

# High Speed Lines: socio-economic factors

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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



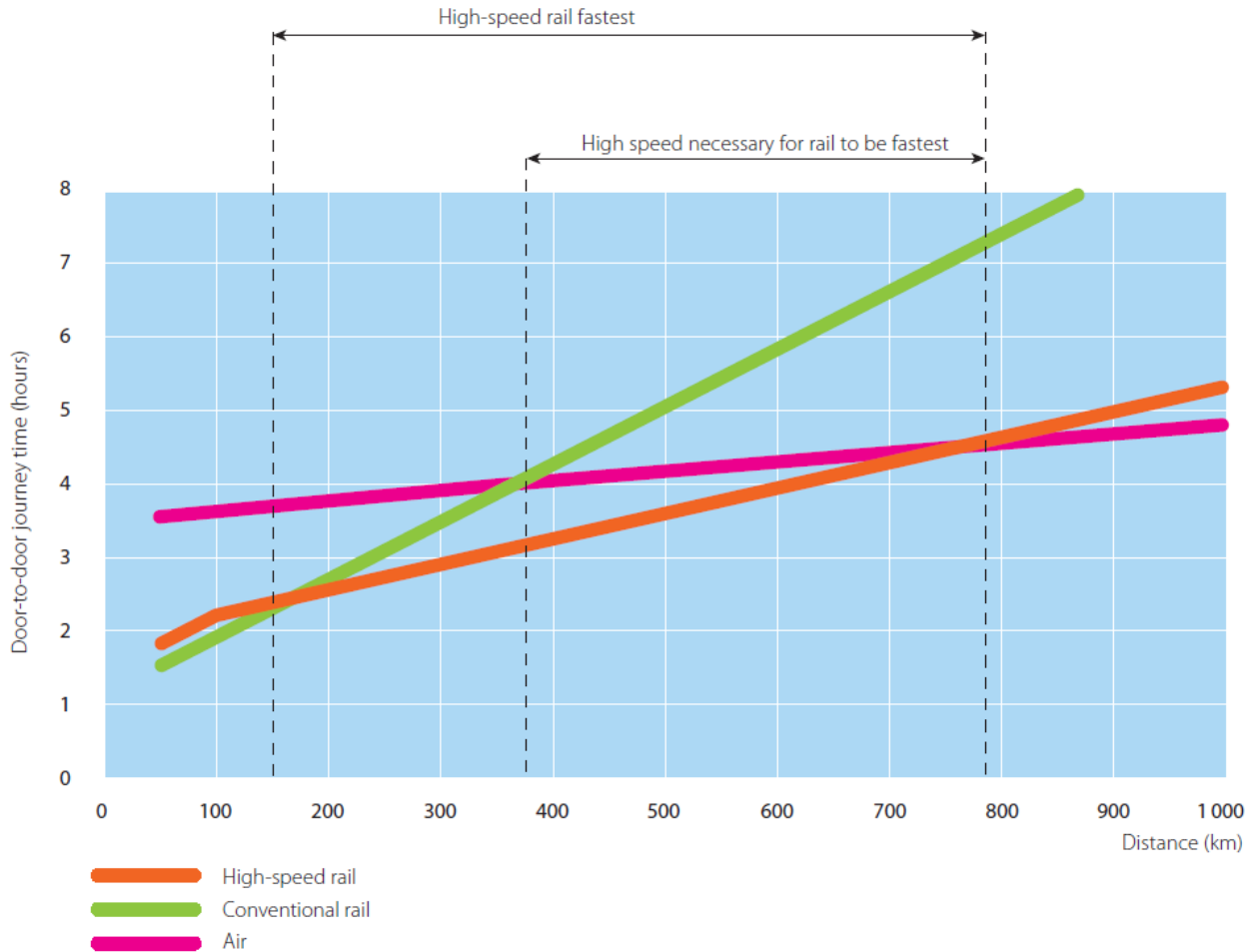


# HS in Europe in 2025



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

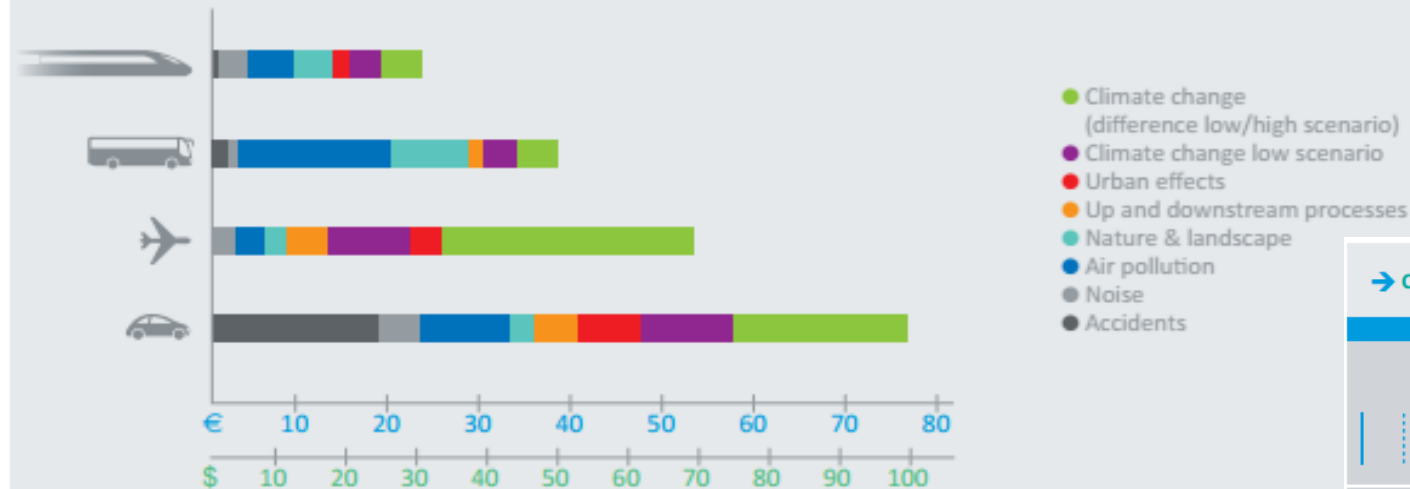
Journey times v. distance for rail (HS and conventional lines) and air transport



# 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](http://www.uic.org/environment)

## → COMPARISONS IN LAND USE

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





# ! 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 ←**

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