Estonia

Sources of information

Estonia's Third National Communication under the United Nations Framework Convention on Climate Change, 2001

Reporting

Two chapters in The Third National Communication deal with projections and measures. Chapter four provides tables, with policies and measures to reduce greenhouse gas emissions in the energy, transport, industry, agriculture, forestry and Waste management sectors. The impact of single measures has been partly quantified for years 2000 and 2005.

Table 1: Information provided on policies and measures

Information provided	Level provided	Comments
Name of policy/measure	+++	
Type of instrument	+++	
Which GHGs?	CO_2, CH_4, all GHG	Some NMVOC, SO_2
Status of implementation	+++	
Implementation body specified	++	In most cases
Quantitative assessment of implementation	+	Estimated mitigation effect for 2005; only some measures are quantified in non energy sectors
Interaction with other P&Ms discussed	++	In some cases

+, ++, +++ level of information available increases as the number of + signs increases

Table 2: Information provided on projections

Category of information	Level of information provided	Comments
Scenarios considered	With measures With additional measures	Scenarios are given for sectors corresponding with IPCC sectors and gases.
Expressed relative to inventory for previous years	No	
Starting year	1999 ?	Not clear from the text
Projections	2000,2005,2010, 2015,2020	
Split of projections	Yes	Projections split by IPCC main sectors and gases.
Presentation of results	+++	Results presented in both tabular and graphical form
Description of model (level of detail, approach and assumptions)	++	Basic description of the models and further references provided
Discussion of uncertainty	No	
Details of parameters and assumptions	+++	Information on type of indicators ued in scenarios provided

+, ++, +++ level of information available increases as the number of + signs increases

Policies and measures

The Estonian National Environmental Strategy (RT I 1997, 26, 390), approved by the Parliament in 1997, is the major basis document for the policy-making process in the field of environment. In the National Environmental Action Plan (NEAP) there are defined concrete conceptual, legislation, organisational, educational, training and also investment measures for reaching the objectives set in the National Environmental Strategy. The implementation process of the new NEAP, accepted by the Government on 05.06.2001 is in progress.

The implementation process of the new NEAP, accepted by the Government on 05.06.2001 is in progress. Overall coordination in the implementation phase lies with the Ministry of Environment. Several other ministries jointly responsible for implementation of some actions have incorporated those actions into their sectoral plans and budgets. County and local governments develop regional and local environmental action plans based on the NEAP experience. Several NGOs promote and raise the NEAP awareness among general public. They are also expected to watchdog actively the NEAP implementation process. Finally, the industry sector is expected to use the NEAP as a reference for their future plans related to environmental management.

Table 3: Summary of the effect of policies and measures by 2010 included in the projections ($MtCO_2$ eq.)

	With measures[a]	With additional measures[b]
CO_2		
CH_4		
N_2O		
F-gases		
Energy (IPCC Sector 1)	–22.7	–0.8
Industry (IPCC Sector 2)	–0.3	0.0
Agriculture (IPCC Sector 4)	–1.0	–0.4
Forestry (IPCC Sector 5)	–0.9	–1.1
Waste (IPCC Sector 6)	–0.6	–0.4
Total	**–25.5**	**–2.6**

a The effect of policies implemented or adopted is derived from the sum of the potentials of the individual scenarios comparing *without* ant *with measures*

b The effect of planned policies is derived from the difference between the *with measures* and the *with additional measures* scenarios

Table 4 gives details of the policies and measures by sector.

Table 4: Policies and measures detailed information on polices and measures (estimated mitigation effect in 2010, in million tons CO_2 equivalent)

Energy sector

Name of policy / measure	Objective and/ or activity affected	GHG affected	Type of instruments	Status	Implementing entity/entities	Mitigation impact, Gg in CO_2 equivalent		
						1995	2000	2005
Long-term National Development Plan for the Fuel and Energy Sector	Reduction of emissions; energy efficiency	CO_2	Regulatory	Planned, ongoing	MoEA	-	110	800
National Energy Conservation Programme	Reduction of emissions	CO_2	Regulatory	Planned, ongoing	MoEA	-	90	950
Estonian National Environmental Strategy	Reduction of emissions	CO_2	Regulatory	Planned, ongoing	All ministries	-	70	190
National Programme for Reduction of Pollutant Emissions from Large Combustion Plants (for 1999 2003)	Reduction of emissions;	CO_2	Regulatory	Planned, ongoing (up to 2003)	MoEA	-	70	200
Quality requirements for liquid fuels	Reduction of emissions	CO_2	Regulatory	Implemented	MoEA; EMI	-	5	20
Emission standards of pollutants into ambient air by large combustion plants	Reduction of emissions	CO_2	Regulatory	Planned, partially implemented	MoE, MoEA	-	n.a.	n.a.
Fuel switch from coal	Reduction of emissions	CO_2	Voluntary	Implemented	Utilities	350	350	350
Boiler conversion programme		CO_2	Voluntary	Implemented		5	42	42
Swedish assistance (NUTEK)		CO_2	Foreign aid	Implemented	MoEA	40	94	131
Renovation of DH systems		CO_2	Voluntary	Ongoing		2	30	50
Local energy planning		CO_2	Regulatory	Ongoing		15	28	35
Revised Building Code		CO_2	Regulatory	Implemented		4	10	18
Implementation of EU SAVE Directive	Energy auditing and certification	CO_2	Regulatory/ voluntary, educational	Planned	MoEA	-	-	15
Renovation of apartment houses		CO_2	Voluntary	Ongoing		-	-	8
Renovation of Narva Power Plants		CO_2	Voluntary	Planned	Eesti Energia, MoEA	-	-	500
Labelling of household appliances		CO_2	Regulatory	Planned, ongoing	MoEA	-	-	10
Regulation establishing target values for pollution level of the ambient air	Reduction of emissions		Regulatory	Planned		-	n.a.	n.a.
Pollution Charge Act	Reduction of emissions		Regulatory	Implemented	MoF	-	n.a.	n.a.

Transport sector

Name of policy / measure	Objective and/ or activity affected	GHG affected	Type of instruments	Status	Implementing entity/entities	Mitigation impact, Gg in CO_2 equivalent		
						1995	2000	2005
Quality requirements for liquid fuels	Reduction of emissions	CO_2	Regulatory	Implemented	MoEA; EMI	-	5	20
Requirements for transport and storage of petrol	Reduction of emission	NMVOC	Regulatory	Implemented	MoE	-	n.a.	n.a.
Motor Vehicles Excise Act	Reduction of emissions	CO_2 NMVOC	Regulatory	Implemented	MoF	-	n.a.	n.a.
Heavy Goods Vehicle Tax Act	Reduction of emissions	CO_2 NMVOC	Regulatory	Implemented	MoF	-	n.a.	n.a.
Development Plan of the Transport Sector for 1999-2006	Reduction of emissions	CO_2	Regulatory	Implemented	MoT	-	5	100

Industrial sector

Name of policy / measure	Objective and/ or activity affected	GHG affected	Type of instruments	Status	Implementing entity/entities	Mitigation impact, Gg in CO_2 equivalent		
						1995	2000	2005
Estonian National Environmental Strategy	Reduction of emissions	CO_2	Regulatory	Planned, ongoing	All ministries	-	0,5	12
National Energy Conservation Programme	Reduction of emission	CO_2	Regulatory	Planned, ongoing	MoEA	-	0,8	35
Quality requirements for liquid fuels	Reduction of emissions	CO_2, SO_2	Regulatory	Implemented	MoEA;	-	n.a.	n.a.
Regulation establishing target values for pollution level of the ambient air	Reduction of emissions	All GHG	Regulatory	Implemented	MoF	-	n.a.	n.a.
Pollution Charge Act	Reduction of emissions	All GHG	Regulatory	Implemented	MoF	-	n.a.	n.a.

Forestry sector

Name of policy / measure	Objective and/ or activity affected	GHG affected	Type of instruments	Status	Implementing entity/entities	Mitigation impact, Gg in CO_2 equivalent		
						1995	2000	2005
Estonian National Environmental Strategy	Improving forest growth	CO_2	Regulatory	Implemented	MoE	-	-	-
Estonian Forestry Strategy	Improving forest growth	CO_2	Regulatory	Planned, ongoing	MoE	-	-	1095,5
Forest Act	Improving forest growth	CO_2	Regulatory	Implemented	MoE	1460	11951	1739
Restoration of Mining Areas	Improving forest growth	CO_2	Regulatory	Implemented	MoE	-	8	15

Waste management

Name of policy / measure	Objective and/ or activity affected	GHG affected	Type of instruments	Status	Implementing entity/entities	Mitigation impact, Gg in CO_2 equivalent		
						1995	2000	2005
Estonian National Environmental Strategy	Reduction of emissions	CH_4	Regulatory	Planned, ongoing	All ministries	-	n.a.	n.a.
Environmental Impact Assessment and Environmental Auditing Act	Reduction of emissions	CH_4	Regulatory	Planned, ongoing	MoE	-	n.a.	n.a.
Requirements to Establishing, Using and Closing of Landfills	Reduction of emissions	CH_4	Regulatory	Planned, ongoing	MoE	-	5	15

Projections

The data in Tables 5–7 are based on information from the Third National Communication. The projections of the total GHG are based on the concept of Global Warming Potential (GWP) within a 100-year time horizon. The WOM scenario baseline, 'without measures') are calculated assuming that the net emission of GHG (on CO_2 equivalent) per every unit of GDP should be constant over time i.e. that the total increase of GDP is closely connected with the increase of GHG. This assumption is the based on close correlation between the decrease of GHG emission and GDP from 1990 to 1994.

The two projections elaborated were:

– WM-projection ('with measures' projection), which reflects the impact of planned measures and the policies and measures implemented in period 1995–2000;
– WAM-projection ('with additional measures' projection), which encompasses additional policies and measures, which may be taken in future.

Table 5: Summary of projections by gas in 2010 ($MtCO_2$ equivalent)

	Base year	with measures	with additional measures
CO_2 with LUCF	31.8	8.64	6.91
CH_4	4.4	2.54	1.83
N_2O	1.0	0.48	0.39
HFC			
PFC			
SF_6			
Total	**37.2**	11.66	9.13
% change relative to base year		**–68.6 %**	**–75.4 %**

The *with measures* projection shows that the currently implemented or adopted measures in Estonia could reduce greenhouse gas emissions by 2010 by 68.6 % and with additional measures by 75.4 %.

Table 6: Summary of projections by sector in 2010 ($MtCO_2$ eq.)

	Base year	With measures	% change relative to 1990	with additional measures	% change relative 1990 (additional measures)
Energy (IPCC Sector 1)	38.8	16.2	–58.4 %	15.4	–60.3 %
— of which transport					
Industry (IPCC Sector 2)	0.6	0.3	–44.6 %	0.3	–46.3 %
Agriculture (IPCC Sector 4)	2.4	1.4	–42.9 %	1.0	–57.9 %
Forestry (IPCC Sector 5)	–6.3	–7.2	13.9 %	–8.3	31.2 %
Waste (IPCC Sector 6)	1.6	1.0	–36.4 %	0.7	–58.4 %
Total without LUCF	**43.5**	**18.9**	–56.5 %	**17.4**	–59.9 %
Total with LUCF	**37.2**	**11.7**	**–68.5 %**	**9.1**	**–75.4 %**

Table 7: Assessment of the target

Without LUCF	$MtCO_2$ equiv. *Ref. scenario*	% of 1990 level (six gas basket)
Base year emissions (from projections)	43.5	
Commitment (base year emissions)	40.0	–8.0 %
2010 emissions with measures	18.9	–56.5 %
2010 emissions with additional measures	17.4	–59.9 %
Gap between with measures and commitment (-ve means no gap)	–21.1	–48.5 %
Effect of additional P&Ms	1.5	3.4 %

Description of modelling approach

Emissions from the energy sector are projected with the modelling framework of the MARKAL model. Scenarios in agricultural sector assumed Estonia will reach the level of EU countries. Projections of CO_2 sinks in Forestry and land use are primarily focused on protection of forest, increase area of reforestation and regulation of annual harvest. The WAM scenario grounds mainly on forestry activities.

Key parameters used in projections

Parameter	Unit	Historical			Projected			
		1990	1995	2000	2005	2010	2015	2020
Population	Million	1.57	1.49	1.37	1.35	1.33	1.31	1.29
GDP (in 1995 constant prices)	Billion EEK	59.0	40.9	52.4	64.3	71.3	79.6	90.0
Annual CPI growth	%	49.0	28.8	5.0	4.0	3.0	2.5	2.5
TPES (excl. motor fuels)	PJ	366.6	200.2	170.4	165.7	166.9	166.7	170.0
Share of renewables*	%	1.8	6.0	11.7	12.7	13.1	13.6	13.9
Pollution charge on CO_2	EEK/t	-	-	5	11.3	17	25	38
Pollution charge on NO_x	EEK/t	-	48	126	314	782	1947	4848
World oil price**	USD/bbl	23.81	17.18	28.98	20.83	21.37	21.89	22.41

* Share of renewable energy sources in TPES (excl. motor fuels)

** Source of projected figures: Annual Energy Outlook 2001. EIA, US DoE. (1999 USD)

Conclusions

The main document used for this summary was the Third National Communication. The level of detail in policies and measures chapter is appropriate and is line with UNFCCC guidelines. The details of the methodology for the projections are partly described. The scenarios are provided for sectors and for total GHGs , but not separately for sectors-all gases. The key policies and measures are summarised in a Table, which makes clear the potential greenhouse gas savings.

The projected decrease from the base year with measures implemented (excluding LUCF) and adopted is 56.5 % in the basket of key GHGs by 2010. Additional policies and measures are applicable to reduce GHG emissions to 59.9 % below base year levels by 2010. This shows that Estonia has reserves to fulfil its commitments.