TERM 2001

Indicators tracking transport and environment integration in the European Union

Summary

European Environment Agency

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

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

Cover: EEA
Layout: Folkmann Design A/S

ISBN 92-9167-312-9

Printed in Belgium

Printed on recycled and chlorine-free bleached paper

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Are we moving in the right direction?

Progress towards a more sustainable transport system has become imperative in the European Union (EU), as in many other parts of the world. Transport therefore figures prominently in the EU's Sixth Environment Action programme (6EAP) and Sustainable Development Strategy. At its June 2001 summit in Gothenburg, the European Council singled out the transport sector as one of the four priority areas where sustainability policy development has to be put on a faster track.

Achieving progress requires better integration of environmental considerations into all areas of transport policy-making. Equally important is to get a clear and quantitative picture of the sector and its development. This brochure summarises the main findings of TERM 2001, the second indicator-based report under the EU's transport and environment reporting mechanism (TERM).

The report's key messages confirm many of the trends, problems and challenges highlighted in TERM 2000. Overall, the report shows that transport is becoming less and not more environmentally sustainable, and integration efforts have to be redoubled.

TERM 2001 is available, together with detailed indicator fact sheets, on the EEA web site: http://themes.eea.eu.int/theme.php/activities/transport

TERM statistics are published by Eurostat in: *Transport and environment: statistics for the transport and environment reporting mechanism (TERM) for the European Union, 2001*. http://www.europa.eu.int/comm/eurostat/

Is the environmental performance of the transport sector improving?

The inexorable growth in road transport and, to a lesser extent, air travel has made the transport sector a major contributor to several important environmental problems.

Fossil fuels remain by far the largest source of energy for transport, which contributes about one quarter of all anthropogenic emissions of carbon dioxide (CO_2) in the EU. Growing emissions of greenhouse gases from the sector jeopardise the achievement of the EU's emissions reduction target under the Kyoto protocol.

Road transport is the largest transport source of CO_2 emissions, followed by aviation. The European Commission's voluntary agreement with the car industry to reduce CO_2 emissions from new cars is expected to slow growth in emissions by passenger cars. Transport is one of the priority target areas for the Community's action plan to improve energy efficiency and the European Climate Change Programme.

The use of catalysts to reduce other exhaust emissions from new petrol-engined cars, and stricter emission regulations for diesel vehicles and for fuel quality have all been positive developments. Some environmental benefits, most notably significant improvements in urban air quality, have resulted.

Nevertheless, urban air quality in most European cities remains poor, indicating the need for additional efforts. Road, rail and aviation transport are major causes of noise annoyance. Road and rail infrastructure continues to take land from agriculture and urban use, and affects a wide range of designated natural sites and habitats.

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- Emissions of NO_x and NMVOCs are falling but substantial reductions are still needed to reach EU emission targets.
- Although urban air quality is improving, pollution levels still pose health risks.
- Transport fatality rates are falling, but road accidents still claim 41 000 lives a year.

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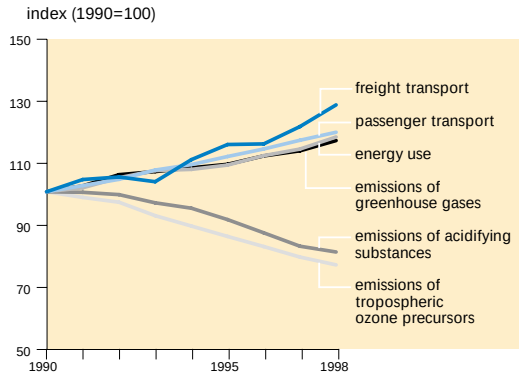
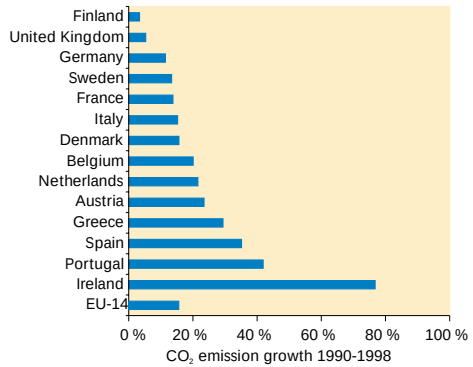
- CO_2 emissions from transport in the EU increased by 15 % between 1990 and 1998.
- It is estimated that more than 30 % of the population is exposed to traffic noise levels that can be annoying or harmful to health.
- Road and rail infrastructure is increasingly fragmenting the EU territory.
- Major accidental oil spills from maritime shipping still occur at irregular intervals in the EU, but more oil slicks come from illegal discharges.

Transport eco-efficiency



Growth in transport CO_2 emissions



Are we getting better at managing transport demand and at improving the modal split?

The European Commission's Sustainable Development Strategy and the revised Common Transport Policy call for the decoupling of transport growth from economic growth and stabilisation of the modal split at 1998 levels by 2010. Current trends point away from these objectives.

Important driving forces for car passenger transport growth are growing car ownership, trends in transport prices and poor spatial planning (leading to urban sprawl). The shift towards car use and aviation is continuing; road and air transport have the fastest growth rates. Tourism is the fastest growing travel purpose.

The main driving forces for the growth of freight transport are the globalisation of the economy, the liberalisation of the internal market, the complexity of trading networks, specialisation of production processes, preferences of customers and decreasing transport costs. The recently adopted railway package of legislation, aimed at opening international freight rail transport to competition, may help to increase rail's share of the transport market.

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- For longer distances, short sea shipping has become quite successful: in 1998 its share in total tonne-kilometres was 42 %, accounting for 6 % of total transported tonnes.

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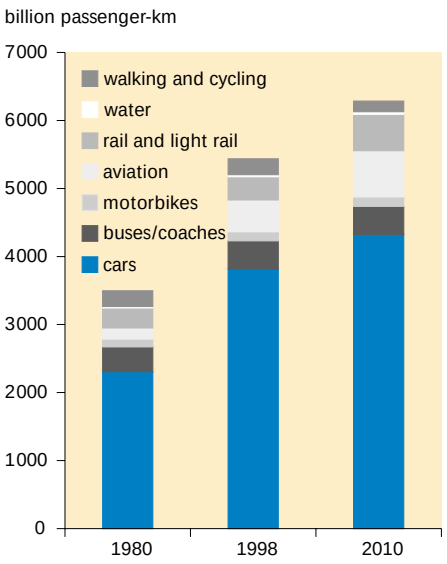
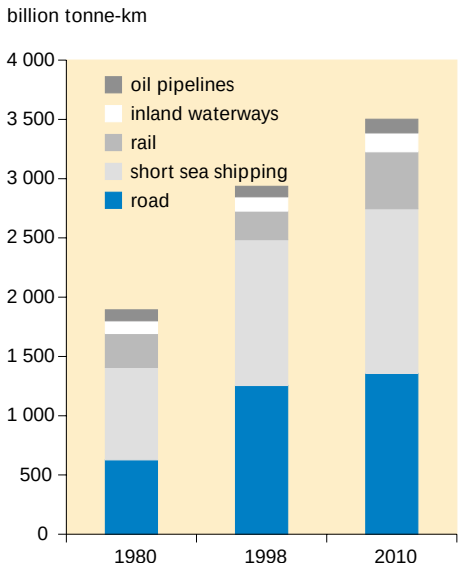
- Passenger transport has increased by about 55 % over the past 20 years; only a slight decoupling from economic growth is expected by 2010.
- Passenger transport continues to shift to cars and aviation.
- Freight transport increased by 55 % between 1980 and 1998; this growth is expected to remain closely linked to economic growth.
- Road freight transport now accounts for 43 % of total tonne-kilometres, and 80 % of total tonnes transported.

Passenger-transport



Freight transport



Are spatial planning and transport becoming better coordinated so as to match transport demand to the need for access?

More people are travelling further as distances between home, work, shops, schools and leisure centres increase. More car ownership encourages urban sprawl (and vice versa, creating a vicious circle). People generally prefer cars to more environment-friendly modes, even when distances are suitable for e.g. walking and cycling. For many, the car has become almost essential for access to basic services and the preferred mode for other purposes.

European Community cohesion policies have an important link with spatial and transport planning. It is however contested that new transport infrastructure building automatically triggers growth in economic welfare and strengthens cohesion among regions.

Several countries are improving coordination between regional, urban and transport planning. However, results can be expected only in the long term and trend reversal is not yet evident.

Actions to promote better planning practices are included in the European Spatial Development Perspective, the Common Transport Policy and 6EAP. The new directive on strategic environmental assessment also aims to ensure that environmental concerns are integrated into spatial planning processes.

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- Accessibility by road and rail to markets is still unbalanced among regions; infrastructure building does not necessarily trigger socio-economic growth.

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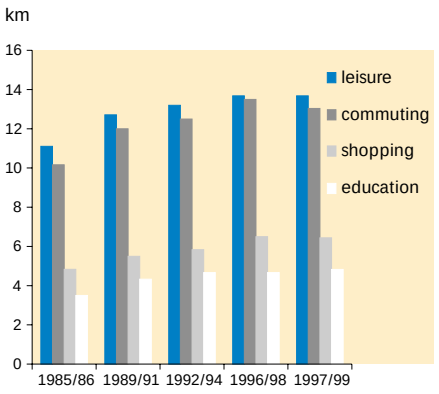
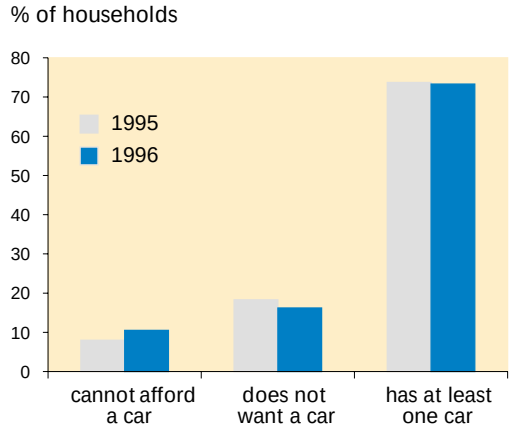
- In some countries, urban sprawl is leading to longer trips to reach basic services such as shopping, employment and education, as well as leisure destinations.
- In some countries, households without a car find it more difficult to access basic services.

Average journey lengths, UK



Households and car ownership, EU 15



Are we optimising the use of existing transport infrastructure capacity and moving towards a better balanced intermodal transport system?

Decisions on transport infrastructure are still made mainly in response to problems of traffic bottlenecks. This reactive approach favours the extension of road and airport infrastructure.

Rail receives a larger share of total investment than its share of total demand, but this has not made rail flexible enough to meet new transport demands. The quality of railway, intermodal and combined services and operations needs to be improved. The railway package aims at improving railway efficiency by developing legislation to open the access of the railway network to national freight services and to international passengers services, and to improve safety and interoperability.

Most investment in the EU's trans-European transport network (TEN) is for motorways, although it was foreseen that 60 % would go to rail, mainly for the development of high-speed rail. There has been relatively high investment in urban rail, and more cycle tracks are being planned in some countries.

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- Rail's 28 % share of infrastructure investment is larger than its share of total transport, but its market share is still declining.

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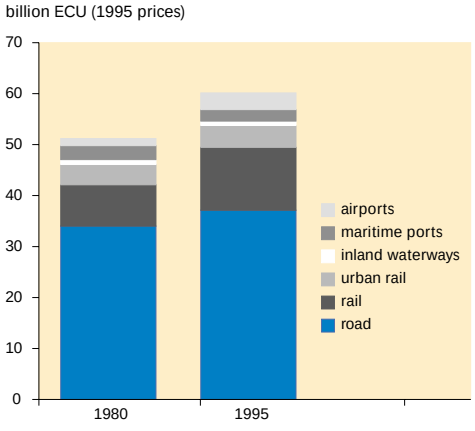
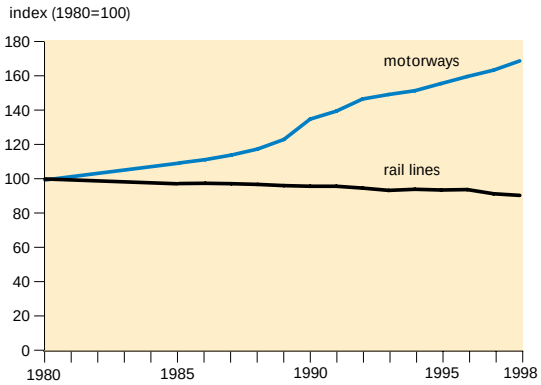
- Each mode's share of infrastructure investment has hardly changed since 1980; road dominates with a 62 % share (1995).
- The length of the motorway network has increased by more than 70 % since 1980; the length of conventional railway lines and inland waterways decreased by about 9 %.
- International funding for TEN is targeted to be 60 % for rail, but actual TEN investments are still biased towards motorways.

Investments in transport infrastructure, EU 15



Length of motorways and railways, EU 15

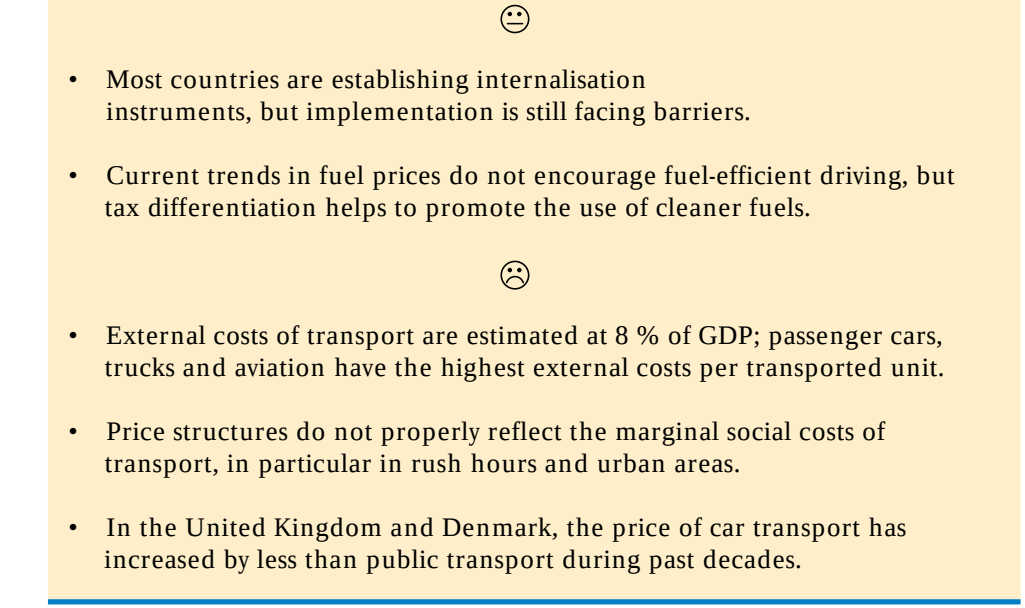


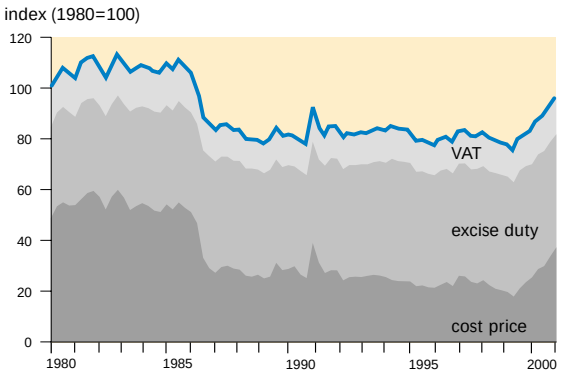
Are we moving to a fairer and more efficient pricing system, which ensures that external costs are internalised?

The main objective of the EU's 'fair and efficient pricing' policy is to internalise marginal social costs, including costs of environmental damage, accidents and congestion, in transport prices. However, this aim is far from being achieved: road and aviation in particular, the modes with the highest external costs per transport unit, thus receive an implicit subsidy from society.

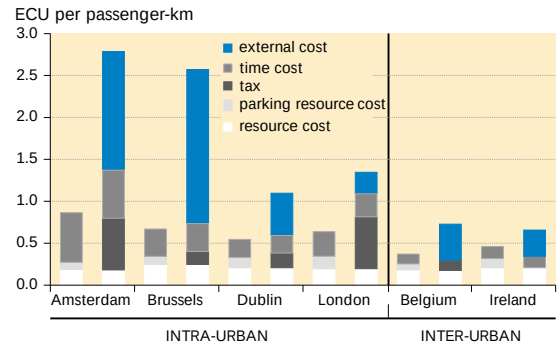
There are, however, signs of progress: most Member States are moving towards tax structures that differentiate between modes on the basis of environmental costs. Internalisation measures are concentrated mostly on air pollution in the road sector and noise in the aviation sector, with almost none on congestion and CO_2 emissions.

Several tools can be used for 'setting the right prices'. Shifting the burden from fixed taxes and charges (such as annual vehicle taxes or the payment of an annual ticket for motorways) to variable taxes and charges (such as tolls, fuel taxes, road kilometre charging) is generally considered to be the most appropriate way forward.





Real average price of motor fuels, EU-15



Car costs and social costs during peak hours, 2005

How rapidly are improved technologies being implemented and how efficiently are vehicles being used?

Over the past two decades the energy efficiency of car transport (and its specific CO_2 emissions) has improved slightly. This is the result of technological advances and the voluntary agreement with the car industry on the reduction of CO_2 emissions from new passenger cars.

There has been no improvement in the energy efficiency of road freight transport, partly because of low load factors. Trucks consume significantly more energy per tonne-km than rail or ship transport.

Stricter emission standards (e.g. the introduction of catalysts) and improvements in fuel quality have resulted in marked decreases in specific emissions of NO_x by cars and trucks. Alternative fuels - such as electricity, natural gas, fuel cells and biofuels - are being developed but have low market penetration. The strategy for sustainable development aims to raise the share of alternative fuels in total road fuel consumption to 7 % by 2010 and 20 % by 2020.

Ship and rail transport compares favourably with road as regards energy efficiency per tonne-km. However, the energy efficiency of rail transport has changed little during the past two decades, suggesting that additional energy saving measures need to be explored even in the rail sector.

The environmental impact of aviation is expected to increase as the gap between the rate of growth and the rate of technology and operational improvements is widening. The Commission has recognised that this trend is unsustainable and announced a strategy to enhance technical standards and (noise and emission) standards for aircraft.

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- Technological improvements and cleaner fuels have made vehicles less polluting per transport unit.

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- There has been a slight improvement in the energy efficiency of passenger car transport but none for road freight transport.
- Shipping and rail transport are the cleanest motorised modes but show little improvement in energy efficiency.

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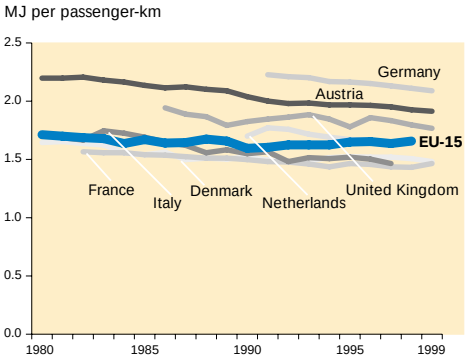
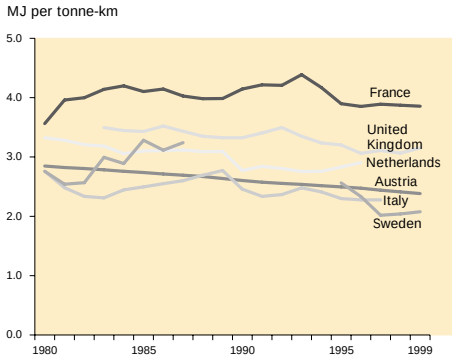
- Occupancy rates for cars and load factors for lorries remain low; this is countering efficiency gains from technological and fuel improvements.
- The average age of the car fleet has increased, slowing the penetration rate of new technologies.
- In terms of emissions per transport unit, and despite technology and operational improvements, aviation is the most polluting transport mode.

Energy use per passenger-km of cars



Energy use per tonne-km of trucks



How effectively are environmental management and monitoring tools being used to support policy- and decision-making?

Following the request by the Cardiff EU Summit in June 1998, most countries have developed or are developing integrated transport and environment strategies. However, many of these have yet to be fully approved, funded and implemented. Also, the national strategies are not always in line with EU strategies and policies. Most notable is the failure to implement internalisation of external costs. Concrete sectoral targets and objectives are often lacking.

Regular transport and environmental indicators are prepared in six countries. Only Austria and Finland have set up a separate indicator reporting mechanism along the lines of TERM. Sweden, France and the German state of Baden-Württemberg are planning to do so.

Several countries are moving towards systematic application of strategic environmental assessment of transport policies and plans at the national or regional level. This helps to integrate environmental considerations at various decision-making levels, and also enhances public information and involvement.

Various countries are undertaking programmes to increase awareness of transport and environment issues, but public awareness does not always result in the desired changes in behaviour - strong incentives are needed.

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- National transport / environment monitoring systems are emerging and could become valuable building blocks for TERM.

😐

- At least 10 Member States are developing integrated transport and environment policies, but concrete targets and objectives are often lacking.
- The practice of strategic environmental assessment is growing, but links with decision-making are weak.
- Cooperation between transport and environment ministries is being formalised in most countries, but needs to be enhanced.

☹

- Public awareness does not always result in changes in behaviour.

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TERM 2001 — Indicators tracking transport and environment integration in the European Union, Summary

Luxembourg: Office for Official Publications of the European Communities

2001 — 17 pp. — 14.8 x 21 cm

ISBN 92-9167-312-9

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