

Luxembourg

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1. SOURCES OF INFORMATION

National Allocation Plan 2008-2012 for Luxembourg, 18 July 2006.

The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat), EEA Technical report No 10/2006.

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

Base-year emissions

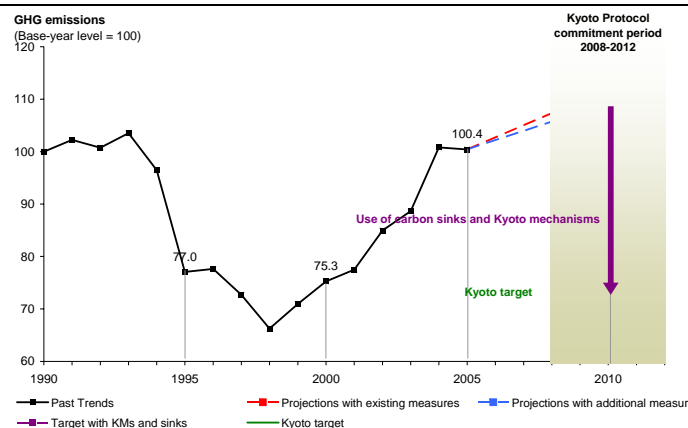
Base-year emissions of greenhouse gases are calculated using 1990 emissions for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) and 1995 emissions for fluorinated gases (SF₆, HFCs and PFCs).

Base-year data is as reported by Member States in the sources noted above. Base year data is consistent with data reported in *The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat)*, EEA Technical report No 10/2006. This data is currently undergoing a review procedure by UNFCCC and is therefore subject to change.

2. SUMMARY

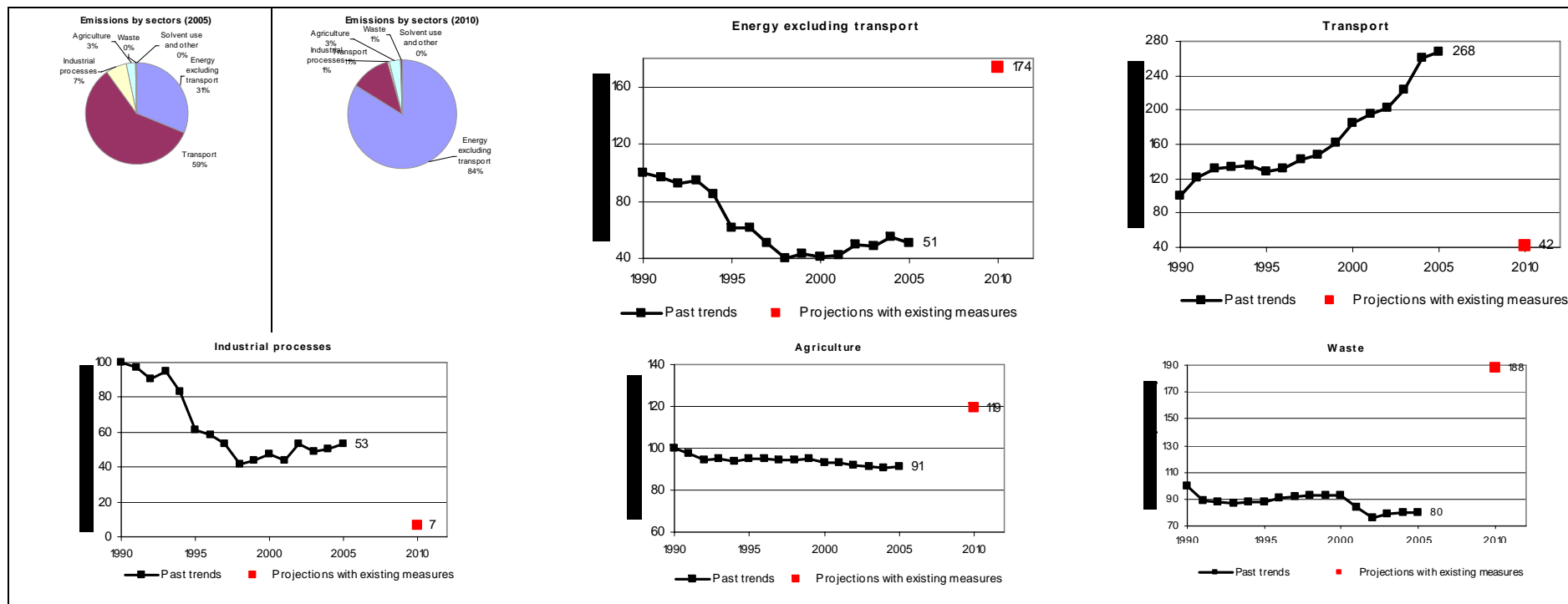
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Share in total EU-15 GHG emissions 2005	0.3 %
Emissions base year (initial report)	12.7 Mt
Emissions 2005	12.7 Mt
Emissions base year (for projections)	12.7 Mt
Projections 2010 with existing measures	14.2 Mt
Projections 2010 with additional measures	13.9 Mt
Kyoto target (absolute)	9.1 Mt
Kyoto target (% from base year)	- 28.0 %
Change base year to 2005	+ 0.4 %
Change 2004-05	- 0.4 %
Change base year to 2010 with existing measures	+ 11.9 %
Change base year to 2010 with additional measures	+9.3 %
Distance to linear target path 2005-6.4 (+21.4) percent points	
Use of Kyoto mechanisms	4.7 Mt
Sinks (Articles 3.3 and 3.4)	n.a.
Emissions in 1990 (Article 3.7)	n.a.



Past emissions: Luxembourg's GHG emissions were 0.4 % below those of 2004, and 0.4 % above base-year levels in 2005. Decreasing emissions with regard to 2004 were mainly due to decreases in fossil fuel combustion in manufacturing industries in particular iron and steel production. Main factors for the emission trend 1990-2005 were the decline in coke consumption after converting the steel industry to electric arc furnaces, and falling thermal power production. Road transport is by far the largest contributor to emission increases, mainly due to low road fuel prices and related fuel tourism.

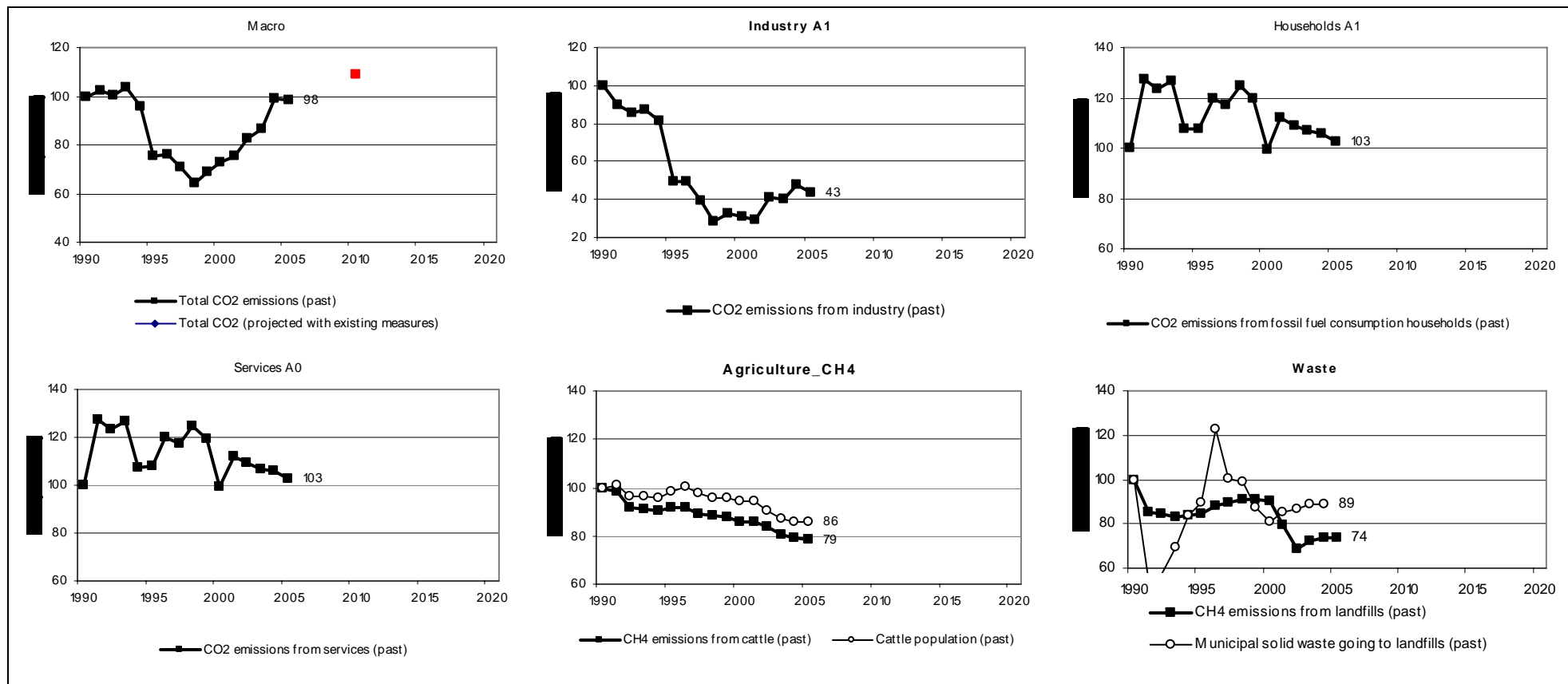
Emission projections: Emissions in 2005 were eleven percentage points below projections with existing measures for 2010. Luxembourg's projections with existing measures are 40 percentage points above the Kyoto target. Additional measures are projected to deliver two percentage points only. In order to close the gap Luxembourg will use the Kyoto mechanisms.



3. REPORTED INDICATORS

No indicators reported by Luxembourg in 2007. Graphs relate to CRF data.

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4. OVERVIEW OF CCPM IMPLEMENTATION IN MEMBER STATE

Table 1. Information provided on the implementation of policies and measures

No information was provided by Luxembourg.

Sector	CCPM	Status
Cross-cutting	Emissions trading 2003/87/EC	
Cross-cutting	Kyoto Protocol project mechanisms 2004/101/EC	
Cross-cutting	Integrated pollution prevention and control 96/61/EC	
Energy supply	Promotion of cogeneration 2004/8/EC	
Energy supply	Taxation of energy products 2003/96/EC	
Energy supply	Internal electricity market 2003/54/EC	
Energy supply	Promotion of electricity from RE sources 2001/77/EC	
Energy supply	Internal market in natural gas 98/30/EC	
Energy supply	Emissions from large combustion plants 88/609/EEC	
Energy consumption	Directives on energy labelling of appliances	
Energy consumption	End-use efficiency and energy services 2006/32/EC	
Energy consumption	Ecodesign requirements for energy-using products 2005/32/EC	
Energy consumption	Energy performance of buildings 2002/91/EC	
Energy consumption	Eco-management & audit scheme (EMAS) EC 761/2001	
Energy consumption	Energy-efficiency labelling for office equipment Regulation No. 2422/2001	
Energy consumption	Efficiency fluorescent lighting 2000/55/EC	
Energy consumption	Efficiency of hot water boilers 92/42/EEC	
Transport	Environmental performance freight transport (Marco Polo Programme)	
Transport	Motor challenge, voluntary EC programme	
Transport	Promotion of biofuels for transport 2003/30/EC	
Transport	Integrated European railway area (2 nd + 3rd Railway package) (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.	
Industrial Process	F-gas regulation (Regulation No 842/2006)	
Industrial Process	HFC emissions from air conditioning in motor vehicles 2006/40/EC	
Agriculture	Support under CAP (1782/2003)	
Agriculture	Support under CAP - amendment (1783/2003)	
Agriculture	Nitrates 91/676/EEC	
Agriculture	Transition to rural development support No 2603/1999	
Agriculture	Agricultural production methods compatible with environment Regulation (EEC) No 2078/92	
Agriculture	Aid scheme for forestry measures in agriculture (Regulation (EEC) No 2080/92)	
Agriculture	Emission by engines to power agricultural or forestry 2000/25/EC	
Agriculture	Pre-accession measures for agriculture and rural development Regulation (EC) No 1268/1999	
Waste	Directive on waste 2006/12/EC	
Waste	Landfill directive 1999/31/EC	
Waste	Packaging and packaging waste (Directive 94/62/EC, 2004/12/EC, 2005/20/EC)	

*Legend****New** national PAM implemented after CCPM was adopted**Existing national PAM **re-enforced** by CCPM**National PAM already in force **before** CCPM was adopted**Not reported*

5. COMPLETENESS OF REPORTING

Luxembourg has not submitted a Monitoring Mechanism submission under Decision 280/2004/EC to the EC, or a 2nd, 3rd or 4th National Communication to the UNFCCC. Hence this Country Profile is based on information on policies and measures and projections contained in Luxembourg's National Allocation Plan (NAP) report.

Projections in the NAP report are presented in a different format to the Country Profiles, and figures are not always directly comparable. In this Country Profile it is noted where only CO₂ figures were given in the NAP report (for example, per sector).

The scenarios in this Country Profile are mostly derived from Tables 6 and 7 of the NAP report, as follows:

Country Profile scenario name	Referred to in NAP tables 6 and 7
Base year	1990
Without measures	baseline scenario/reference scenario
With measures	reduction scenario
With measures including EU ETS	new sector budget

In addition some information has been taken from the NAP summary tables, however in some cases these appear not to be consistent with the text report, including Tables 6 and 7.

The apparent inconsistencies in some of the NAP tables make it difficult to compare figures across different scenarios/gases/sectors. It is not always clear what is included in each scenario and sector.

Table 2. Information provided on policies and measures

Information provided	Level of information provided	Comments
Policy names	+++	Clear name/description
Objectives of policies	++	Good description of PAMs but most objectives not stated
Which greenhouse gases?	+	NAP focuses on CO ₂ ; description of PAMs does not identify which (other) gases
Status of Implementation	++	Could be clearer - PAMs are from National Plan; assume Adopted but some may be Implemented or others only Planned.
Implementation body specified	o	Not specified
Quantitative assessment of implementation	++	"Without measures" and "with measures" allows overall quantification of PAMs for CO ₂ . Most PAMs from National Plan are quantified.
Interaction with other policies and measures discussed	0	Not discussed

Table 3. Information provided on projections

Category of Information	Level of information provided	Comments
Scenarios considered	+++	Without measures (2012), with measures (2012 and 2008-12), with measures including EU ETS (2008-12).
Expressed relative to base year	++	Base year figures provided for CO ₂ by sector and total figure for all non-CO ₂ GHGs together.
Starting year for projections	+	2005
Split of projections	++	NAP focussed on CO ₂ , some projections for non-CO ₂ gases. Only 2008-12 (no base year or other years) are provided in CRF sector format.
Presentation of results	+	Fit-for-purpose for NAP but not suited to this analysis that is based on Monitoring Mechanism submissions and/or 4NC.
Description of model (level of detail, approach and assumptions)	0	Not provided
Sensitivity analysis (key inputs to model / high, central and low projections scenarios / robustness of model)	0	Not provided
Discussion of uncertainty	0	Not provided
Details of parameters and assumptions	+	A few figures provided in the NAP summary tables.

6. ASSESSMENT OF POLICIES AND MEASURES

Table 4. Summary of the effect of policies and measures included in the 2010 projections (Mt CO₂-eq.)

The total effect of PAMs in each sector has been calculated from the baseline "without measures" scenario minus the "with measures" scenario, both for 2012 for consistency ("without measures" is only provided for 2012).

Only figures for CO₂ are provided in these scenarios in the NAP report.

Sector	Without measures (2012)	With measures (2012)	Effect of PAMs (2012)
Households and small combustion plant	1.325	1.241	0.084
Industry and electricity	4.519	4.400	0.119
Transport (energy)	9.123	8.159	0.964
Domestic transport (energy)	1.916	1.578	0.338
Fuel exports (energy)	7.207	6.581	0.626
Total CO₂ (excl. LULUCF)	14.967	13.800	1.167

Source: Tables 6 & 7, NAP.

Table 5. Detailed information on policies and measures

The major policies and measures introduced under Luxembourg's National Action Plan for reducing CO₂ emissions *Changement climatique: Agir pour un défi majeur ! – 1er Plan d'action en vue de la réduction des émissions de CO₂* (28 April 2006, promulgated on 2 May 2006) are described and quantified in the NAP report. The report states that implementation of the National Action Plan as a whole is projected to lower Luxembourg's total domestic emissions, excluding the ETS sector, by approximately 0.450 MtCO₂-eq. compared to the "without measures" or baseline scenario by 2012.

Policies and measures in the "with measures" projection

Sector	Name	Objective	Type of GHG affected	Type of instrument	Status *	Implementing entity	Estimated savings (MtCO ₂ -eq.)		Related CCPM
							2012	2020	
Energy supply	Support for renewable energy				Adopted		Not provided		
Energy supply/ consumption	Buildings - renewable energy heating & energy efficiency measures				Adopted		0.084		
Transport	Implementation of Biofuels Directive				Adopted				Biofuels Directive
Transport	Motor vehicle tax reform				Adopted		0.150		
Transport	Increase in mineral oil tax				Adopted				
Transport	'Soft' measures				Adopted		0.2		
Industry (non-ETS sector)	Voluntary sector agreements				Adopted		0.020		

* 'Adopted' status assumed from the NAP report text.

Policies and measures in the "with additional measures" projection

No policies and measures were reported in the "with additional measures" projection.

7. EVALUATION OF PROJECTIONS

Table 6. Summary of projections by gas in 2010 (Mt CO₂-eq.)

	Base year*	With measures (2010)**	With measures incl EU ETS (2010)**
Carbon dioxide (excl. LULUCF)	11.994	13.503	13.165
CH ₄ , N ₂ O and F-gases	0.693	0.725	0.700
Total (excl. LULUCF)	12.687	14.203	13.865
% change relative to base year (excl. LULUCF)		11.9%	9.3%

* NAP tables refer to "1990" rather than base year.

** average 2008-2012

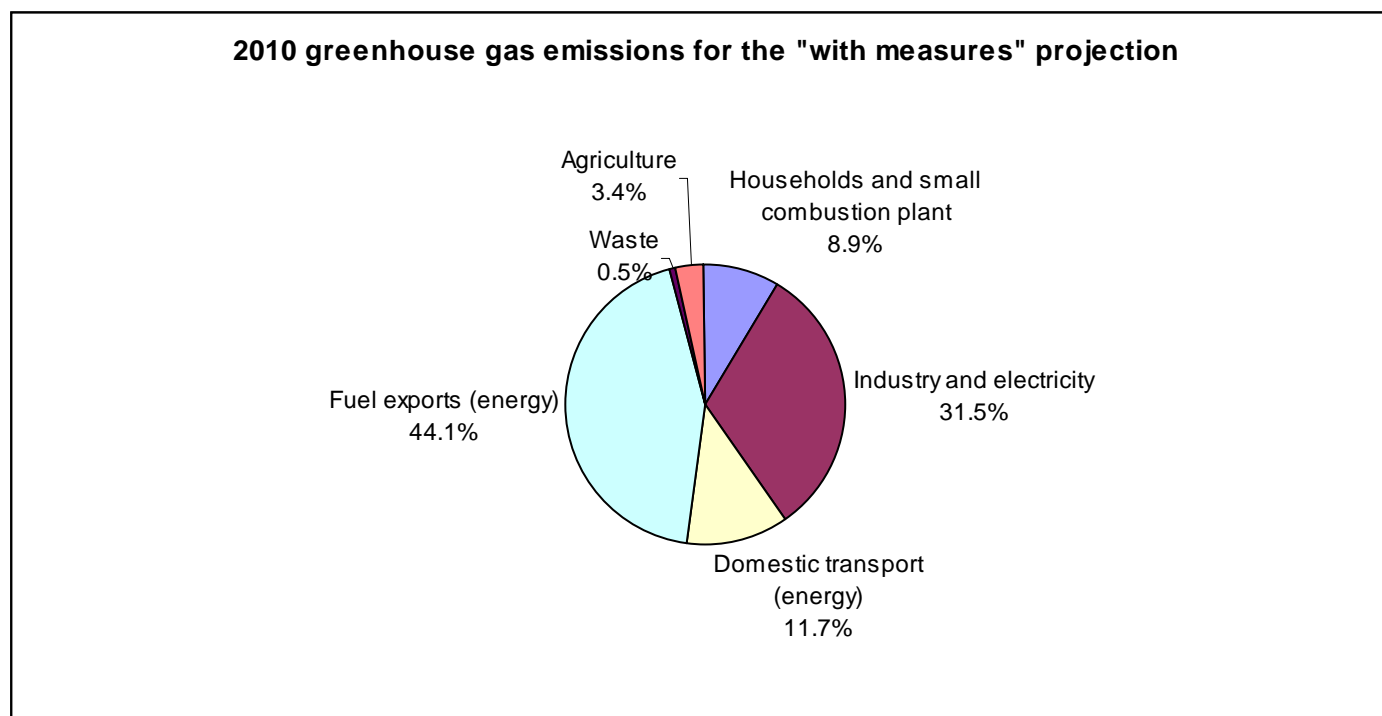
Source: Tables 6 & 7, NAP.

Table 7. Summary of projections (6 gas basket) by sector in 2010 (Mt CO₂-eq.)

Sector	Gas	Base year*	with measures	% change relative to base year	with measures including EU ETS	% change relative to base year
Households and small combustion plant	CO ₂	1.175	1.250	6.4%	1.250	6.4%
Industry and electricity	CO ₂	8.226	4.410	-46.4%	4.400	-46.5%
Domestic transport (energy)	CO ₂	0.752	1.637	117.7%	1.515	101.5%
Fuel exports (energy)	CO ₂	1.841	6.181	235.7%	6.000	225.9%
Transport	Non- CO ₂ gases	NE	0.070	NE	NE	NE
Industrial processes	Non- CO ₂ gases	NE	0.050	NE	NE	NE
Waste	Non- CO ₂ gases	NE	0.070	NE	NE	NE
Agriculture	Non- CO ₂ gases	NE	0.470	NE	NE	NE
Other sectors	Non- CO ₂ gases	NE	0.070	NE	NE	NE
Total CO₂ (excl. LULUCF)		11.994	13.478	12.4%	13.165	9.8%
Total GHG (excl. LULUCF)		12.6875	14.203	11.9%	13.865	9.3%

* NAP tables refer to "1990" rather than base year.

Figure 1. Share by sector of 2010 greenhouse gas emissions according to the "with measures" projection



Source: NAP report. Figure 1 shows households, industry and electricity, domestic transport and fuel export data for CO₂ only, and agriculture and waste for non-CO₂ greenhouse gases only.

Table 8. Summary of projections (6 gas basket) in 2010, 2015 and 2020 (Mt CO₂-eq.)

	Base-year*	2010	2010 % of base- year level	2015	2015 % of base- year level	2020	2020 % of base- year level
Total (excl. LULUCF)	12.688	13.865	109.3%	NE	NE	NE	NE

* Base year is 1990 for all gases except 1995 for F-gases. However NAP tables refer to "1990" rather than base year.

Source: NAP report; 2015 and 2020 projections were not provided.

Table 9. Assessment of the target (6 gas basket), with a comparison of 2010 projections in 2005, 2006 and 2007 national reports

Emissions in MtCO ₂ -equiv., excluding LULUCF				
	2010 projections from 2005	2010 projections from 2006	2010 projections from 2007	2010 projections from 2007, % of base year level
Base year emissions used for projections	12.7	12.7	12.69	100%
Kyoto Commitment/burden sharing	9.2	9.2	9.13	-28.0%
With existing P&Ms projections	9.9	9.9	13.87	109.3%
Gap (-ve means overachievement of target)	0.7	0.7	4.73	37.3%
With additional P&Ms projections	9.9	9.9	13.87	109.3%
Remaining gap	0.7	0.7	4.73	37.3%
Effect of flexible mechanisms	3.0	3.0	4.73	37.3%
Remaining gap (with use of flexible mechanisms)	-2.3	-2.3	0.00	0.0%

Above table excludes LULUCF. LULUCF will be covered in the main report, based on the questionnaire submissions.

Source for 2005 and 2006 data is *Strategie nationale de reduction des emissions de gaz a effet de serre* – first part, May 2000.

* Base year data is consistent with data reported in *The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat)*, EEA Technical report No 10/2006 (12.687 MtCO₂.eq). This data is currently undergoing a review procedure by UNFCCC and is therefore subject to change.

¹ For 2007 reporting this is the "With measures including EU ETS" scenario ("new sector balance" in the NAP report).

8. DESCRIPTION OF MODELLING APPROACH

Overview of modelling approach

No information is provided on the modelling approach in the NAP report submitted by Luxembourg.

The report states that there are “major uncertainties associated with forecasting in relation to future emission trends”;

“Since there are no reasonable and effective forecasting models which permit Luxembourg in mid-2006 to predict economic, energy and emissions trends up to the year 2012, the 2nd NAP will be characterised by greater planning risks and must therefore also exhibit greater flexibility for adjustment”; and

“There are no models adequate to make it possible to assess the trends in the economy, power consumption and emissions through to 2012 for an extremely liberal national economy such as Luxembourg....”.

Sensitivity analysis

The NAP report does not indicate whether a sensitivity analysis was carried out on the key inputs to the model (eg high, central and low projection scenarios). There are no comments on model robustness, other than as quoted above.

Details of the uncertainty assessment

As quoted above, the NAP report suggests major uncertainties in the modelling. However the report does not provide details of any uncertainty assessment/s carried out.

9. PROJECTION INDICATOR REPORTING

Only one projection indicator, CO₂ intensity, was reported by Luxembourg in the NAP summary table IIa. The constituent projections for GDP and CO₂ emissions were provided up to 2012.

10. REPORTING OF PARAMETERS ON PROJECTIONS

None of the mandatory or recommended parameters on projections were reported; however Luxembourg did report Total domestic electricity production in the NAP summary table IIa, with projections up to 2012.

Table 101. Indicators for projections to monitor and evaluate progress with policies and measures (2005/166/EC) Annex III

No	Eurostat Sectors	Indicator	1990	2000	2005	2010	2015	2020	Numerator/denominator	1990	2000	2005	2010 *	2015	2020
1	Macro	CO ₂ intensity of GDP, t/Euro million	0.89	0.40	0.48	0.45			Total CO ₂ emissions, kt	11.99	8.87	12.36	14.36		
									GDP, bio Euro (2000)	13.48	22.00	25.87	32.01		
2	Transport C0	CO ₂ emissions from passenger cars, kt													
		Number of kilometres by passenger cars, Mkm													
3	Transport D0	CO ₂ emissions from freight transport (all modes), kt													
		Freight transport (all modes), Mtkm													
4	Industry A1	Energy related CO ₂ intensity of industry, t/Euro million							CO ₂ emissions from fuel consumption industry, kt						
									Gross value-added total industry, Bio Euro (EC 95)						
5	Households A1	Specific CO ₂ emissions of households, t/dwelling							CO ₂ emissions from fossil fuel consumption households, kt						
									Stock of permanently occupied dwellings, 1000						
6	Services A0	CO ₂ intensity of the services sector, t/Euro million							CO ₂ emissions from fossil fuel consumption services, kt						
									gross value-added services, bio Euro (EC95)						
7	Transformation B0	Specific CO ₂ emissions of public and autoproducer power plants, t/TJ							CO ₂ emissions from public and autoproducer thermal power stations, kt						
									all products-output by public and autoproducer thermal power stations, PJ						
8	Agriculture	Specific N ₂ O emissions of fertilizer and manure use, kg/kg							N ₂ O emissions from synthetic fertilizer and manure use, kt						
									use of synthetic fertiliser and manure, kt nitrogen						
9	Agriculture	Specific CH ₄ emissions of cattle production, kg/head							CH ₄ emissions from cattle, kt						
									cattle populations, 1000 head						
10	Waste	Specific CH ₄ emissions from landfills, kt/kt							CH ₄ emissions from landfills, kt						
									Municipal solid waste going to landfills, kt						

* Annual average 2008-2012

Source: NAP Summary Table IIa.

Table 112. List of parameters on projections (Annex IV of Implementing Provisions¹)

Data for one parameter was reported:

	2000	2005	2010 *	2015	2020
Total domestic electricity production (TWh)	0.43	3.39	5.05		

* Annual average 2008-2012

Source: NAP Summary Table IIb.

1. Mandatory parameters on projections	2005	2010	2015	2020
Assumptions for general economic parameters				
GDP (value at given years or annual growth rate and base year)				
Population (value at given years or annual growth rate and base year)				
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)				
Total electricity production by fuel type (oil, gas, coal, renewables, nuclear, other)				
Energy demand by sector split by fuel (delivered)				
Assumptions on weather parameters, especially heating or 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				
<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				
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				
The number of dwellings and number of employees in the tertiary sector				

¹ Commission Decision of 10 February 2005 laying down rules implementing Decision No 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol

1. Mandatory parameters on projections	2005	2010	2015	2020
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)				
The area of crops by crop type				
Emissions factors by type of livestock for enteric fermentation and manure management (t)				
Assumptions in the waste sector				
Waste generation per head of population or tonnes of municipal solid waste				
The organic fractions of municipal solid waste				
Municipal solid waste disposed to landfills, incinerated or composted (in tonnes or %)				
Assumptions in the forestry sector				
Forest definitions				
Areas of:				
managed forests				
unmanaged forests				

2. Recommended parameters on projections	2005	2010	2015	2020
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				
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)				

2. Recommended parameters on projections	2005	2010	2015	2020
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				

11. COUNTRY CONCLUSIONS

The NAP projections indicate that with the adopted policies and measures together with flexible mechanisms, Luxembourg would just meet its Kyoto target of 9.135 MtCO₂-eq, a 28% reduction from base year levels. Subsequent to Luxembourg's submission of its NAP, the Commission's Decision of 29 November 2006 required that the total quantity of allowances (cap) be reduced by 1.259 MtCO₂-eq. per year. As a result, Luxembourg would eventually have to buy less emission permits than actually expected .

CO₂ emissions from the 'Industry and electricity' sector have decreased significantly since the 1990 base year while those from the transport sector (domestic transport and fuel exports) have increased markedly. The emissions arising from fuel exports, which are added on to Luxembourg's Kyoto balance, constitute by far the largest source of emissions.

Regarding the completeness of reporting, it was not always clear what was included in the different projection scenarios in the NAP, and without a Monitoring Mechanism submission or 4th National Communication that would report on all greenhouse gases and sectors, some parts of this Country Profile could not be completed.

As expected the NAP was focussed on CO₂ with few projections for non- CO₂ gases together and no split by gases. Base year figures were provided for CO₂ by sector, and a total figure for all non- CO₂ greenhouse gases together. In terms of the sectoral split, only data for 2008-12 (no base year or other years) were provided in the CRF sector format.