

## Conference Proceedings:

### European conference “Opportunities of the rail infrastructure package for a sustainable freight transport ”

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Transport and Environment  
and  
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## 1 Introduction

Freight transport increased by a factor of 3 since 1970 and most of this growth happened on the roads. Changing production and consumption patterns have been in favour of the road mode while rail freight has lost market shares. Nevertheless, railways have a potential to regain their position as an important freight transport mode and some rail operators have managed to keep their volumes high despite the unfavourable developments.

The saturation of the road network, negative impacts on people's health living in urban areas or on the whole ecosystem in sensitive areas require a rebalancing of freight transport between the different modes, to give more weight to such less harmful modes as railways.

Obviously, this has not happened so far. Therefore, T&E, the European Federation for Transport and Environment, started a three-year project in 1999 to investigate the reasons for the decline in rail freight transport. Another goal of the project also is to contribute to awareness-raising and intervene in the decision making process to create a legal framework which allows for fair competition between transport modes. This project, "Freight: From Road to Rail" is supported by the Swiss Ministry for Transport, the Catalan and Basque governments, the Swedish rail-infrastructure authorities and several Swiss NGOs.

The lack of a level playing field between transport modes was identified as the major reason for the current situation of increasing road transport at the expense of other, environmentally less harmful, modes. There are several areas in which such a playing field is not level. In the past, infrastructure investments were very unbalanced, putting most of the resources into the road mode. Technological obstacles, essentially the lack of interoperability between national rail networks, create disadvantages in international freight transport. Transport prices do not give correct incentives, as the users do not pay social and environmental costs.

Another important disadvantage of international rail freight compared to other transport modes is the lack of an internal market. Huge national rail operators traditionally dominate rail transport. So far the principle of the internal market has not been applied in the rail sector. Whereas road transport benefits from open access to road infrastructure throughout the European Union and therefore can offer its services independently from the origin or destination of its goods, rail freight is still confronted with institutional barriers when it comes to trans-border services.

In November 2000, the Council and European Parliament agreed on three directives (the "rail infrastructure package"), which should provide the legal framework to open rail infrastructure throughout Europe for international freight services. In a first step, it should be opened for the so-called Trans-European-Rail-Freight-Network. Within seven years of its adoption, the whole network should be opened for international freight services.

It is crucial for the transport system that the railways become an innovative and reliable alternative in international freight transport. Therefore, the immediate implementation of these directives, which have to be transposed into national law by March 2003, is a must.

The main objective of the conference organised by the Catalan Government and T&E on the "Opportunities of the rail infrastructure package for a sustainable freight transport" is to make decision-makers aware of the fact that liberalisation of international rail freight market and opening access to national rail infrastructure is necessary, but in itself insufficient, to attain a more sustainable freight transport.

## 2 Speakers' summary

### 2.1 Transport and environment

#### TERM 2001

#### Indicators tracking transport and environment integration in the EU

**Ann Dom, Project Manager Transport and Environment, European Environment Agency**

#### About TERM

**The transport and environment reporting mechanism (TERM)** was initiated by the joint Transport and Environment Council in 1998. TERM's main purpose is to provide information to support environmental integration efforts in the EU transport sector and to monitor progress.<sup>1</sup>

The Presidency conclusions of the European Council held in Gothenburg on 15 and 16 June 2001 state that "*The European Council agrees a strategy for sustainable development which completes the Union's political commitment to economic and social renewal, adds a third, environmental dimension to the Lisbon strategy and establishes a new approach to policy making.*" Putting sustainable development in the fast track requires regular monitoring by using indicators of progress towards targets in all 3 dimensions. As TERM is intended to monitor regularly the EU integration policies and implementation, it should therefore also have the flexibility to adapt to emerging policies. The definition of clear objectives and Specific, Measurable, Achievable, Realistic and Timely sector targets is an essential step in the policy/ implementation/ monitoring cycle. The purpose of the monitoring system is to evaluate progress towards these SMART targets, and to assess to what extent this improvement is related to the implemented measures.

One of the difficulties perceived in TERM is the lack of clear targets against which the indicator trends can be evaluated (e.g. the Kyoto and NECD emission targets are overall targets, and not specifically addressed to the transport sector).

#### Some Freight transport Indicators

In terms of tonne-kilometre, freight transport increased by 55 % between 1980 and 1998. The largest growth is in road transport (3.9 % per year) and short sea shipping (2.6 % per year).

In the Commission's projections the increase in total tonne-km between 1998 and 2010 is expected to be 38 % (for a projected increase in GDP of 43 %). The target proposed by the White paper on Common Transport Policy to stabilise modal split at 1998 levels means that for rail a significant trend reversal is necessary. The question rises whether the current railway system is able to cope with such a tremendous increase in freight transport demand.

Yet, the main question is to which extent the modal shift stabilisation target will contribute to achieving the EU's environmental targets. There are environmental trade-off effects between modes, which need to be taken into account - each motorised mode has certain environmental impacts, and a shift from one mode to another does not imply the elimination

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<sup>1</sup> The 2001 TERM report can be found on <http://reports.eea.eu.int/term2001>.

of impacts. The target for modal shift stabilisation should be combined with clear targets regarding the restraint of transport growth.

The recent seminar on decoupling of transport and economic growth (organised under the Belgian Presidency on 12 July 2001) concluded that decoupling is feasible and necessary both for the economy and the environment. The aim is to decouple the growth of transport from economic growth, and not only from its negative environmental effects.

From the transport efficiency point of view, decoupling between transport growth and economic growth is necessary to avoid increases in congestion, which more and more jeopardises the EU transport system and economy. Also from the environmental point of view, a restraint in transport growth (in terms of harmful vehicle-km) is required, as the reduction of the sector's environmental pressures through technology and fuel improvements proves to be insufficient to achieve EU environmental targets. The major problems of the transport sector are:

- Despite the EU's 'fair and efficient pricing' policy, internalising marginal social costs, including costs of environmental damage, accidents and congestion, in transport prices, has not happened yet.
- The development of fuel prices has not discouraged fuel consumption (the inflation-corrected EU average price of road fuel at the end of 2000 was lower than in the first half of the 1980s). There has been no improvement in the energy efficiency of road freight transport. Rail and shipping are more energy efficient modes than road transport. However, the energy efficiency of passenger and freight rail transport has remained stable in recent decades.
- Transport infrastructures conflict more and more with nature's infrastructures.
- Decisions on transport infrastructure are still made mainly in response to problems of traffic bottlenecks. This reactive approach favours the expansion of road and airport infrastructure.
- Various environmental regulations - dealing with technologies and fuels - have contributed to significant reductions in emissions of local and regional air pollutants. However, these 'technology gains' are partly offset by the significant growth in transport volume.

### **TERM's future challenges**

- Actions to harmonise methodological approaches and streamline data collection nationally and internationally remain most important to TERM.
- The feasibility of including wider sustainability issues in the TERM indicator set will be investigated.
- The Accession Countries must be included in the TERM process and the indicator list must be adapted accordingly.
- Coordination with the reporting systems for the other sectors (energy, agriculture etc.) is necessary to ensure that cross-sectoral issues (e.g. energy use and pricing) are dealt with in a comparable manner.
- TERM will be gradually developed into a tool for analysing policy effectiveness, both retrospectively and prospectively e.g. by including future indicator outlooks.
- Even though TERM has been received positively, it appears that the TERM indicators are not yet used optimally to support policy development.

- The TERM indicator list has to be evaluated regularly, to ensure that it matches the policy makers' information needs and matches emerging integration strategies and targets (Common Transport Policy, the 6th Environmental Action Programme and the EU sustainable development strategy).
- An appropriate legal basis for TERM must be defined.
- TERM also aims to become a tool for benchmarking country performances, which would help to learn from successful - or unsuccessful - country approaches.

### **Objectives and achievements of the Road to Rail project**

**Markus Liechti, Project Manager, T&E European Federation for Transport and Environment**

#### **About the Road to Rail project**

The European Federation for Transport and Environment started in 1999 a three year fact-finding and awareness raising project 'Freight: From Road to Rail'. Its objective is first to learn about the reasons why freight transport by railways is still stagnating while political objectives are demanding to shift freight from road to railways. Second, these facts are disseminated to policy makers together with proposals to change the current situation.

Very soon it became clear that modal shift is not sufficient to make freight transport system sustainable. The project asks for the introduction of kilometre charging schemes for heavy goods vehicles, such as the one in Switzerland, which requires changes to the relevant eurovignette directive<sup>2</sup>. Railway liberalisation is another topic that the project follows attentively.

The project is supported by the Basque and Catalan Regional Governments, the Swedish National Railroad Administration (Banverket), the Swiss Ministry of Transport and several Swiss NGOs.

#### **Developments of freight transport**

Total freight transport has doubled during the last 30 years within the European Union. Road freight transport has even tripled from 400 btkm in 1970 to 1200 btkm. In the same period, the volume of freight transport by rail has decreased. The other transport modes, have seen a substantial increase (short sea shipping) or remained on constant (inland waterways and pipelines). In recent years, transport growth has been even higher than economic growth what means that the efficiency of the economy regarding transport deteriorated. The unequal development between transport modes influenced modal split. Rail freight share fell from over 30 % to below 10 % while road became the dominant mode.

The consequences of this development are quite evident (e.g. increasing impacts on the environment), but the economic consequences caused by congestion has also been severe, as has dependency on one transport mode and one energy source. Thus, the current transport system is far from being sustainable for the environment, the economy or society.

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<sup>2</sup> Dir 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures.

## **Reasons for this development**

Over the last 30 years a number of changes and developments in economy and in transport policy have given such incentives that the demand for transport, mainly for road transport, increased dramatically.

- Price developments: Transport prices rose less than prices in general and prices for road transport less than for rail transport.
- Transport infrastructure investments: Investments in transport infrastructure were huge but unequally split among transport modes. Two thirds of all investments were spent for roads, about one quarter for railways.
- Network capacity: The motorway network tripled over the last 30 years while the rail network decreased slightly.
- Uneven legislation and enforcement: While railways have strong social and safety rules, road freight sector benefits from very low level legislation and from a lack of strong enforcement.

All these changes have made transport, primarily road transport, less expensive over time and thus the economy started to adopt its production chain according to the given incentives:

- Production and supply systems: The industry is now based on just-in-time production. Storage is essentially outsourced on motorways.
- Changing goods structure: Less heavy bulk goods and more light, added-value, goods are transported.
- Changing customer requirements: Predictability, reliability and safety are more important to customers than 30 years ago.
- Hurdles to internal rail market: Finally, while everything was changing, the hurdles to the internal rail market remained, making it difficult for the rail sector to respond to the changing customer requirements and production situation.

## **Required instruments**

To change unsustainable development in the freight transport sector, transport growth must be decoupled from economic growth. Therefore, the incentives must be changed to reflect the real costs of transport to users, and fair competition between transport modes must be ensured.

This means, the user-pays principle must be applied in transport sector. A kilometre charge considering all cost factors – such as distance, weight and emission of the trucks – must be introduced. Such a system is feasible, as the Swiss Heavy Vehicle Fee shows.

Finally, a level playing field must be established between transport modes. Market distortions have to be removed, for all transport modes the same high quality rules must be put in place and strictly enforced. Investments must be balanced giving priority to less polluting transport modes and on the intermodality of all modes.



## Conclusions

In Europe, we see an ongoing increase in freight transport basically in road freight transport. This is an unsustainable situation for the environment, the economy and society.

The main reasons for this unequal development are wrong incentives and the lack of a level playing field between transport modes. The price system must become fair and efficient, applying the user pays principle, rail freight services must be improved, the rail market liberalised, the unequal investments in transport infrastructure balanced and high safety, social and environmental regulation applied and enforced for all transport modes.

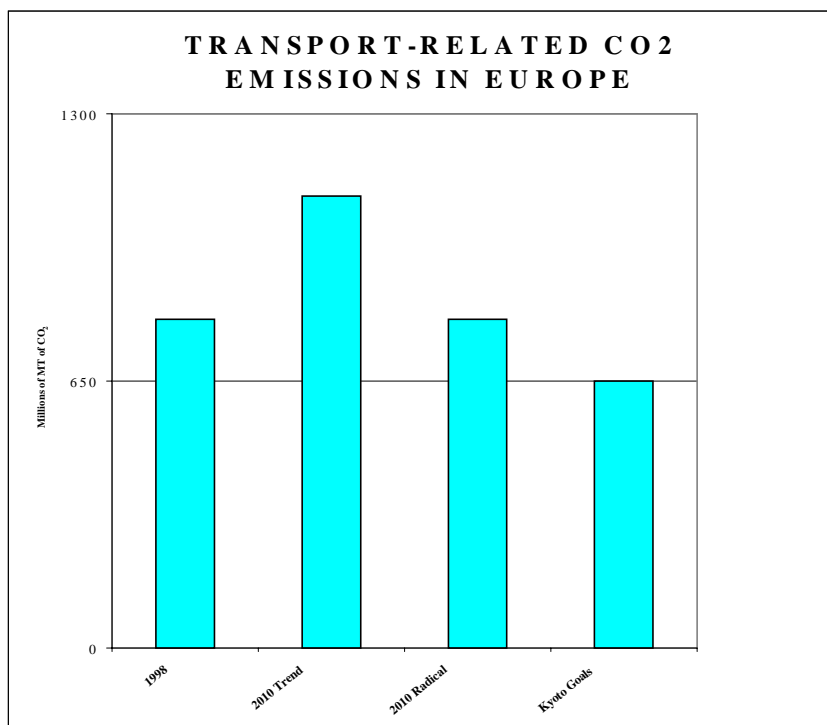
Sustainable freight transport cannot be achieved by one single measure. A complex situation like this demands also complex solutions. A bunch of instruments is needed to make freight transport more sustainable. These instruments have to contribute to the decoupling of transport growth and economic growth, to provide a level playing field for fair competition between all transport modes and to apply the user pays principle.

### How to achieve a sustainable transportation of goods. The viewpoint of citizens

**Pau Noy Serrano**

**President of the Association for the Promotion of Public Transport**

This particular epoch may very well be described as a period of compulsive transport. Transport is growing at a fast rate and this fact has an increasing impact on the environment. It is necessary to decouple economic growth from the growth of transport by rationalising the latter. If the target is to achieve the goals of the Kyoto Protocol, we need to introduce a radical change and to transfer loads and traffic to more ecological modes, by implementing the following actions:



- By making important investments in railways
- By requiring railway transport along heavily congested corridors
- By strictly monitoring labour and road traffic regulations
- By harmonising the charges for each mode

The situation in Catalonia is similar to that of Spain where the railway's market share is 10 % (Tonne-kilometres, t/km). If we take into consideration the fact that the external costs for each t/km are 0,09 € on the road and 0,02 € on the railway, it is obvious that

we need to act now in order to transfer loads from the road to the railway system, otherwise environmental costs might overflow, the targets for the CO<sub>2</sub> emissions might not be achieved and traffic congestion might increase drastically.

However, in order to act it is necessary that the different administrations implement certain measures in order to break up bottlenecks in our railway system. These include, for example, access and length of the freight railway stations at the Port of Barcelona, shortage of the Catalan railway network, insufficient modal and railway exchangers, Renfe's inadequate provision to meet the needs of customers, difficulties related to the circulation on the French network, featuring the change of axes in Portbou, organising and breaking-up tasks at Renfe, lack of co-operation between the railway companies, inadequate operation schedules, lack of a piggy-back system, and unfair competition of the road operators which fail to comply with the regulations, etc.).

It also cannot be expected that the new high-speed line will be able to solve all of the problems, since there will be a number of limitations such as the adequacy of the rolling stock, restriction of 16 MT per axis and the lack of slots due to intense passenger traffic. Therefore, different measures are needed to encourage transfer of goods from road to rail:

- Break up the railway monopoly by separating the management of infrastructure from traffic operations and enabling the starting up of new operators specialised in freight services .
- Advance in the technological homologation of the different networks.
- Solve and prevent bottlenecks within the network.
- Create European and domestic corridors exclusively for transporting goods with relevant installations.
- Enforce an eco-tax on the road, which would equilibrate the fiscal burden of the different means of transport.
- Quadruplicate the commercial speed of freight trains, from the current 20 Km / hour to 80 Km / hour for door-to-door assignments.

It is thought that the combination of the above measures might contribute to increase the current railway quota from 12% to 27% in Catalonia. The targets that might be feasible for each corridor are described next (% of transport volume in tkm).

	<b>Current Railway Share</b>	<b>Future "Road to Rail" Share</b>
<b>Catalonia. Domestic Traffic</b>	<b>2,0%</b>	<b>6,8%</b>
Ebro Corridor	12,6%	25,0%
Madrid	10,5%	20,0%
Eastern Corridor	7,3%	20,0%
Rest	13,1%	25,0%
<b>Catalonia-Spain</b>	<b>11,7%</b>	<b>23,6%</b>
Germany	26,4%	50,0%
Benelux	27,6%	50,0%
France	6,9%	25,0%
Italy	3,7%	25,0%
Portugal	19,3%	35,0%
Other Countries	7,0%	50,0%
<b>Catalonia - Abroad</b>	<b>14,9%</b>	<b>37,5%</b>
<b>Total O/D Catalonia</b>	<b>11,7%</b>	<b>26,6%</b>

## **How to Reach Sustainable Freight Transport: Technical Possibilities and Developments**

**Hilary McMahon, International Affairs Manager, UNIFE**

### **A Sustainable Transport System: Policy Solutions**

Sustainable development is in itself a difficult term. It implies that we must reach a situation whereby we encourage growth today while not harming the chances of future generations in achieving development. This is the goal that UNIFE is aiding our members in achieving.

To be competitive rail must **invest money into developing innovative technologies** to make rail freight products and services a more competitive and sustainable answer to the problems currently faced in the transport of goods in Europe<sup>3</sup>. However, to justify this investment, which is often extremely costly, there must be a possible market out there for these goods. There must be policies to **invest in rail infrastructure** (e.g. TERFN), there must be an impetus on behalf of member states to support rail as a good solution to our transport problems and there must be a liberalised environment where **operators are willing to run reliable freight train services**.

It is for these reasons that both the policy makers and the industry must do their part to ensure that rail freight, the most sustainable answer to Europe's transport problems, has a brighter future.

Indeed there is already evidence of this **brighter future**. Many of you in the rail industry will have noticed that in the last few years, many of our American counter parts have been arriving on the scene.

Now, it is up to the industry and the operators to respond to these calls from our policy makers in Europe.

### **Commercial Solutions**

A dynamic liberalisation policy could reduce the costs of rail transport by 40% according to UNICE. In the freight sector this would mean potential savings of EUR 4.6 billion for businesses in Europe. Such cost reductions, and a more commercial approach as a result of liberalisation, combined with technological innovation, would bring about a more cost-efficient and sustainable rail system.

Projects such as Galileo (Satellite navigation) can help in providing solutions to information and tracing problems – this kind of new technology is essential to providing a quality service.

We need to look more seriously at the possible market for inter-modal / combined transport solutions. UNIFE members are currently introducing new products to increase the efficiency of inter-modal solutions such as Cargospeed, INHOTRA etc.

Furthermore, initiatives such as the internalisation of external costs and 'polluter pays' should be considered to guarantee a level playing field.

The allocation of time slots must be harmonised (as provided for in the Railway package) and co-operation between member states increased.

### **Technical Solutions**

Many of the following subjects will be dealt with in the 6<sup>th</sup> Framework Research Program – in conjunction with the operators – through the framework of the 'Joint Strategy on Rail

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<sup>3</sup> The average age of a European rail freight wagon is more than 20 years.

Research<sup>4</sup>, which has included the environment as one of its four research priorities for the next six years.

1. Modernisation of certain technical situations<sup>5</sup> to meet higher economic, social and environmental performance standards  
Create interoperability, ensure safety
2. Environmental industry management programs and multi-stakeholder partnerships  
Information sharing, definition of tender criteria, rethink manufacturing process
3. Development of new technologies<sup>6</sup>  
Noise reduction, environmentally friendly materials, reduction of air pollution

### Possible setbacks

It is evident that there are many areas which need to be addressed to achieve sustainable development in the rail freight sector, however, to ensure that resources spent reap maximum gain **priority** must be given to certain problems before others.

Furthermore, a **harmonised approach** to sustainable development is necessary to ensure that the progress made in some member states and restrictions enforced upon products and services are equal and uniform. This includes being aware of environmental standards in third countries, outside of the EU, which are often lower.

It is also important that these environmental objectives are backed up by the necessary **regulatory reforms** and we should avoid finding ourselves in a situation where there is an excessive number of overlapping environmental initiatives.

Economic growth and new trends in the movements of goods has created an unsustainable situation for freight transport. Transport has the potential to negatively effect emissions levels, air quality, noise level, biodiversity, cultural heritage and the life style of people in general. Drastic measures must be taken by the policy makers, with new policies and investments, and by the industries, with new improved green technologies to ensure a sustainable future for transport.

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<sup>4</sup> Partners include – UNIFE, UIC, CER, UITP. The budget for the six years will be 200 million EUR.

<sup>5</sup> These instruments are often autonomous actions i.e. own – company initiatives, however, some regulations and economic and fiscal instruments are also useful. None of the following actions can be successful without a commercially –led attitude on behalf of the operators.

<sup>6</sup> Often these new technologies are very expensive and this means that operators are not likely to be able to afford to invest in them, therefore, we must find a way of making them more affordable – joint industry research is one option, incentive schemes such as financial grants another. The development of these technologies must also be cost–effective for the industry itself.

## **2.2 Charging for heavy goods vehicles**

### **Kilometre charging in practice: Swiss HVF**

**Ueli Balmer, Deputy Head of Sector Transport, Office for Spatial Development,  
Switzerland**

#### **The Swiss Heavy Vehicles Fee (HVF)**

On the first of January 2001, the new Swiss Heavy Vehicles Fee (HVF) was put into force. It will contribute to the realisation of the following objectives:

- Polluter pays principle
- Transfer to the rail
- Environmental protection

This HVF replaced the flat fee for heavy vehicles with a total weight of more than 3.5 tons which had complied in many ways with the Eurovignette. On the first of January 2001, three main things changed

1. Change from a flat to a performance related fee, depending on
  - distance
  - admissible laden weight
  - emissions
2. Comparatively high rate
  - Revenue flat fee in 1999: 100 Mio Euros
  - Revenue HVF in 2001: 500 Mio Euros (1'000 Mio in 2005)
3. Higher permitted weight limit on Swiss roads
  - 28 tons till 2000
  - 34 tons from 2001 (40 tons in 2005)

The HVF applies to vehicles for passenger and freight transport with a total weight of more than 3.5 tonnes and is charged for all kilometres driven in Switzerland (Area Tolling). For some vehicle categories, there exist exceptions (e.g. for public transport) or special solutions (e.g. flat fees for coaches and mobile homes).

#### **Calculation of the fee**

According to the polluter pays principle, transport should pay for "real costs"; that means for all the costs it produces. In order to realise real costs, it is important to take external environmental and health costs into consideration, in addition to direct payments for the construction and maintenance of roads. To figure out the external costs, investigations were concentrated primarily on the three areas of a significant size, and that can easily be given a monetary value: health costs and damage to buildings caused by air pollution, the costs of noise and the costs of accidents. The external costs thus determined for goods transport by road come to about 650 Mio. Euros. Taking into account the uncovered costs according to the road calculations and the necessary compensation for the HGV flat fee, this sum is increased to 750 Mio. Euros. To calculate the level of the HVF, this amount has to be divided by the figure of 47 billion tonne-kilometres, the total amount of tonne-kilometres driven by heavy vehicles on the Swiss territory in one year (here 1993). This division leads to the value of 0.016 Euros/tkm. To facilitate the introduction, it was decided to begin with a rate of 0.01 Euros in 2001 before raising it to 0.016 Euros in 2005 (at the same time, in 2005, the weight limit will be raised to 40 tonnes). As the fee also depends on the emissions of the vehicle, it is essentially based on three factors:

- **the distance driven on Swiss territory (in kilometres)**
- **the maximum permissible laden weight (in tons)**
- **an emission factor (x1,15 for Euro 0; x1 for Euro 1: x0,85 for Euro 2 or better)**

The principle of calculation can be explained with the following example:

Rate	x	Distance travelled in Switzerland	x	Weight of vehicle and trailer	x	Emission Factor		
<b>0.01 Euro</b>	<b>x</b>	<b>300 km</b>	<b>x</b>	<b>30 tons</b>	<b>x</b>	<b>1</b>	<b>=</b>	<b>90 Euros</b>

### Technical solution

To levy the HVF, the use of intelligent technologies is absolutely essential. The road use data (kilometres, tons) is recorded by an electronic On-Board Unit (OBU). This unit is connected to the tachograph and automatically registers the distance driven. The maximum permitted laden weight and the emission factor are stored in the OBU as well as in the central information system. A micro wave radio (DSRC beacon) connection is needed to register changes in the status of the OBU (inland/abroad). The owners of the vehicles, which are subject to the HVF, transfer the data from the OBU to a chip-card. The files have then to be transmitted to the federal authority, either by chip-cards (by post) or electronically (per modem, Internet). There, the data are fed into the information system and are subjected to plausibility tests before they are used for billing. For foreign fleet owners and drivers the installation of an OBU is not mandatory. Unequipped users get an identification card, where the necessary technical details (permissible weight, emission factor) of their vehicles are stored. By entering the Swiss territory, they have to make a declaration with this card at a clearance terminal. The fee is calculated on the basis of the declaration when leaving the country.

### Revenue: the greater part goes to the rail mode

The expected revenue of the fee is estimated at about 500 million Euros per year (in 2001). According to the objective of shifting a good part of goods transport from road to rail, two third of this sum will be used for projects of the rail, especially for the two new tunnels across the Alps. The remaining third will be allocated to the cantons (states).

### Expected effects

In parallel to the introduction of the HVF in 2001 and the raise of the rate in 2005, the weight limit will also be adapted. The expected effects described below do therefore not reflect the impact of the HVF alone, but of different measures.

- In transalpine traffic, the number of lorries crossing the Alps will be noticeably reduced.
- In the other regions of Switzerland, growth in heavy goods transport on the road will be strongly reduced (but not stopped!).
- Thanks to this demand management the technical progress in waste gas cleaning is no longer neutralised by a strong growth in heavy vehicles traffic. Air pollution caused by heavy vehicles can therefore be reduced in a significant way.

After the first 8 months of being in force, it is difficult to make reliable statements about the effects of the HVF. But the following remarks can be made

- There have been remarkable changes in the composition of the vehicle fleet (weight adaptations, trend to lower emission classes)

- Two sorts of route changes can be observed: Trend to avoid Switzerland along the border and choice of shorter routes within Switzerland
- In some cases, the transfer of freight transport has become interesting e.g. the transport of Mineral water by rail or the combination of transports on the road.
- On the whole, the traffic volume (in the heavy vehicle sector) is stagnant. On the transit routes, HV Traffic is still growing, but there are no signs of a flow back of detour traffic.

According to an opinion poll made in February, a majority of Swiss people judge the new HVF to be mainly positive whereas the new (higher) weight limit is considered as negative.

## 2.3 Rail infrastructure package

### The rail infrastructure package

**Markus Liechti, Project Manager, T&E European Federation for Transport and Environment**

#### History of the rail infrastructure package

In the early 1990s the first steps towards liberalisation of railways were made. In 1991 Directive 91/440/EEC on the development of European railways was adopted. Four years later Directive 95/18/EEC on the licensing of railway undertakings and Directive 1995/19 on the allocation of railway infrastructure capacity and the levying of charges for the use of railways completed the first series of directives. The intention of these directives was to improve the legal framework for railways and to stop the ongoing decline in their market share. Railways were to be slowly but continuously prepared for internal market competition.

In 1998, the European Commission presented three proposals, the so-called rail infrastructure package, to amend or replace the existing directives and to bring the liberalisation of railways one step further. On the 22nd of November 2000, the European Parliament and the Council agreed on a compromise to pass the following three directives setting up a clear timetable for the opening up of the Trans-European Rail Network to competition:

- 2001/12/EC amending 91/440/EEC on the development of the Community's railway
- 2001/13/EC amending 95/18/EC on the licensing of railway undertakings
- 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification

Directive 2001/12 defines the **Trans European Rail Freight Network (TERFN)** on which all railway undertakings should have right to provide international rail freight services by 2003 without discrimination. In 2008 access will be opened to the whole rail network. Furthermore access rights must also be given to terminals and certain ports.

Directive 2001/14 defines the charging principles for the use of railway infrastructure. Charges should be upon social marginal costs with the possibility of mark-ups according to the market situation. Charging for the infrastructure and for using terminals must be non-discriminatory and must not jeopardise competitiveness. The allocation of capacity has to be harmonised internationally but where there is insufficient capacity, national rules will be applied.

The infrastructure manager has to apply transparent and predictable internal procedures in order to avoid discrimination of certain railway undertakings. For the same reason, essential functions must be organisationally separated: mainly capacity allocation and pricing. On the other hand, the full separation of railway undertakings and infrastructure management is not required. An independent rail regulator must be established in all countries and the safety certification body must also be independent from the infrastructure manager and the operator.

The main limits of the rail infrastructure package lie in the discrimination potential of integrated companies, in the limitation to the TERFN till 2008 and in the implementation process in different countries. Therefore, the European Commission established four working groups with the objectives of giving a platform for all the partners, fostering a coherent implementation in the countries and recognising undesirable developments quite early. The four working groups include monitoring of the rail market, the network statement [? State of the network?], market access and the regulatory bodies.

The European Commission recognised the need for further regulations to promote liberalisation of the railways. In the September 2001 White Paper on the Common Transport Policy, the Commission announced a new rail package for the end of 2001 including the following parts:

- Safety directive proposing a European rail safety agency.
- Communication on rail freight including the liberalisation of national rail freight services (cabotage).
- Communication on international passenger services to gradually liberalise international rail passenger market.
- Amendment of interoperability directives.
- Proposal for a European rail agency.

### **Transposition of European Community Directives for Railway Liberalisation in Catalonia**

**Marc A. García López**  
**Directorate-General of Ports and Transports**  
**Generalitat de Catalunya**

Economic theory applied to the field of transport establishes that competition encourages the generation of products (transport services) of a higher quality standard which in addition are assigned in a more efficient way. The existence of these new, more competitive transport services of a higher quality may change the tendency and reorient road traffic towards the railways.

In addition to the above, the fact that global railway costs (which include external costs such as accidents, CO<sub>2</sub> emissions and congestion (bottleneck problems, etc) are lower than global road costs, means that the road-to-rail modal shift must lead to a more sustainable transportation system.

This is not yet the case, since we are facing an imperfect playing field which requires the implementation of corrective actions. These measures should involve all authorities, not only



state administrations, and must include the implementing of European Community guidelines, also at regional level.

According to the Statute of Autonomy of Catalonia (article 9.15), and article 149.1/21 of the Spanish Constitution, the *Generalitat* of Catalonia has full competence on the railways that “circulate integrally” within the Catalan territory. According to the law, thus, the *Generalitat* is entitled to legislate over **all** railway networks within the Catalan territory.

At present, the situation does not match the legal framework, as the transfer of the competencies from the Spanish state to the *Generalitat* has not yet taken place. It might even be added that there is a certain inflexibility in the process, in the sense that the announced transfer of the line Lleida – La Pobla de Segur has not yet been accomplished.

In the meantime, the Catalan government has approved and sent to the regional Parliament a law proposal for creating the Entity: *Infraestructures Ferroviàries de Catalunya (IFC)* (i.e. the railway infrastructure manager of Catalonia). This is the first issued act to transpose the European Community guidelines to liberalise railways in Spain.

The goal of the IFC act is to clearly split the construction and administration of railway infrastructures from the railway operation and service provision. IFC will be the planning, promoting and administrative organisation of Catalan railway infrastructures, which will remain open to all railway operators who are willing to provide their services on them. This may enable experienced freight companies -which usually work on road transport only - to become intermodal freighters.

*Infraestructures Ferroviàries de Catalunya*, as an organisation, will be a fact in a few months. In the meantime, other legal instruments that are necessary to regulate the conditions of access to infrastructure, to ensure security and safety and to establish an adequate pricing policy as framework for operators and their customers will be implemented.

And here is a final reflection: when we refer to the integration of transport into the environment and to transfer loads between modes, we need to avoid pointing at the road as “evil” as opposed to the “good” railways. We need to establish the basis to achieve a more sustainable and efficient modal distribution, in which each of the modes must find its own specialisation and in which each one must play a significant role.

### **Management model of the project for the new Basque railway network**

**Álvaro Amann**  
**Regional Minister of Transports and Public Works**  
**Basque Government**

The European Atlantic route will soon reach a situation near to collapse: average daily traffic intensity amounts to 31.000 vehicles at the border; future forecasts estimate that in 2015, heavy-load vehicles will total 30.000 units per day.

It is necessary to change this trend drastically and this implies making alternative systems such as railway and maritime transportation more attractive, turning them into genuinely competitive alternatives to the road transport system.

We are facing a historic opportunity for railways in the Basque Country and in Europe. The main challenges are to liberalise Renfe’s current network and to strengthen the metric network of Euskotren and FEVE. It is necessary to improve the infrastructures and mobile

material on both networks and to proceed to renew them. Two main projects are already being implemented: 3.500 million Euros have been allocated to the Basque "Y" project and 1.000 million Euros have been assigned to the Euskotren project.

These programmes also include the transportation of specialised goods along the Basque "Y", the suppression of the Irun – Hendaye transfer terminal, increasing the capacity for goods and commuter trains and linking the ports of Bilbao and Pasaia to the continental railway network.

The Basque government has signed an institutional framework agreement to follow these railway actions and to monitor the implementation works on the Basque railway network. The Basque government is represented by the Department of Transportation and Public Works, the Department of Culture, the Department of Town and Country Planning, the Department of Housing and Environment and the Department of Agriculture and Fishing. The framework agreement is open to both the State administration and the European Commission.

In addition to the above, it is also necessary to implement the European Community Directives 12, 13 and 14 of 2001 and 16/CE so as to split functions in the Basque railway network and in Renfe by creating an administrative institutions for infrastructures, differentiating railway operators and an organisation whose task should be regulating the rights of transit. This will contribute to a greater efficiency in the management of the networks and will make possible any increase in railway freight services.

In the particular case of Euskotren, a future operating scheme has been devised and will consist in the creation of an infrastructure administrator (Imebisa); Euskotren, will remain as a corporation in charge of operating the railway services competing with other companies, and the Basque government will arbitrate the network rights of use.

The model that is currently being planned bears very much in mind both technical and environmental aspects, and takes the following into consideration:

- Road transport accounts for over 75 % of transport within the Community.
- 28% of CO<sub>2</sub> emissions within the European Union are caused by transports, 84% of which is produced by road transport alone. The current trend, which need to be changed, would lead to a 20 % increase in road goods transport over the next 10 years, which would in result in extreme environmental costs.

### **Opportunities of railway deregulation: the viewpoint of an operator**

**Joaquin Martínez-Vilanova**  
**Director of Railway Services**  
**FCC – CONNEX**

Generally speaking, the basic concept of the European Commission's White Paper –the opening of the transport market – has been achieved and completed with the exception of the railway sector. In order to increase the competence in passenger and freight domestic and international services, and in order to revitalise railway transport, to reduce costs and to improve sustainability, EC Directives 12, 13, and 14/2001 have been approved. These guidelines institute the splitting of functions (infrastructure management, operations, granting of licences) and the independence of the manager and the regulator, as well as the liberalisation of international transportation of goods.

The Spanish state has so far failed to carry out the transposition of EC Directives to its legal system that should enable a pricing and granting system that would favour competition.

The implementation of the railway package will provide genuine advantages in Spain:

- For the public administrations, since they will be able to reduce their budgets, a more active role will be assigned to autonomous communities and the duties of regulating, inspecting and controlling will be preserved.
- For customers, whose selection and information choices will increase while the quality to price ratio of railway transport services will be improved.
- For transport operating companies this will mean a political will to favour railway transport to achieve sustainability in a growing market (in terms of passengers and goods) which is basically monopolistic at present.

Railway liberalisation in Europe shows the progressive emergence in each country of various competing operators, one of which may be public. This public operator might eventually disappear by becoming privatised or by merging with other operators. Regulation, homologation and safety duties will remain in the public sector.

The case of Germany is an example: in early 1994, access to authorised railway undertakings was allowed. A charge for the use of stations and tracks was established. The *Länder* were entitled to manage a bid to implement regional railway lines with funds that were directly transferred from the State. 150 freight companies became railway operators. The German public corporation DB AG is still present in the market place and has held a 90 % share during the transition phase. As in Sweden and the Netherlands, prices have been reduced while the quality of the services provided has improved. DB Corporation has managed to highly increase its productivity ratios.

### **Opportunities of implementation of the rail infrastructure package from the economical and environmental point of view**

**Lars Bråberg, Director of IKEA EU-affairs and board member of IKEA Rail AB**

#### **IKEA and transportation**

Transporting over 10.000 articles from 2500 suppliers to more than 140 stores in 30 countries is an enormous challenge. Good distribution is crucial for IKEA and it is essential to simplify things wherever possible. IKEA's transport strategy is built on four cornerstones: namely service, cost, quality and environment. These factors shall always be considered in our business decision process.

At present IKEA has its main sales activities in Europe and also the biggest volumes. Parallel to this, the overall transport activity within the EU in general will grow by 40-50% during the next 10 years. At the same time, international agreements like the Kyoto Protocol have been formed and ratified by a number of countries to take common measures in fighting the growth of emissions, including transport.

#### **The future - eco-infrastructural taxation and increased congestion**

Looking ahead, IKEA therefore predicts environmentally related- and infrastructural taxation, such as the new eco-infrastructural taxation in Switzerland, increasing road prices by approximately 20-25% for heavy vehicles. (Germany follows etc) Other important factors affecting costs of transport is the price on oil. In 2000-2001 the oil price has fluctuated up and down with more than 50%. This makes predictions of future prices on transport very unsure and difficult.

Another factor to consider is the future lack of capacity and capacity on the roads. Even today, the supply of carriers is lower than demand and the future will bring greater lack of capacity and increased congestion on the roads. Without calculating an estimated cost it is easy to understand that increasing goods flow in congestion will cost a lot.

### **A sustainable transport strategy for IKEA**

Since railway transport is the most optimal environmental transport method of today, it has been a natural part of IKEA transport strategy for many years. However the European Railway sector has not been capable of developing and providing competitive and flexible service products in the tempo needed. This means that the share of IKEA goods transported by rail has been decreasing during the last years and today, less than 20% of IKEA goods are transported by rail.

In order to change this tendency and to have a more sustainable transport policy, IKEA decided to take advantage of the new market situation in the EU (the adopted "railway package") by establishing the company IKEA Rail AB.

### **Advantages with the railway package – reduced costs, increased service and more flexibility**

The core activity of IKEA Rail AB will be to co-ordinate all IKEA rail flows and to develop new goods flow lines on rail when needed. The aim is thus not to have IKEA owned trains and wagons but to generate and create a future optimal rail transport situation for IKEA by "buying" slots on the rail i.e. that IKEA will set up its own timetable for rail transports. By breaking down a general transportation package to transport goods from A-B into separate service parts (tender process for each part IKEA needs) that are needed for IKEA, money can be saved and flexible customer friendly solutions can be found. As an example of benefits, the average speed of the train operating from Duisburg (D) - Älmhult (S) will be 65 km/h (to compare with international goods train in Europe which have the average speed of 18 km/h (Commission policy guidelines)).

### **Environmental benefits**

The main objective of the initiative of IKEA Rail AB is to increase the share of intermodal transport and to reduce the road transport share in the supply chain of IKEA. Today, less than 20 % of the total IKEA goods volume is carried out by rail or intermodal transport. The aim of the initiative is to double the present rail share to 40% of the estimated transport volume in year 2005 thereby avoiding the need for about 25 000 truck journeys per year on heavily used roads (Germany – Poland and Germany- Sweden in the start up phase).

### **Threats – lack of competition and slow deregulation of the market**

It is not enough to formally deregulate the market in order to create an open European railway transport market. Today there are still few operators in the EU market with the present market consisting of regional monopolies and dominance of a few operators. It is therefore important that the member states implement the railway package properly and that the Commission monitors and supervises this implementation and proposes new legislation when needed. IKEA would like to see a further deregulation of the domestic transports within the EU and that rail freight user have access to the rail market. Furthermore, today a rail company needs at least 12 different permissions, issued by different authorities, before it can

operate on a line between Sweden and Germany. Harmonisation measures are therefore needed to reduce both red tape and costs.

### **Implementation of the railway package: the viewpoint of the railways**

**Antonio Herce**  
**Executive Chairman of Ferrocarrils de la Generalitat de Catalunya**

## **1. Background**

The most outstanding facts of railway freight transport in the last decades of the 20<sup>th</sup> century are the strong competition of road transportation, the reduction of major traditional freights (minerals, iron and steel industry), the loss of competitiveness in the field of light-weight, sparse and short-distance freight, the stagnation of investments in the railway infrastructures, and finally, the loss of market share (see table).

#### **Goods transport in Europe per means of transport (1980-1998)**

<b>Mode</b>	<b>1980</b>	<b>1998</b>
Railway	24%	15%
Road	58%	74%
Rest (navigable routes, oil pipelines)	18%	11%

The growth and development of international transport of goods as a result of the gradual European integration process and the fast adjustment of air and road transport services to the new situation experienced by the European market place have not contributed to increase the transport of goods by railway.

Other highly important issues are the environmental advantages of railway transport, particularly when compared to road and air transport.

The Treaty of Maastricht, as the response of the European Union to the current transport situation, introduces the concept of a trans-European network that has made possible to develop a director scheme for transport infrastructures at European level and to implement the Union's financial support. The European transport policy of the nineties has also enabled liberalisation of the markets, particularly when it comes to road, sea and air transport.

## **2. The railway policy of the European Union**

In the nineties, a first package of Directives issued by the Council was implemented. The purpose of that package was to promote the integration of railway transport of goods. These guidelines dealt with the development of railway systems within the European Union, the grant of licences to railway undertakings, the assignment of infrastructure capacities and charges and the inter-operation of high-speed trans-European railway system.

Owing to the insufficiency of the cited Directives, in 2001 the European Parliament and the European Council drew up and approved a second legislative package that modifies, replaces and completes the guidelines contained in the first package. These new Directives will need to be transposed to the legislation of each Member State. This process is currently being implemented and should end before March 15<sup>th</sup>, 2003.

On the other hand, the European Commission has submitted the White Paper on the Common Transport Policy, which states sixty proposals designed to give the integration a new driving force and to improve the transport system within the European Community.

### 3. Significant aspects

Transport is part of a logistic chain and in consequence all transport services (sea, air, road and railway transport services) must complement one another. The railway-road bimodality is clearly preferable in both technical and economic terms. Furthermore, it is more advantageous as far as congestion, accidents, pollution, etc. are concerned. However, there is currently a series of limitations to bimodality such as the lack of gauge for transporting lorries on flat wagons and the cost of using special low-platform wagons. Some of the solutions proposed to solve these problems will start to be applied in 2002.

### 4. Characteristics of the new model

- The existence of a regulator body that would be fully independent from the infrastructure manager and from operators.
- Intermodality is one of the main features of the new model. Therefore, it is important to establish connections with freight terminals, in order to reduce costs and delays when changing platforms.
- It is important to have financially healthy operators so that they are competitive in a railway market that is open to competition and to establish “reasonable” charges for the use of the infrastructure.
- Strategic alliances with other operators; truck and wagon operators, suppliers, road operators, etc.
- It is necessary to have available slots in commercial peak hours for every type of traffic.
- It is also needed to reform railway freight terminals and to create new terminals for different rail widths, particularly at the borders.

### 5. Conclusions

Railway freight needs a strong push in order to be in a position to expand the market segments in which it may provide a competitive level of service. In addition to this, social habits, the improved quality of life, protection of the environment, the search for a sustainable development model and the currently ruling political will are favouring the recovery of railway transport.

The competitiveness strategic challenge, based on the guidelines issued by the European Union, suggest a totally new future for the railway sector, insofar as they involve an opportunity to change the current existing model, not only within the international level of the European Community, but also at the domestic level of each State and Regions, along with the necessary adequacy of the relevant infrastructures in order to make this process sustainable.

Last but not least, the significant increase in transport demand during the coming years reaffirms the need to count on the railway system (see table).

#### Traffic forecast for the Pyrenees (Atlantic + Mediterranean sections)

Year	1995	2005	2015	2025
Millions of tons (all modes considered)	58	109	168	229

## **Opportunities of implementation of the rail infrastructure package from the environmental point of view**

**Duco van Dijk, Netherlands Society for Nature and Environment (SNM)**

### **Introduction**

The Netherlands Society for Nature and Environment is the Dutch member of T&E. From the office in Utrecht, 90 people work on sustainable industry, agriculture, spatial and urban planning and mobility. As regards this last theme, we aim for a transport and traffic system within the boundaries of sustainability, with freedom of movement for everyone. Stichting Natuur en Milieu, together with other environmental and transport organisations, wants to inspire others and make a significant impact on changes in our mobility. The Transport Team generates ideas and presents proposals, wherever possible, to those more directly involved in the decision-making process.

To get a grip on the complex issue of freight transport we use the so-called ladder. The ladder shows five levels at which you can aim strategies for sustainable transport. From bottom to top the steps of the ladder are:

- ❑ The vehicle system (individual components: cars, trains, ships)
- ❑ The traffic system (logistics, fleet management)
- ❑ The transport system (the total sum of movements)
- ❑ The spatial system (spatial arrangement of functions)
- ❑ The socio-economic system (political and economic structure, trends)

Each level poses different challenges for sustainability. For instance, on the first step the focus is on technical solutions such as the catalytic converter or Euro standards for emissions. The third step of the ladder is the level with which we concern ourselves during this conference, with modal shift as the main strategy for sustainability.

Each step up on the ladder leads to a more complex arena. Solutions are more difficult to find and more diverging interests are involved. Secondly, serious improvements on a lower step of the ladder are being annulled by growth higher up. Therefore, efforts are necessary on all steps of the ladder. There is no single solution to the environmental problems caused by freight transport.

### **Rail transport**

Bearing this in mind, we can say that rail transport surely helps, but is certainly no cure-all. For instance, rail infrastructure leads to deterioration of landscapes and scattering of nature and rail transport causes noise and emission problems. The dedicated rail freight track from Rotterdam to the German industrial Ruhr-area, the so-called Betuwelijn, found heavy opposition in the Netherlands by both local inhabitants and the environmental movement. The last decade there has been much focus in the Union on modal shift. Modal shift will not help us making the ever-growing freight volumes of the coming decades more sustainable. The challenge is to take transport policy one step further!

### **Decoupling**

Transport grows faster than the economy. We need a new approach to slow down the almost unhindered growth of freight transport in Europe. We need to break the link between economic growth and transport growth. Since the Gothenburg Summit, decoupling found its way on the European agenda. Known approaches to decoupling are internalisation of

external costs, road pricing, and kilometre charging. In the Netherlands, we found another way of bringing about decoupling in freight transport: transport prevention!

### **Transport prevention**

In short, transport prevention means producing the same but transporting less. By changing products and production patterns, it is possible to reduce the transport demand of companies. It is not a logistic solution: transport prevention focuses on what happens *behind* the factory gate, before the transport order is given. A research commissioned by the SNM found three categories for reducing transport demand:

1. Reducing volume and/or tonnage

Changing product design, production processes or even marketing, for instance extracting water from sodas before they are transported.

2. Reducing distances travelled

Local sourcing or brand independent production are just two of the examples found to reduce distances travelled in the production process.

3. Reducing waste and return flows

The most difficult option, but think of ICT and bar codes to predict and manage stocks and ordering.

### **Transport prevention: some examples**

McDonalds transports Coca Cola powder instead of the whole product. In the outlets, water is added to produce the final product, saving enormous amounts of transport. A Dutch company produces hydrogen and oxygen for a glass factory. Instead of transporting it to the glass factory, they are now considering producing the chemicals on the site of the glass factory. This could save 1.8 million ton kilometres a year and it is safer too, because no large storage capacity is needed for the hydrogen. Other examples are the separation of water from milk before it is transported from the farm or the virtual auctioning of flowers.

Decoupling makes surprising partners. In the Netherlands the environmental movement, the business community, shippers and the government work closely together to promote the concept of transport prevention. In brief, the aim is to stimulate and support shippers to organise their production in a 'transport-aware' manner. To this end, the government has mounted a subsidy scheme, helping companies to develop transport prevention projects.

Together with the above-mentioned partners in the Netherlands, we are working on promoting the concept in the Union. We hope this will have the same effect as in the Netherlands!



### **3 Panel discussion on the importance and obstacles of transposing the rail infrastructure package**

**Coordinator: Andrés López Pita, from the Universitat Politècnica de Catalunya**

**Panelists: Álvaro Amman, from the Basque Government**

**Alf Ekström, from Banverket**

**Duco van Dijk from SNM**

**Joaquín Martínez Vilanova, from FCC - Connex**

**Marc. A. García, from the State Ports and Transportation Office**

#### **Issues discussed**

In order to accomplish a sustainable freight transport system, it seems that the most suitable thing would be to achieve complementation between road and railway transportation. However, there are also other more radical positions that advocate reducing transport demand.

During the last few years, economic growth and transport growth have been closely linked together. Both have been conditioned by the use of one single type of transportation and one single energy source. While freight transport progressively grew, railway transportation experienced a gradual stagnation in front of the flexibility provided by road transport.

The increase of road transport has also resulted in an increasingly polluted environment in general, in spite of technological progress which endeavours to minimise the impacts of emissions from vehicles.

In view of these events, the European Union has begun to promote the use of railway transportation in order to bring to an end a cycle that does nothing to contribute to the desired sustainability and which, on the other hand, causes road congestion and increased effects on the environment.

The idea behind this is to achieve a competitive railway service for freight. To this end, the three Directives integrating the railway infrastructure package were submitted (1999). The purpose of these Directives is to encourage the renewal of railway networks. The first step would be to liberalise them, thereby separating infrastructure and operation. However, even in the countries in which this process has already been implemented, the possibility for independent railway undertakings to operate is still in a theoretical phase (as in the case of Switzerland) or there is little chance for them to operate at all (such as in Germany and Sweden (IKEA)).

In international long distance routes – in which rail transportation services might be more competitive – the weight of tradition and domestic protection policies, which have ruled the railway industry for many years, restrict railway competitiveness. In addition to all this, it is necessary to bear in mind technical incompatibility of the different domestic networks (varying rail gauge or railway voltage).

Incorporating new goods services onto the currently existing network involves a few limitations, as this network is shared with public transport. Particularly in the cases in which high-speed train lines are to be shared with goods transport, there is a limitation of 16 T per axis.

All of the above seems to indicate that the final goal might be to obtain a railway network that would be exclusively devoted to transporting goods. However, will that be achievable? Is it possible to finance an infrastructure of this kind with the fees collected from heavy-load vehicles circulating on the roads, which is current practice in Switzerland? Would this be a good solution? How about internalising external costs (pollution, noise, accidents, congestion, etc.)?

## Annex 1: Background document



European Federation for Transport and Environment

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# How can market forces in the rail sector contribute to a sustainable freight transport?

Background paper for the conference on opportunities of the rail infrastructure package for a sustainable freight transport, 20 - 21 September 2001, Barcelona

## Introduction: Why is liberalisation of railways a topic?

Liberalisation of railways has been politically discussed in Europe for more than 10 years. The EU put it on its agenda in the early nineties aiming to revitalise the railways of the Community. In 1991 Directive 91/440/EEC on the development of European railways was adopted. Four years later Directive 95/18/EEC on the licensing of railway undertakings and Directive 1995/19 on the allocation of railway infrastructure capacity and the levying of charges for the use of railways completed the first series of directives.

The intention of these directives was to improve the legal framework for railways and to stop the ongoing decline in their market share. Railways were to be slowly but continuously prepared for internal market competition. While access to rail infrastructure has been opened up to a wider array of railway undertakings, or for groupings of such enterprises, this open access was limited to international freight transport.

Another four years later, in 1999, the European Commission presented three proposals, the so-called rail infrastructure package, to amend or replace the existing directives and to bring the liberalisation of railways one step further. On the 22nd of November 2000, the European Parliament and the Council agreed on a compromise to pass the three directives<sup>7</sup> setting up a clear timetable for the opening up of the Trans-European Rail Network to competition.

Since the early nineties, important political changes were also made by the European Union giving more weight to the environment. The Amsterdam Treaty (Treaty of the European Community) emphasises the principle of sustainable development respecting the environment (Art. 2) and sets out objectives for environmental protection. The Sustainable Development Strategy approved by the heads of governments of the Member States in June 2001 and the White Paper on Common Transport Policy which is announced to be published in September 2001 require not only a modal shift towards environmentally less harmful transport mode but also a decoupling of transport growth and economic growth.

This paper should provide an answer to the question if, and under which conditions, the rail infrastructure package and the liberalisation of railways can contribute to a more sustainable transport system, integrating the three pillars of economic, environmental and social sustainability.

<sup>7</sup> Directive 2001/12 amending Council directive 91/440/EEC on the development of the Community's railways, 2001/13 amending Council directive 95/18/EEC on the licensing of railway undertakings, 2001/14 replacing 1995/19 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification.

## **Why liberalisation?**

Liberalisation has an important place within the European Union's economy, which is based on the principle of free movement of people, goods, services and capital. These four freedoms are the pillars of the internal market. They abolish borders and remove institutional obstacles within the European Union. These principles do not allow for any discrimination on the basis of the nationality of any person or company based within the European Union, with regard to any economic activity in any Member State.

The common market is gaining an increasingly important role over time. It is successively being applied in all parts of the economy. Many previously protected industries, which were run by big national monopolies, have been liberalised and competition has been introduced to such sectors as energy supply or telecommunications. The transport sector has not been exempt from this development either. In the road freight sector for example, it is possible to run services throughout Europe without any national borders or institutional barriers.

Liberalisation is also one of the most important pillars building up a market economy. Under the theoretical conditions of perfect competition, economic and social welfare is maximised. Competition requires the principle of liberalisation in order to allow every individual or company to participate in market processes. Therefore, liberalisation is not an objective of its own but an instrument to increase social welfare. However, reality does not correspond to a situation of perfect competition and thus liberalisation does not automatically maximise social welfare. This is particularly true in transport. Network industries as electricity, telecommunication, road or railways are characterised by many distortions as externalities, sunk costs or economies of scale.

These distortions do not represent good reasons to not undertake liberalisation. However, they have to be considered while liberalising the sector. Simply introducing market forces in sectors with many distortions does not automatically improve social welfare. Thus, liberalising the rail sector requires rules and regulations to achieve the objectives.

## **Status of rail liberalisation in Europe**

While most sectors within the European Union have been liberalised, rail transport liberalisation is still being hindered by the historical management of national networks and by the high level of infrastructure investment costs. The present European policy direction is continuously introducing some flexibility in this sector allowing, market forces into the rail freight market.

Following the first steps, taken in the 1990s, the rail infrastructure package represents an important further step. This agreement will allow for the liberalisation of rail freight transport; firstly on the Trans-European Rail Freight Network (TERFN) in 2003, and then on all tracks in 2008. It was agreed on 22 November 2000 after many weeks of intense debate in the Conciliation Committee between the European Parliament and the Council. The conciliation procedure cemented agreement on the following controversial issues: time-scale for the next steps on how to open the network, the principle of infrastructure user charges and the question of derogations.

The rail infrastructure package contains the following achievements, which distinguish it from legislation made between 1991 and 1995:

- Definition of a Trans-European Rail Freight Network (TERFN), involving access to ports and inter-modal terminals
- Free access to the TERFN network for all rail companies licensed within the European Union. Previously, this was only the case in international transport for international groupings of rail companies, holding a licence between the different countries in which they were based, with transit rights in other European Union

countries. Within 7 years of the Directive entering into force, access rights must be given to the entire rail network for international rail freight transport.

- Separation of infrastructure and operation: Essential functions related to the allocation of rail infrastructure must be separated from operating rail services to ensure non-discrimination of railways undertakings.
- Creation of a harmonised and transparent allocation system for infrastructure costs: The long-term objective is full cost recovery. However, the inter-modal situation regarding transport infrastructure charging must be taken into account and infrastructure charges must not become an obstacle to developing advanced rail services as combined transport.
- Non-discriminatory rules of access to the network: Every country must establish an independent rail regulator. This institution must ensure non-discrimination against railway undertakings.
- Ensure safety of the railway system. Existing safety standards must be maintained or even improved. Independent bodies must set safety rules.

The objective of the rail infrastructure package is to revitalise the rail transport sector. The arrival of new railway undertakings could help to bolster competition in this sector and should be accompanied by measures to encourage company restructuring that takes account of social aspects and work conditions.

The process of liberalising railways will continue. It is expected that the forthcoming White Paper on the Common Transport Policy will contain proposals for a package of measures which should restore rail's credibility in the eyes of shippers and industry, in terms of reliability of service. The priority is to open up the markets, not only for international services, but also for cabotage on national markets. The final objective is that, step-by-step, a network of railway lines would be dedicated exclusively to goods services.

### **The rail freight market: How does it work? How did it develop?**

Although the liberalisation of Europe's railways has already been initiated politically by Directive 91/440 of July 1991 (see chapter 1), its impacts so far have been rather limited. Despite the legislators' intention to open access to the network, traditional national rail companies still dominate the market in every European country. All experience so far has shown that the minimal requirement, formulated in the first Directive, of a separation of infrastructure and operation in purely accounting terms is not enough to create a considerable level of competition. The risk of discrimination remains too high.

This national orientation has created many technical barriers in the past; for example different widths of gauges or electricity. It has also created institutional barriers, which liberalisation brings into focus.

First, there is no level playing field between transport modes. Rail freight operators must overcome institutional obstacles and barriers. Therefore, they are confronted with costs in international transport which their competitors in other transport modes, who can offer door-to-door services throughout Europe, do not face.

The second impact is internal to the railways, but is nevertheless even bigger. The national orientation and protection has limited railways' perspectives to their own domestic market. Consequently, there has been no intra-modal competition within or across national borders, and little or no incentive for improving services in international rail freight transport. These additional obstacles and barriers are a major disadvantage for long distance rail freight transport, a market where railways in fact should have competitive advantages compared to the road sector.

The performance of rail freight over the last 30 year is. In a strongly growing market, the volume of goods transported by on rail has stagnated, or even fallen slightly. One of the

reasons is that the freight market has become increasingly international and – for the reasons just described – the railways have not been competitive enough to respond to the flexibility of international road transport. Obviously, institutional factors have not been alone in creating an unlevelled playing field between transport modes, but they have certainly contributed to the situation.

### **The impact of rail liberalisation on economic sustainability**

An effective transport system is crucial for the functioning of the economy. Nowadays industry is very much dependent on one transport mode and one energy source. The fuel price protest in autumn 2000 showed the vulnerability of such a system. Production risked coming to a halt because the supply chain was interrupted. Such a situation is a threat for the economy and for society, as the supply of goods cannot be maintained. An economy which depends solely on one transport mode and energy source is not sustainable.

Thus, one of the main objectives of European transport policy must be to make the best use of available transport infrastructure and to achieve a less vulnerable transport system.

Can the rail infrastructure package and the liberalisation of railways contribute to achieve this objective? Can the railways become a valuable alternative to road transport by implementing market forces?

A customer-oriented rail system can offer industry a competitive alternative in price, speed and reliability. Thus, liberalisation of railways must aim to improve the rail services: it must create competition among rail freight operators. This will only happen if discrimination-free access to the entire European rail network for all rail companies, private and public, is ensured.

The rail infrastructure package does not require the separation between infrastructure and service operators but only the separation of certain functions. To ensure the non-discrimination of potential service providers, the strict separation of these functions is necessary and the independent rail regulator has to play a crucial role. But also, the European Commission has to survey that non-discriminatory access to rail infrastructure is granted in all Member states.

The most important element for fair competition within the rail sector is the creation of a fair and transparent pricing system for using the rail infrastructure. Such a system has to be overseen by an independent body. It should consider the scarcity of the used resources and thus be as close as possible to social marginal costs.

Fair conditions for competition are not only required within the rail sector. If rail freight services are to become a valuable alternative, a level playing field between all transport modes is also required. The pricing principles and environmental, safety and social regulation should be applied for all transport modes equally.

In addition to institutional barriers, technical obstacles hinder also the development of international freight services. The interoperability of conventional railways, as requested by Directive 2001/16/EEC which was adopted by the Parliament and the Council in January 2001, must be realised.

Considering all these aspects, the transport system can become economically more sustainable through implementing the rail infrastructure package seriously,.

### **The impact of rail liberalisation on environmental sustainability**

Efficient transport is an essential service contributing to competitiveness, economic growth and social cohesion, but the growing demand for transport has led to increasing negative

impacts on the environment. The TERM report from the European Environment Agency<sup>8</sup> has shown that transport still represents a threat to the environment and that despite some improvements, many environmental impacts of transport continue to grow. The biggest threat posed by transport at the present time concerns climate change. Whereas all the other sectors have reduced their greenhouse gas emissions in absolute volume, transport sector emissions continue to increase. A major problem is the ongoing growth of transport, which has outweighed many of the technological improvements made in this sector (e.g. fuel quality).

The European Union recognises these impacts; e.g. in the Amsterdam Treaty, which introduces the principle of sustainable development respecting the environment. The Sustainable Development Strategy also aims to decouple transport growth from economic growth.

Can the rail infrastructure package contribute to reducing transport's environmental impacts? Will the transport system become more sustainable if market forces attract more freight transport on railways?

Assuming that the liberalisation of railways is successful and that rail freight transport becomes an alternative to the road transport, the volume of goods transported on railways will increase. To evaluate the environmental impact of this development, two questions must be addressed:

1. Does the transport by rail of a given volume have less environmental impact than the same volume transported by road?
2. Does the volume on roads decrease by the amount shifted to railways (in other words, is there a modal shift rather than an overall increase)?

Rail transport theoretically has in less environmental impacts than road transport. Therefore, transporting more goods by railways can be considered to be more sustainable than by road. However, modal shift from road to rail may also have negative environmental impacts in some cases. Road transport has made a great effort to reduce its negative environmental impacts, whereas the rail sector has not done the same. Thus, the environmental advantage of rail transport has diminished over time. The reduction of environmental impacts should have high priority for the rail sector in the future. The charging system for the use of rail infrastructure should provide incentives for the reduction of the environmental impacts.<sup>9</sup>

As to the second question, the answer is simply NO. The rail infrastructure package can lead to better rail services and thus attract new traffic on railways. However, this simply makes the whole transport system more attractive, reduces its costs and therefore increases transport demand. Even if the rail infrastructure package is an economic success, it is not sufficient by itself

to make the transport system environmentally more sustainable. Additional measures are required which would allow for the necessary decoupling of transport and economic growth. Most importantly, a fair and efficient pricing system will be required for all transport modes, which would consider all types of costs (infrastructure, environment, accidents, etc.).

Finally, the introduction of competition might bring about the danger of neglecting safety rules. The rail infrastructure package considers this potential negative impact by requiring the maintenance of existing safety levels. However, safety must be taken into account seriously by implementing these rules.

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<sup>8</sup> Transport and Environment Reporting Mechanism: Are we moving in the right direction? Indicators on transport and environment integration in the EU. TERM 2000 represents nowadays the best set of environmental indicators.

<sup>9</sup> In accordance with the Swiss Heavy Vehicles tax, whose level varies according to the emission class of the vehicle.

## **The impact of rail liberalisation on social sustainability**

Transport is seldom an objective in itself: it is an instrument that provides people access to jobs, housing, goods and services. It has therefore an essential function not only for the economy but also for each individual. Freight transport, which is the main focus of the rail infrastructure package, plays a minor role for individuals. However, it provides access to the goods that people buy in the shops or get delivered at home.

An effective transport system is therefore also important with regard to the social sustainability. The rail infrastructure package can contribute to improve this sustainability as described in chapter 5.

Social sustainability also has other aspects. It has to fulfil the citizens' needs to preserve the natural environment and health, to access natural resorts, and to enjoy landscapes and biodiversity. The contribution to achieve requirements in this sense by the rail infrastructure package is limited, as shown in chapter 6. On the contrary, it increases the pressure on natural sites.

Finally, the preservation of the dignity and integrity of all labour forces against exploitation by the employers is another aspect of social sustainability. The transport sector shows that social regulation differs between transport modes, with working conditions typically being better for railway workers than road freight workers. The implementation of the rail package must not lead to a reduction of social security and protection of the employees. Moreover, transport workers in other transport modes must be better protected, for competitive but also for safety reasons.

## **Conclusions**

1. The rail infrastructure package is a necessary but insufficient instrument to achieve a sustainable transport system.
2. It can contribute to a more sustainable transport system only

### **- if it is implemented appropriately:**

- Access to rail infrastructure must be non-discriminating.
- Access must be opened as soon as possible to the whole rail network and not only to the Trans-European Rail Freight Network
- Rail infrastructure should not be privatised. The privatisation of rail infrastructure creates a private monopoly which is difficult to regulate.
- Independent institutions are needed to monitor and uphold high safety and social standards in order to protect the environment, workers and citizens.

### **- if it is accompanied by other measures**

- It is the responsibility of politicians to make the decisions to maintain those services which are socially or ecologically required, but economically not advantageous.
- Technical interoperability has to be promoted to attract international freight operators and make the transport system more sustainable.
- A level playing field between all transport modes must be established. Fair and efficient pricing systems must be introduced for all transport modes. This means achieving the decoupling of transport and economic growth.



3. As important as the liberalisation of the rail freight sector is, it is not an objective in itself. The real objective must be that railways become a more competitive transport mode and that the whole transport system becomes more sustainable.
4. Liberalisation is only one instrument among others. Only the implementation of a set of instruments can be successful in achieving a more competitive rail freight sector.
5. However, the existence of other obstacles is not an argument against liberalisation. Liberalisation is necessary for competitive rail freight and a sustainable transport system.

Author: Markus Liechti, T&E  
Date: 10 September 2001

## **Annex 2 Agenda**

### **20<sup>th</sup> September, 2001**

#### **15.00 Registration**

#### **15.30 Conference Opening**

Pere Macias  
Conseller de Política Territorial i Obres Públiques  
Generalitat de Catalunya

*[Chairman of the session: Matthias Zimmermann, T&E]*

#### **15.45 Environmental impacts of transport**

Ann Dom  
Project Manager Transport and Environment  
European Environment Agency

#### **16.30 Objectives and achievements of Road to Rail project**

Markus Liechti  
Project manager  
T&E

#### **17.00 How to reach sustainable freight transport: a citizen view**

Pau Noy  
President  
APTP

#### **17.30 How to reach sustainable freight transport: technical possibilities and developments**

Hilary McMahon  
Political Affairs Manager  
UNIFE

#### **18.00 Closure of the session**

### **21<sup>th</sup> September, 2001**

*[Chairman of the session: Marc A. García, Generalitat de Catalunya]*

#### **09.00 Rail infrastructure package and Interoperability of Conventional Rail Systems**

Fernando de Esteban  
Adjoint General Director, DG TREN  
European Commission

**9.45 Internalisation of external costs of freight transport:  
Fuel charges or kilometre charging? T&E s position**

Frazer Goodwin  
T&E

**10.15 Kilometre charging in practice: Swiss HVF**

Ueli Balmer  
Swiss Ministry of Transport

**10.45 Coffee break**

**11.15 Transposition of rail infrastructure package in Sweden**

Alf Ekström  
Banverket

**11.45 Transposition of rail infrastructure package in Catalonia**

Enric Ticó  
General Director of Harbours and Transportation  
Generalitat de Catalunya

**12.15 Management scheme for the new Basque railway network project**

Álvaro Amann  
Consejero de Transportes y Obras Públicas  
Basque Government

**12.45 Opportunities of implementation of the rail infrastructure package  
from the economical point of view**

Joaquín Martínez-Vilanova  
Director of Railway Services  
FCC-Connex

Lars Braberg  
Director of EU Affairs  
IKEA Rail

**13.30 Break**

*[Chairman of the session: Markus Liechti, T&E]*

**15.30 Implementation of the rail infrastructure package: the views of the railways**

Antonio Herce  
President  
FGC

**16.00 Opportunities of implementation of the rail infrastructure package from the environmental point of view**

Duco van Dijk  
SNM

**16.30 Panel discussion on the importance and obstacles of transposing the rail infrastructure package**

Coordinated by:  
Andrés López Pita, Centre d'Innovació del Transport, UPC

Panelists:  
Álvaro Amann, Basque Government  
Alf Ekström, Banverket  
Joaquín Martínez-Vilanova, FCC-Connex  
Marc Garcia, Generalitat de Catalunya  
Duco van Dijk, SNM

**18.00 Closure of the conference**

Ole Thorson  
Board Member T&E

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**END**

## About this paper

Railway liberalisation has been politically discussed in Europe for more than 10 years. In 1999, the European Commission presented three proposals, the so-called rail infrastructure package, to amend or replace existing directives from 1991 and 1995 and to bring the liberalisation of railways one step further. On the 22nd of November 2000, the European Parliament and the Council agreed on a compromise to pass the three directives, thus setting up a clear timetable for the opening up of the Trans-European Rail Network to competition. In September 2001, T&E and the Catalan Government organised a conference in Barcelona on the opportunities and limits of rail liberalisation for a sustainable transport system. Its main objective was to make decision-makers aware of the fact that liberalisation of international rail freight market and opening access to national rail infrastructure is necessary, but in itself insufficient, to attain a more sustainable freight transport. This publication includes the presentations of the speakers at the conference and a background document for this conference summarising the most important facts of rail liberalisation and sustainability.

## About T&E

The European Federation for Transport and Environment (T&E) is Europe's primary non-governmental organisation campaigning on a Europe-wide level for an environmentally responsible approach to transport. The Federation was founded in 1989 as a European umbrella for organisations working in this field. At present T&E has some 40 member organisations covering 21 countries. The members are mostly national organisations, including public transport users' groups, environmental organisations and the European environmental transport associations ('Verkehrsclubs'). These organisations in all have several million individual members. Several transnational organisations are associated members.

T&E closely monitors developments in European transport policy and submits responses on all major papers and proposals from the European Commission. T&E frequently publishes reports on important issues in the field of transport and the environment, and also carries out research projects.

The list of T&E publications in the annex provides a picture of recent T&E activities. More information can be found on the T&E web-site: <http://www.t-e.eu>

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### Associate members

BirdLife International  
Community of European Railways  
European Cyclists' Federation  
Union Internationale des Chemins de fer (UIC)  
International Union for Public Transport  
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