	4.4
Industrial processes	1.0	1.2	0.9	0.0	0.0	0.0	NA	NA	NA	0.3	0.1	0.1	1.3	1.4	0.9
Waste	0.0	0.0	0.0	0.5	0.6	0.6	0.1	0.1	0.1	NE	NE	NE	0.6	0.7	0.7
Agriculture	0.0	0.0	0.0	1.3	1.2	1.2	1.0	0.9	0.9	NE	NE	NE	2.3	2.2	2.2
Other	0.0	0.0	0.0				0.1	0.0	0.0	NE	NE	NE	0.1	0.0	0.0
Total (excl. LULUCF)	16.2	17.8	16.2	2.4	2.3	2.3	1.3	1.3	1.4	0.3	0.1	0.1	20.2	21.6	19.8

Key:

Reference year: 1986

WEM: 'with existing measures' projection

WAM: 'with additional measures' projection

Source: Slovenia's MM submission, March 2007

Table 2. Summary of projections by sector and by gas in 2010 compared to 1990 emissions (MtCO₂eq)

	Carbon dioxide	Methane	Nitrous oxide	F-gases (SF ₆ , HFCs and PFCs)	Total
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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).

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	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)	11.1	12.0	11.1	0.5	0.4	0.4	0.1	0.1	0.1	NA	NA	NA	11.7	12.4	11.6
Energy supply	6.3	6.9	6.1	0.4	0.3	0.3	0.0	0.0	0.0	NA	NA	NA	6.7	7.2	6.4
Energy – industry, construction	3.1	2.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	3.1	2.5	2.4
Energy – other (commercial, residential, agriculture)	1.6	2.6	2.6	0.1	0.1	0.1	0.1	0.1	0.1	NA	NA	NA	1.8	2.8	2.8
Transport (energy)	2.7	4.8	4.2	0.0	0.0	0.0	0.0	0.2	0.2	NA	0.0	0.0	2.7	5.0	4.4
Industrial processes	1.0	1.2	0.9	0.0	0.0	0.0	NA	0.0	0.0	0.3	0.1	0.1	1.3	1.4	0.9
Waste	NE	0.0	0.0	0.5	0.7	0.7	0.1	0.1	0.1	NA	0.0	0.0	0.6	0.7	0.7
Agriculture	NE	0.0	0.0	1.2	1.2	1.2	1.0	1.0	1.0	NA	0.0	0.0	2.2	2.2	2.2
Other	NE	0.0	0.0	NE	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0
Total (excl. LULUCF)	14.8	18.0	16.3	2.3	2.3	2.3	1.3	1.3	1.4	0.3	0.1	0.1	18.6	21.7	19.9

Key:

WEM: 'with existing measures' projection

WAM: 'with additional measures' projection

Source: Slovenia's MM submission, March 2007, and Annual greenhouse gas inventory 1990 – 2006, April 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 (SF6, HFCs and PFCs)			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	108.4	100.7	100	75.6	75.7	100	83.2	113.6	100	NA	NA	100	106.7	99.7
Energy supply	100	108.5	96.4	100	74.4	73.9	100	113.3	113.3	100	NA	NA	100	106.7	95.2

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Energy – industry, construction	100	79.5	76.8	100	76.5	107.0	100	36.3	169.4	100	NA	NA	100	79.2	77.6
Energy – other (commercial, residential, agriculture)	100	162.9	162.9	100	79.0	79.0	100	90.6	90.6	100	NA	NA	100	154.7	154.7
Transport (energy)	100	177.6	158.1	100	30.7	30.7	100	483.0	483.0	100	NA	NA	100	181.0	161.9
Industrial processes	100	119.9	91.2	100	167.8	167.8	100	NE	NE	100	46.7	46.7	100	106.1	72.7
Waste	100	NE	NE	100	121.5	121.5	100	98.5	98.5	100	NA	NA	100	125.7	125.7
Agriculture	100	NE	NE	100	99.3	99.3	100	95.7	95.7	100	NA	NA	100	93.9	93.9
Other	100	NE	NE		NE	NE		79.1	80.3		NA	NA		41.9	42.5
Total (excl. LULUCF)	100	121.7	110.4	100	98.8	98.8	100	107.1	109.9	100	46.7	46.7	100	116.3	106.8

Key:

WEM: 'with existing measures' projection

WAM: 'with additional measures' projection

Source: Slovenia's MM submission, March 2007, and Annual greenhouse gas inventory 1990 – 2006, April 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.	20.4	21.7	19.9
	Index (base-year emissions = 100)	100	106.3	97.5

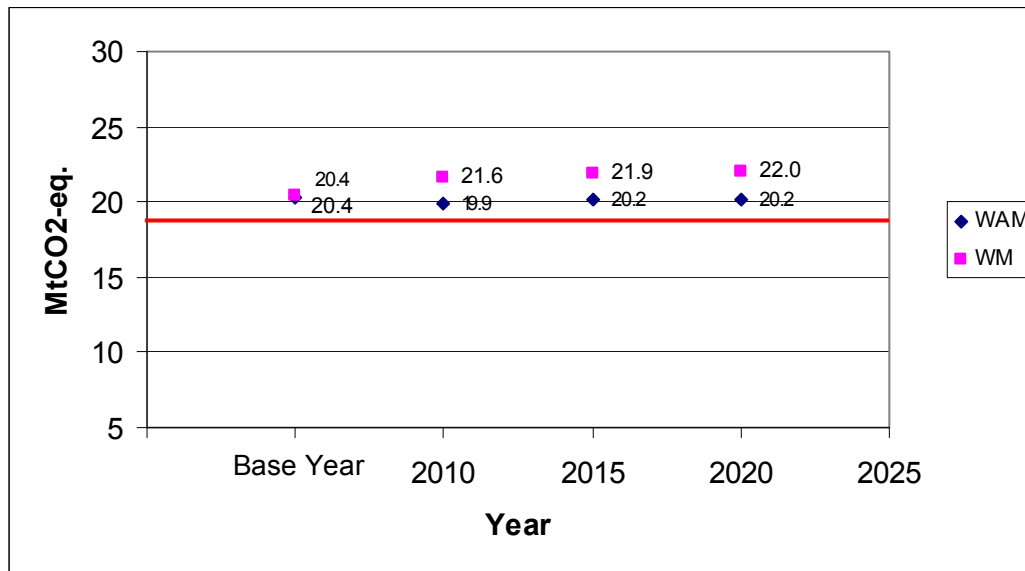
Source: Slovenia's MM submission, March 2007, and Annual greenhouse gas inventory 1990 – 2006, April 2008

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

In the Figure 1 below the projections under WAM scenarios are presented compared to the Kyoto target. As the graph presents the Kyoto target of 18.7 Mt CO₂ eq. will be achieved neither in the first commitment period, nor later.

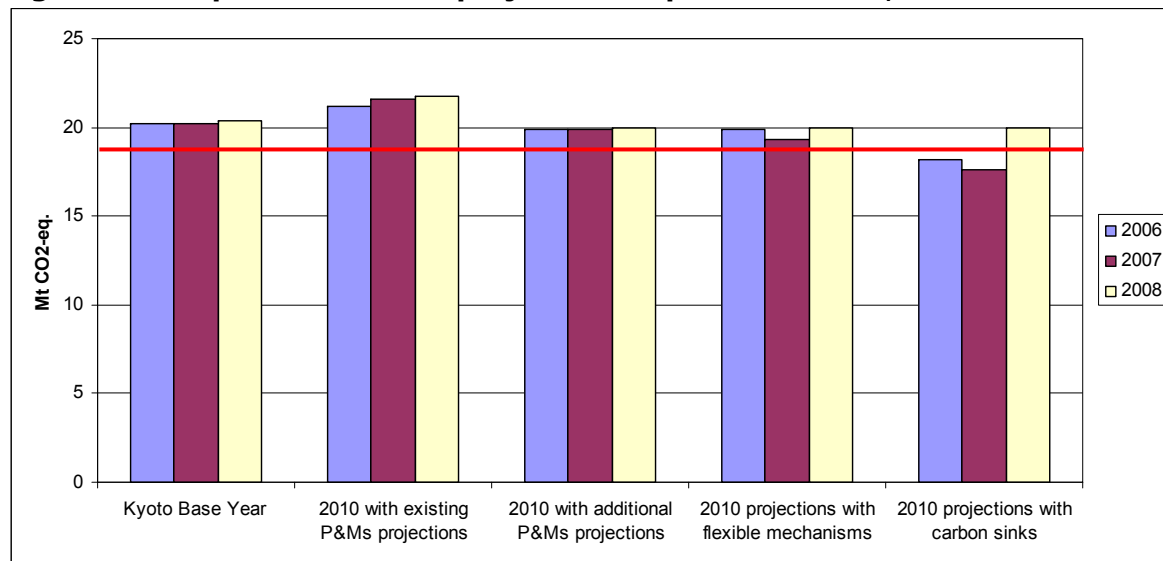
Figure 1. Greenhouse gas projections in 2010, 2015 and 2020 (Mt CO₂-eq.)



Source: Slovenia's MM submission, March 2007

As presented in the Figure 2, Slovenia will not be able to reach its Kyoto target with the existing and additional PAMs. Slovenia is interested in using all three Kyoto flexible mechanisms as an investor in order to meet its Kyoto target. Slovenia has signed one MoU with Macedonia for a CDM project and it is planned to sign further MoUs with other countries. Carbon sinks can also contribute towards meeting the Kyoto target.

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



Source: Slovenia's MM submission, March 2007

3. CLIMATE CHANGE MITIGATION POLICIES AND MEASURES

Slovenia has introduced a significant number of PAM especially for the energy sector. The reduction potential of these PAM is assessed only for 2010 and there is no assessment of the costs of these PAMs. The PAMs are introduced for WEM and WAM scenarios. The biggest emission reductions are expected to occur from the Energy supply and Energy consumption sectors, followed by ETS, Transport and Forestry sectors. The number of additional PAMs is very limited and the reduction potential is not so high. In spite of the numerous PAMs introduced, Slovenia will not achieve the Kyoto targets. Source for information is the European Climate Change Programme (ECCP), Database on Policies and Measures in Europe <http://www.oeko.de/service/pam/index.php>

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

	Top down calculation		Bottom Up calculation	
	Existing Measures	Planned Measures	Existing Measures	Planned Measures
Energy (total, excluding transport)	NE	0.8	1.6	3.5
Energy supply	NE	0.8	0.7	1.6
Energy – industry, construction	NE	0.0	NE	1.9
Energy – other (commercial, residential, agriculture)	NE	0.0	0.8	0.5
Transport (energy)	NE	0.5	1.1	NE
Industrial processes	NE	0.4	0.2	NE
Waste	NE	0.0	0.1	NE
Agriculture	NE	0.0	1.4	NE
Cross-sectoral	NE	0.0	1.3	NE
Total (excluding LULUCF)	NE	1.8	5.7	4.0

Note: The effects of measures detailed above are calculated firstly by determining the difference between total projections in each scenario ('top down calculation') and secondly by summing the reported effect of individual measures ('bottom up calculation').

Source: Greece's MM submission, June 2008, for the top down calculation; ECCP Policies and Measures database, June 2008, for the bottom up calculation.

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Table 6. Detailed information on Existing Policies and measures

Sector	Name	Type	GHG	Status	Absolute Reduction			Costs [EUR/t]
					[kt CO ₂ eq. p.a.]			
					2005	2010	2020	
Cross-cutting	Emissions Trading	Economic, Regulatory	CO2	implemented		1313		
Cross-cutting	Change of excise duty and Environmental tax on CO2	Fiscal	CO2	implemented				
Cross-cutting	Jl and CDM	Economic	CO2	implemented				
Energy supply	IPPC Regulation and EPA for thermal power plants	Regulatory	CO2	implemented		Cluster value		
Energy supply	Regulation of energy markets	Economic, Regulatory	CO2	implemented		Cluster value		
Energy supply	System of guaranteed purchase prices for CHP in district heating	Economic	CO2	implemented		Cluster value		
Energy supply	Certification of energy source for CHP in district heating	Regulatory, Information	CO2	implemented		Cluster value		
Energy supply	Financial incentives for CHP in district heating	Economic	CO2	implemented		Cluster value		
Energy supply	System of guaranteed purchase prices for renewable energy	Economic	CO2	implemented		Cluster value		
Energy supply	Certification of energy source for renewable energy	Regulatory, Information	CO2	implemented		Cluster value		
Energy supply	Financial incentives for renewable energy	Economic	CO2	implemented		Cluster value		
Energy supply	System of guaranteed purchase prices for CHP in industry	Economic	CO2	implemented		103		
Energy supply	Environmental tax on CO2	Fiscal	CO2	implemented		214		
Energy supply	Financial incentives for renewable energy in industry	Economic	CO2	implemented				
Energy supply	Financial incentives for renewable energy in households	Economic	CO2	implemented		255		
Energy	CHP and renewable energy in households	Economic,	CO2	implemented		70		

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supply		Information						
Energy supply	Combined emission reduction of SI-ENS-01, SI-ENS-02, SI-ENS-03	Economic, Regulatory	CO2	implemented, planned		8		
Energy supply	Combined emission reduction of SI-ENS-04, SI-ENS-05, SI-ENS-06	Economic, Information, Regulatory	CO2	implemented		0.0		
Energy supply	Combined emission reduction of SI-ENS-07, SI-ENS-08, SI-ENS-09	Economic, Information, Regulatory	CO2	implemented		205		
Energy consumption	Legislation in the area of energy performance of buildings	Regulatory	CO2	implemented		105		
Energy consumption	Financial incentives for energy rehabilitation of buildings	Regulatory	CO2	implemented		217		
Energy consumption	Directive on energy end-use efficiency and energy services	Voluntary/negotiated agreement, Regulatory, Information	CO2					
Energy consumption	Energy efficiency in households	Economic, Information	CO2	implemented		305		
Energy consumption	Voluntary agreements for increased energy efficiency in industry and construction	Voluntary/negotiated agreement	CO2	implemented		Cluster value		
Energy consumption	Financial incentives for increased energy efficiency in industry and construction	Economic	CO2	implemented		Cluster value		
Energy consumption	IPPC Regulation and EPA for increased energy efficiency in industry and construction	Regulatory	CO2	implemented		Cluster value		
Energy consumption	Combined emission reduction of SI-ENS-10, SI-ENS-11, SI-ENS-12, SI-ENS-13	Voluntary/negotiated agreement, Economic, Regulatory	CO2	implemented		193		

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Transport	EU strategy for reducing emissions from private motor vehicles	Fiscal, Voluntary/ negotiated agreement, Information	CO2	implemented		467		
Transport	Public Passenger Transport Act	Economic, Information	CO2	implemented		421		
Transport	Excise Duty Act	Fiscal, Regulatory	CO2	implemented		247		
Industrial Processes	IPPC regulation and EPA for aluminium		CO2, PFC	implemented		159		
Industrial Processes	Coolant emissions from refrigeration, freezing and air conditioning appliances and removal of coolants from obsolete appliances	Regulatory	HFC	implemented		32		
Agriculture	Anaerobic Digesters	Economic, Information	CO2, CH4	implemented		16		
Agriculture	Pasture raising of beef cattle	Information, Education	CH4	implemented		15		
Agriculture	Education on rational fertilizing, co-financing soil analyses	Economic, Education	N ₂ O	implemented		37		
Forestry	Forest Development Programme in Slovenia	Regulatory	CO2	implemented		1320		
Waste	Decree on landfill of waste, Decree on environmental tax for environmental pollution caused by waste disposal	Economic, Fiscal, Regulatory	CO2, CH4	implemented		105		
Waste	Rules for biodegradable waste	Regulatory	CO2, CH4	implemented		40		

Source: Öko Institut, (accessed 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	Absolute Reduction			Costs
					[kt CO ₂ eq. p.a.]			[EUR/t]
					2005	2010	2020	
Energy supply	Promoting investment for ensuring reliable supply for thermal power plants	Economic	CO2	implemented, planned		Cluster value		
Energy supply	Combined emission reduction of SI-ENS-01, SI-ENS-02, SI-ENS-03	Economic, regulatory	CO3	planned		105		
Transport	Resolution on Transport Policy	Economic, Regulatory, Fiscal	CO2, CH4	planned		520		

Source: Öko Institut, (accessed 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	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
Existing national policies and measures reinforced by CCPM		
New national policies and measures implemented after CCPM was adopted	Emissions trading 2003/87/EC	Cross-cutting
	Directives on energy labeling of appliances	Energy consumption
	Eco-management & audit scheme (EMAS) EC 761/2001	Energy consumption
	Efficiency of hot water boilers 92/42/EEC	Energy consumption
	Support under CAP (1782/2003)	Agriculture
	Landfill directive 1999/31/EC	Waste
	Consumer information on cars 1999/94/EC	Transport
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
	Energy performance of buildings 2002/91/EC	Energy consumption
	End-use efficiency and energy services 2006/32/EC	Energy consumption
	Energy labeling for office equipment 2422/2001	Energy consumption
	Efficiency fluorescent lighting 2000/55/EC	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
	Agreement with car manufacturers ACEA etc.	Transport
	Marco Polo programme on freight transport	Transport
	Motor challenge, voluntary EC programme	Energy consumption
	HFCs in mobile air conditioning 2006/40/EC	Transport
	F-gas regulation (842/2006)	Transport
	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
	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.

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In case of Slovenia the status of the majority of the PAMs vis-à-vis the relevant CCPMs is not reported. Therefore, it is difficult to assess the country's pro-activeness in implementing CCPMs in national policies.

4. METADATA

Sources of information

1. Slovenia's national report submitted to the European Commission under Article 3(2) of the Monitoring Mechanism, Decision 280/2004/EC. Report submitted March 2007.
2. Slovenia's Monitoring Mechanisms report 2008 (narrative part).
3. Slovenia's Annual greenhouse gas inventory 1990 - 2006 and inventory report, April 2008.
4. European Climate Change Programme (ECCP), Database on Policies and Measures in Europe <http://www.oeko.de/service/pam/index.php>

Kyoto base-year emissions

For Slovenia the Kyoto base year emission is 20.354 Mt CO₂ eq.

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 1986 emissions for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) and 1995 emissions for fluorinated gases (SF₆, HFCs and PFCs).

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

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. In the case of Slovenia it is the year 1986. Inventory recalculations from year to year may mean that latest inventory data cannot be compared with projections based on older inventory data. Where such an inconsistency has arisen, MS projections have been corrected by applying the following formula, in Table 2:

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

Quality of Reporting

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

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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 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	+++	
Objectives of policies	+++	
Types of policies	+++	
Which greenhouse gases?	+++	
Status of Implementation	+++	only in one case is the implementation status missing
Implementation body	+++	
Quantitative assessment of emission reduction effect and cost of policies	++	Quantitative assessment is provided for all PAMs but only for 2010. No emission reduction is calculated for 2005 and 2020
Interaction with other national and EU level policies	++	Interaction is mentioned in several cases in the general description.
Measures implementing community legislation	++	in many cases it is mentioned to which EC directive relates that specific policy
Arrangements for flexible mechanisms	+++	Designated Focal Point and Designated national Authority set for JI and CDM projects. MoU signed with Macedonia, new ones are expected to be signed
Balance between domestic action and flexible mechanisms	+	current level of domestic action is not enough to reach Kyoto target

Table 10. Information provided on projections

Category of Information	Level of information provided	Comments
Projection scenarios	+++	WEM, WAM scenarios
Policies included in each projection	+++	Policy names are given and general description provided
Expressed relative to historic reference year data	+++	base year for emission calculations is given
Starting year	+++	1986 for CO ₂ , CH ₄ , N ₂ O and 1995 for F-gases (PFC, HFC and SF ₆)
Split of projections	+++	all six gases
Presentation of results	+++	
Description of methodologies	+++	description is provided for different sectors
Sensitivity analysis	+++	sensitivity analyses was carried out for low and high economic scenarios and three scenarios for implementing measures
Discussion of uncertainty	++	Uncertainty factors are described for almost all sectors but % are given only for agriculture.
Details of parameters and assumptions	+++	Yes, they were reported for 2007
Indicators for projections	+++	In 2007 and for mandatory indicators only

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)	3.4	3.7	2.3	2.1	Annual growth rate (%), 2000
Population (value at given years or annual growth rate and base year)	1985	1980	1975	1964	Thousand People
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)	237.3	257.4	273.2	275.3	
6a. - Oil (fossil)	99.6	101.3	103.1	102.0	Petajoule (PJ)
6b. - Gas (fossil)	40.0	49.5	73.6	75.2	Petajoule (PJ)
6c. - coal	62.0	63.2	50.2	50.2	Petajoule (PJ)
6d. - Renewables	35.7	43.4	46.3	47.9	Petajoule (PJ)
6e. - Nuclear (IEA definition for energy calc.)	63.4	59.5	58.5	58.5	Petajoule (PJ)
6f. Net Electricity import (-+)	-1.2	-3.7	-4.8	-9.2	Petajoule (PJ)
6g. - Other Please Specify in Column I	0.0	0.0	0.0	0.0	Petajoule (PJ)
Total electricity production by fuel type (oil, gas, coal, renewables, nuclear, other)	14150.0	16104.3	19973.8	20353.5	
7. - Oil (fossil)	31.6	45.0	41.7	41.7	Gwhe
8. - Gas (fossil)	379.8	1375.8	4725.4	4888.1	Gwhe
9. - coal	4597.6	4833.3	4861.5	4861.5	Gwhe
10. - Renewable	3527.0	4733.4	5228.4	5445.3	Gwhe
11. Nuclear (IEA definition for energy calc.)	5614.0	5116.8	5116.8	5116.8	Gwhe
12. - Other Please Specify in Column I					
Energy demand by sector split by fuel (delivered)	300.7	316.9	331.7	333.8	
13. Energy Industries	142.7	150.0	161.3	162.7	
13a. Oil (fossil)	0.4	0.5	0.4	0.4	Petajoule (PJ)
13b. Gas (fossil)	4.4	11.3	34.3	34.7	Petajoule (PJ)
13c. coal	58.6	59.5	46.7	46.7	Petajoule (PJ)
13d. Renewables	16.0	19.3	21.4	22.4	Petajoule (PJ)
13e. -- Nuclear (IEA definition for energy calc.)	63.4	59.5	58.5	58.5	Petajoule (PJ)
13e. - Other Please Specify in Column I					Gwhe
14. Industry	46.1	48.5	48.0	48.7	
14a. Oil (fossil)	10.5	11.3	11.1	11.7	Petajoule (PJ)
14b. Gas (fossil)	28.3	29.6	29.5	29.6	Petajoule (PJ)
14c. coal	3.5	3.7	3.5	3.5	Petajoule (PJ)

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14d. Renewables	3.8	3.9	3.9	3.9	Petajoule (PJ)
14e. - Other Please Specify in Column I					Petajoule (PJ)
15. Commercial (Tertiary)	25.2	26.5	27.1	26.9	
15a. Oil (fossil)	18.6	18.4	17.8	16.7	Petajoule (PJ)
15b. Gas (fossil)	4.1	5.0	5.8	6.4	Petajoule (PJ)
15c. coal	0.0	0.0	0.0	0.0	Petajoule (PJ)
15d. Renewables	2.5	3.1	3.5	3.8	Petajoule (PJ)
15e. - Other Please Specify in Column I					Gwhe
16. Residential	29.3	29.2	29.1	28.8	
16a. Oil (fossil)	12.6	11.8	11.1	10.2	Petajoule (PJ)
16b. Gas (fossil)	3.2	3.6	4.0	4.5	Petajoule (PJ)
16c. coal	0.0	0.0	0.0	0.0	Petajoule (PJ)
16d. Renewables	13.4	13.8	14.0	14.1	Petajoule (PJ)
16e. - Other Please Specify in Column I					Gwhe
17. Transport	57.4	62.7	66.2	66.6	
17a. Oil (fossil)	57.4	59.4	62.7	63.0	Petajoule (PJ)
17b. Gas (fossil)					Petajoule (PJ)
17d. Renewables	0.0	3.4	3.6	3.7	Petajoule (PJ)
17e. - Other Please Specify in Column I					Gwhe
Assumptions on weather parameters, especially heating or cooling degree days					
18a. Heating Degree Days	2836	2836	2836	2836	Annual HDD
18b. 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	30%	30%	29%	29%	%
<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	25799	26561	26920	25966	Million passenger km
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					

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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)					
33. Total Cattle	453	520	528	528	
33a. Dairy cattle	120.3	124	114	114	1000 heads
33b. Non-dairy cattle	332.2	396.3	413.7	413.7	1001 heads
34. sheep	129.4	120.0	120.0	120.0	1002 heads
35. swine	547.4	661.4	665.0	665.0	1003 heads
36. poultry	4358.2	5487.8	5551.0	5551.0	1004 heads
37. Other, please specify	19.2	17.0	17.0	17.0	1005 heads
The area of crops by crop type					
Wheat (and spelt)	30059	30000	30000	30000	Hectares
Rye	1320	1000	1000	1000	Hectares
Barley	15451	18000	18000	18000	Hectares
Oats	2731	2251	2251	2251	Hectares
Maize (for grain)	42369	39248.29	38000	38000	Hectares
Triticale	1986	2000	2000	2000	Hectares
Millet	627	226	226	226	Hectares
Buckwheat	811	632	632	632	Hectares
Other cereals	193	57	57	57	Hectares
Fodder peas	1521	1641	1641	1641	Hectares
Dry beans	310	310	310	310	Hectares
Potatoes	6306	7000	7000	7000	Hectares
Sugar beet	5057	0	0	0	Hectares
Feedbeet	1469	1500	1500	1500	Hectares
Rape	2260	11360	15000	15000	Hectares
Pumpkins for oil	4108	4000	4000	4000	Hectares
Maize for silage	31525	28000	28000	28000	Hectares
Fodder cereals and mixtures of leguminous and cereals	200	200	200	200	Hectares
Emissions factors by type of livestock for enteric fermentation and manure management (t)					
40. enteric fermentation Dairy cattle	2014	2009	2041	2041	Tonnes CO2e /Thousand Heads
41. enteric fermentation Non-dairy cattle	1095	1075	1085	1100	Tonnes CO2e /Thousand Heads
42. enteric fermentation sheep	168	168	168	168	Tonnes CO2e /Thousand Heads
43. manure management Dairy cattle	1426	1421	1450	1450	Tonnes CO2e /Thousand Heads
44. manure management Non-dairy cattle	608	604	612	619	Tonnes CO2e /Thousand Heads

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45. manure management sheep	66	66	66	66	Tonnes CO2e /Thousand Heads
46. manure management Swine	356	381	391	391	Tonnes CO2e /Thousand Heads
47. manure management Poultry	6.6	6.6	6.6	6.6	Tonnes CO2e /Thousand Heads
Assumptions in the waste sector					
Waste generation per head of population or tonnes of municipal solid waste	793.1	740.0	740.0	740.0	kt
The organic fractions of municipal solid waste	52.0	52.0	52.0	52.0	%
Municipal solid waste disposed to landfills, incinerated or composted (in tonnes or %)	100.0	80.7	65.8	60.3	%
Assumptions in the forestry sector					
Forest definitions	Forest means land overgrown with forest trees in the form of stands or other forest plants which provides any of the functions of a forest. Forest according to this Act also includes overgrown plots of land defined as forest in the spatial element of the forest management plan (Forestry act, 1994). Selected threshold values for the forest definition to be used for reporting under Articles 3.3 and 3.4: minimum area for forest land area: 0,05 ha, Minimum value for tree crown cover: 30 %, Minimum tree height : 2 m (AAU Report SLO, 2006).				
Areas of:					
managed forests	1169196	1194196	1219196	1244196	Hectares
unmanaged forests	0	0	0	0	Hectares

The projection parameters are provided for the WEM scenario.

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					
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					

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Assumptions for buildings (in residential and commercial / tertiary sector)					
<i>For Member States using macroeconomic models:</i>					
Share of tertiary and household sectors in GDP					
Rate of improvement of energy intensity					
<i>For Member States using other models:</i>					
Number of households					
Number of new buildings					
Rate of improvement of energy efficiency (1990 = 100)					
Assumptions for the transport sector					
<i>For Member States using econometric models:</i>					
Growth of transport relative to GDP split by passenger and freight					
Improvements in energy efficiency split by vehicle type					
Improvements in energy efficiency split by vehicle type, whole fleet/new cars					
Rate of change of modal split (passenger and freight)					
Growth of passenger road kilometres					
Growth of passenger rail kilometres					
Growth of passenger aviation kilometres					
Growth of freight tonne kilometres on road					
Growth of freight tonne kilometres by rail					
Growth of freight tonne kilometres by navigation					
Assumptions for the agriculture sector					
<i>For Member States using econometric models:</i>					
Agricultural trade (import/export)					
Domestic consumption (e.g. milk/beef consumption)					
<i>For Member States using other models:</i>					
Development of area of crops, grassland, arable, set-aside, conversion to forests etc					
Macroeconomic assumptions behind projections of agricultural activity					
Description of livestock (e.g. by nutrient balance, output/animal production, milk production)					
Development of farming types (e.g. intensive conventional, organic farming)					
Distribution of housing/grazing systems and housing/grazing period					
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					