Less oil, more welfare

Position Paper – March 2006

Submission to the European Commission public consultation on:
'Doing more with Less', the European Commission's Green Paper on Energy Efficiency, COM(2005)265final

European Federation for
TRANSPORT and ENVIRONMENT

T&E is Europe's principal environmental organisation campaigning specifically on transport. Our 45 member organizations in 21 countries all work to promote an environmentally-sound approach to transport and mobility.

Summary: Five Key Principles and Ten Key Actions

Energy efficiency is THE key tool for managing the rapidly growing environmental, economic and geopolitical challenges associated with oil demand from the transport sector.

The EU's energy policy in transport should be based on the following **principles**:

1. energy efficiency policies in the transport sector could and should be much **more ambitious** than in other sectors (for example those in the European Emissions Trading System), because the 'ability to pay' for energy reduction in transport is higher than in more vulnerable sectors in the economy
2. **binding targets** should be set for energy use in transport: stabilisation by 2010 and halving by 2030, and a comprehensive plan to achieve this target should be developed and implemented
3. all targets for energy efficiency and targets for renewable energy should be clearly **separated** - biomass is a scarce resource too
4. The EU should become the most **transport efficient** economy in the world, just as it should strive to become the most energy efficient economy in the world
5. Given the big differences in performance across the EU, 'bad' member states in terms of transport energy efficiency should **learn** from experiences of 'good' ones

The following key **actions** need to be taken:

1. **Double the fuel efficiency** of new passenger cars and vans over the next decade by introducing an EU-wide and fleet-wide regulation with positive and negative incentives
2. complement this system with fuel-efficiency-based registration, circulation and company **car taxes** that that are strong enough to make a real difference;
3. Develop targets and a policy for fuel efficiency of **lorries**
4. Raise **fuel taxes** in road transport and introduce them where they are not yet present
5. Introduce a framework Directive for **charging** of all transport modes, which includes external costs
6. Strengthen the EU policy for managing transport **speed** - including broader fitting of speed limiters and adapters and the promotion of slow modes - as speed is an extremely critical factor in energy use
7. Include **aviation and shipping** in the EU ETS with a meaningful scope and cap, – while recognising that additional policies for these sectors will still be needed
8. Drastically improve the quality, scrutiny and transparency of economic and environmental assessments of transport **investments** that use EU money, and cancel investments in case of negative outcomes
9. Closely study the impacts of increased oil demand on the exploitation of **unconventional oil**
10. Follow the IEA recommendation to develop an EU **strategy for quick cuts** in oil consumption in order to deal with oil supply disruption and temporary price spikes

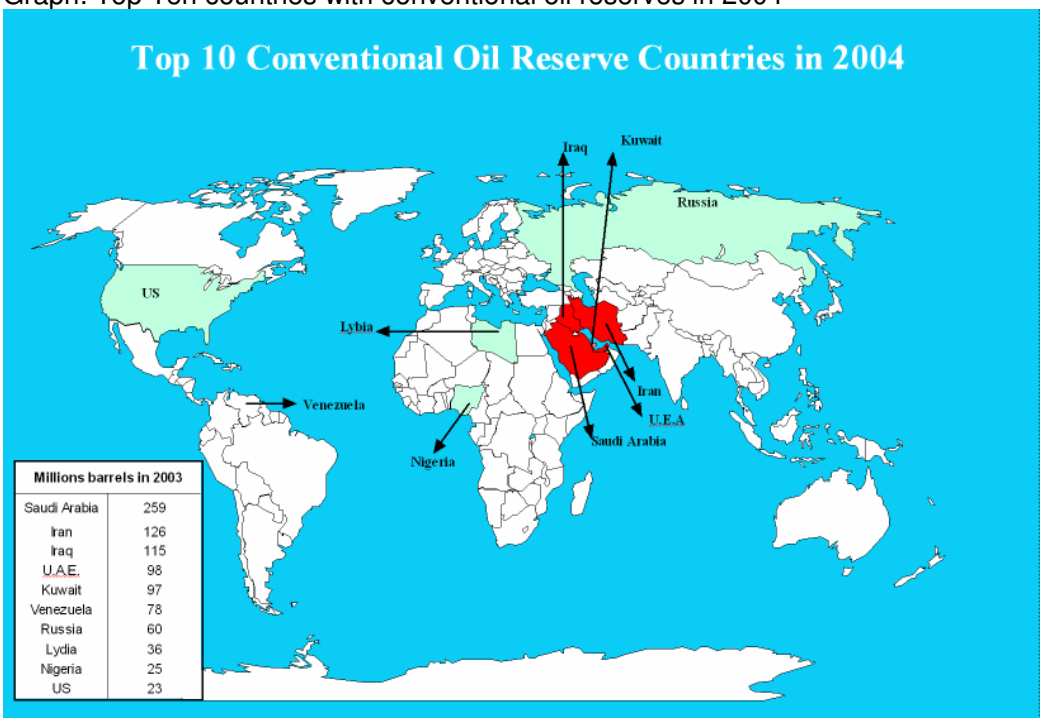
THE CHALLENGE

A worrying outlook

The energy use of transport poses gigantic, unique and growing challenges for Europe. These challenges are not only environmental, they are also economic and geopolitical. Ninety-eight per cent of transport runs on oil and, conversely, transport is responsible for 70% of the EU's oil consumption. By 2030 the EU will import 86% of its oil needs. Oil use is THE central transport energy issue and vice versa.

First, oil dependence is an important geopolitical issue.

Graph: Top Ten countries with conventional oil reserves in 2004



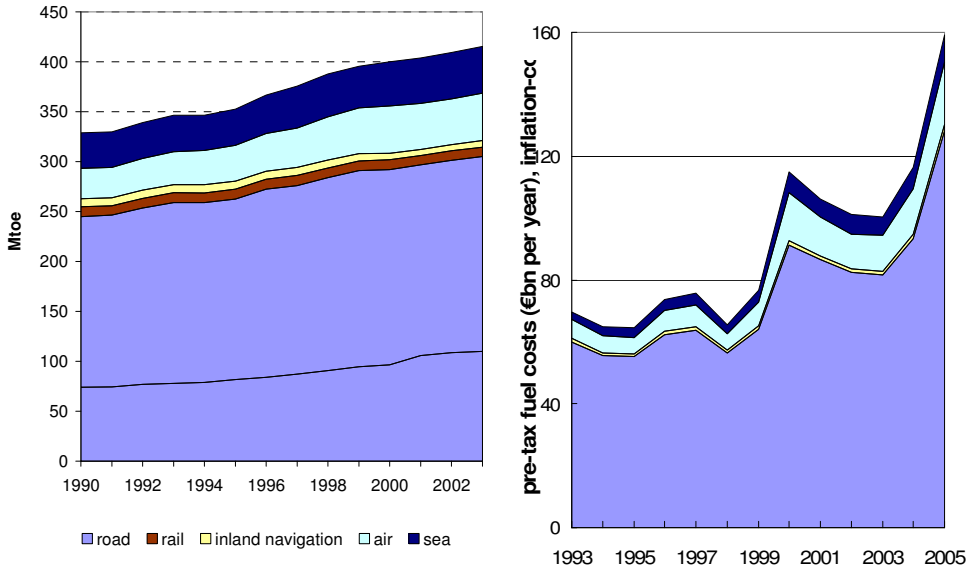
Rising energy use poses important environmental challenges. Transporting passengers and freight within and between European countries requires more and more energy. While non-transport sectors managed to reduce their greenhouse gas emissions by 8 per cent between 1990 and 2003, **CO_2** emissions from the transport sector increased by 27 per cent. Transport's share of energy use was 34 per cent in 2003, a figure that is still rising. Passenger cars take more than half the energy; vans and lorries a quarter; ships and aircraft each some ten per cent. A few per cent goes to inland shipping and rail.

In addition, **the environmental challenges of unconventional oil** are too often forgotten. At current oil prices of around € 50 a barrel, it is extremely attractive economically to exploit so-called unconventional oil, such as the Canadian tar sands. It is well known that producing oil from these sources requires an enormous amount of energy in itself: the well to wheel greenhouse gas emissions are some 20-25% higher than those of conventional oil (http://www.iea.org/Textbase/work/2005/oil_demand/Oilintransportwkshp/pdffiles-day1/greene2.pdf).

As it is largely marginal (extra) demand that causes unconventional oil sources to be exploited, avoiding this extra demand through conservation policies implies that we not only avoid the GHG emissions from burning the oil product, but also the extra GHG emissions from exploiting unconventional sources. **Saving fuel, and thereby not exploiting unconventional oil sources therefore has double benefits.** These considerations add to the urgency of oil conservation in transport.

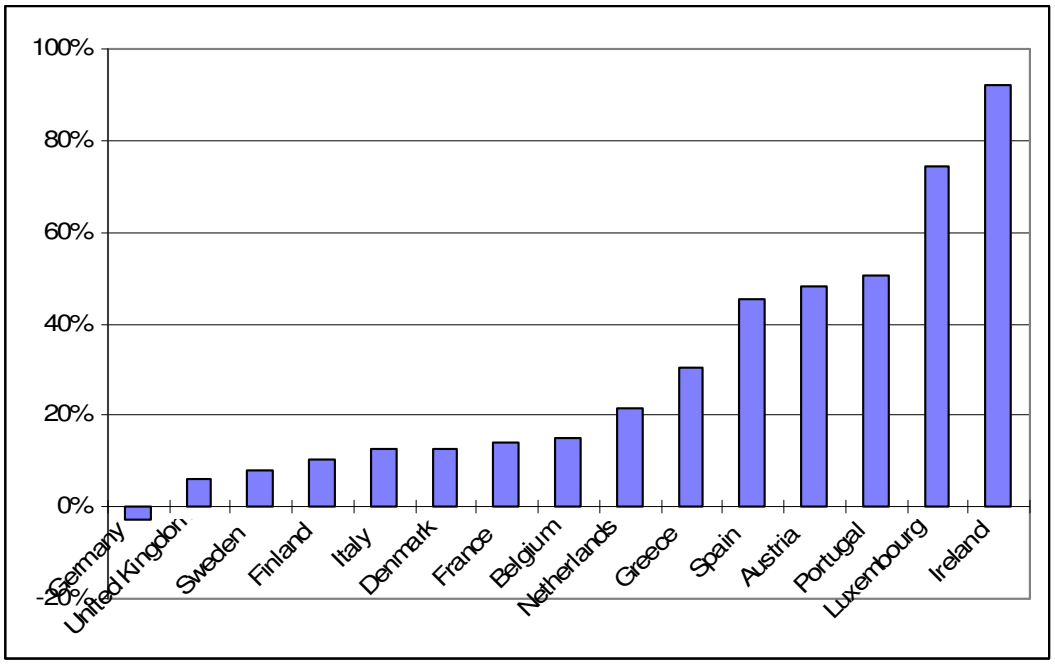
Growing demand for transport is not only harming the environment but also the economy. While energy use has risen by a quarter over the past decade, the **cost** of that energy has more than doubled and this has negatively affected the EU's trade balance. The EU's oil dependence will rise to 86% in 2020.

Graph: Final energy consumption in transport from 1990 to 2003 in the EEA30 (EU25 plus Norway, Iceland, Bulgaria, Romania, and Turkey), and the cost of the fuel (pre-taxes, inflation-corrected, € of 2005). Sources: EEA fact sheet on energy in transport, and T&E analysis based on cost figures in the Oil Bulletin



But behind this picture of a seemingly unquenchable thirst for oil, there is a more detailed and intriguing picture of the performance of individual Member States.

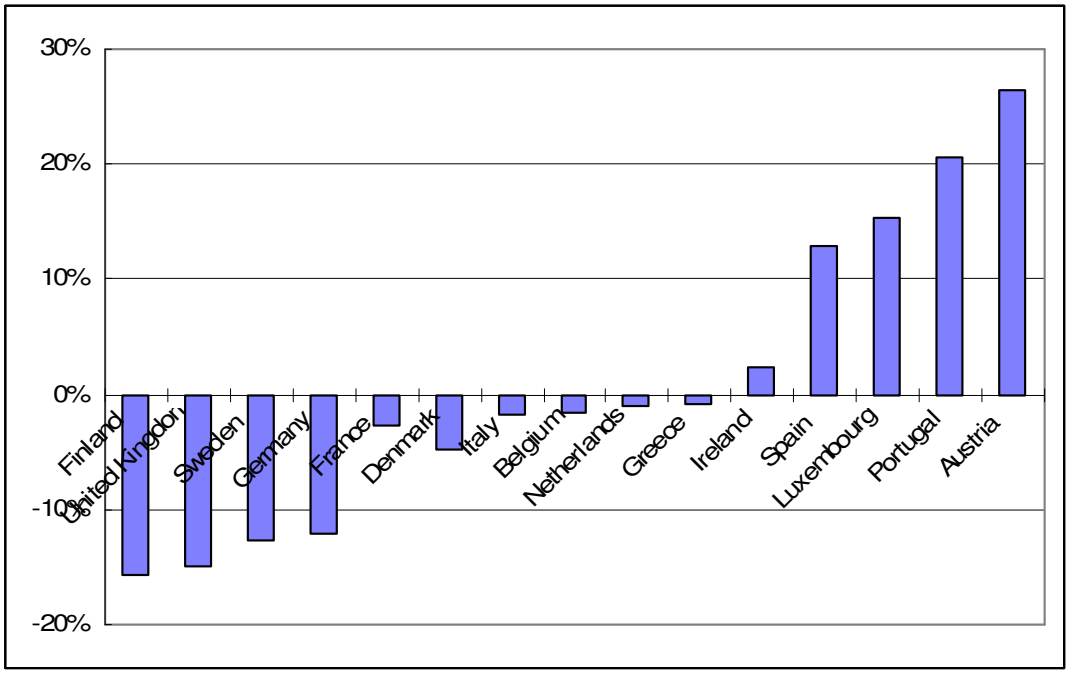
Graph: rise in energy consumption in road transport in old 15 EU Member States between 1995 en 2003



This graph clearly shows that some Member States managed to more or less contain the energy consumption of their transport sector, while others saw excessive increases. Germany, the UK, Sweden and Finland showed the best performance.

As economic growth is a very obvious explanatory variable for rises in energy use, the graph below corrects for that and shows the development in transport energy efficiency of the old 15 EU Member States.

Graph: rise in energy consumption in road transport in old 15 EU Member States per € of GDP between 1995 en 2003



This graph shows that some countries, in Scandinavia, the UK and Germany, managed to become 10-15% more transport energy efficient, while others, notably Spain and Portugal, used 15 to 20 per cent more transport fuel to earn a € of income.

Note: The figures of in particular Luxembourg and Austria should primarily be seen in the context of increasing 'tank tourism' due to low fuel taxes in these countries. Raising fuel taxes in these two countries is of utmost importance as the low taxes cause detours to be made and are a serious barrier for neighbouring countries to raise their fuel taxes.

THE SOLUTIONS

Sustainable transport

Sustainable transport is more than energy-efficient transport. 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. We use the following definition:

A sustainable transport system minimises consumption of non-renewable resources, emissions, land use, impacts on ecosystems and human health, and limits waste, emissions and renewable resources within the absorption capacity of the planet. This system is socially inclusive, by providing access for all citizens to the most essential goods and services, offering choice of transport mode, and protecting vulnerable user and other groups from safety and health risks and nuisances caused by transport.

In a sustainable transport system, users instead of taxpayers pay for their infrastructure use and environmental, health, safety and congestion costs so that they get incentives for smarter travel choices and do not leave an unpaid bill to society.

In this paper we will focus on the energy consumption aspects of transport. We will cover the following topics:

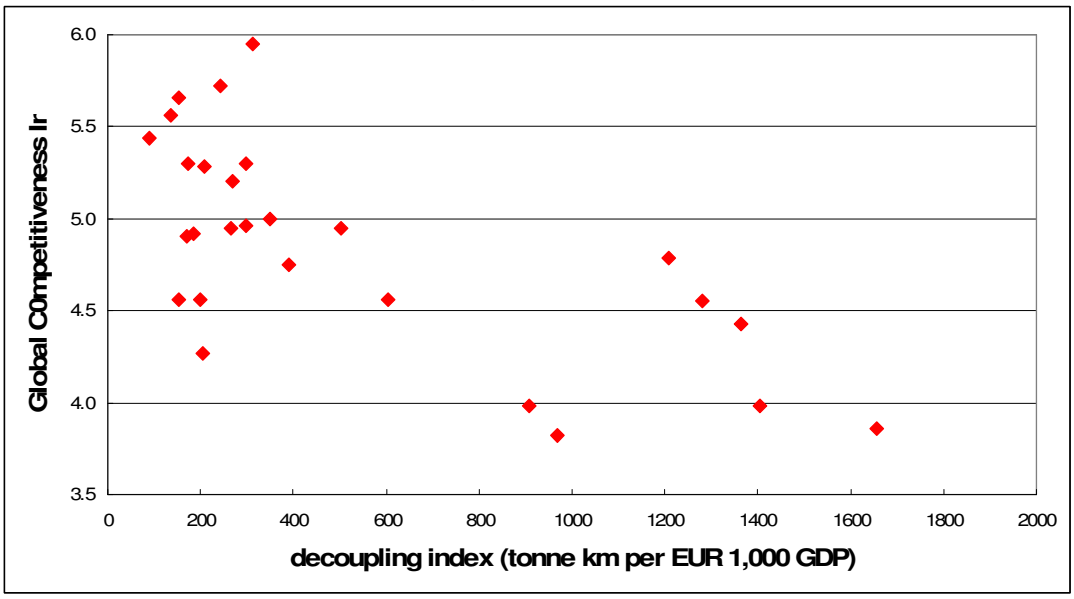
- Towards the most transport efficient economy – a double decoupling
- Why energy saving policies in the transport sector could and should go further
- Right prices for all transport modes
- Re-invigorating energy taxation
- Rethinking speed
- Modernising the EU's transport investment policy
- Focus on Cars and Vans
- Focus on Aviation
- Focus on Shipping

Towards the most transport-efficient economy

It is conventional wisdom that in both passenger and freight transport, decoupling of economic growth from transport growth has not taken place. Growth has generally been in line with GDP.

However, closer analysis of different countries and regions within the EU show a wide variation of transport intensities per unit of GDP. See the graph below in which freight transport intensity of different countries has been put against the country's score on the Global Competitiveness Index.

Graph: Freight intensity of 27 European states (in tonne km per € 1,000 of GDP, EEA data) vs their score on the Global Competitiveness Index.



Every dot in the graph represents a country.

The graph shows that countries that have a good score on the competitiveness index are generally more transport efficient (less transport intensive) than countries with a lower score on the GCI. In fact, transport is in many ways comparable with energy efficiency – competitive countries are generally more energy efficient too.

Therefore, Europe's approach to transport policy should be based on the guiding principle that the EU should become the **most transport-efficient economy in the world**. There is an analogy with energy efficiency here - transport use and energy use are alike in many ways. Both are indispensable to any modern economy and both are means to an end, rather than an end in themselves.

Both are not external effects in themselves but rather an important cause of external effects. But crucially both are, in the end, costs to society and should be used as sparsely as possible.

At the beginning of the 1970s there was a generally-held consensus that economic growth and growth of energy consumption inevitably go hand in hand. The Club of Rome used this argument to forecast *ecological* disaster, while right-wing hardliners used it to 'prove' that attempts to break the link (i.e. to save energy) would lead to *economic* disaster. Although energy consumption is still on the rise, it is now, thankfully, clearly nonsense to view energy saving as a bad thing.

Thirty years on, transport policy makers have some catching up to do. There is abundant scientific and empirical evidence that reducing transport can have numerous positive consequences (better traffic flow, improved safety, reduced environmental and health impacts) – especially when transport prices are too low, as they generally are. Therefore, an important section in this paper deals with getting the prices right in transport.

Why energy saving policies in transport could and should go further

Policies to improve energy efficiency and to fight climate change are often a balancing act between (usually upfront) costs, and paybacks in a later stage. In these considerations cost effectiveness plays a major role.

In this section we want to stress that in our view cost effectiveness does NOT imply that we should strive for equal abatement costs per tonne of CO_2 or per PJ avoided in all sectors.

Cost effectiveness is a defendable policy principle (as it defines the maximum effectiveness at minimum cost to the EU society), but the problem lies with its current definition.

Cost effectiveness now is only associated with *compliance* costs, which leads to the conclusion that equal carbon prices across all sectors is the most cost effective solution. However, some sectors are exposed to international competition and therefore the potential for action in those sectors leading to cost rises may be more limited than in those where the activity itself cannot be exported as is the case with transport.

Because of the small part played by transport costs in overall product prices, increases in transport costs from policy actions to reduce GHGs are likely to have a minor impact on competitiveness.

So, in our view the definition of cost effectiveness of a REGIONAL (such as EU level) climate and energy policy should be extended so it does not just cover compliance costs, but also covers competitiveness costs and energy *dependence / security* costs.

This more comprehensive approach would certainly lead to the conclusion that the transport sector has a high *ability to pay* for energy use reductions without serious economic consequences, and that hence energy efficiency policies in transport should be more ambitious than those in more vulnerable industries.

Right Prices for all Transport Modes

Despite the political agreement on the 'Eurovignette' Directive on lorry charges in December 2005, the legal framework for transport pricing is very incomplete at European level. This has the unfortunate effect of unacceptable levels of external costs borne by society at large – estimated at 8% of the EU's GDP – and 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.

Therefore the following actions are needed:

- The midterm review of the Common Transport policy and the request from the Transport Council and the European Parliament in the recent 'Eurovignette' compromise should be used to finally introduce a **Framework Directive** on transport infrastructure charging. Such a framework should obviously include all categories of external costs, reduce existing distortions between different modes of transport, give clear incentives to better use of existing infrastructure capacity

and improved environmental and safety performance, and include a transparent and complete methodology to calculate infrastructure and external costs.

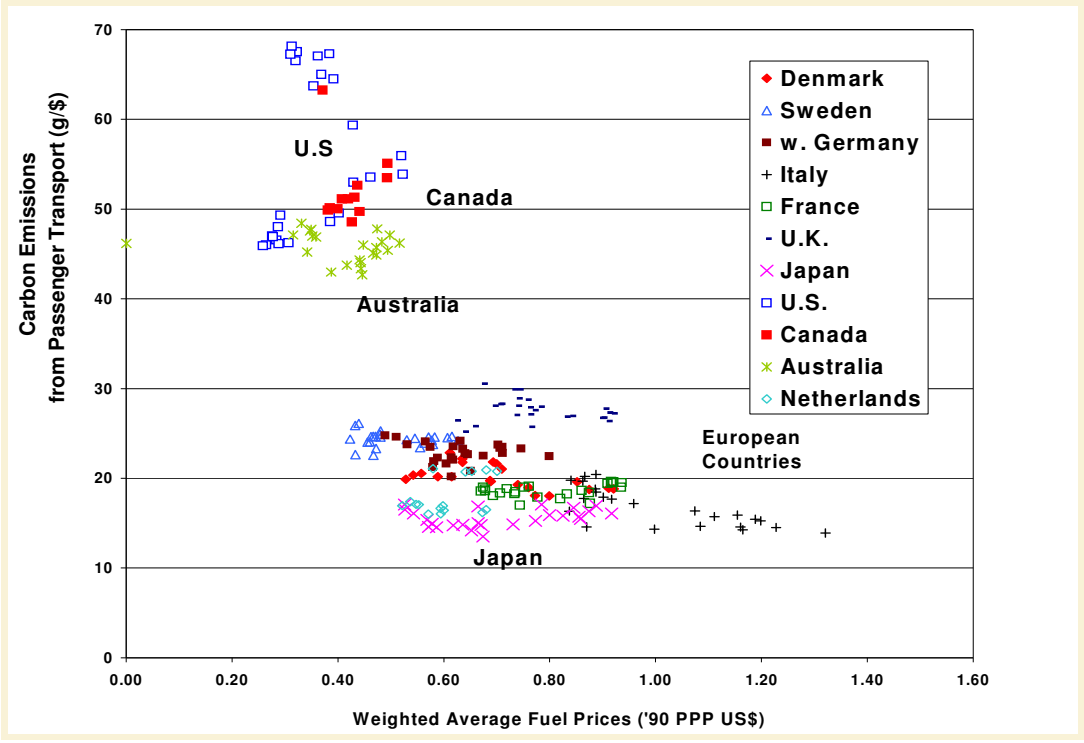
- This Framework Directive should be quickly followed up with appropriate daughter Directives for all modes of transport – but those daughter directives should be more of an *enabling* character (i.e. much more flexible) than the Eurovignette Directive which is restrictive in what it allows Member States to do in the field of road charging.

- encourage Member States to use the new opportunities presented by the revised **Eurovignette Directive**. Although unfortunately the Directive does not allow charging for external costs (still), it does offer countries more possibilities to introduce a well-differentiated charging system that covers the entire road network rather than just the motorways

Re-invigorating energy taxation

The discussion on energy taxation has come to an almost complete stop since the adoption of the 2003/96 Directive on the taxation of energy products. Nevertheless, fuel taxes offer an extremely powerful and 'first-best' tool to reduce energy consumption and dependence. The argument that fuel taxes do not work because consumption has increased despite taxation is simply untrue and over-simplified. There is ample scientific evidence about the long-term impacts of fuel prices on fuel consumption and these impacts can be very effectively demonstrated.

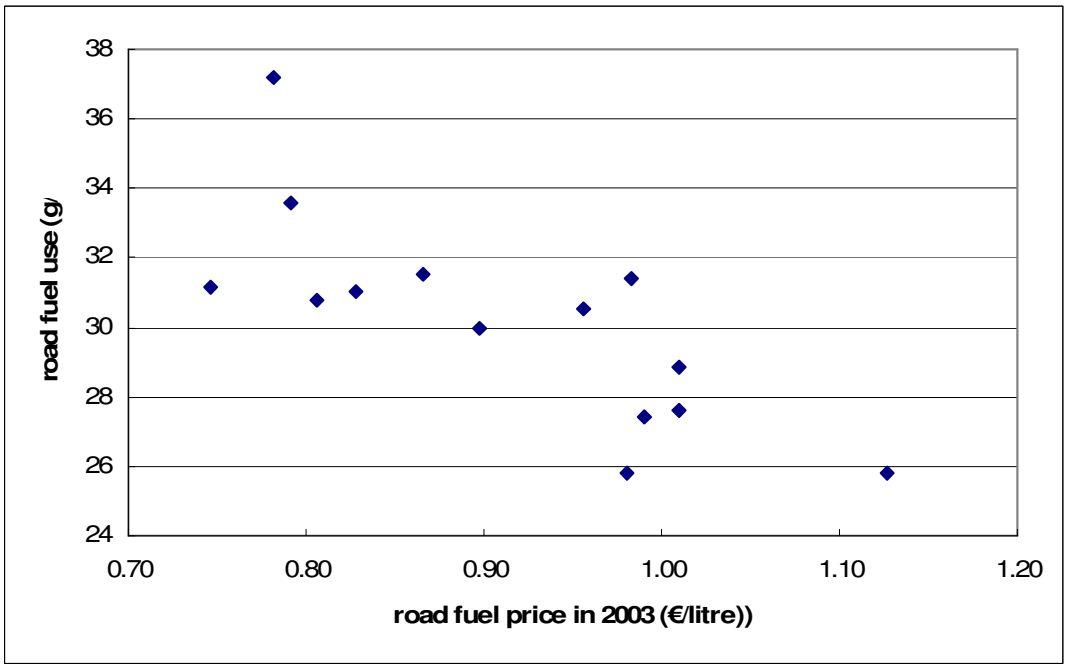
The graph below shows the correlation between fuel prices and transport fuel intensity in an international context. (Source: Lee Schipper, Director of Research of Embarq, presentation at T&E event 'Transport and climate change' http://www.t-e.nu/Article102.html).



This graph shows that countries with the highest fuel prices in the world use four times less fuel to earn a dollar of income than countries with the lowest fuel prices.

But even within the EU there are remarkable differences between countries with relatively high and low fuel prices.

Graph: average fuel prices in 2003 vs. transport energy intensity of old EU15 Member States (in grammes of road transport fuel per € of GDP). Source: Transport and Environment Reporting Mechanism data, T&E analysis



This graph shows that even within the EU itself there is a remarkable correlation between fuel prices and transport energy intensity of the old 15 EU Member States. Countries with the lowest fuel taxes burn some 50 per cent more fuel to earn an € of income than countries with the highest fuel taxes.

Therefore, we urge Europe to encourage:

- taxation, to increase the minimum **road diesel and petrol taxes** and petrol to at least €500 per 1,000 litres by 2010.
- 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**.

Rethinking speed

Effects of lower speeds

Traffic speed is a key variable in transport policy. Speed plays a dominant role in a string of transport indicators such as mobility demand, fuel consumption and CO_2 emissions, air pollution, noise, safety and congestion.

A study by Umweltbundesamt (CO_2-mindering im Verkehr, 2003) shows that a 120 and 100 km/h speed limit on German motorways would reduce energy use from cars on motorways by 10 and 20 per cent respectively.

A detailed study by CE Delft (*Speed limiters on vans and light trucks*, 1997) calculates that fitting a speed limiter in vans at a level of 100 km/h would reduce energy consumption of this category in 2020 by 7.6 per cent. Limitation to 110 km/h would reduce it by some 4 per cent. A subsequent extensive field trial (*Begrenzing op bestelling*, CE Delft, 2002) led to somewhat higher results: limiting the speed to 110 km/h reduced fuel consumption by some 5 per cent.

The effectiveness of this measure increases over time because a) the percentage of transport on motorways increases and b) the power output of vans increases, resulting in more frequent driving at speeds over 100 km/h in the baseline scenario.

The French *Plan Climat* (2004) estimates that enforcement of current speed limits would reduce road transport fuel consumption by some 2 per cent.

The report *External Vehicle Speed Control* (University of Leeds and the UK Motor Industry Research Association MIRA), estimates that 8% of fuel could be saved under a mandatory ISA (Intelligent Speed Adaptation) scheme. About half of these savings would be achieved in urban areas, and an important factor here is the more stable speed distribution that results from ISA. The benefit/cost ratio of ISA devices is estimated at 5 to 12, a very high figure.

In addition, two indirect effects are worth considering.

The first is that lower speed limits on motorways reduce the need for high-power cars. The average power output of cars currently increases by some 2 per cent per year (*Reducing CO_2 emissions from new cars*, Kageson, 2005). According to the same UBA study mentioned above, thirty per cent lower power in cars (or: halting the 2% increase for some 17 years) would lead to 13-19% fuel savings for petrol cars and 5-15% savings in case of diesel cars.

It's not so much the AMOUNT of innovation that is the problem, it's the DIRECTION of the innovation.

The second is the fact that longer travel times will reduce mobility to some extent. Therefore, in the medium term, fuel savings from reduced speeds and more balanced speed distributions will be higher than in the direct short-term impacts.

Speed is also important for aircraft and ships. Recent analysis by the Dutch National Aerospace Laboratory (NLR) shows that, despite claims that aircraft have increased their fuel efficiency by 70% over the last 40 years, the propeller aircraft of the late 1950s were just as fuel efficient as those sold today (http://www.t-e.nu/Article158.html). The most important explanation for this is NOT that technology has not progressed. It is that the technological improvement has been used to increase the speed of aircraft - from some 520 km/h in the late 1950s to some 900 km/h now – rather than improve its fuel efficiency.

With ships, the trends are even more worrying. All progress in ship design is sacrificed to achieve higher cruise speeds. A 10% increase in a ship's speed translates to 30% higher fuel consumption.

Effects on safety, air quality, congestion

There is overwhelming evidence that lower speed limits on motorways brings **safety** benefits. A 100 km/h limit as applied during the oil crisis and for a couple of years in Hessen showed a 25-50% reduction in fatalities. The EC's Road Safety Action Plan contains very convincing evidence too. Better enforcement of speed limits in France led in the first year to 21 per cent fewer fatalities on France's roads.

The impact of speed on *air quality* is somewhat more complex than the impact on fuel consumption. As a rule it can be said that NO_X emissions reductions are stronger than fuel consumption reductions, due to the fact that the NO_X emission index generally increases with higher engine loads (= higher temperatures). The response of HC and Pm emissions is also generally found to be positive, related to reduced spread in speed distribution. Lowering the speeds in Rotterdam from 100 to 80 km/h gave a 25% reduction in NO_X emissions from traffic. This has substantially alleviated the air quality problems in this zone.

Numerous model studies indicate that intercity roads reach their maximum capacity at around 80 km/h and hence lower speeds would also reduce *congestion*. Once again the Dutch example of reducing the motorways speed at Rotterdam to 80 km/h gives clear evidence of the better capacity utilisation made possible by lower speeds.

Despite an increase in traffic of approx. 3 per cent, the daily congestion period is reduced by some 30 minutes, and the average length by approximately 2 kilometres.

Conclusions and EU policy recommendations

Speed is a crucial parameter for transport policy in general and for energy use in particular. Lower speeds and more a more constant speed pattern lead to less emissions, accidents, noise, and congestion. The EU could improve its speed policies thorough the following means:

- Extend the obligation to fit speed limiters to N1 vehicles (vans). Directive 1992/6 and 2002/85 prescribe speed limiters for heavy (>12t) lorries and (>10t) buses, and light (7.5-12t) lorries and buses respectively. There are strong arguments for this extension. The share of vans in traffic is increasing - by 2020, their share in total road transport fuel consumption will have risen to some 11 per cent in the 'old' EU15. In addition, unequal treatment of different goods vehicles (N1, N2, and N3) causes an increasing economic distortion in the freight transport market.
- Include mandatory fitting of Intelligent Speed Adaptation (ISA) in the type approval procedure for cars that links to local speed limits. This regulation should enter into force as soon as maps covering speed limits in the EU are available. This process is now well under way, driven by commercial aspirations or mapping companies, and is likely to be completed in 2009.
- Put the issue of maximum speed limits on the EU's agenda. Subsidiarity concerns have too long prevented the issue from being taken up at EU level.
- Promote 'slow modes' of transport: walking, cycling and public transport. Slower modes burn less energy per km, but, what is probably even more important, burn far less energy per HOUR spent

Modernising the EU's transport investment policy

Investing in transport systems is, besides pricing, another crucial tool the EU has to increase the sustainability and efficiency of the transport system. Investing in bad projects is a drag on the economy, and generates economically unnecessary transport, which is bad for economic and energy efficiency. In our submission to the consultation on the Common Transport Policy, we analysed the situation and gave five key recommendations for improvement of the EU's infrastructure planning process:

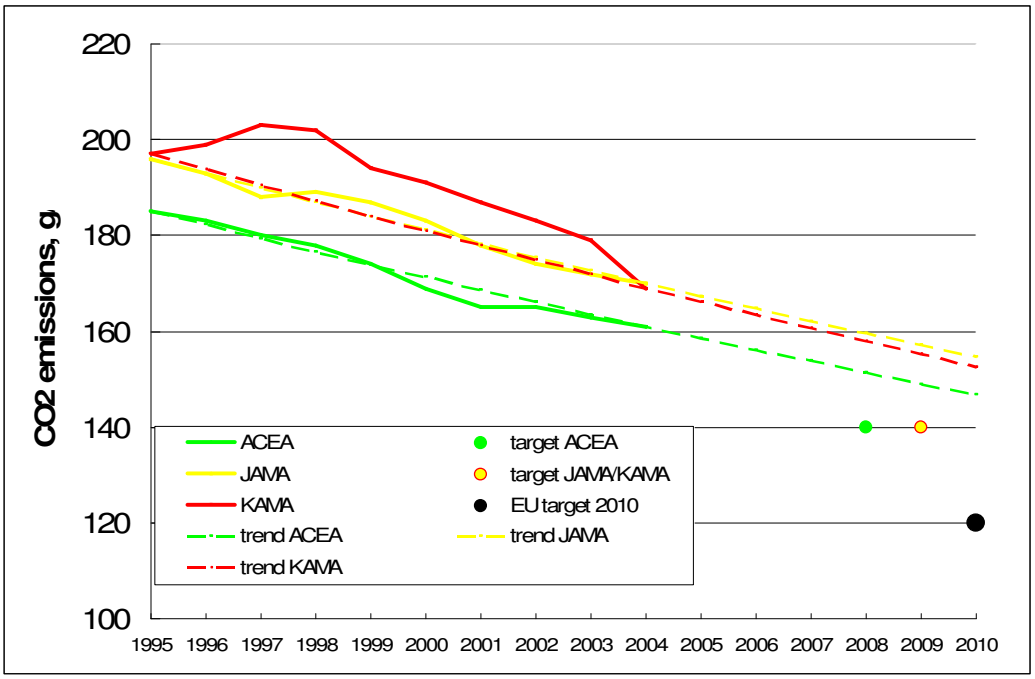
1. Much improve the analytical basis for strategic investment plans. There is a tremendous amount of knowledge available in the EU on real transport bottlenecks and costs and benefits of potential solutions, but the current system of high level groups does not use that potential and is overly focused on national pet projects. This seriously undermines the credibility and value for money of EU spending on transport. Economically and ecologically unviable projects should be eliminated at this stage;
2. Evaluate EU transport spending on the basis of its results, rather than on the basis of its size;
3. Rebalance the investment package from 'hardware' (concrete) to more 'software', thereby increasing use, efficiency and interoperability of the existing networks. The objective to improve the quality of rail services is fine, but there are economically and environmentally more attractive investments to be made than the hugely expensive megaprojects that take the bulk of current European investment;
4. Drastically increase the quality and transparency of project information. Currently hardly any information on economic, environmental or social impacts of EU-sponsored projects is publicly available, hampering public debate and thereby reducing the quality of investment. In addition, the analyses are rarely or not at all scrutinised by respected and independent bodies;
5. Assess projects more holistically, by taking a much broader range of alternative solutions into account than is currently the case.

Focus on Cars and Vans

Road transport generates more than one fifth of all CO2 emissions in the EU, with passenger cars and vans being responsible for 15 per cent. Total passenger car CO_2 emissions in the EU have been rising by on average 1 per cent per year.

The commitments of the European, Japanese and Korean car manufacturers' associations to reduce CO_2 emissions to 140 g/km by 2008/2009 are the first pillar of the EU's strategy to reduce CO_2 emissions from passenger cars. The other two pillars are consumer information (fuel efficiency labelling), and fiscal incentives. On average, CO_2 emissions from new passenger cars sold in the EU-15 decreased by some 13 per cent in the first 9 years of the commitment. In the remaining 4-5 years a 14% reduction will be needed.

See the graph below. The trend lines are based on a constant year-on-year improvement in relative (i.e. percentage) terms.



It is certain that all three associations still need to make major additional efforts to increase the average annual reduction rate and reach the 140g CO_2/km target by 2008/9, let alone the target of standing EU policy for 2010, which is 120g/km.

Because of the non-committal nature of the agreement and incomplete monitoring by the European Commission, it is very difficult to know the reality of the results of the industry's efforts under the agreement. It is, for example, practically impossible to see which car makers have done well over the years and which haven't.

With the knowledge that we do have, there is no reason to be optimistic that the targets will be met under present circumstances. New cars grow heavier every year, by 12 kilograms on average. The power of car engines increases correspondingly, with 2% per year on average. Thus, the fuel efficiency gains that have been made by technological innovation of engines, have been offset by more power and increased weight, not to mention more energy consuming gadgets in the average new car sold. This trend must be broken, if not reversed – and the car industry, if left alone, is unlikely do be able to do this. Regulation is needed, accompanied with positive and negartive incentives, to change the direction of innovation in the car industry.

The 2003 official joint Commission/industry monitoring report states that ACEA is no longer confident that it can meet its target of 140g/km.

Considering the cost of achieving the 120 g/km objective, by far the most comprehensive study on the topic so far is an IEEP/TNO/CAIR study from 2005. The study is the most comprehensive to date, because it assesses and synthesises all previous studies on the topic so far, notably Ricardo (2003), DLR (2003), JRC (2002) and ADL (2003).

In addition, the IEEP/TNO study is the only one to recognise the importance of the quality of *policy options,* in particular their degree of *flexibility*, in relation to the costs. The more flexible the policy is, the lower the average cost per car.

The main conclusion from this study is that achieving the 120 g/km objective would, if the most flexible policy option is selected, cost € 577 per vehicle – and that these costs are probably overestimated.
Pre-tax fuel savings, however, are € 625 to € 940 per car, depending on the fuel price.
Comparing these costs and fuel saving benefits leads to the conclusion that the net costs to society of achieving the '120' objective are negative.

The conclusion of this overall cost/benefit analysis of a drive to realize the 120g/km target for CO_2 emissions of new cars implies that it is, from an economic point of view, a 'no regret' measure of climate policy.

Europe should therefore move as quickly as possible to legally binding fuel economy standards for cars and vans, just like the other important economic regions like the US, Japan and China. Such fuel economy standards should respect the following principles:

- They should give manufacturers an incentive to improve the fuel efficiency of every model sold, not just to those that do not meet the standards
- They should be framed in such a way that they do not give incentives to make cars heavier, more powerful, wider, or higher because such incentives are counterproductive;
- They should reward both early action and year-on-year improvement
- They should not allow use of biofuels to count towards the target

In addition, a range of other EU-wide measures can be identified to curb CO_2 emissions from passenger cars:

- Changing the tax base of both registration and circulation taxes to CO_2. Also, registration taxes should not be abolished as a recent Commission proposal recommends.
- Improving and harmonising the car energy label so that it gives colour codes and fuel costs per year;
- Adapt the test cycle so as to include energy use by electrical equipment such as air conditioning, more dynamic (and more high speed) driving;
- Fitting of equipment to improve in-use fuel efficiency such as a gear shift indicator and fuel consumption and tyre pressure monitors
- Introducing tyre energy labels and prohibition of the least energy-efficient tyres
- Vouchers for driver training when a car is purchased
- A code to refrain from advertising top speed, power and to avoid positive associations with these qualities, and to spread advertising budgets equally across the product range rather than on high-CO_2 cars
- Include mandatory fitting of Intelligent Speed Adaptation (ISA) in the type approval procedure for cars that links to local speed limits. This regulation should enter into force as soon as maps covering speed limits in the EU are available. This process is now well under way, driven by commercial aspirations or mapping companies, and is likely to be completed in 2009.

Focus on Aviation

Aviation is the fastest-growing source of greenhouse gas emissions. The EU's CO_2 emissions from international aviation have increased by 73% between 1990 and 2004. By 2020, aviation emissions alone will account for 8-24 per cent of the total climate impact of the EU, depending on the growth of air travel, reduction in emissions from other sectors, and the 'multiplier' of CO_2 emissions.

Aviation offers the most 'climate intensive' connection between two places.

The rise of aviation as a transport mode has also led to a dramatic increase in the typical distance of trips made (particularly it must be said by those in the developed world).

The growth of aviation is not just a virtue of the aviation sector itself. 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 an ongoing dispute between Airbus/Boeing on this issue at the WTO), there is massive indirect support in the form of a tax exemption for kerosene, exemption of VAT on international tickets and duty-free shopping on flights from and to the EU. Apart from the abolition of duty-free shopping for intra-EU flights in July 1997, which was relatively insignificant, the EU has not taken any initiative to correct this. Aviation is the fastest growing energy consumer in the EU. Energy use and CO_2 emissions are rising by 3 per cent per year.

Reducing the climate impact of air travel requires a package of different activities and measures.

- **Including aviation into the European Emissions Trading system (EU ETS)** has recently been suggested by the European Commission in its Communication on Reducing the Climate Change Impact of Aviation. NGOs have welcomed this as a first step but have stressed the need for a package of measures to combat the climatic impact of the sector and to level the playing field in transport.

- Essential elements of the inclusion of aviation into the EU-ETS are:
  - The geographic scope should be as wide as possible. All flights from and to EU airports should be included in the system, which would give a coverage of some 360 MT of CO_2 by 2020, in contrast with only 80 MT for intra-EU flights.
  - Non-CO_2 gases should be included in the system, either through ancillary measures, or through a multiplier, whichever is implementable in the short term
  - The allocation of permits to the aviation sector should be in line with those of other sectors, i.e. -8% compared with 1990 levels for 2008-2012 and -15 - -30% compared with 1990 levels for 2020.
  - Permits should be auctioned, not grandfathered. Aviation is a highly dynamic sector with many new entrants, grandfathering is unfair to new market entrants.

- Non-CO_2 effects should ideally be dealt with through ancillary measures such as a NO_X emissions charges, at airports to start with, and changes in Air Traffic Management to prevent formation of contrails and cirrus clouds. As long as such ancillary measures are not in place a multiplier on CO_2 emissions should be used in the EU-ETS to ensure the environmental integrity of the scheme.

- **Kerosene taxation or en route charging remain a necessity**
  The inclusion of aviation into the EU ETS will give the aviation sector incentives to reduce its CO_2 emissions, but these incentives will remain relatively limited. Prices in the EU ETS are likely to stay in the € 10-30 range, which is extremely unlikely to lead to strong reduction efforts in the aviation sector. In addition, aviation is not still enjoys a zero-tax rate for fuel, with a few exceptions (domestic flights in the Netherlands for example). This distorts the transport market. A kerosene tax on intra-EU flights is legally possible. As a recent European Commission paper ('New sources of financing for development', April 2005) correctly points out, 'a kerosene tax on intra-Community and domestic flights could be implemented by making it mandatory while allowing for the possibility to exempt all carriers on specific routes where non-EU carriers operate and benefit from exemptions under unchanged Air Service Agreements'. Ongoing renegotiation of ASAs would then gradually allow for the taxation of third country carriers on intra-EU flights'. Fortunately, the aviation market is not yet very open and non-EU carriers only execute a small share (less than 5 per cent) of intra-EU flights. In October 2005 some 15 bilateral air service agreements of the EU with third countries have been re-negotiated and the fuel tax exemption struck through.

- **Ticket taxes to make up for VAT exemption**
  There is no justification for keeping the VAT privilege that the aviation industry has enjoyed for decades. Introducing ticket taxes may turn out to be easier than the factual introduction of VAT on international air tickets, and the purpose is more or less identical. There is unlimited policy freedom in this area – some Member States such as the UK and France have already introduced such taxes.

- **All** other EU, national, regional and local **subsidies** which directly or indirectly promote aviation should be abolished.

Focus on Shipping

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. Over the last years, ships have increased their average speed, and therefore their energy consumption. This "speeding on the sea" is only possible, because ships could use cheap and dirty fuels, mostly residual products from refineries.
A rising demand for energy here is linked to air quality problems in coastal areas. What we do not realise is that about 70% of shipping occurs within a distance of 400 kilometres from the shoreline.

There is an urgent need for the following actions:
- push for a new **global maritime climate 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 steps to address energy consumption, greenhouse gas and CFC emissions from ships

- at the same time start preparations for an EU initiative to address the climate effects of shipping. A European system of differentiated fairway dues for all inland and maritime waterways is a promising solution. Also inclusion of the sector in the EU Emission Trading System could be considered. Last but not least, a fuel

tax for shipping should not be overlooked. Such a tax would address a major subsidy for international trade. Its revenues could be used for international development objectives, like the currently emerging aviation ticket taxes – or alternatively as a badly needed alternative funding source for the EU budget, as some have suggested.

- support the development and introduction of **the Clean Ship Concept**[1] 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.

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

- Introduce a speed limit on all EU waterways.

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