

Latvia

Sources of information

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

Reporting

The 3rd NC provides a list of policies and measures to reduce greenhouse gas emissions in a range of sectors. The impact of the measures has been quantified in a few cases. The figures are presented for one scenario, it is not clear from the text if this is '*with measures*' or '*with additional measures*' one.

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 , N ₂ O,	Some CO, NO _x
Status of implementation	++	
Implementation body specified	+++	In most cases
Quantitative assessment of implementation	+	Estimated mitigation effect for 2000, 2005; only a few measures are quantified
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 provided
Discussion of uncertainty	No	
Details of parameters and assumptions	+++	Information on type of indicators used in scenarios provided

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

Policies and measures

Priorities of the policy of environment protection in Latvia are set forth in the Declaration on the Planned Action of the Cabinet of Ministers and implemented in the preparatory work for accession to the European Union. The government of Latvia in the Declaration of the Planned Action has taken the commitment to continue work started by the previous governments. The goal is to accelerate the overall development of the country reaching the stage when improvement of macroeconomic indicators results in higher levels of welfare of each resident of Latvia. To reach the goals established by the government in the area of environmental protection, particular attention is devoted to:

- investment projects in the area of: household waste;
- potable water and urban wastewater;
- elimination of hazardous waste and creation of the system of final disposal;
- promotion of the development of environmental projects and their implementation in the private sector;
- implementation of the integrated approach to pollution elimination and control; waste management and packaging;
- implementation of the National Program on Biological Diversity;
- further development of the monitoring system of environment protection in line with the respective EU provisions, and
- development of environment education and environment communication program

Questions related to climate change are addressed by MEPRD, Latvian Environment Agency, SHMB, Ministry of Economy, Ministry of Finance and Energy Department of the Latvian Development Agency (LDA ED).

GHG emission reduction is not the primary objective of the measures described in the Chapter on Policies and Measures but is rather a side effect of their implementation. Development scenarios of the sector cover only those activities where it was possible to evaluate the impact on GHG. Knowing that the majority of measures do not have an effect on CO₂ emissions, the impact of all measures is expressed on the CO₂ equivalent basis. The aggregate effect of implementation of measures was estimated as the sum of outcomes of all measures in the presented table.

Table 3: Summary of the effect of policies and measures by 2010 included in the projections (MtCO₂ eq.)

	With measures ^a	With additional measures ^b
CO ₂	-11.9	
CH ₄	-2.8	
N ₂ O	-1.8	
F-gases		
Energy (IPCC Sector 1)		
Industry (IPCC Sector 2)	-14.0	
Agriculture (IPCC Sector 4)	0.0	
Forestry (IPCC Sector 5)	-3.3	
Waste (IPCC Sector 6)	1.2	
Total	0.2	
	-15.9	

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

Table 4: Detailed information on policies and measures (estimated mitigation effect in 2010, in million tons CO₂ equivalent)

Summary of policies and measures in the sector of energy

Name of policy or measure	Objective	GHG affected	Type of instrument	Status	Implementing entity or entities	Estimate of mitigation impact, by GHG, Gg in CO ₂ equivalent.		
						1995	2000	2005
Energy generation and transmission (IA1)								
<i>Policy: Use of renewable energy resources in energy generation and transmission sector</i>								
Wider use of fuel wood for centralised district heating	To increase share of wood in the fuel balance earmarked for district heating	CO ₂	Economic, socio-economic	U	Local governments	NE	NE	NE
Renewal of small HPS	Increase the specific weight of renewable resources in total energy balance	CO ₂ , N ₂ O, NO _x , CO	Economic, socio-economic	U	Enterprises	NE	NE	NE
Use of wind energy	Increase the specific weight of renewable resources in total energy balance	CO ₂ , N ₂ O, NO _x , CO	Socio-economic	U	Enterprises	NE	NE	NE
Bio diesel fuel as a internal combustion fuel in small scale co-generation plants	To reduce CO ₂ emissions by replacing diesel fuel by bio diesel fuel in small capacity co-generation equipment internal combustion engines	CO ₂ , CO	Socio-economic	U	Enterprises	NI	NI	+3.9*
<i>Policy: To increase efficiency in the energy generation and transmission sector</i>								
Wider use of co-generation	To increase installed capacity of co-generation plants and the amount of energy produced by co-generation, as well as efficiency of use of energy resources	CO ₂	Economic, socio-economic	U	Local governments or enterprises	NE	NE	NE
Riga district heating rehabilitation project	Project No.1 – increase of efficiency of boiler houses Project No.2 – improvement of work of energy supply system	CO ₂ , N ₂ O, NO _x , CO	Economic	U	Local governments	NI	NE	NE
Projects of the Local Governments' Crediting Fund	To improve operation of the heat supply system, in some projects – to carry out efficient heat insulation of buildings and radical reduction of energy consumption.	CO ₂	Economic, socio-economic	I	Local governments	NI	-22.9	-22.9

Name of policy or measure	Objective	GHG affected	Type of instrument	Status	Implementing entity or entities	Estimate of mitigation impact, by GHG, Gg in CO ₂ equivalent.		
						1995	2000	2005
Manufacturing industry and construction (1A2)								
<i>Policy: To increase efficiency of use of energy resources in industry</i>								
Increase of energy efficiency in dairy companies of Latvia	Starting with 2000 annual 3% increase of efficiency in dairy enterprises	CO ₂ , N ₂ O	Economic	A	Enterprises	NI	-0.4	-2.2
Increase of energy efficiency in bakeries of Latvia	Increase of competitiveness of bakeries	CO ₂ , N ₂ O, NO _x , CO	Economic	A	Enterprises	NI	NE	NE
<i>Policy: To increase efficiency of use of energy resources in construction</i>								
Heat efficiency improvement program in buildings	To study the general situation in the country in the area of heat keeping of buildings, provide information on opportunities and efficiency of heat insulation, as well as on the activities to be accomplished for optimisation of situation	CO ₂ , N ₂ O, NO _x , CO	Informational research, educational	P	MEPRD Construction Dpt., ME Energy Dpt., etc.	NI	NI	NE
Reduction of heat losses in buildings. Project No.1. Educational system development project	To start important changes in educational system by increasing cost-efficiency of educational establishments	CO ₂ , N ₂ O, NO _x , CO	Economic	A	MES and local governments	NI	-186.6	NE
Project No.2. 1997-1998 SCORE program demonstration projects	Solving energy conservation problems on the level of consumers	CO ₂ , N ₂ O, NO _x , CO	Economic	I	Owners of buildings	NI	NE	NE
Project No.3. Energy efficiency improvement demonstration projects implemented within the Swedish government STEM program	To demonstrate economic and technical usefulness of energy conservation	CO ₂	Economic	I	Local governments	NI	-0.36	-0.36
Project No.4. Pilot projects of the PSO program "Energy Efficiency in Buildings of Latvia"	Raising energy efficiency in buildings, reduction of environmentally harmful emissions by reducing energy consumption	CO ₂ , N ₂ O, NO _x , CO	Economic	I	Local governments	NI	NE	NE

Name of policy or measure	Objective	GHG affected	Type of instrument	Status	Implementing entity or entities	Estimate of mitigation impact, by GHG, Gg in CO ₂ equivalent.		
						1995	2000	2005
Transport sector (1A3)								
<i>Policy: To restrict use of passenger cars in cities</i>								
Improvement of the public transport system in Riga	To improve public transport system	CO ₂ , N ₂ O, NO _x	Informative, socio-economic	A	Riga Council	NI	NE	NE
Development of cycling	To include cycling transport in the general transport system of Riga	CO, CO ₂ , N ₂ O, NO _x	Economic, informative	A	Riga Council	NI	NE	NE
<i>Policy: To introduce technological measures for CO₂ emission reduction</i>								
Use of bio-fuel by road transport	To replace gasoline by gasoline-ethanol mix in automobile engines	CO, GOS, NO _x	Economic, socio-economic	P	Enterprises	NI	NI	NE
<i>Policy: Stricter control of the technical condition of transport vehicles</i>								
Construction of technical check-up stations	To improve quality of control of technical condition of motor vehicles	CO ₂ , CO, NO _x	Economic	A	RTSD	NI	NE	NE
Introduction of type approval procedures for new automobiles	Improvement of technical condition of automobiles by raising requirements to new cars	NO _x	Economic	A	RTSD	NI	NE	NE
<i>Policy: Creation of environmentally friendly transport system</i>								
Creation of environmentally friendly transport system	Creation of a targeted, environmentally friendly transport system by balancing availability of transport for economic and social needs and environmental opportunities and resistance	NO _x , CO and GOS	Socio-economic	A	MT and the subordinated institutions	NI	NE	NE
Leakage of volatile substances from fuels (1B2b)								
Reduction of volatile substances from fuels arising from the storage of oil products	To establish the order how all oil depots of Latvia should install steam collection and processing equipment	GOS	Economic, legislative	A	Oil base owner	NI	NE	NE
Reduction of natural gas leakage from pipeline	A/S "Latvijas Gaze" plans to continued gas system modernisation and	CH ₄	Economic	A	A/S "Latvijas Gaze"	NI	NE	NE

Name of policy or measure	Objective	GHG affected	Type of instrument	Status	Implementing entity or entities	Estimate of mitigation impact, by GHG, Gg in CO ₂ equivalent.		
						1995	2000	2005
systems	reconstruction resulting in reduction of methane emissions into environment.							
International activities								
Efficient use of energy in agencies of Latvia	To improve energy efficiency in institutions and reduce environmental impacts on the local, regional and global scale.	CO ₂ , N ₂ O, CO, NO _x	Economic, informative	I	Danish and Latvian specialists	NI	NE	NE
Economically cost-effective use of wood-waste in the local governments' heating systems	To separate heat source from the remaining system and replace heavy fuel oil by another environmentally friendly fuel. To develop the potential of Ludza municipality and to continue similar projects in other locations of Latvia.	CO ₂	Economic, informative	A	Dutch energy company "Essent" and "Vides Projekti"	NI	NI	-12
Efficient lighting program	To decrease the impact of lighting on climate change, reforming modern lighting technologies market in Latvia	CO ₂	Economic, socio-economic	A	DPC, Ekodorna	NI	NI	-4.6

Summary of policies and measures in industry

Name of policy or measure	Objective	GHG affected	Type of instrument	Status	Implementing entity or entities	Estimate of mitigation impact, by GHG, Gg in CO ₂ equivalent.		
						1995	2000	2005
Chemical industry (2B)								
<i>Policy: Introduction of the EMS and clean manufacturing practice pursuant to ISO 14001 requirements</i>								
Introduction of EMS and CP in pharmaceutical industry of Latvia	The objective is to integrate EMS in other management systems (quality, health and safety at work) of enterprises.	CO ₂ , N ₂ O, CH ₄	Voluntary, economic, informative	I	Company management	NI	NE	NE
Introduction of EMS and CP chemical industry of Latvia	The objective of the project is to integrate EMS in 4-6 chemical enterprises of Latvia and to achieve that at least one enterprise gets ISO 14 001 certificate or EMAS registration.		Voluntary, economic, informative	P	Company management	NI	NI	NE

Summary of policies and measures in agriculture

Name of policy or measure	Objective	GHG affected	Type of instrument	Status	Implementing entity or entities	Estimate of mitigation impact, by GHG, Gg in CO ₂ equivalent.		
						1995	2000	2005
Agriculture (4)								
Rural development program	To improve productivity of milking cow and pig herds and partly raise revenues of grain producers and field vegetable farmers, encourage rational used of covered areas, compensate energy price rise in covered areas and ensure the domestic demand for vegetables produced in Latvia.	CH ₄ , N ₂ O	Economic	A	Public institutions, local government, agricultural producers	NI	NE	NE
SAPARD rural development program	To introduce agriculture-related EU <i>acquis communautaire</i> ; to create competitive and sustainable agriculture, well developed and sustainable countryside, diversified and sustainable rural environment	CH ₄ , N ₂ O, CO ₂	Economic	P	RSS and agricultural producers	NE	NE	NE
Good agricultural practice	To lessen the negative impact of business activity on the environment and to respect agricultural production regulations adopted in the developed countries and Europe and the world	N ₂ O	Voluntary	A	Agricultural producers	NI	NE	NE
Processing of animal-origin waste	Processing of animal-origin waste	CO ₂	Regulatory, economic	P	Not identified	NE	NE	NE

Summary of policies and measures in LUCF

Name of policy or measure	Objective	GHG affected	Type of instrument	Status	Implementing entity	Estimate of mitigation impact, by GHG, Gg in CO ₂ equivalent.		
						1995	2000	2005
Changes in forest stock (5A)								
<i>Policy: Sustainable management of forests and forestland</i>								
Targeted afforestation of abandoned agricultural land	To encourage rational use of abandoned agricultural and otherwise not reclaimed land thus increasing forest-covered areas	CO ₂	Voluntary	A	Land owners and users	NI	+2.7*	-7.8
Increase of forest productivity	To increase forest productivity	CO ₂	Economic, legislative	I	Land owners and lawful possessors	NI	NE	NE

Summary of policies and measures in waste management

Name of measure or policy	Objective	The GHG affected	Type of instrument	Status	Implementing entity	Estimate of mitigation impact, by GHG, Gg in CO ₂ equivalent.		
						1995	2000	2005
Solid waste landfills (6A)								
<i>Policy: Reduction of waste in landfills</i>								
Waste recycling	To reduce the amount of household waste in landfills	CH ₄	Economic	A	Enterprises	NE	NE	NE
<u>Project No.1.</u> Modernisation project of "Getlini" – Riga municipal waste landfill	To produce biogas from waste and later use it for energy generation	CH ₄	Economic	A	SIA "Getlini-Eko"	NI	NI	-268.4
<u>Project No.2.</u> Waste management project in Liepaja	To create a modern waste management system and to use the produced biogas for energy generation	CH ₄	Economic	A	SIA "Liepajas RAS"	NI	NI	-35.57

Explanations:

I – implemented, A – adopted, P – planned

NE – impact of the measure is not estimated

NI – the measure has no impact

* Increase of GHG emissions is explained by the start of intensive land management whereby accumulation of carbon in the soil has stopped.

Projections

The national communication presents a more detailed description of one development scenario or the *scenario 'with measures'* compared to the scenario *'without measures'* or the baseline scenario. The scenario *'with measures'* is based on the long-term economic development forecast for the time period of 2000 till 2020. This projection is the base of modeling future path of GHG emissions in key sectors of economic activity.

GHG emission reduction generated by measures in 2000-2020, Gg CO₂ equivalent

Measure	2000	2005	2010	2015	2020
<i>Energy transformation</i>	-210.26	-21.56	-20.48	-22.84	-25.44
Bio diesel fuel as a internal combustion fuel in small scale co-generation plants	NI	3.9	NE	NE	NE
Projects of the Local Governments' Crediting Fund	-22.9	-22.9	-16	-16	-16
Increase of energy efficiency in dairy companies of Latvia	-0.4*	-2.2*	-4.12*	-6.48*	-9.08*
Reduction of heat losses in buildings	-186.96	-0.36	-0.36	-0.36	-0.36
<i>Transport</i>		-94.37	-148.72	-234.18	-486.91
Use of bio fuel in road transport	NI	-23.59	-54.08	-78.06	-149.82
Improvement of the public transport system	NO	-11.80	-27.04	-46.84	-112.37
Development of cycling	NO	NO	NO	-15.61	-18.73
Construction of technical check-up stations	NE	-47.19	-40.56	-31.22	-18.73
Creation of environmentally friendly transport system	NE	-11.80	-27.04	-62.45	-187.28
<i>International projects</i>		-16.6	-12	-12	-12
Economically cost effective use of wood-waste in the local governments' heating systems	NI	-12	-12	-12	-12
Efficient lighting program	NO	-4.59	-9.24	NO	NO
<i>Land use change and forestry</i>	2.7	-7.8	-14.78	-14.78	-14.78
Targeted afforestation of abandoned agricultural land	2.7	-7.8	-14.78*	-14.78*	-14.78*
<i>Waste management</i>		-298.62	-296.73	-238.14	-224.49
Biogas generation	NI	-298.62	-296.73	-238.14	-224.49
Total GHG emission reduction	-207.56	-438.94	-501.95	-521.94	-763.62

Table 5: Summary of projections by gas in 2010 (MtCO₂ equivalent)

	Base year	With measures	With additional measures
CO ₂ with LUCF	12.3	0.4	
CH ₄	4.1	1.3	
N ₂ O	3.4	1.6	
HFC	NO	?	
PFC			
SF ₆	NO	0.1	
Total	19.8	3.3	
% change relative to base year		-83.25 %	

Table 6: Summary of projections by sector in 2010 (MtCO₂ eq.)

	Base year	With measures	% change relative to 1990	With additional measures	% change relative to 1990 (additional measures)
Energy (IPCC Sector 1)	24.6	10.0	-59.4 %		
<i>Solvent use</i>					
Industry (IPCC Sector 2)	0.1	0.1	-5.9 %		
Agriculture (IPCC Sector 4)	5.3	2.0	-62.4 %		
Forestry (IPCC Sector 5)	-10.8	-9.6	-11.1 %		
Waste (IPCC Sector 6)	0.5	0.7	46.4 %		
Total without LUCF	30.6	12.8	-58.0 %		
Total with LUCF	19.8	3.3	-83.5 %	0.0	

Table 7: Assessment of the target

Without LUCF	MtCO ₂ equiv.	% of 1990 level (six gas basket)
	Ref. scenario	
Base year emissions (from projections)	30.6	
Commitment (base year emissions)	28.1	-8.0 %
2010 emissions with measures	12.8	-58.0 %
2010 emissions with additional measures	12.8	-58.0 %
Gap between with measures and commitment (-ve means no gap)	-15.3	-50.0 %
Effect of additional P&Ms	0.0	0.0 %

Description of modelling approach

Development projections of energy sector were assessed with the MARKAL optimization model. Scenarios in industrial processes include CO₂ and F-gases. Scenarios in agricultural sector are based on national rural development program SAPARD. Projections of CO₂ sinks in Forestry and land use are primarily focused on increase of forest area and decrease of annual harvest between 2005 and 2020. In the waste sector it is expected that permanent waste production per resident, after year 2015 to unmanaged landfills, will no longer exist.

Basic indicators used in macroeconomic forecasts in 1996-2020, % (average annual growth rates)

Indicator	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
Growth rates of gross domestic product	4.7	5.4	5.2	6.0	5.4
Private consumption	6.4	5.5	5.5	5.5	5.5
Changes in outputs, including					
- Agriculture	-1.2	2.5	4.2	4.5	4.2
- Industry	4.6	5.8	4.5	5.2	4.6
- Services	5.8	5.5	5.7	6.5	5.9
Annual average number of residents, thous., in the final year of the period	2373	2343	2290	2200	2165

Conclusions

The main document used for this summary was the Third National Communication. The key policies and measures are summarised in several Tables, but are not entirely quantified. Description of scenarios is limited and not very transparent, it is difficult to find out if the numbers in tables correspond *with measures* or *without measures (baseline)* scenario.

The projected decrease from the base year with measures implemented and adopted is -58 % in the basket of GHGs by 2010, excluding sinks. The Energy sector will decrease by 56.8 %, however this reduction assumes that in 2010 sinks in LUCF will be almost on the level of CO₂ emissions from energy sector.