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***Annex to the***

**COMMUNICATION FROM THE COMMISSION  
TO THE COUNCIL AND THE EUROPEAN PARLIAMENT**

**2005 Environment Policy Review**

{COM(2006) 70 final}

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## INTRODUCTION

This Commission Staff Working Paper, as an annex to the 2005 Environment Policy Review<sup>1</sup>, presents evidence on selected EU environmental issues relevant to environment policy during 2005.

It has been prepared in two parts. Part 1 draws on statistical data relevant to the four priority areas of the 6<sup>th</sup> Environmental Action Programme (6EAP), commenting on significant issues and providing background to the Commission's policy work during 2005 and future initiatives. It also provides evidence relevant to discussion of the links between environment and the economy and progress on implementation.

Part 2 contains the Commission's review of the environmental policy actions highlighted by each Member State in their Lisbon National Reform Programmes. These documents, submitted to the Commission at the end of 2005, contained a wide range of measures, related to macroeconomic, microeconomic and employment policy, – that the Member States plan to take to move towards the aims of the EU's Lisbon Agenda. Member States prepared these NRPs on the basis of the Integrated Guidelines for Growth and Jobs. The Commission assessed them and the reporting on all the 24 Integrated Guidelines in the Annual Progress Report on Growth and Jobs “Time to move up a gear”<sup>2</sup>.

Among the Integrated Guidelines, Guideline 11 focuses on environmental policy measures to ensure the sustainable use of resources. The summary by the Commission, presented in Part 2 below, looks at the measures submitted by Member States in the context of the aims of this Guideline.

More comprehensive information on the environment in Europe can be found in the European Environment Agency's “*The European Environment, State and Outlook 2005*” report (SOER).<sup>3</sup> The EEA's report covers a wide range of areas and includes an EU level analysis of main issues, including 4 priorities of the 6<sup>th</sup> EAP, information for the full Core Set of Indicators, countries' assessment and forecasts. Further information can be retrieved from Eurostat's report “*Measuring progress towards a more sustainable Europe - Sustainable development indicators for the European Union - Data 1990-2005*”<sup>4</sup>. Environmental issues are there presented alongside social and economic indicators, and focus is given to their inter-linkages.

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<sup>1</sup> COM(2006) xxx final

<sup>2</sup> [http://europa.eu.int/growthandjobs/index\\_en.htm](http://europa.eu.int/growthandjobs/index_en.htm)

<sup>3</sup> [http://reports.eea.eu.int/state\\_of\\_environment\\_report\\_2005\\_1/en](http://reports.eea.eu.int/state_of_environment_report_2005_1/en)

<sup>4</sup> [www.europa.eu.int/comm/eurostat/sustainabledevelopment](http://www.europa.eu.int/comm/eurostat/sustainabledevelopment)

## PART 1 - STATISTICAL DATA

This part highlights selected key indicators for the environment and environment policy, including the four priority areas of the 6<sup>th</sup> EAP. The indicators have mainly been chosen from the Structural Indicators employed for reporting for the Lisbon process<sup>5</sup>; the Sustainable Development Indicators to monitor the EU Sustainable Development Strategy and the EEA's Core Set of Indicators, which provide a comprehensive basis for assessment of progress against environmental policy priorities.

Wherever possible the information provided describes the full circumstance of the environmental issue – covering all links in the causal chain:

- showing the *state* of the environment, illustrating what to preserve or regain,
- highlighting aspects of the *pressures* exerted by society and the economy on the state of the environment, and
- reporting what action has been taken as a *response* to mitigate these pressures.

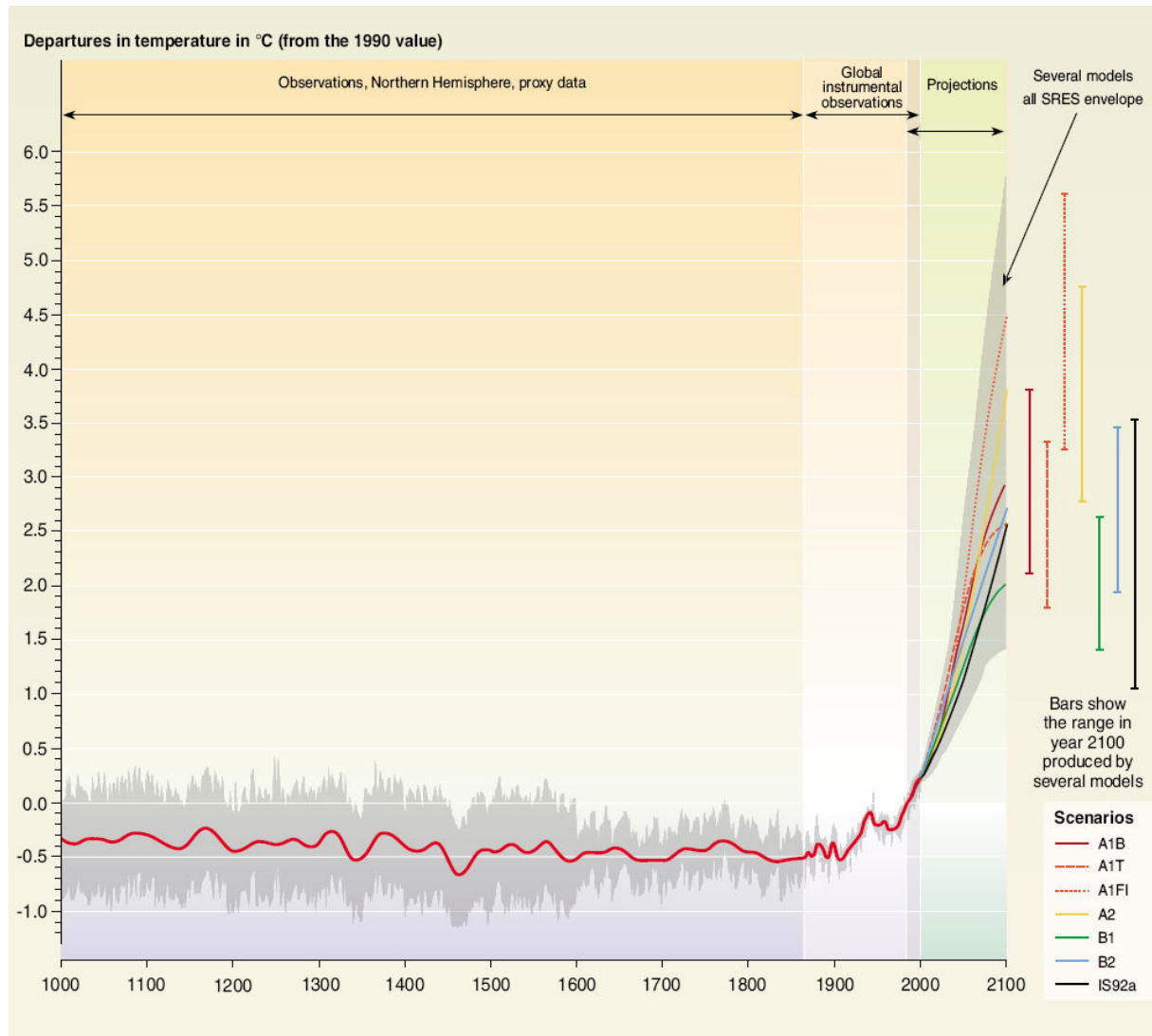
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<sup>5</sup>

[www.europa.eu.int/comm/eurostat/structuralindicators](http://www.europa.eu.int/comm/eurostat/structuralindicators)

## Climate Change

*State indicator:* Northern Hemisphere surface temperature from year 1000 to 2100, including various scenarios



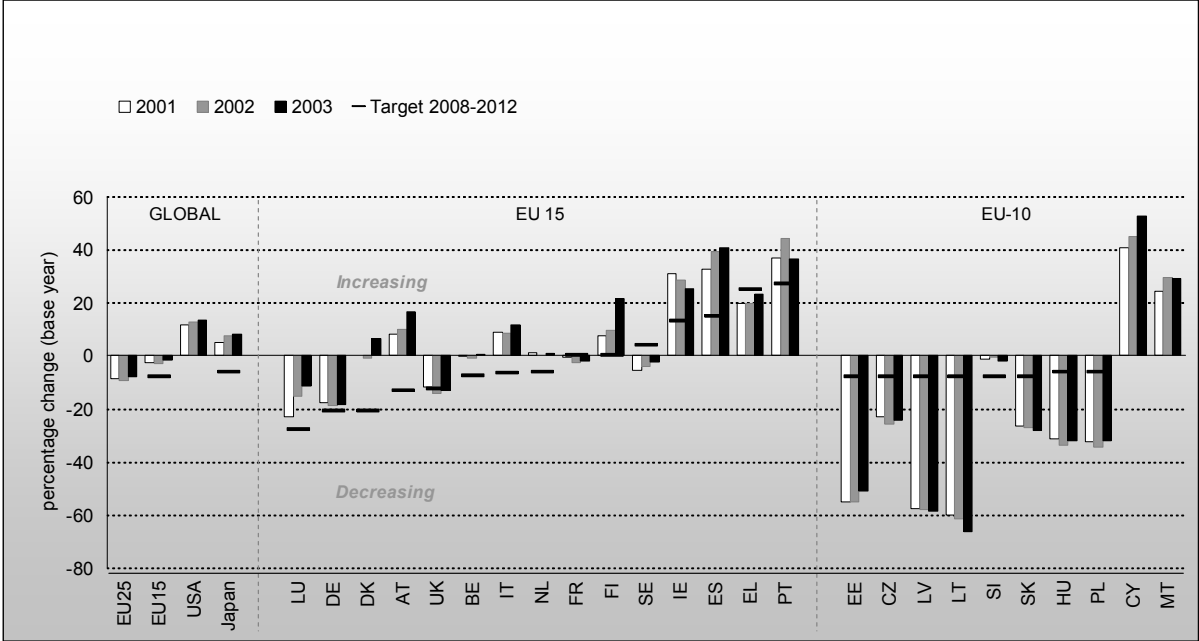
Source: Intergovernmental Panel on Climate Change, 2001<sup>6</sup>

Climate change needs a very long-term view. This graph shows the generally stable climate before the 20<sup>th</sup> century, an accelerating increase in temperature since then and projections for different scenarios for the 21<sup>st</sup> century. The presented scenarios assume different demographic trends, and different economic and environmental policies which lead to correspondingly different greenhouse gas emissions and rises in temperature. All scenarios predict that temperature will rise at a similar or higher rate than at present. Any projections based on model calculation comprise a degree of uncertainty – the bars to the very right indicate the range of this uncertainty for the different scenarios. Comparing the projections and the uncertainty ranges with the EU target of limiting the temperature increase to 2 degrees

<sup>6</sup> Intergovernmental Panel on Climate Change (2001) 3rd assessment report - synthesis report, p. 34 (<http://www.ipcc.ch/pub/un/syrenng/spm.pdf>)

Celcius shows that this is only met by the scenarios which incorporate an active climate change mitigation policy.

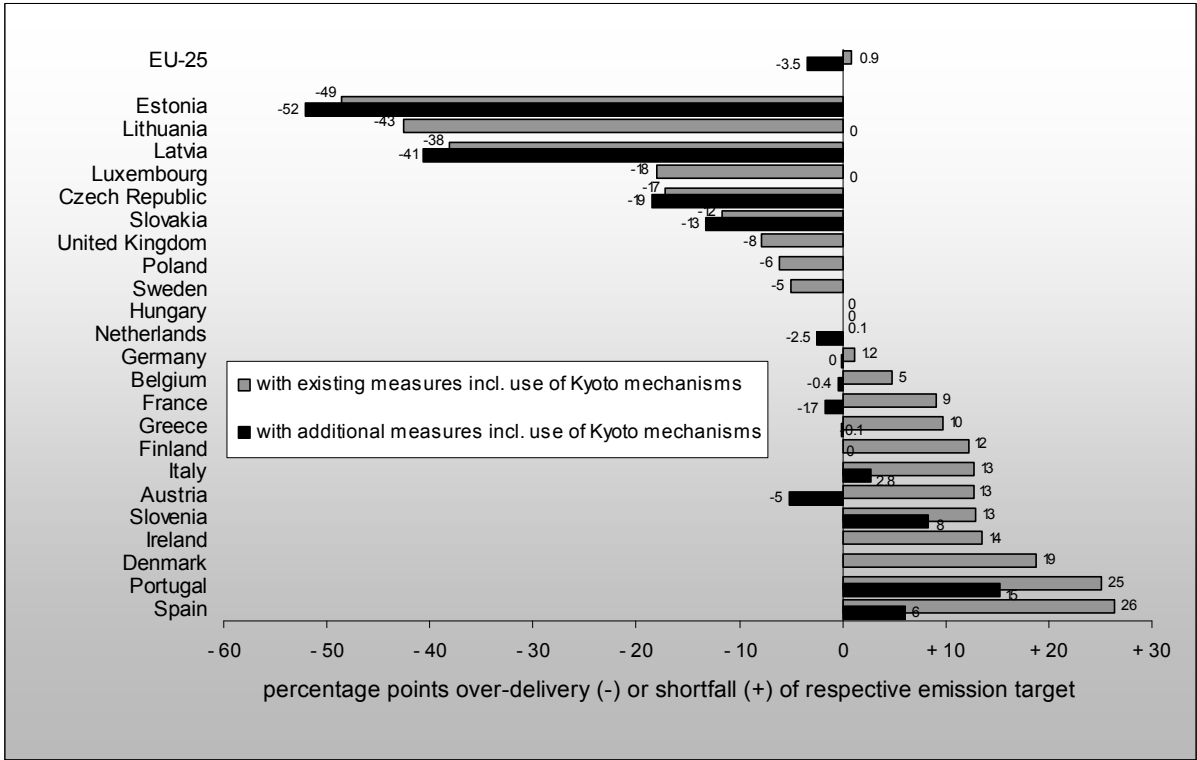
*Pressure indicator:* Total Kyoto greenhouse gas emissions (in CO<sub>2</sub> equivalents) as a percentage of Kyoto base year emissions, with Kyoto Protocol / Burden Sharing Agreement targets.



Source: European Environment Agency, European Topic Centre on Air and Climate Change

The graph shows the greenhouse gas emissions relative to the base year. In many old Member States and the EU15 as a whole emissions in 2003 have increased compared to 2002, except for Ireland and Portugal. Ireland, along with Latvia, Lithuania and Slovakia from the new Member States are the only ones that showed a continuous decrease of emissions over the last three years. Overall, in 2003 the emission reduction against base year was 1.7 % for EU15, while for the EU25 the decrease amounted to 8 %.

Performance indicator: Projection for distance-to-target in 2010 (percentage points) for the EU-25, including Kyoto mechanisms, and additional policies and measures<sup>7</sup>



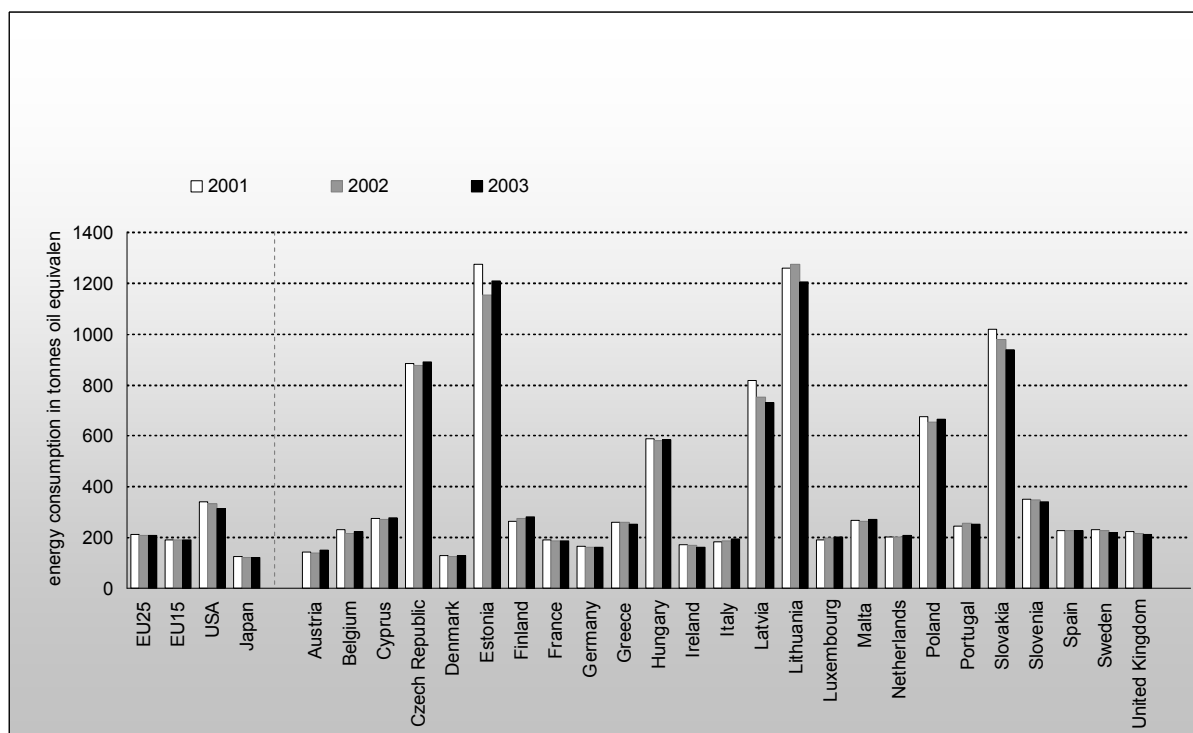
Source: European Environment Agency

The Kyoto targets have to be achieved during the period 2008 to 2012. All EU25 Member States provided projections for 2010 assuming existing domestic policies and measures. The graph shows these projections in grey. Several countries also provided projections with additional domestic policies and measures. These projections are portrayed in black. The projections indicate that the existing measures are, in many cases, not adequate. Member States will need to use additional measures and Kyoto mechanisms in order to reach Kyoto targets. By implementing existing and additional domestic measures and by using the Kyoto mechanisms, 17 out of the 23 Member States with a Kyoto target and the EU as a whole, are currently projected to meet their targets.

<sup>7</sup> Data from 2003; Data exclude emissions and removals from land-use, land-use change and forestry (LULUCF). For the following Member States the additional effects of the use of Kyoto mechanisms are included: Austria, Belgium, Denmark, Finland, Ireland, Italy, Luxembourg, the Netherlands and Spain. For EU-15 the effect of the use of Kyoto mechanisms is calculated based on information from these nine countries. Projections for Poland cover only CO<sub>2</sub> and N<sub>2</sub>O. Projections for Spain cover only CO<sub>2</sub>. Projections for Cyprus and Malta are not available, as they do not have their targets under the Kyoto protocol.



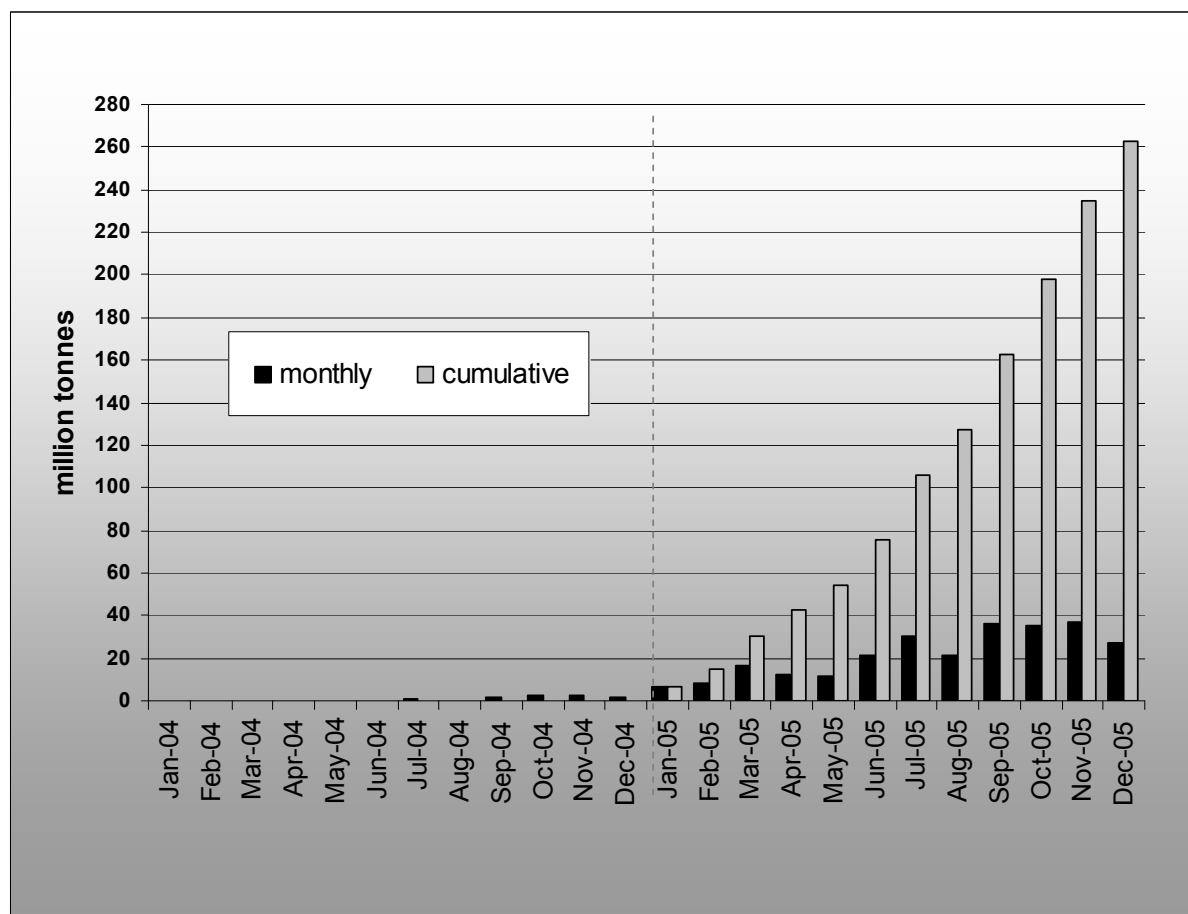
*Efficiency indicator: Energy intensity (tonnes oil equivalent used per 1,000 Euro GDP)*



Source: Eurostat

The amount of energy needed to produce the same economic output differs enormously, within the EU and worldwide. Increasing energy efficiency is one of the indispensable responses to climate change, especially as many options are profitable in business terms. Unfortunately there is no clear trend in the EU towards higher energy efficiency. For the EU25 the figure stayed nearly stable, fluctuating between 206 and 209 tonnes oil equivalent per 1,000 Euro GDP. Only seven Member States (Greece, Ireland, Latvia, Slovenia, Slovakia, Sweden and the United Kingdom) showed a continuous decrease in energy intensity.

Response indicator: EU Emissions Trading Scheme: Volume CO<sub>2</sub> traded (million tonnes)

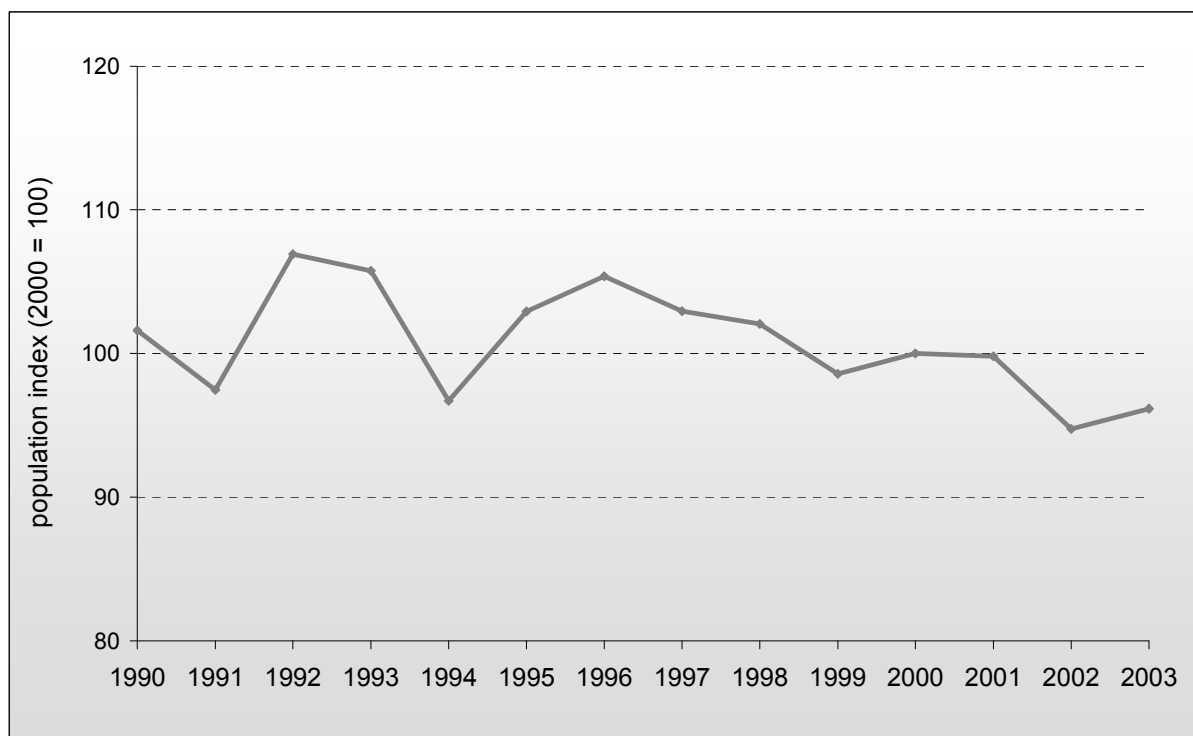


Source: Point Carbon 2006

The EU Emissions Trading System officially started on 1 January 2005. The graph shows the use of this newly created market for industrial carbon dioxide (CO<sub>2</sub>) emissions. Traded volumes can be expected to increase as electronic registries go on-line in more Member States.

## Biodiversity and ecosystems

*State indicator:* Index of populations of selected farmland birds in Europe

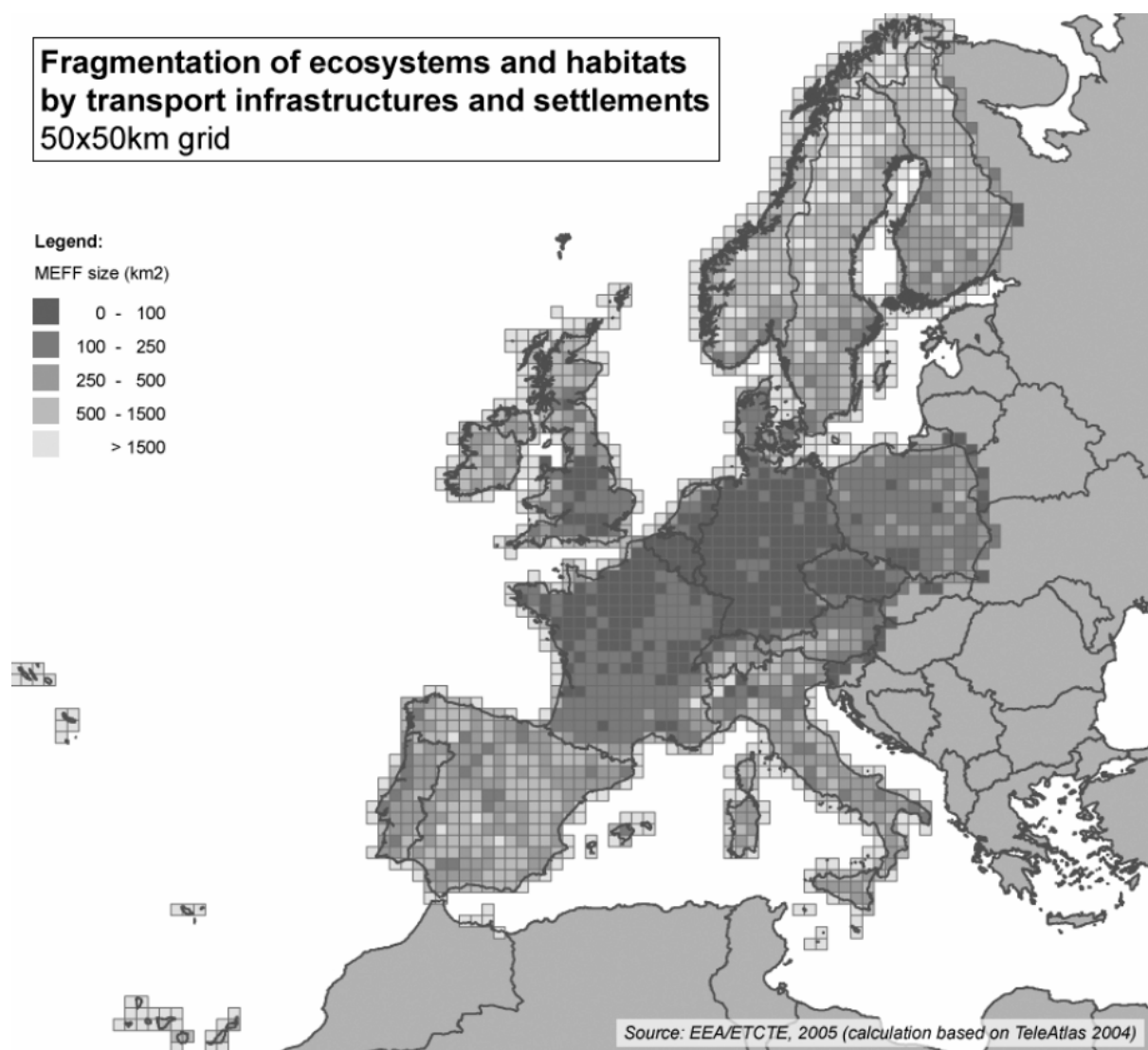


Source: Pan-European Common Bird Monitoring scheme (PECBM), Eurostat<sup>8</sup>

Halting the loss of biological diversity by 2010 is an important target of the EU. Birds are considered good proxies for biodiversity and the integrity of ecosystems as they tend to be at, or near, the top of the food chain, have large ranges and can migrate and thus tend to reflect changes in ecosystems rather rapidly. Although the 2003 figures show an increase in the population index, this can not yet be considered as a favourable change from the generally negative trend.

<sup>8</sup> Different figures are presented this year, following the selection of species more specific to farmland.

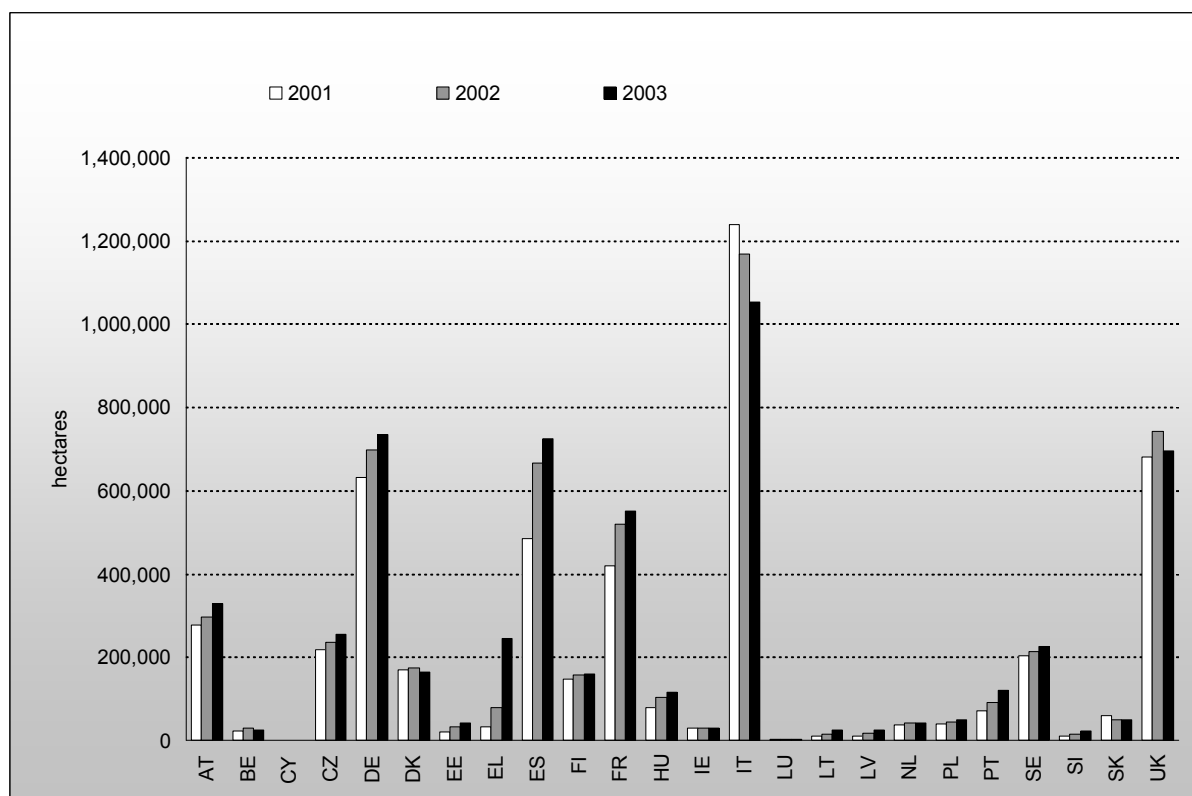
Pressure indicator: Landscape fragmentation in 2004, Effective Mesh-size (MEFF)<sup>9</sup>



Fragmentation continues to be one of the major threats to the integrity of ecosystems across Europe, with some regional differences. Fragmentation reduces the connectivity and the size of habitats, which is essential for biodiversity conservation, for example to allow for genetic exchange between populations. The intensity of fragmentation is increasing, mainly due to the expansion of transport infrastructure. This is a very visible development in many landscapes. Presented data show the extent and distribution of the phenomenon using Effective Mesh-size (MEFF) as the unit of measurement. Highly fragmented landscapes with a MEFF smaller than 100 km<sup>2</sup> appear darkest in the map. Areas with a small grade of fragmentation appear brightest.

<sup>9</sup> MEFF is a geo-statistical measure, which converts the probability that randomly selected points in an area are connected into the size of an unfragmented patch, measured in km<sup>2</sup>. The presented map shows the extent and distribution according to available data, but there is a need to improve consistency of application in all Member States.

Response indicator: Area occupied by organic farming (hectares)<sup>10</sup>



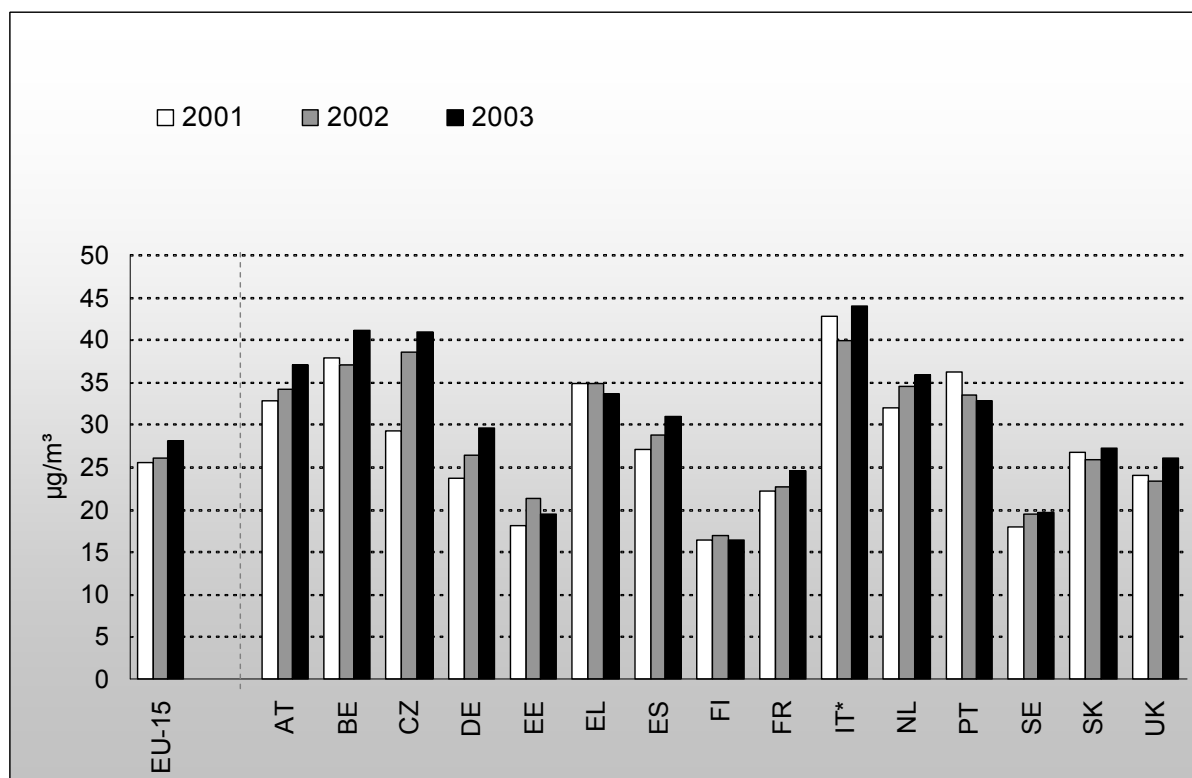
Source: Eurostat and Institute of Rural Sciences, University of Wales, Aberystwyth

Conservation of biodiversity cannot be restricted to nature conservation sites, but has to be integrated into the wider countryside with other land uses. Agriculture is the major land use in the EU and a major policy area for the EU. Organic farming contributes in many respects to biodiversity policies. The Common Agricultural Policy provides for funding of organic farming, but it is up to the Member States to design the specific measures for support. Data show that organic farming continues to grow in the EU25, although at a much slower rate. Moreover, for Italy and the United Kingdom for instance the most recent data indicate a slight reduction of area occupied by organic farming. However, 15 out of 25 Member States showed a continuous increase in the three years reported, the strongest being reported for Greece.

<sup>10</sup> Farming is only considered to be 'organic' at EU-level if it complies with Council Regulation (EEC) n 2092/91.

## Environment and Health

State indicator: Urban population exposure to air pollution by particles ( $\mu\text{g PM}_{10}/\text{m}^3$ )<sup>11</sup>

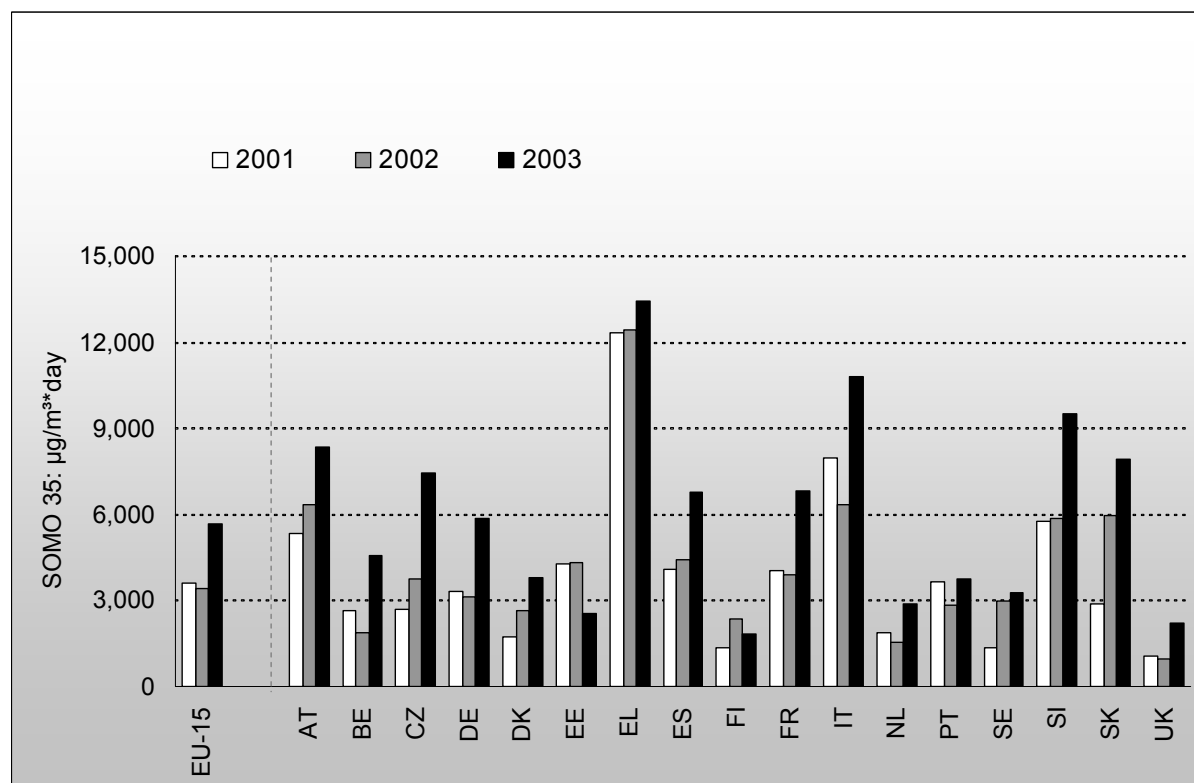


Source: European Commission, DG Environment, Mandatory reporting by Member States under Exchange of Information Decision 1997/101/EC and Directive 1999/30/EC. \* IT: data for only one measurement station available.

Chronic exposure of population to particulate matter has serious health implications. To portray these risks the indicator shows the annual mean of the urban background concentration of  $\text{PM}_{10}$ . On a European scale, there are no distinctive trends in the last years, once the increase in 2003, which is mainly attributable to the specific weather conditions, is considered.

<sup>11</sup> Population weighted annual mean concentration of particulate matter ( $\text{PM}_{10}$ : particulate matter with a diameter smaller than  $10 \mu\text{m}$ ) at urban background locations in agglomerations. To ensure comparability only data from measurement stations operating in all three years is used. This requirement limits the coverage to 15 Member States.

State indicator: Urban population exposure to air pollution by ozone (SOMO35)<sup>12</sup>

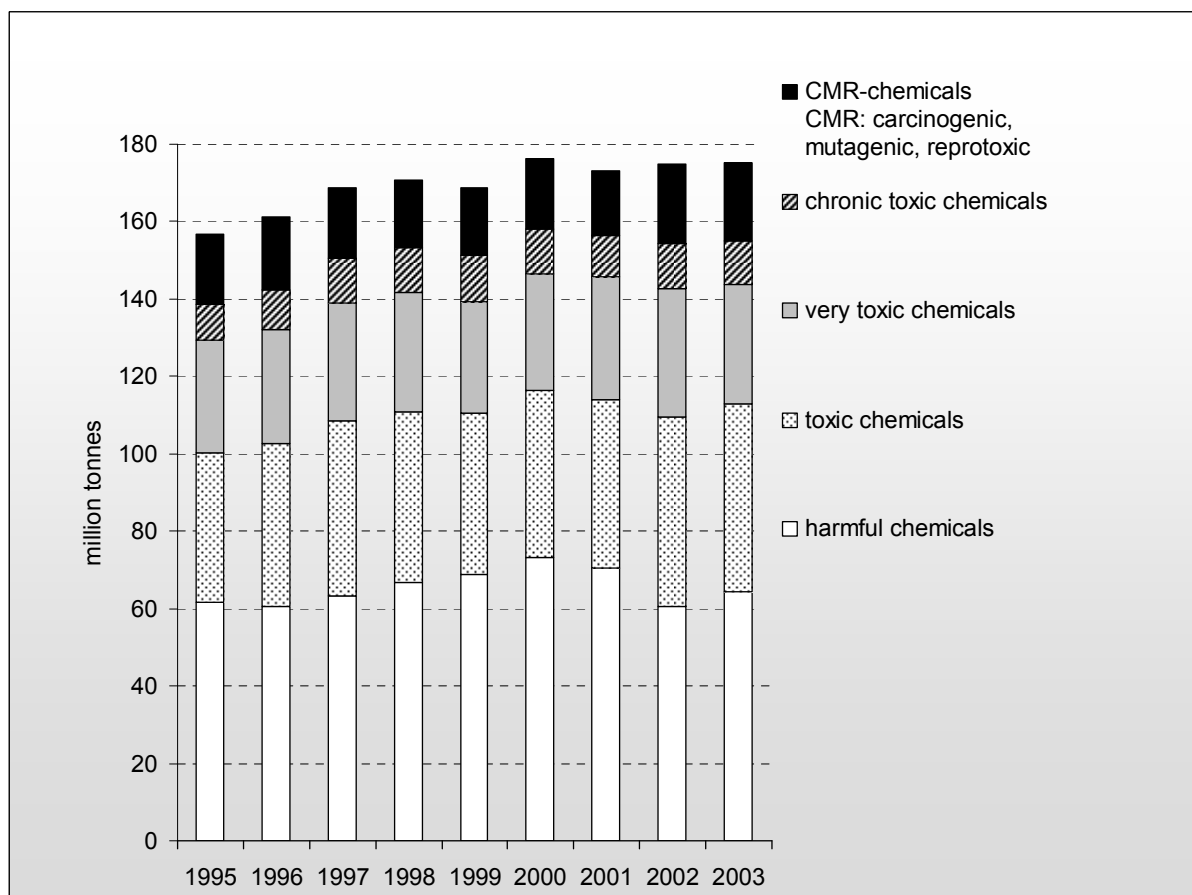


Source: European Commission, DG Environment, Mandatory reporting by Member States under Exchange of Information Decision 1997/101/EC and Directive 2002/3/EC

Increased concentrations of ground-level ozone cause health risks. While in recent years the focus was mainly on the peak concentrations during the summer, new evidence shows that also the continuous exposure to low level concentration has a significant detrimental impact on human health. The methodology behind the presented ozone indicator captures these risks from low concentrations, with any figure above zero indicating a risk to health. The figures for the years 2001 to 2003 show large differences between Member States, which not only relate to geographic and climatic conditions, but also to local air emissions and transboundary contributions. Given that the heat wave in 2003 boosted ozone concentrations in most Member States, the data show no significant trend.

<sup>12</sup> information relating to the share of electricity from renewable energy sources for the last five years concern the last available data in the period 1998-2002, source: Eurostat: <http://europa.eu.int/estatref/navigation.htm>

Pressure indicator: Production of toxic chemicals (million tonnes), by toxicity class<sup>13</sup>



Source: Eurostat

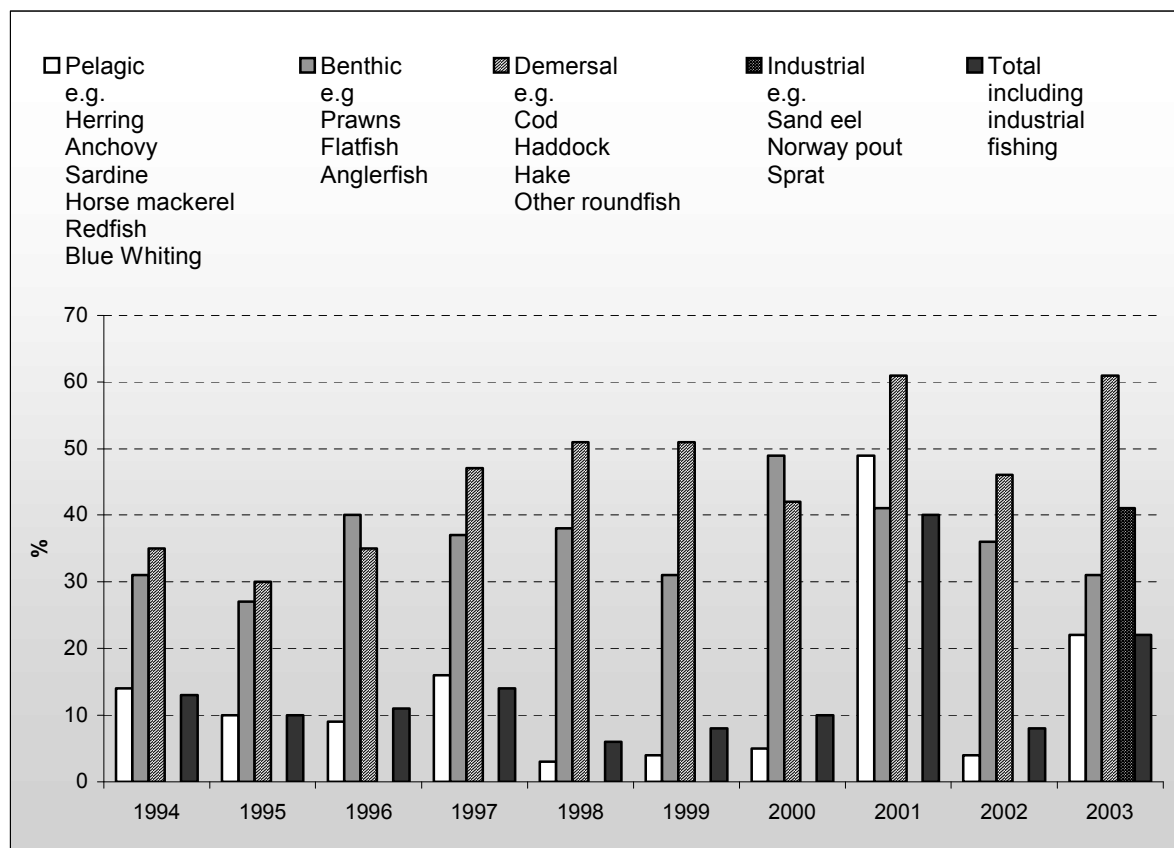
This newly produced data set shows increased production of toxic chemicals during the second half of the 1990s and a stabilisation since 2000 in the EU15. In addition, a shift towards the more toxic substances can be identified. The production of the most dangerous group, the carcinogenic, mutagenic and reprotoxic (CMR) chemicals, increased from 1995 to 2003 by 11.5 % or 2.1 million tonnes, while the amount of chemicals of the lowest toxicity class (harmful chemicals) grew by 4.5 %.

<sup>13</sup> The classes are derived from the Risk Phrases assigned to the individual substances in Annex 6 of the Dangerous Substance Directive (Council Directive 67/548/EEC as last amended in 2001).



## Natural Resources

*State indicator:* Percentage of fish catches from stocks outside safe biological limits

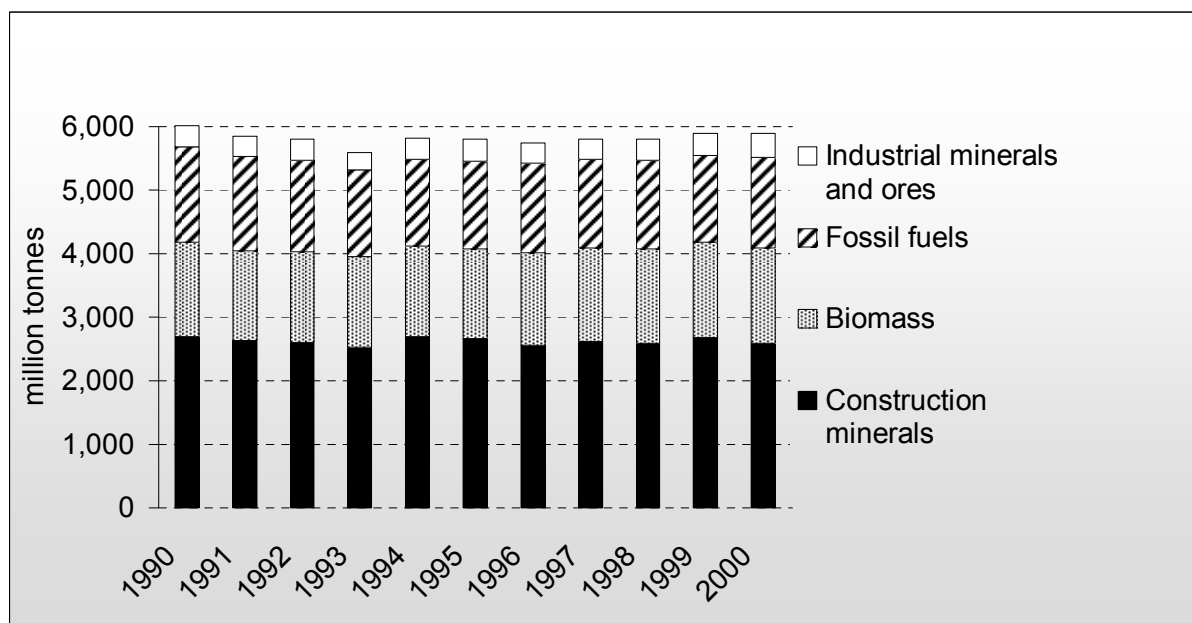


Source: European Commission, DG Fish, International Council for the Exploration of the Sea, Eurostat

This indicator links biodiversity, ecosystems and sustainable use of natural resources, by showing the percentage of fish landings which originate from fish stocks managed under EU responsibility which are considered to be over-exploited. Prior to 2000 the overall figure fluctuated around 10 %. However, for the years 2001 and 2003 the figures show a much higher degree of over-exploitation. This is due to the fact that some important pelagic and industrial<sup>14</sup> stocks, which supply large catches, fell out of safe biological limits for the first time. These stocks are now thought to be so close to overexploitation that also in future years they may again be found to be overexploited. Detailed analysis of the other two categories of fish show that demersal stocks have shown a steady deterioration, while the situation for benthic stocks seems to have continuously improved since 2000.

<sup>14</sup> 'Industrial' covers fisheries whose products are not for human consumption but for industrial processing.

Pressure indicator: Domestic material consumption (million tonnes), by material<sup>15</sup>, EU-15

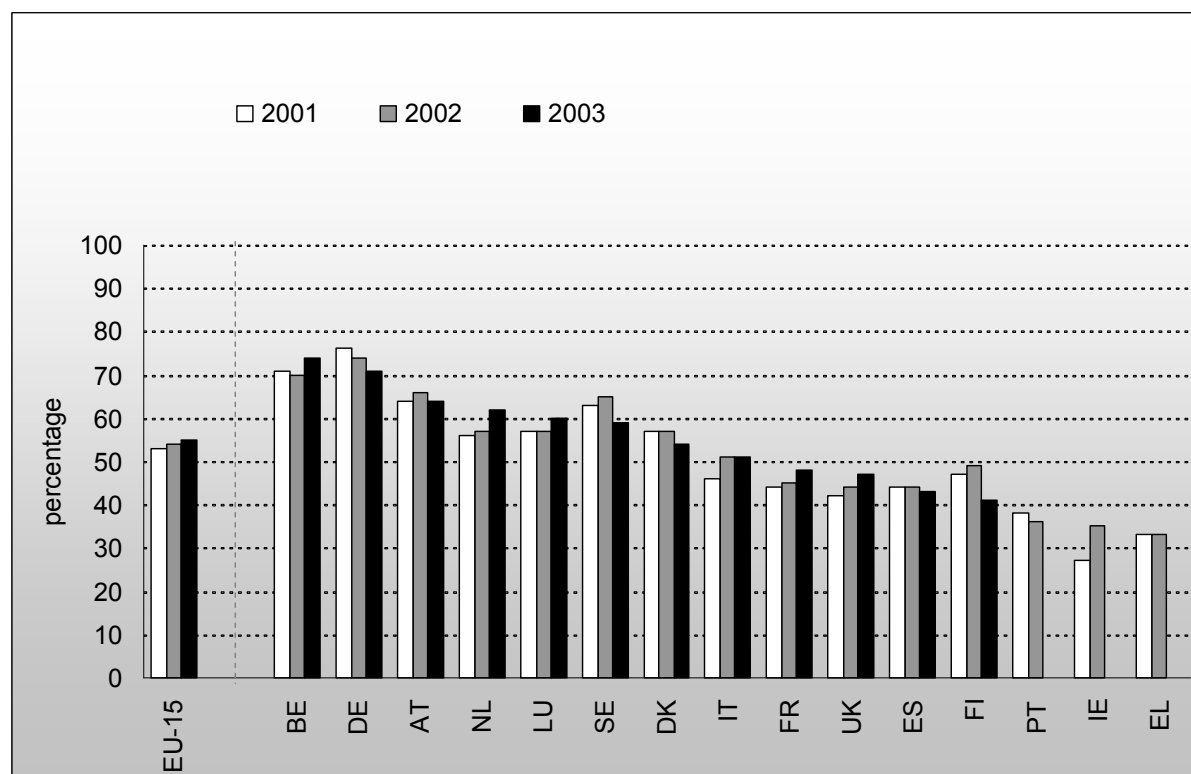


Source: Eurostat

Use of natural resources can exert significant pressure on the environment. But the pure amount measured in tonnes is only a first indication. Various breakdowns e.g. by type of material (as shown above), by sector or by the ecosystems affected, give the necessary deeper insights. Policy aim is to decouple the environmental impact of the use of natural resources from economic growth, particularly to ensure that renewable resources are not depleted through overexploitation.

<sup>15</sup> Fossil fuels include coal, crude oil, natural gas and others; biomass comprises food, feed, animals, forestry and non edible biomass.

*Response indicator: Recycling rates of packaging waste (percentage)*

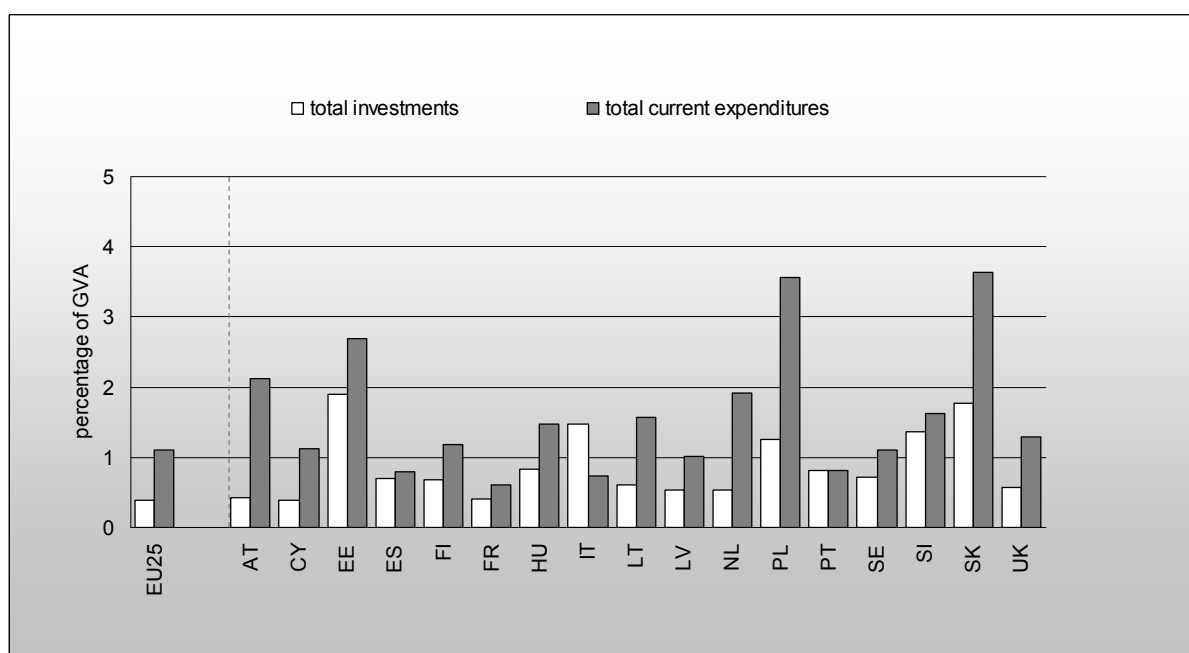


Source: European Commission, DG Environment, Mandatory reporting by Member States under Commission Decisions 97/138/EC and 2005/270/EC

Recycling is one important response to the waste of natural resources. It saves material from being lost in landfills or incinerators and by replacing virgin materials, recycling can reduce environmental impacts. Although on the European scale, there has been a continuous increase in the recycling rate of packaging waste, the situation varies significantly between Member States. Packaging waste is roughly 5% of total waste generation. A more comprehensive picture on waste generation and recycling will become available in 2006, prompted by the Waste Statistics Regulation.

## Environment and the economy

*Response indicator:* Environmental protection expenditure by industry in 2002 (percentage of GVA)



Source: Eurostat

The gross value added (GVA) is defined as the value of all newly generated goods and services less the value of all goods and services consumed as intermediate consumption. The depreciation of fixed assets is not taken into account. Gross value added is compiled according to the industry that created it.

Environmental protection expenditures is defined as the money spent on all purposeful activities directly aimed at the prevention, reduction and elimination of pollution or any other degradation of the environment. These expenditures do not include: activities that, while beneficial to the environment, primarily satisfy technical needs or health and safety requirements, expenditure linked to mobilisation of natural resources, calculated cost items such as depreciation or the cost of capital, payments of interest, fines and penalties for non-compliance with environmental regulations or compensation to third parties.

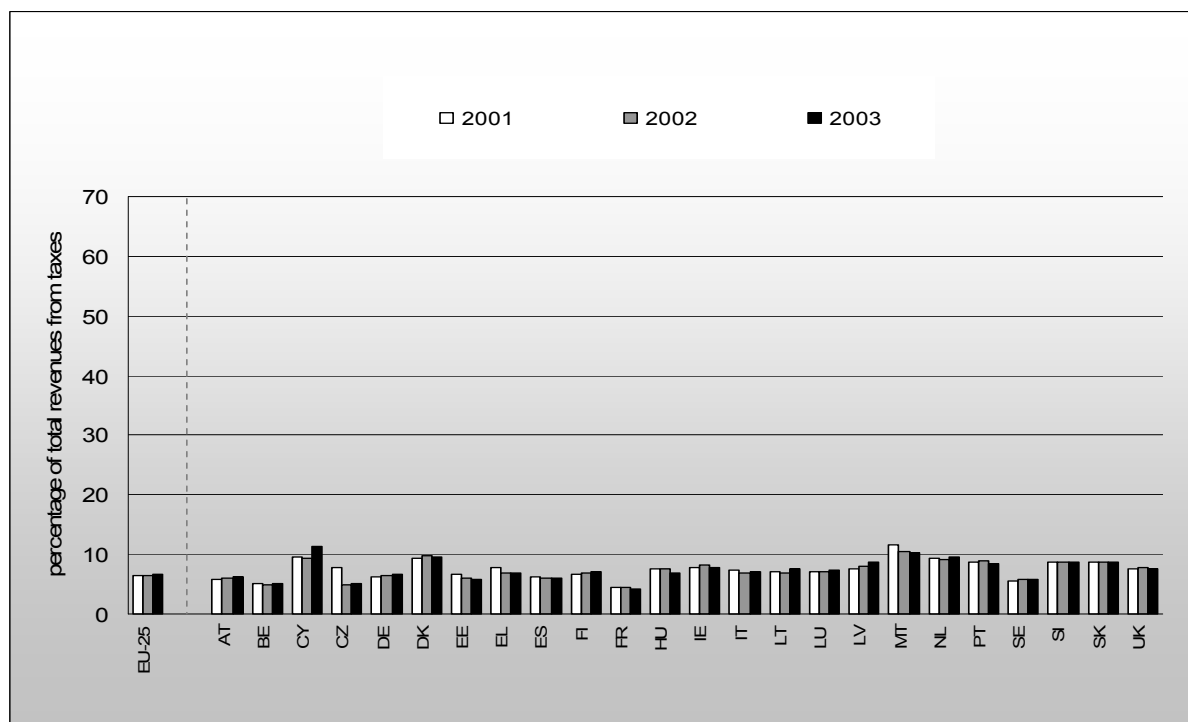
The majority of the EU-25 countries showed a decrease in investments<sup>16</sup> in environmental protection by industry between 1997 and 2002. Current expenditure<sup>17</sup> on the other hand increased in the same period. In 2002 only Italy and Slovenia saw investment larger than current expenditure. The majority of the EU countries saw a decrease in total environmental protection expenditure's share of Gross Valued Added (GVA).

<sup>16</sup> All outlays in a given year for machinery, equipment and land used for environmental protection purposes. Total investments are the sum of two categories: pollution treatment investments and pollution prevention investments.

<sup>17</sup> The money spent during the year for the execution of environmental protection activities. It is the sum of two categories. in-house expenditure, and fees and purchases

Response indicator: Environmental taxation: share of taxes in total tax revenue (percentage)

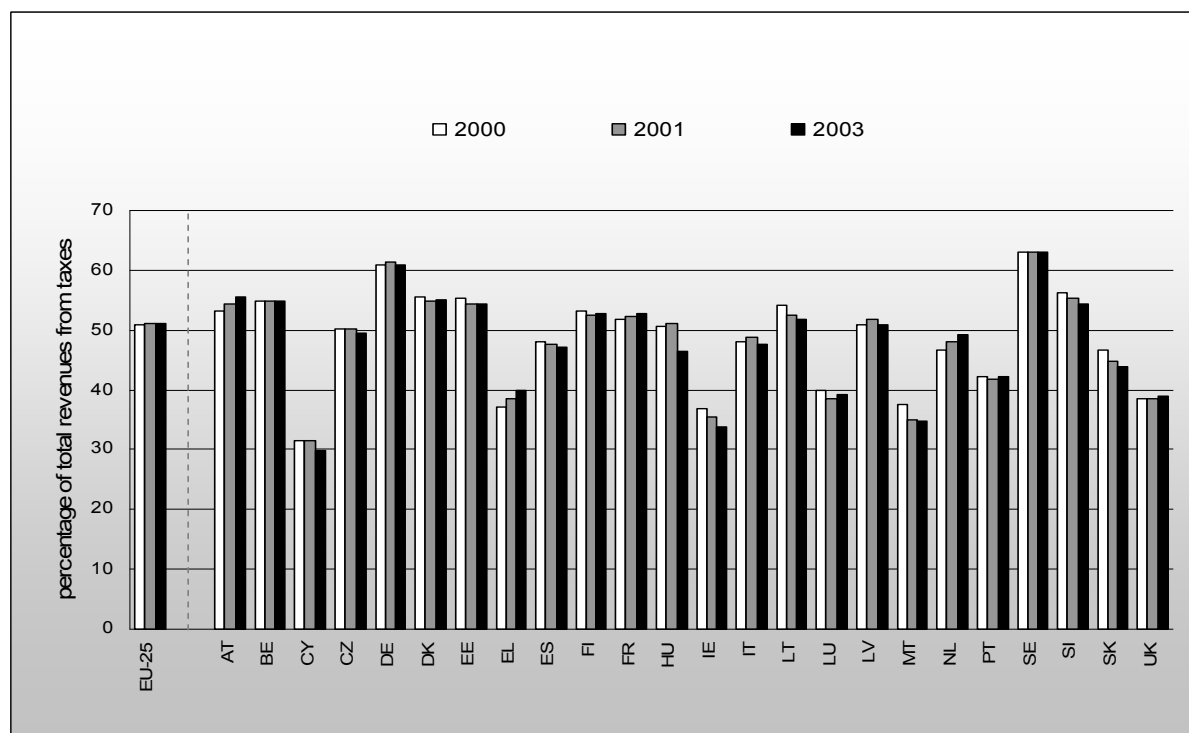
### Revenue from environmental taxes



Source: Eurostat 2005<sup>18</sup>

<sup>18</sup> Structures of taxation system in the European union 1995-2003, Luxembourg 2005

## Revenue from taxes on labour



Source: Eurostat 2005<sup>19</sup>

The environmental taxes are a good example of the use of the market-based instruments for environmental policy purposes. During the period 1970-1999 effective taxation on labour increased while other taxes remained broadly stable. This heavier taxation on labour appears to have been a disincentive to the creation of additional jobs, especially low skilled jobs. A shift of taxation from labour to consumption and/or environmental taxes could also help as part of a broader strategy to increase employment levels.<sup>20</sup>

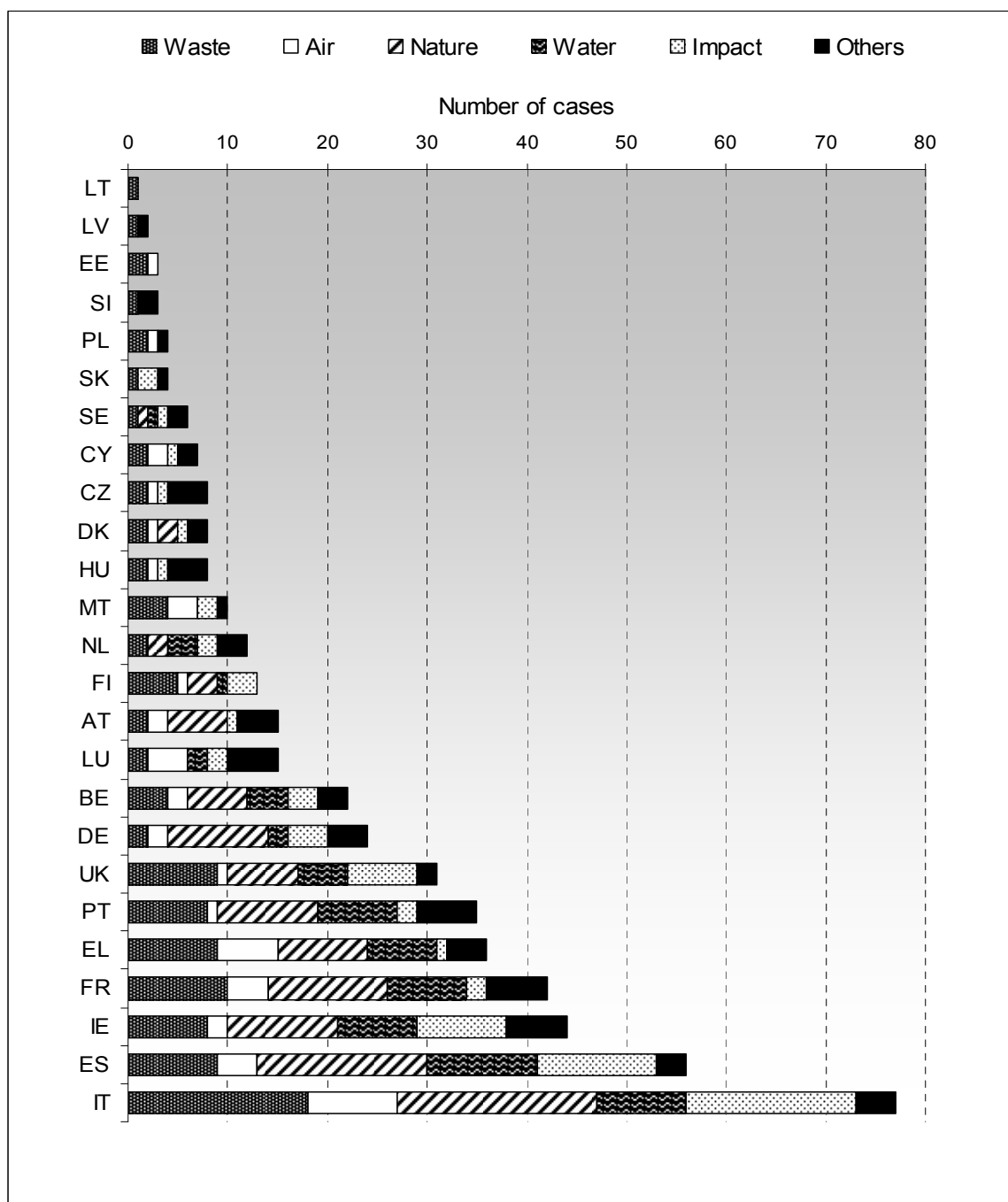
In the period 2001-2003 the data show a continuation of this trend, while revenue from environmental taxes for EU-25 stayed at the same level (6.5%-6.6% of total revenues from taxes), revenue from taxes on labour for the EU-25 increased from 50.9% to 51.2%.

<sup>19</sup> Structures of taxation system in the European union 1995-2003, Luxembourg 2005  
<sup>20</sup> COM(2005) 525 final/2

## Implementation

### Open infringement cases in Member States

(as of 31 December 2005)



Source: European Commission, DG Environment

Open infringement cases include: lack of transposition of EU law into national law, non-conformity of transposition with EU provisions, and bad application of EU environmental law. The graph gives a snap-shot at the date indicated. For the first time infringement cases against new Member States are reported, with very low figures. At the other end of the scale France, Ireland, Spain, and Italy are facing 40 or more open cases in the field of environment.

## PART 2 - COMMISSION SUMMARY OF THE ENVIRONMENTAL CONTENT OF NATIONAL REFORM PROGRAMMES

### 1. INTRODUCTION

#### Where does the information come from?

The information presented below is based on the summary of factual information presented by Member States in their National Reform Programmes within the renewed Lisbon Strategy for Growth and Jobs<sup>21</sup> and on the European Environment Agency's "*The European Environment, State and Outlook 2005*" report (SOER 2005).<sup>22</sup>

Data concerning greenhouse gas emission come from the document: "*Annual European Community greenhouse gas inventory report 2005 – Submission to the UNFCCC*" (EEA 2005).

Information relating to the revenue from environmental taxes is based on the document: "*Structures of the taxation system in the European Union 1995-2003*" (Luxembourg 2005).

#### How is the information structured?

The structure of the review reflects Guideline 11<sup>23</sup> of the Integrated Guidelines under four broad headings:

- Increasing energy efficiency and use of renewables
- Decoupling economic growth from environmental degradations
- Halting biodiversity loss
- Fighting climate change

#### How complete is the information?

The review is primarily based on information delivered by the Member States themselves in their National Reform Programmes, checked against the European Environment Agency's SOER 2005. Hence, it may often be the case that the summary does not cover all actions a Member State is performing in a given area. For instance, if there is no information on actions taken to halt biodiversity it could simply mean that a Member State chose not to mention all its actions in its National Reform Programme (NRP).

Detailed information about the environmental performance of individual Member States is presented by EEA's SOER 2005.<sup>24</sup> The information there covers: greenhouse gas emissions, energy consumption<sup>25</sup>, renewable electricity, emissions of acidifying substances, emissions of ozone precursors, freight transport demand, share of organic farming, municipal waste and use of freshwater resources. Countries covered include EU25, acceding countries (Romania and Bulgaria), Turkey, Switzerland, Norway, Iceland and Lichtenstein.

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<sup>21</sup> [http://europa.eu.int/growthandjobs/pdf/integrated\\_guidelines\\_en.pdf](http://europa.eu.int/growthandjobs/pdf/integrated_guidelines_en.pdf)

<sup>22</sup> [http://reports.eea.eu.int/state\\_of\\_environment\\_report\\_2005\\_1/en](http://reports.eea.eu.int/state_of_environment_report_2005_1/en)

<sup>23</sup> Guideline No 11

<sup>24</sup> [http://reports.eea.eu.int/state\\_of\\_environment\\_report\\_2005\\_1/en](http://reports.eea.eu.int/state_of_environment_report_2005_1/en)

<sup>25</sup> information relating to the share of electricity from renewable energy sources for the last five years concern the last available data in the period 1998-2002, source: Eurostat: <http://europa.eu.int/estatref/navigation.htm>



## **2. AUSTRIA**

### **Increasing energy efficiency and use of renewables**

- Austria's indicative target for share of electricity from renewable energy sources in 2010 is 78%, due to a high share of hydropower. Over the last five years, the actual share has oscillated between 66% and 72%. Since 2002 some measures have been taken to support green electricity. There is a boom in new green electricity plants, particularly wind and solid biomass. National targets for 2008 have already been met.
- The National Sustainable Development Strategy seeks to improve energy intensity by 1% per year and to quadruple resource productivity. In 2006 adoption of an action plan for resource efficiency is planned. Measures in the climate policy (including flexible mechanisms) will help with resource efficiency.

### **Decoupling economic growth from environmental degradation**

Revenue from environmental taxes in Austria has increased from 5.2% of total taxes in 1998 to 6.3% in 2003 (from 2.3% of GDP to 2.7%), while the EU averages are around 6.6% and 2.7%.

In 2004, the following fiscal measures were taken by the Austrian Government:

- an increase of mineral oil tax and differentiation according to sulphur content;
- the introduction of an energy tax on coal and gas;
- financial support for biofuels and for the use of particle filters in diesel cars from 2005 onwards.

Environmental technologies play an important role in the Austrian programme. Support will be given to improving market conditions via green public procurement and an export initiative. National measures will include an action plan, the creation of a database for environmental technologies, pilot projects for technology platforms, the development of performance targets for production processes, and studies to encourage sustainable production and consumption. Moreover creation of an advisory council on environmental technologies is planned. Financial guarantee instruments to cover the risks of environmental technology projects have also been introduced. The government procurement agency has developed newsletters, lists of criteria and training measures to help public administrations use green procurement.

### **Halting biodiversity loss**

Austria does not refer to halting biodiversity loss in its NRP.

## **Fighting climate change**

- Austria has committed to reducing its emissions for the period 2008-12 by 13% compared to 1990. In 2003 total greenhouse gas emissions were 16.6% above 1990 levels.
- The major increases in emissions come from transport and electricity/heat production (+80% and +25%, respectively).
- To bridge the gap, Austria plans to make use of the Kyoto project mechanisms (*Joint Implementation* and *Clean Development Mechanism*) and to purchase allowances from other countries.
- Moreover it has developed a programme (klima:aktiv) to support the introduction of “climate-friendly technologies”, inter alia in construction and energy use.

### **3. BELGIUM**

#### **Increasing energy efficiency and use of renewables**

Belgium's indicative target for share of electricity from renewable energy sources in 2010 is 6%. Over the last five years, the actual share has increased to 2.3%.

The Belgian Government plans to improve the energy efficiency of buildings through fiscal measures, regulation, and agreements with economic sectors. Improvement of the energy efficiency of transport systems will be done *inter alia* through differentiation of the vehicle tax system.

#### **Decoupling economic growth from environmental degradation**

Belgium plans to raise the rate of internalisation of external environmental costs by variation of vehicle taxation in line with CO<sub>2</sub> emission and a green certificate system for renewables.

Belgium makes limited use of environmental taxes (revenue from them is equivalent to 2.3% of GDP or 5.1% of total taxation, while the EU-25 averages for 2003 are around 2.7% and 6.6% respectively). While nominally there are a number of ecotaxes on specific products (e.g. batteries), they are not applied and have been replaced by voluntary agreements with industry. However, a number of ecotaxes are also applied at regional level.

#### **Halting biodiversity loss**

Belgium continues to devise measures to fight the loss of biodiversity, through the development of a network of "natural regions". The major objectives are the protection of maritime areas, and the promotion of sustainable management of forests, *inter alia* via R&D, sensitisation efforts for more sustainable pesticide use, together with greater co-operation with the farming sector.

#### **Fighting climate change**

Under the Community burden-sharing agreement on GHG emissions, Belgium has committed to reducing its emissions for the period 2008-12 by 7.5% compared to 1990. In 2003 emissions were 0.6% higher than in 1990. Belgium plans to make use of the Kyoto project mechanisms (*Joint Implementation* and *Clean Development Mechanism*) and to purchase allowances from other countries.

## 4. CYPRUS

### **Increasing energy efficiency and use of renewables**

The indicative target for Cyprus for the share of electricity from renewable energy sources for 2010 is 6%. Cyprus currently generates far below 1% of renewable electricity. Cyprus's NRP aims to meet this target and also increase the percentage of total energy consumption coming from renewable sources from the current 4% to 9% by 2010. It provides financial incentives in the form of grants for investments and/or tariff subsidisation in the fields of energy conservation and the promotion of Renewable Energy Sources utilisation. Moreover a five-year energy saving programme will be implemented as from 2006. It will include an energy saving campaign, a zero tax rate on biofuels and energy saving, and investment in public buildings.

### **Decoupling economic growth from environmental degradation**

Cyprus has not made much use of environmental taxes except from some related to energy and transport. Revenue from environmental taxes in Cyprus has increased from 9.1% of total taxes in 1998 to 11.4% in 2003 (from 2.6% of GDP to 3.8%), while the EU averages are around 6.6% and 2.7%. Cyprus has also obtained an additional transitional period until 2008/2010 to adjust to the new minimum tax rates for motor fuels under the energy products taxation directive. The Government envisages taking the following measures to promote decoupling of economic growth from environmental degradations:

- Excise duty and registration fees on electric cars were abolished, whereas dual propulsion cars (hybrids) are now subject to half the registration and circulation fee;
- Excise duty on cars will be differentiated according to CO<sub>2</sub> emissions;
- Payment of incentives for scrapping of vehicles older than 15 years;
- A provision was introduced for a small fee, paid for each passenger car and light commercial vehicle before being cleared by the customs. The total amount thus collected is earmarked for the development and enhancement of public transport, and is considered as an innovative measure in terms of Cyprus budgetary practice.

Cyprus also plans to address the environmentally-harmful subsidies.

A road map for ETAP will include actions for internalizing negative environmental externalities and a campaign for raising business and consumer awareness on the use of environmental technologies. Measures to promote the dissemination of environmental technologies will be taken in the framework of the Action Plan on Green Public Procurement

### **Halting biodiversity loss**

Cyprus is planning a Coastal Area Management Programme (CAMP) project on Integrated Coastal Zone Management.

## **Fighting climate change**

Cyprus does not have greenhouse gases emissions reduction commitments. However, a national law on Emissions Trading was adopted in 2004. The Government has also prepared a Strategic Plan for reducing greenhouse gas emission which has been implemented since 2004. This plan includes promotion of the use of RES (Renewable Energy System), high efficiency air conditioning systems and electric appliances, energy-efficient lighting bulbs, solar collectors, photovoltaic systems, promotion of co-generation and energy conservation and campaign on public awareness on climate change.

## **5. CZECH REPUBLIC**

### **Increasing energy efficiency and use of renewables**

The Czech Republic's target for the share of electricity from renewable energy sources for 2010 is 8%. Over the last five years, the actual share has increased from 3.2% to 4.6% in 2002.

The National Programme for Economical Use of Energy and Usage of Renewable and Secondary Energy Sources for 2006-2009 seeks to accelerate the increase in energy efficiency, promote the use of renewable and secondary sources of energy, and support the use of nuclear energy. In August 2005 a new law introduced minimum prices for electricity generated by renewable sources and premiums (green bonuses) on the price of electricity generated by renewable sources in order to help achieve this target.

### **Decoupling economic growth from environmental degradation**

Revenue from environmental taxes is equivalent to 2.7% of GDP or 7.4% of total taxation, while the EU-25 averages are around 2.7% and 6.6% (2003).

Budget neutral environmental tax reform is one of the aims in the Czech Government's programme declaration of May 2005.

The Czech Republic sees the development of environmental technologies as a way to successfully solve a number of crucial problems in the future, and also a way to improve the competitiveness of national businesses in the European market. Actions include:

- Possibility for taxpayers to deduct 100% of the costs they incur in the implementation of R&D projects. The aim is to support the use of alternative energy sources, and the introduction of equipment to protect and improve the environment;
- In 2005, programmes to promote the use of environmental technologies to small and medium-sized enterprises gave support for projects concerning environmental technologies for an amount of € 1.4 million (41.4 m CZK);
- Environmental technologies are supported through environment-friendly public contracts;
- A number of R&D programmes support environmental technologies.

### **Halting biodiversity loss**

The Czech Republic does not refer to halting biodiversity loss in its NRP.

### **Fighting climate change**

Regarding climate change and the Kyoto Protocol, the Czech Republic has committed to reducing its CO<sub>2</sub> emissions for the period 2008-12 by 8% compared to the level in 1990. Currently the country's emissions are 24.3% below their 1990 level, although they have recently been growing again.

## 6. DENMARK

### **Increasing energy efficiency and use of renewables**

The Denmark's target for the share of electricity from renewable energy sources for 2010 is 29%. In 2002 the share of renewable electricity was 19.9%. The Energy Strategy (2005) sets out concrete initiatives in the area of energy saving, with an increased effort in the transport sector and continued efforts to ensure a proper framework for renewables.

### **Decoupling economic growth from environmental degradation**

- Denmark's revenues from environmental taxes have fallen since 1998 to 4.7% of GDP or 9.5% of total taxation in 2003, while the EU-25 averages are 2.7% and 6.6% respectively.
- Denmark's NRP stresses that the key economic and social challenges shall be 'married' to a continued high level of environmental protection. Emphasis has been put on environmental integration of sector policies with biodiversity and nature policy with a view to the forthcoming new strategy on cost-effective implementation of the Water Framework Directive.
- Denmark has an obligation to perform environmental, economic and social impact assessments of all new regulation. This helps to integrate environment into other policy areas and facilitates the use of market based instruments.
- GDP has grown faster than growth rates of energy consumption, water extraction and waste. However, only in water extraction has there been absolute decoupling.
- Denmark strives to internalise external environmental costs via tax structures. Denmark already has high levels of environmental taxes compared to the EU average. It has also lowered the tax on sulphur-free diesel in order to realise that fuel's environmental benefits.
- Denmark is working to seize the export opportunities environmental technology and eco-innovation can provide. A Green Technology Foresight<sup>26</sup> has been used to identify potential commercial success areas for Danish enterprises within environmental production technology, equipment and knowledge. Denmark plans to identify and build on existing strengths in this field to strengthen synergies with innovation and research.
- The Danish Government is linking development of technologies (and export markets) to achievement of environmental goals in specific sectors – for livestock production and aqua-culture.

### **Halting biodiversity loss**

The 2004-2009 action plan for biodiversity and nature protection contain measures on NATURA 2000 areas. There are two additional programmes: 'Water environment plan III',

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<sup>26</sup> Technological Foresight is a systematic effort to look into the future and analyse potential opportunities within science, technology, society and economy. <http://www.teknologiskfremsyn.dk>

aiming at 50% reduction of agricultural phosphate and a 13% reduction of nitrates by 2015 and 'Nature and environment' together due to receive € 1.3 more million for 2006-2009.

### **Fighting climate change**

Under the Community burden-sharing agreement on CO<sub>2</sub> emissions, Denmark is committed to a 21% reduction in its average annual greenhouse gas emissions in 2008-2012 (compared to 1990 emissions). In 2003, Danish greenhouse gas emissions were 6.3% higher than in 1990, pointing to a need for greater action. The 2005 Energy Strategy sets out concrete initiatives in the area of energy saving with an increased effort on the transport sector and also continued efforts to ensure a proper framework for renewables.



## **7. ESTONIA**

### **Increasing energy efficiency and use of renewables**

Estonia's target for the share of electricity from renewable energy sources for 2010 is 5.1%. In 2002 the share of electricity from renewable sources was 0.5%. Programmes to promote sustainable and environmentally-friendly energy production together with increases in energy efficiency are included in the NRP.

### **Decoupling economic growth from environmental degradation**

Estonia is using a wide range of environmental taxes (revenue from them is equivalent to 2.0% of GDP and 5.9% total taxation, while the EU-25 average is around 2.7% and 6.6% in 2003), both for energy and beyond, in particular through charges on water and waste. It has its own energy resource in the form of oil shale, on which mining charges are applied.

The Government's general approach is to shift the burden of taxation from labour to resource use and pollution and also reduce activities that are harmful to health, environment, industry and economic growth, and at the same time encouraging employment. Potential measures have been described, on the basis of which specific measures for achieving the goals of ecological taxation reform will be worked out.

### **Halting biodiversity loss**

The Government plans measures for the preservation of biodiversity through conservation by developing a conservation development plan and by initiating its implementation. This will guarantee state co-financing of nature conservation measures to diversify rural life and offer alternative employment opportunities and promote nature tourism in 2006.

### **Fighting climate change**

Estonia has committed to an 8% reduction its CO<sub>2</sub> emissions for the period 2008-12 (compared to 1990 emissions). As concerns climate change and the Kyoto Protocol, Estonia has significantly reduced its CO<sub>2</sub> emissions. In 2003 Estonia's emissions were 50.8% below their level in 1990.

## **8. FINLAND**

### **Increasing energy efficiency and use of renewables**

Finland's target for the share of electricity from renewable energy sources for 2010 is 31.5% and in 2002 it was 23.7%. Increased capacity for electricity generation, and measures related to energy use, energy sources and technology will be included in the updated national climate and energy strategy. According to the programme, Finland has already implemented a large part of the measures proposed in the EU Green Paper on energy efficiency of 2005 and sees only a limited scope for further improvement.

### **Decoupling economic growth from environmental degradation**

Finland makes intensive use of environmental taxes (revenue from them is equivalent to more than 3.2% of GDP and 7.2% of total taxation, while the EU-25 average is around 2.7% and 6.6%) both for energy and beyond. It has undertaken environmental tax reform twice in the 1990s, shifting the burden of taxation from labour taxation and social security contributions towards CO<sub>2</sub> emissions and landfill. Currently Finland is committed to reforming the tax structure with a view to promoting sustainable development. The ecological tax reform is designed to discourage the use of non-renewable natural resources, to reduce environmental nuisances and promote recycling of products and energy use.

Finland outlines detailed measures for implementing the Environmental Technologies Action Plan, including a support programme to increase the uptake of Finnish environmental technology and knowledge at the international marketplace.

### **Halting biodiversity loss**

Finland does not refer to halting biodiversity loss in its NRP.

### **Fighting climate change**

Under the Community burden-sharing agreement on CO<sub>2</sub> emissions, Finland has committed to maintain its CO<sub>2</sub> emissions for the period 2008-12 at the level of 1990. In 2003 Finland's emissions were 21.5% above level in 1990.

## **9. FRANCE**

### **Increasing energy efficiency and use of renewables**

The target share of renewable energy sources for electricity production for France for 2010 is 21%. For the last five years, the actual share has fluctuated between 13% and 16.5%. Concerning biofuels, France aims to speed up achieving 5.75% target originally set for 2010, in particular by tax incentives. For residential construction, the tax credit will increase: from 25% to 40% for energy efficiency (insulation), and from 40% to 50% for equipment for renewable energy production (solar panels).

### **Decoupling economic growth from environmental degradation**

- France is creating a “Commission on economic instruments” to integrate environment into economic policies, notably through the use of market-based instruments.
- As regards environmental taxes, revenue from them has fallen in relative terms since 1998 to 1.9% of GDP or 4.3% of total taxation in 2003, while the EU-25 averages are 2.7% and 6.6% respectively. From January 2006, the “carte grise” (circulation tax) will be more expensive for vehicles producing high levels of CO<sub>2</sub> emissions. Moreover, in order to promote public awareness, new labelling will be introduced to inform citizens of vehicle CO<sub>2</sub> emissions. Water charging will be modified so that charges will be more closely related to consumption and agricultural users will pay prices similar to those of others users.

### **Halting biodiversity loss**

Halting biodiversity loss is one of the three environmental priorities of the NRP. It will be implemented via national thematic strategies, the first seven of which will soon be adopted.

### **Fighting climate change**

Under the Community burden-sharing agreement on greenhouse gas emissions, France has committed to maintain its emissions for the period 2008-12 at its 1990 level. Emissions in 2003 were 1.9% below 1990. In July 2004 France’s government adopted a “Climate Plan”, which aims to achieve CO<sub>2</sub> emissions reduction goals.

## 10. GERMANY

### **Increasing energy efficiency and use of renewables**

The indicative target for Germany for the share of electricity from renewable energy sources for 2010 is 12.5 %. Over the last five years, the share has increased from 4.9% to 8.1%.

- Germany will focus on offshore wind power. In the longer term, Germany will seek to make renewables competitive without further subsidies;
- The Government will provide financial incentives for modernisation and innovation of energy generation and industrial energy use;
- Germany increased efficiency standards of buildings over time and provides financial support for upgrading existing buildings;
- Further measures are planned to improve the energy efficiency of buildings and to promote renewable energy on the basis of a renewable energy law;
- A labelling system for the energy efficiency of electrical appliances will be introduced;
- The 5<sup>th</sup> energy research programme focuses on renewables and on efficiency improvements for power plant technology;
- In order to reach the EU target for biofuels market share in 2010 of 5.75% the current system of excise duty exemption for fuel will be replaced by subsidies to biofuels. The government will give financial incentives to encourage refiners to mix biofuels into their fuels. The government has developed a strategy for alternative fuels and innovative engines to facilitate their introduction into the market. This includes an R&D programme, including support for the installation of alternative fuels pilot plants and demonstration projects for hydrogen fuel.

### **Decoupling economic growth from environmental degradation**

- The revenue from environmental taxes in Germany has increased from 5.2% of total taxes in 1998 to 6.7% in 2003 (from 2.2% of GDP to 2.7%). The government plans to modify the car circulation tax so that it relates to CO<sub>2</sub> and pollutant emissions.
- Germany sees a high level of environmental protection as a basis for sustainable growth which will help avoid medium and long-term costs to the economy and society. Support for eco-innovations is seen as the key factor in this context. A framework programme “research for sustainability” has been created with an annual budget of €160 million for five years which will focus on better resource efficiency and environmental technologies.
- The development of eco-innovative technologies is seen as an important way to capture a major share of the world market for such technologies. Support has so far been given via a renewable-energy law and through R&D support.

### **Halting biodiversity loss**

Germany does not refer to halting biodiversity loss in its NRP.

### **Fighting climate change**

Under the Community burden-sharing agreement, Germany is committed to reducing their CO<sub>2</sub> emissions for the period 2008-12 by 21% compared to 1990. In 2003 Germany's greenhouse emissions were 18.5% below level 1990. Germany puts high emphasis on further measures to prevent climate change. It will further develop the national climate change programme and push for further development of the EU-Emissions Trade Scheme.

## **11. GREECE**

### **Increasing energy efficiency and use of renewables**

Greece's target for electricity generated from renewable sources is 20.1% by 2010. In 2002, electricity production from renewable resources was about 6% of total electricity production. Greece is taking steps to change this path and has a new investment law that provides incentives for production of electricity from renewable energy sources. Greece has set a target for 2008 for the tertiary sector and households to reduce energy consumption by 11-12%, through the use of e.g. solar energy or recycling of fuel gases.

Work on promoting biofuels includes a draft law for the exemption of specific quantities of bio-diesel from the Special Consumption Tax over the period 2005-2007. The National Objective is to replace 5.75% of total transport fuels by biofuels.

### **Decoupling economic growth from environmental degradation**

The NRP identifies policy actions where there are synergies:

- Programmes increasing the employability of the unemployed include one based on the 'market needs' of environmental programmes.
- An existing lack of spatial planning which is seen to hinder entrepreneurial activity and contribute to environmental deterioration is to be remedied through a National Spatial Plan and specific spatial plans, coming into force in May 2006.
- Efforts towards more effective and sustainable waste management are focusing on alternative recycling systems and reforming the legislative framework for the management of dangerous waste like electric and hospital waste.
- The share of Greece's tax revenue coming from environmental taxes has fallen from 8.9% of total tax take in 1998 to 6.8% in 2003. This corresponds to 2.5% of GDP in 2003.
- The new investment law includes direct and indirect subsidisation and tax exemptions, aiming at the promotion of investment plans for the protection of the environment.
- Greece is taking steps towards the use of Green Public Procurement with the promotion of hybrid vehicles in public administration to tackle atmospheric pollution and the conversion of all State hospitals to the use of natural gas as fuel.

### **Halting biodiversity loss**

Greece increased funding to 27 authorities in charge of protected areas. Greece is also participating in the international collaboration of Mediterranean countries (Medwet) for the protection of wildlife reserves.

## **Fighting climate change**

Greece has committed itself to a maximum increase of its emissions of 25% for 2008-12 compared to the 1990 level. Currently Greece's emissions are 23.2% above its 1990 level.

In Greece – due to structural characteristics of the energy system –twice as much CO<sub>2</sub> is emitted for a given unit of production as the EU-15 average in 2000.

## **12. HUNGARY**

### **Increasing energy efficiency and use of renewables**

Hungary's target for the share of electricity from renewable energy sources for 2010 is 3.6%. For the last five years, the actual share has stayed between 0.7-1.1%. The NRP points to the need to launch a specific targeted programme for supporting renewable energy, as well as the need for renewal and implementation of an energy efficiency programme.

### **Decoupling economic growth from environmental degradation**

- The revenue from environmental taxes in Hungary has fallen from 9.0% of total taxes in 1998 to 6.9% in 2003 (from 3.5% of GDP to 2.7% in 2003);
- The NRP indicates that broader use of environmental taxes will help to achieve synergies between environmental protection and growth;
- Production and use of environmental friendly technologies in Hungary are rather low. While the role of ETAP to improve this situation is recognised, there seem to be no specific measures to support eco-innovation or R&D being announced;
- The NRP mentions the need to make broader use of environmental taxes.

### **Halting biodiversity loss**

Hungary does not refer to halting biodiversity loss in its NRP.

### **Fighting climate change**

As concerns climate change and the Kyoto Protocol, Hungary has committed to reducing its CO<sub>2</sub> emissions for the period 2008-12 by 6% compared to the 1990 level. Currently Hungary's emissions are 31.9% below its 1990 level.



## **13. IRELAND**

### **Increasing energy efficiency and use of renewables**

Ireland's target for the share of electricity from renewable energy sources for 2010 is 13.2%. In the period 1997-2002 the share electricity from renewable energy sources has fluctuated between 4.2%-5.4%. Ireland is putting in place a feed-in tariff mechanism, which differentiates among renewable technologies to ensure use of a broad range of them. The 2004 Finance Act introduced a scheme to stimulate the use of biofuels.

### **Decoupling economic growth from environmental degradation**

- Ireland's revenue from environmental taxes has fallen since 1998 to 2.4% of GDP or 7.9% of total taxation in 2003, while the EU-25 averages are 2.7% and 6.6%.
- New high-efficiency power plants and an increasing share of gas in the fuel mix as well as a decrease in energy consumption by industry have contributed to decoupling energy use and emissions from GDP growth.
- In the context of a more sustainable transport policy, road pricing and congestion charging are being considered to manage traffic demand in Greater Dublin.
- A government agency (Enterprise Ireland) runs programmes that encourage companies to implement environmental management schemes, with a particular focus on SMEs, and helps companies to develop products with lower environmental impacts.
- The Environmental Protection Agency runs the Cleaner Greener Project for environmental technology under the Environmental Research and Technical Development Initiative (ERTDI).
- Ireland promotes environmental awareness of those in charge of public procurement by encouraging the government supply agency to include environmentally-preferable products in their supply contracts, hosting Green Trade Fair for procurement officers, and boosting tendering for green electricity supply.

### **Halting biodiversity loss**

Ireland's main tool is the first National Biodiversity Plan that covers the period 2002-2006. A Biodiversity Research Programme is being developed to help establishing future national and sectoral strategies.

### **Fighting climate change**

Ireland has committed to a maximum increase of its CO<sub>2</sub> emissions for the period 2008-12 by 13% compared to the level of 1990. The 2000 National Climate Change Strategy set out a framework for achieving reductions in national greenhouse gas emissions. Still, in 2003, the latest year for which figures are available, emissions were 25.2% above 1990 level, down from 31% in 2001.

## **14. ITALY**

### **Increasing energy efficiency and use of renewables**

Italy's target for the share of electricity from renewable energy sources for 2010 is 25%. In 2002, the share of electricity from renewable energy sources was 14.3%. The NRP includes several measures concerning the energy sector: defining a national 2005-2030 energy programme; implementing energy technology co-operation and development programmes; setting up pilot energy districts for use of renewable energy sources; and an ongoing programme to increase use of methane gas in Southern Italy.

The plan also intends to:

- introduce fiscal incentives to encourage energy saving, by supporting the introduction of low CO<sub>2</sub> emission vehicles;
- promote the use of alternative automotive fuels for traction (LPG, gas-methane, biofuels) by incentives and improved regulation.

### **Decoupling economic growth from environmental degradation**

The revenue from environmental taxes in Italy has fallen from 7.9% of total taxes in 1998 to 7.2% in 2003 (from 3.4% of GDP to 3.1%, which is above the EU-25 average of 2.7% in 2003). However, the NRP does not mention ecological tax reform.

In the field of environmental technologies, Italy plans to:

- develop high-efficiency industrial engines, including ones for co-generation;
- develop methods to exploit hydrogen as an alternative energy source;
- develop alternative technologies for the valorisation of solar energy.

The NRP also intends to promote green public and private procurement. The Government in 2003 set an obligation for the public administration to use at least 30% of recycled materials. Italy has introduced a Fund for the Promotion of Sustainable Development to finance sustainable production and consumption (environmental management for SMEs, technologies for sustainable use of water resources).

### **Halting biodiversity loss**

Italy does not refer to halting biodiversity loss in its NRP.

### **Fighting climate change**

Italy has committed to reducing its greenhouse gas emissions for the period 2008-12 by 6.5%. In 2003 Italy's emissions were 11.6% above their 1990 level. In 2002 Italy approved the National Plan for the reduction of GHG emissions. Italy intends to implement the Urban Plans for Mobility which aim at decreasing air and noise pollution and minimising transport congestion in urban areas.

## **15. LATVIA**

### **Increasing energy efficiency and use of renewables**

Latvia's target for the share of electricity from renewable energy sources for 2010 is 49.3%. In 2002 the share of electricity from renewable energy resources was 39.3%. According to Latvia's NRP the use of renewable energy resources will play an important role. This would be achieved by:

- implementing test projects, including biogas (2005-2008);
- a strategy for the use of renewable energy resources and development of environmental technologies (2006);
- support schemes for promotion of bio-fuel use in public transport, logging machinery and inland water transport (2005);
- guidelines for application of the green public procurement in public administration as well as central and local government institutions (2006).

### **Decoupling economic growth from environmental degradation**

Revenue from environmental taxes in Latvia has fallen from 9.0% of total taxes in 1998 to 8.7% in 2003 (from 3.1% of GDP to 2.5%).

Latvia will issue policy documents in the field of development of environmental technologies (2006). The 'Latvian Environmental Protection Fund' will finance research projects, including subsidies for business.

### **Halting biodiversity loss**

Nature is mentioned as the most important resource of Latvia, attracting tourists from all over the world. The largest areas of intact nature are situated in the specially protected nature reserves.

Latvia aims to preserve biological diversity at the current level:

- By creating specially protected maritime nature territories (2007) and establishing micro-reserves (2008);
- By implementing activities of the Rural Development Plan sub-programmes (2006);
- By ensuring favourable conservation status for specially protected species and habitats and by creating the NATURA 2000 network (2008);
- By implementing nature monitoring, and developing a long-term state programme for scientific research in priority areas of biological diversity (2008).

## **Fighting climate change**

Latvia has committed to reducing its emissions for the period 2008-12 by 8% compared to 1990. In 2003 Latvia's emissions were 58.5% below its 1990 level. Measures foreseen in this area are:

- reducing the volume of methane emissions from landfills and wastewater treatment facilities (2008);
- encouraging the capture of CO<sub>2</sub> – supporting the rise of forest plantation productivity and reforestation of non-agricultural land (2004-2006);
- increasing the energy efficiency of the energy production sources and energy transmission and distribution systems;
- promoting energy saving and efficient use in buildings and heat supply systems.

## **16. LITHUANIA**

### **Increasing energy efficiency and use of renewables**

Lithuania's target for the share of electricity produced from renewable energy sources is 7% by 2010. In 2002 the share of electricity from renewable energy resources was 3.2%. The NRP specifies budget allocation for the relevant support programmes for the following objectives:

- Electric power generated from renewable energy resources accounting for at least 6.4% of power consumed in Lithuania by (2008);
- As part of the National Energy Efficiency Programme, seek to achieve starting from 2007, energy resource/energy savings that would amount to 1% compared to the previous year;
- Implement the programme for the stimulation of biofuel production and use (2008). The National Sustainable Development Strategy (2003) encourages the use of biofuel, with a minimum target by 2020 of 15% of all fuel used for road transport.

### **Decoupling economic growth from environmental degradation**

Revenue from environmental taxes is equivalent to 2.2% of GDP or 7.6% of total taxation, while the EU-25 averages are around 2.7% and 6.6% (2003).

Lithuania plans to implement and stimulate cleaner technologies with the help of the following measures:

- National guidelines for the implementation of the ETAP (2006);
- National guidelines for the implementation of the EU Integrated Product Policy (2006);
- A National green public procurement implementation plan (2006);
- A programme for the introduction of the eco-labelling scheme (2006);
- Stimulation of recycling and private capital investments in waste management (2008).

### **Halting biodiversity loss**

Lithuania proposes specific measures for the promotion of biodiversity (forecasts for the direct costs on the government budget are included in all of them):

- Fitting out tourist paths and tracks of an educational nature in national parks and developing ecological education system (2008);
- Afforestation of agricultural land as provided for in the Programme on Increase of Forest Coverage for Lithuania (2008);
- Completing of the protected areas network ("NATURA 2000") (2008);
- Implementing of the project for the restoration and preservation of the Lithuanian Baltic coastal zone (2006).

## **Fighting climate change**

Lithuania has committed to reducing its emissions for the period 2008-12 by 8% compared to 1990. In 2003, Lithuania's greenhouse gas emissions were 66.2 % lower than in 1990.

Lithuania seeks to decouple greenhouse gas emissions from production growth. It will:

- Update the national strategy for implementation of the UN Framework Convention on Climate Change (2006);
- Develop a national system for implementation of the joint implementation mechanism under the Kyoto Protocol (2006);
- Develop an effective greenhouse gas emissions trading system (2006).

It is planned to develop a national programme to reduce emissions to air.

## **17. LUXEMBOURG**

### **Increasing energy efficiency and use of renewables**

Luxembourg's target for the share of electricity from renewable energy sources for 2010 is 5.7%. In spite of the introduction of a multi-annual subsidy programme for renewable electricity for both households and enterprises over the last five years, the actual share has stayed between 1.6% and 2.9%.

- The Government considers that protection of environment and competitiveness are complementary, and that win-win solutions can be found. Furthermore, investment in environmental areas (renewable energies, energy efficiency, eco technologies) can generate new jobs.
- Energy efficiency and new and sustainable energies are priorities for the government. This is also seen in the context of a secured energy supply and the growth of innovative firms in that field. Luxembourg also intends to develop support schemes for biofuels.

### **Decoupling economic growth from environmental degradation**

Revenue from environmental taxes is equivalent to 3.0% of GDP or 7.3% of total taxation, while the EU-25 averages are around 2.7% and 6.6% (2003).

Luxembourg will offer fiscal incentives to promote environmental friendly behaviour. It also intends to study the use of fiscal instruments to make the price of certain natural resources reflect the full cost to society.

Referring to the fight against climate change, Luxembourg will investigate use of market-based instruments, such as vehicle taxes. Integration of external costs for road transport will be pursued, through the promotion of water and rail and the inter-modal transport.

The Government will analyse areas where environmental technologies could be developed.

The objectives and planned measures on eco-efficiency in the context of ETAP are:

- To promote rational energy use in production, transport and the residential sector (public building). This will include support for the development of public transport while discouraging individual transport;
- To formulate, in mid-term, new energy legislation taking into account eco-efficiency with more market-based instruments;
- To elaborate a programme to promote bio-fuels;
- To promote R&D and innovation and production of eco-technologies using green public procurement and subsidies, e.g. for renewable energy or energy audits as well as the reinforcement of public-private partnerships in research and innovation.

### **Halting biodiversity loss**

Luxembourg is working on a national plan to protect nature, with support given to maintain biodiversity.

### **Fighting climate change**

Under the Community burden-sharing agreement on CO<sub>2</sub> emissions, Luxembourg has committed to reducing its CO<sub>2</sub> emissions for the period 2008-12 by 28% compared to 1990. In 2003, Luxembourg's greenhouse gas emissions were 11.5% lower than in 1990. Achieving the Kyoto targets is a priority for Luxembourg. Beyond the emission trading system for greenhouse gases, there will be an Action Programme to tackle climate change.



## **18. MALTA**

### **Increasing energy efficiency and use of renewables**

Malta's indicative target for the share of electricity from renewable energy sources for 2010 is 5%. Energy efficiency and use of renewables are not regarded as a priority in the NRP.

### **Decoupling economic growth from environmental degradation**

The NRP has detailed information on budget and timetables for all measures. In the programme measures are included to "build capacity to introduce the Polluter Pays Principle through the use of economic instruments."

Revenue from environmental taxes is equivalent to 3.4% of GDP or 10.2% of total taxation, while the EU-25 averages are around 2.7% and 6.6% (2003).

As of September 2004 a new 'eco-tax' scheme was introduced, with a number of products being taxed. The scheme is in place to encourage producers to arrange recovery, recycling and treatment.

Additionally, Malta intends to:

- Draft a National ETAP for Malta by the end of 2006;
- Implement a Green Public Procurement Plan by the end of 2008.

### **Halting biodiversity loss**

The Government uses following measures to halt loss of biological diversity:

- National Biodiversity Strategy Action Plan;
- Carrying out marine scientific surveys for Special Areas of Conservation;
- Regional Project for Marine and Coastal Protected Areas;
- Strengthening the institutional capacity for the implementation of the Community nature protection acquis;
- Treatment of all sewage in Malta and Gozo (planned).

### **Fighting climate change**

Malta does not have an emission reduction target under the Kyoto Protocol. In 2003 total greenhouse emissions were 29.1% above 1990 level.

The NRP includes a few measures concerning climate change:

- Capture of methane from waste disposal and treatment;
- Replacement of existing uncontrolled landfill with engineered landfills and further improve upon the treatment of Municipal Solid Waste;
- Promote the increased use of biofuels through the exemption of excise duties on their importation and a pilot collection scheme currently for the collection of used cooking oil.

## **19. NETHERLANDS**

### **Increasing energy efficiency and use of renewables**

The target for the Netherlands for the share of electricity from renewable energy sources for 2010 is 9%. For the last five years, the actual share has stayed near 4%.

- The Government supports development of renewable electricity, with simplification of approval procedures for wind and biomass plants. A long-term strategy for energy innovation started in 2004 and system innovation with objectives up to 2030 focuses on efficiency improvements, sustainable mobility and electricity, clean fossil fuels and R&D programmes in these areas.
- The NRP restates the quantitative objectives for the shares of green electricity and CO<sub>2</sub>-emissions, and adds targets for green energy and progress in energy efficiency. There will be financial support for environmental measures from the “Economic structure fund”.

### **Decoupling economic growth from environmental degradation**

Revenue is more than 3.7% of GDP or 9.5% of total taxation in 2003, while the EU-25 averages are around 2.7% and 6.6% respectively.

The NRP indicates supporting “knowledge development” on waste water treatment, waste separation and biotechnology, mostly with the help of public-private partnerships. A programme for green public procurement will be ready by the end of 2005. It will concentrate on energy saving, mobility and air quality. Moreover, the NRP indicates some support schemes for green electricity.

### **Halting biodiversity loss**

The NRP sets the objective for the increase in population density in and around cities, while developing nature and recreation areas. Natural areas are to be purchased for conservation purposes.

### **Fighting climate change**

Under the Community burden-sharing agreement, the Netherlands are committed to reducing their CO<sub>2</sub> emissions for the period 2008-12 by 6% compared to 1990. In 2003 the Netherlands’s greenhouse emissions were 0.8% above their 1990 level. The Netherlands plan to make use of the Kyoto project mechanisms (*Joint Implementation* and *Clean Development Mechanism*) and to purchase allowances from other countries.

Apart from the energy-related measures, in the NRP there is no explicit reference to policies concerning climate change. Implicitly, this is covered by the structural indicator sheets, which include GHG emission development and mention the use of flexible mechanisms under the Kyoto Protocol by the Netherlands to meet its Kyoto target.

## **20. POLAND**

### **Increasing energy efficiency and use of renewables**

Poland's indicative target for the share of electricity from renewable energy sources for 2010 is 7.5%. Currently Poland's renewable energy consumption is about 2% of all energy consumed in 2002.

Renewable energy sources are promoted by instruments, such as preferential rates for the sale of electrical energy.

The Government plans measures to increase production of renewable energy:

- A system for trading in energy source certificates;
- Support for biomass, water and wind power;
- Increasing the share of bio-fuels;
- Continuing implementation of the "Strategy for developing renewable energy" (2000) and support for municipal heating favouring co-generation.

### **Decoupling economic growth from environmental degradation**

The Government envisages taking following measures to promote decoupling of economic growth from environmental degradation:

- Implementation of ETAP
- Tools for assessing financial risk of eco-innovation;
- Promotion campaign to explain the purpose and viability of choosing the most energy-efficient products;
- Establishment of an eco-technology database;
- Green public procurement.

The Polish government acknowledges that eco-technologies can produce win-win benefits as they reduce environmental impact and business operating costs. The benefits include greater competitiveness of companies thanks to greater innovation, and also the expansion of the market for eco-technology.

### **Halting Biodiversity loss**

Poland does not refer to halting biodiversity loss in its NRP.

## **Fighting climate change**

Poland has committed to reducing its CO<sub>2</sub> emissions for the period 2008-12 by 6% compared to 1990. Due to the restructuring of the Polish economy and high environmental protection expenditures in the 1990s, the country's emissions in 2003 were 32.1% below its 1990 level.

## **21. PORTUGAL**

### **Increasing energy efficiency and use of renewables**

- The indicative target for Portugal for the share of electricity from renewable energy sources for 2010 is 39%. Over the last five years, the actual share has oscillated between 20% and 36%.
- Renewable electricity generation in Portugal is dominated by large hydro-power plants, thus production depends on rainfall which has recently been very low.
- The NRP indicates measures to increase energy efficiency and the share of renewables, mainly wind-energy.
- Biogases are to be used for the production of hydrogen batteries. Among the objectives behind these measures are “decrease production costs” and “reduce dependency on fossil fuels” to increase competitiveness. This programme announces a 2006-2010 action plan for energy efficiency.

### **Decoupling economic growth from environmental degradation**

- Revenue from environmental taxes in Portugal has fallen from 10.4% of total taxes in 1998 to 8.4% in 2003 (from 3.6% of GDP to 3.1%), while the EU-25 averages are around 6.6% and 2.7%.
- In the NRP there are concrete measures to address transport taxation, energy efficiency and renewables, but elimination of harmful subsidies and green procurement are not tackled.
- To penalise heavy polluters, a reform of vehicle taxes is planned.

### **Halting biodiversity loss**

The NRP indicates the need to halt biodiversity loss but no concrete measures are put forward.

### **Fighting climate change**

Portugal has committed to limit the maximum increase of its greenhouse gas emissions for the period 2008-12 to 27% compared to the level of 1990. Current emissions are 36.7% above its 1990 level although they fell in 2003 by 5.3% compared to the 2002.

The NRP refers to reduction in the use of cars and promotion of wind power.

## **22. SLOVAKIA**

### **Increasing energy efficiency and use of renewables**

Slovakia's target for the share of electricity from renewable energy sources for 2010 is 31%. In 2002, the share was just below 19%. Electricity is mainly produced from nuclear, gas and coal power plants. Slovakia also has over 180 small hydropower plants currently in operation. Slovakia plans to adopt a law on the promotion of renewable energy and to give support to R&D in this area. It will carry out identification and gradual elimination of barriers preventing more intensive use of renewable sources of energy.

### **Decoupling economic growth from environmental degradation**

In 2002, the share of the total tax revenue that came from environmental taxes was above 6%, which represented around 2% of the Slovak GDP (compared to the EU-15 2002 average of 2.6%).

Slovakia recognises that conditions for sound long-term economic growth must not be based on policies which excessively burden the environment. Slovakia also stresses the need to actively promote activities and policies aimed at eco-innovations, introduction of environmental technologies and reduction of energy costs.

For promotion of sustainable production and consumption the following measures are announced in the NRP:

- promotion of environmentally friendly products;
- support of green public procurement;
- introduction of recyclable and biologically decomposable packaging;
- introduction of a mapping, classification and information system of the environmental loads.

### **Halting biodiversity loss**

The NRP indicates the following actions to halt biodiversity loss:

- making more sustainable use of water, water ecosystems and other renewable and non-renewable resources;
- implementing Slovakia's Water Plan and plans for water system management;
- reduction of adverse effects on drainage conditions in river-basins;
- progressing programmes for national parks, nature reserves, protected bird areas and areas of the European significance;
- updating an Action Plan for the protection of biodiversity for the years 2003-2010.

## **Fighting climate change**

Slovakia has committed to reducing its emissions for the period 2008-12 by 8% compared to 1990. In 2003 Slovakia's emissions were 28.2% below its 1990 level. Apart from the participation in the EU Emission Trading Scheme, Slovakia's aim is to implement "adaptation measures in the land management of the Slovak Republic for climatic change. Slovakia aims to take action to decrease the consumption of materials damaging the ozone layer of the Earth.



## **23. SLOVENIA**

### **Increasing energy efficiency and use of renewables**

The target for Slovenia for the share of electricity from renewable energy sources for 2010 is 33.6%. In 2002 the share was 25.9%. Currently a major project for Slovenia is to rapidly improve the efficiency of energy use and use of renewable energy sources, in line with the national energy programme.

### **Decoupling economic growth from environmental degradation**

- Revenue from environmental taxes in Slovenia has increased from 2.4% of total taxes in 1998 to 8.6% in 2003 (from 0.9% of GDP to 3.4%), while the EU-25 averages are around 6.6% and 2.7%.
- Gradually decoupling economic growth and environmental pressures is a long term objective, and water and wastewater issues are mentioned in particular in the NRP. Furthermore, Slovenia will introduce EMAS or ISO 14001 in public environmental protection services.
- Slovenia seeks to apply the polluter pays principle. Some measures are planned for the next few years: continue the environmental tax reform, impose taxes on energy and CO<sub>2</sub> emissions and provide financial incentives for environmentally-friendly production.
- The 2004 Environmental Protection Act includes measures, such as the assessment of environmental impacts, the requirement for an environmental protection licence for certain installations and activities, and the improvement of public access to environmental information.

### **Halting biodiversity loss**

One-third of the territory of Slovenia is protected under Natura 2000. Biodiversity is seen as an economic opportunity. Thus efforts have been intensified to preserve biodiversity in implementing the nature protection programme for 2005-2008.

### **Fighting climate change**

Slovenia has committed to reducing CO<sub>2</sub> emissions for the period 2008-12 by 8% compared to 1990. In 2003 greenhouse gas emissions were 1.9% below their 1990 level. Currently a number of national measures to reduce CO<sub>2</sub> emissions have been implemented, included taxes on CO<sub>2</sub>, promotional campaigns for household energy efficiency and energy efficiency of buildings.

## **24. SPAIN**

### **Increasing energy efficiency and use of renewables**

The target for Spain for the share of electricity from renewable energy sources for 2010 is 29.4%. Since 1998 the share has fallen from 19% to 13.8% in 2002. In the NRP increased energy efficiency is defined as an “additional” and “horizontal” objective.

### **Decoupling economic growth from environmental degradation**

- Revenue from environmental taxes in Spain has fallen from 6.9% of total taxes in 1998 to 6.1% in 2003 (from 2.3% of GDP to 2.2%, staying below the EU-25 average of 2.7% in 2003).
- The national R&D programme includes a thematic line on environment, sustainable development and renewables. Promotion of the use of clean technologies is mentioned, but no concrete measures proposed.
- Limited measures for implementing ETAP to promote environmental technologies are announced. As they are limited, there is a risk that their potential for growth and employment opportunities may be missed.
- The fact that growth and environmental degradation have been coupled is recognised, as is the need to change this pattern. Modernisation of the tax system is mentioned as a means to bring forward more incentives for better management of resources.

### **Halting biodiversity loss**

Spain does not refer to halting biodiversity loss in its NRP.

### **Fighting climate change**

Spain has committed to a maximum increase of its greenhouse gas emissions for the period 2008-12 by 15% compared to the level of 1990. In 2003 greenhouse emissions were 40.6% above its 1990 level. In the NRP reaching the Kyoto targets is presented as an objective, but there is no action plan to address the problem.

## **25. SWEDEN**

### **Increasing energy efficiency and use of renewables**

The target for Sweden for the share of electricity from renewable energy sources for 2010 is 60%. For the last five years, the share has been between 47% and 55%. Among the measures Sweden plans to implement are:

- Green electricity certificates, financial support for wind power, investment programmes for renewables and energy efficiency in construction and renovation of buildings and for changing heating systems in private housing;
- Funding for energy efficiency has been set aside for improving public awareness and for energy efficient product development.

The Government stresses that measures for increased energy efficiency and improved environment in their programme will contribute to growth and employment. The section of the NRP on microeconomic policy foresees that Sweden's competitiveness will increasingly build on environmentally-friendly production processes.

### **Decoupling economic growth from environmental degradation**

- Revenue from environmental taxes is equivalent to 3.0% of GDP or 5.9% of total taxation, while the EU-25 averages are around 2.7% and 6.6% (2003).
- The Government will undertake an analysis of the market-based instruments in use for environment policy in Sweden with the aim of proposing new ones or improving existing ones. New taxes on waste are under consideration.
- The Government is also specifically considering a series of initiatives in 2006 to improve the sustainability of the transport sector. Among the measures under consideration are: vehicle taxation relating to CO<sub>2</sub> emissions, a distance-based tax for heavy vehicles, more information for consumers to guide environmentally friendly choices, an increase in the public authorities use of environmentally friendly cars from 25% to 35% in 2006, a tax on air transport, initiatives to increase the use and availability of biofuels.

For promotion of sustainable production and consumption the following measures are announced:

- An increase € 21 million (210 m SKR) to the budget for environment and sustainable development research in 2005-2008 to support innovation and new jobs;
- A strategy for products and materials;
- An environmental technology council being set up to improve the development of environmental technologies;
- A national plan for implementing ETAP;
- A national action plan for green public procurement.

### **Halting biodiversity loss**

Nature is seen as a precondition for eco-tourism, and ecosystems are also mentioned as important for leisure, public health, forestry, agriculture and fisheries. Sweden has since 2002 had a strategy for biodiversity. In 2005 Sweden also adopted a strategy for the marine environment.

### **Fighting climate change**

Sweden has committed to a maximum increase of its greenhouse gas emissions for the period 2008-12 by 4% compared to the level of 1990. In 2003 Sweden's emissions were 2.4% below its 1990 level. The Swedish Government indicated that their climate investment programme should continue for 2006-2008 and intends to set aside additional money for this.

## **26. UNITED KINGDOM**

### **Increasing energy efficiency and use of renewables**

The UK aims for renewables to supply 10% of UK electricity in 2010, subject to the costs being acceptable to the consumer, with the aim of doubling this by 2020. In 2002 the share of electricity from renewable energy source was 2.9%. The percentage of energy from wind remained static in 2003 at 0.39%. Currently the Renewables Obligation (RO) stimulates the UK's renewable energy industry. Just over 2% of electricity was supplied under the RO in 2004.

### **Decoupling economic growth from environmental degradation**

Revenue from environmental taxes is equivalent to 2.7% of GDP or 7.5% of total taxation, while the EU-25 averages are around 2.7% and 6.6% (2003).

- The NRP mentions the Environment Agency has undertaken activities in relation to internalisation of external environmental costs and decoupling of economic growth from environmental degradation. In particular it develops a modelling tool (REWARD) for understanding the links between economic growth and environmental pressures.
- According to the NRP the Government will implement measures in 2006 to tackle barriers to the commercialisation of innovation in the environmental goods and services sector. The UK environmental goods and services sector was estimated to have an annual turnover of £25 billion (€ 37 billion) in 2004 and to employ around 400,000 people. The Business Resource Efficiency and Waste (BREW) programme, created in 2005, is providing £284 million (€ 420 million) over three years to improve business efficiency, reduce waste and cut harmful emissions.
- Sustainable consumption and production is one of the 4 priorities in the 2005 UK Sustainable Development Strategy. The UK aims to become the European leader in sustainable public procurement by 2009. Moreover by the end of 2006, the Government will provide a consumer advice service – Environment Direct – to help consumers make more sustainable choices.

### **Halting biodiversity loss**

The NRP announces the UK's intention to integrate biodiversity with social and economic issues across all sectors, for example by mainstreaming biodiversity into other policies through the partnership approach of the Biodiversity Strategy for England.

### **Fighting climate change**

The 2000 UK Climate Change Programme within which the climate change levy, climate change agreements, and national emissions trading were introduced, contributed to reduce greenhouse gas emissions from the UK economy by an estimated 12.5 % below 1990 levels in 2004, with emissions of carbon dioxide in 2004 estimated to be 4 % lower than in 1990. In 2003 greenhouse gas emission were 13.3% below 1990. The UK has developed instruments in the area of climate change, such as the Climate Change Levy and national emissions trading and seeks to work towards further developing the EU Emissions Trading Scheme and to link it to other countries.