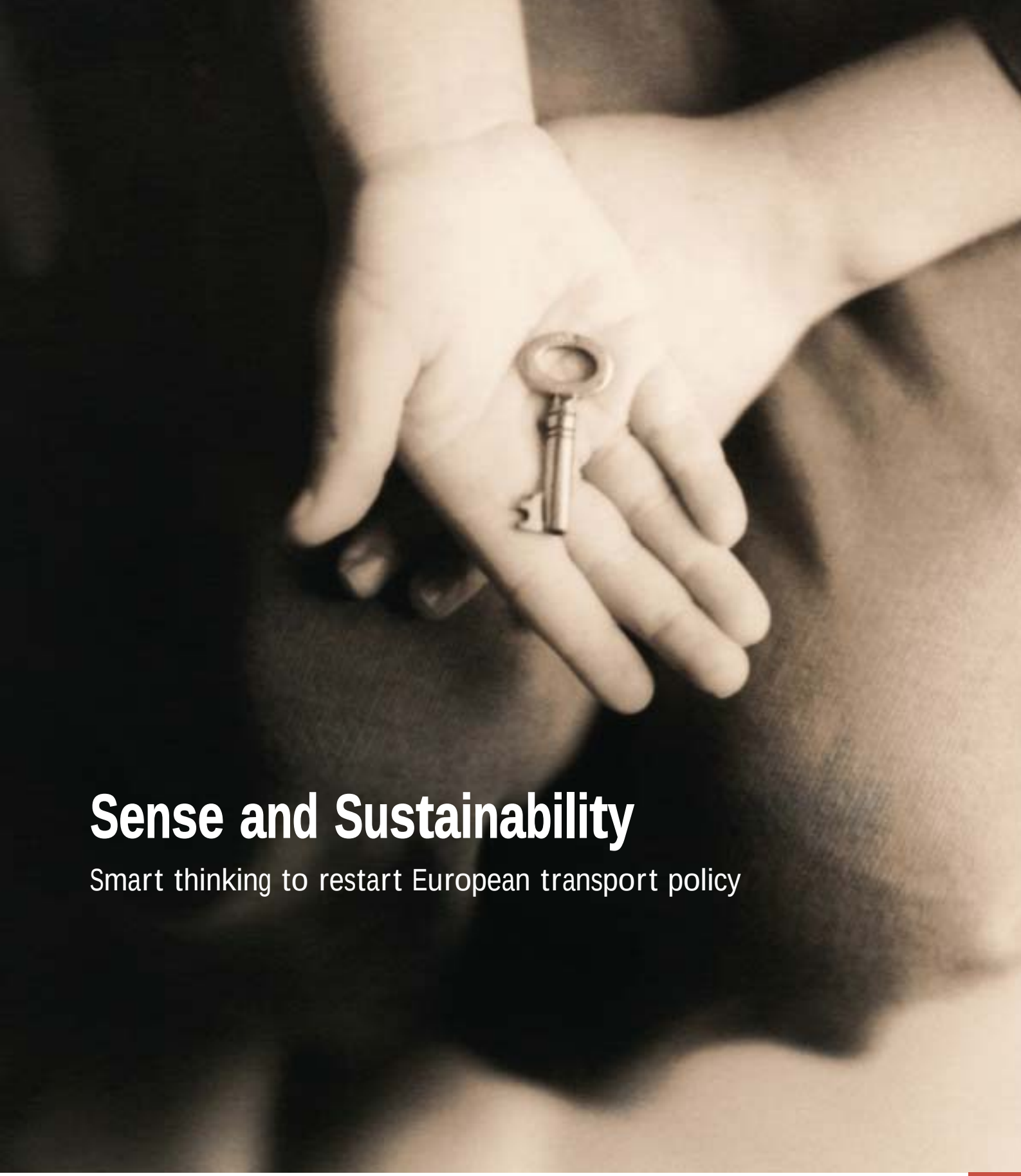

Sense and Sustainability

Smart thinking to restart European transport policy

T&E

Europe's voice for sustainable transport

Sense and Sustainability
Smart thinking to restart European transport policy, T&E 04/6

A *T&E / Stichting Natuur en Milieu* publication

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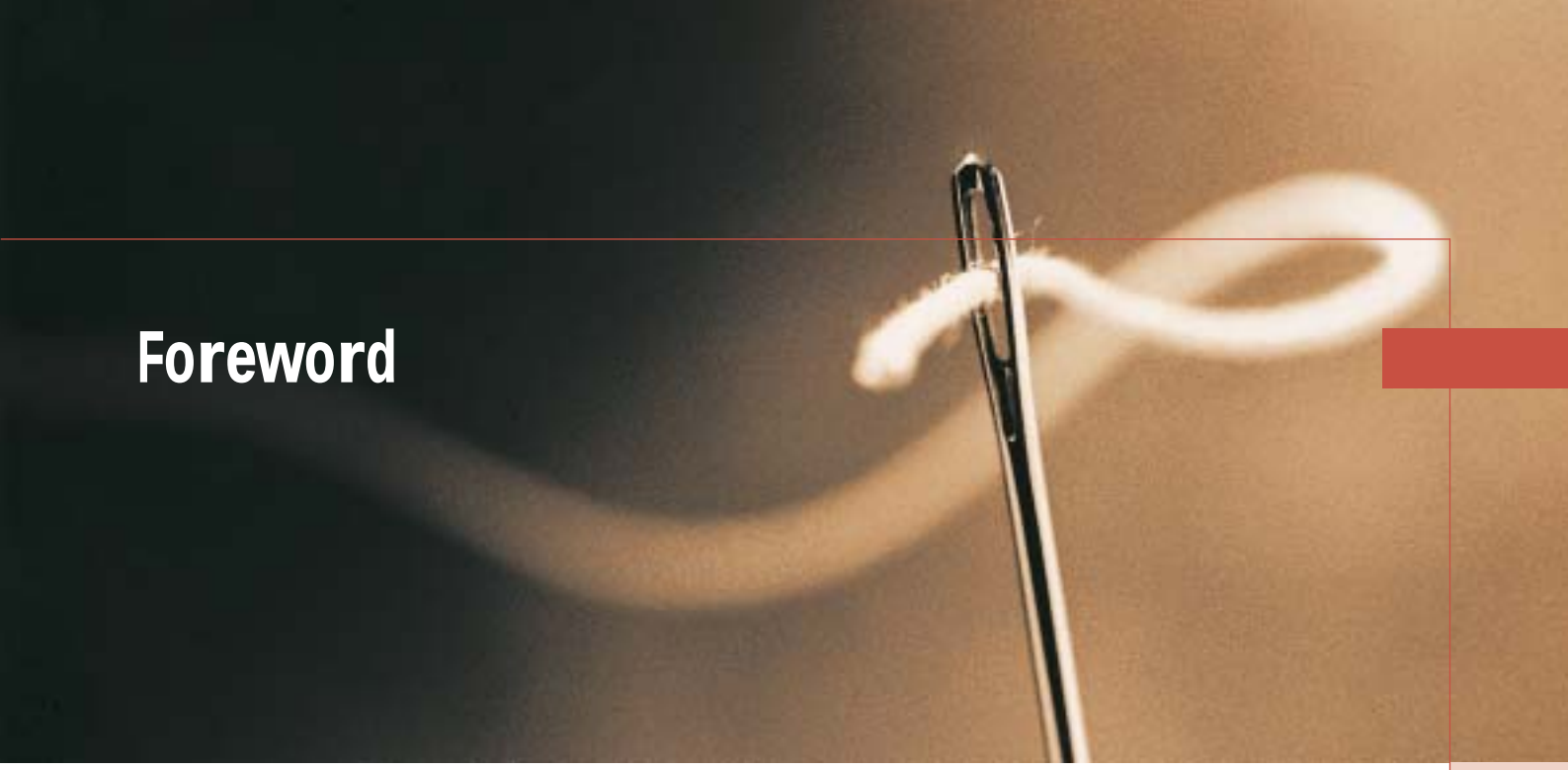


Foreword

This publication has been specifically written for Commissioners and MEPs. Therefore, if you are reading it, you are probably an MEP or a member of an MEP's support staff, or a Commissioner or Commission official.

So let's start with what we know about you:

- You're very busy.
- You get hundreds of papers which you haven't time to read.
- There's always some organisation wanting to tell you that its point of view is the right one and all others are misguided!

And this publication looks like just another example, yes? So why should you put aside time to read it?

Basically, because it is intended to help you.

It comes from T&E, the European Federation for Transport and Environment, which for the past 15 years has painstakingly built a reputation for advocating solutions to transport issues that not only take the environment into account but do so based on scientific and economic research and evidence. In other words, we are not advocating unfounded, from-the-heart, populist options, but courses of action which are justified and legitimised by serious thought and reference to published work. And however urgent and serious the environmental problems are, we still advocate an "evolution, not revolution" approach, recognising that complex modern societies need time to adjust to changing realities.

I don't need to tell you how important the environment is in transport planning. But you can be forgiven for feeling daunted at the task of distinguishing the scientifically sound from the hopeful-but-possibly-misguided among the various ideas put forward for reducing the harmful impact of transport on the environment.

Therefore, this publication is intended to be a useful guide to what needs to be done and what can be done at EU level. If it seems long, and full of footnotes, that is only because we want to explain and justify everything we say (and we recognise that you may only have time to read the summary of our recommendations). It reaches you at the start of perhaps the most crucial five years in the history of post-war Europe, when the EU has just expanded from 15 to 25 states. The Europe our children and grandchildren will inherit will be shaped in large part by the work you and your colleagues undertake in the next five years.

It is with pleasure and pride that I present this publication to you, on behalf of both T&E and our principal partner in this project, Stichting Natuur en Milieu (the Netherlands Society for Nature and Environment). I hope it will be useful, and perhaps serve as the opening of a dialogue with us. With that in mind, if you have any comments or questions, we would be delighted to hear from you.

Good luck in your work over the next five years!

Sonja Klingberg, *President*
European Federation for Transport and Environment (T&E)
Brussels • October 2004

Executive Summary: A Five-Year Work Programme

This publication covers six themes: true prices, climate change and energy use, aviation, shipping, health and quality of life, and European investment in transport. Each corresponding chapter explains the problems, gives an overview of recent developments, and explains why action is important. The chapters conclude with a series of specific recommendations for the Commission and Parliament.

The recommendations are not merely designed to reduce environmental impacts. They have also been framed to reduce congestion and accidents, improve human health and accessibility, and respect freedom of movement. They take into account the principle of subsidiarity, the proper functioning of the internal market and the competitiveness of European industry, and leave room for a lower overall level of taxation - in particular for labour.

What follows is a summary of T&E's recommendations.

We call on the enlarged Council and the new Commission and Parliament to:

- place **all EU citizens** at the heart of the Common Transport Policy, not just transport users
- set **targets** for greenhouse gas (GHG) emissions from transport – a promise made in the 6th Environmental Action Plan. Also to set targets for other emissions, noise, and fragmentation of habitats by new infrastructure.
- introduce a **Framework Directive** on transport charging in 2005, as announced in the 2001 Common Transport Policy White Paper, and subsequently introduce **Daughter Directives** to make road, air, water and rail transport more efficient
- encourage the Council to agree an environmentally and economically sound **Eurovignette Directive** which uncouples transport pricing and investment (i.e. no obligatory earmarking), allows Member States to include external costs, and includes no obstacles to charging on the full network
- amend Directive 2003/96 on energy taxation to increase and level the minimum **road diesel and petrol taxes**, and to take equivalent measures for **aviation, shipping and rail** fuels
- base **fixed car taxes** on CO_2 emissions and leave Member States free to decide whether or not to have a car registration tax
- redefine the car industry's **voluntary CO_2 commitment** before 2008, and start preparations now for a legally binding follow-up to achieve the agreed target of 120g CO_2/km by 2010 at the latest
- adopt **'Euro 5'** and **'Euro 6'** road vehicle emission standards that are technology-neutral and are at near-zero pollution levels
- rethink the **enforcement** of vehicle emission **standards** now that cycle-beating (e.g. by 'chip-tuning') has become the rule, not the exception with today's engine management systems
- present an extremely firm and united EU position in **ICAO** to address the impact of aviation on global warming and protect Europe's right to decide its own aviation policies
- exercise this right by delivering on previous promises to introduce a fuel or emissions charge for **European flights**
- take urgent action on **aircraft noise**, especially related to night flights
- tighten global standards for **ship** engines and fuels, and introduce incentives to reduce greenhouse gas emissions
- link financial support for short-sea **shipping** and Motorways of the Sea to environmental criteria
- subject EU-funded transport projects to an independent, open, and properly audited **cost benefit analysis** and ensure the results are fed back into funding decisions. Until such action is taken, any decision to increase EU funding for the **Trans-European Network** transport projects should be postponed, to protect both EU competitiveness and the interests of taxpayers.
- free-up adequate resources to better **enforce existing EU legislation** on environmental assessment of projects and public participation. In order to strengthen the democratic process, EU funding should not be given if laws are not complied with (the principle of **conditionality**).

Introduction: Towards Sustainable Transport

Environmentally sensible, economically sound, socially just, politically responsible

"The present system of mobility is not sustainable, nor is it likely to become so if present trends continue."

It would be easy to dismiss this statement as just the opinion of a radical environmental group. But the words come from the conclusions of a report by the World Business Council for Sustainable Development[1] (WBCSD) and reflect a consensus reached by a dozen leading global companies, including BP, Shell, Ford, General Motors, Honda, DaimlerChrysler, Nissan, Toyota and Volkswagen. The WBCSD conclusions add: "If current mobility trends were to continue, social, economic and environmental costs worldwide would be unacceptably high."

The European Environment Agency also adds weight to this argument. In its latest transport and environment monitoring report,[2] the EEA assessed progress towards sustainability in the transport sector on the basis of 27 indicators. For six there was not enough data available, six others were neutral, and 13 were negative. None were positive.

Climate change does not exist merely on paper. Another recent EEA Report[3] provides a worrying overview of some 20 concrete climate impacts in Europe. This is not only a worrying prospect for nature, ourselves and our children, but also increasingly a burden on the economy. According to the reinsurance company Munich Re, weather-related damage in Europe amounted to around $100 billion in the 1999-2003 period, about twice the highest figures recorded earlier. More drought in the South and more floods in the North are being recorded, and the trend is expected to continue. Almost all glaciers are disappearing at high speed. A combination of road vehicles and aircraft is responsible for almost 30% of Europe's human-induced global warming, and this percentage is widely expected to increase.

URGENT PROBLEMS, FAR TOO LITTLE ACTION

- Weather-related damage in Europe amounted to approximately $100 billion over the 1999-2003 period, representing a doubling compared with earlier periods
- Transport accounts for about one third of human-induced global warming in the EU, and greenhouse gas emissions from transport have been increasing by 2% per year since 1990. Road (17%) and air (approx. 12%) transport are the most important contributors.
- Transport kills over 50,000 people per year in the EU and this figure has been painfully stable over the last few years
- The number of premature deaths due to traffic-related air pollution is very likely to be even higher than this figure
- The number of ozone alarm days has remained virtually unchanged over the last decade, despite efforts to reduce emissions;
- Despite technological progress and a voluntary commitment of the industry, passenger cars are scarcely more climate-friendly per kilometre than a decade ago. Increased weight, engine power and use of air conditioning are the main reasons for this.
- The economic case for the Trans-European Networks transport projects is very weak. Estimated time savings, usually the lion's share of the benefits of transport investment, account for only 4% of the costs of the projects.
- Although some countries are trying to make transport pay its true costs, the average level of charges levied on freight transport in the EU is decreasing. And contrary to public perception, fuel is still cheaper in real terms than in the first half of the 1980s.

[1] WBCSD, "Mobility 2030: Meeting the Challenges to Sustainability", July 2004, World Business Council for Sustainable Development. Citation from Overview Report p.10

[2] EEA, "Paving the way for EU enlargement, indicators of transport and environment integration, TERM 2002", 2002, European Environment Agency, Copenhagen

[3] EEA, "Impacts of Europe's changing climate", August 2004, European Environmental Agency, Copenhagen

There is also a wide range of other environmental concerns which are caused or exacerbated by transport. Poor air quality means hundreds of European children die from pollution every year,[4] transport accidents kill around 50,000 EU citizens every year, about one third of EU households do not have access to a car so suffer for the 'freedoms' of the two-thirds that do, and numerous households are subjected to unreasonable levels of noise. These are the better documented problems, but there are others, including the deterioration or loss of local public transport and the adverse impact on human health of people feeling unable to walk or cycle for many of their shorter journeys.

In short, we need action to steer European policy towards sustainable transport. Yet in the last few years such action has slowed down.

Where are we going wrong?

One of the most striking features of the transport sector is its **inefficiency**. The reason for this is artificially low transport prices. When people or companies make a transport decision, the *price* they use for their own *cost* calculation – basically: "Do I think it is financially viable for me to make this trip?" – is missing certain elements. This is because the *costs* the transport user bestows upon others are not included in the *price* of the journey. The result is that transport is artificially cheap and thus overused.

A couple of examples: when a day-tripper decides to visit a friend during peak hours, he/she only makes a personal cost/benefit analysis of the trip, ignoring the fact that the trip is likely to cause more congestion, and in so doing would cause delays to various professionals whose costs rise as a result of the lost time. Likewise private individuals do not consider the fact that their trip has an impact on the health of others as a result of the exhaust emissions. Various illnesses and ailments, including headaches, asthma, stroke, cancer and premature deaths, are all caused by these emissions and the associated costs are high. Yet they are not paid for and scarcely considered by the car user but are borne instead by the sufferers, and those that take care of them, be it family members or hospitals funded by taxpayers.

© Sierra Club

Another reason for transport's unsustainability is **the way we view it**. Our society cannot live without transport, but it is still a cost element, just as electricity is. We have no difficulty when politicians say we must look to make economic progress while using less electricity than we have done in the past (or at least less electricity from the most polluting sources), so why do we have so much trouble supporting the pursuit of economic progress with less transport, at least less environmentally damaging transport? Climate change, the need for fuel independence from the Middle East, and the impending peak in global oil production are just three of the most often quoted reasons for changing our view of transport.

We are also partly **seduced** by transport. In a world where television brings us enticing pictures of faraway places, it is hard for us to advocate transport policies that limit our freedom to drive to somewhere special or make it more expensive to fly to the other side of the world. But such practices all come at a cost to society, and if we do not address these costs, the bill the next generations will pick up will be much greater than if we take action now. And we cannot hide behind the excuse: it's a global issue so we can't act alone – a handful of major studies[5] have shown how the EU can play a leading role in rebalancing the aviation issue and encourage the aviation industry to become a contributing partner in a sustainable transport system. (The policies needed are described in Chapter 4.)

[4] "Inheriting the world: The atlas of children's health and the environment", WHO, 2004
[5] for example: "A European Environmental Aviation Charge – feasibility study", CE Delft, 1998 and "Economic incentives to mitigate greenhouse gas emissions from air transport in Europe", CE Delft, 2002

What is sustainable transport?

Sustainable transport is the transport sector's contribution to sustainability. If sustainable development, as defined by the Brundtland Commission, is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs", then sustainable transport should be the use of transport and other factors in helping to meet present needs without jeopardising future generations.

To put some flesh on these bare bones, T&E has highlighted four criteria that any element of sustainable transport should satisfy: environmentally sensible, economically sound, socially just, and politically responsible. They may sound as ambitious as they seem irreconcilable. But in fact they complement each other.

- **environmentally sensible**… the various strands of the environmental threat are well documented, and EU leaders and transport ministers have regularly confirmed the need to integrate environmental concerns into transport policy making. Article 6 of the Constitutional Treaty, the Lisbon Strategy and the Sustainable Development Strategy all recognise that environmental protection based on the precautionary principle is a core European value, yet the Cardiff process of environmental integration appears to have run into the sand, and there is a long way to go for implementation of this principle into everyday transport dossiers such as pricing and investment in infrastructure.

- **economically sound**… in EU affairs, ecology and economy seem to be fighting each other, with Commissioners often having to weigh up economic benefits with environmental disbenefits. Yet what is good economically is almost always good environmentally, as long as the economic system is working to accurate prices and not subject to distortions from hidden subsidies. And the reverse is true – an economically sound approach to pricing and investment can deliver enormous benefits for both the environment and the European economy and competitiveness. It is about making money work for the economy and the environment, not against it.

- **socially just** … transport can only be sustainable if it is fair on all members of society, in other words, if it provides a minimum level of access to basic services for *all* people. And providing access is not the same as providing mobility!

- **politically responsible** … public support for the European project largely depends on the degree it can live up to its promises, and be transparent in the way decisions are made and money is spent. The way transport has been handled at EU level has undermined such support and fuelled criticism about careless spending of EU money. Although some steps have been taken to improve the situation, there is still a lot of essential action to be taken.

So how can sustainable transport be achieved?

This publication highlights a number of important steps that need to be taken to move towards sustainable transport. Some will sound threatening, but they need not be. Good transport policy, including pricing, is not a social dilemma – it is a potential social win-win situation, and if politicians and officials embrace that, then progress can be quick and satisfying.

As such, we hope this publication inspires policy makers across the decision-making spectrum, be they politicians or officials, or even campaigners, journalists or 'mere' citizens. We hope this policy agenda will enthuse policy makers at local, national and European Level, for they all have to work in a similar direction in order to progress together. We invite them to embark on the most prominent task for the immediate future: to combine ecology and economy, and step beyond the unproductive idea that the two are opposites.

1. Getting the Prices Right

Let the economy work for the environment, not against it

Why is this important?

"Getting the Prices Right" was the title of a groundbreaking 1993 T&E report and has remained a key slogan ever since. It made the case that the price of transport as charged to users should reflect the real costs to society, including infrastructure costs and external costs of emissions, accidents, congestion and noise. This would encourage users to choose the least damaging vehicles, routes and modes, to only make trips that deliver net benefits to society, and to use existing infrastructure capacity more efficiently. In short, correct price signals would make the transport sector economically, environmentally and socially more efficient and fiscally more fair. Above all, the user and polluter pays principle are recognised as common sense in other sectors of the economy where we have to pay for what we use and what we damage.

The potential gains of 'getting the prices right' are enormous; the total costs of the EU transport system are about 10 per cent of GDP[6] and more accurate prices would make large savings on all cost items possible.

What has happened so far?

The 1993 T&E publication 'Getting the Prices Right' called for the user and polluter pays principle to be applied to transport, and brought the previously academic instrument into EU policy debate. Since then, the European Commission has underlined the importance of a user-based pricing system on several occasions, for example in its 1995 Green Paper 'Towards fair and efficient pricing',[7] in its 1998 White Paper 'Fair payment for infrastructure use',[8] and finally in its 2001 White Paper updating the Common Transport Policy 'European transport policy for 2010: time to decide'.[9] In the last of these, the European Commission said it would publish a framework directive on transport infrastructure pricing in 2002. However, in the spring of 2003, the Commission abandoned this approach, despite demands from heads of government at the Barcelona summit in March 2002 that transport costs must be reflected in transport prices by 2004.[10] In short, the framework for a European transport pricing system is still incomplete and incoherent.

For road transport, since 1993 the 'Eurovignette' Directive has provided guidelines for charging lorries for road use. The current Directive 1999/62 is still a long way from providing a comprehensive framework for a user- and polluter-based pricing system. A revision of the directive is currently going through the EU legislative process. The European Parliament gave it a first reading on 20 April 2004, and the transport Council failed to agree on an amended proposal at its March and June 2004 meetings. T&E and a broad range of other transport stakeholders have criticised certain elements of the draft revision; in particular, T&E believes it is essential that any revised Directive must allow member states the right to apply road user charges to the whole road network without any restrictions, the right to include all external costs, and the right to decide on what the revenues are used for.

For rail, Directive 2001/14 provides rules for pricing for the use of infrastructure. This directive leaves member states a lot of freedom to apply user charges for rail infrastructure.

For all other transport modes, no provisions have so far been made at European level for internalising external costs. This is despite the fact that over the last 10 years a wide range of research projects have calculated external costs and conclud-

[6] Consisting of the costs of infrastructure investment and maintenance (approx. 2%), environmental and health costs of emissions (4%), suffering from accidents (2%) and costs of other impacts among which noise (2%). Source: T&E analysis of EEA 2002 fact sheets on investment and external costs
[7] See European Commission 1995
[8] See European Commisssion 1998
[9] See European Commission 2001
[10] See European Council 2002

ed that wrong price signals are at the heart of many transport problems and give an unfair competitive advantage to those vehicles, users and modes which do most damage to society.

What needs to be achieved 2004-09?

The legal framework on transport pricing is still incomplete at European level. This has the unfortunate effect of providing the perfect excuse for every individual mode to point at the – perceived or real – unfair way it is treated vis-à-vis its competitors. The European Commission should therefore propose as soon as possible a comprehensive framework on infrastructure charging for all transport modes. Such a framework should reduce existing distortions between different modes of transport and give clear incentives to better use of existing infrastructure capacity and improved environmental and safety performance.

Specific recommendations

T&E calls upon the new Commission and Parliament to:

- encourage the Council to agree an **environmentally and economically sensible Eurovignette Directive**; this should mainly follow the line of the First Reading of the European Parliament on the current draft revision. Specifically it should leave member states freedom to (a) spend the revenues the way they want, (b) cover all roads rather than just the trans-European network, and (c) include environmental costs.

- introduce a **Framework Directive** on transport infrastructure charging in 2005, as announced in the 2001 Common Transport Policy White Paper. The Directive should be based on the principles set out in the 1995 Green Paper and the 1998 White Paper on infrastructure charging, and include a transparent and complete methodology to calculate infrastructure and external costs.

- subsequently introduce **Daughter Directives** for charging of passenger cars, road passenger transport, aviation, shipping and rail transport, either at the same time as or not later than one year after the Framework Directive (and of course road haulage, though this will hopefully have been covered in the Eurovignette directive).

- take action to **reduce the cost of implementing advanced road charging schemes.** Kilometre counters could be made more fraud resistant. Collaboration could be sought with private parties such as the insurance industry as it could benefit from distance-based insurance premiums. Standards for Electronic Vehicle Identification (EVI) systems should be developed, which include environmental (CO_2, Euroclass) and safety characteristics of the vehicle.

- amend Directive 2003/96 on energy taxation to increase the minimum **road diesel and petrol taxes** and petrol to at least €500 per 1,000 litres by 2010. Ensure a level playing field by introducing minimum taxes for **rail diesel** and VAT on fuel oils used by inland ships, and by modernising the 1952 Strasbourg Fuel Oils Agreement between the Rhine States so that a minimum tax for **inland shipping diesel** can also be levied. In addition, it should be ensured that the minimum levels are corrected for **inflation**.

- complete the third pillar of the strategy on CO_2 from cars as soon as possible with a Directive to base **fixed car taxes** (registration/sales, annual tax, and especially company car taxes) on CO_2 emissions. The UK offers an interesting example in this respect, which implies that the particular British sensitivity on EU tax issues can be avoided here. Registration/sales taxes should be left intact as these are crucial tools for countries in their transport and environment policies.

- study the pros and cons of the introduction of greenhouse gas **emissions trading** schemes in the different modes of transport.

- allow **trading of slots** for use of port, airport and rail infrastructure, and investigate the feasibility of such schemes for road transport, in order to economically optimise the use of scarce infrastructure capacity. In the case of road transport, such a system could initially be developed for heavy goods vehicles in ecologically sensitive areas such as mountainous regions.

- remove all non-essential national and EU subsidies that hinder the development of a sustainable transport system, including indirect subsidies.

2. Climate and Energy

Making fuel go further, improving alternatives

Oil: many good reasons to use less

There are many good reasons to save oil. It saves money and imports. It reduces dependence on politically sensitive regions. It makes the economy more resistant to a serious global oil supply problem, which some say is only a few years away. It reduces the risk of oil tanker disasters such as those involving *Prestige* and *Erika* which ran aground in EU waters. And last but certainly not least, it reduces the danger of climate change.

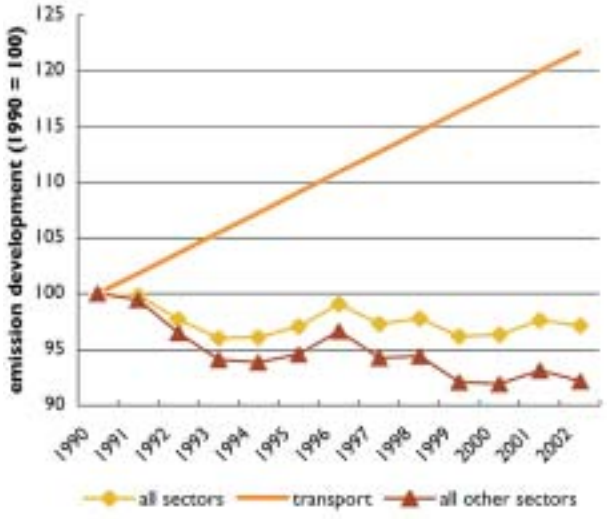
The reality of climate change
Bloomstrandbreen Island Glacier, Norway then and now
©Norsk Polar Institute (left), ©Aslund / Greenpeace (right)

Transport: worst performer on Kyoto

Despite these statements of the obvious, the oil-guzzling transport sector is without competition the *worst performer* in relation to the EU's 'Kyoto' commitments. The growth in energy use of road and air transport is primarily responsible for this. This chapter will deal primarily with road. Aviation has the honour of being treated in a special chapter.

In the period 1990-2002, non-transport sectors reduced their greenhouse gas emissions by an average of 8%, whereas the transport sector increased its emissions by 22%.[11] In other words: other sectors are well on track towards making their contribution to the EU's overall Kyoto commitment, but the performance of the transport sector is letting the team down. This is illustrated by the graph below.

TRENDS IN EU15 CO_2 EMISSIONS IN TRANSPORT AND OTHER SECTORS



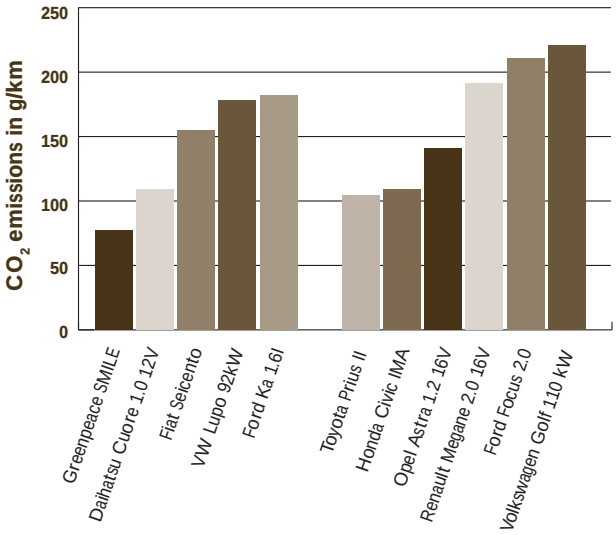
In reality, the real transport picture is even worse, because the Kyoto figures don't include the lion's share of the climatic impact of aviation and shipping, two notorious growth sectors.

And they are not only growing, they are already very *significant* contributors to global warming. If one takes into account the full impact of aviation and shipping on global warming, the total contribution of the transport sector currently accounts for about one third of overall greenhouse gas emissions, and this share is almost certain to rise further in the next decades if no additional policies are implemented.

Making the problem even worse is the fact that the transport sector in general and the passenger car in particular are renowned for their irrational use of energy. Almost all cars are designed to carry four people plus baggage, yet average vehicle occupancy rates are seldom more than one person. Cars are also much less fuel-efficient than they need to be, as witnessed by the differential in consumption between the best and the worst. The thirstiest models use four times more fuel than the most efficient ones, and even within one class of vehicles, the best models are twice as efficient as the worst. See the graph for some random examples.

Lookalike cars, half the fuel: Greenpeace's SMILE and the original Renault Twingo

SAME SIZE, FACTOR TWO DIFFERENCE IN FUEL EFFICIENCY AND CO_2 EMISSIONS.
Some sample petrol cars from the compact (< 3.5 m., left), and midsize (4-4.5 m., right) class. Extreme sports car versions and automatic gearbox models are excluded.



Better fuel efficiency is not just about advanced and expensive propulsion and materials technology; it is also about cars with smaller engines.

[11] Annual European Community greenhouse gas inventory 1990-2002 and report 2004

Past policies: at best not enough, at worst no improvement

Transport's poor performance is hardly new, and some action has been taken to tackle it. The most important examples are

- the EU's so-called 'three pillar strategy', dating from 1995, to reduce CO_2 emissions from passenger **cars**
  - the car makers' CO_2 *commitment*. As this is the 'central' pillar of the strategy this theme is developed below;
  - energy *labelling*. Although an understandable and necessary measure, studies on the topic so far show that its impact on consumer choice has been limited;
  - *Taxation;* some nine years after the launch of the strategy, a proposal to shift the basis of car taxation to CO_2 is finally expected some time around the end of 2004;

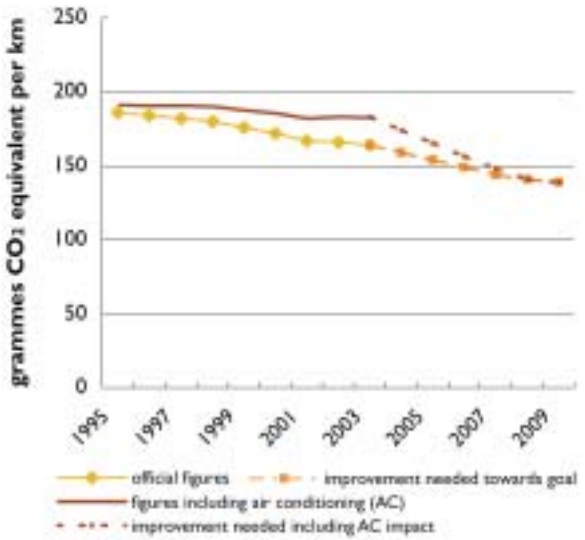
- Directive 2003/30, which aims to secure a 5.75% share for **biofuels** in the transport sector by 2010. T&E has always been sceptical about this because numerous studies show two important drawbacks. Firstly, many 'routes' to produce biofuels lead to more rather than less CO_2 emissions. Secondly, it is economically and environmentally better to burn biomass at a fixed source than to turn it into biofuels for use in transport. Conversion of lignocellulosic (wood-based) biomass into hydrogen, ethanol and methanol shows an efficiency of 50-70%,[12] (the net efficiency for converting agricultural crops into fuels is even lower). Compare this with biofuels which have a net efficiency conversion rate for combined heat and power production of 96-98% and biofuels are clearly not efficient for transport.

- A proposal to gradually replace the refrigerants in vehicles' **air conditioning** systems with more climate-friendly alternatives.

- Directive 2003/96 on the taxation of energy products, which also covers the increase in the **minimum tax rates** for petrol and diesel. However, the increases in the Directive between 1994 and 2010 are not even enough to keep pace with inflation.[13]

Industry commitment has hardly led to more climate-friendly cars

In the late 1990s, the European, Japanese and Korean car manufacturers' associations committed themselves to lower the per-kilometre CO_2 emissions of their cars sold in the EU to an average of 140 grammes by 2008 (2009 for Korea).



Despite official reports saying the agreement is 'on track', the graph (above) shows that in reality hardly any progress has been made in producing more climate-friendly cars[14]. What the graph does show is:

- according to official figures, cars have become 12% more fuel efficient. An annual improvement rate of 3% is needed to reach the official target, whereas in recent years only 1% has been achieved

- if the impact on global warming of the ever more popular vehicle air conditioning systems is included, cars sold in 2003 were only about 4% more climate friendly than those sold in 1995! An unprecedented annual improvement rate of 5% between 2004 and 2008 would therefore be needed to achieve the target.

The future: making fuel go further, improving on alternatives

A word on alternative technology is appropriate here. There are those who believe that **alternative fuels and propulsion mechanisms like hydrogen and fuel cells** will take over in the transport sector and save the climate. Unfortunately, they are at best overoptimistic and at worst in denial.

Firstly, all the evidence shows that it will still take an extremely long time before fuel-cell powered vehicles and hydrogen become really competitive in price terms. Most studies agree that these types of vehicles will not play an important role in the overall car fleet until at least 2030. Secondly, hydrogen is

[12] "World Energy Assessment", UN Development Programme (UN, 2000)
[13] The average annual incease of the minimum petrol and diesel duty between 1994 and 2010 amounts 1,4 and 1.9 per cent respectively, which is lower than the average inflation rate
[14] Source: EC monitoring report Feb. 2004 and 2003 Commission presentation on climatic impacts of mobile air conditioners

not an energy *source*, it's an energy *carrier* just like electricity that needs to be produced, and there is no reason to assume that this will be done in a sustainable way. And thirdly, if the hydrogen is produced by using fossil fuels, the cradle-to-grave CO_2 performance of the hydrogen-powered fuel cell vehicle is not very impressive, certainly not if compared with state-of-the art conventional vehicles such as hybrids.

As already explained in this chapter, the same story more or less holds true for **biofuels**. The environmental viability of biofuels depends primarily on the way they are produced, and the outcome can be good or bad.

Climate policy must be based on the overall impact on global warming of a set of technologies and practices, not on a narrow view of one 'alternative' technology that may only do a little to help. Alternatives are only real alternatives if they **deliver** on environmental performance.

One thing is certain: improving the fuel efficiency of vehicles, or **making fuel go further**, is something we are unlikely ever to regret because its environmental (and cost) benefits are vastly greater than any possible drawbacks, and improved fuel efficiency often brings economic benefits as well. And when petrol and diesel are subjected to equivalent standards of fuel quality and taxation, it will reduce the dilemma for car buyers of having to decide between petrol for lower pollution but worse fuel-economy, or diesel for more pollution but better fuel-economy.

Specific recommendations

T&E calls upon the new Commission and Parliament to:

- re-define the **voluntary commitment of the car industry** before 2008, so that it better reflects the real climatic impact of light vehicles. It should include vans (N1 vehicles), the climatic impact of non-CO_2 emissions and of on-board devices, notably air conditioning. In addition, the test cycle should be revised to better reflect everyday driving.

- start preparations now on a **legally binding follow-up** to the revised current commitment, so it is ready by 2008. This follow-up should ensure that the Council's and Parliament's target of 120 g/km by 2010 is reached (in the original Commission proposal it was supposed to be reached by 2005). This legally binding agreement should contain financial incentives to make it more attractive to produce and buy climate-friendly cars.

- amend Directive 2003/96 on energy taxation to increase the minimum **road diesel and petrol taxes** to at least €500 per 1,000 litres by 2010. It is also important to ensure a level playing field by introducing minimum taxes for **rail diesel**, and push the Central Commission for Navigation of the Rhine to modernise the 1952 Diesel Oil Convention so that fuel oils for **inland ships** can be taxed too. In addition, the minimum levels should be regularly corrected for **inflation**.

- complete the third pillar of the strategy on CO_2 from cars as soon as possible with a Directive to base **fixed car taxes** (registration/sales, annual duty, and especially company car taxes) on CO_2 emissions. The UK offers a useful example in this respect. Registration taxes should be left intact as these are crucial tools for countries in their transport and environment policies.

- present a comprehensive strategy to reduce the climatic impact of **freight transport** as these emissions are increasingly important. Such a strategy should do more than just induce modal shifts, it should require improvements from every mode.

- study the pros and cons of the introduction of greenhouse gas **emissions trading schemes** in the different modes of transport.

- fulfil the promise made in the 6th Environmental Action Plan to set a **target** for greenhouse gas emissions from the transport sector.

- require **vans** to be fitted with **speed limiters**. Now the obligation for these energy and life-saving devices has been extended to small trucks, there is *de facto* a situation that within the market for commercial vehicles vans are the only vehicles that are exempt. As some vans are capable of reaching speeds of up to 200 km/h, the time has clearly come to erase this anomaly.

- amend the Directive on **biofuels** to ensure environmental integrity, in other words to ensure that every euro of taxpayers' money granted to biofuels is environmentally well spent and not a new agricultural subsidy in disguise. To achieve this, environmental criteria for biofuels should be developed first.

- direct the abundant research money available for the 'hydrogen society' towards **sustainable production** of hydrogen.

- establish a framework in which **railways** are encouraged to be much more pro-active in their climate policies, for example by running on sustainable electricity and investing in this.

3. Aviation

Quieter, cleaner, cooler, and fiscally rational

Onwards and ever upwards

After the first successful motorised flight by the Wright Brothers in 1903 it didn't take long for the next pioneers to realise the enormous potential for transport by air. Civil aviation really took off after the Second World War with double-digit growth figures lasting for decades. The rise of low-price carriers (they call themselves "low-cost" but we prefer the term "low-price" as we feel the costs to society are not low, even if the price paid by the customer is) has shown that the potential for the sector to grow is far from over yet. Despite the short-term setback to aviation following the atrocious 9/11 events, growth figures of 5% per year are expected to continue for the next decades.

Economics: growth fuelled by state support

This growth is not just a virtue of the aviation sector itself. On numerous occasions, attention has been drawn to the fact that a range of subsidies – whether open, hidden, direct or indirect – that distort competition have played a big role as well. Besides the direct subsidies and special loans to airports and aircraft manufacturers, there is massive indirect support in the form of a tax exemption for kerosene, lack of VAT on international tickets, and tax-free shopping on flights from and to the EU. Apart from the abolition of tax-free shopping for intra-EU flights in July 1997, which was relatively insignificant in aviation terms, the EU has not taken any initiative to correct this.

Despite the fact that the aviation sector is bigger than it should be (in a world without subsidies), its current contribution to global and European GDP is only around 1%, and its contribution to employment has not passed the 0.2% mark.

Environment: about insomnia and climate nightmares

Unfortunately, the dream of flying has a high potential to become the Earth's worst **climate nightmare**. Like Icarus, we seem mesmerised and things are getting too hot to handle. It's clearly time for an urgent wake-up call.

As aircraft exhaust gases have a much more potent greenhouse effect 10-11 kilometres above ground – where modern jets fly – than at sea level, burning a given amount of fuel in a plane has a greenhouse effect equivalent to burning about three times as much fuel in a car[15]. This is caused by chemical and physical processes, for example the formation of contrails and subsequent cirrus trails.

In 1992 global aviation contributed about 3.5% to human-induced global warming. If governments, industry and consumers do not change their ways, by 2030 the impact of aviation on our global climate will have become by far the single largest contributor. Even assuming that governments implement modest post-Kyoto climate policies in other sectors, by 2030 aviation will be responsible for approximately **15% of the EU's impact on global warming**.

[15] IPCC, Aviation and the global atmosphere, Cambridge UK, 1999. More recent EU research indicates this factor should be revised upwards because of new information on the impact of aviation-induced cirrus clouds (AAC-workshop 2003).

Aircraft **noise** is of the utmost concern to many people living or working in the vicinity of airports or under flight paths. It has a significant impact on the health and quality of life of several million people in Europe. **Sleep disturbance**, interference with communications, disruption of normal work and learning abilities and general annoyance all generate stress and have adverse psychological and physical effects on health. It is common scientific knowledge that the human ear and mind are more stressed by aircraft noise then by similar levels of other traffic noise. The biggest grievance is the impact of aircraft noise at night: with lower background noise levels aircraft become more intrusive during the hours of sleep. The World Health Organisation stresses the importance of protecting residents at night: its studies show that sleep disturbance can lead to several adverse conditions, notably **lower productivity** at work.

Many night flights can and should be diverted to daytime operations. The growing trend of airlines to relocate from one airport to another because of more lenient night-time flight regulations (even just the threat to relocate) has led to a situation in which airports are competing with each other to offer the mildest night restrictions. And that comes at the cost of those living near airports, in particular disruptions to their sleep. It is therefore imperative to agree on mandatory minimum requirements for night flights at all European commercial airports.

In addition to these two top environmental priorities, there is the impact of local air pollution and the safety risk of citizens near airports, and both problems are growing.[16]. In 1999, the European Commission said of the gap between the growth of the sector and its environmental improvement: "This trend is unsustainable and must be reversed,"[17] a statement which seems to make total sense but has received hardly any follow-up (as illustrated by the next section).

Contrails and cirrus clouds during the morning rush hour above Utrecht

The global arena: a disaster

Given the fact that aviation is a highly international business, the global arena is *in theory* the best place to deal with its environmental issues. But such hopes have not yet been backed up by statesmanlike action.

Let us start with emissions of **greenhouse gases** (GHGs). The first problem, and one that is far from being resolved, is that GHGs from international flights are not included in the commitments listed in the 1997 Kyoto Protocol, so no-one feels truly responsible for them. The Kyoto Protocol instead calls on the International Civil Aviation Organisation (ICAO) to provide a solution. In essence ICAO has been 'studying' the issue ever since. If that seems like no progress, it is probably worse than that: at time of writing it seems likely that the 2004 ICAO Assembly will make it much more difficult than before for countries to introduce charges or taxes on greenhouse gases from aviation.

Besides, the EU is currently involved in delicate negotiations on a common bilateral agreement with the USA. In this arena the US is categorically denying the EU's right to tax kerosene at EU airports or to charge carriers for the emissions they release in EU airspace.
It is therefore likely that the net result of seven years' talking at ICAO and other international fora is that we are further away from implementing measures than ever.

In the field of **noise**, ICAO agreed a 'Chapter 4' standard for new aircraft to come into force in 2006. The standard is barely more than 3 dB(A) stricter than the 'Chapter 3' standard that dates from 1978! Over 95% of aircraft produced in 2001 were already capable of meeting 'Chapter 4' and the best aircraft were even some 9 dB(A) quieter. It is clear that the picture of a sector that praises itself for its technological innovations and expects that technology to solve the noise problem in the future needs some adjustment.

Even worse, ICAO has not yet agreed on any policy to phase out the noisiest 'Chapter 3' aircraft. As a few disproportionately noisy flights are frequently responsible for the majority of noise complaints at airports, removing these would have brought clear benefits. As it is, analysis carried out by ICAO's own 'Model for Assessing Global Exposure from Noise of Transport Airplanes' (MAGENTA) task group, found that the number of people affected by aircraft noise in Europe will increase by 42% till 2020.

To many people living near airports, this situation is not just disappointing, it is totally unacceptable. Whether one sides with them or not (and even allowing for certain alleged economic benefits of aviation, they seem to have a fair case), such discontent is likely to lead to increasing pressure for local airport restrictions, opposition to new developments, and a deterioration in the often fragile relationship between airports and their communities.

[16] See for an overview: T&E, Aviation and its impact on the environment, Brussels, 1999
[17] Communication on Air Transport and the Environment, 1999/640

Conclusion: EU action is needed now!

Recognising the need for swift action, the Commission wrote in its Communication on air transport and the environment (footnote 17):

> *"On the basis of the results in ICAO by the end of 2001 the Commission will present a re-assessment of the balance between global, Community and local measures with a view to ensuring fulfilment of the environmental goals laid down in the Amsterdam Treaty and the Kyoto-Protocol ... The European Commission will … continue and accelerate its preparatory work with a view to possibly introducing proposals to establish a European Environmental Aviation Charge to be presented in 2001."*

The 6th Environmental Action Programme delayed the pace for EU action by one year, in other words to 2002. Two years later (autumn 2004), and despite the obvious lack of progress in ICAO, no new initiatives by the Commission have been put forward. Action is long overdue, as highlighted by convincing studies on the matter initiated by T&E, the Netherlands Society for Nature and Environment, and the European Commission itself.

These studies and recent developments such as the 2003 Energy Taxation Directive lead to the following conclusions:

- A **kerosene tax** is environmentally effective and efficient, and fiscally fair. Member States can introduce it for domestic flights, and the Energy Taxation Directive 2003/96 allows Member States to tax kerosene used on intra-EU flights with the mutual agreement of the Member States concerned. However, in cases where non-EU carriers have rights to operate on intra-EU routes, a fuel tax leads to discrimination when the relevant bilateral Air Services Agreements (ASAs) exempts fuel from taxation. The EU is therefore seeking to change the long-running practice of including mandatory exemptions from fuel tax in ASAs with non-EU count

- En-route **charging of emissions** released in **EU airspace** is likely to be both environmentally effective and legally feasible. EUROCONTROL could manage such a system.

- At the time of writing, the feasibility of including the aviation sector in the EU's **emissions trading** regime for fixed sources is being studied. The United Kingdom has shown a keen interest in putting forward emissions trading for aviation in its Council presidency in the second half of 2005.

Specific recommendations

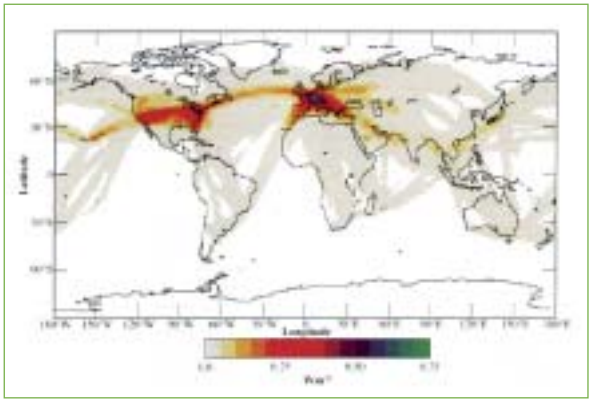
T&E calls upon the new Commission and Parliament to:

- present an extremely firm and united EU position in **ICAO** to address the global warming issue and, at the very least, keep the door open for action at European level.

- ensure in negotiations on the bilateral **Air Service Agreement with the USA** that it gains the right to tax or charge the fuel used or emissions released by ALL carriers – including American ones. If that is not attainable, the new agreement should certainly not contain language that would prevent the EU from taking action to protect its citizens and the global climate, irrespective of the USA's action on this problem. It is worth noting that 70% of global flights take place between and in the EU and the US.

- deliver on the promises made by the EU in the past by introducing a meaningful **en-route emissions charge**, and by 2006 at the latest to correct the existing market failures and help protect the global environment. It is possible to design the charge so it is effective but creates only minor repercussions for the European aviation industry. It would also reiterate the leading role of the European Union in the international arena – as history has shown, international developments and innovation are often stimulated by the actions of a forerunner.

- give serious consideration to **emissions trading**. In theory this might also be an appropriate route to give an incentive to the aviation sector to improve its environmental performance. However, the current experiences with the emissions trading scheme for fixed sources suggests that any trading scheme should fulfil the following requirements:



Source: IPCC 1999, p. 105

- it should have a meaningful ceiling, ie. one that is at least consistent with national responsibilities under the Kyoto Protocol or any subsequent agreement under the UN Framework Convention on Climate Change
- it should be based on the *total* global warming impact of aviation, in other words the aviation sector should have to acquire about three CO_2 permits for each unit the sector wants to emit because of the enhanced impact of gases emitted at altitude
- permits should be auctioned rather than awarded according to a 'base year' worked out from past emissions ('grandfathered') in order to respect the Polluter Pays Principle
- the maximum "escape" to other Kyoto mechanisms like Joint Implementation or Clean Development Mechanism credits should be limited to 20%

If the Commission wants to take this route, it should propose meaningful legislation for an EU-wide emissions trading system regime for aviation that covers all its impacts before the UK-presidency starts in July 2005.

- take urgent action on **aircraft noise**, in particular to defuse the fierce competition on lax standards that is costing EU citizens some of their human rights. A harmonised **eight-hour night-time regime** at EU airports should be introduced, during which only a very small number of essential flights would be allowed to land, and even then only the quietest aircraft.

- propose an EU framework for **noise and emissions-related airport charges**. Current environmental differences in airport charges vary widely – and in many cases such differences are not very meaningful – and emission charges are extremely rare (only Sweden and Switzerland deploy these). Closer harmonisation would make the situation much more transparent to the industry and hence make it easier to plan environmental investments.

- make it legal, after full discussions, for airports to introduce tradable airport slots combined with tradable noise and emission permits. This would make capacity and environmental management of an airport much more effective, efficient and predictable. In addition, slots are very valuable assets for airlines, so this practice would provide very powerful incentives for them to improve their environmental performance. At the very least, airports should be allowed to build in environmental criteria into current slot allocation procedures.

- **remove all** local, regional, national and EU **subsidies** which work against aviation becoming more sustainable

4. Shipping

Sailing into cleaner water and air

Shipping seems further away than it is

Shipping and aviation have a lot in common. Both are highly global modes of transport, playing an important role in international trade and relations. Both are rapidly growing modes of transport. Typical forecast growth rates of global shipping are 3% per annum, ranging from 1-2% for oil cargo and some 8-9% for container shipping. And both aviation and shipping are modes that are used most of the time out of human eyesight. This perhaps explains why environmental policy for both modes has remained under-developed compared with land-based transport. We all experience cars and lorries in everyday life, and we no longer accept that it is necessary for them to emit thick clouds of soot, to be terribly noisy, or to throw waste overboard.

What we do not realise is that about 70% of shipping occurs within a distance of 400 kilometres from the shoreline. Ports and their hinterland can be particularly affected, given that here the impacts of shipping and land-based traffic flows converge.

The environmental impacts of shipping only really come to public attention when there is a spill or other disaster. The *Erika* and *Prestige* disasters highlighted the fact that the shipping sector was essentially backward in environmental terms. Unfortunately, it took the sight of numerous birds coated in oil to create strong political support for stricter safety legislation. With the *Erika* and *Prestige* legislative packages, important steps towards safer ships have been taken to reduce the worst safety risks in European waters.

By contrast, the environmental impact of **operational pollution** from ships has received only limited attention in recent years. Apart from accidents, ocean shipping still has the reputation of being a relatively clean mode of transport. However, these days more oil pollution is actually linked to operational discharges than to accidental spills. Here, enforcement and economic incentive schemes have to complement existing legislation.

In addition, **atmospheric emissions** from ships receive far too little attention. In 2010 maritime transport is expected to be responsible for 75% of SO2 emissions in the EU. About 80% of the fuel burnt on ships is heavy fuel oils (also known as bunker oils), basically a residue from oil refineries that is thus cheaper than crude oil. Shipping is a cheap way for the oil industries to get rid of hazardous waste, yet most of the fuel is not burned on the open seas but close to the shore.

The past: slow progress on emissions

In the field of atmospheric emissions, 18 May 2004 effectively marked one of the first steps forward in the history of shipping. On that date, the Pacific island of Samoa deposited to the International Maritime Organisation the island's ratification of the so-called 'Annex VI' to the IMO's Marpol convention (the annex dealing with air pollution). This had been agreed in 1997 but needed 15 states to ratify it before it could enter into force – Samoa was the 15th! The most important direct effect will be that, as of 19 May 2005, a maximum sulphur limit of 1.5% (15,000ppm) will apply to ships using the Baltic Sea. To put this into context, from 2009 road fuels will contain no more than 10ppm of sulphur to protect the advanced catalysts. The Annex also laid down a methodology for measuring nitrogen oxides (Nox) emissions from engines, and introduced a first stage of engine NOx standards, although these are in practice still largely meaningless.

Of the 15 countries that ratified the Annex, only five were from the EU. This performance, which T&E believes is shameful, was even criticised by industry, because companies need clarity about future legal requirements. There are ways for the EU to make amends for this failure, for example by introducing a strict Directive on sulphur content of marine fuels which at time of writing is still under negotiation.

However, marine emissions are not just about fuels. Marine engines emit large quantities of NOx and this is only now beginning to be addressed. The global standard for sea-borne shipping as contained in the Marpol Annex VI is very lax. In addition, in 2003 the EU set standards for inland vessels, which were much more relaxed than for diesel locomotives and lorries. The reasons for this were not economic or technical, but merely institutional: the EU felt it did not have the power to go beyond the standards agreed by the Central Committee for Navigation of the Rhine.

To encourage a shift towards ships with lower engine emissions, **ports** need to play a crucial role. A system of differentiated port dues could provide incentives for using environmentally sound technologies, and help promote quality shipping. With the Swedish system of differentiated port and fairway dues, a positive example has already been set in an EU member state. Many ships that frequently berth in Sweden are equipped with retrofitted exhaust technology, while the owners of ships that do not frequently visit Sweden choose not to fit these technologies. This shows the power and flexibility of economic instruments, and how they can encourage technology to be implemented in a very cost-effective way.

It is also very important that work should begin on tackling greenhouse gas emissions from shipping. Currently the contribution of CO_2 emissions from ships to total global warming is about 2%. Without additional policies, this is expected to rise by 1.5-3% per year. A very important option in tackling these emissions is lowering the average **speed** at which vessels sail, or at least halting the trend towards ever-faster ships. Average speeds around 10% lower would reduce emissions by over 20%. This is approximately the same emission reduction that would be achieved by implementing all the technical measures one could think of. Furthermore, in a greenhouse gas emission strategy, the climatic impact of NOx emissions and of CFC leakage of refrigerants from cooling systems should not be forgotten. New concepts such as the SkySails ship (picture) might prove interesting too.

SkySails, a concept to use wind power for commercial propulsion

Specific recommendations

T&E calls upon the new Commission and Parliament to:

- push for a new **global maritime environmental policy**. Now that Annex VI to the Marpol Convention has been ratified, the floor is open to talk at international level about broader environmental responsibilities for the global shipping sector. This should include stricter sulphur limits, both globally and in sensitive zones, stricter engine NOx and PM emission standards, and steps to address the greenhouse gas and CFC emissions from ships.

- introduce at EU level a Directive on environmentally differentiated port charges. Port dues are important, tried-and-tested tools to stimulate cleaner ships. There is a precedent for EU action in the field of port dues. Regulation 2978/94/EC stipulated that ports had to offer a reduced tariff for certain safer tankers. A similar model should be applied to reflect the environmental performance of vessels. There maybe arguments that such action impacts adversely on EU competitiveness, but this is likely to be minimal, and leadership on such measures pays off in the long run.

- develop the Framework Directive on transport infrastructure charging as promised in the 2001 White Paper on the Common Transport Policy, and apply it to inland and maritime waterways. A European system of differentiated fairway dues for all inland and maritime waterways should reflect environmental performance, safety risks and infrastructure use.

- work together with the Central Committee for Navigation of the Rhine on a quick tightening of emissions standards for engines used in vessels plying inland waterways, so that these reflect state-of-the-art technology and are roughly equivalent to standards for lorries and diesel locomotives.

- support the development and introduction of **the Clean Ship Concept**[18] as promised by the ministers of the North Sea Conference (Bergen, 2002). The Ministers agreed "to explore and develop the concept of vessels designed, constructed and operated in an integrated manner to eliminate harmful discharges and emissions throughout their working life." This can be done with research and development funds, fiscal 'green shipbuilding' support, pilots and information distribution.

- complement the Clean Ship Concept with a **Clean Port Concept**. This should include mandatory environmental and risk management plans from ports.

- link any financial support for short sea shipping and Motorways of the Sea to stringent environmental criteria.

- critically **evaluate** by mid 2005 the working of the **Directive on Port Reception Facilities in Sea Ports**. When the 'significant' indirect fee system (significant means at least 30%) proves to be insufficient, this percentage must be increased up to an 100% indirect fee.

[18] see e.g. www.noordzee.nl

5. Health and Quality of Life

Fresh air, better sleep, better shape, fewer risks, and access for all

'Good' transport means good for everyone, not just for users

'Good' transport means better quality of life. 'Good' transport allows people with sensitive lungs and sensitive ears to still feel OK in cities. It enables people to have more time to spend doing what they want to do rather than getting there. It enables and even encourages people to use healthy and environmentally benign modes of transport such as walking or cycling (or wheelchairs), despite their relative vulnerability. 'Good' transport is not just good for the *users* (the objective of the Common Transport Policy), it's good for *every citizen*.

There is a social dilemma here as people adopt different roles at different times: parent, teacher, worker, student, shopper, tourist. These roles have different requirements and so people have a range of different mobility needs, often in the same day. They may even see the world differently depending on the role they play at a given moment. For example, a parent putting their young child to bed will curse the number of aeroplanes flying overhead, or the number of cars passing the schoolyard, but as a tourist wanting to take a holiday in a far-away place that same person will be delighted to find a plentiful selection of cheap flights. Transport systems need to reflect this reality in a socially just way, and to serve citizens in all roles, making life easier, rather than focus on them only in their capacity as transport users. After all, transport is (or should be) only a means to an end, not the end itself.

Motorised travel is often said to have brought freedom and a better life to people and societies. In some senses this is no doubt true, but such freedoms and enhancements to quality of life have to be seen in the wider context. Much less emphasised are the economic, environmental and in particular the social costs of such motorised 'freedom'. Social elements are among the most relevant to people's daily lives in determining quality of life: Can I get across the road easily? Are my children able to meet their friends and go to school without having to rely on me to take them in the car? Do I have to spend a large part of my income on a car because otherwise I cannot do the things I want to? It soon becomes clear that the freedoms brought by cars have come at the cost of other people's freedoms, notably those without cars (and sometimes those with cars).

BOX 1: THRIVING INNER CITIES DO NOT NEED CARS

In 2001, the Economic Research Centre of the European Council of Ministers of Transport (ECMT) held a 'Scientific Round Table of Transport and Economic Development'. Given the complicated nature of the matter, the number of easy-to-grasp conclusions from this discussion was relatively limited. Nevertheless, this was one of them:

> *"Plans to revitalise city centres, for example through the construction of shopping malls, are more likely to be successful if provision is made for pedestrian areas, tram networks or priority bus lanes rather than direct access for private cars to shopping centres."*

Sustainable transport systems reduce social exclusion of people (young, elderly, poor, disabled), and they do not damage health, in fact they contribute to a higher level of public health as they involve modest physical exercise. Such systems mean fewer environmental problems and a more efficient economy, which in turn leads to greater overall well-being.

Past action: focus on technology

The EU has made some progress in addressing one of the pressing health problems associated with transport, namely **vehicle emissions**. After some 15 years of slow progress, the story really started in the late 1980s with the gradual phasing out of lead from petrol and the introduction of three-way catalysts. Over the last 10 years a broad range of Directives for cleaner cars, vans, lorries, locomotives, ships and fuels has been adopted to address air pollution problems.

However, over that same period **air quality** and health have not improved significantly. For example, the number of ozone alarm days has remained constant over the last decade, and air quality does not comply with EU standards in 97% of cities[19]. There is an apparent divergence between theory (emission standards to protect air quality) and practice (everyday air quality). A broad range of factors is responsible for this:

- Traffic growth ... really strict emissions limits are needed to prevent improvement from being outstripped by the 2-3% annual growth in road transport
- Insufficient standards ... current standards still fail to address all contributors to poor air quality, for example particulates
- 'Forgotten' sectors ... non-road modes were only very recently addressed (mobile machinery, diesel locomotives) and some modes like aviation and shipping have been insufficiently addressed (see chapters 3 and 4)
- Misleading test cycles … emissions measured in test cycles do not reflect everyday emissions – in everyday life vehicles are driven more aggressively, they deteriorate, are being tampered with, etc
- Limited application of standards … EU standards only apply to new vehicles, so older vehicles legally emit worse levels of pollutants per kilometre driven; the EU has also failed to encourage member states to introduce incentives – such as differentiated vehicle taxes – for a quicker phasing-out of the worst polluters
- Weather … summers are getting warmer, which provokes more formation of ozone

In the field of **noise**, the EU's track record is very disappointing. After the 1996 Green Paper on a future noise policy, there was a deafening silence for six years until Directive 2002/49 was adopted. And that Directive does not lay down specific targets or standards, but only establishes a common monitoring and reporting

methodology, and requests authorities to draw up plans for noise 'hot spots'. This is disappointing, as a broad range of noise-reduction measures relevant to vehicles and infrastructure is available, and the EU could play an important role in setting technical standards and European frameworks for economic incentives.

While the Commission should continue to work towards the most stringent environmental standards possible for vehicles and fuels, it should remain cognisant of the fact that quality of life, particularly in cities, relies to a great extent on socially responsible transport, and this requires more than technology. It is recognised that most action on socially responsible transport will be taken at local and regional level, and subsidiarity concerns prevent the EU from prescribing detailed measures. Yet the EU could and should require cities to develop sustainable urban transport plans in which environmental and social sustainability concerns play a pivotal role. The **strategy on the urban environment** offers an opportunity to take the EU's role forward.

Specific recommendations

T&E calls upon the new Commission and Parliament to:

- continue the EU's strong and important role enforcing **technical** standards and requirements, notably in the following ways:
  - there is scope for considerable further reductions of permitted emissions levels of particulate matter and nitrogen oxides in the up-coming 'Euro-5' and 'Euro-6' standards for cars, vans and lorries. The EU should learn from its previous experiences with three-way catalysts that the cost of retrofit technology comes down very quickly when produced in large quantities, and its quality only improves. It is more important to set 2010 standards at a very stringent level for use in 2010, than to speed up the process of setting these standards in exchange for laxer values.

[19] EEA 2002 TERM report: Paving the way for EU enlargement

- The EU should push for much stricter emission and noise standards for sea-going and inland vessels and for aircraft at IMO, CCNR, and ICAO respectively.

- speed up the introduction of cleaner vehicles, trains, ships, aircraft and fuels, and the phasing-out of the worst polluters. This should be done by working on European **frameworks** for environmentally **differentiated** vehicle, road, rail, port and airport **charges** and for environmentally differentiated tradable slots for ports, airports, and rail infrastructure.

- revise the emission measurement **test cycle** for passenger cars and vans, to better reflect today's driving patterns, and driver behaviour, and use of air conditioners and other electronic equipment.

- confirm the standards for nitrogen dioxide (NO_2) in the review of certain elements of the first Daughter Directive. In the same review, the standards for microparticulates (PM10) should be made mandatory and complemented with a standard for PM2.5, and also a standard for ultra-fine particles, so as to provide maximum protection for human health.

- urge the Commission to ensure that all provisions of the Directive on environmental **noise** (2002/49/EC) are fulfilled. More specifically, the Commission should use the opportunity under this directive to propose in 2009 strict ambient noise limits that protect citizens' health and quality of life.

- ensure the EU is a force for pushing and co-ordinating the development of technologies that stimulate responsible use of the car, and make vehicle identification easier. Examples include the **Intelligent Speed Adapter (ISA)** that helps drivers comply with speed limits, and systems for **Electronic Vehicle Identification (EVI)**. For the latter, the EU should ensure that any system includes the environmental (CO_2, Euroclass) and safety characteristics of a vehicle so that less environmentally harmful vehicles can be recognised.

- on the **non-technical** front, ensure the EU takes some responsibility for protecting the health of citizens living in urban areas to the full extent foreseen under the Treaty. This may mean requiring urban areas to create sustainable urban transport plans in the forthcoming **Thematic Strategy on the Urban Environment**. The Commission should not use the valid principle of subsidiarity to avoid taking meaningful action to fulfil its mandate; nor should it allow the subsidiarity principle to be misused for this purpose. In particular, the EU should aim to:

  - protect the health and quality of life of all EU citizens by ensuring the scope of legislation goes beyond the largest agglomerations and applies to cities over 50,000 inhabitants
  - ensure that access to vital services and areas is ensured for those without a car
  - non-motorised modes of transport are promoted in the urban context, in order to avoid pollution and promote physical well-being

- ensure that the rights of users of vulnerable but environmentally benign transport are respected (in particular children and the elderly walking and cycling). A good way for the EU to do this would be by pushing for better **enforcement** of traffic safety policy. It could also propose EU legislation **if member states fail to adequately enforce traffic safety policy by 2007**, in line with the Council-approved Commission recommendation 2004/345.

- restructure European transport investment policy, in particular shifting the emphasis away from trans-national prestige projects (specifically the TEN-Ts) and more towards smaller urban and regional transport systems that make a real difference to the everyday lives of EU citizens. The idea put forward in the July 2003 revision of the Eurovignette directive, that revenue from road charging must be ploughed back into transport (mostly road), not only runs counter to economic theory but does little or nothing for citizens and the environment. If such ideas, which are mirrored in statements from the TENs guidelines, can be removed, it would free up EU funds to be used for smaller urban and regional transport projects and reduce the risk of citizens having to bear the burden of cost overruns on bigger projects.

- propose criteria to **define sensitive areas** from an ecological and a human health point of view. It is important that this includes areas where EU environmental standards are currently being exceeded. **A coherent transport policy for such sensitive areas** should then be developed, mainly for freight transport but also for passenger transport.

- hold the Council to its decision of 18 September 2001 to designate a person to sign, on behalf of the Community, the **Transport Protocol** of the Convention on the Protection of the Alps (known as the '**Alpine Convention**'). Although the EU is the last of nine partners to sign, the Council has still designated no-one to do so. Signing and subsequently ratifying the Protocol would support the development of more sustainable transport policies in the EU in general and the vulnerable Alpine region in particular.

- ensure that **funds** for transport research are not predominantly spent on vehicle, propulsion and fuel technology, but also on technical and non-technical ways of influencing driving behaviour and managing demand in a sustainable way.

6. European Investment

More double-checks, no blank cheques

Transport is like electricity: indispensable, but a cost item in the end

Investments in transport systems have long been regarded as one of the engines driving the European economy. In the years immediately following the Second World War, reconstruction of transport infrastructure was of vital interest to build up the economy, equal to the construction of, for example, an electricity network. Modern society cannot live without transport just as it cannot live without electricity.

Electricity is nowadays considered a commodity that is indispensable, but should be used as efficiently as possible because it costs money. No politician would dare to call for more use of electricity because that would help economic development. The real challenge is to have economic growth with as little use of electricity as possible, and energy in general. Investment in electricity infrastructure is balanced with demand management techniques like higher prices during periods of peak demand.

Yet there is a strange resistance to adopting these rational principles for transport. In 2001 a logical objective was set for transport policy: the **decoupling** of economic growth and transport growth. We have seen in *energy* that this kind of policy is not just accepted on paper, but enacted in reality. So why do policy makers and politicians in the *transport* sector still seem a long way from wholeheartedly accepting this target, or even being convinced by the need for it? Perhaps it is because the myth that investment in transport is a strategic decision that spurs economic growth is so hard to kill. It certainly is a myth, at least in absolute terms. Numerous respected economists have shown that investing in transport as a way of stimulating economic growth is at best a risky strategy and at worst simply wrong. See the table opposite page for some common myths and real facts about transport and economic development.

SOME **POPULAR MYTHS AND SCIENTIFIC FACTS** ABOUT TRANSPORT AND ECONOMIC DEVELOPMENT[20]

MYTH	FACT
"Transport is the motor of the economy."	Transport intensity varies enormously in the EU; some countries use **three times less transport** than other countries to earn the same income (OECD)
"Traffic growth is unavoidable"	The well-monitored example of London (**34% reduction in private cars** after introduction of the congestion charge, April 2004 monitoring report) confirms the findings of numerous theoretical studies that transport policy *can* seriously tackle transport volume
"Building infrastructure is good for the economy and for employment."	"When opportunity costs of infrastructure investments are taken into account, it is likely that ... putting more resources into **education and training** is likely to offer better returns." (Transportation Research Board, 1997, 'Macroeconomic Analysis of the Linkages between Transportation Investments and Economic Performance'). "All that can be said is that the impact of infrastructure investment on **employment** is **limited or even negative**, contrary to popular belief" (conclusion from ECMT's *Round Table on Transport and Economic Development*, 2001, p190)
"Reducing traffic and road pricing frustrate economic development."	"There is scope for carefully judged policies which help to **decouple** the rate of traffic growth from the rate of economic growth, thereby reducing the environmental and congestion costs of traffic and also – to some extent – assisting in **delivering the benefits of economic growth**. Such policies include pricing, management and investment initiatives." (SACTRA, the UK Standing Advisory Committee on Trunk Road Assessment, Transport and the Economy, 1999)
"Building infrastructure helps regenerate poorer areas."	In fact the reverse can be true, as new infrastructure can suck away economic activity as the area can be served from a larger distance (infrastructure is a 'two way road'). **"There are no clear and incontestable conclusions** regarding the effects on infrastructure investment on the local industrial or commercial fabric." (ECMT's *Round Table on Transport and Economic Development*, 2001, p190, emphasis added). "The substantial regional, national and international development effects commonly claimed by project promoters typically **do not materialise**, or they are so diffuse that researchers cannot detect them." (Flyvberg et al, *Megaprojects and risks*, 2003, p136)

Decision-making: about rent seeking and overestimated viability

Investment in transport infrastructure is definitely an area where politicians feel they can build a reputation by acquiring a maximum share of collective funds for their country, region or city. The fact that the parties that benefit are not the same as the parties that bear the costs and financial risks leads to what is known as 'rent seeking' behaviour, which may be a human trait but is damaging for the decision-making process.

What this means in practice is described in a groundbreaking book[21] that analyses the economics of 258 large-scale infrastructure projects across the globe. Two of its conclusions are:

- "Cost overruns by 50-100% in real terms are common on the largest projects, and overruns above 100% are not uncommon."
- "Actual project viability typically does not correspond with forecast viability, the latter often being brazenly over-optimistic."

It is clear that many more checks and balances are needed to ensure that money from European tax payers is not spent on projects that may appear useful but on closer inspection prove not to be economically viable. Both technical (audited cost/benefit analysis) and institutional (proper treatment of financial risk) changes are necessary.

[20] Emphases added in quotes. See also T&E 02/1, "Transport and the Economy: The Myths and the Facts", online at www.t-e.nu/docs/Publications/2002%20Pubs/BrochureMyths.pdf
[21] Megaprojects and risks; an anatomy of ambition, Flyvbjerg, Bent, Niels Bruzelius and Werner Rothengatter, Cambridge, 2003

Direct EU influence on investment and setting of priority projects.

Box 2, below provides an overview of the most direct influence the EU has on transport investment decisions, namely the European funds. A clear and detailed overview of what the EU is intending to spend, and has already spent, on transport is extremely necessary for reasons of transparency and accountability.

BOX 2: WHAT MONEY ARE WE TALKING ABOUT?

The total construction and maintenance costs of the EU's infrastructure network are likely to exceed €200 billion per year, or approximately 5% of the tax burden on European citizens and companies. The figures are based on an extrapolation of German and Swiss transport accounts prepared for the EC's UNITE project, and on Dutch figures.

It is the European Commission's ambition to increase the share of this money that is to be invested in Trans-European Network transport projects (TEN-Ts). Spending on this is estimated at €40bn per annum up to 2020. Of this, about €15bn per annum should flow to the so-called priority projects.

Total transport funding with EU money is very hard to estimate because information is highly scattered, not detailed, often incomplete, and generally relates to budgets rather than actual expenditure. It can be estimated that expenditure in the past amounted to about €3bn per year, a figure the Commission wants to increase to at least €5bn per year with its proposal 2004/475. In addition, the European Investment Bank (EIB) has guaranteed loans amounting to about €8bn per annum on average.

The European Commission has been intensively looking for ways to increase the budget for the TEN-Ts, saying it is necessary to achieve the targets for growth and employment set at the 2003 European Council in Lisbon. Given the 'myths and facts' table on page 25, it is perhaps not surprising that the Commission has never seriously investigated whether the claims that the TEN-Ts will contribute to growth and employment are scientifically justified.

The Commission's attempts so far to raise the budget for transport infrastructure have been based around the following ideas:

- considerably **increasing the EU's contribution** to infrastructure investment. The list of TEN-T priority projects was expanded, following recommendations from the Van Miert High Level Group. Regulation 807 was adopted to raise the maximum percentage of Community funding from 10% to 20%. And it is the Commission's wish (as expressed in proposal 2004/475) to raise the percentage of EU funding to 30%, and for cross-border sections even to 50%. If that happened, annual expenditure on transport would increase to at least 5% of the EU budget. It is not yet clear how this idea would impact on the budget for other EU priorities, especially in view of the wish of many member states to limit the EU budget.
- **involving the private sector** in funding TEN projects, though so far this has not been very successful. This may relate to the financial risks associated with many of the TEN projects and to the fact that direct benefits are only a fraction of the costs.
- a proposal for a **revised Eurovignette Directive** that would oblige member states to re-channel revenues into infrastructure. As we describe in chapter 1 (page 9), a requirement to 'earmark' revenues would conflict both with the principle of subsidiarity and with principles of economic efficiency.

Indirect EU influence: environmental Directives to improve the decision-making process

The EU can exercise influence on infrastructure decision-making in indirect ways, for example through its Directives on Environmental Impact Assessment and Strategic Environmental Assessment, the Bird and Habitat Directives, and – even more indirectly – the Air Quality Directives and the Water Framework Directive. Together with the provisions of the Århus Convention, they form a legal framework that, if properly implemented and enforced, would seriously take environmental considerations into account in project decision-making.

Although each of the Directives can and should be further improved and clarified, the weakest point of these Directives is clearly the poor way they are currently being implemented and enforced.

BOX 3: FOUR-STEP APPROACH IN SWEDEN

A 'best practice' example of a sensible approach to decision making can be found in Sweden where the Parliament has instructed its Rail and Road Authorities to subject infrastructure decisions to four analytical steps:

1. Can the traffic problem be solved by **influencing demand** and the choice of transport modes?
2. Can the traffic problem be solved by **better use of existing infrastructure** and vehicles?
3. Can the problem be solved with **limited improvements in existing infrastructure**?
4. If the answer to all questions above is no, than solving the traffic problem with new infrastructure is an option.

T&E's conclusion: more double-checks, no blank cheques

T&E's demands in the field of EU investment in transport infrastructure come down to two simple elements:

No blank cheques: T&E is convinced the trend towards higher EU budgets for TEN-T projects cannot be justified, at least not without a proper cost/benefit analysis. The economic viability of infrastructure investment, and the benefits associated with given projects, are generally heavily overestimated. Individual EU-sponsored projects are not subject to cost/benefit analysis, which is irresponsible towards European taxpayers.
More double-checks: cost/benefit analysis is badly needed, and also tighter EU control of (strategic) environmental impact assessment and other EU laws on environmental protection.

Specific recommendations

T&E calls upon the new Commission and Parliament to:

- **de-link** transport **pricing and investment**. The European Commission has identified revenues from transport infrastructure charges as one of the most promising ways of financing the TEN-Ts. But common economic principles show that (1) proper pricing should not serve financing aims but be aimed at sending signals to the market to increase transport efficiency and to reduce the negative impact of transport at low cost, and (2) revenues should not be 'earmarked' as this limits the flexibility to spend money on society's most urgent needs. The message is clear: investment should not be funded directly by revenues from transport pricing schemes.

- A scrutinised and open **cost/benefit analysis** for all EU-funded projects. The EU is lagging behind its member states in operating a proper macro-economic assessment of costs and benefits of infrastructure projects. This in turn fuels criticism about careless spending of EU money. What is needed is a three-step approach:
  - the Commission should urgently issue guidelines for proper cost/benefit analysis, making optimal use of existing experience and expertise in the member states
  - all projects that are to receive EU money should be subjected to such an analysis
  - in order to avoid deeply and intentionally flawed analyses from the past, the assessment should be subject to **public scrutiny** by an independent body, preferably the European Court of Auditors, in cooperation with the national accounting offices.

- organise an **open debate** on the impact of infrastructure investment on the **economy**. There are widely diverging views, myths and facts about the relationship between investment in infrastructure and economic development. Now that it is proposed to raise the amount of Community funding for infrastructure projects to around €5 billion per year, it is vital that this money is spent wisely and not on the basis of misguided hopes.

- **invest in brains, not concrete**. As civil society groups recommended to the Irish presidency in their joint publication, "*Investing for a sustainable future*"[22], the European Union should seriously rethink its investment policies. Investments in issues such as education, health care, and training often yield a higher rate of return than investments in hard transport infrastructure, as well as being more highly regarded by the public.[23] Such an investment shift would be likely to reflect the concerns and wishes of citizens, and would also bring the Lisbon targets closer.

- open up EU transport funds to **smaller and more sustainable projects**. The TEN guidelines and Cohesion policy documents clearly state that Member States stand a greater chance for EU funding if they apply for a project that is on the TEN list. Yet the subsequent cost overruns, typically in the range of 50-100% in real terms, suck away funds for other infrastructure budgets, notably at local, regional and national level, and for maintenance. As a result, rail and road systems all over the EU suffer from serious lack of maintenance. This is an example of EU-scale ambitions being pursued at the expense of normal citizens' everyday worries.

[22] A joint publication of the European Trade Unions Confederation (ETUC), the European Environmental Bureau and the Social Platform. See www.etuc.org/EN/Press/releases/sustdevelop/PRETUC-EEB-NGOs.pdf
[23] See also T&E, 'Transport, Infrastructure and the Economy', Brussels, 2000, T&E 00/06

- Improve the **EIA and SEA Directives**. Reviews of the Directives on Environmental Impact Assessment and Strategic Environmental Assessment are planned for 2005. It should be made mandatory that every TEN infrastructure project falls under the scope of the SEA Directive. The Commission should also play a much more important role in ensuring a meaningful SEA is carried out for projects funded with EU money, in particular ensuring that all relevant alternatives are considered.

- ensure **compliance** with environmental Directives and enforce **conditionality** for funding. The EU funds hundreds of transport projects, and in theory such funding can only happen if projects comply with EU legislation. But in reality the Commission has insufficient capacity to enforce proper compliance, and projects are given EU funding despite breaching EU environmental rules. Money from the TENs budget should be put aside to make sure EU environmental and public participation laws are respected, and funding should be made conditional on compliance. Europe could learn lessons from America, where if states do not adhere to the Clean Air Act, they can ultimately lose federal money to fund highway building.

- constantly **revise the priority status** of each TEN project to reflect the outcomes of the economic and environmental assessments. The spirit of the 'kick out clause' should be retained (even though it is not a legal requirement of the TENs guidelines) as it would lead to greater accountability and financial probity.

- put a substantial portion of resources into **research and development** on **non technical transport issues**, such as the understanding of social, psychological and policy factors (including the development of policies) that can help speed up the introduction of new technologies and instruments.

Europe's voice for sustainable transport

About T&E

T&E is Europe's principal environmental organisation campaigning specifically on transport. Members are drawn from NGOs in nearly every European country, all of whom promote a more environmentally sound approach to transport.

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in cooperation with

Natuur en Milieu

About Stichting Natuur en Milieu

Stichting Natuur en Milieu (SNM) - The Netherlands Society for Nature and Environment was founded in 1972 and is one of the major environmental organisations in The Netherlands. SNM works closely with other national and provincial environmental groups and is a member of T&E. Currently, 80 professional staff work on issues including economy, transport, countryside, industry and urban environment.

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Timed to coincide with a new European Parliament, Commission, and an enlarged EU, this publication offers policy makers considered solutions to help restart sustainable transport policies.

Six key areas have been identified as needing urgent action. True prices; climate change and energy use; aviation; shipping; health and quality of life; European investment in transport are each covered by an in-depth chapter including specific recommendations for short and long term policy objectives.

'Sense and Sustainability' continues T&E's 15-year record of advocating environmental solutions to transport issues based on sound scientific and economic research. The publication is essential reading for European transport and environment decision makers.