INTERNATIONAL UNION OF RAILWAYS

unity, solidarity, universality

The Rail Sector and Sustainable Development: Building a Green Economy

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UIC: International Union of Railways

INTERNATIONAL UNION OF RAILWAYS

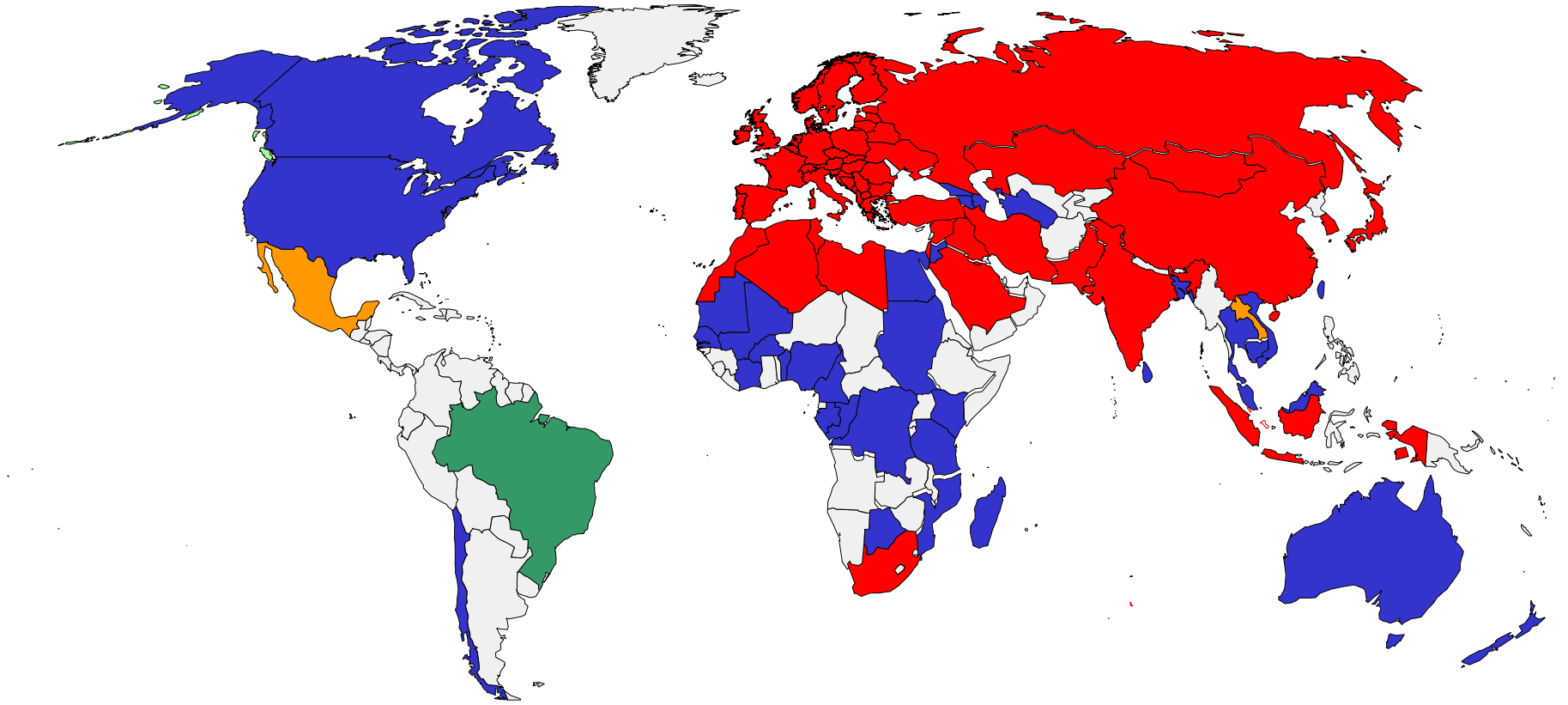
unity, solidarity, universality

The UIC is a professional organisation serving the needs of rail transport through international cooperation at the global level

- Since 1922
- 200 members on all continents
- Members are:
  - Railways
  - Rail operators
  - Infrastructure managers
  - Railway service providers
  - Public transport companies

UIC: The International Union of Railways

200 members worldwide



Members Active Associate Affiliate

UIC Mission

Promoting the development of rail transport

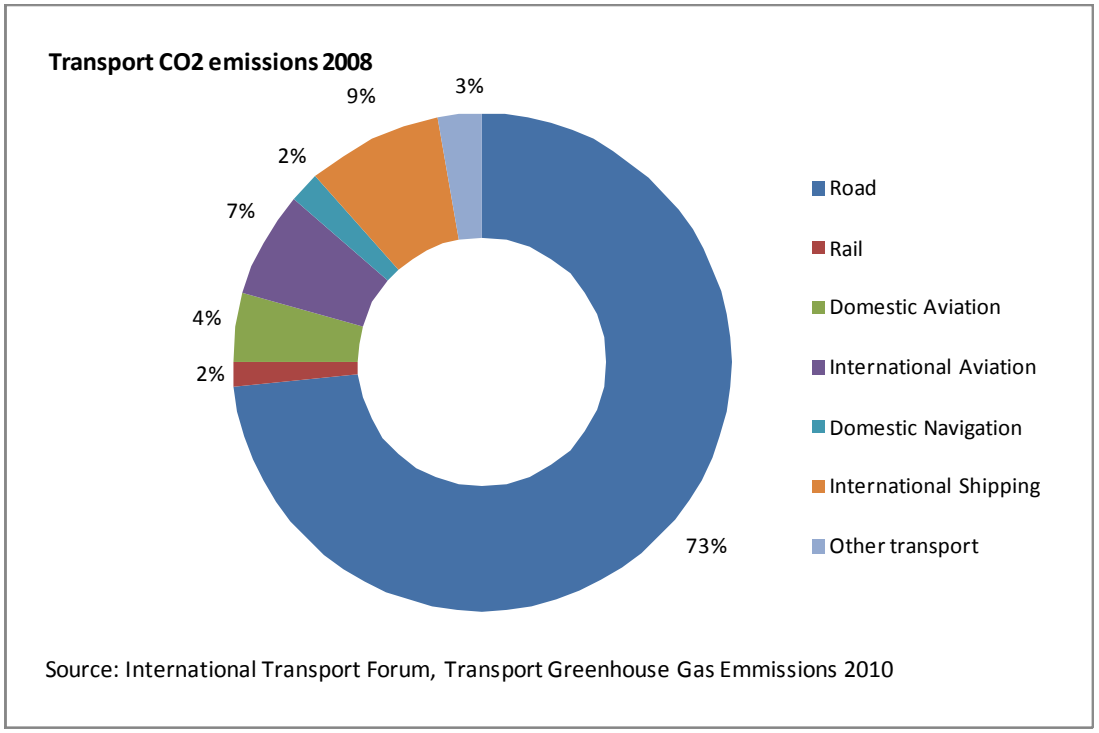
at world level,

in order to meet challenges

of mobility and sustainable development

The mobility challenge

- The explosion in global mobility has created environmental challenges
- Transport accounts for over 50% of world consumption of fossil fuels – forecast to increase to 60% in 2035
- Within transport rail accounts for 2% of CO2 emissions

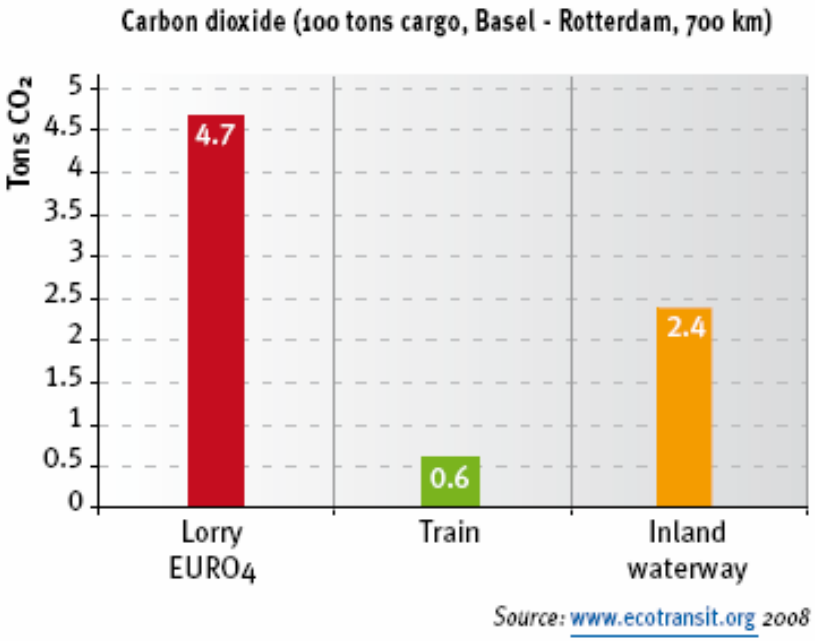


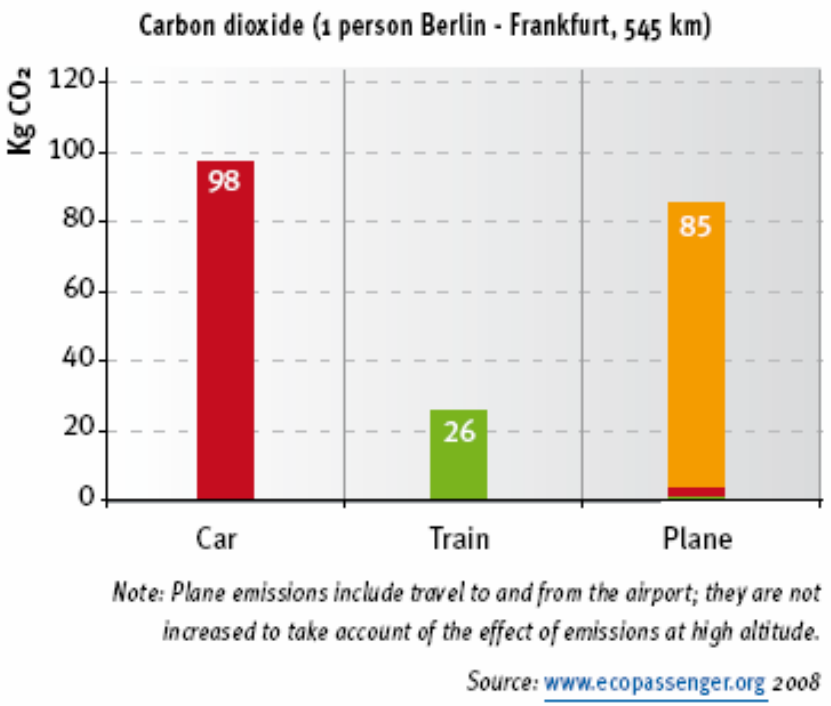
Source: International Transport Forum, Transport Greenhouse Gas Emmissions 2010

Context: The Green Economy

- UNEP defines a green economy as one that results in “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcity”
- On transportation, UNEP argues that “the current modalities based on private motorized vehicles are a major contributor to climate change, pollution and health hazards”
- UNEP supports the transport policy principle of “shifting to more environmentally friendly modes such as public and non-motorized transport for passengers and to rail and water transport for freight”
- Therefore, provided railways can maintain their environmental benefits, then they can be a building block for a green economy

Rail is a low carbon transport mode

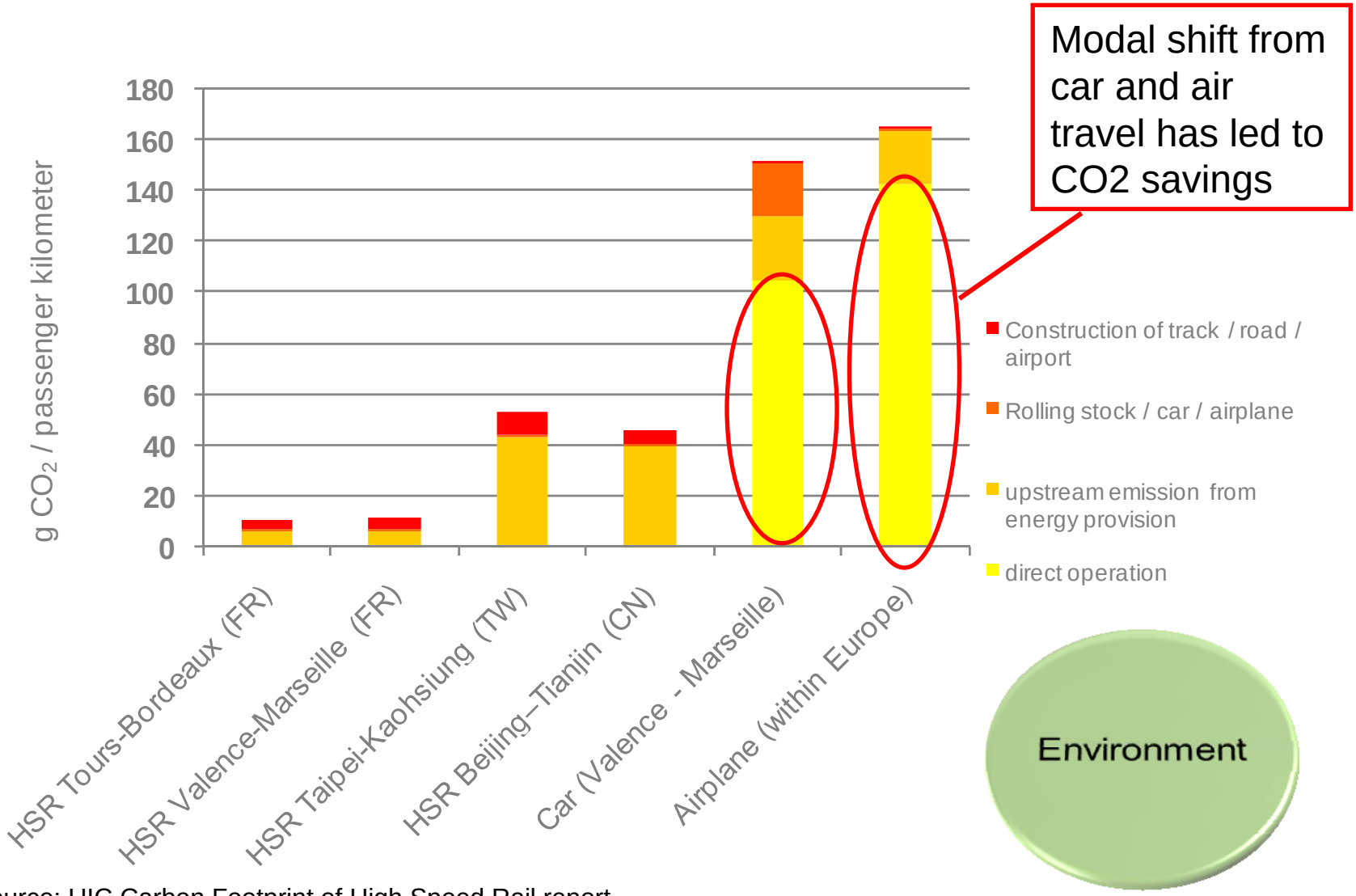




www.ecotransit.org
(global carbon footprinting freight)

www.ecopassenger.org
(carbon footprinting passenger Europe)

High Speed Rail is a Low Carbon Mode

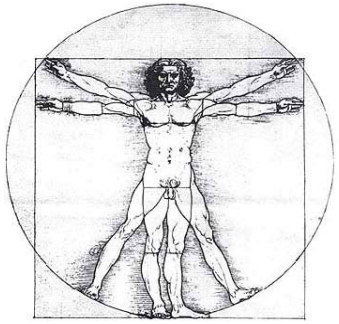


Source: UIC Carbon Footprint of High Speed Rail report

Comparison of Carbon Emissions

Magnitude of CO2 emissions per person (in a 600 km trip):

- 80 kg if travelling by plane



(the weight of the passenger)

- 13 kg if travelling by high speed train

(the weight of his/her suitcase)

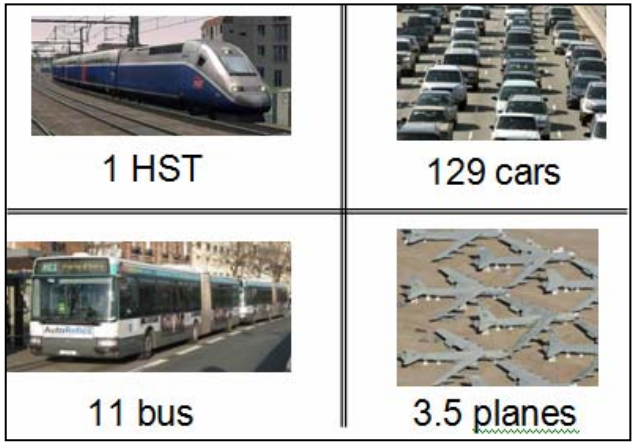
Modal Market Share before and after HSR

Sector	Mode	% before HSR	% after HSR
Paris -Lyon	Road	29	21
	Rail	40	3
	HSR	0	70
	Air	31	6
Madrid -Seville	Road	44	30
	Rail	16	1
	HSR	0	61
	Air	40	8
Hamburg-Frankfurt	Road	57	45
	Rail	23	3
	HSR	0	48
	Air	10	4

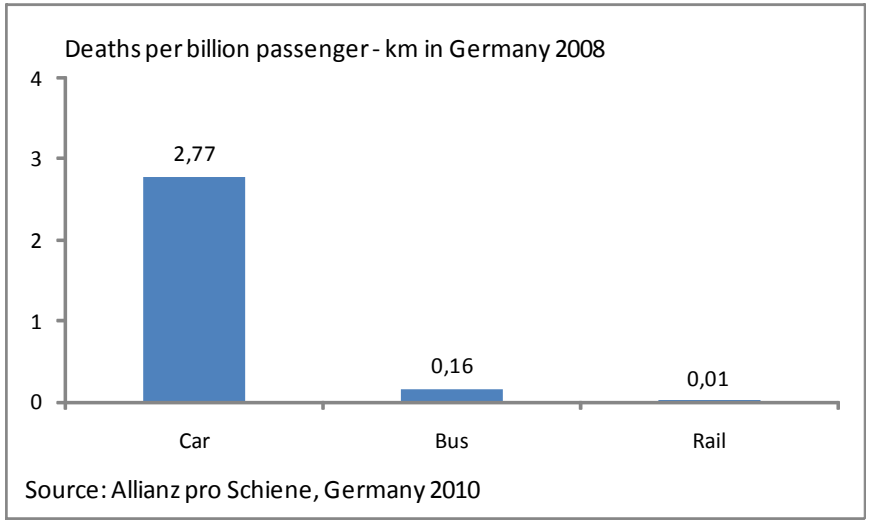
Source: Adapted from Gallois and Lopez Pita et al (2005-06)

Rail has many other advantages

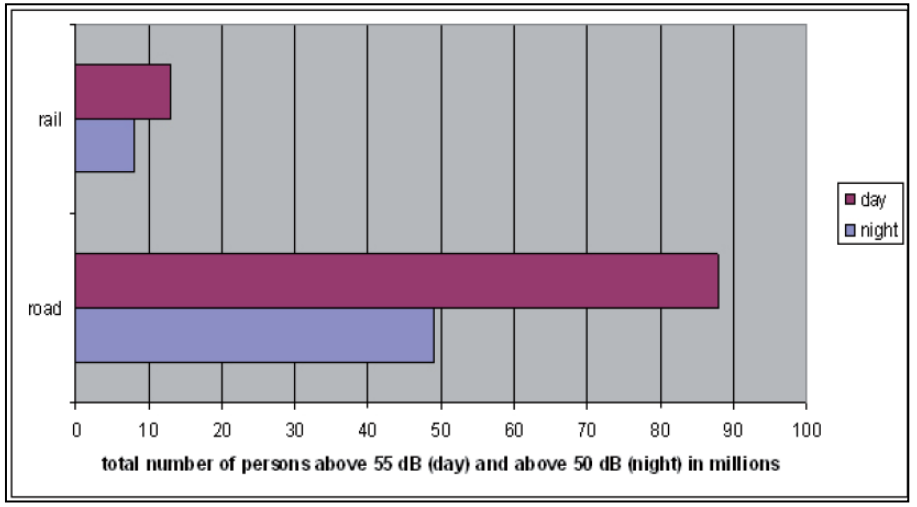
Capacity



Safety



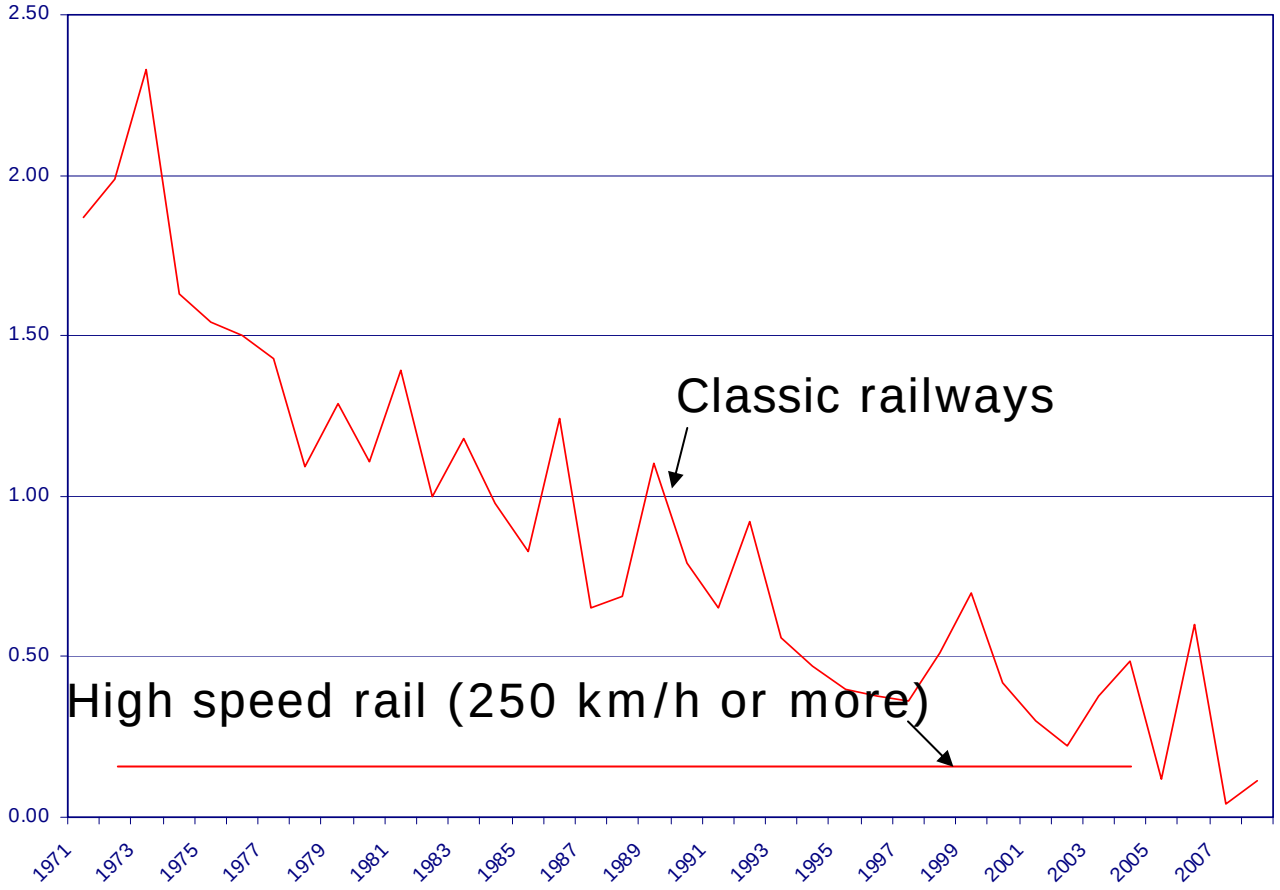
Noise



Safety on HSR

-No fatal accidents in 46 years high speed history in Japan.

-Safety evolution in European railways



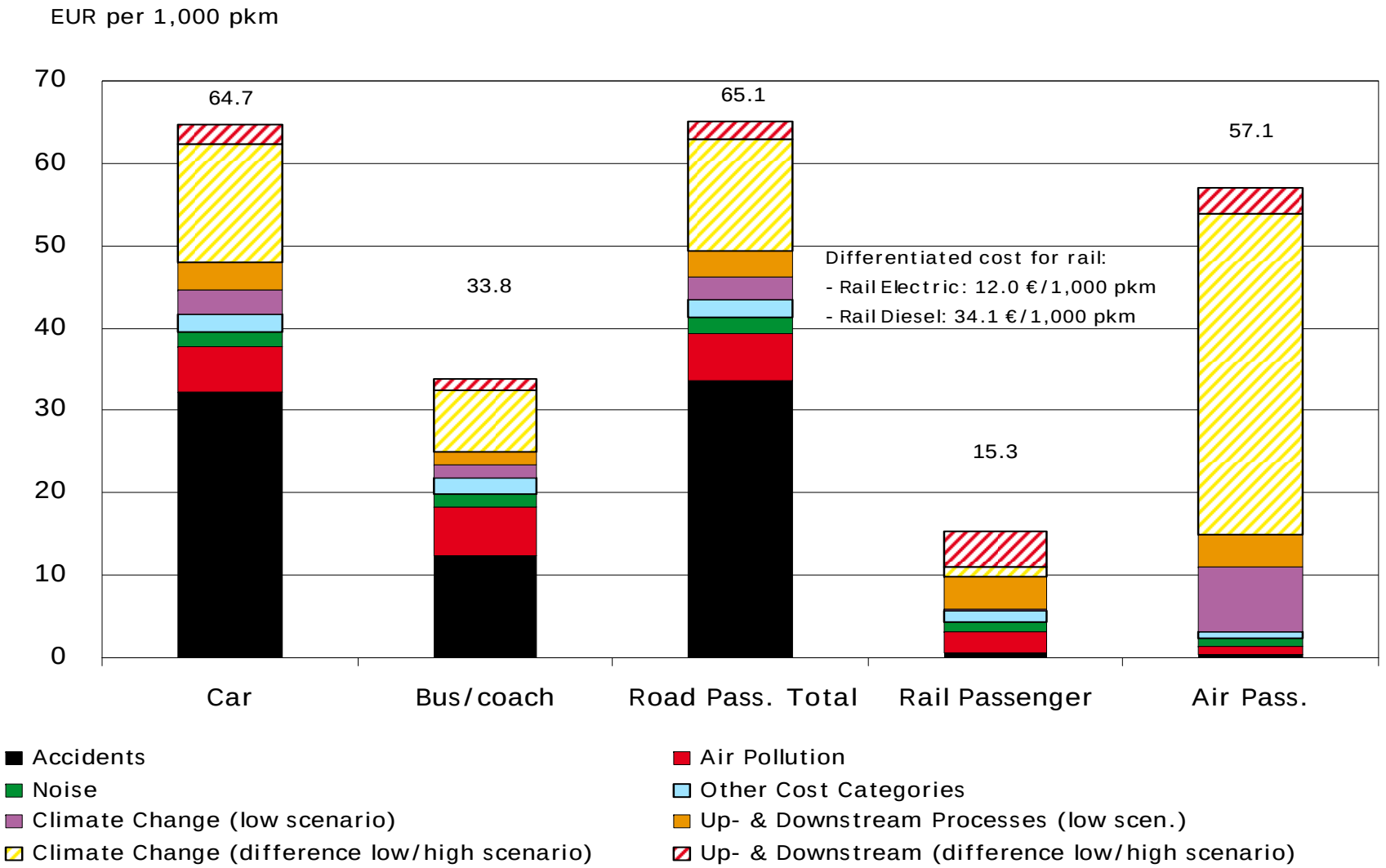
Passengers injured in accidents per Bn passenger km

Land occupancy

- Average HSR 3,2 ha/km
- Average motorways 9,3 ha/km

In China HSR land use is 10% of highways

UIC Analysis: External Costs of transport modes in Europe



UIC Analysis: External Costs in Europe

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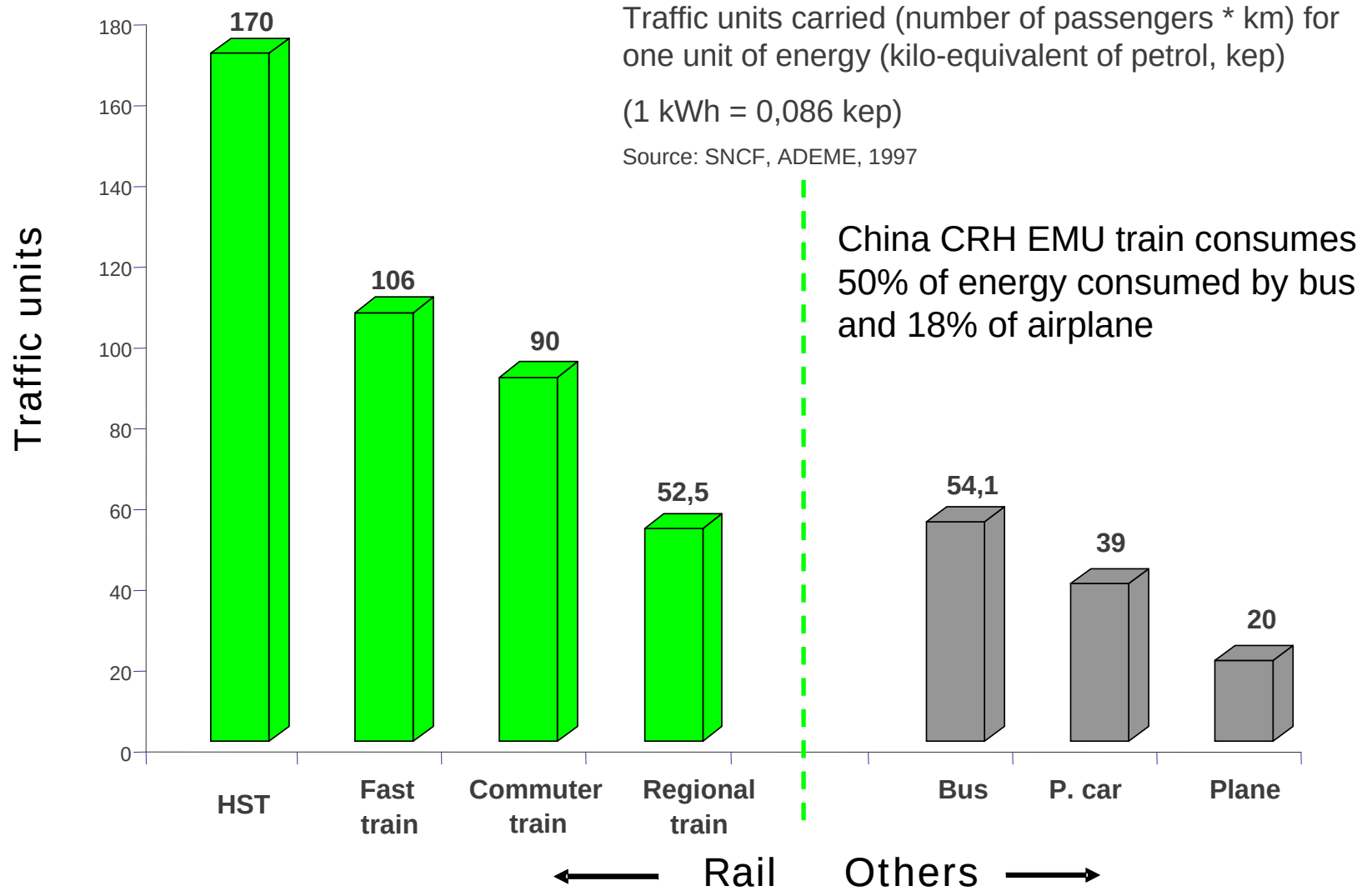
Energy efficiency comparison



Competitors are catching up…

Flight

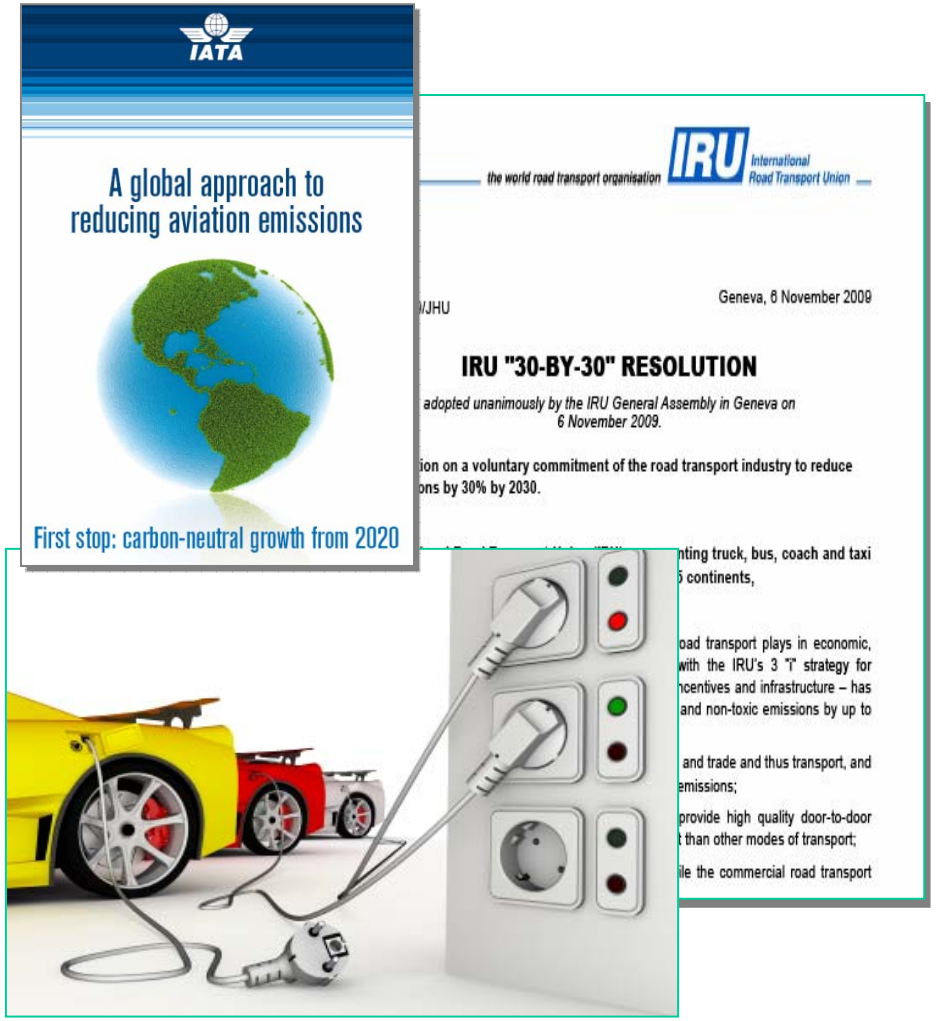
- Goal: Carbon-neutral growth by 2020
- Improving fuel efficiency by ~1.5% p.a. (2009-20)
- Reducing CO_2-emissions by 50% by 2050, relative to 2005

Trucks

- Reducing CO_2-emissions by 30% by 2030, relative to 2007

Electric cars

- Example Germany – Target 2050: Almost no use of fossil fuels for inner city transport



Railways need to react to these developments to maintain our environmental advantage

Railways are continuing to improve

European Targets 2030

50% reduction of specific CO2 emissions from train operation*

40% reduction in total exhaust emissions of Nox and PM10**

Vision 2050: European railways will strive towards

Carbon-free train operation and

Zero emissions of Nox and PM10 from non electric trains

Noise and vibration levels are socially and economically acceptable

**Base year 1990: measured per passenger-km and gross tonne-km*
***Base year 2005*

UIC: Tools, studies, documents

> Energy & CO_2 database

> EcoPassenger & EcoTransIT World

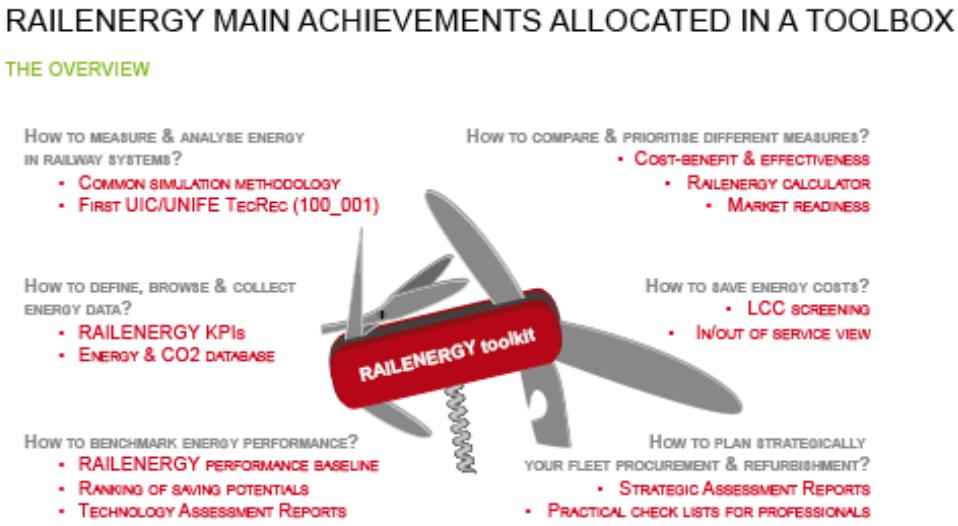
> Energy driving

> Energy Billing

> RailEnergy

> International conferences

> Studies and Reports



> See www.uic-sustainability.org for information

UIC Sustainability Declaration

- **UIC Declaration on Sustainable Mobility and Transport**
- **Objective**
  - Public commitment to Sustainable Development
  - Show ongoing progress via regular reports
- **18 commitments on sustainable development**
  - Includes commitments to reduce environmental impact, and to better serve our customers and society.

Signed by 50 UIC members, including Indian and Russian railways, JR-East and Chinese Ministry of Railways

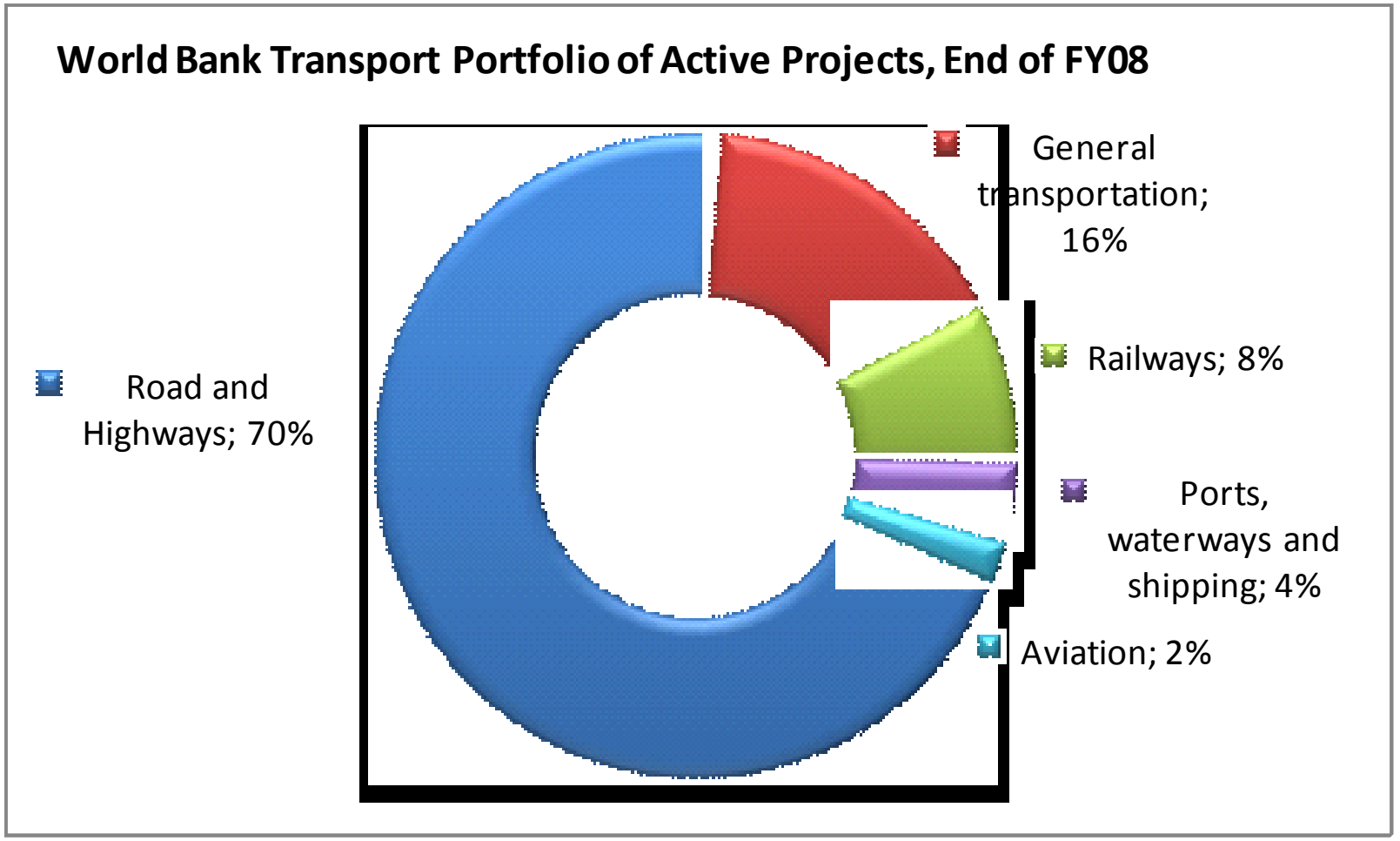
Summary: The sustainability case for rail

- **Rail is…**
  - A low carbon mode
  - A comparatively safe transport mode
  - A resource efficient mass transport system
- **Rail has an important social and economic role:**
  - We are a major employer
  - We are key to the movement of freight
  - We are a solution to traffic congestion
- **The challenge is to design fully inter-modally connected sustainable mass transport systems!**

Outlook – sustainable transport

- Rail cannot deliver a green economy on its own, but it can be the backbone of a more sustainable transport system
- A sustainable transport system combines the strengths of all transport modes in one integrated system
- Decision makers and international funders should look at broader sustainability issues when making investment decisions

Currently investment decisions favour road



■ ■ ■ Thank you for your kind attention!

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