

Responding to the Climate Change 2003

- Railway as the backbone of any sustainable transport system

Railways: the key to reducing CO₂ emissions in transport!

The railway's CO₂ advantage in itself offers global society the way towards the fulfilment of the Kyoto Protocol if supported by appropriate measures. In developed countries, policies have to be implemented at a national and international level to give the public incentives to direct the necessary and needed shift of transport modes towards a sustainable transport system – using railways and their environmental advantages as the backbone. Action has to be taken now by all stakeholders and transport and planning decision-makers to establish appropriate railway infrastructure to support the developing countries in striving to achieve economic (and sustainable) development. Quality of life for every citizen involves more than climate change. In this respect, railways offer sustainable mobility through efficient transport built on social equity, low environmental impact and positive economic growth. Railways bring people together.

Transport alone causes 25 % of the CO₂ emissions at global level. Road traffic and aviation are responsible for almost 90 % of CO₂ emissions caused by transport.

Railways are the most environmentally-friendly mode of land transport in terms of energy efficiency, and are continuously improving this advantage. Railways have a big potential for reducing their energy consumption even more. The CO₂ advantage of the railways is essentially contributing to the fulfilment of the Kyoto Protocol if supported by appropriate measures. Public authorities have to implement appropriate policies at national and international level if they wish to make full use of this advantage. Most important is the internalisation of external costs for all modes. The figure shows the European average values of external costs (for passengers) which are very low for rail. Internalisation of external costs would improve the market position of railways by a certain transfer from other modes and would support sustainable mobility.

Appropriate policies to exploit the railways' CO₂-reducing potential for society must also include investments in infrastructure in both developing and developed countries.

In developing countries, a robust rail system will be crucial due to the current dramatic growth of their populations and urban areas. By establishing the basic infrastructure, the railways will become available for the benefit and mobility of a broader population. The rail system has to be the cornerstone linking urban hubs as well as suburban conglomerations for passengers. This requires sustainable urban planning with rail as a backbone for the infrastructure.

In the developed countries, infrastructure needs to be upgraded to achieve the full benefit of railway systems for society. This means the construction of new lines for high speed trains but also of additional dedicated freight lines. Additional measures to achieve a shift towards a more sustainable transport system are also essential. Such measures should include removing the regulatory disadvantages which rail suffers as compared with other modes, particularly road, as well as charging transport users according to the costs they generate, and the development of policies

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giving the public incentives to fulfil the needed change towards more sustainable transport.

An example of a successful modal shift has taken place between Paris and Brussels with the introduction of the Thalys high speed train, replacing Air France flights. This saves 6,700 tonnes of CO₂ emissions per year. There are several other European corridors with a market share of about 50% for high speed trains. Within the last 6 years the high speed trains have doubled the number of passengers.

Belgian Railways implemented a set of quality improvements in steel transport which has increased the railways' share of that market from 39 % to 48 % in a period of 10 years. This means 26,500 less lorries on the roads and a reduction of 25,400 tonnes in CO₂ emissions.

Using various economic instruments (taxation, subsidies, investment, land management, etc.), Switzerland has successfully managed to build efficient railways, especially for freight transport, where rail has a market share of around 33% today. With heavier road taxation and the development of "heavy goods vehicle railway services", especially in sensitive zones such as the Alps, the objective is to halve road transit traffic through Switzerland by the year 2010.

In the US, railways are the major mode in freight transport, with a market share of over 40% today. The basis for this success was the 1980 reform (Staggers Rail Act) combined with high-quality service, low prices and a favourable geographical context (long distances).

The railways contribute strongly to the fulfilment of the Kyoto Protocol. But more than being an answer to the problem of climate change, railways are also offering efficient transport built on social equity, low environmental impact and positive economic growth, resulting in more sustainable mobility. Quality of life for every citizen is an essential challenge for any future policy.

Read more about the energy efficiency of the railways: www.railway-energy.org
or www.railway-mobility.org or www.uic.asso.fr