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**2008 Environment Policy Review**

**Part 2**

**{COM(2009) 304}**

## Part 2: Environment policy actions in the Member States

This part consists of the Commission's review and summary of the major environment policy developments in the Member States. The policy actions listed are by no means exhaustive but rather present a snapshot of actions that took place around 2008 and upcoming initiatives to be expected in 2009. This review also includes data tables providing a more complete picture on the environmental situation in each Member State.

### NOTE TO THE READER

Additional information guiding the data tables:

#### 1. Member States targets

Indicator	Legal instrument
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq. - trend	Kyoto Protocol agreement
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	Regulation (EC) no 443/2009
Electricity produced from renewable energy sources (% gross electricity consumption)	Directive 2001/77/EC
Combined heat and power generation (% gross electricity generation)	Community strategy to promote combined heat and power, COM(97) 514 (i)
Sufficiency of site designation under the Habitats Directive	Directive 1992/43/EC
Area occupied by organic farming (% of Utilised Agricultural Area)	National Organic Farming Plans (ii)
Urban population exposure to air pollution by particles (annual mean concentration, µg/m <sup>3</sup> )	EC, DG Environment (iii)
Urban population exposure to air pollution by ozone (SOMO35 level, µg/m <sup>3</sup> .day)	EC, DG Environment (iv)
Air pollutant emissions (thousand tonnes) - sulphur dioxides (SO <sub>2</sub> ) - nitrogen oxides (NO <sub>x</sub> ) - non-methane volatile organic - ammonia (NH <sub>3</sub> )	National Emissions Ceiling (NEC) Directive, Directive 2001/81/EC
Recycling of packaging waste (as % total packaging waste)	Directive 1994/62/EC and Directive 2004/12/EC (v)

(i) Establishing an indicative target for EU-15.

(ii) IFOAM (International Federation of Organic Agriculture Movements) provided indicative targets when included in the National Organic Farming Plans.

(iii) The indicative target corresponds to the WHO interim target-3 (IT-3), which roughly reflects the ambition of the current EU policy tackling air pollution.

(iv) The 2005 Thematic Strategy on Air Quality (TS AQ) outlines interim objectives on the reduction of acute mortality due to ozone which can be translated into targets for each country for 2020. This target has no legal character and is calculated from the year 2000 country indicator and the relative reduction indicated in TS AQ. Targets for BG, EE, HU, LV and RO are not available due to data constraints.

(v) Targets for EU-15 are set in Directive 1994/62/EC, while targets for EU-12 are set in Directive 2004/12/EC. Target year is 2008 for most Member States (all except EL, IE, PT, CZ, EE, CY, LT, HU, SK, SI, MT, PL, LV)

## **2. Country ranking of indicators**

When relevant, country rankings of indicators are provided. The ranking is based on the environmental performance of an indicator in a specific country: 1=best environmental performance, 27=worst environmental performance. For instance the country with the lowest greenhouse gas emissions per capita scores 1; the country with the lowest share of electricity from renewables scores 27, etc. The ranking is done for the last available year.

The country ranking for the 'municipal waste' indicator is only indicative as Member States' municipal waste collection schemes differ strongly (e.g. contrary to some other Member States, a significant part of Austria's municipal waste comes from small and medium-sized enterprises, and not from households).

## **3. EU-27 average and EU-27 total**

For most indicators, the EU-27 average or EU-27 total is also indicated. It always refers to the last reported year of the indicator (2006, 2007 or 2008).

## **4. Information on indicators**

- Sufficiency of site designation under the Habitats Directive (Nature and biodiversity section): this indicator measures the effective compliance with the Habitats Directive by Member States, so all Member States should have reached 100%.

- Freight transport (Nature and biodiversity section): freight transport is a cross-cutting issue with implications on climate change, human health and biodiversity. It is a driving force behind the demand for more transport infrastructure (causing habitat fragmentation) and can result in negative impacts on biodiversity due to soil sealing, pollution and noise. The indicator refers to inland freight transport, and includes transport by road, rail and inland waterways.

- Water exploitation index (Environment and health section): this indicator measures total water abstraction as a percentage of available long-term freshwater resources.

## 5. Data sources

Indicator	Source
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq. - from energy supply and use, including transport (Mt CO <sub>2</sub> eq.) - from transport - per capita (tonnes CO <sub>2</sub> eq.) - per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP) - trend (% change compared to base year, mostly 1990) - Projected 2010 emissions trend * - with existing measures, Kyoto mechanisms and carbon sinks - with existing and additional measures, Kyoto mechanisms and carbon sinks	European Environment Agency (EEA)  EEA on the basis of Member States data
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	EC, DG Environment
Electricity produced from renewable energy sources (% gross electricity consumption) - from hydropower - from wind - from biomass	EC, Eurostat
Combined heat and power generation (% gross electricity generation)	EC, Eurostat
Energy consumption per capita (kg oil eq.)	EC, DG Environment based on Eurostat data
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	EC, Eurostat
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area	EC, DG Environment
Sufficiency of site designation under the Habitats Directive	EEA
Area occupied by organic farming (% of Utilised Agricultural Area)	EC, Eurostat, Institute of Rural Sciences, University of Wales Aberystwyth, FiBL and others
Freight transport (billion tkm) - % road - % rail	EC, Eurostat
Urban population exposure to air pollution by particles (annual mean concentration, µg/m <sup>3</sup> )	EEA
Urban population exposure to air pollution by ozone (SOMO35 level, µg/m <sup>3</sup> . day)	
Air pollutant emissions (thousand tonnes) - sulphur dioxides (SO <sub>2</sub> ) - nitrogen oxides (NO <sub>x</sub> ) - non-methane volatile organic compounds (NMVOC) - ammonia (NH <sub>3</sub> )	EEA
Water exploitation index	EEA
Municipal waste generated (kg per capita) - % landfilled - % incinerated	EC, Eurostat
Recycling of packaging waste (as % total packaging waste)	EC, Eurostat
Infringements of EU environmental legislation	EC, DG Environment
Share of environmental taxes in total tax revenue	EC, Eurostat and DG Taxation and customs union

\* According to Member States projections submitted in 2007 and relevant 2008 updates

## EU-27 INDICATORS

The tables below show indicators relevant to the 6 EAP. It follows the same structure as the data tables presented in the review of Member States' environment policy actions. When a target for EU-15 exists, the table also includes data for EU-15.

### Climate change and energy

	EU-27			
	2000	2005	2006	Target
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	5 065.5 EU27 4 118 EU15	5 156.8 EU27 4 186 EU15	5 142.8 EU27 4 151 EU15	3 923.8 EU15 (by 2008-12)
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	3 973.8	4 109.1	4 098.7	
- from transport (Mt CO <sub>2</sub> eq.)	923.7	984.1	992.3	
Total Kyoto GHG emissions	EU-27			
- per capita (tonnes CO <sub>2</sub> eq.)	10.5	10.5	10.4	
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	550.5	512.5	495.7	
- trend (% change compared to base year)	-12.2% EU27 -3.5% EU15	-10.6% EU27 -1.9% EU15	-10.8% EU27 -2.7% EU15	-8.0% EU15 (by 2008-12)
- trend (% change compared to 1990)	-9.1% EU27 -3.0% EU15	-7.5% EU27 -1.4% EU15	-7.7% EU27 -2.2% EU15	
- Projected 2010 emissions trend				
- with existing measures, Kyoto mechanisms and carbon sinks			-13.4% EU27 -8.0% EU15	-8.0% EU15 (by 2008-12)
- with existing and additional measures, Kyoto mechanisms and carbon sinks			-16.3% EU27 -11.3% EU15	
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	162.2 (2004)	160.2 (2006)	157.5 (2007)	130.0 by 2012-15
Electricity produced from renewable energy sources (% gross electricity consumption)	13.8%	(2006) 14.6%	(2007) 15.6%	21.0% (by 2010)
- from hydropower	11.6%	9.2%	9.2%	
- from wind	0.7%	2.5%	3.1%	
- from biomass	1.3%	2.7%	3.0%	
Combined heat and power generation (% gross electricity generation)	10.5% (2004) 9.5% EU15	11.1% EU27 10.8% EU15	10.9% EU27 10.8% EU15	18.0% by 2010 for EU- 15
Energy consumption per capita (kg oil eq.)	3 565	3 711	3 694	
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	214	209	202	

## Nature and biodiversity

	EU-27				
	2000	2006	2007	2008	Target
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		14.2%*	16.3%	17.0%	
Sufficiency of site designation under the Habitats Directive					100%
Area occupied by organic farming (% of Utilised Agricultural Area)	3.2% (2002)	4.0%	4.1%		
Freight transport (billion tkm)	2032.5	2418	2505.0		
- % road	73.9%	76.9%	76.9%		
- % rail	19.5%	17.4%	17.4%		

\* EU-25

## Environment and health

	EU-27			
	2000	2005	2006	Ceiling
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	27.8	28.8	30.0	30.0
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	3 087	3 919	4 417	2 698 for EU-25
Air pollutant emissions (thousand tonnes)				(by 2010)
- sulphur dioxides ( $\text{SO}_2$ )	9 928	8 227	7 946	8 300
- nitrogen oxides ( $\text{NO}_x$ )	12 581	11 406	11 199	9 000
- non-methane volatile organic compounds (NMVOCs)	11 166	9 596	9 391	8 800
- ammonia ( $\text{NH}_3$ )	4 221	4 054	4 006	4 300
Water exploitation index*				

\* No EU value available. See part 1.

## Natural resources and waste

	EU-27			
	2000	2006	2007	Target
Municipal waste generated (kg per capita)	524	523	522	*
- % landfilled	55.0%	42.2%	41.0%	
- % incinerated	15.1%	19.1%	20.0%	
	2000	2005	2006	
Recycling of packaging waste (as % total packaging waste)		55%	56.5 %	55%-80% (by 2008)

\* The EU has missed the 2000 target of stabilising municipal waste generation to 300 kg/per capita set by the 5<sup>th</sup> Environment Action Programme (5EAP)

## Better regulation and implementation

	EU-27		
	31/12/2006	31/12/2007	31/12/2008
Infringements of EU environmental legislation	420	479	481

## Use of market-based instruments

	EU-27		
	2000	2005	2006
Share of environmental taxes in total tax revenue	6.8%	6.7%	6.4%



## AUSTRIA

### Highlights in 2008

Environment policy in Austria in 2008 has focused on energy and climate change. A policy discussion process is underway to determine how best to deal with rapidly rising energy demand, which cannot be covered solely by increasing the use of renewable energy sources and demand management, e.g. increasing energy efficiency and consumer awareness. One widely quoted approach is “low carbon, low energy, low distance”, reflecting the three main fields of action: energy and industry, buildings, and mobility.

The development and implementation of environment policy was affected by the political situation, particularly in the second half of 2008 with the decision to hold early elections. As a result, there was little legislative activity in the environmental field, and many of the implemented measures were the result of long-term initiatives at EU level.

### Climate change and energy

	Austria				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions	81.1	93.3	91.1	68.8	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.				(by 2008-2012)		
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	59.7	72.4	69.8		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	18.1	24.4	23.1		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	10.1	11.4	11.0		10.4	16
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	391.0	413.6	390.8		495.7	5
- trend (% change compared to base year*)	+2.6%	+18%	+15.2%	-13% (by 2008-12)	-10.8%	21
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks		+5.1%		-13.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-13.3%			-16.3%	

\* Base year is 1990.

	Austria				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	166.8	162.5 (2006)	161.7 (2007)	130 by 2012-15 for EU-27	157.5	15
Electricity produced from renewable energy sources (% gross electricity consumption)	72.4%	(2006) 56.6%	(2007) 59.8%	78.1% (by 2010)	(2007)15.6%	1
- from hydropower	69.5%	49.6%	51.4%		9.2%	
- from wind	0.1%	2.5%	2.9%		3.1%	
- from biomass	2.8%	4.5%	5.5%		3.0%	
Combined heat and power generation (% gross electricity generation)	10.4%	15.4%	16.1%	18% by 2010 for EU-15	10.9%	8
Energy consumption per capita (kg oil eq.)	3 624	4 141	4 116		3 694	19
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	137	150	145		202	3

In 2006, Austria's greenhouse gas emissions were 15 % higher than the base-year level, well above its Kyoto target of -13% for the period 2008-2012. However, according to the latest data, Austria is projected to achieve its target once also additional measures have also been applied. Following the adoption of the climate and energy package in December 2008, Austria agreed to reduce greenhouse gas emissions by 2020 by 16 % compared to 2005 levels for sectors like buildings, road transport and farming.<sup>1</sup> Furthermore, Austria has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 34% (up from 23% in 2005).

In July 2008, the Austrian parliament passed an amendment to the Eco-Electricity Act in order to improve framework conditions for the generation of 'green electricity'. As defined in the federal electricity law, electricity is 'green' when it is obtained from biomass, wind, solar, bio-gas and geothermal energy (but not from water power). The amendment includes: an increase in investment allowances as well as easements for small-scale water power stations, the re-evaluation of green electricity tariffs in 2009, the new application scheme for green electricity subsidies, and elimination of the co-funding obligations of the states (Länder) in the field of photovoltaics. With these and other measures, the Austrian government intends to double the share of its 'green' electricity by 2015. According to data from the Austrian government, green electricity is currently already helping to avoid 2.4 million tonnes of CO<sub>2</sub>. Overall, the amendment aims at avoiding 5 million tonnes of CO<sub>2</sub> per year.

In August 2007, the former parliamentarian and member of the Green Party, Andreas Wabl, was appointed Austria's first Climate Change Coordinator. In addition to representing the Chancellor in all climate change-related matters, the Coordinator is responsible for organizing the yearly Climate Summit (held in April 2008) and also serves as a link between the government and the NGO community, labour unions, business groups, academia, and the public.

<sup>1</sup> i.e. sectors not covered by the EU Emission Trading System (ETS). For ETS sectors - i.e. power plants and large industrial emitters - an EU-wide reduction target is set at 21% below 2005 levels in 2020.

## Nature and biodiversity

	Austria					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		14.3%	13.7%	13.8%		17.0%	
Sufficiency of site designation under the Habitats Directive	87.3% (2004)		88.3%	88.8%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	8.2%	11.1%	11.4%		20%* by 2010	4.2%	1
Freight transport (billion tkm)	54.2	58.9	58.4			EU total 2505.0	
- % road	64.8%	66.5%	64.0%			76.9%	6 of 26
- % rail	30.6%	30.3%	31.5%			17.4%	5 of 26

\* Indicative target according to the Austrian Action Plan for Organic Farming 2008-2010 (Aktionsprogramm Biologische Landwirtschaft 2008-2010).

The European Commission has taken Austria to the European Court of Justice for failing to designate a sufficient number of sites under the Habitats Directive, namely 6 natural habitat types in the Alpine biogeographical region and 10 natural habitat types and 12 species in the Continental biogeographical region. The case was sent to the European Court of Justice in March 2008.

In mid 2007, the National Biodiversity Commission (NBC) issued the “Results-oriented goals for the fulfilment of the 2010 target” to serve as a benchmark for the implementation and evaluation of actions carried out in support of the Austrian Biodiversity Strategy issued in 2005. The report concludes that more should be done to include additional stakeholders who are presently not represented in the NBC but whose participation is vital for the fulfilment of the stipulated goals. Furthermore, the report stresses the importance of considering external factors, such as climate change, which can have significant impacts on biodiversity.

In April 2008, the Austrian Initiative for Biodiversity Research was founded through a collaborative effort between the Science and Research Ministry, the University of Vienna, National Parks Austria, and the Thayatal National Park. Its objective is to help to halt the decline in biodiversity by improving communication and networking between different actors in the field, notably Austria’s biodiversity research community. Furthermore, the Initiative aims to support international biodiversity research efforts and promotes outreach activities to the public.

## Environment and health

	Austria				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	25.9	28.9	30.4	30.0	30.0	11 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	6 894	5 711	5 341	4 161	4 417	18 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides (SO <sub>2</sub> )	32	27	28	39	7946	
- nitrogen oxides (NOx)	205	237	225	103	11198	
- non-methane volatile organic compounds (NMVOCs)	177	164	172	159	9391	
- ammonia (NH <sub>3</sub> )	69	66	66	66	4006	
Water exploitation index	1990		Latest available year (1999)			
	4.5%		4.4%			

In 2008 the law for testing the environmental impact of new activities and projects was being reviewed. In particular, the role of involved stakeholders came under repeated scrutiny and national thresholds needed to be updated.

## Natural resources and waste

	Austria				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	581	653	597		522	21
- % landfilled	33.7%	15.0%	14.4%		41.0%	6
- % incinerated	11.2%	26.0%	30.2%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	69%	66.9%	68.4%	55%-80% (by 2008)	56.5%	2

In January 2008, an amendment to the Environmental Promotion law increased the funding available for water-related activities (e.g. treatment of industrial waste water, improving water supplies, flood protection, and improving water quality) through the dedicated fund for environment and water management by an extra € 10 million in 2007 and € 20 million in the years thereafter. Significantly, the reform also includes an additional € 140 million for activities which improve the ecological status of water, to be disbursed between 2007 and 2015.

In line with the Batteries Directive, Austrian battery legislation was published in May 2008, and came into effect in September 2008. The new law holds manufacturers and importers responsible for the collection and appropriate disposal of waste batteries and accumulators, including all associated costs. Previously, this had been the responsibility of - and a considerable burden for - communes and waste management associations.

In 2007, the Austrian government agreed a national plan for sustainable public procurement and laid down a road map for its implementation. As a first step, a report on the status quo of green public and private procurement was published, while three federal ministries initiated a

pilot project which covers five different product groups (vehicles, paper, personal computers and monitors, cleaning supplies, and electricity). From October 2008 onwards, a series of regional dialogues with stakeholders were held in order to establish a list of criteria for federal public procurement, while efforts in 2009 will also include actions at state (Länder) level. The ultimate aim is the adoption of a comprehensive national action plan based on the lessons learned from the pilot phase by 2010.

### Better regulation and implementation

	Austria			<i>EU-27 total</i>
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	16	12	11	<i>481</i>

### Use of market-based instruments

	Austria			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	5.6%	6.2%	5.9%	<i>6.4%</i>

In Austria, commuters who travel to their workplace are eligible for support based on the distance travelled. In June 2008, in response to rising fuel prices, the government announced a modification of this system, increasing the support available for each individual traveller. The modification also included an additional measure whereby commuters who use public transport instead of private vehicles are entitled to a higher payment.

### Environmental technologies

Environmental technologies are an important segment of the Austrian economy, constituting some 4.2% of manufactured goods production and employing 22,000 people. In recent years, this sector has registered above-average growth and turnover. Recognizing Austria's potential in this field, the Environment Ministry and the authorities of Lower Austria presented the Master Plan for Environmental Technologies in February 2008. The Plan focuses on four main areas: export promotion, research and development and qualification, finance, and the domestic market, and includes 30 measures, including increased cooperation with new EU Member States in the field of energy and climate and support for exporting enterprises.

June 2008 saw the inauguration of the Austrian Clean Technology (ACT) competence centre, a joint initiative of the Environment Ministry and the Austrian Federal Chamber of Commerce and one of the measures included in the Master Plan. The objective of the ACT is to serve as a hub for marketing efforts in support of environmental technology, particularly with regard to the international market.

Also in 2008, the government presented a new Programme where SMEs can apply for a € 5,000 'innovation cheque' to purchase external expertise, e.g. to undertake technological research, market studies or impact assessments, or to hire an external expert.

## **Outlook for 2009**

E-Control, the electricity and gas market regulator, is leading efforts to design a new model law to promote energy efficiency. It will focus on several areas, for example, heating, changes in consumption habits, alternative financial models, and energy supply. Potential measures are discussed in working groups within the framework of the Austrian national platform for energy efficiency. The work so far has highlighted the need for comprehensive measures to reduce the rapidly rising demand for energy by around 2% per year – an effort which can only partially be covered by renewable energy sources.

The government is expected to issue the general construction permit for improving navigation of the Danube river in 2009 to fulfil plans to double the volume of goods transported on the Danube. With a budget of some € 200 million, the project plans to stabilise the streambed, ensure navigability even at low water levels, and protect the ecosystems of the Donau-Auen national park. In October 2008, the environmental impact assessment was carried out with the participation of independent experts and interested citizens and NGOs and its results will be included in the reports of external reviewers.

With regard to climate change adaptation, a study is being carried out in order to identify expected impacts on various sectors (e.g. water management, tourism, agriculture, forestry and electricity generation) as well as ‘no-regrets’ options for action covering all of these fields. The study, which involves stakeholder consultations and a series of five expert workshops, focuses on the fact that there is still a great deal of uncertainty and a lack of systemic knowledge as regards assessing the impacts of climate change. Nevertheless, the study can be viewed as the first step toward a full-scale programme for climate change adaptation.

## BELGIUM

### Highlights in 2008

Environment policy in Belgium is mainly a regional competence. The environmental agenda of the three regions – Brussels, Flanders and Wallonia – was dominated by the transposition and implementation of various recent EU Directives. Environment policies in Belgium in 2008 focused mainly on climate change, energy efficiency and renewable energy.

The approval of the national allocation plan by the European Commission, with three sub-regional plans, has made targets more concrete and allocated responsibility between the three regions. The plans set emission caps and allocate allowances for installations covered by the EU Emissions Trading System in line with achieving Belgium's greenhouse gas emission reduction target in 2008-2012. All three regions promoted renewable energy by adopting legislation, as well as various other region-specific market-based incentives and decrees, such as the Walloon air climate plan. Further, topics such as environment and health, water management, soil sanitation, legislation on environmental permits, biodiversity and particularly waste reduction, continued to be addressed during 2008 in the different regions.

### Climate change and energy

	Belgium				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	145.5	142.3	137	134.8 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	116.4	115.2	110.9		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	24.9	26.6	26.1		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	14.2	13.6	13.0		10.4	21
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	578.0	521.8	487.6		495.7	11
- trend (% change compared to base year*)	-0.1%	-2.3%	-6%	-7.5% (by 2008-12)	-10.8%	13
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks		-8.5%		-7.5% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-8.5%			-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Belgium				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	165.4	152.8 (2006)	151.7 (2007)	130 by 2012-15 for EU-27	157.5	6
Electricity produced from renewable energy sources (% gross electricity consumption)	1.5%	(2006) 3.9%	(2007) 4.2%	6.0% (by 2010)	(2007) 15.6%	22
- from hydropower	0.5%	0.4%	0.4%		9.2%	
- from wind	0%	0.4%	0.5%		3.1%	
- from biomass	1.0%	3.1%	3.3%		3.0%	
Combined heat and power generation (% gross electricity generation)	6.5%	8.5%	8.7%	18% by 2010 for EU-15	10.9%	17
Energy consumption per capita (kg oil eq.)	5 988	5 835	5 727		3 694	25
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	247	227	219		202	13

In 2006, Belgium's greenhouse gas emissions were 6% lower than the base year, compared to its Kyoto target of -7.5% for the period 2008-2012. According to the latest data, Belgium is projected to achieve its target using existing measures, Kyoto mechanisms and carbon sinks.

In 2008, all levels of Belgian administration have been actively promoting new measures to deal with the climate change and energy challenge. Measures ranged from the approval of the National Allocation Plan to promotion of renewable energy and energy efficiency measures.

In October 2008, the European Commission approved the National Allocation Plan Table that indicated the specific amounts of CO<sub>2</sub> allowances allocated to each installation under the EU Emissions Trading System. This means that the three regional allocation plans can come into force.

The federal government and the three regions promoted renewable energy and energy efficiency during 2008. The federal government offers a tax reduction on 40% of invoiced expenses, ranging from double glazing to solar panels, with a certain maximum amount per year and per home. Additionally, the regions have set up supplementary subsidy schemes for promoting energy efficiency, e.g. the Brussels capital region gives subsidies for insulation, energy efficient household appliances, boilers, heating systems and solar energy. The regions also adapted their legislation in line with the Energy Performance in Buildings Directive. In Wallonia, the air climate plan was adopted in March 2008. It includes indicative targets for renewable energy and energy consumption. Wallonia also requires energy labelling for rental properties as well as properties for sale since September 2008. In Flanders, properties put up for sale must have an energy label certificate since November 2008. This applies to rental properties too as of January 2009.

Following the adoption of the climate and energy package in December 2008, Belgium agreed to reduce greenhouse gas emissions by 2020 by 15% compared to 2005 levels in sectors like buildings, road transport, and farming (i.e. sectors not covered by the Emissions Trading System). Furthermore, Belgium has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 13% (up from 2% in 2005).



## Nature and biodiversity

	Belgium					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		12.6%	12.6%	12.7%		17.0%	
Sufficiency of site designation under the Habitats Directive	99.6% (2004)		99.6%	99.6%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	1.5%	2.1%	2.4%			4.2%	20
Freight transport (billion tkm)	66	60.5	59.2			EU total 2505.0	
- % road	77.4%	71.1%	71.1%			76.9%	9 of 26
- % rail	11.6%	14.2%	13.2%			17.4%	17 of 26

The Federal Plan on Sustainable Development 2004-2008 includes a specific action point on ‘protecting biodiversity’, which promotes close cooperation between transport, business, sustainable development and the research sector in an effort to protect biodiversity. In December 2008, the federal government launched a public consultation on the proposed federal action plans for the integration of biodiversity into these four sectors.

New legislation in Flanders on soil rehabilitation was implemented as of June 2008. It is based on the decree for soil rehabilitation and soil protection and includes, among other things, new guidelines on these issues. At the same time, special organisations for soil sanitation were created in 2008 in order to promote cooperation and the distribution of costs between the regional level, the local authorities and the private sector. The 2010 goal is to restore 37% of the sites with potential pollution and to sanitise 31% of sites with a known pollution problem.

In September 2008, the Walloon government introduced a new Forest Code, which places greater emphasis on protecting biodiversity. This Code will be important for biodiversity protection in Wallonia because one third of the whole territory is covered by forests. The new Code aims to strike a balance between the environmental, economic, social, educational and recreational functions of forests. The Walloon region also adopted a new Decree on Soil Management. It outlines soil management based on risk assessment and risk management.

## Environment and health

	Belgium				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	32.9	30.9	33.9	30.0	30.0	16 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	1 976	2 695	4 024	2 554	4 417	9 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	171	144	139	99	7946	
- nitrogen oxides ( $\text{NO}_x$ )	330	285	278	176	11198	
- non-methane volatile organic compounds (NMVOCs)	249	153	150	139	9391	
- ammonia ( $\text{NH}_3$ )	87	74	73	74	4006	
	1994		Latest available year (2005)			
Water exploitation index	33.8%		32.4%		n.a.	24

Concerning air quality, the federal government organised between November 2008 and January 2009 a consultation on the draft of the 2009-2012 plan to combat air pollution. It should contribute towards achieving the emission levels indicated in the Göteborg protocol and the Directive on national emission ceilings for certain atmospheric pollutants.

In Flanders, a number of provisions regarding reduction of Nitrogen Oxide ( $\text{NO}_x$ ) and Non-Methane Volatile Organic Compounds (NMVOC) emissions have been incorporated into the Flemish Regulation on Environmental Permits. The Flemish Dust Plan to reduce  $\text{PM}_{10}$  levels in ambient air went through a revision process during 2008 and will be made more stringent in 2009. Priority was also given to various projects concerning integrated water basin management. Final approval of the Water Basin Management Plans is expected in 2009.

In 2008, the Walloon and the Flemish regions continued implementing the programme for the sustainable management of nitrates in agriculture, which was adopted in 2007. Its main objective is to detect and designate vulnerable zones and apply the new protective rules limiting the use of nitrates for agricultural purposes in these areas. The Walloon region also launched a public consultation on water designed to pinpoint the most pressing issues and then develop new initiatives during 2009.

The Brussels Region has been working on a new plan to reduce noise nuisance. The focus is to reduce noise from transport, improve the sound comfort of dwellings, promote new technology (insulation, new cars and public transport, etc.), introduce an observatory for the follow up of noise complaints, and designate quiet zones.

## Natural resources and waste

	Belgium				EU-27 average	rank in EU-27
	2000	2006	2007	target		
Municipal waste generated (kg per capita)	474	483	492		522	12
- % landfilled	15.4%	5.0%	4.3%		41.0%	4
- % incinerated	32.9%	33.5%	32.9%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	63%	76.8%	79%	55%-80% (by 2008)	56.5 %	1

Belgium ranks among the top EU Member States in terms of separate collection and recycling of waste. For waste selection more and more Flemish communes are introducing the "DIFTAR" (differentiated tariff). This is a financial instrument designed to calculate waste selection costs as accurately as possible and to financially stimulate citizens to prevent waste and improve their waste separation habits. Households that produce less waste per person and separate it efficiently will have to pay a lower tariff. In January 2008, a new Walloon fiscal decree came into force stimulating better waste management in the Walloon Region. This decree introduces eight new taxation regimes, ranging from taxation on waste incineration to a tax favouring selective collection of waste from households. The Brussels government in 2008 launched a public consultation on a draft waste reduction plan. An important target of the draft plan is to reduce waste by 50 kg per person per year up to 2014.

## Better regulation and implementation

	Belgium			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	20	24	21	481

By the end of 2007, the new Walloon decree on environmental responsibility came into force. It transposes the EU Liability Directive, and was made more explicit in June 2008 by a ministerial circular. The decree provides a framework of rights and obligations for each actor in the environmental field and applies the polluter pays principle more explicitly.

## Use of market-based instruments

	Belgium			EU-27 average
	2000	2005	2006	
Share of environmental taxes in total tax revenue	5%	5.2%	4.9%	6.4%

## Environmental technologies

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. Belgium reported that by April 2008, 1369 authorisations had been issued out of a total of 1519.

## **Outlook for 2009**

In June 2009, all three regions are electing a new parliament and government. In the coming year, further efforts will be put into transposing European Directives into national and regional laws. At different government levels, more measures will be implemented to reduce greenhouse gas emissions, including new and higher subsidies for insulation, etc. The Flemish government also has plans to reform the tax system for private vehicles, which should better take into account the environmental features of the vehicle. Further discussions with the other regions and the federal government will be launched on this in 2009. In December 2008, the Walloon government finalised the draft version of the Walloon Environment and Health Action Plan for the period 2008-2013. Public consultation on this new Plan was launched in January 2009 and it is expected to come into force during the first half of 2009. Wallonia is also finalising a regional sustainable development strategy, which will be adopted in 2009. The Brussels government can apply new measures in 2009 when concentrations of air pollutants exceed a threshold. For example, a driving ban can be imposed on cars according to their licence number and a driving ban on all trucks above 3.5 tonnes.

## BULGARIA

### Highlights in 2008

As a new member of the EU, Bulgaria is busy establishing the foundation for its environment policies. Environment policy instruments are largely being implemented as part of the measures within the Operational Programmes, adopted in 2007, and financed by the EU Cohesion policy and Structural funds.

In order to harmonize national legislation with European Community requirements on the management of waste from extractive industries, the Law on Natural Resources was amended and supplemented in 2008. The Council of Ministers approved the Ordinance on the protection of waters against pollution caused by nitrates from agricultural sources. This will facilitate the reduction of nitrate levels in subsurface waters.

### Climate change and energy

	Bulgaria				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions	68.7	70.5	71.3	122.0	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.				(by 2008-2012)		
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	48.2	51.2	52.2		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	6.0	8.2	8.7		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	8.4	9.1	9.2		10.4	10
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	5012.7	3975.9	3784.3		495.7	27
- trend (% change compared to base year*)	-48.2%	-46.8%	-46.2%	-8.0% (by 2008-12)	-10.8%	4
- Projected 2010 emissions trend compared to base year *						
- with existing measures, Kyoto mechanisms and carbon sinks		-29.8%		-8.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-34.9%			-16.3%	
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	na	Na	na	130 by 2012-15 for EU-27	157.5 (2007)	
Electricity produced from renewable energy sources (% gross electricity consumption)	7.4%	(2006) 11.2%	(2007) 7.5%	11.0% (by 2010)	(2007) 15.6%	16
- from hydropower	7.4%	11.1%	7.4%		9.2%	
- from wind		0.1%	0.1%		3.1%	
Combined heat and power generation (% gross electricity generation)	n.a.	6.1%	6%	18% by 2010 for EU-15	10.9%	22
Energy consumption per capita (kg oil eq.)	2 282	2 582	2 669		3 694	7
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	1940	1607	1554		202	27

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1988 and for F-gases is 1995.

Projections show that Bulgaria will meet its Kyoto Protocol commitments. Greenhouse gas emissions are projected to decrease in 2008-2012 by 30% or more compared to base year levels, achieving more than the targeted reduction of 8%. The share of electricity production from renewables of gross electricity consumption stood at 11.2% in 2006 (surpassing the 2010 target) but fell down to 7.5% in 2007 due to a drop in electricity produced from hydropower. Although a continuously decreasing trend was observed from 1994 to 2006, Bulgaria still has the highest energy intensity in the EU.

Following the adoption of the climate and energy package in December 2008, the country agreed to increase greenhouse gas emissions by maximum 20% compared to 2005 levels in non-ETS sectors (e.g. buildings, road transport, and farming). Furthermore, Bulgaria has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 16% (up from 9 % in 2005).

Measures on energy efficiency and on the development of renewable energy infrastructure are being financed through Cohesion Policy funds. They include introducing innovative, energy-saving technologies and equipment; upgrading energy management and improving heat and energy properties of buildings; and using energy-saving materials and products. Renewable energy sources will be promoted by building, renewing or refurbishing equipment for the use of renewables, and introducing production technologies using equipment for energy generation from renewables, including combined power and heat generation.

### Nature and biodiversity

	Bulgaria					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area			28.8%	34%		17.0%	
Sufficiency of site designation under the Habitats Directive				94.3%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	0.2%	0.4%		8% * by 2013	4.2%	26
Freight transport (billion tkm)	12.2	19.9	20.9			EU total 2505.0	
- % road	52.3%	69.0%	70.0%			76.9%	8 of 26
- % rail	45.2%	27.1%	25.1%			17.4%	10 of 26

\* Indicative target according to the National Plan for Development of Organic farming in Bulgaria 2007-2013.

Although Bulgaria in 2008 designated a very substantial proportion of its territory as part of the Natura 2000 network, some gaps still remain. The Bulgarian authorities are struggling to enforce the nature protection legislation in these sites. The Natura 2000 network currently includes 114 Special Protection Areas (SPAs) and 228 Sites of Community Importance, although six of the SPAs are considerably smaller in size than the corresponding Important Bird Areas. Thus, Bulgaria failed to meet the requirements for designating the most suitable areas in its territory and for this reason, the European Commission opened an infringement case against Bulgaria.

The most important measures in Operational Programme Environment include elaboration of management plans to support the management of Natura 2000 sites, increasing awareness of Natura 2000 networks, establishment of management bodies for Natura 2000 sites, restoration of damage caused by human activities, afforestation with native species, and assisting the

natural ability of species to adapt to climate change and variations in other environmental circumstances.

## Environment and health

	Bulgaria				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	20.4	55.6	55.4	30.0	30.0	23 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	200 (2001)	2 154	2 124	n.a.	4 417	3 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides (SO <sub>2</sub> )	1045	900	877	836	7946	
- nitrogen oxides (NO <sub>x</sub> )	128	233	246	247	11198	
- non-methane volatile organic compounds (NMVOCs)	79	147	159	175	9391	
- ammonia (NH <sub>3</sub> )	58	57	55	108	4006	
	1990		Latest available year (2005)			
Water exploitation index	64.9%		38.2%		n.a.	26

The Operational Programme Environment was approved by the European Commission at the end of 2007. Two of its Priority Axes focus on construction of the necessary infrastructure for water supply and wastewater collection, discharge and treatment, and on the improvement of infrastructure for waste treatment. The total amount of funds available for the implementation of the two Priority Axes in the period 2007-2013 amounts to more than €1 650 million.

## Natural resources and waste

	Bulgaria				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	516	446	468		522	10
- % landfilled	77.3%	79.8%	82.9%		41.0%	22
- % incinerated	0%	0%	0%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	n.a.	30.8%	30%	55-80% (by 2014)	56.5 %	24

The Bulgarian government has adopted various environmental laws transposing European Directives. The Soil Protection Act was adopted at the end of 2007 and aims to prevent soil degradation and damage to soil functions, and to restore damaged soil functions. Also the Ordinance on transposing the Directive on the management of bathing water quality and the protection of waters against pollution caused by nitrates from agricultural sources was adopted. Further, the Law on Natural Resources was amended and supplemented to harmonize legislation on the management of waste from extractive industries.

The Operational Programme Environment contains measures relating to waste such as reducing the quantity and/or hazard of dangerous substances in accumulated waste, launching regional facilities for municipal waste treatment and pre-treatment (composting, separation),

setting up waste recycling centres, building regional installations for construction and demolition waste recycling, and preparing and updating regional and municipal waste management plans.

### Better regulation and implementation

	Bulgaria			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	0	6	7	<i>481</i>

Bearing in mind that Bulgaria joined the EU in 2007, the number of complaints filed by the Commission is rather large, especially in the nature sector. In November 2008, the European Commission sent warning letters to Bulgaria in two separate cases over its failure to properly implement EC environmental laws. The first case concerns the Waste Framework Directive, and Bulgaria's failure to establish an adequate household waste management system in Sofia. In the second case Bulgaria is being sent a first written warning about the environmental impact assessments required under the Birds Directive.

### Use of market-based instruments

	Bulgaria			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	7.6%	9.9%	9.1%	<i>6.4%</i>

### Environmental technologies

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. Bulgaria reported that by April 2008, only 297 authorisations had been issued or reconsidered and, where necessary, updated out of a total of 415.

### Outlook for 2009

The Agency for International Business and Cooperation is providing its expertise for the "Development of a National Waste Management Programme" for 2009–2013. The first draft of the new Programme is expected to be ready by the end of 2009. The National Waste Management Programme sets out a long-term strategy for sustainable waste management and a framework for decision-making in compliance with the legislation and policy of the European Union.

The draft National Sustainable Development Strategy was approved by the National Advisory Council on Sustainable Development and published for public consultation in May 2007. The strategy is expected to be approved by the Bulgarian government in 2009.



## CYPRUS

### Highlights in 2008

In response to a prolonged period of drought for the third consecutive year, the government of Cyprus in 2008 designed a drastic Drought Mitigation and Response Plan including a series of emergency measures, making the need for water management a priority.

On waste, Cyprus has made progress in implementing its Strategic Plan for Management of Solid Waste, which includes the establishment of four regional centres for integrated management of solid waste, as well as the restoration of existing landfills. The regional centres are expected to become fully operational in 2010. Finally, in response to health threats caused by air pollutants, the government has launched a National Action Plan for Air Quality Improvement, with measures to support public transport and stricter standards and procedures for used vehicles.

### Climate change and energy

	Cyprus				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	8.7	9.9	10.0	No Kyoto target	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	6.8	7.8	8.0		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	1.8	2.1	2.1		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	12.2	13.1	13.1		10.4	22
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	856.6	834.1	814.0		495.7	18
- trend (% change compared to 1990*)	+43%	+67.3%	+66%	No Kyoto target	-10.8%	27
- Projected 2010 emissions trend compared to 1990*				No Kyoto target		
- with existing measures, Kyoto mechanisms and carbon sinks	+44.2%				-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	+41.4%				-16.3%	
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	172.2 (2004)	168.9 (2006)	169.1 (2007)	130 by 2012-15 for EU-27	157.5	21
Electricity produced from renewable energy sources (% gross electricity consumption)	0	0	0	6.0% (by 2010)	15.6%	26
Combined heat and power generation (% gross electricity generation)	0	0.3%	0.3%	18% by 2010 for EU-15	10.9%	26
Energy consumption per capita (kg oil eq.)	3 444	3 254	3 377		3 694	12
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	280	247	251		202	16

\* No base year under the Kyoto protocol; change refers to 1990.

Cyprus has no quantitative emission reduction commitments under the Kyoto Protocol, but as an EU Member State, it is bound by the obligations set out in the Emissions Trading Directive. Nevertheless, Cyprus greenhouse gas emissions have risen by 66% compared to 1990 levels, with energy generation and transport being the major contributors. According to the latest data, with the existing policies and measures, emissions will by 2010 decrease to 44 % above 1990 emissions. The implementation of additional measures could further reduce emissions to 41 % above 1990 emissions. In December 2008, Cyprus agreed by 2020 to reduce greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport and farming) by 5% compared to 2005 levels. Furthermore, Cyprus has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 13% (up from 3% in 2005).

Cyprus lacks national energy sources and relies heavily on imported oil. Energy intensity remains at a relatively high level, almost 25% above the EU average. To address the issue, the government put forward an Energy Savings Programme in 2006, which has been extended to 2010. This programme promotes energy savings in the public and private sectors, including measures such as the provision of incentives for the purchase of hybrid vehicles, flexible fuel vehicles, and electric vehicles; financial support for the thermal insulation of houses; financial support for energy conservation investment in public buildings and services; promotion of biofuels; expansion of the use of school buses; improvement of lighting; and information campaigns.

The use of renewable energy sources for electricity generation is still very low, despite considerable potential, especially of wind energy. This is partly due to public opposition to the installation of wind farms.

The Vasilikos Energy Centre, which aims to promote the diversification of energy sources and the introduction of natural gas on the island, is scheduled to begin operation in 2013. The future use of natural gas as an energy source should improve efficiency in electricity generation and decrease greenhouse gas emissions.

In 2008 the Institute of Agricultural Research finished a project on prospects for cultivating a number of energy crops in Cyprus (sweet sorghum, rape, sugar beet, sunflower, maize, barley, potato and wheat). The results were not very optimistic due to the severe water shortage, the lack of good agricultural land and competition with animal feed crops.

## Nature and biodiversity

	Cyprus					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area*		11.3%	17.5%	17.5%		17.0%	
Sufficiency of site designation under the Habitats Directive**		45.9%	25.0%	25.0%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	1.3%	1.3%			4.2%	23
Freight transport (billion tkm)	1.2	1.2	1.2			EU total 2502.0	
- % road	100%	100%	100%			76.9%	26 of 26
- % rail	-	-	-			17.4%	26 of 26

\* The figure concerns only the Republic of Cyprus. \*\* 2006 data for CY are not fully comparable with 2007 and 2008. \*\*\* The railway system is missing due to the geography of the country.

The management plans for 12 Natura 2000 sites have been completed, while management plans for another 13 sites are underway. These 25 management plans cover a significant percentage of the current Cypriot Natura 2000 network, which comprises 36 sites. However site designation gaps still exist (e.g. the Akamas peninsula) and there is further work to be done on tackling illegal hunting.

The Coastal Area Management Programme for Cyprus was finalised in June 2008. The Programme was oriented towards sustainable management of the whole coastal area of Cyprus, introducing and applying the principles, methodologies and practices of sustainable development and Integrated Coastal Area Management.

Preparations for the National Action Plan for Combating Desertification were completed in 2008 and the Plan was sent for Ministerial approval. It involves a number of government departments and includes policies and measures relating to the management of water resources; promotion of sustainable (and traditional) agricultural practices; measures to prevent overgrazing and promote afforestation; institutional and fiscal measures to encourage the population to remain in rural areas; integration of management and conservation measures for the protection of biodiversity; and training and raising public awareness.

## Environment and health

	Cyprus				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	n.a.	n.a.	n.a.	30.0	30.0	
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	n.a.	n.a.	n.a.		4 417	
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	52	42	36	39	7946	
- nitrogen oxides ( $\text{NO}_x$ )	22	17	18	23	11198	
- non-methane volatile organic compounds (NMVOCs)	16	11	11	14	9391	
- ammonia ( $\text{NH}_3$ )	5	5	5	9	4006	
	1990		Latest available year (2005)			
Water exploitation index	n.a.		45.4%		n.a.	27

In Cyprus, environment-related health risks are mainly linked to the increasing levels of atmospheric pollutants in urban areas with heavy traffic. To address the problem, the government introduced the National Plan for Air Quality Improvement in 2008. There are eight target areas under this plan, aimed at the transport, energy, industry, and agricultural sectors, energy efficiency, fuel improvement, and raising public awareness. Measures for the transport sector are particularly important as transport is one of the main causes of atmospheric pollution. Under the Plan, measures supporting public transport and setting stricter standards and procedures for used vehicles were implemented gradually from 2008. Further measures include setting up a Steering Committee for implementation, launching studies for public transport improvement, building a new bus depot and introducing 300 additional bus stops, priority for buses at traffic lights and special bus lanes on major roads.

Strategic Noise Mapping was completed in December 2007, resulting in two action plans to alleviate the problems identified. The first action plan included traffic management measures, such as banning heavy vehicles on city and intercity roads at night time and reducing speed limits inside urban areas. The second action plan was for the construction of noise barriers in sensitive areas, such as new schools, hospitals, parks, churches, etc. The action plans are pending approval by the Ministry of Finance.

## Natural resources and waste

	Cyprus				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	680	745	754		522	25
- % landfilled	90.1%	87.5%	87.3%		41.0%	25
- % incinerated	0%	0%	0%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	22%	11.1%	25.2%	55%-80% (by 2012)	56.5 %	26

During 2008, technical, economic and environmental impact assessment studies regarding the restoration of uncontrolled landfill sites were completed for 10 sites in an effort to comply with the provisions of the Directive on the landfill of waste.

The generation of municipal solid waste is on the rise, and waste handling primarily takes the form of landfilling, as recycling rates are still low. The Strategic Plan for the Management of Solid and Hazardous Waste is under implementation and includes the establishment of four regional centres (one per administrative district) for integrated management of solid waste, as well as the restoration of existing landfills. The regional centres, which are expected to become operational in late 2009 or in 2010, will incorporate the following facilities: a landfill site, a sorting plant, a biogas collection and energy recovery unit, biodegradable waste treatment, a transfer station and a demolition waste disposal unit.

The Cypriot Research Promotion Foundation is participating in several European environmental sustainability projects to strengthen the cooperation and coordination of research activities across Member States, for the next five years. For example, URBAN-NET is looking at urban sustainability in Europe by identifying and addressing trans-national requirements for research and sharing good practices and MARIFISH is seeking to provide evidence to fisheries managers for the sustainable management of fisheries, including aquaculture, using the ecosystem-based approach.

## Better regulation and implementation

	Cyprus			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	7	9	9	481

Out of a total of 481 environment-related infringement cases in the EU at the end of 2008, 8 concerned Cyprus. Most open infringement cases in 2008 relate to air and nature.

## Use of market-based instruments

	Cyprus			EU-27 average
	2000	2005	2006	
Share of environmental taxes in total tax revenue	8.9%	9.9%	9%	6.4%

## **Environmental Technologies**

The most important of the actions on environmental technologies is the Sustainable Development Programme (which is part of the Framework Programme for Research, Technological Development and Innovation 2008) launched in February 2008. The programme covers all three sustainability dimensions - environmental, social and economic - and includes four specific actions targeting the introduction of environmental technologies in various sectors. These are: Specific Action: “Natural Environment” (€650 000); Specific Action: “Urban and Built Environment” (€800 000); Specific Action: “Agriculture, Animal Farming, Fisheries and Aquaculture” (€500 000); Specific Action: “Social and Economic Sustainability” (€500 000).

## **Outlook for 2009**

The National Biomass Action Plan of Cyprus is expected to be agreed in 2009. The Action Plan will cover the three main axes of the European Biomass Action Plan: biomass for electricity production, biomass for heating and cooling, and biofuels for transport. It will establish indicative national targets for biomass electricity, heating and cooling, and seek to find ways to meet the EU target for 10% biofuels use in transport by 2020.

Regarding waste management, more work will be done to prepare the four regional centres (Larnaca/Famagusta, Paphos, Nicosia and Limassol): they are expected to be fully operational by 2010. According to the National Energy Efficiency Plan, which came into effect in 2008, several measures will be introduced in the residential sector in 2009, including regular maintenance and inspection of boilers, heating installations and air-conditioning systems.

## CZECH REPUBLIC

### Highlights in 2008

Climate change and energy were chosen as one of the key priorities of the 2009 Czech Presidency of the EU Council. This was also reflected in the national agenda for 2008, in particular as concerns the amendment to the Emissions Trading Act and the introduction of grant schemes for households to replace coal stoves with more sustainable alternatives. The process to revise the two main environment-related strategic documents - the Sustainable Development Strategy and the State Environmental Policy – was launched in 2008.

The Czech Republic has not yet designated all the Sites of Community Importance and Special Protection Areas under the Habitats and the Birds Directive, needed to complete its national Natura 2000 network. One of the reasons for the delay is balancing the needs of biodiversity with the need for transport infrastructure development. This continued to be a problem in 2008, when a proposal for the Czech Spatial Development Policy, a nation-wide land-use plan, was published.

### Climate change and energy

	Czech Republic				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions	147.0	145.7	148.2	178.7 (by 2008-2012)	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.						
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	120.7	120.7	121.8		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	12.6	17.8	18.2		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	14.3	14.3	14.5		10.4	24
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	2389.7	1972.6	1878.4		495.7	24
- trend (% change compared to base year *)	-24.3%	-25%	-23.7%	-8.0% (by 2008-12)	-10.8%	9
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks		-25.7%		-8.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-28.8%			-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Czech Republic				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	153.0 (2004)	153.1 (2006)	153.1 (2007)	130 by 2012-15 for EU-27	157.5	9
Electricity produced from renewable energy sources (% gross electricity consumption)	3.6%	(2006) 4.9%	(2007) 4.7%	8.0% (by 2010)	(2007) 15.6%	19
- from hydropower	2.8%	3.6%	2.9%		9.2%	
- from biomass	0.8%	1.3%	1.7%		3.0%	
- from wind		0.1%	0.2%		3.1%	
Combined heat and power generation (% gross electricity generation)	n.a.	16.8%	15.1%	18% by 2010 for EU-15	10.9%	10
Energy consumption per capita (kg oil eq.)	3 943	4 427	4 503		3 694	22
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	890	828	795		202	23

In 2006, Czech Republic's greenhouse gas emissions were 24% lower than the base year level, compared to its Kyoto target of -8% for the period 2008-2012. According to the latest data, the Czech Republic is projected to significantly overachieve its target. A new study in the Czech Republic on the possibilities of greenhouse gas emissions reductions showed that the country has the potential to reduce greenhouse gas emissions by 50% below 1990 levels by the year 2020 with relatively low investment costs. As a follow-up, the Ministry of Environment intends to submit a new Climate Protection Policy to the government.

Following the adoption of the climate and energy package in December 2008, the Czech Republic agreed not to increase its greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport and farming) by more than 9% by 2020 compared to 2005 levels. Furthermore, the Czech Republic has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 13% (up from 6% in 2005).

National initiatives related to climate change and energy ranged from general emissions reduction efforts, to initiatives regarding the buildings sector and transport policies.

In September 2008, the Amendment to the Emissions Trading Act became effective. It enables the Ministry of Environment to issue and sell Assigned Amount Units (AAU). Total AAU revenues are expected to range between CZK 10 and 25 billion (€ 400 to 1 billion) and will go into the State Environmental Fund, which is used mainly for co-financing environment policy measures. For example, households can apply to this fund for subsidies to replace old coal stoves with alternatives using renewable sources.

With regard to the transport sector, the Amendment to the Road Use Tax adopted in June 2008 offers tax exemptions for environmentally friendly vehicles. One aim of the law is to encourage business to purchase new, more environmentally friendly cars.

The Ministry of Environment committed to achieving the EMAS standards, by promoting sustainable modes of transport, using renewable energy sources and eco-labelled products and encouraging ministry officials to engage in active environmental protection and decision-making in line with environmental and sustainable development principles. The same commitments were made by the Ministry with regard to the 2009 Czech Presidency of the EU Council, including the commitment to offset all CO<sub>2</sub> producing activities via carbon credits.



## Nature and biodiversity

	Czech Republic					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		13.3%	13.4%	13.3%		17.0%	
Sufficiency of site designation under the Habitats Directive			59.5%	59.5%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	7.2%	8.9%		10% * by 2010	4.2%	4
Freight transport (billion tkm)	54.9	66.2	64.5			EU total 2505.0	
- % road	68%	76.1%	74.7%			76.9%	14 of 26
- % rail	31.9%	23.8%	25.3%			17.4%	8 of 26

\* Indicative target according to the Action Plan of the Czech Republic for the development of organic farming until 2010.

In response to infringement cases launched in 2006 concerning the Natura 2000 Directives, a government proposal for amending the Nature and Landscape Protection Act was developed in 2008, setting out stricter rules for Natura 2000 impact assessments, and regulating forest policy and public administration in this field. In 2008, the proposal was sent for discussion to the parliament.

In October 2008, the government approved National Forestry Programme II (for the period 2007-2013) laying down fundamental principles for sustainable forest management and the protection of biodiversity in forests. This document was agreed on by a group of diverse specialists, ministerial officers, foresters and NGO representatives.

## Environment and health

	Czech Republic				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	32.8	39.7	40.7	30.0	30.0	19 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	4 851	5 533	5 889	3 126	4 417	19 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	264	219	211	265	7946	
- nitrogen oxides ( $\text{NO}_x$ )	396	278	282	286	11198	
- non-methane volatile organic compounds (NMVOCs)	244	182	179	220	9391	
- ammonia ( $\text{NH}_3$ )	74	68	63	80	4006	
	1994		Latest available year (2005)			
Water exploitation index	22.7%		12.2%		n.a.	16

During the first half of 2008, the first draft of the Spatial Development Policy, the top strategic document governing all spatial (urban) planning in the country, went through the strategic impact assessment phase and public consultations. The thousands of comments received were being reviewed by the Ministry for Regional Development. The draft Policy

includes all planned long-term infrastructure and other development projects by all Ministries, including road and highway construction projects, plans for new hydro-dams, and a new runway for the Ruzyně airport.

The Ministry of Health finished its strategic noise mapping in February 2008. It includes maps for the Prague, Brno and Ostrava area, for Ruzyně airport and for the most important roadways and railways. This was followed by a process of drafting noise action plans, which were submitted to the Ministry of Health in July.

### Natural resources and waste

	Czech Republic				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	334	296	294		522	1
- % landfilled	84.4%	79.1%	82.7%		41.0%	21
- % incinerated	9.3%	12.5%	12.2%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	51.4% (2003)	59%	63.4%	55%-80% (by 2012)	56.5 %	5

In February 2008, the Ministry of the Environment proposed a draft amendment to the Waste Act. The amendment was welcomed by NGOs but criticised by industry and local authorities. It aimed to introduce obligatory separation of biodegradable waste by local authorities, higher fees for landfills and major changes in collection systems for end-of-life electrical and electronic equipment and batteries. As a reaction to the hundreds of comments that the proposal received in the inter-governmental consultation procedure, the Ministry withdrew its original proposal in June and drafted a bill limiting amendments to provisions on the free take-back of batteries transposing the Directive on batteries and accumulators.

Later on in the year, the Ministry of the Environment issued a separate Decree on Management of Biodegradable Waste laying down detailed arrangements for the management of biodegradable municipal waste and composting, and for biogas stations. The new Decree presents opportunities for running municipal composting or biogas stations as a means of lowering the high percentage of biodegradable waste deposited at landfills.

### Better regulation and implementation

	Czech Republic			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	4	11	18	481

Most infringement cases open in 2008 relate to nature and chemicals, but there are also some on environmental impact assessment.

## Use of market-based instruments

	Czech Republic			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	7.3%	7.3%	7.0%	6.4%

In January 2008 the first phase of the ecological tax reform (ETR) came into effect and introduced minimum taxation of coal, electricity and natural gas to implement the relevant Directive. As a next step, the Ministry of Environment was preparing a second phase of the ecological tax reform during 2008. It is expected to bring further measures leading to lower taxes on labour and lower social contributions and increased taxes on polluting activities. Different proposals were discussed in June 2008 at the meeting of the inter-ministerial working group for ETR, which considered higher taxation of ambient air pollution instead of greenhouse gas emissions and a tax rebate on clean technologies.

## Outlook for 2009

An important activity for the first half of 2009 is the Czech Presidency of the EU Council. This is a challenging opportunity for the Czech Republic to lead major environmental policy debates at European level.

The review and drafting of the updated State Environmental Policy and the National Sustainable Development Strategy will be continued and possibly finalised in 2009.

Concerning implementation of the Water Framework Directive, the draft River Basin Management Plans were undergoing a six month public consultation procedure until December 2008. They have to be compiled and completed by December 2009.

Further amendments to crucial environmental laws are expected in 2009, namely the Waste Act, the Packaging Act, the Air Protection Act, the Forest Act, the Planning and Building Act, and possibly laws on the second phase of ecological tax reform.

## DENMARK

### Highlights in 2008

Climate change was a very significant environment policy issue in Denmark in 2008 - not least because Denmark is hosting the climate summit in December 2009, where a successor to the Kyoto Protocol is to be agreed. Although Denmark is launching a multitude of new initiatives in this field, the latest data on greenhouse gas emissions reveal that Denmark continues to be short of its ambitious Kyoto target of reducing overall emissions by 21%. In February it adopted a new energy policy for 2008-2011 with targets for energy consumption and renewable energy.

In June, the government launched a new strategy for clean air in the cities which seeks to tackle air pollution from traffic and from domestic wood-burning stoves. Key indicators on pollution have shown increasing trends in major Danish cities over the last few years.

### Climate change and energy

	Denmark				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions	68.0	63.6	70.5	54.7 (by 2008-2012)	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.						
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	52.4	49.6	56.9		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	12.2	13.2	13.6		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	12.7	11.7	13.0		10.4	20
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	391.4	344.0	369.1		495.7	4
- trend (% change compared to base year*)	-2.0%	-8.3%	+1.7 %	-21.0% (by 2008-12)	-10.8%	18
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks		-11.6%		-21.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-11.6%			-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Denmark				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	174.4	161.3 (2006)	158.6 (2007)	130 by 2012-15 for EU-27	157.5	13
Electricity produced from renewable energy sources (% gross electricity consumption)	16.4%	(2006) 25.9%	(2007) 29.0 %	29.0% (by 2010)	(2007) 15.6%	5
- from wind	11.6%	15.8%	18.8%		3.1%	
- from biomass	5.1%	10.1%	10.1%		3.0%	
- from hydropower	0.1%	0.1%			9.2%	
Combined heat and power generation (% gross electricity generation)	52.6%	52.1%	40.7%	18% by 2010 for EU-15	10.9%	2
Energy consumption per capita (kg oil eq.)	3 657	3 636	3 846		3 694	17
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	122	116	118		202	1

In 2006, Denmark's greenhouse gas emissions were 2 % higher than the base year level, far above its Kyoto target of -21 % for the period 2008-2012. The latest data show that Denmark is not expected to achieve its target, even if it uses additional measures.

In February, the Danish government agreed on Denmark's energy policy for 2008-2011, which meets EU environmental goals in several areas. The new energy policy commits Denmark to reducing overall energy consumption: the target is a 2% reduction by 2011 compared to 2006 and a 4% reduction by 2020 compared to 2006. By 2011, the renewable energy should provide 20% of the country's total energy needs. The policy measures combine further investment in windmills, improving the energy performance of new buildings, campaigns on energy saving in buildings, support for a new knowledge centre for energy efficiency in buildings, and support for biomass-based electricity and wind generation of electricity.

As part of the new energy policy package, it was decided in August that Denmark's largest wind park should be in the sea between Anholt and Djursland. When the turbines are ready in 2012, they will have a capacity of 400 MW electricity, corresponding to the annual consumption of 400 000 Danish households.

In March, the government launched its new strategy for climate change adaptation. The strategy outlines a set of guidelines for authorities, enterprises and citizens in order to prepare them for timely responses to climate change. The government also appointed a Commission on Climate Change Policy. The purpose of this Commission is to realise the government's vision for making Denmark fully independent of fossil fuels in the long term. It will report on its work in 2010.

Following the adoption of the climate and energy package in December 2008, Denmark agreed to reduce greenhouse gas emissions by 2020 by 20% compared to 2005 levels for the sectors not covered by the EU Emissions Trading System. Furthermore, the country has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 30% (up from 17% in 2005).

## Nature and biodiversity

	Denmark					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area *		8.8%	9.0%	8.9%		17.0%	
Sufficiency of site designation under the Habitats Directive	99.1% (2004)		100%	100%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	6%	5.1%	5.5%		**	4.2%	12
Freight transport (billion tkm)	26.1	23.1	22.7			EU total 2505.0	
- % road	92.1%	91.9%	92.2%			76.9%	20 of 26
- % rail	7.9%	8.1%	7.8%			17.4%	19 of 26

\* Denmark has also an important Natura 2000 marine area, consisting of around 12.8 thousands km<sup>2</sup> in 2008

\*\* Denmark had fixed an indicative target of 12% by 2003 according to the Action Plan II Development in organic farming.

In June, the government started designing a new "green strategy" involving both nature and agriculture and aiming at "green growth". The final strategy is expected to be launched in 2009. The aim is to design a comprehensive new plan which takes as its point of departure commitments related to the Water Framework Directive and the Birds and Habitats Directives. The strategy will also suggest ways of using the Common Agricultural Policy to support this vision of green growth.

## Environment and health

	Denmark				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, µg/m <sup>3</sup> )	24.1 (2002)	23.4	27.1	30.0	30.0	9 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, µg/m <sup>3</sup> . day)	1 716 (2001)	1 467	3 507	2 224	4 417	8 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides (SO <sub>2</sub> )	29	22	25	55	7946	
- nitrogen oxides (NO <sub>x</sub> )	205	184	185	127	11198	
- non-methane volatile organic compounds (NMVOCs)	129	116	110	85	9391	
- ammonia (NH <sub>3</sub> )	106	93	90	69	4006	
	1990		Latest available year (2004)			
Water exploitation index	7.7%		4.2%		n.a.	9

In June, the government launched a new strategy for clean air in cities, which seeks to tackle problems with air pollutants from wood burning stoves in households as well as emissions from traffic. Key indicators on NO<sub>x</sub>, VOC, PAH, and PM<sub>10</sub> have shown increasing trends in cities in recent years. Measures include incentives for the use of particle filters in diesel vehicles, support for wood stoves of superior quality, extending "environmental zones" in big cities and tax-exempting electric cars.

The Danish Environmental Protection Agency (DEPA) and the municipalities of greater Copenhagen introduced new "environmental zones" in September. In these zones, older diesel trucks and buses above 3.5 tonnes must be equipped with a particle filter and a special sticker (unless they meet the Euro 3 norm). It is expected that some 12 000 diesel vehicles will be affected by this new law. Calculations by DEPA show that these vehicles cause about 50% of the air pollution in the two municipalities, and the new zones are expected to reduce the level of ultrafine particles by 20% in two years` time.

### Natural resources and waste

	Denmark				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	665	741	801		522	27
- % landfilled	10.1%	5.0%	5.1%		41.0%	5
- % incinerated	52.9%	53.2%	53.3%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	56%	52.5%	56.2%	55%-80% (by 2008)	56.5 %	8

Since 2002 work has been going on a major reform of the waste sector in Denmark. A major legislation package was prepared in autumn 2008, and the draft legislation will be presented to the Parliament in 2009. There is to be administrative reform of the waste sector to make it more efficient, and to liberalise some aspects of waste handling. The reform will enter into force in January 2010.

A bill introducing producer liability for used batteries was approved in June. Producers and distributors of batteries now have the responsibility for collecting used batteries from consumers. Moreover, producers and distributors are to be responsible for the correct disposal of used batteries in an environmentally acceptable way. The bill will implement the European Directive on Batteries and Accumulators and Waste.

In May, the government launched an overall plan for green public procurement for 2008 and 2009. It focuses on campaigning, the development of guidelines on green procurement, and partnerships for green procurement in the public sector. As a good example, the Ministry of Environment, the Ministry of Climate and Energy, and the municipalities of Copenhagen, Frederiksberg and Gladsaxe, together with the company DONG Energy, agreed in September 2008 to put their combined consumption of taxis up for "green tender". The tender can only be won if a taxi firm can meet certain environment and energy-related criteria (i.e. NO<sub>x</sub>, particles, CO<sub>2</sub> emissions). The parties to the agreement pay 31 million DKK (approximately €4.2 million<sup>2</sup>) per year for taxi services.

<sup>2</sup> Exchange rate April 2009: 1 € = 7.4486 DKK

## Better regulation and implementation

	Denmark			<i>EU-27 total</i>
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	8	10	17	481

Most of the infringement cases open in 2008 related to waste and nature. The law on environmental protection was tightened in February 2008 and raised the level of fines for littering and improper waste disposal for both households and enterprises.

## Use of market-based instruments

	Denmark			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	10.5%	11.5%	12.2%	6.4%

For the sectors not covered by the EU Emissions Trading System, the tax on CO<sub>2</sub> was increased in 2008 by between DKK 3/tonne (€0,4 per tonne) and DKK 90 /tonne (€12 per tonne) to reach DKK 150/tonne (€20 per tonne). The Government's Tax Commission will make suggestions in 2009 on future increases or decreases of taxes on labour and energy.

## Environmental technologies

The Energy Development and Demonstration Programme supports demonstration projects of energy technologies (e.g. biofuels). An amount of 200 million DKK (€27 million) will be contributed as soon as possible according to plans by the government published in June.

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. Denmark reported that by April 2008, 1425 authorisations had been issued or reconsidered and, where necessary, updated out of a total of 1719.

## Outlook for 2009

By far the most prominent environment policy issue for Denmark in 2009 will be hosting the COP-15 climate summit in December. The Ministry of Climate and Energy is already putting a considerable amount of effort into activities leading up to the summit, and in 2009 this work will intensify.

Concerning implementation of the Water Framework Directive, the government will send a draft set of water plans for public hearing in December 2008. After a six-month hearing period, the plans are to be compiled and completed by December 2009. In relation to this, a revised surveillance programme for water and nature will be launched in December 2009 aiming to fulfil obligations under the Water Framework Directive and the Habitats Directive.

The government intends to launch a policy initiative on the sustainable future of Danish cities that will contain an action plan outlining overall policy in this area.



## ESTONIA

### Highlights in 2008

During 2008, Estonia was active on the development of environmental strategic planning. It approved the Radiation Safety Development Plan for 2008-2017, which sets out measures for ensuring radiation safety and managing radiation emergencies. In spring 2008 it also approved the National Waste Management Plan for 2008-2013, where the focus is on developing on-site waste sorting and improving the collection and management infrastructure for reusable waste. In October, the parliament approved the National Development Plan of on Oil-shale Use for 2008-2015, which sets annual limits on the mining of oil-shale and leads to more effective and environmentally friendly use and mining of oil-shale. Also the first Estonian National Hunting Development Plan was approved and the draft of the Environmental Education Development Plan 2008-2013 was proposed.

In order to improve the performance and quality of public services, the government prepared structural changes in the environmental administration. For example, in early 2009, the State Nature Conservation Centre, the Radiation Centre and an Environmental Board were created. The latter will be in charge of all environmental permitting. This administrative reform does not affect the long-term environmental goals set by the Estonian government and parliament.

### Climate change and energy

	Estonia				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions				39.2	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.	18.2	19.3	18.9	(by 2008-2012)		
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	15.5	16.9	16.3		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	1.7	2.2	2.4		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	13.3	14.3	14		10.4	23
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	2 989.7	2 168.1	1 919.9		495.7	25
- trend (% change compared to base year*)	-57.2%	-54.7%	-55.7%	-8.0% (by 2008-12)	-10.8%	1
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks		-62.8%		-8.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-65.7%			-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Estonia				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	177.7 (2004)	181.4 (2006)	180.3 (2007)	130 by 2012-15 for EU-27	157.5	25
Electricity produced from renewable energy sources (% gross electricity consumption)	0.3%	(2006) 1.4%	(2007) 1.5%	5.1% (by 2010)	15.6%	25
- from hydropower	0.1%	0.1%	0.2%		9.2%	
- from wind		0.8%	0.9%		3.1%	
- from biomass	0.2%	0.4%	0.4%		3.0%	
Combined heat and power generation (% gross electricity generation)	n.a.	10.2%	10.7%	18% by 2010 for EU-15	10.9%	15
Energy consumption per capita (kg oil eq.)	3 429	4 130	4 034		3 694	18
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	1 215	967	848		202	24

The latest greenhouse gas data (2006) show that Estonia's emissions were 56% lower than the base year level, compared to the Kyoto target of -8% for the period 2008-2012. Estonia is projected to significantly overachieve its target. Following the adoption of the climate and energy package in December 2008, Estonia agreed not to increase its greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport and farming) by more than 11% by 2020 compared to 2005 levels. The share of renewable energy in final energy consumption in Estonia was 18% in 2005. Estonia has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 25%.

The goal of the government has been to secure energy independence for the country and to gradually replace oil-shale as an exhaustible resource in the energy balance. The focus of government efforts was therefore on energy and climate change and the use of renewable energy sources. In Estonia, the majority of electricity (94%) is produced from oil-shale. It is a local mineral with low-caloric value, and its extraction and use as an energy resource causes considerable environmental impact (mining waste, ash, air emissions, etc). The government has initiated broad-based discussions on energy in connection with the drafting of national energy and electricity development plans. These plans set the crucial long-term development goals for energy and cover several issues, including support for renewable energy, energy saving, opening up the electricity market and support for new connections.

A state aid scheme was approved by the European Commission in 2008 on support for combined heat and energy production, reconstruction of power plants and support for district heating infrastructure. Preparations have also been made to provide the legal basis for the construction of off-shore wind parks. Specific measures for improving the energy efficiency of buildings were approved in January 2008 through the Estonian Housing Development Plan 2008-2013. They include support schemes for housing renovation with the purpose of energy saving.

In 2008, the Estonian government prepared the application of the National Energy Technologies Programme. This programme is part of the Estonian Research and Development and Innovation Strategy for 2007-2013 and one of its objectives is to develop technologies related to local renewable energy sources. The other two parts of the programme are the development of oil shale technologies and new energy technologies.

In 2008, an analysis of the possibilities for reducing greenhouse gas emissions in Estonia was carried out. This report gave an overview of the potential measures to be implemented in order to reduce greenhouse gas emissions. Additionally there is research underway to find out how and to what extent CO<sub>2</sub> can be combined with oil shale ash. Technologies for CO<sub>2</sub> capture and storage will also be studied in the future.

### Nature and biodiversity

	Estonia					EU-27 average	rank in EU-27
	2000	2006	2007	2008	Target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		15.8%	17.7%	17.7%		17.0%	
Sufficiency of site designation under the Habitats Directive			84.2%	84.2%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	8.8%	8.8%			4.2%	5
Freight transport (billion tkm)	12.9	16.0	14.8			EU total 2505.0	
- % road	37.3%	34.7%	43.2%			76.9%	2 of 26
- % rail	62.7%	65.3%	56.8%			17.4%	2 of 26

The Estonian Environmental Strategy 2030 sets long-term development objectives for the natural environment. In order to implement the strategy, the government has approved the Estonian Environmental Action Plan 2007-2013. Sustainable use of natural resources and preservation of the diversity of landscapes and nature are important priorities of the Action Plan. In 2008, more than 179 new management plans were put in place for different nature protection areas.

In 2008, the principles of managing national environmental protection and infrastructure were analysed, in connection with establishing the Environmental Board. The present system is being reorganised. Responsibilities of the Board include issuing environmental permits and licences, governing protected natural property, developing and applying action plans on invasive species and determining and monitoring key biotopes. Several other tasks, e.g. the establishment of infrastructure which enables visits to protected areas, are delegated to the State Forest Management Centre.

## Environment and health

	Estonia				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	18.2 (2002)	20.7	22.7	30.0	30.0	6 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	4 255 (2001)	1 321	4 331	n.a.	4 417	11 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides (SO <sub>2</sub> )	96	77	71	100	7946	
- nitrogen oxides (NO <sub>x</sub> )	35	32	30	60	11198	
- non-methane volatile organic compounds (NMVOCs)	41	36	34	49	9391	
- ammonia (NH <sub>3</sub> )	10	9	9	29	4006	
	1990		Latest available year (2002)			
Water exploitation index	15.2%		6.7%		n.a.	12

In 2008, implementation of the air emissions reduction programme continued. The government worked on increasing the efficiency of the system for issuing and supervising pollution and integrated environmental permits in order to be in compliance with the limits on emissions of pollutants given in the National Emissions Ceiling Directive.

In June 2008, the Estonian Government adopted the Population Health Strategy 2009-2020. The main objective of the Strategy is to increase the number of "healthy life years" by decreasing mortality and morbidity rates.

## Natural resources and waste

	Estonia				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	440	466	536		522	15
- % landfilled	99.5%	59.7%	54.3%		41.0%	11
- % incinerated	0%	0.2%	0.2%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	33.5%	40%	45.7%	55%-80% (by 2012)	56.5 %	17

In May 2008, the National Waste Management Plan 2008-2013 was approved. It aims to prevent waste generation and to reduce landfilling. The focus in the period 2008-2013 is on developing on-site waste sorting, improving collection, and improving the management infrastructure for reusable waste. Since January 2008, it is prohibited to landfill unsorted municipal waste and in coming years more focus is expected on waste incineration, as several infrastructure developments were ongoing in 2008.

Amendments to the Packaging Act and the Packaging Excise Duty Act have been initiated. They give indicators for packaging waste recycling targets up until 2012. By July 2009, all landfills that do not meet EU requirements have to be closed. Work is in progress on transposition into Estonian law of the Directive on the management of waste from extractive industries and the amending Directive on environmental liability.

In summer 2008, the parliament passed a law following accession to the International Oil Pollution Compensation Funds 2003 protocol. This instrument gives Estonia new scope for covering damage related to marine oil pollution accidents. Estonia will join the Fund with effect from January 2009.

During 2008, environmental public services in Estonia provided two innovative solutions: a regular fishing permit application can be made with payment by mobile phone, and forestry activities can be notified through the national ID database.

Estonia, like all Member States, is responsible for awarding and promoting the EU “Flower” Eco-label. In March, the Estonian competent body awarded the label for the first time to the AS Eskaro Company for its ceiling paints. The company decided to apply for the Flower as a result of the project “Application of the Community Eco-label in Estonia”, initiated by the Ministry of the Environment of Estonia in 2006. In 2008, a study was carried out to find out which eco-labelled products are sold in Estonia and how great the potential is. The EU Eco-label criteria for services have been established for Estonian campsites and tourist accommodation.

### Better regulation and implementation

	Estonia			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	7	12	19	<i>481</i>

The Ministry of Justice, together with the State Chancellery, conducted the process of updating and harmonizing the regulatory impact assessment system in the public sector. Several training activities are planned for 2009.

The Environmental Impact Assessment and Environmental Management Systems Act was amended due to the need to specify the activities subject to compulsory environmental impact assessments (EIA) and the criteria used for assessing the need for an EIA. Preparations are continuing for creating an EIA and Environmental Management System - EMS registry, by adopting the respective legislation.

### Use of market-based instruments

	Estonia			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	5.4%	7.4%	7.1%	<i>6.4%</i>

In 2008, the government continued to shift taxation from employment to environmental impact. In 2008, the Ministry of Environment prepared the strategy of environmental charges for 2010-2020 in which it involved main stakeholders such as business, environmental NGOs and scientists. This report determines basic principles and proposals for economic instruments in environment policy in the coming years. The government is expected to approve the document in due course. The new environmental tax rates are expected to be enforced once Estonia becomes a member of the euro-zone.

Excise duty rates on motor fuels were increased in early 2008 to the level of the minimum EU requirements. Excise duty on petrol rose by 25%, and on diesel by 34.5%. Additionally, from 1 January 2008, excise duty was introduced on electricity. Even though, for natural gas, the EU minimum rate of excise duty is obligatory only from 2014 onwards, it was decided to

increase the excise duty rates from 2008 on natural gas used for commercial purposes to match the EU minimum rate. In addition, also from 2008, the exemption of excise duty on shale-derived fuel oil was abolished.

### **Environmental technologies**

In the field of environmental technologies, several studies were conducted in 2008 to determine the possible directions of environmental technology innovation, to identify the application possibilities and do a marketing analysis of the proposed solutions. There were also estimates of supply and demand in respect of eco-innovative environmental technologies.

### **Outlook for 2009**

Further attention will be given in 2009 to the reform and improvement of the environmental public service system. This includes a more customer-friendly environment in all environmental authorities at all levels, support for the successful start of the newly established Environmental Board, implementation of environmental databases and development of new e-solutions (e.g. web-based environmental permit applications and reporting environmental charge calculations).

The quality of environmental legislation will be promoted by implementing the new national regulatory impact assessment system, which will start in 2009. Environmental, social, and economic impacts, impacts on national security, and impacts on regional development will be analysed during development of the legislation.

In 2009, strategic planning will continue in several environmental areas, e.g. with the development of a Forestry Development Plan and an Environmental Protection Strategy for the period up until 2020.

Several legal Acts on environmental protection will be revised in 2009 to specify the terms of fines, and amendments will be made in the environmental supervision area. Also regulations on the pricing of water services will be developed to ensure a fair price for water services in all local municipalities.

## FINLAND

### Highlights in 2008

In November the government has approved a new, ambitious climate and energy strategy for Finland, with detailed insights into climate and energy policy measures up to 2020, and suggestions up to 2050. In March, the Forest Biodiversity Action Programme for Southern Finland 2008-2016 (METSO Programme) was approved by the government with the aim of halting the ongoing decline in the biodiversity of forest habitats. The Finnish authorities in 2008 launched a new national Public Procurement Action Plan that aims to increase green public procurement.

### Climate change and energy

	Finland				EU-27 total	rank in EU- 27
	2000	2005	2006	target		
Total Kyoto GHG emissions	69.8	69.0	80.3	71.1 (by 2008-2012)	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.						
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	54.9	54.7	66.0		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	13.1	14.1	14.4		992.3	
					EU-27 average	rank in EU- 27
- per capita (tonnes CO <sub>2</sub> eq.)	13.5	13.2	15.3		10.4	25
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	527.5	460.8	511.1		495.7	12
- trend (% change compared to base year*)	-1.7%	-2.8%	+13.1%	0% (by 2008-12)	-10.8%	20
- Projected 2010 emissions trend compared to base year *						
- with existing measures, Kyoto mechanisms and carbon sinks	+16.9%			0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-0.6%				-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Finland				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	179.7	177.9 (2006)	176.1 (2007)	130 by 2012-15 for EU-27	157.5	23
Electricity produced from renewable energy sources (% gross electricity consumption)	28.5%	(2006) 24.0%	(2007) 26.0%	31.5% (by 2010)	(2007) 15.6%	7
- from hydropower	17.9%	12.3%	15.1%		9.2%	
- from wind	0.1%	0.2%	0.2%		3.1%	
- from biomass	10.5%	11.6%	10.7%		3.0%	
Combined heat and power generation (% gross electricity generation)	36.4%	38.9%	34.9%	18% by 2010 for EU-15	10.9%	3
Energy consumption per capita (kg oil eq.)	6 287	6 608	7 182		3 694	26
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	258	243	253		202	17

In 2006, Finland's greenhouse gas emissions were 13% higher than the base-year level, well above its Kyoto target to stabilise emissions by the period 2008-2012. However, according to the latest data, Finland is projected to achieve its target once additional measures are also applied.

Following the adoption of the climate and energy package in December 2008, Finland is required to reduce greenhouse gas emissions by 16% by 2020 compared to 2005 levels in non-ETS sectors (e.g. buildings, road transport, and farming). Furthermore, it has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 38% (up from 28% in 2005).

The cornerstones of the long-term Climate and Energy Strategy are energy-saving and promoting the use of renewable energy, as well as the cost-effectiveness and market-orientation of the proposed measures. It also outlines the main elements of energy and climate policy until 2050 and proposes measures for action. The Strategy covers both mitigation of climate change and adaptation to its effects. In addition to energy production, the report examines the use of energy and transport, the role of forests in curbing greenhouse gases, and other key areas related to emissions.

An energy-saving agreement has been signed with the freight transport and logistics sector. The aim is to reduce emissions by 9% between 2008 and 2016. Following this example, an energy-saving agreement was also reached concerning public transport, with the same 9% emission reduction target.

In June 2008 the public Finnish Innovation Fund, Sitra, launched a new Energy Programme for 2008-2012. The Programme focuses on improving the energy efficiency of services and buildings and on mobilising consumers.

In October 2008 it was announced that a new suburb of more than a thousand energy-efficient homes is to be built in Skaftkärr, Porvoo. The initiative will provide energy-efficient homes for more than 4000 inhabitants, and the area will be designed and developed as a pilot project of nationwide importance.

In September, the Prime Minister's Office published a report on the use of climate labels on products. The report serves as an input to the government report on climate and energy policy.



The report assesses the strengths and weaknesses of various labels and proposes a climate label prototype.

### Nature and biodiversity

	Finland					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		16.2%	14.5%	14.4%		17.0%	
Sufficiency of site designation under the Habitats Directive	68.5%		68.5%	99.3%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	6.6%	6.4%	6.5%			4.2%	9
Freight transport (billion tkm)	42.2	40.8	40.3			EU total 2505.0	
- % road	75.8%	72.7%	73.9%			76.9%	12 of 26
- % rail	24%	27.1%	25.9%			17.4%	6 of 26

The METSO Programme approved in 2008 aims at establishing favourable trends in Southern Finland's forest ecosystems by 2016, in line with internationally defined biodiversity targets. One of the key measures to improve Finland's network of protected forests and to enhance good forestry practices is "natural values trading": forest-owners can voluntarily conclude conservation agreements with the authorities in return for compensation paid under the Nature Conservation Act or the Act on the Financing of Sustainable Forestry. Funding decisions have so far guaranteed €182 million of financing for the programme until 2012.

The METSO Programme was launched at the same time as Finland's new National Forest Programme for 2008-2015. The co-ordinated preparation and launch of the two programmes intends to illustrate that the commercial use of Finland's forests can be harmonised with the conservation of their biodiversity.

### Environment and health

	Finland				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	14.7	15.3	16.6	30.0	30.0	2 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	1 340	1 686	2 606	1 818	4 417	5 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU-27 total	
- sulphur dioxides ( $\text{SO}_2$ )	89	69	85	110	7946	
- nitrogen oxides ( $\text{NO}_x$ )	210	177	193	170	11198	
- non-methane volatile organic compounds (NMVOCs)	160	131	133	130	9391	
- ammonia ( $\text{NH}_3$ )	33	36	36	31	4006	
	1990		Latest available year (1999)			
Water exploitation index	2.1%		2.1%		n.a.	6

The Council of State has issued a regulation limiting the use of perfluorinated alkylated substances (PFAS). Certain PFAS are ubiquitous contaminants, which are found in the

environment and organisms throughout the world. The PFAS compound of biggest concern, perfluorooctanesulphonate (PFOS), is persistent, bioaccumulative and toxic. The PFOS related substances are not produced in Finland, but are imported either as chemicals or as part of final products.

### Natural resources and waste

	Finland				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	503	495	507		522	13
- % landfilled	60.8%	57.8%	52.7%		41.0%	10
- % incinerated	10.3%	8.5%	11.6%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	50%	43.2%	49.1%	55%-80% (by 2008)	56.5 %	15

Sitra has launched the preparation of the Natural Resources Strategy. The aims of the strategy are to look at the future use of natural resources and their management, and to set goals and timetables for the bodies responsible for the measures. The results of the work will be presented in 2009.

In 2008, a new national Public Procurement Action Plan was launched in order to reduce greenhouse gas emissions, the use of chemicals, and waste in the public sector. Public sector purchases will also promote sustainable use of natural resources, and favour environmentally friendly innovations. Public procurement in Finland amounts to approximately € 22 billion a year, equivalent to 15% of the country's gross national product.

### Better regulation and implementation

	Finland			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	8	9	12	481

### Use of market-based instruments

	Finland			EU-27 average
	2000	2005	2006	
Share of environmental taxes in total tax revenue	6.6%	7%	6.8%	6.4%

As of January 2008, the government introduced a new registration tax on passenger cars. The tax is based on the performance of the car in terms of emissions of grams CO<sub>2</sub>/km. The law for a similar (CO<sub>2</sub> based) annual vehicle tax has also been signed, but is not expected to enter into force until 2010. The tax changes are intended to stimulate consumers to purchase more fuel-efficient cars, while also speeding up the renewal of cars in order to have a national car fleet with the latest and most efficient technology.

As of January 2008 energy tax rates in Finland were raised by 9.8% on average. The increase in carbon surtax was 13%. However, biofuels are exempt from the tax increases.

## **Outlook for 2009**

The Climate and Energy Strategy, adopted by the government in November 2008, will be discussed in Parliament in 2009. A working group led by the Ministry of Finance is preparing proposals to revise waste taxation by the end of 2009. Currently waste taxes are paid on waste left at public landfill sites, but are not applied to private or industrial landfills when they do not routinely receive waste produced elsewhere.

The 2006 National Strategy for Sustainable Development "*Towards sustainable choices. A nationally and globally sustainable Finland*" will be assessed in 2009. The Finnish National Commission on Sustainable Development will report to the government on the results of the assessment.

A new centre of expertise to combat oil pollution will be set up in 2009 in Porvoo under the auspices of the Finnish Environment Institute. Its tasks will be to service and store the government-owned equipment used to tackle oil pollution, to develop new equipment, and to organise training and exercises.

## FRANCE

### Highlights in 2008

The innovative "Grenelle" stakeholder consultation process, which brought together over 300 participants from local authorities, non-governmental organisations, businesses, trade-unions and central government, was launched in the summer of 2007. The process led to concrete recommendations and recognition of the cross-sectoral nature of environmental issues. It was translated into a ministerial and administrative structural reform, and triggered the beginning of the systematic integration of environmental issues into policy-making. The first step in the legislative process to implement the recommendations is the "Grenelle I" bill, which was passed by the Senate in February 2009 and is now awaiting second reading approval by the National Assembly. It will be followed by at least two other bills to cover all the commitments made during the consultation process. In addition, the bill institutionalises the stakeholder consultation process as a permanent tool for monitoring implementation of the commitments made and providing input for future policy developments. France is thus on the way to putting in place an ambitious framework to address growing environmental concerns. However it is too early to know whether financial resources will match the priorities and objectives identified, and whether the incentives and legislative frameworks put in place will lead to effective implementation.

As part of the French Presidency of the Council of the European Union during the second half of 2008, France facilitated adoption of the climate and energy package, one of the Presidency's priorities. This agreement will allow the European Union to retain its leading role in seeking a global agreement at the UNFCCC Climate Conference in Copenhagen in December 2009.

### Climate change and energy

	France				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions	555.6	555.1	541.3	563.9	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.				(by 2008-12)		
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	392.5	402.1	391.3		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	137.0	139.5	138.6		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	9.2	8.9	8.6		10.4	8
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	385.4	354.6	338.4		495.7	2
- trend (% change compared to base year*)	-1.5%	-1.6%	-4%	0% (by 2008-12)	-10.8%	14
- Projected 2010 emissions trend compared to base year *						
- with existing measures, Kyoto mechanisms and carbon sinks		+0.1%		0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-4.2%			-16.3%	
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	162.5	148.9 (2006)	148.4 (2007)	130 by 2012-15 for EU-27	157.5	4

	France				EU-27 total	rank in EU- 27
	2000	2005	2006	target		
Electricity produced from renewable energy sources (% gross electricity consumption)	15.1%	(2006) 11.3%	(2007) 13.3%	21.0% (by 2010)	(2007) 15.6%	13
- from hydropower	14.4%	11.1%	11.4%		9.2%	
- from wind	0%	0.4%	0.8%		3.1%	
- from biomass	0.8%	1.0%	1.1%		3.0%	
Combined heat and power generation (% gross electricity generation)	3%	4%	3.2%	18% by 2010 for EU-15	10.9%	24
Energy consumption per capita (kg oil eq.)	4 275	4 401	4 321		3 694	21
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	188	185	179		202	6

\* Base year is 1990.

In 2006, France's greenhouse gas emissions were 4% lower than the base-year level, and so below its Kyoto target of stabilising emissions by the period 2008-2012. France projects to achieve its target only once additional measures have also been applied.

The "*Grenelle I*" bill confirms France's commitment to reducing its greenhouse gas emissions by 75% by 2050, compared to 1990 levels. It implies a yearly reduction of 3% on average. France's aim is to become the most efficient economy of the EU in terms of carbon equivalent by 2020. To this end France is committed to achieving the European targets in terms of greenhouse gas emission reduction and energy efficiency improvements by 2020. In December 2008, France agreed to reduce greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport, and farming) by 14% in 2020 compared to 2005 levels. It also aims to achieve a 23% share of renewable energy in final energy consumption by 2020 (up from 10% in 2005).

National measures concerning climate change will focus primarily on reducing the energy consumption of buildings and reducing emissions from the transport and energy sector. The "*Grenelle I*" bill requires new buildings to have a primary energy consumption below 50kWh/m<sup>2</sup>/year on average: from 2011 for public and tertiary constructions, and from 2013 for others (compared to the average consumption of 240kWh/m<sup>2</sup>/year of the existing building stock). Rules will set a threshold on the energy used for heating buildings. The bill also sets a target of a 38% reduction of energy consumption in existing buildings by 2020. To this end, the government has set a target of 400 000 dwellings to be renovated per year, from 2013. It plans to introduce various measures and incentives concerning public authorities, property owners and tenants, as well as the banking and insurance sector, to achieve this target.

A mass retailing chain, Casino, supported by the government and the Agency for Environment and Energy Management, introduced carbon labelling for everyday products, called the Casino Carbon Index. This index shows the quantity of greenhouse gases emitted, in CO<sub>2</sub> equivalent and per 100g, throughout the lifecycle of a product. The Carbon Index was first introduced in June 2008 for a dozen products. By the end of 2009, plans are to have labelled over 2 900 products. In addition, two supermarkets were testing another tool to make customers aware of the carbon content of products. Receipts given to clients include the carbon footprint of their total purchase.

The government also promotes multimodal and integrated transport, in particular the development of rail and river freight, as well as sea transport and ports. The non-road transport of merchandise should increase from 14% to 25% by 2022. The budget allocated for the renovation of railways will be increased to reach €400 million per year by 2015. This is 2.5 times what is currently allocated under the Plan for the renewal of railways for 2006-2010.

Good work is also being done at local level. For example, the city of Perpignan in Southern France decided in 2008 to cover all its electricity needs from renewable energy sources by 2015. The city plans to develop 40 wind turbines and solar farms, install solar panels on public and commercial buildings, use the heat from a waste incinerator for local greenhouses, and put in place electricity savings measures for households. This programme represents an investment of € 500 million. 440 000 MWh/year will be produced and 25 000MWh/year saved. The government, local authorities and private partners will support this programme.

### Nature and biodiversity

	France					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area *		11.8%	12.4%	12.5%		17.0%	
Sufficiency of site designation under the Habitats Directive	74.2%		90.7%	90.7%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	1.3%	2%	1.9%		6% ** by 2012	4.2%	21
Freight transport (billion tkm)	268.5	261.4	269.4			EU total 2505.0	
- % road***	76%	80.9%	81.4%			76.9%	17 of 26
- % rail***	20.6%	15.7%	15.2%			17.4%	15 of 26

\* France has also an important Natura 2000 marine area, consisting of around 15 thousands km<sup>2</sup> in 2008.

\*\* Indicative target according to the Action plan "Organic agriculture until 2012: new measures to triple the organic farming area" (Plan d'action "Agriculture biologique: Horizon 2012. De nouvelles mesures pour tripler les surfaces", 2007).

\*\*\* 2007 data are estimates.

The "Grenelle I" bill also includes the strengthening of the national strategy for biodiversity. It plans to designate protected land areas to ensure that a minimum of 2% of metropolitan land area is protected within 10 years. In addition, there will be protected sea areas, representing 10% of national waters, by 2012 for metropolitan France and 2020 for overseas territories, inclusive of the Natura 2000 network. Furthermore, in order to protect the 131 fauna and flora species identified as endangered in 2007, conservation plans will be set up within five years, and special corridors for fauna and flora will be put in place. The government's financial efforts are scheduled to increase from € 190 million currently to € 300 million per year in 2013.

The government has set an objective of 6% of useable agricultural area for organic farming by 2012 and 20% by 2020, compared to 1.9% in 2007. Tax credits in favour of organic farming will be doubled in 2009 to encourage conversion from conventional to organic farming.

In June 2008, France was considered to have achieved 91% of its target for Natura 2000 sites, which cover 12.5% of the terrestrial area. A status report on the conservation of habitats and species of common interest, which covered 132 habitats, and 91 flora and 200 fauna species, showed that the majority of habitats and species located in the Alps or Mediterranean areas are in a satisfactory or good state of conservation. By contrast, the majority of species and habitats located in the Atlantic and Continental areas are in an unfavourable state of conservation. This applies to Aquatic and humid habitats too.

### Environment and health

	France				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	22.3 (2001)	20.4	21.1	30.0	30.0	5 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	2 966	4 264	4 685	2 565	4 417	15 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	1198	486	452	375	7946	
- nitrogen oxides (NOx)	1559	1413	1351	810	11198	
- non-methane volatile organic compounds (NMVOCs)	1935	1425	1336	1050	9391	
- ammonia ( $\text{NH}_3$ )	797	745	740	780	4006	
	1991		Latest available year (2002)			
Water exploitation index	20.8%		17.8%		n.a.	18

The first measure introduced as part of the Particles Plan ( $\text{PM}_{10}$ ) recommended by the "Grenelle" was the reinforcement of the system informing and alerting the public on particle pollution peaks. To improve outdoor air quality, the government plans to transpose the Air Quality Directive through the adoption of a Particles Reduction Plan. As for indoor air quality, construction and decoration products will have to be labelled to comply with European regulations, and some substances banned.

The government aims to maintain or achieve good water quality for all waters (sea and continental) by 2015. The use of phosphates in washing products will be banned from 2012. In addition, 98% of wastewater treatment plants will have to meet certain standards by 2010 and 100% by 2011. Moreover, the monitoring of aquatic environments will be strengthened to comply with the Water Framework Directive. This includes the preparation of measurement programmes for the period 2016-2021.

## Natural resources and waste

	France				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	516	538	541		522	16
- % landfilled	42.6%	36.8%	34.2%		41.0%	8
- % incinerated	32.8%	34.2%	35.9%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	42%	53.3%	54.8%	55%-80% (by 2008)	56.5 %	11

"Grenelle" stakeholders agreed on a waste policy and targets in December 2007. Two of them, reducing household waste by 5 kg per year and per capita over 5 years and increasing the quantity of household recycled waste from 24% in 2004, to 35% in 2012 and 45% in 2015, are part of the "Grenelle I" bill.

The government is preparing a Plan for Sustainable and Responsible Fishing. The plan seeks to optimize fisheries management, to make the fishing industry more attractive, to make its economic development sustainable, and make fishing safer. The total budget for the Plan is expected to reach € 310 million over 3 years. In addition, the "Grenelle I" bill introduces eco-labelling for fish products in 2009 to help sustainable management of fisheries.

In 2008, the government also paid attention to green public resources management and procurement. The "Grenelle" bill aims to integrate sustainable development into the government's decision-making processes regarding procurement, waste management and public funding. Moreover, public administrations will audit energy consumption and greenhouse gas emissions starting from 2009. Consequent renovation work is expected to deliver a reduction of 40% in energy consumption and 50% in greenhouse gas emissions within 8 years, compared to the initial consumption and emission levels.

## Better regulation and implementation

	France			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	29	32	34	481

Further efforts should be made to achieve timely and correct transposition of EC environmental legislation into French law. At the end of December 2008, France had the 4th highest number of ongoing infringements of EU environmental legislation in the EU.

## Use of market-based instruments

	France			EU-27 average
	2000	2005	2006	
Share of environmental taxes in total tax revenue	5.7%	5.4%	5.2%	6.4%



## **Environmental technologies**

The government plans to invest an additional € 1 000 million in R&D on sustainable development, including future energies and new engines, and waste treatment and recycling technologies. State spending on clean technologies and environment impact prevention will be raised to the level of civil nuclear R&D spending ("*Grenelle I*" bill of 21/10/08).

## **Outlook for 2009**

The next bill resulting from the "*Grenelle*" stakeholder process, "*Grenelle II*", will concern specifically the building and transport sectors. It will give details on how the government plans to achieve the overall objectives and commitments made in the "*Grenelle I*" bill. The bill is expected to be passed at the end of 2009.

The upcoming National Sustainable Development Strategy 2009-2013 is expected to put in place a sustainable development strategy at ministry level, initially as a pilot project in the Ministry of Agriculture and Fisheries and the Ministry of Interior, and around 20 public establishments. The pilot phase will lead to the formal integration of sustainable development into tenders and agreements approved by the state.

The government intends to strengthen the role of local authorities in the sustainable development of land use. Before 2012 local authorities at all levels will produce a Territory Climate Energy Plan including measures on urban development ("*Grenelle I*" bill of 21/10/08). The main objectives of the plan are to tackle the reductions in areas of agricultural and natural land and to encourage the revival of city centres.

The National Health and Environment Action Plan for 2009-2013 will focus on environmental inequalities in three areas: geographical, social and individual. Including local governments in the process has been identified as particularly important to facilitate implementation of the Plan's objectives. Regional action plans will be defined by January 2009 and implemented throughout the year.

## GERMANY

### Highlights in 2008

2008 was an active period for German environment policy and important policy commitments of prior years have been followed up with concrete measures. The Integrated Energy and Climate Programme is a main priority and a broad range of implementing legislation has been adopted. Special emphasis has been put on boosting the energy performance of buildings, more renewables in the heat sector, the expansion of combined heat and power generation, access to the natural gas grid for biogas and the expansion of offshore wind installations.

Important measures in the transport sector include a pollution-linked increase in charges on lorries. However, concerning biofuels in transport, Germany is revising its high domestic targets in the light of the current discussion on the sustainability of biofuels. Although Germany has achieved considerable improvements with regard to air quality in recent years, and an increasing number of cities are introducing low-emission zones, particulate matter and ozone concentrations have continued to be an occasional threat to public health.

### Climate change and energy

	Germany				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	1 019.5	1 005.0	1 004.8	973.6 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	828.1	819.4	818.9		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	184.3	165.5	162.0		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	12.4	12.2	12.2		10.4	18
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	494.3	472.9	459.3		495.7	8
- trend (% change compared to base year*)	-17.3%	-18.5%	-18.5%	-21.0% (by 2008-12)	-10.8%	10
- Projected 2010 emissions trend compared to base year*				-21.0% (by 2008-12)	-13.4%	
- with existing measures, Kyoto mechanisms and carbon sinks	-22.9%					
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-26.2%					

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Germany				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	180.8	171.3 (2006)	168.3 (2007)	130 by 2012-15 for EU-27	157.5	20
Electricity produced from renewable energy sources (% gross electricity consumption)	6.5%	12.0% (2006)	15.1% (2007)	12.5% (by 2010)	15.6%	11
- from hydropower	3.8%	3.2%	3.4%		9.2%	
- from wind	1.6%	5.0%	6.4%		3.1%	
- from biomass	1.1%	3.4%	4.8%		3.0%	
Combined heat and power generation (% gross electricity generation)	10.6%	12.6%	12.5%	18% by 2010 for EU-15	10.9%	12
Energy consumption per capita (kg oil eq.)	4 150	4 209	4 237		3 694	20
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	160	158	155		202	4

The latest available data show that Germany's greenhouse gas emissions were 18.5% lower than the base year level, which is not far short of its Kyoto target of -21% for the period 2008-2012. Germany is projected to overachieve it by applying existing measures, Kyoto mechanisms, carbon sinks and additional measures.

The German Integrated Energy and Climate Programme of August 2007 aims at a greenhouse gas emissions reduction of 40% by 2020 compared to 1990 levels. The implementation and legal transposition of the Programme was the main focus of Germany's energy and climate policy in 2008. In June, the Parliament adopted a comprehensive amendment to the Combined Heat and Power (CHP) Law of 2002. The amendment will continue the support for CHP installations through a bonus tariff on the electricity price. It will do this by obliging network operators to connect up CHP plants and buy their electricity. In addition, the bonus will also be extended to modernised and new CHP plants, and electricity for own consumption will become eligible for the bonus.

Also in June, the Renewable Energies Heat Act was adopted, stipulating that by 2020, 14% of Germany's heat requirement must come from renewable sources. Finally, the Renewable Energy Sources Act provides a higher feed-in tariff for wind energy, and also other measures to stimulate the development of both onshore and offshore wind power. All new legislation adopted in June will enter into force in January 2009.

Germany also approved a range of other energy-related laws and measures in 2008. The Biogas Feed-in Ordinance, passed in March 2008, establishes the legal framework for feeding gas produced from biomass into Germany's natural gas grid. The ordinance obliges the operators of gas grids to connect producers of biogas to the grid. In September 2008 a new Law on the Liberalisation of Electricity and Gas Metrology entered into force. It allows consumers to choose freely their providers of gas and electricity and metering services. One of its aims is to enable consumers to make more informed choices through more transparent measurements of energy consumption.

In addition, energy and climate change related funding programmes were introduced or increased in 2008. The existing CO<sub>2</sub> building renovation programme will be continued until 2011 and will have a total budget of € 3 billion for the period from 2009 to 2011. Special attention will be given to the energy savings potential of urban infrastructure. Up to € 200 million will be allocated to providing municipalities with low-interest loans.

In 2008 the federal government also introduced General Guidelines for the Procurement of Energy Efficient Products and Services, giving priority to environmental and especially energy efficiency considerations when federal bodies tender for goods and services.

Following adoption of the climate and energy package in December 2008, Germany agreed to reduce greenhouse gas emissions by 2020 by 14% compared to 2005 levels in non-ETS sectors (e.g. buildings, road transport, and farming). Furthermore, Germany has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 18% (up from 6% in 2005).

### Nature and biodiversity

	Germany					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area *		13.7%	13.6%	13.6%		17.0%	
Sufficiency of site designation under the Habitats Directive	26.2% (2004)		99.3%	99.3%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	3.2%	4.8%	5.1%		** 20%	4.2%	13
Freight transport (billion tkm)	429.8	501.0	522.8			EU total 2505.0	
- % road	66.1%	65.9%	65.7%			76.9%	7 of 26
- % rail	18.2%	21.4%	21.9%			17.4%	11 of 26

\* Germany also has an important Natura 2000 marine area, consisting of 23.2 thousands km<sup>2</sup> in 2008.

\*\* Germany has fixed an indicative target of 20% (no target year) as mentioned in the Federal Organic Farming Scheme.

A National Strategy on Biological Diversity was adopted by the federal government in November 2007 and forms the centrepiece of government efforts to combat biodiversity loss in Germany. This strategy is complemented by a Strategy on the Conservation of Agricultural Biological Diversity which specifically addresses the protection and potential of biodiversity in agriculture, forestry and fisheries.

## Environment and health

	Germany				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	25.8	23.9	25.6	30.0	30.0	8 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	2 852	3 322	4 437	2 317	4 417	12 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides (SO <sub>2</sub> )	637	574	558	520	7946	
- nitrogen oxides (NO <sub>x</sub> )	1815	1447	1394	1051	11198	
- non-methane volatile organic compounds (NMVOCs)	1613	1385	1349	995	9391	
- ammonia (NH <sub>3</sub> )	627	620	621	550	4006	
	1991		Latest available year (2001)			
Water exploitation index	24.6%		20.2%		n.a.	20

At the end of 2008, 23 German cities (including Berlin, Munich, Frankfurt and the big cities in the Ruhr area) established low-emission zones to mitigate air pollution by particulate matter, and more are planned for 2009 and 2010. All of these zones were established during 2008, since plans to introduce the first low-emission zones in 2007 already had to be postponed for administrative reasons. Cars and trucks with high emissions of particulate matter are not allowed to enter these zones. A complete overview of cities with existing or planned low-emission zones is available on a website which is regularly updated.

In March 2008, the new Crop Protection Law entered into force. Its aim is to protect crops by ensuring efficient use of crop protection substances. Furthermore, it seeks to mitigate the dangers from crop protection activities for human and animal health, and for the ecosystem. This law updates the guidelines for the licensing, labelling, handling and use of crop protection substances. A National Action Plan on Sustainable Use of Plant Protection Products followed in June 2008 to promote innovative crop protection measures and further develop an integrated approach to crop protection. The Plan sets a target to reduce the risks arising from the use of plant protection products by 25 % by 2020.

## Natural resources and waste

	Germany				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	643	563	564		522	18
- % landfilled	25.7%	0.7%	0.5%		41.0%	1
- % incinerated	20.7%	32.3%	34.0%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	78%	68.2%	66.5%	55%-80% (by 2008)	56.5 %	3

In October 2008 the federal government passed a National Strategy for the Sustainable Use and Protection of the Sea, which seeks to reconcile nature conservation with the growing spectrum of uses - like fisheries, shipping, tourism, renewable energy generation, exploitation of fossil energy and mineral resources - and takes into account land-based activities. A range of instruments are to be used including integrated management of the coastline and land use planning in coastal and sea areas.

The main issue in waste management is to simplify waste landfill regulation. A new regulation, adopted by the federal government in September 2008, combines three separate ordinances and three technical guidelines on landfills. In addition an amendment to the packaging ordinance was adopted in April 2008. The aim is to install a proper system for collecting and recycling retail packaging.

### Better regulation and implementation

	Germany			<i>EU-27 total</i>
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	16	13	9	481

Past problems with Natura 2000 site designation, reporting and management under the Habitats and Birds Directive have largely been solved and a whole series of infringement cases opened by the Commission on grounds of non-compliance have now been closed.

### Use of market-based instruments

	Germany			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	5.7%	6.3%	6.1%	6.4%

### Environmental Technologies

Germany is a leading producer and exporter of environmental goods and services. The ETAP roadmap currently in place has been followed up by new research programmes adopted in January 2008 on the efficiency of materials and network resources. These programmes form part of the Integrated Energy and Climate Package. The German government committed itself to allocating € 400 million from sales of carbon allowances in the EU emissions trading market to low-carbon research and development projects. Projects will cover areas such as refrigeration technology and biomass research. The German ETAP roadmap was being assessed in 2008 and will be updated in 2009.

### Outlook for 2009

In October 2008 the German Minister of the Environment presented a discussion paper on a new environmental industrial policy. The paper puts forward an ambitious agenda for the radical decoupling of economic growth from resource consumption. It suggests that Germany's economic future essentially lies in making the transition to a resource-efficient, low-carbon economy, and taking a leading role in the global market for environmental products and services. Further action is expected in 2009.

After the original project for a new comprehensive Environmental Code had been abandoned, the federal government decided in March 2009 to introduce four new draft environmental laws into the parliamentary process. The four laws are: (i) on the simplification of environmental law, (ii) on water law reform, (iii) on replacing the Federal Nature Conservation Act, and (iv) on regulating protection from non-ionising radiation.

## GREECE

### Highlights in 2008

In 2008, Greece made further efforts to complete key strategic programmes and plans and submitted several proposals for consultation or parliamentary vote. In January, Greece signed the Mediterranean Protocol on Integrated Management of coastal areas and launched preparations for a draft Joint Ministerial Decision for the integrated management of the coastal areas and the islands. The National Programme for the Management and Protection of Water Resources was finalised in March, and was sent for consultation to the National Council of Water Resources. The Greek National Special Framework Spatial Plan for Sustainable Development was approved in July 2008 and will be the basic instrument for rational economic and housing development and environmental protection.. Moreover, several spatial plans have been prepared: the Special Spatial Plan for Renewable Energy Sources has been approved in December 2008 by the National Council. The Plan for Tourism has undergone public consultation and is currently at the final stage of approval. The Special Spatial Plan for Sustainable Development for Industry has been signed by the Ministerial Committee. The Plans for Coastal and Mountainous areas have been completed and the public consultation is to be launched.

Although Greece will meet its climate change targets under the Kyoto protocol, progress is slow in the areas of nature and biodiversity protection and in waste management. Greece will need to make further efforts to protect nature areas and to complete its planned programmes on sewage waste treatment and on closing and restoring illegal landfills.

### Climate change and energy

	Greece				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	128.2	133.8	133.1	133.8 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	98.8	105.4	104.7		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	19.6	23.0	24.1		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	11.7	12.1	12		10.4	17
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	929.7	789.8	751.8		495.7	16
- trend (% change compared to base year*)	+19.9%	+25.1 %	+24.4%	+25.0% (by 2008-12)	-10.8%	22
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks	+22.8%			+25.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	+20.8%				-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Greece				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	179.0	165.3 (2006)	164.2 (2007)	130 by 2012-15 for EU-27	157.5	18
Electricity produced from renewable energy sources (% gross electricity consumption)	7.7%	12.1%	6.8%	20.1% (by 2010)	15.6%	17
- from hydropower	6.9%	9.3%	3.8%		9.2%	
- from wind	0.8%	2.6%	2.7%		3.1%	
- from biomass		0.2%	0.3%		3.0%	
Combined heat and power generation (% gross electricity generation)	2.1%	1.7%	1.7%	18% by 2010 For EU-15	10.9%	25
Energy consumption per capita (kg oil eq.)	2 585	2 823	2 826		3 694	9
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	236	212	205		202	11

In 2006 Greece's greenhouse gas emissions were 24% higher than the base-year level, slightly below its Kyoto target of +25% for the period 2008-2012. The latest projections reveal that Greece will overachieve its Kyoto target applying existing measures, Kyoto mechanisms, carbon sinks and additional measures. In October 2008, the European Commission approved the 2nd National Allocation Plan. For sectors covered by the Emissions Trading System it provides for a 16.7% reduction of greenhouse gas emissions compared to Greece's projected emissions for the period 2008-2012.

Following adoption of the climate and energy package in December 2008, Greece agreed to reduce, by 2020, greenhouse gas emissions by 4% compared to 2005 levels for sectors like buildings, road transport and farming (i.e. sectors not covered by the Emissions Trading System). Furthermore, Greece has committed to achieving, by 2020, a share of energy from renewable sources in gross final energy consumption of 18% (up from 6.9% in 2005).

In April 2008 Greece was suspended from the Kyoto flexible mechanisms as the national system had to be investigated. In November 2008, following a positive review, the United Nations Compliance Committee reinstated Greece in the Emissions Trading System of the Kyoto Protocol. Greece is now in line with international standards and fulfils all the prerequisites for participating in the Kyoto flexible mechanisms.

The government has launched a nation-wide awareness raising campaign on renewable energy and cogeneration of heat and power. Among other actions, a mobile unit is visiting cities all around Greece, informing the public about relevant actions and answering questions.



## Nature and biodiversity

	Greece					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		19.0%	19.0%	20.9%		17.0%	
Sufficiency of site designation under the Habitats Directive	98.6%		99.1%	99.1%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	7.6%	7.3%			4.2%	7
Freight transport (billion tkm)	19.3 (2003)	34.7	28.6			EU total 2505.0	
- % road	97.7%	98.1%	97.1%			76.9%	24 of 26
- % rail	2.3%	1.9%	2.9%			17.4%	24 of 26

\* The railway system is not much developed due to the geography of the country.

An internet portal is under construction for the dissemination of information on biodiversity so that the public has access to reliable data. An assessment of the conservation status of habitat types and species of Community Interest has been finalised in line with the Habitats Directive, and its findings will contribute to determine directions for further action and conservation measures. The Second National Report on Implementation Measures of the Habitats Directive for the period 2001-2006 was submitted in April 2008 in accordance with the reporting obligations. As stated by the government, Greece is still facing problems with the organisation of a national system for collecting data on the status and trends of the various components of biological diversity, engaging sufficient personnel with relevant expertise, producing time-series data for biodiversity and coordination of authorities with co-competencies. In October 2008, the European Commission took legal action against Greece for failing to implement the Birds Directive. Greece had already been condemned on the matter in 2007 but is still failing to designate sufficient protected areas for migratory and vulnerable wild birds under the requirements of the Directive on the conservation of wild birds.

Three more National Parks have been designated: the “National Park of East Macedonia and Thrace” already published in the Government Gazette; the “National Park Kotihou-Strofilias Wetland” and the “National Park of Axios-Loudias-Aliakmonas Delta” which are awaiting approval by the relevant ministries. The State Council (Supreme Court) has annulled the decision for the designation of an eco-development area as the relevant national legislation grants superior legal protection to National Parks, in the form of Presidential Decrees (superior legal status, compared to joint ministerial decisions). In practice, this means that all Joint Ministerial Decisions granting protection status to Natura 2000 sites need to be revised and possibly replaced by new Presidential Decrees.

## Environment and health

	Greece				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	40.9 (2001)	41.1	36.1	30.0	30.0	18 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	7 052	9 600	7 315	6 140	4 417	22 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	493	545	536	523	7946	
- nitrogen oxides ( $\text{NO}_x$ )	330	332	316	344	11198	
- non-methane volatile organic compounds (NMVOCs)	299	289	291	261	9391	
- ammonia ( $\text{NH}_3$ )	73	73	73	73	4006	
	1990		Latest available year (1997)			
Water exploitation index	10.9%		12.1%		n.a.	15

Since 2005, and especially after November 2007 when the Asopos River was found to be polluted with high levels of hexavalent chromium, the Environmental Inspectorate has imposed fines of €2.6 million on 43 industries. In March 2008 the General Inspectorate published an audit report on the legitimacy and completeness of wastewater disposal permits for 19 enterprises in the area of the Asopos River. The report suggests that the government issues a new circular clarifying any ambiguities or controversies regarding different legislative requirements for the disposal of hazardous wastewater. The Environmental Inspectorate has also audited industries in the vicinity of the Koronia Lake, imposing fines of €715 700. Recently the Ministry of Environment decided to increase the maximum fine to be imposed for non-compliance with environmental terms to €2 million per industry, this being four times higher than in the past.

Priority agglomerations located at coastal areas are almost fully equipped with waste water treatment plants (WWTPs). Five large cities of more than 150 000 people and 44 priority agglomerations, discharging in coastal areas, are equipped with WWTPs which operate in compliance with the Urban Waste Water Directive requirements. Five new WWTPs were planned to commence operation in 2008. Despite these efforts, in November 2008, the European Commission launched an infringement procedure against Greece for not putting in place the required infrastructure for collecting and treating waste water in 12 other towns and cities despite having already been condemned by the European Court of Justice for this failure.

## Natural resources and waste

	Greece				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	408	443	448		522	8
- % landfilled	91.2%	87.1%	84.2%		41.0%	23
- % incinerated	0%	0%	0%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	33%	41.8%	42.8%	55%-80% (by 2011)	56.5 %	18

In January the government signed the Mediterranean Protocol on the Integrated Management of Coastal Areas, the first legal text on international cooperation for the management of coastal areas. The government has started preparing a Joint Ministerial Decision for the implementation of the commitments and regulations of this Protocol. The National Programme for the Management and the Protection of Water Resources was presented in March and has been forwarded for consultation to the National Council of Water Resources. The results of the consultation are not yet available.

Waste is the most problematic sector with regard to the implementation of European environmental legislation in Greece. The main problem is disposal of waste at illegal dumps. In November 2008, the European Commission sent Greece a final warning over problems with the operation of a new western Attiki landfill at Fyli which is considered to be a violation of EU waste legislation. Four inspections by the permitting authorities between October 2007 and July 2008 revealed several ongoing operational problems, which are not disputed. These include waste not being adequately covered in the landfill, the lack of security at the site which allows people and animals to gain access, the absence of rainwater collection, and the risk of fires and of waste slippage in the landfill.

In May 2008, the government agreed more support to municipalities for implementing waste policy. Grants will be provided to municipalities on the basis of the annual quantity of waste collected per citizen.

## Better regulation and implementation

	Greece			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	30	26	27	481

Progress has been made during the past few years, but delays in undertaking transposition measures for European environmental legislation are frequent. To date, Greece has not yet notified national transposition measures for the Directive concerning mining waste.

In September 2008, the draft Presidential Decree which transposes the Directive on environmental liability was released for consultation and signature by the appropriate Ministers and subsequent examination by the State Council. For its proper implementation, a coordinating body will be created within the Ministry of Environment and will be supported by central and regional committees. Since October 2008 the legislative requirements are in place for the wider use of water from waste water treatment plants and the government will investigate the potential use of the reclaimed treated wastewaters. The draft Joint Ministerial Decision regarding bathing water (Directive 2006/7/EC) was also signed by the government.

## Use of market-based instruments

	Greece			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	6.8%	6.6%	6.3%	6.4%

## Environmental technologies

Measures to increase and improve investment in RTD by both the private and the public sector constitute a major priority in the new planning period 2007-2013. The new Law 3653/2008 "Institutional framework of research and technology and other provisions" regulating the national programme of research and technology (N.P.R.T.), establishes a programme promoting research, technology and innovation.

As regards pollution prevention and control measures an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities need to set permit conditions to operate installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC) which requires that all industrial permits be issued by 30 October 2007. Greece reported that by April 2008, 293 authorisations had been issued or reconsidered and, where necessary, updated out of the total 482.

## Outlook for 2009

2009 will be designated a "Year of Recycling". The government, alongside the responsible partners, decided to improve public information and awareness of recycling. It will also prepare educational material for distribution at schools. These efforts are part of the response to tackle waste management and to complete the planned projects for landfills and for sewage waste treatment.

Greece has prepared its National Biodiversity Strategy, for which a public consultation has been launched in early 2009. Furthermore, the Specific Spatial Plans for Tourism, Industry and Coastal and Mountainous areas will be promulgated in 2009, while spatial regulation plans for four major cities in Greece are to be completed in 2009. The second Phase of the land registry survey is under way and it includes a legal certainty of property rights and confirmation on the exact location of each land parcel. In this way, by 2011, 310 000 ha will be included in the National land registry corresponding to an area where almost 2/3 of the Greek population lives. The possibility of incorporating the remaining agricultural and forest areas in order to complete the registry is also being explored.

In the transport sector, the government is planning a series of measures to encourage eco-driving, such as including it in driving lessons and driving tests from January 2009 onwards. Eco-driving will also be taught to drivers of public transport vehicles.

## HUNGARY

### Highlights in 2008

The inaugural meeting of the Council for Sustainable Development was held in October 2008. The Council was set up to provide a forum for organizations taking part in the implementation and review process of the National Sustainable Development Strategy (NSDS). The National Climate Change Strategy, prepared in line with the NSDS, was adopted with the aim of reducing greenhouse gas emissions, as well as decreasing the environmental, economic and social effects of climate change.

The implementation period of the 2nd National Environmental Programme (NEP), which addresses most of the areas under the EU's 6th Environment Action Programme, ended in December 2008. Therefore, during most of 2008, the Ministry of Environment and Water was preparing the 3rd NEP. Furthermore, in order to improve application of the constitutional right to a better environment, a new post was established: "Ombudsman for future generations".

Further efforts are needed to protect Natura 2000 sites, in particular when considering infrastructure projects. Hungary needs to ensure the correct application of the Environmental Impact Assessment Directive, including effective public participation in environmental impact assessment procedures. Efforts must also be increased to complete infrastructural developments on urban waste water treatment and restoring illegal landfills, as well as to comply with air quality limit values.

### Climate change and energy

	Hungary				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions				108.5	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.	77.6	80.2	78.6	(by 2008-2012)		
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	58.9	61.2	59.9		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	8.9	12.2	12.7		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	7.6	8	7.8		10.4	5
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	1 491.0	1 251.7	1 178.7		495.7	20
- trend (% change compared to base year*)	-32.8%	-30.5%	-31.9%	-6.0% (by 2008-12)	-10.8%	7
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks				-24.9%	-6.0% (by 2008-12)	-13.4%
- with existing and additional measures, Kyoto mechanisms and carbon sinks				-25.4%		-16.3%

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is the average of 1985-1987 and for F-gases is 1995.

	Hungary				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	157.3 (2004)	153.5 (2006)	153.9 (2007)	130 by 2012-15 for EU-27	157.5	11
Electricity produced from renewable energy sources (% gross electricity consumption)	0.7%	3.7%	4.6%	3.6% (by 2010)	15.6%	20
- from hydropower	0.3%	0.4%	0.5%		9.2%	
- from wind		0.1%	0.3%		3.1%	
- from biomass	0.4%	3.2%	3.9%		3.0%	
Combined heat and power generation (% gross electricity generation)	n.a.	19.1%	22.4%	18% by 2010 for EU-15	10.9%	6
Energy consumption per capita (kg oil eq.)	2 450	2 776	2 757		3 694	8
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	602	546	521		202	19

In 2006, Hungary's greenhouse gas emissions were 32% lower than the base year level, compared to its Kyoto target of -6% for the period 2008-2012. Thus, the prospect of Hungary significantly overachieving its Kyoto target on greenhouse gas emissions is good. Based on the latest projections, emissions in Hungary will decrease by 25.4% in 2008-2012 compared to the base year level by using a combination of measures, Kyoto mechanisms, and carbon sinks.

In March 2008, the Parliament adopted the National Climate Change Strategy. The main aim of the Strategy is to reduce the environmental, economic and social effects of climate change, with special emphasis on increasing public awareness about climate change related issues.

An almost equally important step a few months earlier, in December 2007, was the adoption of a Government Resolution that established rules for trading carbon credits. As a result, carbon credit negotiations have begun. Related to this, the Green Investment Scheme was launched to ensure that the income from carbon credit sales will be used, among other things, to reduce the harmful effects of climate change.

In April 2008, the parliament adopted the Hungarian Energy Policy for 2008-2020. The main strategic objective of the Energy Policy is to ensure security of supply, and to promote competitiveness and sustainability. To replace the former Energy Efficiency Strategy and Energy Efficiency Action Plan covering the period 2000-2010, a new Energy Efficiency Action Plan was approved in February 2008, which specifies the measures necessary to fulfil the energy efficiency objectives of Hungary. The Action Plan has set an annual target of 1% energy savings for the period 2008-2016. Measures include energy efficiency labelling of gas and electrical equipment, energy audits of buildings, information campaigns, and financial support for reconstruction to increase energy efficiency in households and industry.

In October 2008, the Hungarian Academy of Science initiated strategic programmes in seven areas, some of them environmental. The seven areas are energy policy, water management, environment and climate, food security, pension financing, education, and stability and viability of the state and the social institutions. In the energy sector, for example, the Academy recommends studying possible ways of increasing renewable energy production.

Following adoption of the climate and energy package in December 2008, Hungary agreed not to increase its greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport and farming) by more than 10% by 2020 compared to 2005 levels. Furthermore, Hungary has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 13% (up from 4% in 2005).

### Nature and biodiversity

	Hungary					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		21.1%	21.2%	21.0%		17.0%	
Sufficiency of site designation under the Habitats Directive		85.6%	85.6%	85.6%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	2.9%	2.9%			4.2%	17
Freight transport (billion tkm)	28.1	41.7	46.9			EU total 2505	
- % road	68.1%	73.1%	76.3%			76.9%	15 of 26
- % rail	28.8%	22.3%	19.0%			17.4%	13 of 26

In November 2007, the European Commission approved the list of the Pannon Biogeographical Region of proposed Sites of Community Interest (SCIs) as Natura 2000 areas. Designation of new areas as Special Protection Areas (SPAs) has been requested by the EU. The Natura 2000 network comprised 467 SCIs (1.4 million hectares) and 55 SPAs (1.35 million hectares) in December 2008. Natura 2000 areas make up a total of about 1.96 million hectares, or 21 % of the total area of Hungary. Some 38.5 % of the Natura 2000 areas in Hungary are protected at national level. Based on the European Commission review in 2005, new areas have been designated for a total of 19 species and 7 habitats in total.

Under the Cohesion and Structural funds for the period 2007-2013, planned expenditures by Hungary for biodiversity and nature protection amounts to € 126 million. Other relevant areas where Cohesion and Structural funds will be allocated are Promotion of Natural Assets (€ 163 million) and Natural Heritage (€ 114 million).

In order to prevent birds flying into unsecured power lines, the Ministry of Environment and Water signed a partnership with three electricity suppliers and the Hungarian Association for the Protection of Birds and Nature/(MME) BirdLife Hungary. According to the latter, approximately 30 000 birds die annually in Hungary in this way. In addition, a list has been compiled of invasive species that could potentially endanger or limit the living conditions of native species. Possible means of protection will be considered after the list has been reviewed by a larger group of experts.

## Environment and health

	Hungary				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	40.1 (2003)	37.7	35.8	30.0	30.0	17 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	na	5 091	5 228	n.a.	4 417	17 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	489	129	118	500	7946	
- nitrogen oxides ( $\text{NO}_x$ )	185	203	208	198	11198	
- non-methane volatile organic compounds (NMVOCs)	166	177	177	137	9391	
- ammonia ( $\text{NH}_3$ )	71	80	81	90	4006	
	1992		Latest available year (2002)			
Water exploitation index	5.9%		5.4%		n.a.	11

Despite initiatives to reduce air pollutants and improve ambient air quality, high background concentrations of  $\text{NO}_2$ , particulate matter ( $\text{PM}_{10}$ ), and ground level ozone are still unsolved problems in Budapest, and in some other big cities. Legislation to disseminate smog information and to define limit values was adopted in October 2008. A Law aiming to decrease long-distance, cross-border heavy metal air pollution was approved in late 2007.

In January 2008, a new regulation package on noise and vibration came into force based mainly on the principles of prevention. The new legislation gives the authorities powers to force the operators of establishments with excessive noise emission to reduce the level of noise.

Efforts to comply with the Water Framework Directive have resulted in general improvement of surface water and groundwater quality. The first round of public consultation on the River Basin Management Plan for Hungary was completed in September 2008. Based on the results of the pilot project initiated to develop the national methodology for River Basin Management (an EU PHARE project), the first version of the River Basin Management Plan was drafted in December 2008 and was issued for public consultation.

## Natural resources and waste

	Hungary				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	445	468	456		522	9
- % landfilled	84.5%	80.3%	74.8%		41.0%	17
- % incinerated	7.6%	8.3%	8.3%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	43.3%	45.9%	48.9%	55%-80% (by 2012)	56.5 %	16

Hungary has experienced severe floods in recent years. To deal with this, a big reservoir in the Tisza valley region (at Cigánd-Tiszakarád) was opened for operation in November 2008



as part of the large-scale Vasarhelyi Plan. Another reservoir (at Tiszaroff settlement) is under construction, and should be completed in 2009.

In 2007 and 2008, implementation of medium-term waste management plans continued, focusing on regional waste management systems. Most of the 12 ISPA projects (EU Instrument for Structural Policies for Pre-accession) were completed in 2008, but not all. With investment of €197 million, these projects will in the end serve 3.8 million inhabitants in various areas: selective collection, waste utilization, landfill construction and recultivation. The Cohesion Fund project will serve a further 600 000 people.

### Better regulation and implementation

	Hungary			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	4	6	12	<i>481</i>

The parliament has adopted a law to appoint an “Ombudsman for future generations” aiming to help enforce the constitutional right to a better environment. In May 2008, the new Ombudsman was appointed. The task of this Ombudsman is to increase environmental awareness of the public and to support NGOs.

The new draft civil law has the potential to bring significant environment-related progress. It will broaden the scope of human rights protection to include the right to a healthy environment. It will update the right to damage compensation, and it will regulate responsibility and compensation issues in the fields of environmental protection, nature conservation and waste management.

### Use of market-based instruments

	Hungary			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	7.8%	7.5%	7.7%	<i>6.4%</i>

### Outlook for 2009

A two-year long National Climate Change Programme will be launched in order to facilitate implementation of the National Climate Change Strategy. The main aim of the programme will be to reduce greenhouse gas emissions and to prepare adaptation measures to deal with the unavoidable impacts of climate change.

## IRELAND

### Highlights in 2008

In line with what is done in several other European countries, the Irish government has decided to improve accountability for its environmental impact. New initiatives in 2008 included the establishment of an offsetting scheme, covering official travel. Further, changes to Vehicle Registration Tax and Motor Tax were introduced in July 2008 to encourage consumers to become more environmentally-conscious when purchasing new cars. Both taxes are now levied on carbon emissions, with seven emissions bands. In the coming years, further efforts are needed to protect nature areas and on waste water treatment. Also continued efforts on climate change are needed in order to ensure that Ireland achieves its commitments in this area.

### Climate change and energy

	Ireland				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	69.0	70.3	69.8	62.8 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	43.5	46.6	46.1		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	10.8	13.0	13.7		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	18.3	17.1	16.6		10.4	26
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	658.4	511.9	480.3		495.7	10
- trend (% change compared to base year*)	+24.1%	+26.5%	+25.5%	+13.0% (by 2008-12)	-10.8%	23
- Projected 2010 emissions trend compared to base year*				+13.0% (by 2008-12)		
- with existing measures, Kyoto mechanisms and carbon sinks	+12.6%				-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	+12.4%				-16.3%	
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	160.2	165.2 (2006)	160.5 (2007)	130 by 2012-15 for EU-27	157.5	14
Electricity produced from renewable energy sources (% gross electricity consumption)	4.9%	(2006) 8.5%	(2007) 9.3%	13.2% (by 2010)	15.6%	14
- from hydropower	3.5%	2.5%	2.3%		9.2%	
- from wind	1.0%	5.5%	6.6%		3.1%	
- from biomass	0.4%	0.4%	0.4%		3.0%	
Combined heat and power generation (% gross electricity generation)	2.4%	2.4%	5.6%	18% by 2010 for EU-15	10.9%	23
Energy consumption per capita (kg oil eq.)	3 765	3 636	3 641		3 694	14
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	178	143	139		202	2

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

Ireland's rapid economic growth over the last decade has resulted in a substantial increase in demand for energy. Concerning the Kyoto target, Ireland has committed to a maximum increase of its greenhouse gas emissions by 13% above the 1990 level for the period 2008-2012. In 2006, greenhouse gas emissions in Ireland were 25.5% above 1990. However, according to the latest data, Ireland is projected to achieve its target using existing measures, Kyoto mechanisms, carbon sinks and additional measures.

In 2007, the government introduced a National Climate Change Strategy with the aim of reaching the Kyoto target. In Ireland only around 100 installations participated in Phase I of the EU Emissions Trading System, although this number increased to 155 in Phase II which began in 2008. Inclusion of these additional installations will contribute about a third of the extra reductions in CO<sub>2</sub> emissions required to meet the Kyoto target. Ireland also has a biofuels target of 5.75% and a 15% renewables target for electricity by 2010, although the biofuels target has now been brought forward to 2009. In 2007, the Carbon Fund Act was passed, establishing a carbon fund for acquiring Kyoto units in order to fulfil Ireland's carbon emissions reduction requirements. It has been proposed that the 2010 5.75% biofuels target be revised downwards to 4% and the proposal was in 2008 under public consultation.

November 2007 saw a landmark change for the energy sector in Ireland, with completion of a Single Electricity Market covering the whole island. This will reduce the inefficiencies, both economic and environmental, that derive from having parallel industries north and south of the border that separates Ireland from Northern Ireland, which is part of the UK.

In December 2008, Ireland agreed by 2020 to reduce greenhouse gas emissions by 20% compared to 2005 levels in non-ETS sectors (e.g. buildings, road transport and farming). Furthermore, Ireland has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 16% (up from 3% in 2005).

### Nature and biodiversity

	Ireland					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		10.0%	10.5%	11.1%		17.0%	
Sufficiency of site designation under the Habitats Directive	86% (2004)		86%	86%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	0.6%	0.9%	1.0%		5% * by 2012	4.2%	24
Freight transport (billion tkm)	12.8	17.7	19.1			EU total 2505.0	
- % road	96.2%	98.8%	99.3%			76.9%	25 of 26
- % rail	3.8%	1.2%	0.7%			17.4%	25 of 26

\* Indicative target according to the Organic Farming Action Plan 2008-2012.

The EU Court of Justice ruled in December 2007 that Ireland had failed to designate a sufficient number of Special Protection Areas under the Birds Directive and had also only partially designated others. No designations were made in 2008.

In 2008, the government released a cost-benefit analysis of biodiversity in Ireland. The aim of the report was to identify the extent to which biodiversity benefits the country, and whether the benefits of related policy are at least commensurate with the costs. The research valued biodiversity in Ireland, in terms of its contribution to productive output and human utility, at €2.6 billion a year, while biodiversity policy costs amount to around €370 million a year, although only a portion of this is spent on biodiversity directly.

In 2008, the government started developing Ireland's 2nd National Biodiversity Plan to replace the existing Plan from 2002. The forthcoming plan will consider the work programmes of the Convention on Biological Diversity and the EU Biodiversity Action Plan.

### Environment and health

	Ireland				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	20.4 (2001)	13.8	15.4	30.0	30.0	1 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	n.a.	n.a.	n.a.		4 417	
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	137	71	60	42	7946	
- nitrogen oxides ( $\text{NO}_x$ )	136	124	119	65	11198	
- non-methane volatile organic compounds (NMVOCs)	81	62	60	55	9391	
- ammonia ( $\text{NH}_3$ )	121	110	110	116	4006	
	1994		Latest available year (2005)			
Water exploitation index	2.6%		1.7%		n.a.	5

A consultation paper on noise was launched in August 2008, in line with the requirement set out in the programme for government to 'Publish comprehensive legislation on noise pollution'. The points for discussion include: an integrated approach to noise pollution; improving the powers of local authorities; drafting codes of practice for industry, construction, commerce and households for the reduction of noise; a higher profile for noise through an annual reporting mechanism; and a new information website.

Following administrative reforms made in 2007 under which Ireland's Environmental Protection Agency (EPA) gained a greater oversight role of Irish local authorities, there was increased focus on the installation and upgrading of disinfection equipment for drinking water. During 2008, further progress was made in tackling a previous chronic problem of micro-biological contamination of many drinking water supplies by *E.coli* which had led to a European Court of Justice (ECJ) ruling against Ireland in 2002.

The ECJ ruled in September 2008 that Ireland had failed to comply with the Urban Waste Water Treatment Directive for six settlements which should have had secondary waste water treatment by December 2000. Significant investment in urban waste water treatment appears to be necessary. In 2008, the Irish authorities started to implement a new system of authorising waste water discharges: the absence of such a system had resulted in an ECJ ruling against Ireland in 2005.

## Natural resources and waste

	Ireland				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	603	804	786		522	26
- % landfilled	91.9%	58.6%	59.4%		41.0%	13
- % incinerated	0%	0%	0%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	19.0%	55.6%	54.5%	55%-80% (by 2011)	56.5 %	12

In September 2008, the Environmental Protection Agency published a new National Hazardous Waste Management Plan, covering the period 2008-12. The Plan makes 29 recommendations that will: help reduce the generation of waste; demonstrate alternatives to waste generation; ensure appropriate collection and management; increase Ireland's self-sufficiency in disposing of hazardous waste; and counter the effects of previous contamination. Specific measures in the Plan include: establishing a network of drop-off points for waste; investigating domestic solutions to hazardous waste treatment; identifying the scale of port and harbour residues and subjecting them to planned decontamination; and, significantly, proposing a cross-border hazardous waste disposal infrastructure with Northern Ireland.

A new 'Hotel and Hospitality Project' was announced by the EPA in April 2008. Between 2008 and 2012, the EPA's National Waste Prevention Programme (NWPP) will work with individual establishments to improve environmental management practices, prevent waste and encourage resource efficiency, whilst also reducing costs in the sector. It is intended that 150 of Ireland's largest hotels will be involved in the programme, which offers grants to improve environmental practices. The EPA estimates that even though the project provides only €1.6m, €80m pa could be saved by making these improvements, which is a substantial return.

There was a 33% increase in spending (bringing the total to €1 245 million a year) on grants to local authorities for public education and awareness initiatives in 2008, relating to both litter and graffiti.

## Better regulation and implementation

	Ireland			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	38	34	35	481

At the end of 2008, Ireland had the 3rd highest number of ongoing infringements of EU environmental legislation of all Member States.

In order to demonstrate greater accountability, the government announced that it would establish an 'Irish Government Offsetting Scheme' to offset the emissions associated with air travel by ministers and civil servants. Introduced in July 2008, this has been retrospectively applied to all travel since the current government was formed in 2007.

## Use of market-based instruments

	Ireland			EU-27 average
	2000	2005	2006	
Share of environmental taxes in total tax revenue	9.1%	8%	7.6%	6.4%

The government introduced changes to Vehicle Registration Tax (VRT) in July 2008, which is now based on CO<sub>2</sub> emissions, with seven bands according to the level of emissions from new registered vehicles. VRT is a tax levied as a percentage of the open market selling price of the vehicle, ranging from 14% (0-120g CO<sub>2</sub>/km) to 36% (>225g CO<sub>2</sub>/km). In addition, there is a Motor Tax based on CO<sub>2</sub> emissions, payable annually and ranging from €100 for the least polluting, to €2000 for the most. To complement these changes, a new vehicle labelling system was introduced, in a similar style to the EU standard for electrical appliances. The label gives additional details, including the rate of VRT, the annual Motor Tax payable, and the amount of fuel required to run for 18 000km.

In addition, the landfill tax was increased by a third in 2008, to €20 per tonne landfilled.

## Environmental Technologies

The Irish Energy Research Council has prepared a comprehensive Energy Research Strategy 2008-2013, pointing out that investment in the energy sector is at historically low levels (€6m in 2005). The strategy recommends that this recent trend be reversed, with a substantial increase in funding for research.

The actions commencing in 2008 included: identifying and mapping Ireland's energy resources; developing research programmes; and encouraging research groups to dedicate more resources to research in sustainable energy. The three main areas of focus in the new strategy are sustainable bioenergy, buildings and transport. It was recognised that the main energy challenges facing Ireland in 2008 were those of reducing energy demand, switching away from fossil fuels and harnessing the potential benefits of carbon capture and storage.

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. Ireland reported that by April 2008 360 authorisations had been issued or reconsidered and, where necessary, updated out of a total of 461.

## **Outlook for 2009**

The government of Ireland intends to publish its new Sustainable Development Strategy in 2009. This will replace the existing strategy of 2002 and will relate strongly to the social partnership agreement 'Towards 2016' that was published in 2006. It is expected that this new Strategy will have an increased focus on community involvement in environment policy, together with future initiatives relating to biofuels.

In addition, under the Agreed Programme for Government, a biofuels obligation scheme will be introduced in 2009, whereby producers will be required to meet a certain proportion of sales with biofuels. This will help achieve the target of 10% by 2020, as announced in the Irish Green Paper on Sustainable Energy.

## ITALY

### Highlights in 2008

The severe waste crisis in Naples and Campania triggered several urgent measures and actions in 2008. As a temporary emergency measure, the government, with the support of military forces, reopened various landfills in the region. While the situation has been partially addressed, there is a further need to develop and implement waste management strategies in many regions. However, waste management is only a problem for some Italian regions. Others are performing quite well, e.g. in terms of recycling.

Air pollution and climate change policies remain a challenge in Italy. Despite increasing efforts on renewable energy and energy saving, Italy remains one of the three EU Member States projected not to achieve its Kyoto target. The contribution from industrial installations to total greenhouse gas emissions is still very significant, although efforts have been made.

Initiatives on nature and biodiversity have progressed well over the past year. Key actions included stricter control and projects to restore the original conditions of protected areas, the launch of the National Forestry Inventory exercise, and progress on the implementation of the Mediterranean Action Plan for the conservation of marine turtles, monk seals, seabirds, cartilaginous fish and cetaceans.

### Climate change and energy

	Italy				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	552.3	577.9	567.9	483.2 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	453.4	478.0	473.7		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	124.5	131.6	133.2		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	9.7	9.9	9.7		10.4	11
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	463.7	464.8	448.4		495.7	6
- trend (% change compared to base year*)	+6.9%	+11.8%	+9.9%	-6.5% (by 2008-12)	-10.8%	19
- Projected 2010 emissions trend compared to base year*				-6.5% (by 2008-12)		
- with existing measures, Kyoto mechanisms and carbon sinks	-1.4%				-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-4.6%				-16.3%	

\* Base year is 1990.



	Italy				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	154.0	148.1 (2006)	145.5 (2007)	130 by 2012-15 for EU-27	157.5	2
Electricity produced from renewable energy sources (% gross electricity consumption)	16%	14.5% (2006)	13.7% (2007)	22.55% (by 2010)	15.6%	12
- from hydropower	13.8%	10.3%	9.1%		9.2%	
- from wind	0.2%	0.8%	1.1%		3.1%	
- from biomass	0.5%	1.8%	1.9%		3.0%	
Combined heat and power generation (% gross electricity generation)	8.3%	9%	9.8%	18% by 2010 for EU-15	10.9%	16
Energy consumption per capita (kg oil eq.)	3 037	3 196	3 158		3 694	10
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	183	190	185		202	7

Italy, together with Denmark and Spain, is one of the three Member States projected not to achieve their Kyoto target. With greenhouse gas emissions almost 10% above 1990 levels in 2006, Italy is a long way from meeting its target (-6.5% by 2008-2012). Following the adoption of the climate and energy package in December 2008, Italy agreed to reduce greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport and farming) by 13% by 2020 compared to 2005 levels. Furthermore, Italy has committed to achieve by 2020 a share of energy from renewable sources in gross final energy consumption of 17% (up from 5% in 2005). The government targets for production of electricity from renewable energy sources for the coming years (2007-2012) will increase by 0.75% per year. New growth rates for the years after 2012 will be set in the near future.

Italy's latest National Allocation Plan for greenhouse gas emissions (2008-2012) was approved at the end of 2007 and entered into force in January 2008. The new plan is in line with a more general sectoral policy to address the final restructuring of the entire Italian energy sector. The fact that liberalisation of this sector has not been completed has delayed for several years wider application of all the measures to promote energy efficiency and the use of renewable alternatives.

A system of tradable green certificates for renewable electricity generated has been introduced. These certificates are issued by the Italian Power Services Administrator (GSE) and are used by producers and importers to fulfil their obligations regarding renewable energy. The 2008 Budget Law established that new installations will be granted green certificates valid for 15 years. The same Law envisages that small plants (up to 1 MW) will have the choice between being granted green certificates or receiving a feed-in tariff for 15 years. Tariffs differ according to the type of renewable energy.

A pilot project, *Archimede*, to boost the renewable energy potential of the southern regions is being developed in Sicily by the Italian National Agency for New Technologies, Energy and the Environment (ENEA). It involves constructing a solar power plant with a capacity of 5 MW.

Energy efficiency has been given increased attention in order to meet the energy savings targets set for the period 2005-2009. In 2008, Energy Efficiency Certificates or "white certificates" were introduced as a new mechanism to promote energy efficiency. These

certificates can be traded by energy distributors, who are obliged to meet energy efficiency goals. Whereas end-users do not have direct access to the white certificate market, distributors or Energy Service Companies (ESCOs) installing the systems can create and sell the energy efficiency certificates.

In 2008, the government paid particular attention to the buildings sector by confirming fiscal incentives up to 55% of the cost of reducing energy losses in buildings. They promote wider use of renewable energy, such as installation of solar panels for hot water production, and other similar initiatives. However, the 2009 Financial Act did not renew these incentives for future years.

Italy is receiving a large contribution from cohesion policy funds for the co-financing of sustainable energy investment. It has the highest budget in the EU-27 for clean energies and energy efficiency with €1.84 billion allocated for the period 2007-2013. This represents 7% of the total cohesion policy funds allocated to the country.

### Nature and biodiversity

	Italy					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		17.5%	19.0%	19.0%		17.0%	
Sufficiency of site designation under the Habitats Directive	98%		99.8%	99.8%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	8%	9%	9.1%			4.2%	3
Freight transport (billion tkm)	207.6	212.9	213.2			EU total 2505.0	
- % road*	89%	90.1%	90.0%			76.9%	19 of 26
- % rail*	11%	9.8%	9.9%			17.4%	18 of 26

\* 2006 and 2007 are estimates

Italy was considered, by June 2008, to have achieved 99.8 % site selection sufficiency for the species and habitat types under the Habitats Directive in its territory. A total of 132 Natura 2000 sites now have completed and agreed management plans, while work on another 597 is ongoing.

In December 2007, Italy published a national plan on agricultural biodiversity. This includes several initiatives, such as a programme for the collection, cataloguing and conservation of animal breeds. Particular emphasis has been put on organic agriculture via the National Plan for Organic Farming and Organic Products. The Plan's funding for the years 2007 and 2008 was increased by €10 million, compared to the 2006 budget, and is to be increased further in the 2009 budget. Most recent data shows that in 2007 organic farming represented 9.1% of total agricultural area, which makes Italy one of the top performers in the EU.

The 2007 Financial Act allocated funds for stricter control and the restoration of protected areas to their original conditions. Under this umbrella, for example, the environmental restoration of the polluted Piombino national site started in December 2008. Piombino has been declared a national polluted site due to the severe soil and sea pollution it had suffered from local industry.

For the updating of the Italian forestry plans (dating from the 1980s) expenditure of €50 million has been authorised for the years 2008 and 2009, mainly for implementation of the National Forestry Inventory that will be the basis for the elaboration of a new Forestry Plan.

Italy participates in the Regional Activity Centre of the Mediterranean Action Plan for the conservation of marine turtles, monk seals, seabirds, cartilaginous fish and cetaceans. In 2008, a first triennial action plan for the conservation of cetaceans (whales and dolphins) was approved by the Central Institute for Scientific and Technological Research applied to the Marine Ecosystem. The implementation of three further plans for the conservation of monk seals, marine turtles and selachians (sharks, rays and skates) has progressed well since 2001, while two plans concerning cephalopods (octopus, squid, cuttlefish and nautilus) and marine birds were still under consideration at the end of 2008.

### Environment and health

	Italy				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	52	43.2	41.6	30.0	30.0	20 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	6 609	7 319	7 643	5 462	4 417	23 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	755	408	389	475	7946	
- nitrogen oxides ( $\text{NO}_x$ )	1373	1112	1061	990	11198	
- non-methane volatile organic compounds (NMVOCs)	1496	1212	1174	1159	9391	
- ammonia ( $\text{NH}_3$ )	441	411	408	419	4006	
			Latest available year (1998)			
Water exploitation index	<i>n.a.</i>		24.0%		<i>n.a.</i>	23

In 2007, the Italian government formulated a Plan to transpose the Directive on environmental liability. Following a review process in 2008, the Plan will be revised and finalised during 2009.

At local level many sustainable mobility policies have been implemented by municipalities to fight air pollution. For example, the "ECOPASS" measure introduced in January 2008 in Milan is a tax for private cars entering the city centre, similar to the London congestion charge. As the data show and despite efforts from the national and local governments in 2008 to improve air quality, including funding to implement air quality programmes in urban areas and to reduce particulate matter ( $\text{PM}_{10}$ ) emissions, serious problems remain. In the winter various regions of Italy, including all the regions in the Po valley, suffered from high concentrations of air pollutants. In 2008, Italy requested an extension of the derogation from compliance with air quality standards.

## Natural resources and waste

	Italy				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	509	553	550		522	17
- % landfilled	75.6%	53.9%	52.0%		41.0%	9
- % incinerated	8.1%	12.1%	12.2%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	38%	53.7%	54.9%	55%-80% (by 2008)	56.5 %	10

The 2008 waste crisis in Naples and Campania forced the government to adopt several emergency measures, and a strategic waste planning approach, in order to start tackling this severe environmental problem. As a temporary measure, the government reopened various landfills in the Campania region. Under the new strategic waste planning approach, there are plans to implement the collection of waste for recycling, to develop incinerators and to better control the illegal dumping of waste.

In 2008, soil protection measures focused on improving monitoring activities. In this respect, to ensure full integration with the single information system and the national information network, expenditure of €750 000 per year was authorised by the 2007 Financial Act for the 2007-2009 period.

The Green Public Procurement (GPP) Decree was finalised in 2007. This Decree supports the introduction of environmental and social criteria into public procurement procedures. Many public administrations have been actively promoting the application of green public procurement. Moreover, in April 2008, the National Action Plan for GPP was approved and will start to be implemented in 2009. On sustainable consumption and production, the latest 2008 data show that Italy has 212 companies with products awarded the European Eco-label, the largest number in the EU.

## Better regulation and implementation

	Italy			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	61	60	45	481

In 2006, the government took the initiative to renew environmental legislation by adopting the “Environmental Code”. In 2008, significant amendments to the Environmental Code were adopted, including revised legislation on general environmental principles, detailed guidelines for Environmental Impact Assessments and Strategic Environmental Assessment, and more stringent legislation on water resources, water protection and waste.

In 2008, the government restructured the Ministry of the Environment and the Italian Environment Agency. This process created several new agencies as well as a new division of responsibilities. For example, the Agency for Environment Protection and Technical Services (APAT) was converted into the Institute for Environment Protection and Research (ISPRA), taking over some responsibilities from other institutions.

### Use of market-based instruments

	Italy			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	7.6%	6.9%	6.5%	6.4%

### Environmental technologies

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. Italy reported that by April 2008 3 989 permits had been issued out of a total of 5577.

### Outlook for 2009

The 2009 Financial Act, approved in December 2008, suggests a continued policy focus on tackling climate change and improving energy efficiency, as well as the use of renewable energy sources. The government has confirmed an annual budget of € 200 million for the fund to support implementation of the Kyoto Protocol. Additionally, the “Fund for the promotion and spread of energy efficiency and energy savings and the promotion of renewable energy sources” will receive € 40 million for its operations in 2009. But at the same time, the 2009 Financial Act will reduce the budget for other environment policy initiatives. Of the overall budget of the 2009 Financial Act, 2.4%, or € 819 million, is earmarked for the environment compared with € 1.5 billion in previous years.

## LATVIA

### Highlights in 2008

In 2008, the Latvian government launched preparations for a new Environment Policy Strategy 2009-2015. It will include targets and propose actions to tackle environmental problems and is scheduled to be adopted in the first half of 2009.

Latvia became eligible for International Emissions Trading in April. Furthermore, the Energy Efficiency Action Plan for 2008-2010 was approved by the government in May. Key measures include reduction of heat energy losses in heat networks, a decrease in energy consumption in apartments and the establishment of new cogeneration power plants using renewable energy resources. Also the new Building Energy Performance Law was adopted in 2008. This law aims to transpose the requirements of the EU Directive on energy performance of buildings to the national level.

### Climate change and energy

	Latvia				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tons (Mt) CO <sub>2</sub> eq.	10.0	11.1	11.6	23.8 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	7.4	8.1	8.5		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	2.2	3.1	3.5		992.3	
					EU-27 average	rank in EU-27
- per capita (tons CO <sub>2</sub> eq.)	4.2	4.8	5		10.4	1
- per GDP (tons CO <sub>2</sub> eq. per 1000€ GDP)	1 179.6	883.9	824.5		495.7	19
- trend (% change compared to base year*)	-61.3%	-57.0%	-55.1%	-8.0% (by 2008-12)	-10.8%	2
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks		-46.1%		-8.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-46.1%			-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Latvia				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	191.0 (2004)	181.8 (2006)	182.2 (2007)	130 by 2012-15 for EU-27	157.5	26
Electricity produced from renewable energy sources (% of gross electricity consumption)	47.7%	(2006) 37.7%	(2007) 36.4%	49.3% (by 2010)	15.6%	3
- from hydropower	47.6%	36.5%	35.2%		9.2%	
- from wind	0.1%	0.6%	0.7%		3.1%	
- from biomass		0.6%	0.6%		3.0%	
Combined heat and power (CHP) generation (% of gross electricity generation)	n.a.	30.7%	42.6%	18% by 2010 for EU-15	10.9%	1
Energy consumption per capita (kg oil eq.)	1 578	1 952	2 021		3 694	2
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	759	614	563		202	20

The Kyoto target for Latvia for the period 2008-2012 is -8 % compared to base year levels. In 2006, the country's greenhouse gas emissions were already 55% lower than the base year emissions. Latvia is well on the way towards fulfilling this commitment as the most recent projections for 2010 show. In December 2008 Latvia agreed not to increase its greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport and farming) by more than 17% by 2020 compared to 2005 levels. Furthermore, Latvia has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 40% (up from 33% in 2005).

The government measures on climate change are outlined in the Climate Change Mitigation Programme for 2005-2010. This includes the following priorities: raising energy efficiency, designing a modern transport system (i.e. optimising traffic flows in cities; promoting public transport in Riga; developing bicycle infrastructure) and implementing best available technologies.

Latvia became eligible for International Emissions Trading in April 2008. The Latvian government has already adopted a national strategy of Assigned Amount Unit (AAU) management, allocating around 40 million AAUs for Green Investment Scheme (GIS), of which 8-10 million were to be sold during a pilot transaction in late 2008. Latvia expects to gain experience through the pilot transaction, which will shed light on the secondary legislation for the GIS. The Ministry of Environment has already started negotiations with a limited number of buyers on the AAU transaction in the pilot phase.

The Latvian government has decided to build a power plant based on coal mixed with biomass. In 2008, it took further discussions on implementation of the project, including identification of the site for the power plant and execution of an environmental impact assessment (EIA). The plan is to build the power plant in the Liepāja region. However, no final decision on the EIA and whether the power plant can be built has been taken yet.

The Energy Efficiency Action Plan for 2008-2010 was approved by the government in May 2008. The key measures proposed aim to reduce heat energy losses in the heat networks, to promote the establishment of new cogeneration power plants using renewable energy

resources and to decrease heat energy consumption in apartments. The aim is to achieve a decrease in final energy consumption by 67 GWh, or 0.2% of total final energy consumption.

The Building Energy performance Law which transposes the Directive on energy performance of buildings, was adopted in 2008. It sets requirements for certification of energy auditors and energy certificates for buildings.

### Nature and biodiversity

	Latvia					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under the Habitats and Birds Directives) as a % of terrestrial area		11.0%	11.0%	11.0%		17.0%	
Sufficiency of site designation under the Habitats Directive			89.4%	89.4%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	0.3%	10.3%	9.8%			4.2%	2
Freight transport (billion tkm)	18.1	27.6	31.5			EU total 2505.0	
- % road	26.5%	39.0%	41.9%			76.9%	1 of 26
- % rail	73.5%	61.0%	58.1%			17.4%	1 of 26

Latvia has 98 Special Protection Areas (SPA) and 331 Sites of Community Importance (SCI) under the Natura 2000 network. In total these cover 11% of its land area. A total of 103 Natura 2000 sites have completed/agreed management plans, with 12 under development. In addition to the Special Protection Areas, micro reserves have been established since 2008 for the protection of plant species, animal species, and biotopes.

The new National Environmental Policy Strategy for 2009-2015 is under development and will be adopted in the first part of 2009. This new strategy includes a chapter on biological diversity, where the main goal is to ensure a balance between the interests of nature protection and economic activity. The strategy proposes: to improve the Natura 2000 network in accordance with the most recent scientific studies and to finalise the introduction of a monitoring system; to elaborate and implement a nature protection communication strategy; and to promote research into the impact on species and biotopes of different economic activities. By 2012, a new National Programme on Biological Diversity is to be elaborated.

Under the Cohesion and Structural Funds for the period 2007-2013, the amount Latvia plans to spend on biodiversity and nature protection is € 26 million.



## Environment and health

	Latvia				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	n.a.	n.a.	n.a.	30.0	30.0	
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	n.a.	308	1 758	n.a.	4 417	1 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	10	4	3	101	7946	
- nitrogen oxides ( $\text{NO}_x$ )	37	40	44	61	11198	
- non-methane volatile organic compounds (NMVOCs)	56	63	65	136	9391	
- ammonia ( $\text{NH}_3$ )	12	14	15	44	4006	
	1991		Latest available year (2005)			
Water exploitation index	1.3%		0.7%		n.a.	1

Concerning air quality, the day and night limit values for solid particles were sometimes (depending on weather conditions) exceeded from March to June 2008 in larger cities like Riga. Furthermore, the majority of inhabitants in the households in rural areas are using water from private wells, which in some cases may not comply with the requirements on drinking water quality.

## Natural resources and waste

	Latvia				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	270	411	377		522	4
- % landfilled	93.3%	71.0%	85.4%		41.0%	24
- % incinerated	0%	0.5%	0.5%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % of total packaging waste)	45.6%	47%	42.2%	55%-80% (by 2015)	56.5 %	19

The State Waste Management Plan 2006- 2012 adopted by the government in 2005 set the following priorities: decoupling of waste generation and economic development; overall reduction in the volumes of waste generated through improved waste prevention initiatives; better resource efficiency and a shift to more sustainable consumption patterns.

It seeks to establish 10 new landfills for disposal of municipal waste by 2009 and to close existing dumpsites by 2009 and to re-cultivate them by 2012. These goals are implemented by regional waste management plans which were approved by the government in late 2007 and 2008. They include more detailed provisions, e.g. action programmes, activities for improvement of the waste management system, institutional responsibilities, financing and potential financing sources.

In accordance with the government's Action Plan, recommendations were given in 2008 on how to promote Green Public Procurement (GPP) in public sector institutions. The

recommendations are mainly based on the GPP Training Toolkit of the European Commission.

### Better regulation and implementation

	Latvia			<i>EU-27 total</i>
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	3	9	12	481

### Use of market-based instruments

	Latvia			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	8.1%	9.2%	7.9%	6.4%

The Law on Natural Resource Tax was amended in 2008. It increased several taxes, e.g. on municipal waste storage in landfills and on packaging materials.

### Outlook for 2009

Adoption of the new Environmental Policy Strategy 2009-2015 is planned in the first half of 2009. Under the provisions of the Building Energy Performance Law, regulations on the certification of energy auditors and on the issuing of energy certificates for buildings will be adopted in 2009. Furthermore, alignment with the international Emissions Trading System is planned for 2009.

Preparation of a new National Sustainable Development Strategy is under way. In October, a public forum took place and the adoption of a new National Sustainable Development strategy is planned for 2009.

According to the Action Strategy of the Ministry of Environment 2007-2009 work will continue on the following: development of water management systems for municipalities; waste management development and improvement; restoration of historically polluted sites; nature protection infrastructure for conservation of biodiversity; development of effective heat supply systems based on modern technologies to reduce air pollution and climate change; and reduction of environmental risks, including flooding.

## LITHUANIA

### Highlights in 2008

Environment policy in Lithuania in 2008 focused on energy, climate change and waste management. At the national level, the year started with the government resolution on a national five-year strategy on implementation of the Kyoto Protocol in the period up to 2012. The strategic document outlines the goals to be met in order to tackle climate change and specifies the measures to be taken for reaching these goals. In the international context, the main priority was negotiations on the EU climate and energy legislative package in the period up to 2020, where the government was keen to ensure that the Lithuanian energy supply situation after closure of the Ignalina nuclear plant in 2009 was taken into account. In addition, the National Energy Strategy implementation plan for 2008-2012 came into effect. It specifies all the measures necessary to achieve the Strategy's targets and defines the institutions responsible and the resources required. The Lithuanian government has voted for some changes in the Energy Efficiency Action Plan approved in the previous year.

A number of measures have been launched within the framework of the National Waste Management Plan 2007-2013 (in effect since 2007): the implementation phase of legal regulations on waste recovery and disposal, enforcement of waste producers' responsibility and further development of a modern municipal waste management system.

### Climate change and energy

	Lithuania				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	19.3	22.7	23.2	45.4 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	11.1	13.2	13.4		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	3.2	4.2	4.5		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	5.5	6.6	6.8		10.4	2
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	1 562.5	1 259.2	1 195.5		495.7	21
- trend (% change compared to base year*)	-60.8%	-54.1%	-53.0%	-8.0% (by 2008-12)	-10.8%	3
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks		-30.4%		-8.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-30.4%			-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Lithuania				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	186.1 (2004)	162.2 (2006)	175.3 (2007)	130 by 2012-15 for EU-27	157.5	22
Electricity produced from renewable energy sources (% gross electricity consumption)	3.4%	3.6%	4.6%	7.0% (by 2010)	15.6%	21
- from hydropower	3.4%	3.3%	3.3%		9.2%	
- from wind		0.1%	0.8%		3.1%	
- from biomass		0.2%	0.4%		3.0%	
Combined heat and power generation (% gross electricity generation)	n.a.	15.5%	14.3%	18% by 2010 for EU-15	10.9%	11
Energy consumption per capita (kg oil eq.)	2 020	2 524	2 484		3 694	5
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	1134	948	862		202	25

In 2006, Lithuania's greenhouse gas emissions were 53% lower than the base year level, compared to its Kyoto target of -8% for the period 2008-2012. According to the latest data, Lithuania is projected to significantly overachieve its target. Following the adoption of the climate and energy package in December 2008, Lithuania agreed not to increase its greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport, farming) by more than 15% by 2020 compared to 2005 levels. Furthermore, Lithuania has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 23% (up from 15% in 2005).

The initiatives directed towards implementation of the Kyoto Protocol in the period to 2012 are listed in the National Strategy, adopted in January 2008. Among the main actions planned are: more effective monitoring of climate change and assessment of vulnerability of the landscape, ecosystems and biological diversity; measures to reduce the impact on climate of energy, industry, transport, agriculture and forestry; measures to improve waste management with a view to reducing the generation of greenhouse gases; developing research; and nationwide awareness raising campaigns on combating climate change.

The Lithuanian government has also taken a long-term approach by approving the National Energy Strategy for 2008-2025 and by defining its main targets and directions for their implementation up until 2025. It reflects aspects of efficiency, energy security, and environmental and management improvement. A key point is the comprehensive integration of Lithuania's energy systems, especially the electricity and gas supply sectors, into EU systems and the EU energy market. Diversifying the sources of primary energy and rapidly increasing the relative weight of renewable energy resources are other major points. The government is seeking to ensure that the share of the natural gas supplied from by any single country does not exceed 30% of Lithuania's annual fuel balance.

The five-year National Energy Strategy implementation plan came into effect in 2008. Its main features include modernization and development of energy supply systems, development of renewable energy sources, enhancement of energy efficiency, and improvement of energy sector management. The Strategy will also cover the development of new energy production potential, enhancing energy production efficiency, and energy sector security.

The Energy Efficiency Action Plan (approved in 2007) was amended and published in a new version. The Plan reviews current consumption of energy, evaluates energy saving potential, sets national energy savings targets and describes how to achieve these targets. The national indicative energy savings target for the period 2008–2016 is 327 ktoe (3 797 GWh). The official national energy savings target set in the National Energy Strategy is 9% of the final energy consumption level for 2005, or 404 ktoe (4 700 GWh).

The Lithuanian government adopted a Resolution on public procurement supply contracts, imposing energy efficiency requirements. Government institutions and other public bodies will have to include energy efficiency requirements in the technical specifications when launching public procurement procedures. The government still has to set minimum efficiency requirements in the technical specifications.

### Nature and biodiversity

	Lithuania					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		13.7%	13.9%	13.9%		17.0%	
Sufficiency of site designation under the Habitats Directive			61.2%	61.2%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	3.5%	4.5%			4.2%	14
Freight transport (billion tkm)	16.7	31.0	34.7			EU total 2524.0	
- % road	46.6%	58.4%	58.5%			76.9%	3 of 26
- % rail	53.4%	41.6%	41.5%			17.4%	3 of 26

Lithuania has 77 Special Protection Areas and 267 Sites of Community Importance under the Natura 2000 network. In total it covers 13.9% of its land area. There are no Natura 2000 sites with completed or agreed management plans; however 61 plans are under development.

In order to support ecological connectivity and coherence in Lithuania, work continued on implementing an interrelated territorial system called the Nature Framework in 2008. The Nature Framework is designed to maintain and improve the natural ecological system in the country; to ensure connections between protected natural areas; and to conserve natural landscape, biodiversity and natural recreational resources. The Nature Frame consists of zones with important ecological functions, such as groundwater filtration, conservation of biodiversity, recreational resource protection and aesthetic qualities. It is based on a geo-ecological approach and on managing areas at the level of watersheds and catchments.

From EU resources, € 79 million has been allocated for the “Promotion of natural assets” and € 79 million for the “Natural heritage”.

The government launched a programme for the period 2008-2012 on Lithuanian coastal management, with the conservation or regeneration of the coastline's features at its main objectives. The programme consists mainly of "soft" coastal protection measures, e.g. projects related to sand nourishment, which are sometimes co-financed by EU funds.

## Environment and health

	Lithuania				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	23.3 (2004)	22.9	20.2	30.0	30.0	3 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	n.a.	5 048	4 621	3 456	4 417	13 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	42	44	43	145	7946	
- nitrogen oxides ( $\text{NO}_x$ )	46	58	61	110	11198	
- non-methane volatile organic compounds (NMVOCs)	70	84	78	92	9391	
- ammonia ( $\text{NH}_3$ )	25	39	35	84	4006	
	1990		Latest available year (2005)			
Water exploitation index	17.6%		9.7%		n.a.	13

One of the key environment policy instruments for 2008 is a three-year national programme on air emissions prior to the year 2010, adopted by the Lithuanian government in January 2008. The programme forecasts emission trends and sets up goals and measures in order to ensure that national emission ceiling targets for  $\text{SO}_2$ ,  $\text{NO}_x$ , VOC and  $\text{NH}_3$  are not exceeded by 2010. The programme makes references to forthcoming emissions reduction legislation in the energy, transport, industry and agriculture sectors.

In August 2008, the government adopted the National Children Health Promotion Programme, including measures aimed at maintaining a healthy environment for children. The measures cover a five-year period, 2008-2012, and include for example activities to promote health in schools.

## Natural resources and waste

	Lithuania				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	363	390	400		522	6
- % landfilled	94.8%	91.3%	92.0%		41.0%	26
- % incinerated	0%	0%	0%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	32.7%	32.5%	37.0%	55%-80% (by 2012)	56.5 %	22

In April 2008, the government introduced procedures for analysis of areas contaminated with chemicals, limit values for soil and ground water contamination, and requirements for the management of contaminated areas.

In November 2008, the Lithuanian government finalised transposition of the Directive on waste batteries and accumulators, with amendments to the Administrative Law Offence Code. The legislation introduced collection targets for waste portable batteries and accumulators and established rules for the collection, treatment, recycling and disposal of waste batteries and accumulators.

The National Strategic Waste Management Plan, adopted in October 2007 seeks to ensure municipal waste management quality and accessibility by the year 2009. No later than by the middle of 2009, non-hazardous waste will have to be disposed of only in the regional non-hazardous waste landfills which meet EU requirements. By the end of 2011 all landfills which do not satisfy environmental protection and public health requirements have to be closed and by 2013 the required sewage sludge waste treatment facilities need to be built.

### Better regulation and implementation

	Lithuania			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	5	10	14	<i>481</i>

With the purpose of establishing a 'better regulation' policy and reducing administrative burdens and disproportionate expense, the Lithuanian government approved the Programme on Better Regulation and the related Action Plan in February 2008. As part of the programme, a large number of legal documents are being reviewed.

### Use of market-based instruments

	Lithuania			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	6%	6.7%	6.1%	<i>6.4%</i>

Incentives to invest in pollution reduction equipment are provided through subsidies and loans from the Lithuanian Environmental Investment Fund. The maximum amount of the subsidy for one beneficiary for a three-year period is 70% of total investment in environmental measures and amounts to €101 000 until July 2008. Starting from July 2008 this amount increased to €200 000. 46 projects were approved for financing in 2008, of which 10 are waste management projects, 25 are on reduction of air pollution, and 11 are on reduction of water pollution.

## **Outlook for 2009**

The year 2009 will be important for Lithuania from an energy and economic perspective. Once the Ignalina Nuclear Power Plant is decommissioned in 2009, annual greenhouse gas emissions from electricity generating facilities are expected to increase from 5 to 7 million tonnes. It will also make Lithuania more dependent on external sources.

A programme for the efficient use of energy in transport is expected to be ready by the end of 2009. Furthermore, a new Law on Climate Change will be adopted and a Green Investment Scheme will be created for projects which aim at reducing greenhouse gas emissions.

In 2009 more attention will be paid to the development of renewable energy sources. The Government programme plans to set up a separate Ministry of Energy, including a Department of renewable energy resources. A sum of €63 million has been allocated from EU Structural Funds for implementation of projects intended to stimulate the use of renewable energy resources.

The new EC Regulation on classification and labelling of chemicals will enter into force at the beginning of 2009 and its implementation will create more work for the national authorities and challenges for industries. The appropriate national legislation has to be changed and dangerous substances and mixtures will have to be gradually reclassified and relabelled up until 2015. Information campaigns directed at stakeholders are underway in order to ensure smooth implementation during the transitional period.

In 2007, the government approved the National Green Procurement implementation programme and set a goal that by 2011 environmental criteria are to be applied to at least 25% of public procurement tenders. In 2009, the green procurement capacity of contracting authorities will be strengthened, partly through new training sessions.



## LUXEMBOURG

### Highlights in 2008

Given that Luxembourg is committed to a 28% decrease in greenhouse gas emissions over the 2008-2012 period compared to 1990, energy efficiency and climate change stand as the driving force of Luxembourg's environment policy in 2008.

With regard to climate change, a new tax regulation increasing excise duty on diesel fuel by 1.25 cents per litre came into effect in January 2008. In addition, the "Bonus Car-e" initiative was also launched in January 2008, making €750 available to owners of new vehicles emitting less than 120 g of CO<sub>2</sub>/km. In the energy sector, new fiscal and financial incentives were introduced in February 2008. An important item of budget increase in 2008 was the level of public aid allocated to both individuals and business for energy-efficient investments, ranging from thermal insulation to solar panels.

In other areas, Luxembourg undertook new initiatives under the Natura 2000 Network with regard to both biodiversity preservation and awareness campaigns. Under the umbrella of the Stockholm Convention the government also published its national action plan to reduce persistent organic pollutants (POP) in June 2008. Another major initiative during 2008 was the launch of the government's efforts to reduce the quantity of household waste generated per inhabitant by 50% by 2010 and to increase the reuse of organic waste by 80% and other recyclable waste by 50%.

### Climate change and energy

	Luxembourg				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	10.2	13.3	13.3	9.5 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	8.6	11.8	11.8		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	5.1	7.5	7.3		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	23.5	28.8	28.4		10.4	27
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	462.9	506.9	477.3		495.7	9
- trend (% change compared to base year*)	-22.7%	+0.9%	+1.2%	-28.0% (by 2008-12)	-10.8%	17
- Projected 2010 emissions trend compared to base year*				-28.0% (by 2008-12)		
- with existing measures, Kyoto mechanisms and carbon sinks	-26.8%				-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-28.0%				-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Luxembourg				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	175.5	167.0 (2006)	164.6 (2007)	130 by 2012-15 for EU-27	157.5	19
Electricity produced from renewable energy sources (% gross electricity consumption)	2.9%	3.4% (2006)	3.7% (2007)	5.7% (by 2010)	15.6%	23
- from hydropower	1.7%	1.3%	1.3%		9.2%	
- from wind	0.4%	0.7%	0.8%		3.1%	
- from biomass	0.8%	1.1%	1.3%		3.0%	
Combined heat and power generation (% gross electricity generation)	17.7%	10.1%	10.9%	18% by 2010 for EU-15	10.9%	14
Energy consumption per capita (kg oil eq.)	8 336	10 134	9 970		3 694	27
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	171	184	174		202	5

Luxembourg is far from achieving its climate change commitments. In 2006, Luxembourg's greenhouse gas emissions were 1% higher than the base year level, well above its Kyoto target of -28% for the period 2008-2012. Luxembourg is nevertheless projected to achieve its target through the implementation of existing and additional policies and measures, Kyoto mechanisms and carbon sinks. To address this key environmental issue, the government has launched several initiatives aimed at reducing emissions from transport, and other sectors, by providing incentives for low-emission behaviour while at the same time penalising energy- and emission-intensive activities.

Progressive excise duties on road fuels have been in the pipeline in recent years. This policy was reflected in the introduction of an increase of € 1.25 cents per litre of diesel in January 2008. The most important initiative in transport, however, was the “Bonus Car-e” initiative launched in 2008, which is a public aid scheme providing a € 750 incentive for the purchase of new cars with low CO<sub>2</sub> emissions. In the energy sector, a new set of fiscal and financial aid tools for renewable energy promotion were proposed early in 2008. These included amended feed-in tariffs set in February 2008 as an incentive to increase the share of renewable energy in the overall energy mix. Feed-in tariffs were set by the government for wind, photovoltaic panels, small hydroelectric power plants, biogas, sewage treatment plants and solid biomass thereby obliging the electricity utilities to buy renewable electricity above market prices. Also launched in January 2008 under the new fiscal and financial tools was the “heat premium” which, depending on the technologies used, gives aid for each MWh sold. € 30 per MWh is available for heat produced from biogas, waste wood and/or solid biomass. Other investment subsidies include the promotion of solar thermal panels (50% of investment), biomass boilers (25-30%), geothermal heat exchangers (50%) and geothermal heat pumps (40%). Lastly, the government continued to provide subsidies for energy saving and renewable energy measures in the building sector. For new constructions, for example, these subsidies can reach € 15 000 for a low-energy house and up to € 40 000 for a passive house.

In April 2008, the Energy Agency was restructured and reorganised based on a study carried out by the Vorarlberg Energy Institute recommending the inclusion of energy information, renewable energy and energy efficiency, among the responsibilities of the Energy Agency. As a result, the new “My Energy” entity was created, consisting of the old Energy Agency and a contribution from the State of Luxembourg.

Following the adoption of the climate and energy package in December 2008, Luxembourg agreed to a 2020 reduction target of 20% greenhouse gas emissions compared to 2005 levels in sectors like buildings, road transport and farming that are not covered by the Emissions Trading System. Furthermore, Luxembourg has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 11% (up from 1% in 2005).

### Nature and biodiversity

	Luxembourg					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		17.4%	17.8%	17.8%		17.0%	
Sufficiency of site designation under the Habitats Directive	96.7% (2004)		96.7%	96.7%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	0.8%	2.8%	2.8%			4.2%	18
Freight transport (billion tkm)	8.7	9.6	10.3			EU total 2505.0	
- % road	87.8%	91.5%	92.5%			76.9%	21 of 26
- % rail	7.9%	4.6%	4.1%			17.4%	24 of 26

In 2008, following enactment of the National Plan for Nature Preservation in 2007, work started in the Syre Valley, which is part of the Natura 2000 network, on reforestation and reintroduction of flora.

Starting in January 2008, cross-border cooperation on ecological preservation was launched between Belgium and Luxembourg. This initiative falls under the Council of Europe and ties in with UNEP's aim to establish a pan-European eco-network to fight biodiversity loss and is partly funded by the European Union. The initiative is also part of compliance with the Birds and Habitats EU directives, and of the management of the Natura 2000 network. In 2008, first important steps were taken toward integrating the national and regional systems of the two countries. Once legal documents, management tools and policies had been compared, a research study of the area was conducted to determine its ecological resources in central, development and connecting zones. Based on this, 'mapping of the ecological base' of the cross-border region was completed after assessing landscape constraints. The resulting Plan of the ecological base serves as a reference document for all projects concerning the utilization of territory falling within this cross-border region. Next steps in 2009 will be to integrate this document into national and regional planning legislation.

Additionally, in July 2008, the government launched an awareness campaign 'nature – the zest of life' to engage the public in biodiversity conservation. This campaign consisted of various tools including a brochure, an internet site and commercial spots on Luxembourg TV and in the cinemas. The campaign highlights how individuals can contribute to nature conservation in their daily lives.

## Environment and health

	Luxembourg				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	n.a.	n.a.	n.a.	30.0	30.0	
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	n.a.	n.a.	n.a.		4 417	
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	1	1	0	4	7946	
- nitrogen oxides ( $\text{NO}_x$ )	4	3	0	11	11198	
- non-methane volatile organic compounds (NMVOCs)	6	6	3	9	9391	
- ammonia ( $\text{NH}_3$ )	7	5	5	7	4006	
	1990		Latest available year (1999)			
Water exploitation index	n.a.		3.7%		n.a.	8

In the light of the Directive on the assessment and management of environmental noise, the government presented a national mapping of noise pollution in May 2008. The mapping provided key information on noise pollution areas throughout the country, as well as the main points to be addressed. Roads, railways and airports were the major focus of the report.

With regard to other pollutants, the government under the umbrella of the Stockholm Convention, published its national action plan to reduce persistent organic pollutants (POP) in June 2008. The targeted POPs are aldrine, chlordane, dieldrine, DDT, endrine, heptachlore, mirex, toxaphene, hexachlorobenzene, PCB, dioxin and furans. Although POPs listed under the Stockholm Convention have been prohibited in Luxembourg for over 20 years, the 2008 national plan highlights the legislative and institutional capacities in force so as to demonstrate the compliance of the country with the Stockholm Convention, the REACH regulation and related directives.

## Natural resources and waste

	Luxembourg				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	658	684	694		522	24
- % landfilled	21.0%	19.0%	18.7%		41.0%	7
- % incinerated	43.2%	36.3%	35.3%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	45.0%	62.5%	63.8%	55%-80% (by 2008)	56.5 %	4

Subsidies for waste management and sewage treatment came into force in 2008. These subsidies are part of the overall effort to reduce the quantity of household waste generated per inhabitant by 50% by 2010 and to re-use 80% of organic waste and 50% of other recyclable waste. For sewage treatment, starting in January 2008, households are now eligible for subsidies to promote renewable energy technologies and better waste management. The new regulation, passed in December 2007, stipulates that 90% of investment costs for sewage treatment plants can be claimed back.

The Water Protection and Management Law was modified in December 2008. The main goals of this new law include: preventing further degradation and improving the state of national waters and aquatic ecosystems, particularly by monitoring and reducing the discharge of harmful substances; promoting sustainable water usage; reducing flood and drought risk and impacts; and elaborating and implementing monitoring programmes and operational programmes to promote the quality and quantity of surface and ground water.

### Better regulation and implementation

	Luxembourg			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	3	20	16	<i>481</i>

In August 2008, Luxembourg completed its national Aarhus Convention implementation report. This will be used as input into an overall progress report on implementation of public rights (individuals and associations) with regard to the environment. In Luxembourg, the right of access to environmental information and the right to participate in environmental decision-making has become an integral part of government procedures, as can be seen from the many public information and awareness campaigns and the public consultations that were launched in 2008.

### Use of market-based instruments

	Luxembourg			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	8.1%	7.9%	7.4%	<i>6.4%</i>

### Environmental technologies

In 2008 the Ministry of the Economy was preparing a National Action Plan on “Eco-Technologies” to be adopted in 2009. The Action Plan set a double objective: first, to increase the productivity of natural resources, particularly energy resources, and to reduce environmental impacts; second, to develop the eco-technology sector as a means of diversifying the Luxembourg economy. The plan thus aims to accelerate the incorporation of eco-technologies into all sectors of the economy and to build up the Luxembourg market for eco-technologies through its eco-enterprises and research centres. In terms of thematic priorities, the Action Plan proposes to focus on: renewable energies, energy efficiency, and eco-construction.

## **Outlook for 2009**

The draft national budget proposal for 2009 includes items of increased priority compared to 2008. A € 3 million budget increase for the Ministry of the Environment is envisaged for 2009. Items of higher priority include increased focus on renovation of old buildings to improve energy efficiency; more state involvement in information campaigns and information dissemination; and more funding for communal projects aimed at preserving habitats.

The government plans to launch new financial support measures for the promotion of electronic refrigerating appliances with A++ energy labels. An incentive of between € 100 and € 150 will be given to those replacing an old refrigerator with a new A++ appliance.

Based on the first National Sustainable Development Plan approved in 1999, and the review completed in 2006, the second National Sustainable Development Plan will be finalised during 2009.

## MALTA

### Highlights in 2008

A number of waste treatment facilities became operational in Malta in 2008 and there are plans to use the waste heat, gas and other by-products from these sites to generate power. One such proposed project is in the process of being registered as the island's first Clean Development Mechanism project.

The success of Malta's rebate on more energy-efficient domestic appliances in 2007 prompted the government to extend the life of the scheme into 2008, paying out an additional €580,000 in grants.

### Climate change and energy

	Malta				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	2.7	3.2	3.2	No Kyoto target	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	2.3	2.7	2.6		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	na	na	na		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	7.1	7.9	7.8		10.4	6
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	637.5	717.7	693.4		495.7	15
- trend (% change compared to base year*)	+22.7%	+45.5%	+45.0%	No Kyoto target	-10.8%	25
- Projected 2010 emissions trend compared to base year*				No Kyoto target		
- with existing measures, Kyoto mechanisms and carbon sinks	+61.8%				-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	+61.8%				-16.3%	

\* No base year under the Kyoto protocol so figures reflect 1990 values.

	Malta				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	147.8 (2004)	144.9 (2006)	146.7 (2007)	130 by 2012-15 for EU-27	157.5	3
Electricity produced from renewable energy sources (% gross electricity consumption)	0%	0%	0%	5.0% (by 2010)	15.6%	27
Combined heat and power generation (% gross electricity generation)	0%	0%	0%	18% by 2010 for EU-15	10.9%	27
Energy consumption per capita (kg oil eq.)	2 004	2 372	2 207		3 694	3
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	223	265	240		202	15

Malta has no quantitative emission reduction commitments under the Kyoto Protocol, but as an EU Member State, it is bound by the obligations set out in the Emissions Trading Directive. Nevertheless, Malta's greenhouse gas emissions have risen by 45% compared to 1990 levels. According to the latest projections, Malta's emissions are likely to increase further and could reach 62% above 1990 emissions for the period 2008-2012. Following the adoption of the climate and energy package in December 2008, Malta agreed to a maximum increase of its greenhouse gas emissions of 5% by 2020 (compared to 2005 levels) in non-ETS sectors (e.g. buildings, road transport and farming). Furthermore, the Maltese government has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 10% (up from 0% in 2005).

In its corporate responsibility report for 2008, WasteServ Malta Ltd., a government-owned company responsible for waste management, indicated that it is in the process of registering the recovery and utilisation of landfill gases from the Ta' Zwejra site as the country's first Clean Development Mechanism (CDM) project. The extent to which the gas will be used to generate electricity (as opposed to just flaring it) depends on its methane content. The project will provide the impetus for the establishment of the necessary regulatory framework for CDMs on Malta and is considered as something of a pilot for future projects.

### Nature and biodiversity

	Malta					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		12.2%	12.1%	13.0%		17.0%	
Sufficiency of site designation under the Habitats Directive			92.6%	92.6%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	0.2%	0.1%			4.2%	27
Freight transport (billion tkm)	n.a.	n.a.	n.a.			EU total 2505.0	
- % road	100%	100%	100%			76.9%	
- % rail						17.4%	

\* The railway system is missing due to the geography of the country.

Malta has continued to increase the sufficiency of areas protected by the Habitats Directive. In October 2008, Malta's government announced that the country's Natura 2000 network would be extended with the designation of the 'Wied Moqbol to Il-Ponta ta' Benghisa' area (a



coastal region in the south-west of the country) as a Special Protection Area (SPA) to protect local seabirds. Protection of the Ta' Cenc site, an existing SPA, has been extended and also designated as a Special Area of Conservation.

A long-running issue is spring hunting, a practice that is still permitted in Malta but not permitted under the Birds Directive. The case was referred to the European Court of Justice at the start of 2008 and the Commission also applied for interim measures to stop the 2008 hunt. The interim measures were passed, preventing the 2008 spring hunt, but the future status of the spring hunt is still to be adjudicated.

## Environment and health

	Malta				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	n.a.	n.a.	n.a.	30.0	30.0	
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	n.a.	n.a.	n.a.		4 417	
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	24	12	12	9	7946	
- nitrogen oxides ( $\text{NO}_x$ )	9	9	9	8	11198	
- non-methane volatile organic compounds (NMVOCs)	3	4	4	12	9391	
- ammonia ( $\text{NH}_3$ )	1	1	1	3	4006	
	1990		Latest available year (2005)			
Water exploitation index	31.8%		20.9%		n.a.	21

The amount of water extracted from Malta's reserves of groundwater far exceeds sustainable levels and a substantial amount of this abstraction is known to occur illegally. In an effort to control and help protect these reserves, the government instituted the 'Notification of Groundwater Sources Regulations, 2008' in October 2008. The legislation requires that all boreholes, including private ones, be registered with the government. Registration of the boreholes is intended to be a first step towards fully regulating groundwater abstraction on the islands.

Also in 2008, the 'Management of Bathing Water Quality Regulations, 2008' came into effect. This legislation relates to the implementation of the Water Framework Directive and the transposition of EU Directives regarding the management of bathing water quality. Water quality must be monitored and regularly reported and limit values have been specified on a range of contaminants; non-compliance can result in the closure of a site.

## Natural resources and waste

	Malta				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	535	652	646		522	23
- % landfilled	90.3%	86.2%	87.2%		41.0%	27
- % incinerated	0%	0%	0%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	n.a.	n.a.	10.8%	55%-80% (by 2013)	56.5 %	27

The Thermal Treatment Facility at Marsa, an incineration plant, was inaugurated at the end of 2007 and replaces the old incinerators, which fell short of the EU's emissions standards. The new facility generates substantial amounts of heat as a by-product and funding is being sought to install a turbine and generator that will be used to generate enough electricity to make the plant self-sufficient. It seems likely that there will also be surplus electricity that can be fed back into the grid.

Razzett tal-Hbiberija, the site for a planned recreational park will also benefit from the power generated by Malta's first mechanical biological treatment (MBT) plant at Sant'Antnin. Much of the work has been completed and Sant'Antnin will treat biological waste and generate power in 2009. Two further MBT plants are planned.

Malta's Green Public Procurement action plan for 2007-09 has been finalised and is due to be submitted for approval. A second Workshop on Innovative Public Procurement took place in May 2008 to disseminate knowledge more widely across the public sector. The government is also trying to 'lead by example' by fitting some small-scale renewables installations to its buildings.

## Better regulation and implementation

	Malta			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	13	26	12	481

At the end of 2008, there were 12 infringements of European environmental legislation that concerned Malta.

At the end of 2007 the European Commission approved the trans-national 'Mediterranean' programme, of which Malta is a member. The programme will help to finance projects that will assist in the implementation of environmental protection measures and in the promotion of sustainable development practices.

## Use of market-based instruments

	Malta			EU-27 average
	2000	2005	2006	
Share of environmental taxes in total tax revenue	13.1%	9.9%	10.1%	6.4%

Malta's Energy Efficient Appliances Rebate was launched in 2007 to encourage the purchase of more energy-efficient domestic appliances. A 20% rebate was offered on the majority of appliances up to a maximum of €58 while for the most energy-efficient classes of refrigerators and freezers (and combinations) the maximum was €116. The scheme was originally intended to last for one year only, but its success led the government to vote in favour of extending the scheme to July 2008. A total of €580 000 was paid out in 2008.

## Environmental technologies

From the start of 2008, under the EU's Seventh Framework Programme for Research, Technological Development and Demonstration for the period 2007-13, a number of bodies in Malta are setting aside 0.25% of their budgets for research and innovation. These bodies include waste and utilities companies, the Department for Health and the Malta Transport Authority.

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. Malta reported that by April 2008 none of the authorisations had been issued or reconsidered and, where necessary, updated out of a total of 9 expected.

## Outlook for 2009

In its 2009 pre-Budget report, the Maltese government announced that it would earmark some €33m of structural funds for the period 2007-13 to assist in the take-up of renewable sources in the domestic and commercial sectors. It will undertake the necessary studies and carry out discussions to determine the best course of action to increase the penetration of wind power. The government is also proposing to invest in the construction of a 95 MW near-shore wind farm. Sikka I-Bajda, a reef 2 km off the Maltese coast has been identified as a possible site for the farm and a Dutch company has expressed an interest in developing project, which will cost an estimated €130m.

The Maltese government is seeking to increase application of the polluter pays principle and, to this end, will apply an eco-contribution tax to the sale of incandescent and fluorescent bulbs to encourage greater energy efficiency. Eco-contributions will also be levied on plastic bags and printed materials to reduce waste. Also, vehicle taxes will be more closely linked to carbon emissions in an effort to promote a modal shift towards public transport.

## THE NETHERLANDS

### Highlights in 2008

Climate change and energy were the major environmental themes that the Dutch government concentrated on in 2008. A number of climate-related fiscal policies were implemented, e.g. an increase in taxes on heavily polluting cars. Furthermore, a new sectoral agreement was reached between the energy sector, government and other stakeholders. A number of governmental programmes run from 2008 onwards and are geared towards shifting the economy to more low-carbon sources of energy and increasing energy efficiency, particularly in the building sector.

### Climate change and energy

	The Netherlands				EU-27 total	rank in EU- 27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	213.6	211.8	207.5	200.2 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	164.3	171.0	167.1		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	33.0	35.2	36.1		992.3	
					EU-27 average	rank in EU- 27
- per capita (tonnes CO <sub>2</sub> eq.)	13.5	13.0	12.7		10.4	19
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	511.1	474.5	449.7		495.7	7
- trend (% change compared to base year*)	+0.3%	-0.6%	-2.6%	-6.0% (by 2008-12)	-10.8%	15
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks	-8.4%			-6.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-8.4%				-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	The Netherlands				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	173.0	165.5 (2006)	163.6 (2007)	130 by 2012-15 for EU-27	157.5	16
Electricity produced from renewable energy sources (% gross electricity consumption)	3.9%	7.9% (2006)	7.6% (2007)	9.0% (by 2010)	15.6%	15
- from hydropower	0.1%	0.1%	0.1%		9.2%	
- from wind	0.8%	2.3%	2.8%		3.1%	
- from biomass	3.0%	5.5%	4.6%		3.0%	
Combined heat and power generation (% gross electricity generation)	37.6%	29.4%	29.9%	18% by 2010 for EU-15	10.9%	4
Energy consumption per capita (kg oil eq.)	4 837	5 054	4 928		3 694	23
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	197	199	188		202	9

In 2006, the Netherlands' greenhouse gas emissions were 3% lower than the base year level, compared to its Kyoto target of -6% for the period 2008-2012. According to 2008 projections, the Netherlands will achieve the target using existing measures, Kyoto mechanisms and carbon sinks.

Following the adoption of the climate and energy package in December 2008, the Netherlands agreed to reduce greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport and farming) by 16% by 2020 compared to 2005 levels. Furthermore, the Netherlands have committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 14% (up from 2% in 2005).

The government and the energy companies in the Netherlands signed a national sectoral agreement on energy in October 2008 in order to help reach the government's own goals of increasing energy savings to 2% per year, reducing CO<sub>2</sub> emissions by 30% by 2020 and increasing the share of renewable energy to 20% by 2020. Involving the business community is seen as crucial to realising these aims; moreover, the energy production companies will invest in sustainable energy production and carbon capture and storage, while Dutch network operators will make efforts to ensure that the electricity grid can accommodate a strong increase in locally-produced capacity. In this sector, agreements have been made concerning off-shore wind energy, on-shore wind energy, biomass, solar energy, carbon capture and storage, infrastructure and research.

The government has allocated a budget of € 438 million for energy transition activities for its current period of office, 2007-2011. According to government expectations, this money will in turn generate a total of € 3 to 4 billion in energy innovation investment. Approximately half of the money will be allocated to the seven major thematic areas dealt with by "EnergieTransitie", an energy think-tank of scientists, businesses and environmental organisations. This think tank, set up in 2004, will advise the government on how best to develop sustainable and efficient energy technologies.

## Nature and biodiversity

	The Netherlands					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		13.7%	13.9%	13.9%		17.0%	
Sufficiency of site designation under the Habitats Directive	100% (2004)		100%	100%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	1.6%	2.5%	2.5%			4.2%	19
Freight transport (billion tkm)	125.4	130.9	126.1			EU total 2505.0	
- % road	63.4%	63.6%	61.8%			76.9%	4 of 26
- % rail	3.7%	4.1%	5.0%			17.4%	21 of 26

The government has been stimulating nature conservation by providing subsidies for farmers and other private landowners to help them manage their businesses with a view to nature conservation. The government also purchases land as part of its *Ecologische Hoofdstructuur* (EHS), a network of areas in the Netherlands in which the caretaking of nature is prioritized in order to prevent the extinction of plant and animal species. The EHS functions are part of the larger European network of Natura 2000 protected areas. A dedicated investment fund is the main vehicle for achieving the EHS network by 2018. The Netherlands spends approximately € 1 billion annually on nature and landscape, mainly for the purchase and management of natural areas.

In order to bring about the extra boost needed to meet nature policy goals, the government has chosen to focus on five priorities within its new 2008-2011 framework policy programme on biodiversity. First of all, trade in timber, soya, palm oil and peat should be made more sustainable. Second, the government prioritizes the creation of markets and mechanisms to pay for biodiversity. A third priority is the formulation of policy for ecosystem services in national land use as well as policy for promotion of the utilization of biodiversity in agricultural production processes. Fourth, the government signals the need to create ecological networks within a broader regional ecological development. A final priority is the preservation and sustainable use of the biodiversity in seas and oceans.

Moreover, the government has outlined three mechanisms that should be used to support these priorities. The first mechanism deals with new collaborative efforts or coalitions which should be formed with various businesses, non-profit organisations and local governments. The second mechanism is the creation of adequate research and knowledge. Finally, proper communication supports the priorities by creating public support for the importance of biodiversity. After approving this policy programme in March 2008, the Dutch administration sent it to parliament.

At the end of 2007, the government decided to allocate € 5 million for climate "buffers". These will help absorb the consequences of climate change, such as extreme precipitation, longer droughts, warmer summers, etc. Restoring and renewing the natural landscape-forming processes creates a buffer against these consequences of climate change because nature and water are given more geographical space to move into. Five projects have been designated as being suitable climate buffers in five different provinces in the Netherlands.

## Environment and health

	The Netherlands				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	30.1	28.5	31.4	30.0	30.0	12 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	1 247	1 490	2 671	1 518	4 417	6 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	72	65	64	50	7946	
- nitrogen oxides ( $\text{NO}_x$ )	377	325	311	260	11198	
- non-methane volatile organic compounds (NMVOCs)	220	169	164	185	9391	
- ammonia ( $\text{NH}_3$ )	152	133	133	128	4006	
	1990		Latest available year (2001)			
Water exploitation index	8.7%		11.5%		n.a.	14

The Dutch national strategy for environment and health covers the period 2008-2012 and concerns various actions, including improving the quality of the indoor environment and identifying environmental health problems. The key points will be developed further during this period with concrete implementation plans.

The National Cooperation Programme on Air Quality is a new programme initiated in 2008 which aims to reach the European standards and norms for air quality. The funds available include € 555 million for measures such as filters for diesel engines, air filters for the poultry industry and studies into additional innovative measures. A further € 625 million will be spent in the coming years on measures to improve the major road networks in the Netherlands. One example is the flexible speed restrictions, where maximum speeds depend on traffic conditions. Another € 370 million will be spent on measures initiated by local governments in their Regional Cooperation Programmes, for example local initiatives to improve traffic flow and to stimulate the development of cleaner public transport.

## Natural resources and waste

	The Netherlands				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	616	622	630		522	22
- % landfilled	9.3%	2.4%	2.2%		41.0%	2
- % incinerated	30.8%	32.0%	31.7%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	59.0%	59.4%	59.7%	55%-80% (by 2008)	56.5 %	6

The Dutch Association of Municipalities, packing firms and the Ministry of Housing, Spatial Planning and the Environment have agreed on conditions for compensation for the separation of packaging waste. From January 2009, municipalities can (provided they meet certain conditions) apply for compensation for sorting packaging waste from the government waste management fund. This agreement will supplement the framework agreement on packaging and litter, which was agreed in 2007.

As part of the Plan for Green Public Procurement, the Dutch government has committed itself to ensuring that, by 2010, 75% of local government spending and 100% of national government spending will be sustainable. Earlier in 2008, the Ministry for Housing, Spatial Planning and the Environment set up criteria for buying sustainable timber products from certified wood schemes for government procurement in order to support the process.

### Better regulation and implementation

	The Netherlands			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	9	8	7	<i>481</i>

### Use of market-based instruments

	The Netherlands			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	9.7%	10.5%	10.4%	<i>6.4%</i>

The Netherlands made a number of fiscal reforms in 2008, including the introduction and revision of some environmental taxes. Since July 2008 each passenger pays €11.25 extra per ticket for flights inside the EU or for flights of less than 2500 km and € 45 extra for flights outside the EU.<sup>3</sup> In 2008, polluting cars became more expensive while fuel-efficient cars receive a tax discount. This means that the purchase tax is much more on heavily polluting cars than on fuel-efficient cars. Furthermore, the tax on diesel consumption also increased by 3 cents a litre. By introducing a tax on fine particles in April 2008, buying a diesel car also became more expensive.

### Environmental technologies

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. The Netherlands reported that by 1 October 2008 4065 authorisations had been issued of a total of 4537.

<sup>3</sup> As part of the economic stimulus plan from March 2009, the Dutch government intends to scrap these taxes on airplane tickets.



## Outlook for 2009

In 2009 the government is planning to use more tax measures to stimulate sustainable development. A major initiative is the plan to implement a road pricing scheme to further discourage the use of road transport. This plan was an ongoing project of previous governments but had not been finalised due to the need for the system to be technologically refined. The government is hoping to introduce such a scheme in the next five years.

Domestic plans concerning climate change and energy include tighter sustainability criteria for biofuels, initiatives to promote energy-efficient construction methods and a climate adaptation strategy with financial support. Furthermore, in 2009, approximately 165 wind turbines will be erected on-shore with a total capacity of at least 500 MegaWatts (MW). They should provide electricity for approximately 250,000 homes. Furthermore, carbon capture and storage will be a government priority in 2009 as two large-scale demonstration projects will be designated.

The Dutch government intends to apply a new nitrate action programme within the framework of the Nitrates Directive and to request a renewal of the derogation it was granted for the period 2006-2009, both with effect from 2010. The derogation request is for permission to allow farmers to apply higher amounts of manure than the amount fixed in the Nitrates Directive. Discussions with the European Commission on both matters started in 2008.

Finally, the government programme on spatial planning, *Mooi Nederland*, is one of the environmental priorities for the government and will be further implemented in 2009. The goal of the programme is to make citizens more satisfied with the quality of the Dutch landscape. The programme aims to achieve this goal by removing eyesores and by protecting special landscapes.

## POLAND

### Highlights in 2008

The transposition of EU environmental legislation into Polish law was a priority of the government in the field of environment policy in 2008. Given the 16 infringement cases concerning Poland (end December 2008), initiatives to reduce areas of non-compliance were another important field of activity of the government. The updated National Environment Policy for 2009-2012 and looking ahead to 2016 was adopted as a basic document outlining the main environment policy priorities and measures. As regards nature conservation and environmental impact assessments, a new law has been passed and a new General Directorate for Environmental Protection has been established.

Furthermore, in December 2008 Poland hosted the Conference of the Parties (COP-14) of the United Nations Framework Convention on Climate Change in Poznań. The Conference was successful in establishing a work programme for 2009, and moving international climate negotiations into full negotiating mode, which should lead to a final agreement at the end of 2009.

### Climate change and energy

	Poland				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	389.5	386.4	400.5	529.6 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	322.0	318.9	329.8		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	33.2	36.5	38.6		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	10.1	10.1	10.5		10.4	14
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	2 097.6	1 787.3	1 743.9		495.7	23
- trend (% change compared to base year*)	-30.9%	-31.4%	-28.9%	-6.0% (by 2008-12)	-10.8%	8
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks		-28.9%		-6.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-29.0%			-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1988 and for F-gases is 1995.

	Poland				EU-27 total	rank in EU-27
	2000 (2004)	2005 (2006)	2006 (2007)	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	153.0 (2004)	154.8 (2006)	152.6 (2007)	130 by 2012-15 for EU-27	157.5	8
Electricity produced from renewable energy sources (% gross electricity consumption)	1.7%	2.9%	3.5%	7.5% (by 2010)	15.6%	24
- from hydropower	1.5%	1.4%	1.5%		9.2%	
- from wind		0.2%	0.3%		3.1%	
- from biomass	0.2%	1.3%	1.7%		3.0%	
Combined heat and power generation (% gross electricity generation)	n.a.	16.8%	16.0%	18% by 2010 for EU-15	10.9%	9
Energy consumption per capita (kg oil eq.)	2 364	2 460	2 576		3 694	6
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	657	583	574		202	21

In 2006, Poland's greenhouse gas emissions were 29% lower than the base-year level, and much better than its Kyoto target of -6% for the period 2008-2012. Poland is projected to significantly overachieve its target. Following the adoption of the climate and energy package in December 2008, a 21% EU-wide greenhouse gas emissions reduction target for 2020 (compared to 2005 levels) was agreed for power plants and large industrial emitters i.e. the sectors covered by the EU Emissions Trading System (ETS). Furthermore, Poland agreed to a maximum increase in its greenhouse gas emissions of 14% by 2020 compared to 2005 levels in non-ETS sectors. The Polish government has also committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 15% (up from 7% in 2005).

The government submitted for public consultation the document 'Polish energy policy until 2030'. It identifies the following priorities: energy efficiency and safety based on own natural resources and supply diversification; increased share of energy production from renewable energy sources; development of competitive fuels and energy markets; and reduction of energy-related negative environmental impacts.

In September 2008, the government issued a report assessing the feasibility of using renewable energy sources in Poland until 2020. The study covered the technical, economic and market potential. The report revealed that the average share of energy production originating from renewable energy sources in 2020 is expected to amount approximately to 13%. Furthermore, for the development of renewable energy sources, the government launched a scheme to construct at least one agricultural biogas plant in each municipality.

In relation to COP-14, the government initiated the 'Partnership for Climate cooperation platform' which aimed to raise social awareness of climate change. Media, government and non-governmental organisations, and other institutions were encouraged to cooperate under this Partnership.

## Nature and biodiversity

	Poland					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		8.9%	16.5%	18.1%		17.0%	
Sufficiency of site designation under the Habitats Directive*		17.0%	17.0%	17.0%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	1.5%	1.8%			4.2%	22
Freight transport (billion tkm)	128	173.0	203.0			EU total 2505.0	
- % road	56.9%	74.2%	74.3%			76.9%	13 of 26
- % rail	42.2%	25.6%	25.5%			17.4%	7 of 26

\* Data for 2007 and 2008 and assessment are under revision.

In 2008 Poland made substantial progress on implementation of the Birds Directive by designating 17 new special protection areas for birds and extending some of the existing sites. However, Poland is still far from full implementation of the Habitats Directive. Although the core of the network has been established further designations are necessary. The total area of Natura 2000 sites accounts for 18.1% of Poland's total land area, so the government is continuing efforts toward further designation of Natura 2000 sites. The complete list of sites based on Habitats Directive is expected to be presented to the public and notified to the Commission in 2009. Many of the potential sites are still being examined.

In the third quarter of 2008 a new government body was established: the General Directorate for Environment Protection. The new institution will be involved in implementing new management schemes for Natura 2000 sites. In addition, this new institution will also be responsible for issuing the environmental permits required for infrastructure investments, in line with EU law.

## Environment and health

	Poland				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	42.9	39	44.7	30.0	30.0	21 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	3 605	4 039	4 663	2 493	4 417	14 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	1202	1222	1195	1397	7946	
- nitrogen oxides ( $\text{NO}_x$ )	838	811	890	879	11198	
- non-methane volatile organic compounds (NMVOCs)	802	885	916	800	9391	
- ammonia ( $\text{NH}_3$ )	322	326	287	468	4006	
	1990		Latest available year (2005)			
Water exploitation index	24.0%		18.3%		n.a.	19

The government is carrying out the ‘National Programme: Environment and Health – second phase - for the years 2008-2009’. The programme is aimed at implementing the ‘European Strategy on Environmental and Health activities’ and concentrates on children’s health.

In March 2008, the 2003-2007 Progress Report on the implementation of the programme for the removal of asbestos and asbestos-containing products in Poland was published. The Programme proved to be efficient with respect to dissemination of knowledge on the harmfulness of asbestos and helped to introduce the necessary laws and regulations, as well as to comply with EU law in this field. The main areas of concern in this area are: lack of a complete catalogue with locations and amounts of asbestos and asbestos-containing materials in Poland, and the shortage of asbestos-removal plants.

Furthermore, the government continued its efforts to facilitate implementation of the REACH system in Poland. Numerous conferences and seminars were held in 2007 and 2008 together with training sessions addressed particularly at small and medium sized enterprises, in order to raise awareness on the REACH Regulation and the new responsibilities resulting from its provisions.

In November 2008, the Polish government issued an official statement on GMOs. The government aims to ensure that Poland remains GMO-free and will try to mobilize the support of other Member States to make Europe GMO-free.

#### Natural resources and waste

	Poland				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	316	321	322		522	3
- % landfilled	98.1%	73.5%	74.2%		41.0%	16
- % incinerated	0%	0.3%	0.3%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	28.3%	29.5%	37.1%	55%-80% (by 2014)	56.5 %	21

Numerous EU directives have been transposed into the national legal system in recent years. While the latest data show some progress on waste management, this area has remained problematic in Poland.

In September 2008, the government presented a draft municipal waste management system for Poland. Each region will have its own municipal waste treatment installations, financed at regional level and funded by a special waste charge paid by property owners. The charge will cover not only waste disposal and neutralisation, but also waste transport. Municipal waste will continue to be transported by private carriers which operate on contracts with particular property owners.

### Better regulation and implementation

	Poland			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	10	13	16	<i>481</i>

In March 2008, the government adopted a 'Resolution on reduction of administrative burden in high priority regulation fields'. The objective of the government is to reduce administrative burden, including that arising from environmental regulation, land use planning and spatial management by 25% in 2010.

To increase the involvement of stakeholders in the process of preparation of legal acts and strategic documents, the government has prepared a 'Guide on public consultations at different stages of problem solving' in order to improve the quality of the policy-making process.

### Use of market-based instruments

	Poland			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	6.4%	8.1%	8.2%	<i>6.4%</i>

### Outlook for 2009

With a significant inflow of EU funds into Poland in 2009, the government intends to prepare a Regional Development Strategy for Poland. The role of the Strategy would be not only to ensure coherent and appropriate spending of EU funds, but also to become the main strategic document for Poland's future development so as to ensure balanced economic, social and environmental progress.

## PORTUGAL

### Highlights in 2008

Environment policy in Portugal in 2008 focused on two areas - energy and health - so most effort and resources were concentrated in these areas. Several key policy documents and laws were approved. They include the National Action Plan on Energy Efficiency, with the objective to save 20% of energy consumption by 2015. Also adopted were the Portuguese Environmental and Health Action Plan for the period 2008-2013 and the Coastal Action Plan for the period 2007–2013. And it is important to point out the approval of the new Public Procurement Code, which includes several environmental measures.

In the coming years, more efforts are needed from Portugal to address the issue of sustainable transport. The decisive input given by the Portuguese presidency of the EU council during 2007 gives reason for a positive outlook.

### Climate change and energy

	Portugal				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	81.7	87.4	83.2	76.4 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	59.4	64.3	59.9		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	19.4	19.9	20.1		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	8.0	8.3	7.9		10.4	7
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	668.3	684.5	642.5		495.7	14
- trend (% change compared to base year*)	+35.9%	+45.4%	+38.3%	+27.0% (by 2008-12)	-10.8%	24
- Projected 2010 emissions trend compared to base year*				+27.0% (by 2008-12)	-13.4%	
- with existing measures, Kyoto mechanisms and carbon sinks	+26.9%					
- with existing and additional measures, Kyoto mechanisms and carbon sinks	+22.7%					

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Portugal				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	168.0	144.0 (2006)	143.2 (2007)	130 by 2012-15 for EU-27	157.5	1
Electricity produced from renewable energy sources (% gross electricity consumption)	29.4%	29.4% (2006)	30.1% (2007)	39.0% (by 2010)	15.6%	4
- from hydropower	25.3%	20.2%	18.4%		9.2%	
- from wind	0.4%	5.4%	7.4%		3.1%	
- from biomass	3.5%	3.7%	3.9%		3.0%	
Combined heat and power generation (% gross electricity generation)	10.0%	11.6%	11.6%	18% (by 2010 for EU-15)	10.9%	13
Energy consumption per capita (kg oil eq.)	2 452	2 563	2 394		3 694	4
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	236	243	225		202	14

Climate change was a very important environmental policy issue in Portugal in 2008, particularly in relation to energy efficiency. The Portuguese government approved the National Plan on Energy Efficiency, which establishes as one of its objectives to save 20% of energy consumption by 2015. The National Plan includes an important set of energy efficiency measures in transport, services, industry and the public sector. It is complementary to the measures identified under the National Climate Change strategy, contributing to the achievement of national targets under the Kyoto Protocol.

In 2006, Portugal's greenhouse gas emissions were 38% higher than the base year level, which is well above its Kyoto target of +27% for the period 2008-2012. According to the latest data, Portugal is projected to achieve its target if additional measures are also applied.

In 2007 Portugal produced 30.1% of its electricity from renewable sources, mainly hydro power. The 2010 indicative target for Portugal – according to the 2001 Directive on the Promotion of Electricity produced from Renewable Energy Sources – is 39%. The government's own objective for 2010 is to reach 50% and 59% by 2020. The strategy for achieving these objectives is to increase renewable energy capacity substantially, in particular wind power and solar power capacity

The Strategy for achieving the national targets for blended fuels for transport was also approved. It aims at promoting the use of biofuels in the transport sector. A set of standards was defined, including a certification mechanism for the blending of biofuels, and technical rules that allow the blending of higher biofuel levels.

Following the adoption of the climate and energy package in December 2008, Portugal agreed to a maximum increase of its greenhouse gas emissions by 2020 by 1% compared to 2005 levels for non-ETS sectors (e.g. buildings, road transport and farming). Furthermore, Portugal has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 31% (up from 20% in 2005).



## Nature and biodiversity

	Portugal					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		20.3%	20.4%	20.3%		17.0%	
Sufficiency of site designation under the Habitats Directive	81.6%		87.7%	87.9%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	1.2%	7.3%	6.3%		7% * by 2008	4.2%	10
Freight transport (billion tkm)	29	47.3	48.8			EU total 2505.0	
- % road	92.5%	94.9%	94.7%			76.9%	22 of 26
- % rail	7.5%	5.1%	5.3%			17.4%	20 of 26

\* Indicative target according to the proposed action plan, which was not implemented.

The Portuguese government approved the Sectoral Plan on the Natura 2000 Network, which is developed on a macro scale for its mainland territory and defines the strategic orientations for the management of the territory covered by these areas in order to ensure their environmental conservation.

In June 2008, the Operational Programme on Territorial Valorisation was approved. This Operational Programme is part of the National Strategic Reference Framework 2007-2013. It focuses on solving the problems that Portugal still faces in terms of structure and spatial planning and on promoting the factors that improve the competitiveness of regions. It involves integrated action in the areas of natural resources and risk management, urban and rural development, transport, energy and climate change, competitiveness, and infrastructure and public services.

As part of Portuguese restructuring of the policy for the conservation of nature and biodiversity, the Assessment of the National Strategy for the Conservation of Nature and Biodiversity was under consultation in 2008. This process includes consultation with the National Heritage on issues including: scientific research and knowledge, the Nature Conservation Network, valorisation and conservation of protected areas and the Natura 2000 Network, cooperation between local and State administrations, etc.

## Environment and health

	Portugal				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	32.4	34.3	32	30.0	30.0	13 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	2 203	4 145	4 225	1 632	4 417	10 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	307	214	191	160	7946	
- nitrogen oxides ( $\text{NO}_x$ )	298	289	267	250	11198	
- non-methane volatile organic compounds (NMVOCs)	284	287	284	180	9391	
- ammonia ( $\text{NH}_3$ )	71	63	65	90	4006	
	1990		Latest available year (2005)			
Water exploitation index	9.9%		1.5%		n.a.	3

In June 2008 the Portuguese Environment and Health Action Plan for the period 2008-2013 was approved. The overall goals of this plan are: prevention, control and risk reduction strategies; integration of knowledge and innovation; and economic and social development. The Action Plan aims to systematize and integrate dispersed information; strengthen research and identify emerging issues; focus on prevention, control and reduction of risk; adapt consultation policy to each priority area; increase awareness, education and training for professionals and the general public; and reinforce coordination with international efforts on environment and health.

## Natural resources and waste

	Portugal				EU-27 average	rank in EU-27
	2000	2006	2007	target		
Municipal waste generated (kg per capita)	472	545	472		522	11
- % landfilled	71.6%	63.7%	62.9%		41.0%	15
- % incinerated	20.3%	20.3%	19.3%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	31.0%	44.3%	51.4%	55%-80% (by 2011)	56.5 %	14

As far as the waste framework is concerned, in March 2008, the specific regime on the management of waste generated by construction and demolition was approved by the Ministers Council. This regime is designed to implement measures to reduce, reuse and recycle waste.

In February 2008, the Coastal Action Plan 2007-2013 was approved. This Plan includes proposals for actions to be taken along the Portuguese coast for the period 2007-2013. It defines priorities for action at national level, and other measures at regional level.

## Better regulation and implementation

	Portugal			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	28	26	21	<i>481</i>

Portugal has a high (but decreasing) number of complaints compared to other Member States. Several NGO complaints relate to infrastructure with negative effects on the Natura 2000 network. The implementation of infrastructure projects inside or affecting the Natura 2000 network (dams, high-speed train, the new Lisbon airport, tourist resorts, and irrigation schemes) is one area of concern. In 2008, Portugal adopted a national plan for the construction of 10 new dams, which was contested by some NGOs.

## Use of market-based instruments

	Portugal			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	8.0%	8.7%	8.2%	<i>6.4%</i>

There was an important initiative in 2007-2008 related to market-based instruments: motor vehicle taxation was reformed. With effect from July 2007, the taxable base included a 70% component related to engine capacity and a 30% environmental component related to CO<sub>2</sub> emissions. Since January 2008, these percentages have been changed to a 40% component related to engine capacity and a 60% environmental component related to CO<sub>2</sub> emissions. The purpose of this initiative is to encourage consumers to purchase more energy-efficient vehicles.

## Environmental technologies

The most outstanding event in 2008 was the launching of the InovJovem Programme as a way to inspire young entrepreneurs and companies through the processes of training and internships. Its objective is to promote the training of young businesspeople, to give incentive to innovation, and to nurture growth and stability in employment. One of the training areas is environmental protection.

The ECOXXI project, coordinated by the European Blue Flag Association, aims to distinguish the good practices developed by Portuguese municipalities, towards sustainability at local levels, particularly in matters relating to environmental quality and education for sustainability. The ECOXXI project is inspired by the Agenda 21 objectives, through a system of 23 indicators and several sub-indicators, assessment of the sustainability aspects of resources management, information for households on energy, mobility, forests, waste, nature conservation and biodiversity, tourism, air and water quality, agriculture and employment.

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. Portugal reported that by April 2008, 350 authorisations had been issued or reconsidered and, where necessary, updated out of a total of 632.

## **Outlook for 2009**

The Strategic Environmental Assessment of the ‘Strategic Plan on Industrial Wastes’ is expected to be approved in 2009 after review of the Plan.

As regards water resources, implementation of the new institutional model with the consolidation of the National Authority of Water and the five Hydrographical Region administrations will be finalised.

## ROMANIA

### Highlights in 2008

Since Romania joined the EU in 2007, it has been busy transposing EC Directives. Efforts to ensure timely and effective transposition should continue together with the implementation of key obligations under various Directives.

In the summer of 2008, Romania was seriously affected by floods and thousands of houses were damaged and several people killed. In response, the government adopted an action plan with the aim of preventing such natural disasters in the future. Further work is needed on developing a long-term flood prevention strategy (currently under preparation), including allocation of responsibilities among the various stakeholders involved. In any case, Romania, along with all Member States, before 26 November 2009 will have to transpose, an EC law on the assessment and management of flood risks, which entered into force at the end of 2007, and gradually implement its requirements.

The National Sustainable Development Strategy was finalised in 2008 and indicators will be further developed to monitor implementation of the strategy over the period 2013-2030. In October 2008, the National Agency for Protected Natural Areas was legally established as a public institution, and its key mandate will be to administer protected areas at national level. This new agency was established to ensure smooth implementation of the management plans for each of the areas designated for protection. It is expected to become operational in the spring of 2009. In December 2008, together with the change of government, there have been institutional changes too: the Ministry of Environment and Sustainable Development has now become the Ministry of Environment. The responsibilities of the new Ministry seem to have remained the same.

### Climate change and energy

	Romania				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	138.7	152.0	156.7	255.9 (by 2008-12)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	94.9	102.0	105.4		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	9.4	11.9	12.4		992.3	
Total Kyoto GHG emissions					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	6.2	7.0	7.2		10.4	3
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	3 438.2	2 850.3	2 716.5		495.7	26
- trend (% change compared to base year*)	-50.1%	-46.4%	-43.7%	-8.0% (by 2008-12)	-10.8%	5
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks	-31.4%			-8.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-35.3%				-16.3%	

	Romania				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	na	Na (2006)	153.7 (2007)	130 by 2012-15 for EU-27	157.5	10
Electricity produced from renewable energy sources (% gross electricity consumption)	28.8%	(2006) 31.4%	(2007) 26.9%	33.0% (by 2010)	15.6%	6
- from hydropower	28.8%	31.4%	26.8%		9.2%	
- from biomass			0.1%		3.0%	
Combined heat and power generation (% gross electricity generation)	n.a.	26.2%	18.0%	18% by 2010 for EU-15	10.9%	7
Energy consumption per capita (kg oil eq.)	1 654	1 814	1 894		3 694	1
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	1 460	1 167	1 128		202	26

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1989 and for F-gases is 1989.

In 2006, Romania's greenhouse gas emissions were 44% lower than the base year level, achieving more than the targeted reduction of -8% for the period 2008-2012. Romania is projected to significantly overachieve its target and will meet the Kyoto Protocol's commitments even if it enjoys a strong economic development.

Following the adoption of the climate and energy package in December 2008, a 21% EU-wide greenhouse gas emissions reduction target for 2020 (compared to 2005 levels) was agreed for power plants and large industrial emitters i.e. the sectors covered by the EU Emissions Trading System (ETS). Romania also agreed to a maximum increase of its greenhouse gas emissions by 2020 by 19% compared to 2005 levels in non-ETS sectors (e.g. buildings, road transport and farming). Furthermore, Romania has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 24% (up from 18% in 2005).

Romania has the lowest energy consumption per capita in EU but one of the highest energy intensities. At the end of 2007 was adopted the Energy Strategy of Romania for 2007-2020, which aims to increase energy efficiency e.g. through promoting end-use energy efficiency and cogeneration and completing liberalisation of the electricity market.

By the end of 2008, 82% of all the actions in the National Action Plan on Climate Change (2005-2007) had been implemented. In order to ensure continuity, the uncompleted actions will be integrated into the new National Strategy on Climate Change which will be adopted in 2009.

## Nature and biodiversity

	Romania					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		na	13.2%	20.5%		17.0%	
Sufficiency of site designation under the Habitats Directive				81.8%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	0.8%	0.9%			4.2%	25
Freight transport (billion tkm)	33.3	79.9	82.1			EU total 2505.0	
- % road	42.9%	71.7%	72.5%			76.9%	11 of 26
- % rail	49.1%	18.1%	17.5%			17.4%	14 of 26

In April 2008, a Presidential Commission was established for "Listed Buildings, and Historical and Natural Sites". It is to develop a comprehensive long-term strategy for the protection and promotion of cultural heritage, including buildings, and historical and natural sites. A coherent national approach is thus envisaged, in accordance with the relevant EU regulation and policies.

The European Commission took legal action against Romania in September 2008 for infringing biodiversity legislation. The European Commission found that despite some progress, Romania is still failing to designate sufficient protected areas for migratory and wild birds, and is therefore violating the EU's Directive on the conservation of wild birds.

## Environment and health

	Romania				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	53 (2004)	46.2	52.2	30.0	30.0	22 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	n.a.	4 500	2 054	n.a.	4 417	2 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	439	831	863	918	7946	
- nitrogen oxides ( $\text{NO}_x$ )	305	323	326	437	11198	
- non-methane volatile organic compounds (NMVOCs)	265	332	353	523	9391	
- ammonia ( $\text{NH}_3$ )	206	204	199	210	4006	
	1990		Latest available year (2005)			
Water exploitation index	41.4%		12.5%		n.a.	3

Romania's capital city, Bucharest, intends to implement a noise-reduction action plan over the next five years. The acoustic map of the city was completed in 2007 and a draft noise-reduction action plan was finalised in June 2008. After a public debate it will be submitted for approval to the Bucharest city council.

The Programme for Renewal of the National Car Fleet, addressed to the general public, gives financial support to replace cars older than 10 years with new cars. The scheme continued in 2008 and will further continue in 2009 as well. On water management and the obligation to implement the Water Framework Directive and the directives on drinking water quality, the Integrated National Water Monitoring System was reorganised along with the water quality evaluation system.

In June 2008, a government decision was drafted to apply the European Regulation on Persistent Organic Pollutants. Furthermore, the Code for Good Practice in Refrigeration was drafted in 2008 and is to be published in 2009. The Code will support improved standards of installation/service in the sector and provide legal requirements for design and maintenance procedures, objectives for environmental protection and health and safety, and other operational requirements.

### Natural resources and waste

	Romania				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	363	388	379		522	5
- % landfilled	83.2%	75.0%	74.9%		41.0%	18
- % incinerated	0	0	0		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	n.a.	23.0%	28.6%	55%-80% (by 2013)	56.5 %	25

In the summer of 2008, Romania suffered from serious floods due to heavy rains. In total, there were more than 10 000 people evacuated, 13 000 houses, 1400 bridges and 20 000 hectares of farmland were damaged, and several people died. In response, an action plan (2007-2009) for protection against floods was prepared, including identification of the necessary financial resources to secure its implementation. In addition, a long-term strategy for floods prevention is under preparation, and on this basis, priority projects will be selected and co-financed from structural funds. Romania also received support from the Civil Protection Mechanism, which is one of the main European instruments helping with operational response to major disasters.

A Government decree on packaging and waste derived from packaging is under preparation. The new legislative provisions aim to create a functional system for managing packaging and packaging waste.

### Better regulation and implementation

	Romania			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	0	3	7	481

Bearing in mind that Romania joined the EU in 2007, the number of infringements is rather large, especially in the nature sector.



## Use of market-based instruments

	Romania			<i>EU-27 average</i>
	2002	2005	2006	
Share of environmental taxes in total tax revenue	7.6%	7.2%	6.7%	6.4%

In July 2008, a pollution-based tax on cars was introduced to replace the former tax on the first registration of cars (effective from 2007 until July 2008). These amendments brought a fall in the number of new cars and boosted the import of second-hand cars. Therefore, the government decided via an emergency ordinance in December 2008 to triple the tax on second-hand cars, and to suspend it for new cars with Euro 4 engines of up to 2 000 cm<sup>3</sup>. An infringement procedure was launched by the European Commission in 2008 with respect to the legality of this tax. Current discussions show that it is likely that the tax will be soon changed once again, which makes the legislative framework rather instable.

In 2008, a grant programme was approved by the government for companies investing more than €50 million in the production of electricity from renewable sources. The objective of the scheme is to promote sustainable regional development by decreasing electricity consumption and reducing pollution generated by complex burning installations. This scheme is open to all industries but targets the sector producing electricity and heat.

## Environmental technologies

The Ministry of Environment and Sustainable Development (MESD) has developed a roadmap for implementation of the Environmental Technologies Action Plan (ETAP), which is currently under approval. It includes a series of actions aimed at boosting eco-innovation and developing the market for environmental technologies in Romania.

The public funds allocated for Research and Development increased to almost 0.75% of GDP in 2008. This percentage will increase to almost 0.9% of GDP in 2009, and should reach 1% of GDP in 2010. Within this framework, a LIFE+ project was approved by the European Commission which aims to test the Industrial Symbiosis concept in Romania, and benefits from the expertise of a company which implemented the UK's National Industrial Symbiosis Programme.

## **Outlook for 2009**

In 2007, the Ministry of Environment and Sustainable Development initiated a process of revising and updating the National Strategy on Climate Change and the National Action Plan. The revised strategy will cover the period 2008-12 and looks ahead to 2020. It is expected to be launched in 2009.

For the coming year, the Ministry of Agriculture and Rural Development will maintain the same policy measures regarding sensitive farming areas, ecological farming, and environmental pressures as for 2007 and 2008. Focus will be put on launching projects under the umbrella of the National Plan for Rural Development, which is financed by the European Agricultural Fund for Rural Development.

A working group has been established under the coordination of the Ministry of Environment to draft an action plan on Green Public Procurement, which is expected to be adopted in 2009.

The Romanian government is planning measures for 2009 on organic farming, including financial incentives, technical assistance and awareness campaigns on the benefits of organic agriculture.

From January 2009, a green tax on plastic bags has been introduced (0.2 lei (€5 cent) for each plastic bag). The tax value is indicated on the product packaging in order to ensure that end-users have the appropriate information for an environmentally conscious decision.

## SLOVAKIA

### Highlights in 2008

Slovakia considers climate change as one of its environmental priorities and aims to increase the share of energy from renewable energy sources in its total energy consumption from 16% in 2006 to 19% by 2010. In line with this, the government approved the Action Plan for Biomass Use for the period 2008-2013 and a proposal for increased use of biofuels. However, the implementation of programmes and actions in this area are lagging behind.

Pressure has further intensified on the development of tourism, e.g. building ski-lifts, ski-slopes and hotels which affect environmentally protected areas. This is especially true for the Tatra National Park where tourist development is a major environmental issue.

### Climate change and energy

	Slovakia				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions	48.5	49.3	48.9	66.2	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.				(by 2008-2012)		
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	38.3	38.0	37.2		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	4.3	6.4	6.0		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	9.0	9.2	9.1		10.4	9
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	2 201.0	1 761.4	1 609.3		495.7	22
- trend (% change compared to base year*)	-32.7%	-31.5%	-32.1%	-8.0% (by 2008-12)	-10.8%	6
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks	-18.4%			-8.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-21.6%				-16.3%	

\* Base year is 1990.

	Slovakia				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	na	151.0 (2006)	151.6 (2007)	130 by 2012-15 for EU-27	157.5	5
Electricity produced from renewable energy sources (% gross electricity consumption)	16.9%	16.7%	16.6%	31.0% (by 2010)	15.6%	10
- from hydropower	16.9%	15.1%	14.9%		9.2%	
- from biomass		1.5%	1.7%		3.0%	
Combined heat and power generation (% gross electricity generation)	n.a.	15.3%	27.6%	18% by 2010 for EU-15	10.9%	5
Energy consumption per capita (kg oil eq.)	3 257	3 538	3 493		3 694	13
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	994	848	772		202	22

In 2006, Slovakia's greenhouse gas emissions were 32% lower than the base year level, compared to its Kyoto target of -8% for the period 2008-2012. According to the latest data, Slovakia is projected to significantly overachieve its target. Following the adoption of the climate and energy package in December 2008, Slovakia agreed not to increase its greenhouse gas emissions in non-ETS sectors (e.g. buildings, road transport and farming) by more than 13% by 2020 compared to 2005 levels. Furthermore, Slovakia has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 14% (up from 7% in 2005).

Slovakia's focus on climate and energy policy development resulted in a mixed performance during 2008. On the one hand, several policies were introduced to address climate change. On the other hand, implementation of these policies is progressing slowly and energy safety concerns led to the approval of a new coal-fired power plant, which will increase total greenhouse gas emissions considerably.

Slovakia prepared a report which analysed the European climate and energy package from the country's point of view. The report recommends intensified use of renewable energy sources as an efficient way to reduce greenhouse gas emissions. In line with this, the government approved in February 2008 the Action Plan for Biomass Use for the period 2008-2013 and in April 2008 a recommendation on increased use of biofuels.

## Nature and biodiversity

	Slovakia					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		28.9%	28.9%	28.9%		17.0%	
Sufficiency of site designation under the Habitats Directive			72.3%	72.3%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	6.4%	6.5%		5% *	4.2%	8
Freight transport (billion tkm)	27	32.3	37.7			EU total 2505.0	
- % road	53.0%	68.6%	72.1%			76.9%	10 of 26
- % rail	41.7%	30.9%	25.3%			17.4%	9 of 26

\* Indicative target according to the action plan not yet implemented.

In April 2008 the government approved a proposal for re-evaluating the Natura 2000 system – protected bird areas and areas of European importance. In 2008, 16 Special Protection Areas were officially designated by a Ministerial Decree.

## Environment and health

	Slovakia				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	28.5	33.2	28.3	30.0	30.0	10 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	6 735	7 423	6 838	4 424	4 417	21 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	127	89	88	110	7946	
- nitrogen oxides ( $\text{NO}_x$ )	109	98	87	130	11198	
- non-methane volatile organic compounds (NMVOCs)	78	83	78	140	9391	
- ammonia ( $\text{NH}_3$ )	30	27	27	39	4006	
	1990		Latest available year (2003)			
Water exploitation index	2.6%		1.3%		n.a.	2

There was active national policy-making on environment and health in 2008, with measures ranging from a general progress report on Slovakia's Action Plan on Environment and Health, to improved measures against environmental damage, and better protection against pollutants and chemicals.

In December 2007 the Minister of Health presented a national progress report on implementation of its 3rd Environment and Health Action Plan. The report describes the implementation of new laws, amendments to existing ones, and the establishment of working groups, and mentions preparation of the National Child Care Programme for the period 2008-2015, which is related to the European programme.

Following the Law on the Prevention and Remedy of Environmental Damage, in force since September 2007, Slovakia is currently building a web-based information system in this area. The system will collect and provide up-to-date information for professionals and the general public on environmental damage and threats, responsible servicing companies, preventive and remedial measures, etc. The purpose of the system is to enhance prevention and help remedy environmental damage. Similarly, Slovakia has established a National Emissions Information System, which aims to establish systematic and transparent procedures for the collection, verification and transfer of emissions data to the central database.

The president of Slovakia signed the acts of accession to the European Pollutant Release Transfer Register (E-PRTR) in March 2008. This was followed by amending the Law on the Collection, Preservation and Dissemination of Environmental Information (through which the Aarhus Agreement had been transposed into Slovak legislation in 2004). The amendment focuses on the harmonisation of Slovak legislation with E-PRTR rules, partly by adopting a new list of pollutants and key terminology.

Since November 2008, there has been a new law that changes and complements the 2001 Law on Chemical Substances and Chemical Preparations. The new law regulates the competencies of state administration bodies in line with changes to European chemical legislation, including REACH.

### Natural resources and waste

	Slovakia				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	254	301	309		522	2
- % landfilled	77.2%	77.7%	77.7%		41.0%	20
- % incinerated	15.4%	11.6%	10.7%		19.9%	
	2003	2005	2006			
Recycling of packaging waste (as % total packaging waste)	36.3%	29.8%	36.3%	55%-80% (by 2012)	56.5 %	23

Waste management remains a problem in Slovakia. In 2008, an amendment to the Law on Waste and the new Law on Packaging Waste were being prepared. The amendment to the Waste Law is expected to be approved by the government in 2009, and transposes, among other things, the Directive on batteries. The new Law on Packaging Waste is also expected to be approved in 2009. It allows introduction of a deposit system for PET bottles in order to reduce the environmental impact of uncollected plastic bottles. Slovakia has one of the lowest levels of recycling in the EU, with PET bottles representing about 18 thousand tonnes of waste. In addition, the government has approved the construction of a landfill site in Pezinok in south-western Slovakia despite protests from inhabitants of the city.

## Better regulation and implementation

	Slovakia			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	3	8	15	481

In late 2007, members of Parliament adopted an amendment to the Law on Nature Protection and Environmental Conservation which would limit participation of NGOs and the public in the policy process. The amendment led to discussions, which continued in 2008. In the meantime, the European Commission has launched legal action against Slovakia on this case. Another infringement case was opened in 2007 concerning the failure to officially designate about half of the 38 Natura 2000 Special Protection Areas which were agreed by the Slovak government in July 2003.

## Use of market-based instruments

	Slovakia			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	6.5%	8.1%	8.3%	6.4%

## Outlook for 2009

The government will continue to work on its long-term environmental priorities: implementation of the European Climate and Energy Package, the National Reform Programme, and the Sustainable Development Strategy. In addition, the third National Environmental Action Plan and the implementation and absorption of the EU Structural Funds will require attention during 2009.

Environmental burdens from the past, i.e. contaminated industrial land and old agricultural supplies of pesticides, remain an important issue in Slovakia. The Framework Directive on Land Protection, which deals with this issue, is currently under preparation and is expected to be approved in 2009.

A revision of the Law on Environmental Impact Assessment (EIA) is expected to be adopted in 2009. Changes concern: assessment of cross-border impacts; informing the public after the decision on an agreement is made; setting limits on proposed activities and changes in activities. Additionally, changes regarding access of the public and NGOs to the decision-making process under the EIA Directive are still under consideration by the Slovak authorities, following European Commission notification.

## SLOVENIA

### Highlights in 2008

With the Climate and Energy Package negotiations and preparations for the Biodiversity and Biosafety COPs in June 2008 as major environmental priorities, Slovenia was the first of the new Member States<sup>4</sup> to hold the EU Presidency during the first half of 2008. Slovenia also succeeded in reaching second reading agreements on the Waste Framework Directive and inclusion of aviation in the EU emissions trading system.

At home, Slovenia has made significant efforts to frame environment policy initiatives related to EU cohesion policy. New operational programmes were developed and adopted in 2008: the Operational Programme for the Natura 2000 site management programme, the Operational Programme for waste elimination designed to reduce the amount of biodegradable waste, and the Operational Programme to use woody biomass for energy purposes. In the coming years, Slovenia needs to speed up efforts on climate change as the country is still far from achieving its commitments in this area. Most recent greenhouse gas emission data show a continued increase, well above its target of -8% for the period 2008-2012.

### Climate change and energy

	Slovenia				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	18.9	20.5	20.6	18.7 (by 2008-2012)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	15.1	16.5	16.6		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	3.8	4.6	4.8		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	9.5	10.2	10.3		10.4	13
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	882.8	797.9	758.0		495.7	17
- trend (% change compared to base year*)	-7.0%	+0.6%	+1.2%	-8.0% (by 2008-12)	-10.8%	16
- Projected 2010 emissions trend compared to base year*				-8.0% (by 2008-12)		
- with existing measures, Kyoto mechanisms and carbon sinks		-4.5%			-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks		-13.2%			-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1986 and for F-gases is 1995.

<sup>4</sup> i.e. the Member States that have joined the EU since 2004.



	Slovenia				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	151.6 (2004)	154.2 (2006)	155.2 (2007)	130 by 2012-15 for EU-27	157.5	12
Electricity produced from renewable energy sources (% gross electricity consumption)	31.7%	24.4%	22.1%	33.6% (by 2010)	15.6%	8
- from hydropower	31.1%	23.7%	21.4%		9.2%	
- from biomass	0.6%	0.7%	0.7%		3.0%	
Combined heat and power generation (% gross electricity generation)	n.a.	7.3%	7.4%	18% by 2010 for EU-15	10.9%	19
Energy consumption per capita (kg oil eq.)	3 231	3 649	3 658		3 694	15
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	331	314	299		202	18

In 2006, Slovenia's greenhouse gas emissions were 1% higher than the base-year level, well above its Kyoto target of -8% for the period 2008-2012. Slovenia projects that it will only meet its Kyoto commitment if it also accounts for existing and planned additional policies and measures, the use of Kyoto mechanisms and carbon sinks. Slovenia is the only new Member State that intends to invest in Kyoto mechanisms.

Following adoption of the climate and energy package in December 2008, Slovenia agreed to a maximum increase in its greenhouse gas emissions of 4% by 2020 compared to 2005 levels in non-ETS sectors (e.g. buildings, road transport and farming). Furthermore, Slovenia has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 25% (up from 16% in 2005).

While Slovenia has a relatively large share of renewable energy sources in its gross electricity consumption (22.1 % in 2007), this share is well below its 2010 target of 33.6%. Throughout 2008, an Eco-fund supported improving the energy efficiency of buildings and promoting the use of renewable energy sources through measures such as the building of new low-energy and passive apartments and the installation of solar collectors.

In June 2008, the government approved a strategy on the adaptation of Slovenian agriculture and forestry to climate change. This is the first strategy that aims to lay down climate change adaptation guidelines for agriculture and forestry.

In January 2008, the National Energy Efficiency Action Plan 2008–2016 was adopted to comply with the Directive on energy end-use efficiency and energy services. Based on targets established in the Action Plan, Slovenia aims to achieve cumulative savings of at least 9% in relation to the starting point for final energy consumption over the 2008–2016 period.

## Nature and biodiversity

	Slovenia					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		35.5%	35.5%	35.5%		17.0%	
Sufficiency of site designation under the Habitats Directive			72.6%	72.6%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	n.a.	5.5%	6.0%		20% * by 2015	4.2%	11
Freight transport (billion tkm)	9.2	15.5	17.3			EU total 2505.0	
- % road	70.0%	78.2%	79.2%			76.9%	16 of 26
- % rail	30.0%	21.8%	20.8%			17.4%	13 of 26

\* Indicative target according to the Plan of Long-term Development of organic farming in Slovenia.

The Natura 2000 Operational Programme sets objectives for each Natura 2000 site in relation to agri-environmental measures, farmland species and habitat types. Measures to maintain biodiversity are included in the Rural Development Programme for 2007–2013. The rural development programme identifies comprehensive agri-environmental measures for endangered habitats along with six special Natura 2000 measures.

Activities such as illegal tree cutting and construction indicated that the Triglav National Park Act had become ineffective and was no longer capable of providing adequate tools to protect natural assets. In April 2008, the government approved amendments to the Act providing a legal framework for operation of the only national park in Slovenia. The amendments were needed to harmonise the Act with current Slovenian and Natura 2000 legislation.

In June 2008, Slovenia organised the first meeting of Adriatic coastal states (Italy, Slovenia and Croatia) to prepare an Adriatic sub-regional strategy in accordance with the EU Marine Strategy Directive, and to implement Article 5 of the directive on managing coastal and marine environments so as to reach good quality status by 2020. The major outcome of the meeting was that a special sub-regional round table of Adriatic states needs to be formed. The goal of the round table would be to find coordinated solutions for protection of the Adriatic Sea, which are acceptable to all the countries involved.

## Environment and health

	Slovenia				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	30.9 (2002)	36.4	33.3	30.0	30.0	14 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	6 806	6 017	6 461	3 831	4 417	20 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	99	41	18	27	7946	
- nitrogen oxides ( $\text{NO}_x$ )	49	47	47	45	11198	
- non-methane volatile organic compounds (NMVOCs)	51	42	41	40	9391	
- ammonia ( $\text{NH}_3$ )	20	18	19	20	4006	
	1990		Latest available year (2002)			
Water exploitation index	1.4%		2.8%		n.a.	7

Although there was a general improvement in  $\text{SO}_2$  concentrations in 2007,  $\text{PM}_{10}$  limit values were significantly exceeded in particular in urban areas but in other areas too. Air quality management plans have to be prepared or adopted at different levels.

The government designated two areas – Ljubljana and Rižana – as protected areas for drinking water supply, and water management in these areas is based on the Water Framework Directive standards. The provisional water management plans for the "Adriatic Sea" and "Danube" basins will be prepared in 2009.

In February 2008, an action plan was approved by the government to implement the Global Plan of Action of the Strategic Approach to International Chemicals Management (SAICM). SAICM is a policy framework that promotes chemical safety around the world. The aim is to minimise adverse effects from the production and use of chemicals on human health and the environment by 2020.

In the city of Velenje, starting in 2008, public transport was made free of charge for everyone. In another city, Nova Gorica a similar system has been operating since 2006. The major reason for introducing these systems was to reduce the high levels of urban pollution, especially air pollution.

## Natural resources and waste

	Slovenia				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	513	432	441		522	7
- % landfilled	78.4%	83.8%	77.6%		41.0%	19
- % incinerated	0%	0.7%	0%		19.9%	
	2004	2005	2006			
Recycling of packaging waste (as % total packaging waste)	34.3%	45.3%	40.0%	55%-80% (by 2012)	56.5 %	20

In March 2008, the Operational Programme on waste elimination was adopted with the aim of reducing the amount of biodegradable waste. The main goal of the Programme is to maximize the fraction of waste that is recycled, reused and collected separately at source, and ensure the efficient treatment of the remaining fractions (mechanical, biological and thermal).

In May 2008, the government approved two acts: the Act Amending the Fund for Financing the Decommissioning of the Krško Nuclear Power Plant, and the Disposal of Radioactive Waste from the Krško NPP Act. The amendment will improve the efficiency and monitoring work of the Slovenian Agency for Radioactive Waste Management, the public utility service provider.

In March 2008, an interministerial working group on green public procurement was established to prepare a national action plan on green public procurement.

## Better regulation and implementation

	Slovenia			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	5	7	8	481

In the field of waste management and air pollution, the number of complaints and non-conformity cases has increased. Also, more effort needs to be made on effective compliance with and implementation of EC directives and decisions. Transposition is generally accomplished on time.

## Use of market-based instruments

	Slovenia			EU-27 average
	2000	2005	2006	
Share of environmental taxes in total tax revenue	7.9%	8.3%	7.8%	6.4%

In October 2008, the government approved the Implementation Report on the Reform Programme for Achieving the Lisbon Strategy Goals in Slovenia in 2008. The new programme indicates that the taxation system will be amended based on the principles of green taxation and that the procurement system will be upgraded to use a simpler procedure and to include an improved procurement portal. At the same time, special attention will be paid to green procurement and to the encouragement of public-private partnerships.

## **Outlook for 2009**

In order to improve energy efficiency, energy-conscious investment will be promoted through an Environmental Fund, energy certificates will be issued for buildings, and green public procurement procedures will be continued for vehicles and buildings with low energy consumption.

The Operational Programmes, particularly the 2007–2013 Natura 2000 Operational Programme, will be implemented so as to achieve the targets set for areas covered by agri-environmental measures. It will improve sectoral management plans, so as to meet the targets set for nature protection and set up the planned monitoring system.

Measures under the Operational Programme on waste elimination aimed at reducing the amount of biodegradable waste will also be continued. It will maximize the fraction of waste that is recycled, reused and collected separately at source, and ensure efficient treatment of the remaining fractions (mechanical, biological and thermal).

Various environment policy initiatives and activities related to climate change are planned for 2009: transposition of the climate and energy package, amendments to the action programme to comply with Kyoto protocol obligations up to 2012, the establishment of a government office for climate change, and preparation of a climate change act and programme.

## SPAIN

### Highlights in 2008

Spanish environment policy in 2008 had a strong focus on climate change, energy efficiency and waste. Most initiatives launched and most resources spent cover these three areas. Further, a Green Public Procurement Plan, was approved in early 2008. It aims to achieve the target agreed in the EU Sustainable Development Strategy, namely to reach by 2010 average green public procurement at the level of the best performing Member States. In April 2008, the Ministry of Environment was merged with the Ministry of Agriculture, Fisheries and Food, creating the new Ministry of Environment and Rural and Marine Environment. The new Ministry has to propose and implement policies related to climate change, protection of natural heritage, biodiversity, sea, water, rural development, and agriculture.

Spain will need to make further efforts to complete its planned infrastructure on waste and water treatment. It also needs to speed up efforts on climate change as Spain has a long way to go to achieve its commitments in this area.

### Climate change and energy

	Spain				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions - million tonnes (Mt) CO <sub>2</sub> eq.	385.0	440.9	433.3	333.3 (by 2008-12)	5142.8	
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	289.5	347.6	338.3		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	87.0	105.6	108.6		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	9.6	10.2	9.9		10.4	12
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	610.8	595.7	563.6		495.7	13
- trend (% change compared to base year*)	+32.9%	+52.1%	+49.5%	+15.0% (by 2008-12)	-10.8%	26
- Projected 2010 emissions trend compared to base year*				+15.0% (by 2008-12)		
- with existing measures, Kyoto mechanisms and carbon sinks	+30.1%				-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	+20.5%				-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Spain				EU-27 aver	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	158.1	154.5 (2006)	152.2 (2007)	130 by 2012-15 for EU-27	157.5	7
Electricity produced from renewable energy sources (% gross electricity consumption)	15.7%	17.3% (2006)	20.0% (2007)	29.4% (by 2010)	15.6%	9
- from hydropower	12.8%	8.7%	9.3%		9.2%	
- from wind	2.1%	7.9%	9.2%		3.1%	
- from biomass	0.8%	1.0%	1.2%		3.0%	
Combined heat and power generation (% gross electricity generation)	9.2%	7.8%	7.2%	18% by 2010 for EU-15	10.9%	20
Energy consumption per capita (kg oil eq.)	3 071	3 332	3 261		3 694	11
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	222	221	211		202	12

Spain is far from achieving its Kyoto target. In 2006, Spain's greenhouse gas emissions were 49.5% higher than the base year level, far above its Kyoto target of +15% for the period 2008-2012. According to the latest data, Spain is projected not to achieve its target even using additional measures.

In December 2008, Spain agreed to a 2020 greenhouse gas emission reduction target of 10% compared to 2005 levels for non-ETS sectors (e.g. buildings, road transport and farming). Furthermore, Spain has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 20% (up from 9% in 2005).

At the end of 2007, the Spanish Climate Change and Clean Energy Strategy – Horizon 2007-2012-2020 was approved. This Strategy is part of the Spanish Development Strategy and includes a series of policies to mitigate climate change, and to palliate its adverse effects. It will also enable fulfilment of Spain's Kyoto commitments by facilitating public and private initiatives oriented towards increasing efforts of all kinds and from all sectors to fight against climate change. The Strategy also considers measures to achieve energy consumption patterns that are compatible with sustainable development. These measures will constitute the basis for energy planning of public administrations and other private and public entities, and they will encourage citizens to contribute to the fight against climate change.

Continuing its energy and climate change efforts, the government approved the Phase II National Emissions Reduction Plan in January 2008. November 2008 marked the end of the public consultation on the Proposal for emissions allocations for new facilities in the National Allocation Plan 2008-2012, after which the Plan will be finalised. The conditions for new facilities are stricter than the previous ones.

In August 2008, the Energy Efficiency and Saving Plan 2008-2011 was approved by the government. This Plan will strengthen energy efficiency and energy saving measures in order to save an equivalent of 10% of Spanish annual oil imports. It involves an investment of € 245 million, but is expected to save more than € 4 000 million.

A new financial aid programme for strategic investment in energy efficiency and energy savings projects was launched in June. The programme is part of the 2008-2012 Action Plan of the Spanish Energy Efficiency and Saving Strategy and has a budget of € 400 million. It

aims to boost investment in projects related to energy-intensive industries, large distribution chains, hotels, transport fleets, etc., sectors whose energy efficiency and energy savings potential is high.

### Nature and biodiversity

	Spain					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		26.8%	26.6%	26.7%		17.0%	
Sufficiency of site designation under the Habitats Directive	93.5%		95.4%	95.8%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	1.5%	3.7%	3.9%			4.2%	16
Freight transport (billion tkm)	160.3	252.9	269.4			EU total 2505.0	
- % road	92.8%	95.6%	96.1%			76.9%	23 of 25
- % rail	7.2%	4.4%	3.9%			17.4%	23 of 25

In December 2007 the Law on Natural Heritage and Biodiversity was approved by the general courts. It establishes a statutory system of conservation, sustainable use, improvement and restoration of the Spanish natural heritage and biodiversity, with the objective of guaranteeing rights to a decent environment for well-being, health and development. This law regulates the Natura 2000 network and designates other protected areas at national level, and as a new feature addresses the issue of marine biodiversity.

In August 2008 the National Programme to fight desertification was approved by the government. This is Spain's main commitment as a signatory of the United Nations Convention to Combat Desertification. The main objectives are prevention of land degradation and recovery of areas already suffering desertification and will require the regions' participation in a strategy towards the sustainable development of susceptible areas. It proposes better coordination of sectoral actions through an institutional framework consisting of the Desertification Observatory in Spain and the Technical Office for Desertification.

Also in December 2007 the Law on the Sustainable Development of Rural Areas was approved. It aims to establish and regulate measures for promoting the sustainable development of rural areas. Spain implements its rural development policy through 17 Rural Development Programmes established at regional level, which were all approved in 2008. In addition, a National Framework has been set up which includes certain elements common to all 17 regional programmes. The priorities include improving the competitiveness of the agricultural, forestry and agri-food sectors and improving the rural environment and the quality of life in rural areas. For the period 2007-2013, Spain has been granted approximately € 7 billion from the European Agricultural Fund for Rural Development for its Rural Development Programmes, out of which more than 35% has been allocated to actions on land management and environment. Additionally, 15% of the budget of this fund for Spain will be used for agri-environment measures, including the management and protection of Natura 2000 sites.



## Environment and health

	Spain				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	33.4	33.9	33.8	30.0	30.0	15 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	3 118	4 600	4 776	3 104	4 417	16 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	1458	1264	1170	746	7946	
- nitrogen oxides ( $\text{NO}_x$ )	1462	1529	1481	847	11198	
- non-methane volatile organic compounds (NMVOCs)	1088	990	965	662	9391	
- ammonia ( $\text{NH}_3$ )	411	406	424	353	4006	
	1991		Latest available year (2004)			
Water exploitation index	33.2%		34.3%		n.a.	25

In October 2007, the Royal Decree on the re-use of purified water under the National Water Law was approved. This Decree establishes a legal mechanism whereby waste water can be purified and used as an alternative source, promoting the reuse or more efficient use of water resources. It seeks to enhance sustainable development by providing water while at the same time limiting human health risks and environmental damage. In early 2008, the government started public consultation on the hydrological planning processes required by both the Water Framework Directive and the National Law of Water.

In November 2008, the European Commission started legal action against Spain for failure to meet obligations for the treatment of waste water. More than 400 towns and cities do not have water treated up to EU standards.

## Natural resources and waste

	Spain				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	662	599	588		522	20
- % landfilled	51.2%	59.8%	59.5%		41.0%	14
- % incinerated	5.6%	9.0%	9.9%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	40%	50.4%	54%	55%-80% (by 2008)	56.5 %	13

In November 2008, the draft of the National Waste Plan was presented by the Ministry of the Environment. It covers household and similar wastes, waste covered by legislation, contaminated soils, and agrarian and non-dangerous industrial wastes, which are relevant because of their quantity and their impact on the environment. This Plan also includes a Strategy on the Reduction of Biodegradable Waste Spills.

## Better regulation and implementation

	Spain			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	40	42	37	481

At the end of 2008, Spain had the second highest number of ongoing infringements of EU environmental legislation of all Member States. Most of the infringements relate to water and nature.

The Law on Environmental Impact Assessment (EIA) was approved in January 2008 leading to an improvement in the quality of all environmental initiatives. This Law harmonises all the previously existing guidelines under one framework for conducting EIAs. Its value lies in synthesising all the relevant legislation that had been approved before into one law, thereby avoiding fragmentation of legislation.

## Use of market-based instruments

	Spain			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	6.4%	5.4%	5.1%	6.4%

In January 2008, the taxation of purchased vehicles was restructured around environmental criteria. Regulation of the new tax was included in the Spanish Law on Air Quality and Atmospheric Protection. The law now stipulates four tax rates based on carbon dioxide emissions, one of the main drivers of climate change.

The Local Estates Act adopted in March 2008 establishes a discretionary subsidy of up to 50% of the corporate income tax reimbursable, as long as municipal dues are paid and the energy produced or consumed is sourced from renewable energy or cogeneration systems.

## Environmental technologies

In 2008 a call for eco-innovation projects was launched by the Ministry of Environment under the framework of the R&D&I Plan. The Programme on environment and eco-innovation finances three thematic areas: pollution prevention, sustainable management and use of natural resources, and National Parks.

As regards pollution prevention and control, an important incentive for the dissemination of best practices is the process for authorising industrial installations. Competent authorities have to set conditions for issuing operating permits for installations in line with the Directive on Integrated Pollution Prevention and Control (IPPC). This requires that all industrial permits be issued by 30 October 2007. Spain reported that by April 2008, 4499 permits had been issued or reconsidered and, where necessary, updated out of a total of 5351.

## **Outlook for 2009**

The Spanish Waste Plan 2008–2015 is to be approved in 2009. It is one of the most important environmental initiatives for 2009. Also the Urban Environment Strategy is planned for adoption in 2009.

The government plans to approve the "Tourism Plan", which is designed to increase the quality of tourism infrastructure and to improve the added value of the overall tourism product. The projects financed will promote sustainable resorts and tourism infrastructure that pay particular attention to energy efficiency and energy savings, nature conservation and improvement, quality systems and using new technologies. The total budget allocated for 2009 is € 400 million.

Construction of the solar thermal complex Manchasol-1 is to be finalised in 2009 in Ciudad Real. The capacity of Machasol-1 will be 20 MW, and it will supply 30 000 houses, thus avoiding the emission of 149 000 tonnes of CO<sub>2</sub> per year.

In 2009, the National Observatory for Climate Change and Health will be created. It will be a diagnostic instrument for assessing climate change impacts on health, prioritizing problems and proposing actions for improvement.

## SWEDEN

### Highlights in 2008

One of the major issues within Swedish environment policy in 2008 is the government's decision to reform the Swedish system of 16 environmental quality objectives. The system, which has been in place for almost 10 years, was praised in OECD's 2004 environmental performance review for its sound long-term view. According to the government it needs to be adapted to reflect the intensified work at EU level.

During 2008, the country put a lot of effort into improving the marine environment around Sweden. In May, a committee looking into the marine environment proposed that the Baltic Sea should become a pilot area for intergovernmental cooperation on the marine environment. This could provide opportunities for spearheading measures already planned under the EU Marine Strategy Directive. Further, the Environmental Protection Agency presented a national plan outlining how Sweden should tackle environmental challenges in the Baltic Sea, Oresund, and Kattegat.

### Climate change and energy

	Sweden				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions	68.3	66.9	65.7	75.1	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.				(by 2008-2012)		
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	50.8	49.5	48.7		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	19.0	20.3	20.2		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	7.7	7.4	7.3		10.4	4
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	256.3	221.3	209.0		495.7	1
- trend (% change compared to base year*)	-5.4%	-7.3%	-8.9%	+4.0% (by 2008-12)	-7.7%	12
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks	-5.7%			+4.0% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-5.7%				-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	Sweden				EU-27 average	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	198.6	187.2 (2006)	180.1 (2007)	130 by 2012 - 15 for EU-27	157.5	24
Electricity produced from renewable energy sources (% gross electricity consumption)	55.4%	48.2% (2006)	52.1% (2007)	60.0% (by 2010)	15.6%	2
- from hydropower	52.3%	41.3%	44.1%		9.2%	
- from wind	0.3%	0.7%	1.0%		3.1%	
- from biomass	2.8%	6.2%	7.0%		3.0%	
Combined heat and power generation (% gross electricity generation)	5.9%	6.7%	8.0%	18% (by 2010 for EU-15 )	10.9%	18
Energy consumption per capita (kg oil eq.)	5 398	5 724	5 598		3 694	24
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	210	199	188		202	8

In 2006, Sweden's greenhouse gas emissions were 9% lower than the base-year level, which is much better than its Kyoto target of +4% for the period 2008-2012. Sweden is projected to significantly overachieve its Kyoto target. In December 2008, Sweden agreed to a 2020 reduction target of 17% compared to 2005 levels for greenhouse gas emissions in the sectors not covered by the Emissions Trading System (e.g. buildings, road transport and farming). Furthermore, Sweden has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 49% (up from 40% in 2005).

The Climate Committee delivered its report on Swedish climate policy in March 2008. The Committee was asked to undertake a broad review of Swedish climate policy and to make suggestions for a new Swedish climate policy. As an interim target, the report suggests a reduction of greenhouse gas emissions by 4% in 2008-2012 compared to 1990 levels. In 2020, total greenhouse gas emissions would need to be cut by 38% (compared to 1990) to implement the Committee's action plan. The report also gives an indicative emissions target for 2050 of at least 75–90% compared to 1990. Proposals from the government are expected in 2009.

In May, the Swedish Board of Agriculture made a proposal to the government for special investment support of SEK 600 million (approximately €55 million<sup>5</sup>) to be targeted at "biogas" within the rural development programme for 2009-2013. This is further development of a proposal concerning bioenergy from agriculture as a growing resource, and concerns mainly biogas from manure. The motivation for the programme is the large environmental benefits in terms of reduced greenhouse gas emissions that can be realised by producing biogas from manure, thus both reducing emissions of methane and replacing fossil fuels.

<sup>5</sup> Exchange rate April 2009: 1 € = 10.878 SEK

## Nature and biodiversity

	Sweden					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area		13.2%	13.6%	14.5%		17.0%	
Sufficiency of site designation under the Habitats Directive	91.4%		92.3%	99.0%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	5.7%	7.1%	8.0%		20% * by 2010	4.2%	6
Freight transport (billion tkm)	55.7	62.2	63.8			EU total 2505.0	
- % road	63.9%	64.2%	63.6%			76.9%	5 of 26
- % rail	36.1%	35.8%	36.4%			17.4%	4 of 26

\* Indicative target according to the action plan "Regeringens skrivelse 2005/06:88: Ekologisk produktion och konsumtion - Mål och inriktning till 2010".

In March, the government decided to impose a total ban on phosphates in detergents in Sweden. According to calculations by the Swedish authorities, the total amount of phosphorus dispersed into the Baltic Sea would be reduced by 20% if all countries around the sea were to do the same. Sweden has worked for a ban on phosphates in the EU as well as in the Helsinki Commission. According to the Swedish authorities, all countries along the Baltic Sea have pledged to ban phosphates in detergents, and Sweden is the first country to implement the ban.

In May, the Committee looking into the marine environment proposed that the Baltic Sea becomes a pilot area for intergovernmental cooperation to improve the marine environment. It also proposed a whole new planning system for Swedish waters, with plans and zoning as well as solutions to a number of acute problems. To create a pilot area for the waters of the Baltic Sea provides possibilities for spearheading measures already planned under the EU Marine Strategy Directive. To incorporate EU Common Agricultural Policy, as well as EU Common Fisheries Policy and regional policy is one of the challenges this initiative is facing.

Also in May, the Swedish Environmental Protection Agency delivered its first report on a national plan to tackle environmental challenges in the Baltic Sea, Oresund, and Kattegat. The report outlines how to achieve the targets in the Baltic Sea Action Plan, and it suggests, among other things, protective margins around fields in nitrate sensitive areas and tougher regulations for applying manure..

In June, the Swedish Environmental Protection Agency decided to launch a new framework programme for game/wildlife research for 2009-2014. The objective of this programme is to understand how game is influenced by climate change, and the programme spells out which research questions should be prioritised. Some of the relevant questions include how increasing average temperatures affect wildlife, but also how changes in land use due to increasing production of biofuels might affect wildlife. The Agency will allocate SEK 15 m (EUR 1.55 m) annually for five years for research within this area.

## Environment and health

	Sweden				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, $\mu\text{g}/\text{m}^3$ )	17	19.5	20.4	30.0	30.0	4 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, $\mu\text{g}/\text{m}^3 \cdot \text{day}$ )	1 598	2 917	2 898	1 715	4 417	7 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides ( $\text{SO}_2$ )	46	40	39	67	7946	
- nitrogen oxides ( $\text{NO}_x$ )	220	181	175	148	11198	
- non-methane volatile organic compounds (NMVOCs)	220	200	195	241	9391	
- ammonia ( $\text{NH}_3$ )	56	53	52	57	4006	
	1990		Latest available year (2004)			
Water exploitation index	1.7%		1.5%		n.a.	4

In September, the government initiated work on a new vision for sustainable cities, which should stimulate urban planning and construction projects that help improve the environment and reduce climate effects, while at the same time supporting Swedish exports of environmental technologies. The initiative should inspire climate-friendly construction of buildings throughout Sweden. The government has set aside SEK 340 m (EUR 34.8 m) for 2009 and 2010 to mobilise the industry and a national institutional platform is to be established to support the development of sustainable cities.

## Natural resources and waste

	Sweden				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	428	497	518		522	14
- % landfilled	22.9%	5.0%	4.1%		41.0%	3
- % incinerated	38.3%	46.9%	46.3%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	58.0%	48.2%	58.1%	55%-80% (by 2008)	56.5 %	7

The government has made a change to the procedures for producers of packaging and paper (e.g. newspapers and magazines) requiring them to make sure that their products are covered by a waste collection and recycling system. A fundamental principle of the procedures is to make producers liable for establishing incentive structures and collection facilities that facilitate the collection and recycling of this type of waste. The changes mean that producers are to be held to account if the system fails to encourage consumers to recycle their waste.

In August the government appointed a negotiator to help identify better cooperative waste handling solutions between municipalities and producers, for the recycling of glass and paper. The issues that are meant to be resolved between producers and the municipalities are: "bulk waste" (physically large pieces of waste), which is the responsibility of the municipalities; waste ending up in the producers' waste collection system, that should have been put in the

ordinary waste collection system; and glass and paper which ends up in the ordinary system, but which should have gone to the producers' collection system.

### Better regulation and implementation

	Sweden			<i>EU-27</i>
	31/12/2006	31/12/2007	31/12/2008	<i>total</i>
Infringements of EU environmental legislation	6	10	9	<i>481</i>

### Use of market-based instruments

	Sweden			<i>EU-27</i>
	2000	2005	2006	<i>average</i>
Share of environmental taxes in total tax revenue	5.3%	5.7%	5.6%	<i>6.4%</i>

The government proposal for an increase in the CO<sub>2</sub> tax presented in November 2007 came into effect in January 2008. The tax increase has meant an increase in transport fuel costs to consumers.

The Stockholm congestion charge on road traffic was made permanent in August 2007 and helps to reduce traffic and transport emissions. The congestion charge currently ranges from 10 to 20 SEK (0.92-1.84) per trip per day (max 60 SEK/day or 5.5 EUR/day) depending on the time of the day. Taxis, buses, and "green" cars are exempt from the charges.

### Environmental technologies

In 2008, the Swedish Energy Agency supported approximately 70 research projects on vehicles with a smaller climate impact for a total of SEK 343 m (€ 31.5 m). Most of the projects aim at developing hybrid cars and improving the energy efficiency of conventional cars. In December, the Agency announced that funding for research and development until 2011 will reach or exceed the "climate billion" (SEK 1bn/€91m) target it had set previously.



## **Outlook for 2009**

The Swedish government will focus its priorities on three specific areas in the period 2009-2011: climate, the marine environment, and environmental research. In the spring, it will outline proposals that will help Sweden meet its obligations under the EU climate and energy package, including changes in the structure of environmental and energy taxes. Further, it plans to spend SEK 300 million (€ 27.5 million) on climate adaptation in 2009-2011, for example on improving the knowledge base on the risk of landslides and improving coordination between local authorities. The government has also earmarked SEK 655 million (€ 60 million) for 2009-2011 to initiate further efforts to improve the marine environment in the Baltic Sea and Kattegat. Concerning the focus on research, the idea is to promote research on energy efficient technologies, transport systems and renewable materials, which are all considered important for the environmental challenges of the future.

The issue of biodiversity is also considered a cornerstone in Swedish environment policy, and will require by far the largest proportion of the environmental budget, namely SEK 5.5 billion (EUR 505 m) during the period 2009-2011. Some of the issues that the government is emphasising are protection of forest resources, protection of valuable nature, and protection of wildlife. In 2009 the government will produce a specific proposal on the future protection of wildlife.

In the second half of 2009, Sweden will hold the Presidency of the EU Council. Climate change, marine environment and biodiversity will be among the priorities.

## UNITED KINGDOM

### Highlights in 2008

In October 2008 the government announced the creation of a new Department of Energy and Climate Change (DECC) to give even greater focus to solving the twin challenges of climate change and energy supply. The Department brings together much of the Climate Change group previously located within the Department for Environment, Food and Rural Affairs (DEFRA) and the Energy group from the Department for Business, Enterprise and Regulatory Reform.

The government in October 2008 accepted the recommendations of the Climate Change Committee and committed the United Kingdom to cutting greenhouse gas emissions by 80% of 1990 levels by 2050.

### Climate change and energy

	United Kingdom				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Total Kyoto GHG emissions	669.9	655.3	652.3	679.3 (by 2008-2012)	5142.8	
- million tonnes (Mt) CO <sub>2</sub> eq.						
- from energy supply and use, including transport (Mt CO <sub>2</sub> eq.)	559.9	564.4	562.9		4098.7	
- from transport (Mt CO <sub>2</sub> eq.)	128.2	134.9	136.7		992.3	
					EU-27 average	rank in EU-27
- per capita (tonnes CO <sub>2</sub> eq.)	11.4	10.9	10.8		10.4	15
- per GDP (tonnes CO <sub>2</sub> eq. per 1000€ GDP)	418.1	362.6	351.0		495.7	3
- trend (% change compared to base year*)	-13.7%	-15.6%	-16.0%	-12.5% (by 2008-12)	-10.8%	11
- Projected 2010 emissions trend compared to base year*						
- with existing measures, Kyoto mechanisms and carbon sinks	-19.9%			-12.5% (by 2008-12)	-13.4%	
- with existing and additional measures, Kyoto mechanisms and carbon sinks	-20.0%				-16.3%	

\* Base year for CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> is 1990 and for F-gases is 1995.

	United Kingdom				EU-27 total	rank in EU-27
	2000	2005	2006	target		
Average CO <sub>2</sub> emissions from new passenger cars sold (grams CO <sub>2</sub> /km)	184.1	166.6 (2006)	163.6 (2007)	130 by 2012-15 for EU-27	157.5	17
Electricity produced from renewable energy sources (% gross electricity consumption)	2.7%	4.6%	5.1%	10% (by 2010)	15.6%	18
- from hydropower	1.3%	1.1%	1.3%		9.2%	
- from wind	0.2%	1.0%	1.3%		3.1%	
- from biomass	1.1%	2.5%	2.5%		3.0%	
Combined heat and power generation (% gross electricity generation)	6.1%	6.8%	6.3%	18% by 2010 for EU-15	10.9%	21
Energy consumption per capita (kg oil eq.)	3 937	3 874	3 786		3 694	16
Energy intensity - Energy consumption per 1000€ GDP (kg oil eq.)	227	202	193		202	10

In 2006, the UK's greenhouse gas emissions were 16% lower than the base year level, compared with its Kyoto target of -12.5% for the period 2008-2012. Latest projections show that the country looks set to reduce its emissions further.

The Climate Change Bill will become the first long-term legally binding framework to tackle the dangers of climate change. The revisions introduced by the government to earlier drafts of the bill were mostly technical, although there was the addition of a single-use plastic bag charge. The Bill became law in November 2008 and requires the UK to reduce its carbon emissions by 80%, compared to the 1990 baseline, by 2050.

In December 2008, the Committee on Climate Change published a report on the 2050 target and the UK's first three carbon budgets to 2022. The 80% reduction would require a reduction path of between 34% and 42% by 2020, compared to the 1990 baseline. The report examines the possible pathways for carbon reduction in the UK under differing fossil fuel price scenarios and assesses the expected cost to the UK economy.

Following adoption of the climate and energy package in December 2008, the UK agreed to reduce its greenhouse gas emissions by 16% by 2020 compared to 2005 levels in non-ETS sectors (e.g. buildings, road transport and farming). Furthermore, the UK has committed to achieving by 2020 a share of energy from renewable sources in gross final energy consumption of 15% (up from 1.3% in 2005).

## Nature and biodiversity

	United Kingdom					EU-27 average	rank in EU-27
	2000	2006	2007	2008	target		
Natura 2000 area (sites designated under Habitats and Birds Directives) as % of terrestrial area *		6.8%	6.9%	7.1%		17.0%	
Sufficiency of site designation under the Habitats Directive	92.5% (2004)		92.5%	95.2%	100%		
Area occupied by organic farming (% of Utilised Agricultural Area)	3.7%	3.8%	4.2%			4.2%	15
Freight transport (billion tkm)	184	199.7	198.0			EU total 2505.0	
- % road	90%	86.2%	86.6%			76.9%	18 of 26
- % rail	9.8%	13.7%	13.3%			17.4%	16 of 26

\* United Kingdom has also an important Natura 2000 marine area, consisting of around 16.7 thousands Km<sup>2</sup> in 2008.

In May 2008 the government launched a new strategy to deal with the threats from invasive non-native species. This plan is specifically aimed at implementing elements of the EU Biodiversity Action Plan. The key areas that it tackles are public awareness and shared responsibility, while providing a guiding framework for national, regional and local action to tackle invasive non-native species. The plan details more than 30 actions, including promoting better access to information about invasive non-native species and developing an 'early warning system' for both flora and fauna, similar to the alert system currently operated by the European and Mediterranean Plant Protection Organisation for plant health threats.

## Environment and health

	United Kingdom				EU-27 average	rank in EU-27
	2000	2005	2006	Ceiling		
Urban population exposure to air pollution by particles (annual mean concentration, µg/m <sup>3</sup> )	23.4	23.6	24.8	30.0	30.0	7 out of 23
Urban population exposure to air pollution by ozone (SOMO35 level, µg/m <sup>3</sup> . day)	777	1 250	2 189	1 284	4 417	4 out of 23
Air pollutant emissions (thousand tonnes)				(by 2010)	EU27 total	
- sulphur dioxides (SO <sub>2</sub> )	1198	688	676	585	7946	
- nitrogen oxides (NOx)	1899	1620	1595	1167	11198	
- non-methane volatile organic compounds (NMVOCs)	1338	961	910	1200	9391	
- ammonia (NH <sub>3</sub> )	335	315	315	297	4006	
	1990		Latest available year (2001)			
Water exploitation index *	20.4%		21.9%		n.a.	22

\* Data refer to England/Wales.

The government launched its new water strategy for England, 'Future Water', in February 2008. The strategy sets out a framework for water management in England, and a roadmap for achieving its targets by 2030. Measures include promotion of water efficiency in industry and commerce and encouragement of rainwater collection. For water quality, there will be consultation on phasing out the phosphates used in domestic laundry products. The strategy also calls for a review of water charging and the feasibility of compulsory metering.

DEFRA re-launched a series of noise maps for England in 2008, in order to implement the EU's Environmental Noise Directive. These are part of the process towards production of Noise Action Plans, which are to be developed on a five-year rolling programme. Additionally, the rules for permitted noise levels were revised in February 2008 to further reduce the legal noise limits.

### Natural resources and waste

	United Kingdom				EU-27 average	rank in EU-27
	2000	2006	2007	Target		
Municipal waste generated (kg per capita)	578	587	572		522	19
- % landfilled	81.1%	60.1%	56.6%		41.0%	12
- % incinerated	7.3%	9.4%	9.3%		19.9%	
	2000	2005	2006			
Recycling of packaging waste (as % total packaging waste)	40%	54.4%	57.5%	55%-80% (by 2008)	56.5 %	8

The government launched a new drive in June 2008 entitled 'Recycle on the Go' which intends to put accessible recycling bins in public places. The accompanying Voluntary Code of Practice and the Good Practice Guide that were also published said that litter bins in public spaces should be accompanied by recycling bins. The Code has four guiding principles: to add recycling bins to existing waste sites; to use standard signs on recycling bins; to maintain and upkeep bins; and to re-use, recycle or compost the materials collected.

The standard rate of tax on landfill will increase by £8 (approximately €9<sup>6</sup>) per year from 2008 to 2010. There will be consultation on removing the ban on local authorities from introducing household financial incentives for waste reduction and recycling. It was also announced in the 2008 Budget that the aggregates levy will increase in line with inflation from £1.95 (€2.1) per tonne to £2 (€2.2) per tonne.

### Better regulation and implementation

	United Kingdom			EU-27 total
	31/12/2006	31/12/2007	31/12/2008	
Infringements of EU environmental legislation	33	33	31	481

As a simplification measure, a single environmental permit for industry in England and Wales was introduced as part of the new Environmental Permitting Regulations. It combines, for example, the Waste Management License and the Pollution Prevention and Control system, which are required for industrial and waste activities that can harm human health or the environment. In total, 40 separate legal instruments have been combined, and are estimated to save around £76m (€84m) over ten years. This move was introduced to reduce the administrative demands on businesses, reducing costs and increasing compliance rates.

<sup>6</sup> Exchange rate April 2009: 1 £ = 1.1 €

## Use of market-based instruments

	United Kingdom			<i>EU-27 average</i>
	2000	2005	2006	
Share of environmental taxes in total tax revenue	8.1%	6.8%	6.4%	6.4%

In March 2008 it was announced that government departments will now be included in the cap-and-trade Carbon Reduction Commitment (CRC), which is scheduled to begin operation in 2010. In addition, a further announcement was made in July 2008 that state-funded schools will also be included. In total, the scheme will cover around 5 000 public and private organisations, including government departments, retailers, banks and local authorities.

As recommended in the King Review, significant reform of vehicle taxation was announced in the 2008 Budget in order to influence new vehicle purchasing choices. The main changes are the introduction of six new Vehicle Excise Duty (VED) bands from 2009-10, with a new top band "M" for those cars emitting more than 255g CO<sub>2</sub> per km. For new cars sold from 2009 that emit below 150g CO<sub>2</sub> per km, the rate of VED will fall, while new cars from 2010 that emit less than 130g CO<sub>2</sub> per km (the EU target for 2012) will have a zero tax rate. On the other hand, the most polluting cars will have an increased VED of £425 (€467). Furthermore, for this higher rate, there will be a first-year fee of £950 (€1045), more than twice the standard charge.

## Environmental technologies

Jointly administered by DEFRA and BERR, the Environmental Transformation Fund (ETF) began operation in April 2008. The Fund's aim is to accelerate the commercialisation of low-carbon energy and energy-efficiency technologies in the UK. The Fund will specifically focus on the demonstration and deployment phases of bringing low-carbon technologies to market. The Fund is designed to promote developments both within the UK and also internationally, with UK spending amounting to £400m (€440m) in the 2008/09-2010/11 period.

## Outlook for 2009

An important environment policy issue for the UK in 2009 will be the government's formal response, expected in Budget 2009, to the Committee on Climate Change's full report on the 2050 target and the first three carbon budgets covering the period to 2022. The response should indicate how the government intends to make progress towards its stated goal of a low-carbon economy by the middle of this century.

The UK government's sustainable development action plan runs until March 2009, and is to be reviewed in that year. This plan should go beyond the scope of the existing plan and have greater focus on partnerships and community involvement. It should also outline actions relating to the government strategy on sustainable procurement and reducing the government estate's carbon emissions. In addition, the Government will be releasing a voluntary carbon offsetting code of practice.

In 2008, the government completed a full public consultation on a new waste strategy. It is expected that this new strategy will be launched in 2009. The UK is under pressure to catch up with its European counterparts by improving recycling rates and reducing the total amounts of waste produced.

Air Passenger Duty (APD) will be replaced in 2009 by a tax on flights, not passengers. This is designed to allow taxation to reflect emissions more than passenger numbers. Levied on the airlines, this tax will encourage them to accommodate passenger growth by improving utilisation of existing flights and thereby reducing the average CO<sub>2</sub> emitted per passenger, rather than increasing the number of flights.

Water companies in England and Wales will publish the final Water Resource Management Plans in April 2009. The economic regulator for the water and sewage industries in England and Wales, will publish its price review for 2010-2015 in November 2009. The review will also consider planned expenditure on the environment by water companies in England and Wales.