The Voice of European Railways

High Speed Lines: socio-economic factors

Dr Libor Lochman

07 November 2016

CER membership

73% of the European rail network length

80% of the European rail freight business

96% of rail passenger operations in Europe

Who we work with

More than

70

Members and partners

European institutions

Council of the EU, European Commission, European Parliament, European Railway Agency (ERA)

Other organisations:

ASECAP, CEEP, CIT, EBRD, EIB, EFRTC, EIM, EPF, ERFA, ETF, IRU, OTIF, OSJD, RNE, SEETO, T&E, UIC, UNIFE, UIP, UIRR, UITP, and World Bank

History of high-speed rail (HS) in Europe

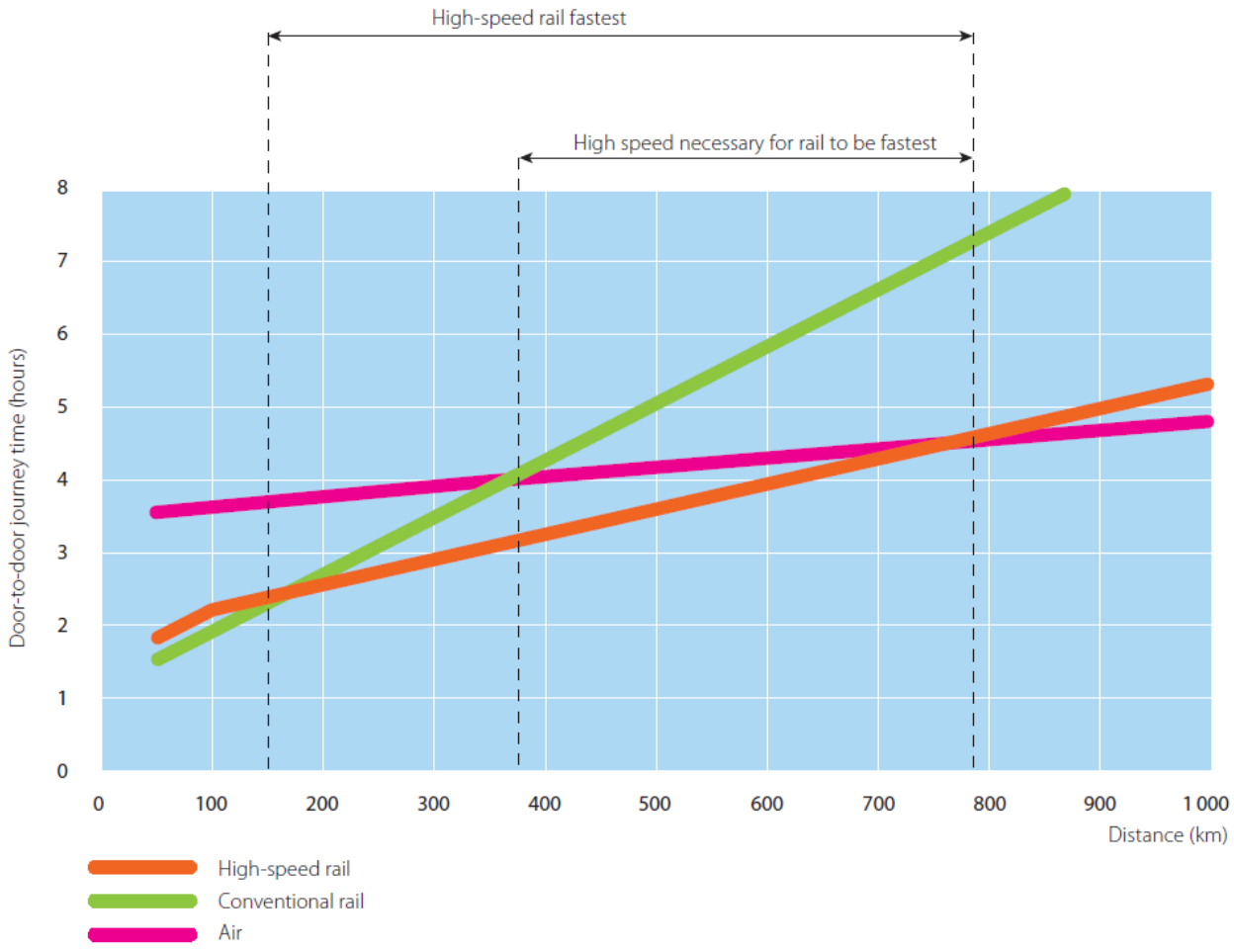
- 1973/74 oil crisis kicked off the HS idea: develop fast travel without oil
- 1977: first HS line in Europe opens between Florence and Rome
- 1981: TGV Paris-Lyon starts operating
- From 1990: Germany (ICE) and Spain (AVE)
- Europe in 2015: over 7,000 km of HS lines, but incomplete interoperability

HS in Europe in 2012

HS in Europe in 2025

HS at 300 km/h is faster than flying for journeys up to 750 km

Journey times v. distance for rail (HS and conventional lines) and air transport

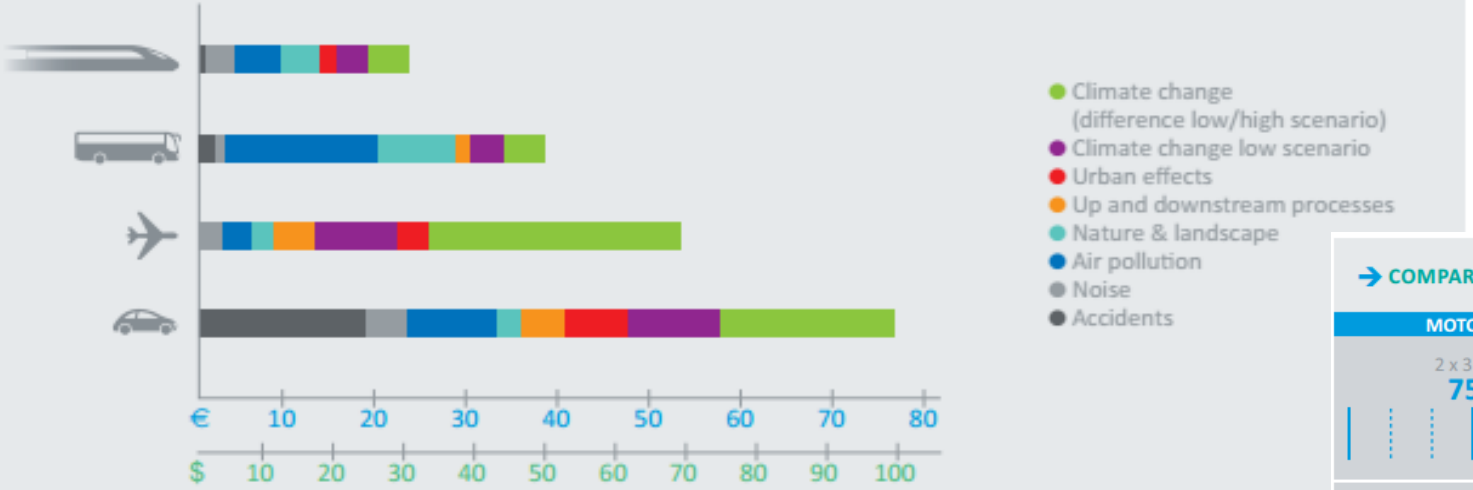


Source: High-speed rails: international comparisons, Steer Davies Gleave, Commission for Integrated Transport, London, 2004

External costs and land use: HS beats other modes

ECONOMY

Average external costs per transport modes (per 1,000 passenger-kilometres)



Source: www.uic.org/environment

COMPARISONS IN LAND USE

MOTORWAY	HIGH SPEED RAILWAY
2 x 3 lanes 75m	Double track 25m
1.7 passenger / car	666 passengers / train
4,500 cars per hour	12 trains per hour
2 X 7,650 PASSENGERS / H	2 X 8,000 PASSENGERS / H

! Positive socio-economic factors for HS in general !

- Reduces travel times - reducing costs and creating new socio-economic opportunities
- Fosters more competitive land and labour markets and agglomeration economies
- Frees up capacity on congested conventional lines (e.g. for freight) and saturated airports, helping the modal shift to "green" transport
- HS can act as feeder to airports (intermodal cooperation)
- High safety, low energy consumption, low GHG emissions, efficient land use of HS

? Negative socio-economic factors for HS in general ?

- High fixed costs of HS lines (UIC estimates):
  - Build: 12-30 M€/km
  - Maintain: around 70 k€/km/year
- Nuisance effects along HS lines (e.g. noise)
- Increased competition from low-cost airlines
- Technological progress in other modes (e.g. driverless electric cars)
- Problems often related to big infrastructure projects, such as huge cost overruns

EU Commission White Paper on Transport sets long-term targets

Reduce GHG emissions of transport:

- 2008-2030: -20%
- 1990-2050: -60%

Hence a modal shift target for passenger transport:

Most medium-distance travel should go by rail by 2050

Complete HS network within EU transport system:

- Maintain dense railway network in all Member States
- **Triple HS network by 2030**
- **Complete HS network by 2050**
- Connect all key airports to rail network, **preferably HS, by 2050**

Socio-economics *ex post* of two HS projects in Europe

HS Paris-Lyon

- Serves up to 40% of French population
- 91% of air-rail market

HS Rome-Milan

- Very close nodes (incl. Florence + Bologna): people now live in "joint city"
- High demand has attracted private competitor (NTV) since 2012

Big shift from air to rail occurred for both

Socio-economics *ex ante* of HS2 in the UK

Idea:

build HS line from London to Birmingham (phase 1), then Leeds and Manchester (phase 2)

Expectation:

HS as growth engine, to bridge North-South divide and rebalance UK economy

Socio-economic factors for HS specifically in Europe

+ Territorial cohesion: HS helps create a feeling of proximity within the Union
+ HS improves Europe's competitiveness by
  - Boosting economic specialisation in regions
  - Improving complementarity between various economic centres in Europe
+ HS reduces dependency on oil imports

Priorities for HS in Europe (1)

Right conditions for HS cooperation across borders

Allocation of HS capacity and charging:

- Ensure cross-border consistency
- Create visibility and stability

Ensure connectivity of HS lines with

- Conventional rail services
- Airports

Build **HS network *in addition* to conventional lines, not at their expense**

Priorities for HS in Europe (2)

Ensure solid HS financing, mainly from national budgets, but also from EU funds

Developing HS in accordance with regional needs:

- Western Europe:
  maintain and renew *existing* HS lines; upgrade and extend where necessary
- Central and Eastern Europe:
  develop *new* HS lines

➔ Complete HS network by 2050 ➔

Dr Libor Lochman
Executive Director
Tel: +32 (0)2 213 08 71
E-mail: Libor.Lochman@cer.be

For regular updates on CER activities,
visit our website: **www.cer.be**
or follow **@CER_railways**