

Environmental signals 2001

Summary

European Environment Agency



About the report

Environmental signals 2001 is the second report in the series produced by the European Environment Agency for high-level policy-makers in EEA member countries and the European Union. The main aim is to present key environmental indicators in order to report, on a regular and consistent basis, on progress in a number of policy areas at the European level. The report also presents a benchmark of countries' performance ('name and shame, name and fame').

The report highlights selected issues; each report in the series is not intended to be comprehensive. For comprehensive background information on European environmental problems, readers should refer to other EEA products such as state-of-the-environment reports or thematic reports, all available on the EEA web site (<http://www.eea.eu.int>). That site also provides a gateway to detailed environmental information at European, EU and national levels, such as analysis of instruments (e.g. eco-taxes) and of environmental management systems, best practice, readily applicable information for business and local authorities, national state-of-the environment reports. (<http://service.eea.eu.int/enviowindows/index.shtml>).



OFFICE FOR OFFICIAL PUBLICATIONS
OF THE EUROPEAN COMMUNITIES

L-2985 Luxembourg



Cover design and layout: Rolf Kuchling

Note

The contents of this publication do not necessarily reflect the official opinions of the European Commission or other European Communities institutions. Neither the European Environment Agency nor any person or company acting on the behalf of the Agency is responsible for the use that may be made of the information contained in this report.

A great deal of additional information on the European Union is available on the Internet.

It can be accessed through the Europa server (<http://europa.eu.int>).

Cataloguing data can be found at the end of this publication.

Luxembourg: Office for Official Publications of the European Communities, 2001

ISBN 92-9167-278-5

© EEA, Copenhagen, 2001

Printed in Germany

Printed on recycled and chlorine-free bleached paper

European Environment Agency

Kongens Nytorv 6

DK-1050 Copenhagen K

Denmark

Tel: (45) 33 36 71 00

Fax: (45) 33 36 71 99

E-mail: eea@eea.eu.int

Internet: <http://www.eea.eu.int>

Environmental signals 2001

Summary

European Environment Agency



On-going policy challenges

Facts and figures

Overall, what do we see?

The environmental problems that are most difficult to solve persist. These have also been identified as priorities for the 6th Community Environment Action Programme 2001–2010: tackling climate change; protecting nature and bio-diversity; sustainable management of waste and natural resources; and environment and health.

In the same way as the emission of greenhouse gases is intimately linked with energy consumption, all the difficult problems — the use of energy (especially for transportation and by households), water and land, and the problems of nitrates and waste — are reflections of the overall scale of resource use.



- **Inputs of six important hazardous substances (heavy metals and organics) into the North East Atlantic have decreased between 1990–1998.**
- **The oxygen status of the majority of European rivers is good, i.e. over 70 % oxygen saturation. Southern and western European countries still have some polluted rivers.**



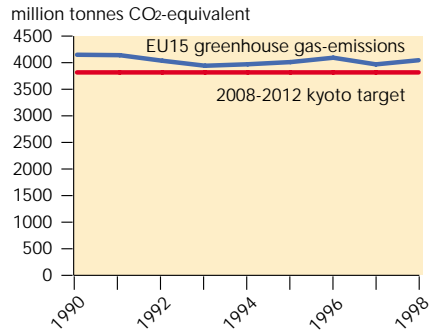
- **Emissions of the six greenhouse gases decreased by 2 % between 1990 and 1998 but are projected to fall by only 1 % by 2010 (from 1990 levels). Fluorinated gas emissions are projected to increase by 60–70 % (from 1995 levels).**



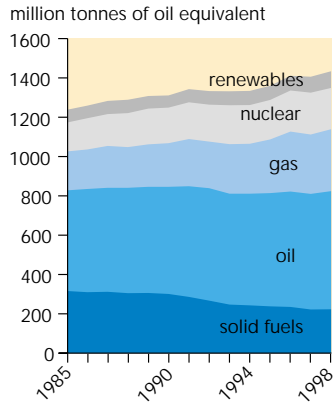
- **Nitrate concentrations in rivers have not changed and smaller rivers stand out with high concentrations.**

Key indicators

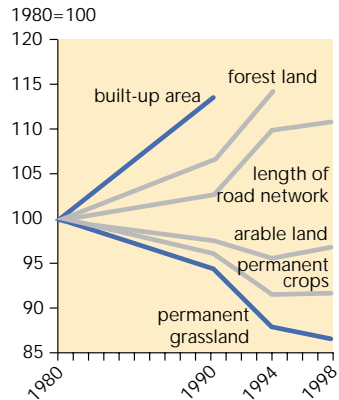
Emission of greenhouse gases



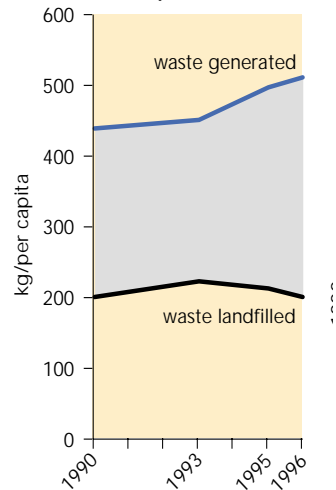
Energy consumption



Land use



Municipal waste



On-going policy challenges

The challenge thus lies in the evolving patterns and scale of consumption and production: transport is constantly increasing, in particular those modes that are least sustainable (road and air); transport is a core activity of the tourism sector that is becoming the first service sector in the European economy; new consumerism expenditures arise, shifting from basic to less basic needs (transport, fuel, recreation); agriculture, though no longer expanding, remains largely intensive.

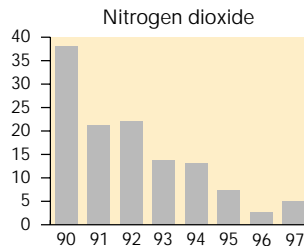
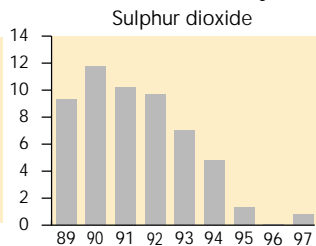
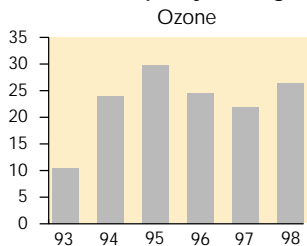
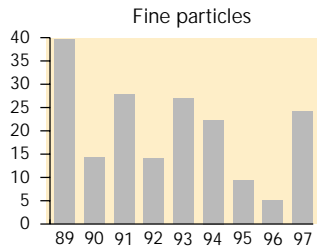
If environmental and sustainability aims and targets are to be reached, higher efficiencies in the use of material and energy will be necessary.

Facts and figures

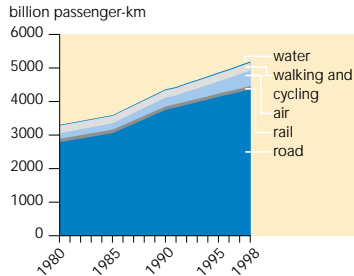
- **Waste generation continues to increase (in a 5–10 % range between 1995 and 1998) and remains closely linked to economic growth.**
- **Total energy consumption in the EU grew by an average of more than 1 % per year between 1980 and 1998, compared with GDP growth of 2 %, indicating a lack of absolute decoupling.**
- **The demand for transport fuels is growing faster than overall energy demand.**
- **The average growth rate of total passenger-kilometres in the period 1980 to 1998 was 2.8 % per year, slightly higher than that of GDP. Only a slight decoupling from economic growth is expected by 2010.**

Key indicators

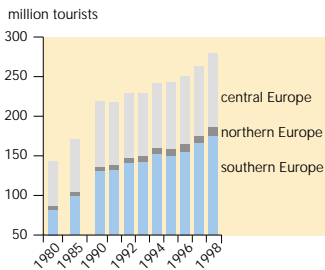
Urban air quality (average number of exceedance days)



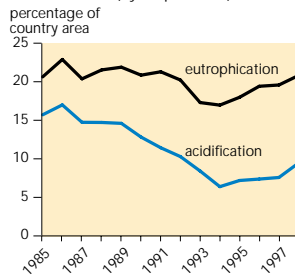
Passenger transport



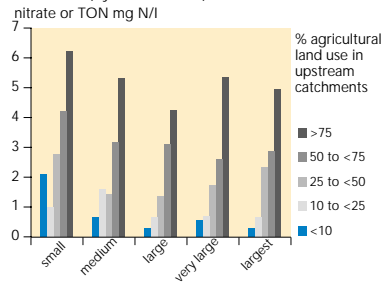
Tourist arrivals



Ecosystem damage (by air pollution)



Nitrate concentrations (by size of rivers)



On-going policy challenges
Facts and figures

Progress in eco-efficiency

The integration of environment in sector policies is slowly progressing through the widening scope of instruments.

Between 1990 and 1998, the eco-efficiency of transport, the energy supply sector and agriculture increased, resulting in absolute decoupling for acidifying substances and ozone precursors.

There was also improvement in eco-efficiency for energy use and related greenhouse gas emissions in the energy supply and agriculture sector, but not in the transport sector. The number of inbound tourist visitors grew faster than total passenger transport.



- **Electricity generation: carbon intensity of fossil fuels has decreased, however action is required to ensure further reduction in line with obligations under the Kyoto Protocol.**



- **Transport of passengers and goods still growing. Decoupling of emissions of acidifying substances and ozone precursors, while emissions of greenhouse gases continue to rise.**
- **Energy supply sector: air emissions of all the major pollutants fell between 1990 and 1998 despite a 12 % increase in total energy output and a 17 % increase (by 1997) in gross value added. In 1998, emissions increased.**

Key indicators

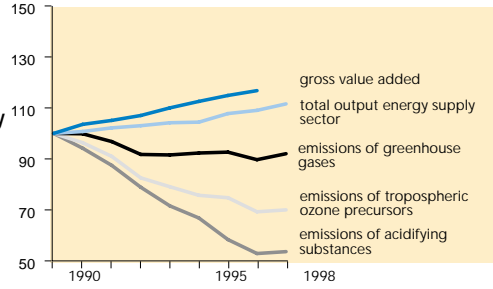
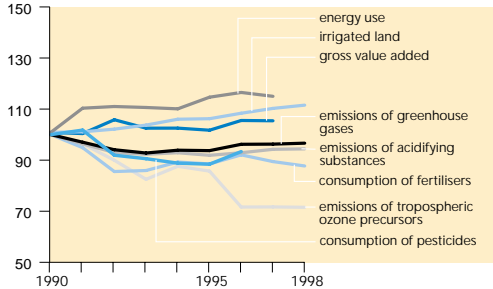
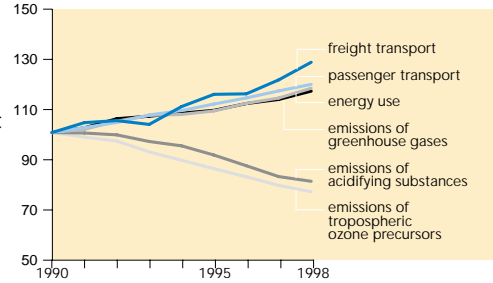
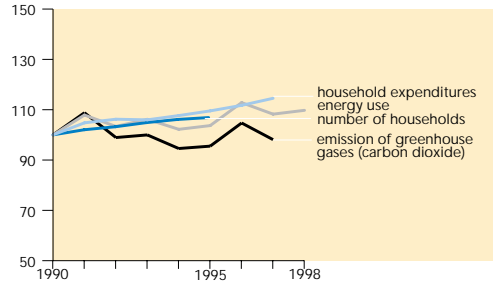
Eco-efficiency (index 100=1990)

Households

Transport

Agriculture

Energy



On-going policy challenges

In agriculture, the increase in productivity per hectare has delivered little progress in improving eco-efficiency, with fairly constant use of energy, water and irrigated land, and fertilisers and pesticides.

An effective implementation of existing environmental legislation would contribute to more progress.

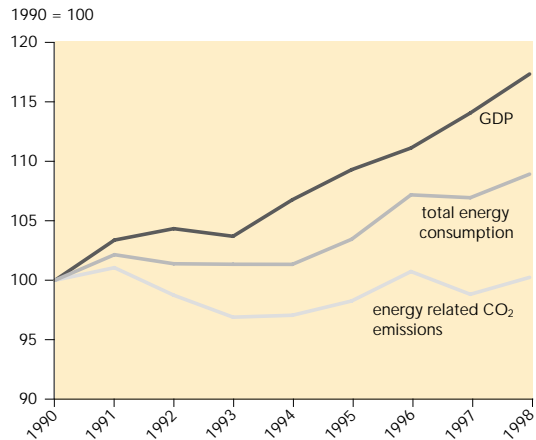
However, eco-efficiency gains are outweighed by the expansion of key sectors such as transport, as well as of tourism, hence hindering an absolute reduction in the total load on the environment.

Facts and figures

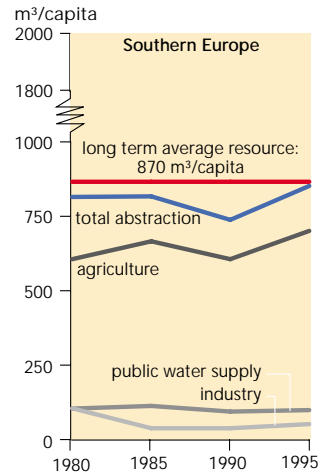
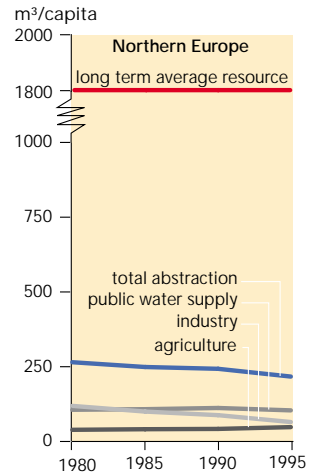
- **Growth in the economy and population still requires additional energy use. Energy-related carbon dioxide emissions have been partially decoupled from such growth.**
- **Agriculture eco-efficiency: less progress than in other sectors. The consumption of fertilisers and pesticides has been reduced, but problems of nutrient surplus persist.**
- **Household sector: carbon dioxide emissions in 1997 were close to the 1990 level, despite improvements in energy efficiency and switching from coal and oil to gas.**
☹
- **Every day during 1990–1998, about 10 hectares of land (10 football pitches) were taken for motorway construction in the EU.**

Key indicators

Overall energy and carbon efficiency



Water abstraction



On-going policy challenges
Consumerism and pricing of goods and services

To achieve higher efficiencies, actions that influence the character and scale of production and consumption are required. A common approach to this in the EU has been through pricing and subsidies policies.

Correct price signals require full internalisation of external costs, confronting those who cause environmental damage with the correct bill.

Within proposed tax reforms, a common way of internalisation is through environmental taxation.

Facts and figures



- Sales of eco-labelled products are on the increase.



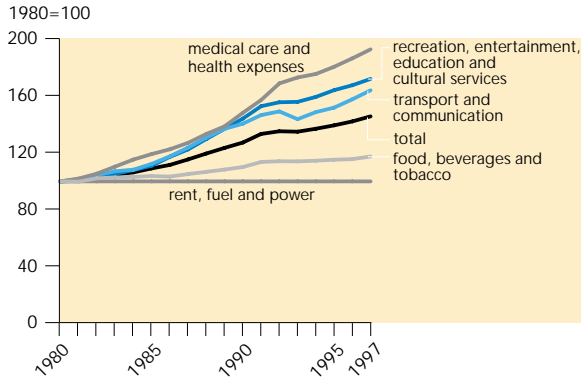
- Household expenditure is nearly twice what it was in 1980. Marked increase on recreation, transport (only +3 % on public transport) and tourism (+16 % between 1990 and 1997).



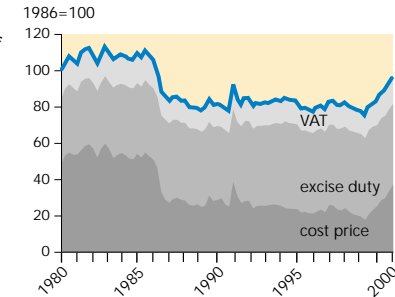
- Prices in the tourism industry are continually decreasing resulting in more trips per capita. Subsequently, tourism intensity grows and threatens the carrying capacity of destinations.
- External costs of transport are about 8 % of GDP. Road transport is responsible for more than 95 % of these costs.

Key indicators

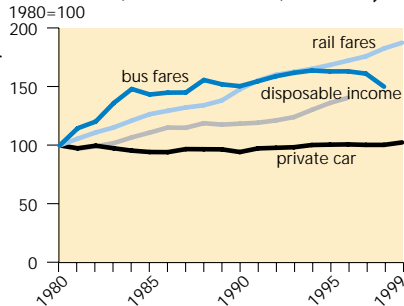
Household consumption expenditure



Real price of motorfuels

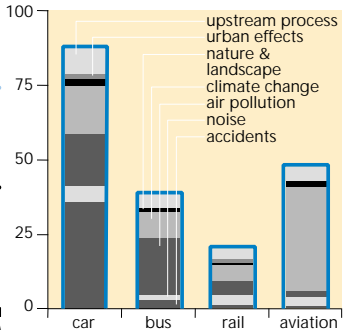


Real price passenger transport, Denmark



Average external costs of passenger transport in 1995

euro / 1000 passenger-km.



On-going policy challenges

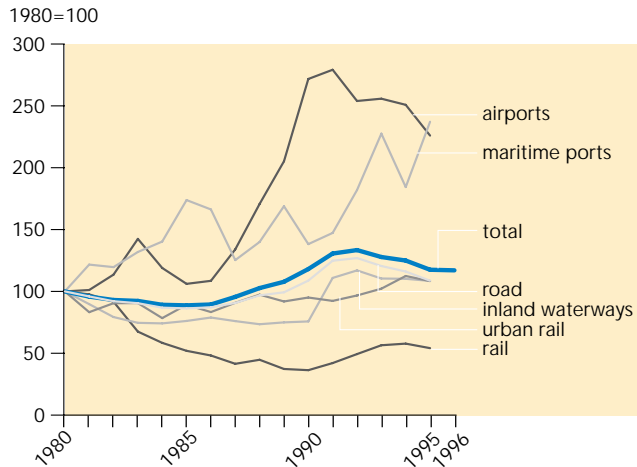
As incomes rise, financial stimuli become less and less effective, and societal acceptance of financial measures, structural economic changes or measures aimed at changing behaviour will have to be won time and time again. Price signals should go with structural changes.

Facts and figures

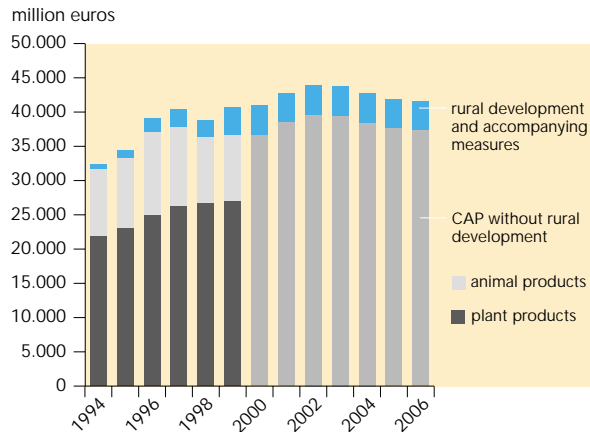
- **In some countries, car transport is cheaper relative to bus and train 20 years ago.**
- **EU average price of road fuel in 2000 was lower than in the first half of the 1980s.**
- **There has been a steady fall in domestic electricity prices – about 1 % per year in real terms between 1985 and 1996, while electricity consumption per household grew around 1 %.**

Key indicators

Investments in transport infrastructure



Expenditures under the Common Agricultural Policy



On-going policy challenges

Integration policies

Bringing environmental objectives into sectoral policies requires environmental policy tools at the very heart of economic activities. This is the essence of the EU sector integration strategies as called upon by the Cardiff Council in 1998.

Analysis of past developments shows that regulatory instruments are effective when large reductions in environmental impact or abolition of polluting products are required. Sometimes sectoral policies are already effective even without explicit inclusion of environmental considerations. For example, in the Netherlands, the milk quota system appears to have had a larger impact on reduction of manure and ammonia emissions than environmental policy.

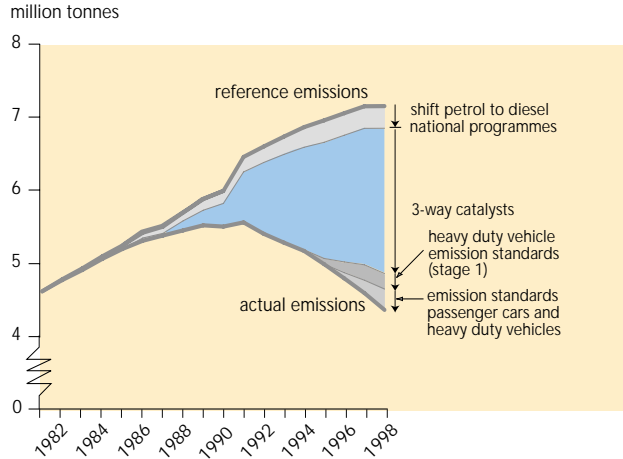
Facts and figures



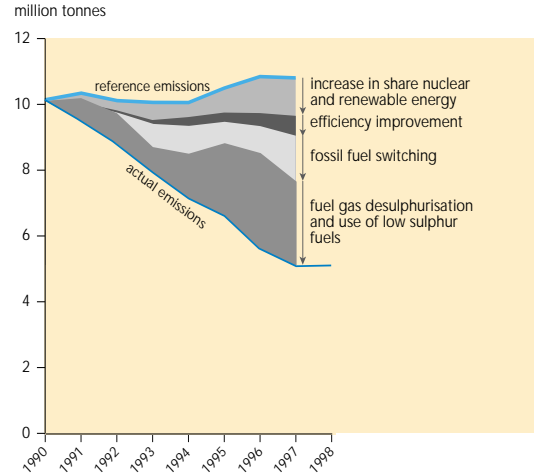
- Three-way catalysts have been the most important measure to counter the increase in nitrogen oxide emissions due to the growth of road traffic. The emissions would have been 50 % higher in 1998 without all the measures taken.
- About half of the decrease in sulphur dioxide emissions by power plants can be attributed to the introduction of flue gas desulphurisation and the use of lower sulphur coals and fuel oils in conventional thermal power plants.
- Atmospheric inputs of heavy metals into the North Sea have decreased between 1987 and 1995, showing the effect of air pollution abatement policies in the countries surrounding the North Sea.
- The concentrations of ammonium and phosphorus have been decreasing in EU rivers in the 1990's reflecting the general improvement in wastewater treatment.

Key indicators

Reduction of nitrogen oxide emissions from road traffic



Reduction of sulphur dioxide emissions from electricity generation



On-going policy challenges

Integration policy implies a more dedicated search for such synergies. International agreements appear to be effective, but in general work only slowly.

Market-based instruments are sometimes effective as stand-alone, but also often act supportively by reinforcing other instruments and providing sources of money for financial support to environmental innovation. In many instances taxes and economic incentives are not strong enough, resulting in incomplete internalisation of external effects and too much leeway for economic activities.

Also, environmental taxes become less effective if income (of a firm or a household) grows faster than the tax rate.

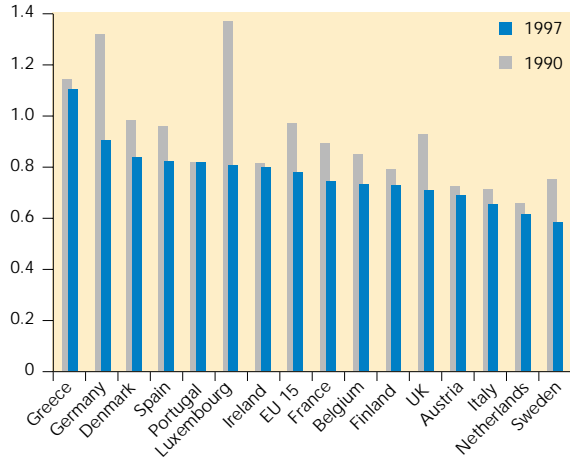
Facts and figures

- The financial support for rural development (including agri-environmental measures) has increased from 5 % in 1996 to 10 % in 2000.
 - More than 20 % of EU farmland was covered by agri-environmental measures in 1998, while one farmer out of seven had an agri-environment contract.
- ☺
- In many countries the market for organic products is still small; it is, however, growing everywhere.
 - EU transport infrastructure investment grew by 17 % in the period 1980–1996 but the investment shares in different transport modes have remained almost unchanged: about 2/3 for road and 1/3 for rail.
 - Renewable sources now contribute 14 % of electricity generation in the EU. While they grew about 3 % per year over 1989–98, an annual increase of 5.5 % would be needed to reach the 2010 target.

Key indicators

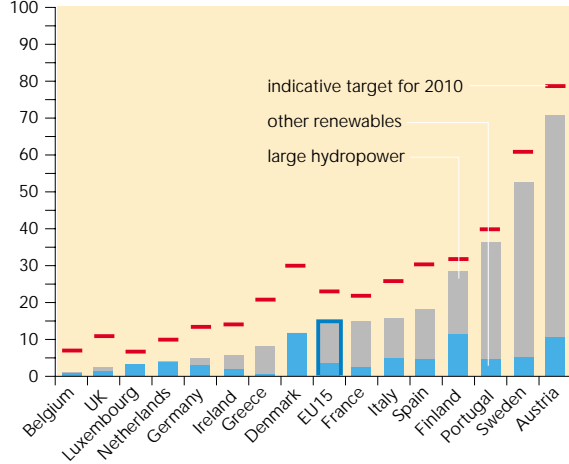
Carbon dioxide intensity of conventional thermal electricity generation

1000 tonnes CO₂/TWh



Share of renewable energy in gross electricity consumption

%



On-going policy challenges

Instruments such as voluntary agreements are generally seen as important for their soft effects in terms of increasing the support and acceptance of other tools and improve conditions for effective application of environmental and integration policy. In a few cases, when well designed, voluntary agreements proved to be environmentally effective.

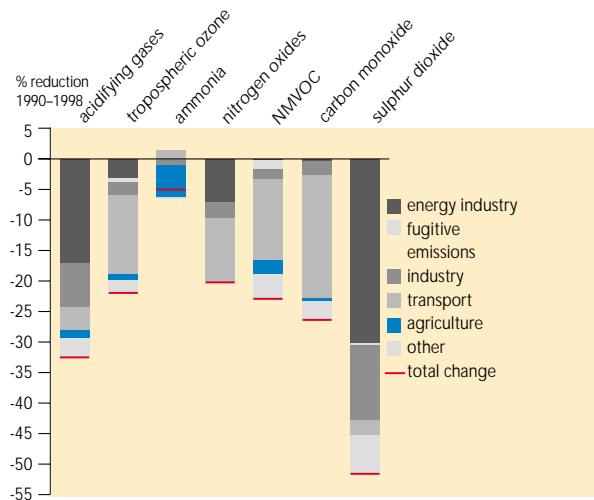
Signs of expanding sustainable development policy are visible: environmental regulation is evolving into integrated regulation, for example with Integrated Pollution Prevention and Control and Integrated Product Policy. The application of environmental taxes is developing into a broader ecological tax reform.

Facts and figures

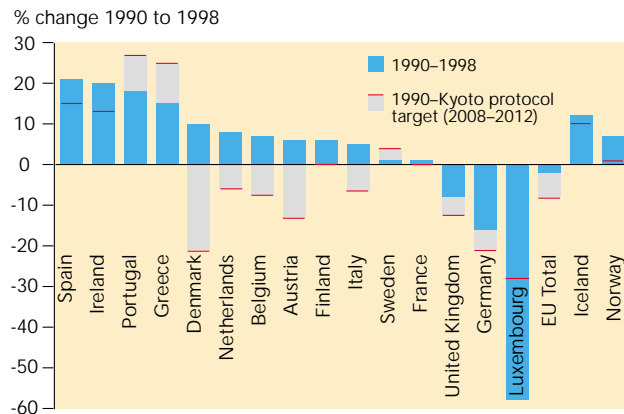
- **The share of combined heat and power electricity in EU gross generation increased from 9 % in 1994 to 11 % in 1998. This is 7 % short of the EU indicative target of 18 % by 2010.**
- **A significant increase in national and sub-regional eco-labelled tourism has been observed since 1990 but this remains very marginal.**
- **A significant side-effect of the positive development in cleaning of wastewater is the increase in the total generation of sewage sludge. Despite the expected increase in recycling, total amounts of sludge for disposal are expected to increase by 50 % in 2005.**

Key indicators

Contributions of societal sectors to the reduction of air pollutant emissions



Greenhouse gas emissions from 1990 and 1998 compared with Kyoto Protocol targets



On-going policy challenges

Agreements with economic entities as regards their environmental behaviour are growing into contracts that encompass the full economic process, as with management contracts in agriculture.

Yearly reporting on sustainable development, on a high political level, would encourage further integration of social, environmental and economic considerations.

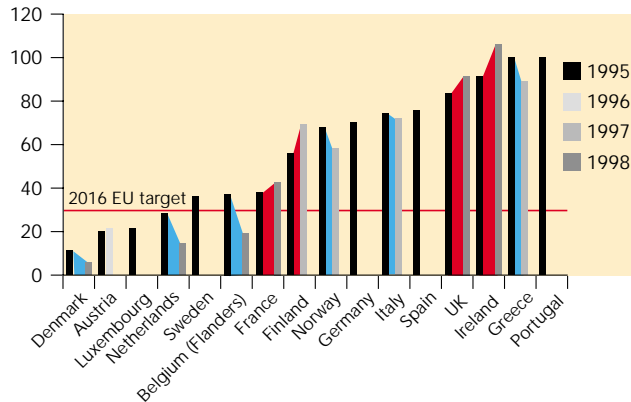
Facts and figures



- **Energy standards for houses and the introduction of more efficient electrical appliances and heating installations have not led to a decrease in total energy and electricity consumption by households.**
- **The share of the more environmentally friendly freight modes (rail, inland waterways, short sea shipping) has decreased by 10 % in the period 1980 to 1998.**
- **More than 3 million farms disappeared in the EU between 1975 and 1995. This is partly due to scale enlargement supported by the CAP. This resulted, together with a 12 % reduction in permanent pastures, in a considerable concentration on agricultural production.**
- **66 % of biodegradable municipal waste ends on landfills. No improvements have been reached in countries having highest rates for landfilling.**

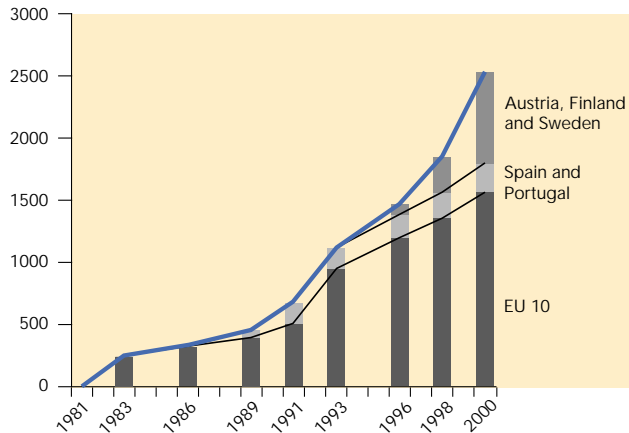
Key indicators

Biodegradable municipal waste landfilled as a percentage of total generation



Nature and biodiversity: designation of special protection areas

number of areas



European Environment Agency

Environmental signals 2001, Summary

Luxembourg: Office for Official Publications of the
European Communities

2001 — 23 pp. — 21 x 9,9 cm

ISBN 92-9167-278-5



21/05/01, 16:33



22

ry_UK.p65

Order form

Please send me _____ copies of: *Environmental signals 2001*, EEA 2001, 112 pp, ISBN 92-9167-271-8,
Catalogue number: TH-36-01-629-EN-C, Price in Luxembourg: 16 euro.

Please fill in this form in CAPITAL LETTERS and send it to your bookseller or to one of the sales agents of the EU
publications office: <http://eur-op.eu.int/general/en/s-ad.htm>

Name: _____ Date: _____

Address: _____

Phone: _____ Signature: _____

Venta Salg Verkauf Πωλήσεις Sales Vente Vendita Verkoop Venda Myynti Försäljning
<http://eur-op.eu.int/general/en/s-ad.htm>

BELGIQUE/BELGIE

Jean De Lamoy
 Avenue du Roi 202/Koningslaan 202
 B-1190 Bruxelles/Brussel
 Tel. (32-2) 538 93 30
 Fax (32-2) 538 08 41
 E-mail: jean.de.lamoy@rlfdoard.be
 URL: <http://www.jean-de-lamoy.be>

**La librairie eur'opéenne/
 De Europese Boekhandel**

Rue de la Loi 244/Veirstraat 244
 B-1040 Bruxelles/Brussel
 Tel. (32-2) 295 26 39
 Fax (32-2) 735 08 60
 E-mail: mail@lbeurop.be
 URL: <http://www.lbeurop.be>

Moniteur belge/Belgisch Staatsblad

Rue de Louvain 40-42/Leuvenseweg 40-42
 B-1000 Bruxelles/Brussel
 Tel. (32-2) 512 27 21
 Fax (32-2) 517 01 84
 E-mail: e-sales@just.fgov.be

DANMARK

J. H. Schultz Information A/S

Heisevej 12
 DK-2620 Albertslund
 Tlf. (45) 43 63 23 00
 Fax (45) 43 63 19 69
 E-mail: schultz@schultz.dk
 URL: <http://www.schultz.dk>

DEUTSCHLAND

Vertriebsabteilung Verlag GmbH

Amsterdamer Straße 192
 D-50735 Köln
 Tel. (49-221) 97 66 80
 Fax (49-221) 97 66 82 78
 E-Mail: vertrieb@bundesanzeiger.de
 URL: <http://www.bundesanzeiger.de>

ΕΛΛΑΔΑ/GREECE

G. C. Eleftheriadis SA

International Bookstore
 Panepistimiou 17
 GR-1040 Athens
 Tel. (30-1) 331 11 41
 Fax (30-1) 323 98 21
 E-mail: elebooks@netor.gr
 URL: [http://www.netor.gr](mailto:elebooks@netor.gr)

ESPAÑA

Boletín Oficial del Estado

Trafalgar, 27
 E-28017 Madrid
 Tel. (34) 915 38 21 11 (libros)
 913 84 17 15 (suscripción)
 Fax (34) 915 38 21 21 (libros),
 913 84 17 14 (suscripción)
 E-mail: clientes@com.boe.es
 URL: <http://www.boe.es>

Mundi Prensa Libros, SA

Castell, 37
 E-28001 Madrid
 Tel. (34) 914 36 37 00
 Fax (34) 915 75 39 99
 E-mail: libreria@mundiprensa.es
 URL: <http://www.mundiprensa.com>

FRANCE

Journal officiel

Service des publications des CE
 26, rue Desaix
 F-75727 Paris Cedex 15
 Tel. (33 1) 40 58 77 31
 Fax (33 1) 40 58 77 00
 E-mail: europublications@journal-officiel.gouv.fr
 URL: <http://www.journal-officiel.gouv.fr>

IRELAND

Aian Hannas's Bookshop

270 Lower Rathmines Road
 Dublin 6
 Tel. (353-1) 496 73 98
 Fax (353-1) 496 02 28
 E-mail: hannas@iol.ie

ITALIA

Licosa Spa

Via Duca di Calabria, 1/1
 Casella postale 952
 T-51072 Firenze
 Tel. (39) 052 64 93 1
 Fax (39) 052 64 12 57
 E-mail: licosa@licosa.com
 URL: <http://www.licosa.com>

LUXEMBOURG

Messageries du livre SARL

5, rue Raffäisen
 L-2411 Luxembourg
 Tel. (352) 40 10 20
 Fax (352) 49 06 61
 E-mail: mail@ml.lu
 URL: <http://www.ml.lu>

NEDERLAND

SDU Servicecentrum Uitgevers

Christoffel Plantinstraat 2
 Postbus 20014
 2500 EA Den Haag
 Tel. (31-70) 378 98 80
 Fax (31-70) 378 97 83
 E-mail: sdu@ml.nl
 URL: <http://www.sdu.nl>

ÖSTERREICH

**Manzsche Verlags- und
 Universitätsbuchverlag GmbH**

Kohlmarkt 16
 A-1014 Wien
 Tel. (43-1) 53 16 11 00
 Fax (43-1) 53 16 11 67
 E-Mail: manz@schwinge.at
 URL: <http://www.manz.at>

PORTUGAL

Distribuidora de Livros Bertrand Lda

Grupo Bertrand, SA
 Rua das Terras dos Vales, 4-A
 Apartado 60037
 P-2700 Amadora
 Tel. (351) 214 95 87 87
 Fax (351) 214 96 02 55
 E-mail: dib@ipp.pt

Imprensa Nacional-Casa da Moeda, SA

Sector de Publicações Oficiais
 Rua da Escola Politécnica, 135
 T-1-250-100 Lisboa Codex
 Tel. (351) 213 84 97 50
 Fax (351) 213 84 97 50
 E-mail: spc@incm.pt
 URL: <http://www.incm.pt>

SUOMI/FINLAND

**Akatemien Kirjakauppa/
 Akatemitä Bokhandeln**

Keskuskatu 1/Centralgatan 1
 P.O. Box 128
 FIN-00101 Helsinki/Helsingfors
 P.alm (358-9) 121 44 18
 F.alm (358-9) 121 44 35
 Sähköposti: spss@akatemiin.com
 URL: <http://www.akatemiin.com>

SVERIGE

BTJ AB

Traktorvägen 1, 1-13
 S-221 82 Lund
 Tlf. (46-46) 18 00 00
 Fax (46-46) 30 79 47
 E-post: djbu-pub@btj.se
 URL: <http://www.btj.se>

UNITED KINGDOM

The Stationery Office Ltd

Customer Services
 P.O. Box 29
 Norwich NR3 1GN
 Tel. (44) 870 60 05-522
 Fax (44) 870 60 05-533
 E-mail: book.orders@tso.co.uk
 URL: <http://www.tsoofficial.net>

ISLAND

Bokabud Larusar Búðin

Sklaravörðustíg, 2
 IS-101 Reykjavík
 Tel. (354) 552 55 40
 Fax (354) 552 55 60
 E-mail: bokabud@simnet.is

NORGE

Swets Blackwell AS

Østervøien 18
 Boks 65 12 Etterstad
 N-0906 Oslo
 Tel. (47) 22 97 45 00
 Fax (47) 22 97 45 45
 E-mail: info@no.swetsblackwell.com

SCHWEIZ/SUISSE/SVIZZERA

Euro Info Center Schweiz

c/o OSBC
 Stämpelihaardstrasse 85
 PF 482
 CH-8035 Zürich
 Tel. (41-1) 365 53 15
 Fax (41-1) 365 54 11
 E-mail: elcs@osbc.ch
 URL: <http://www.osbc.ch/elcs>

BALGARIA

Europress Euromedia Ltd

59, blvd Vitosha
 TG-1000 Sofia
 Tel. (359-2) 980 42 30
 Fax (359-2) 980 42 30
 E-mail: Media@eurobox.cib.bg
 URL: <http://www.europress.bg>

ČESKÁ REPUBLIKA

UVIS

odd. Publikaci
 Havelskova 22
 T2-130 00 Praha 3
 Tel. (420-2) 22 72 07 34
 Fax (420-2) 22 71 57 38
 URL: <http://www.uvis.cz>

CYPRUS

Cyprus Chamber of Commerce and Industry

P.O. Box 21455
 CY-1509 Nicosia
 Tel. (357-2) 88 97 52
 Fax (357-2) 66 10 44
 E-mail: demetr@ccci.org.cy