



# The Sustainability of High Speed Rail Operation

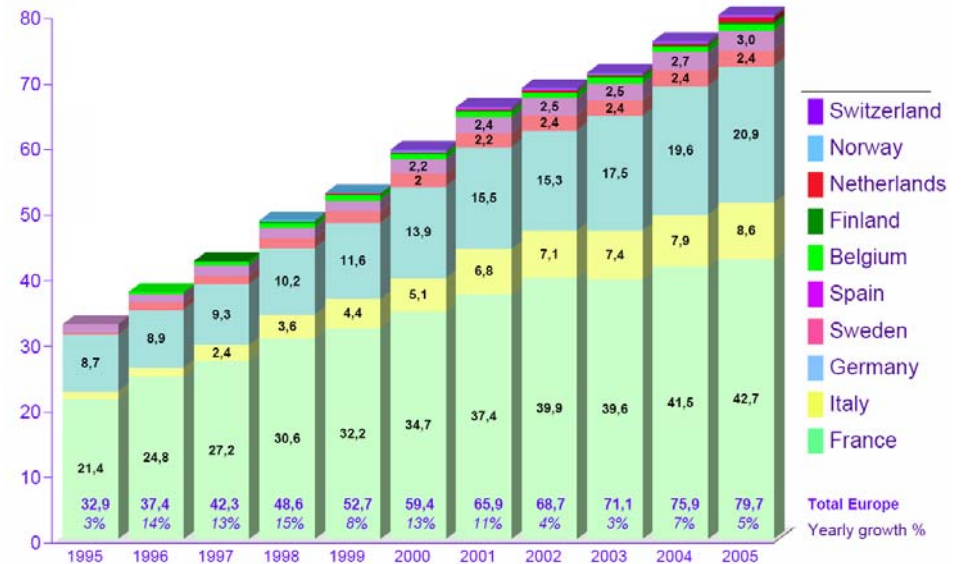
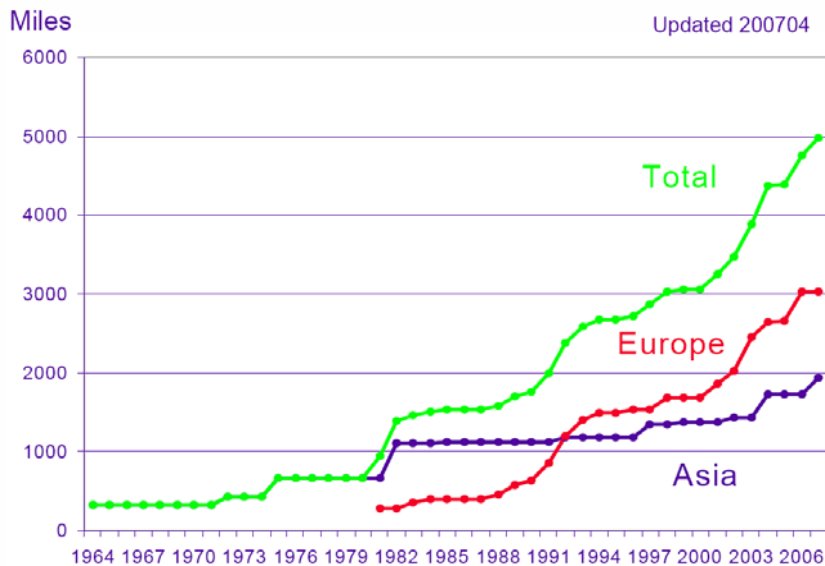
Anton van Himbergen  
Lloyd's Register Rail Europe

Stand 2-B0.54



# The Sustainability of High Speed Operation

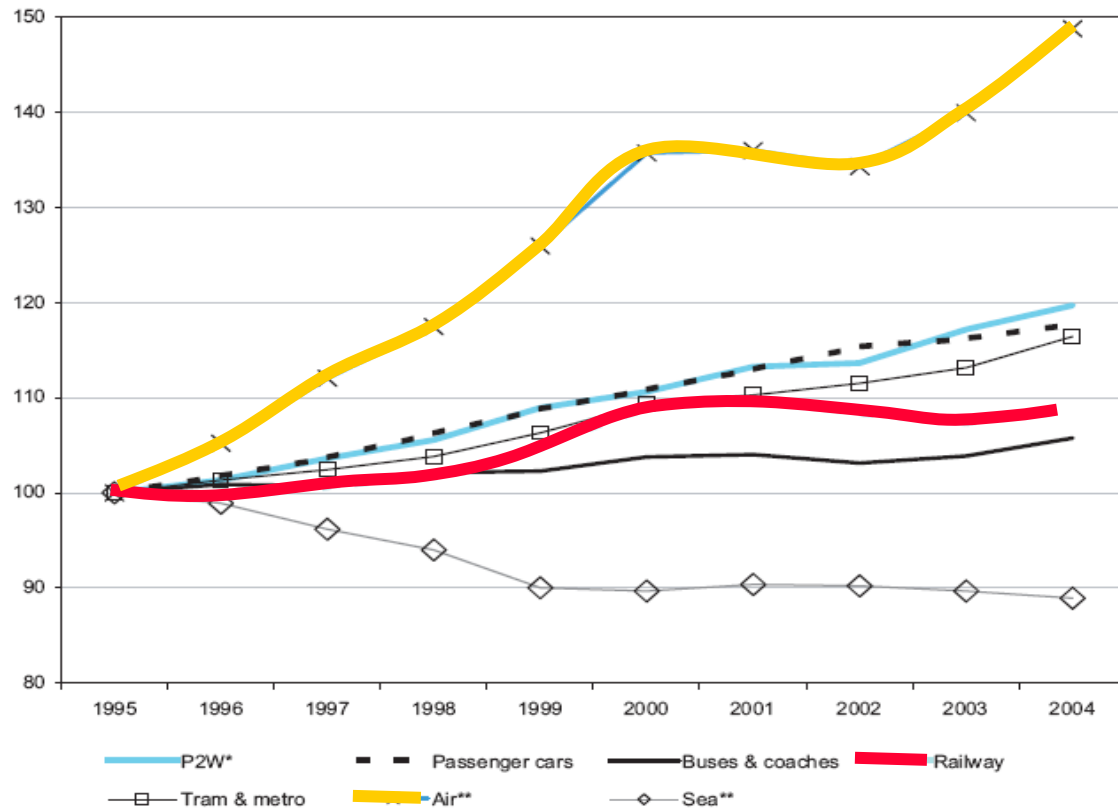
The volume of global high speed rail operations is growing...



Ref. UIC 2007

# The Sustainability of High Speed Operation

...however, air traffic is still dominant



	Total	Railway	Air
1995	5149	324	324
2000	5734	353	440
2001	5823	355	441
2002	5903	351	435
2003	5956	347	454
2004	6061	352	482
2020	8000	850*	684

passenger transport performance, EU25 in billion pass.km  
 \*: incl metro and light-rail

ref.: Eurostat & ERRAC

# The Sustainability of High Speed Operation

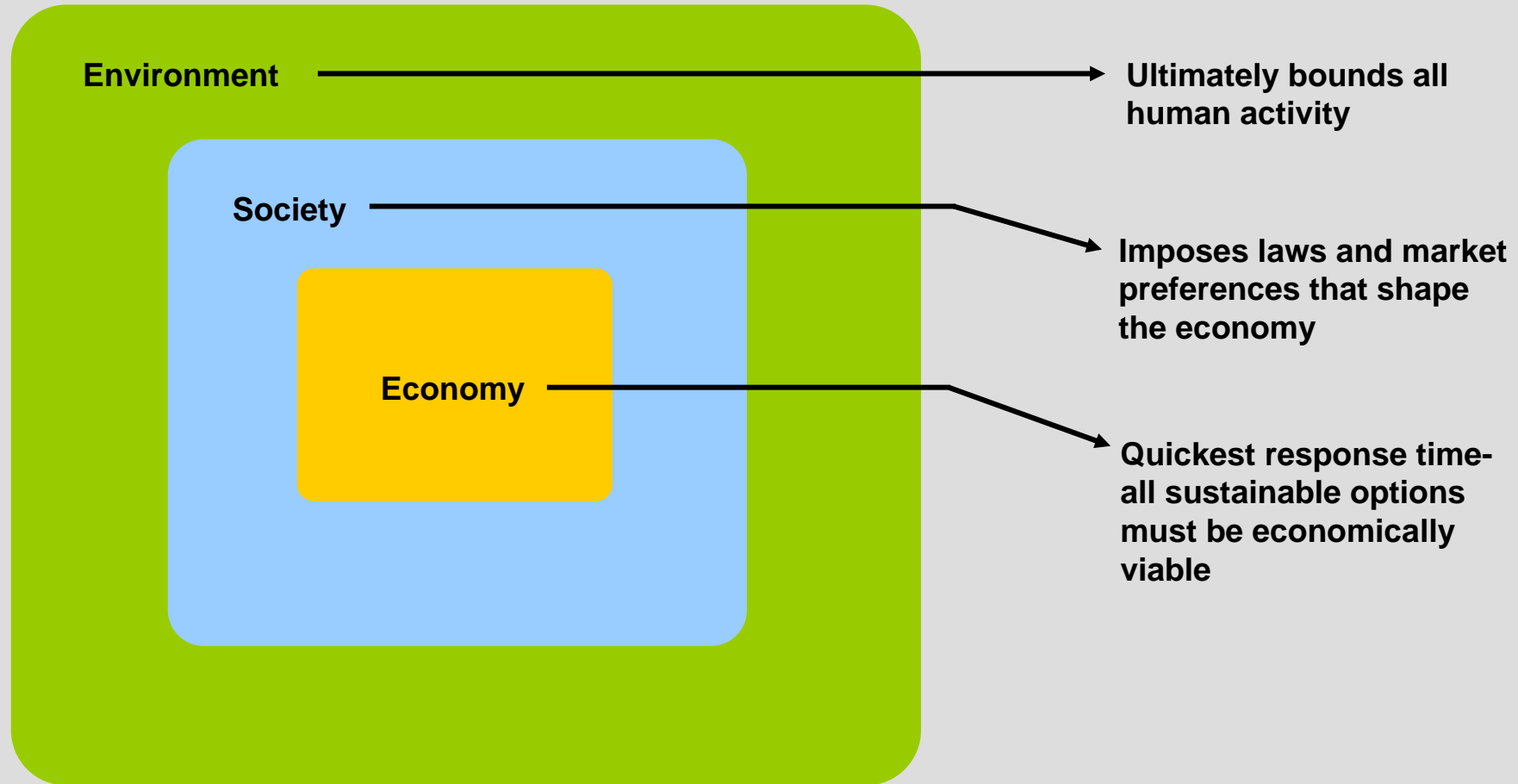
High speed rail is crucial to assuring a sustainable future for transport

## DEFINITION

- Sustainable development "meets the needs of the present without compromising the ability of future generations to meet their own needs"

*- Brundtland Commission*

# The Sustainability of High Speed Operation



# The Sustainability of High Speed Operation

High speed rail must balance the three pillars of sustainability:

## Environment

- Waste
- Noise/vibration
- Material use
- EMR
- Visual impact
- Gaseous emissions
- Ecology
- Spillage of liquids
- Climate change

## Economic

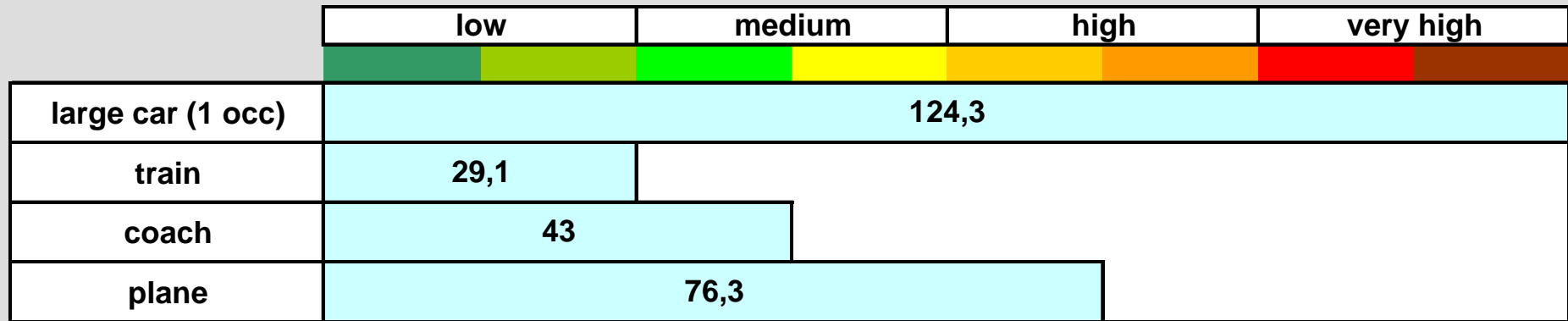
- Fuel use
- Transport of goods and people
- Fares and access charges
- Performance and delays
- Workforce employment
- Governmental subsidy
- development

## Social

- Passenger safety
- Workforce safety
- Transport accessibility
- Social inclusion
- Employment
- Public safety
- Recreation and tourism
- Regional prosperity
- Passenger perception/  
comfort

# The Sustainability of High Speed Operation

High speed rail can be a low emissions mode of transport...



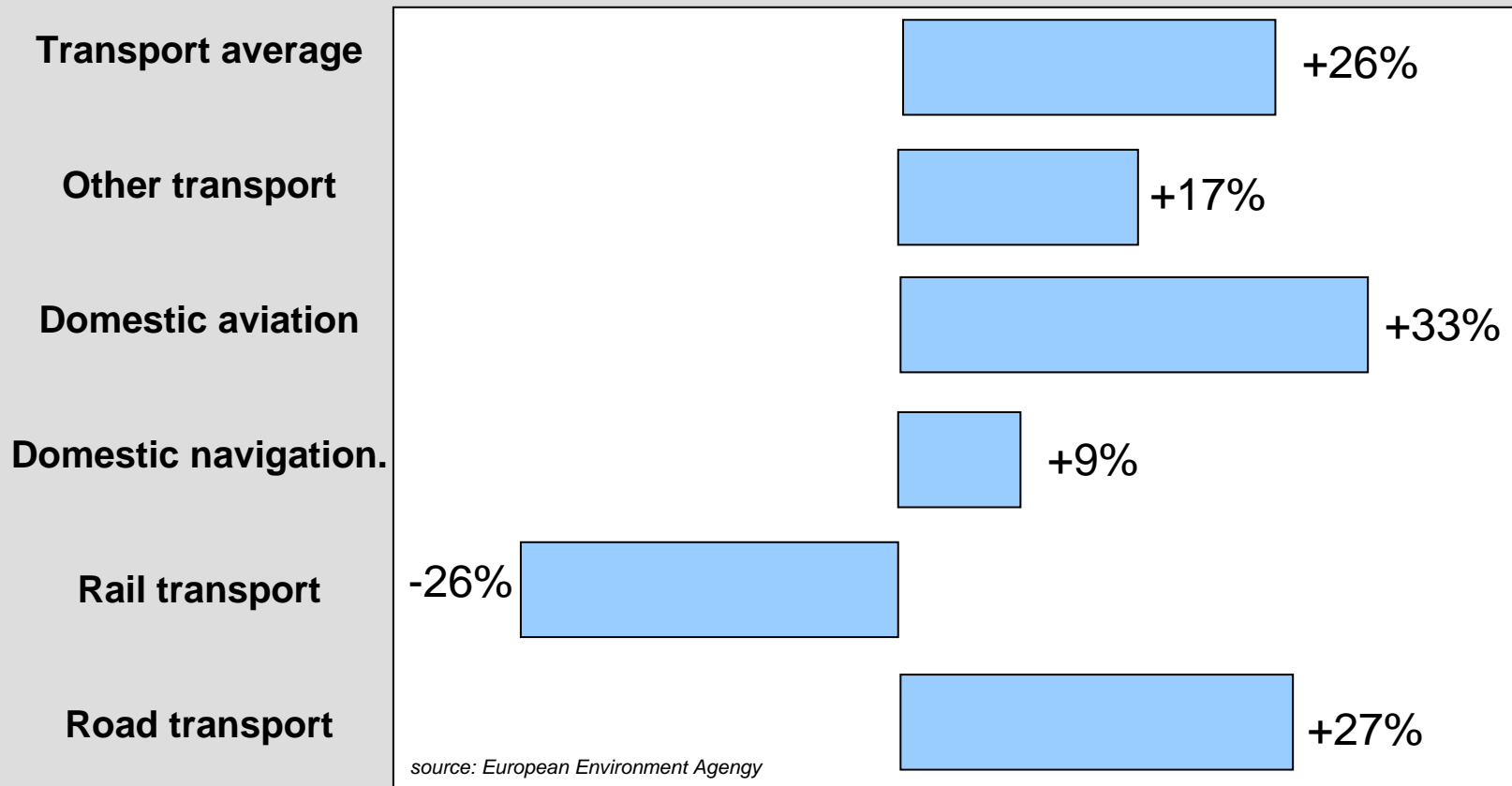
kg CO2 per traveller

CO2 emissions for a 300 mile trip

[www.transportdirect.info](http://www.transportdirect.info)

# The Sustainability of High Speed Operation

...and absolute green house gas emissions from rail transport are declining...



# The Sustainability of High Speed Operation

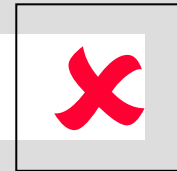
...however, other modes of transport are working harder to improve



Energy consumption  
>20% reduced



Energy consumption  
41% increased



*sources: Boeing, RSSB Study T618*

# The Sustainability of High Speed Operation

Sustainable high speed rail must also appeal to passengers:

- Reliability, predictability
- Total travel time
- Cost
- Convenience (information, services)
- 'Personal time', efficiency
- Comfort
- Cleanness
- Environmental image
  
- Seat availability
- Safety

Importance of environmental considerations in choosing transport mode

	Car driver	Train passenger
main role	2%	10%
important	43%	44%
small	35%	30%
no	20%	16%

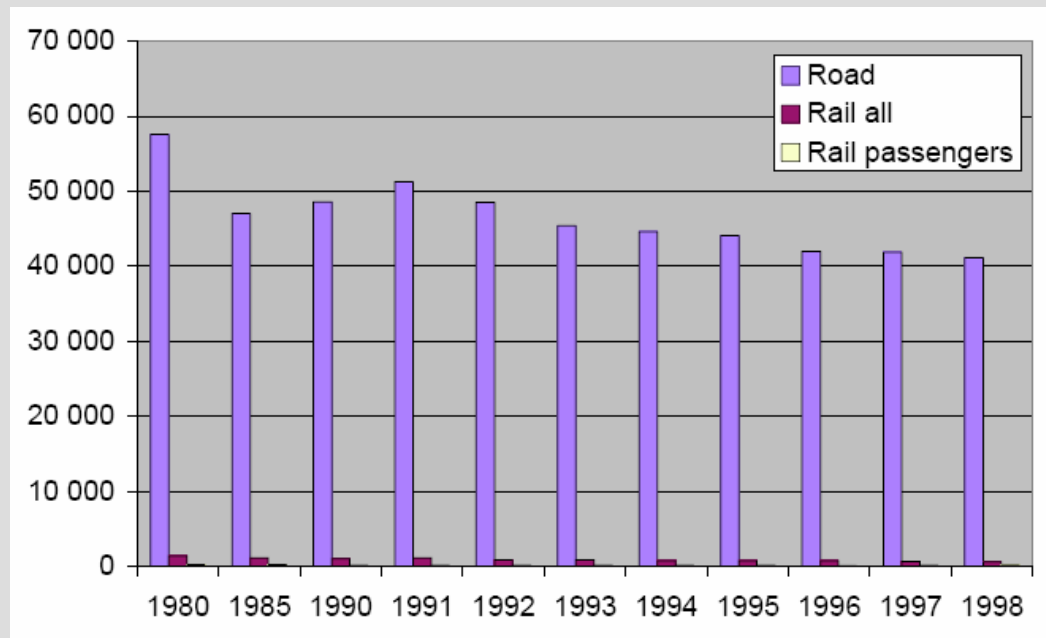
# The Sustainability of High Speed Operation

Passengers are influenced by environmental and practical issues:

	low	medium	high	very high
London - Paris				
train				
plane	3.5 h, 244 kg			
London - Lyon				
train				
plane	4 h, 250 kg			

# The Sustainability of High Speed Operation

High speed rail is also far safer than driving:



Road and rail transport fatalities per year (EU)

Source: European Environment Agency

# The Sustainability of High Speed Operation

Who is going to pay for all of this?

- ❑ Rail infrastructure is expensive
- ❑ External costs are not always factored, skewing the economics of different modes of transport
- ❑ Incentive structures need to be examined



**€7.100.000.000**

*Cost to build High Speed Line South in the Netherlands*



**€7.800.000.000**

*Cost to build High Speed 1 route in UK  
(London-Channel Tunnel)*

# The Sustainability of High Speed Operation

## The global Sustainability

Because LIFE MATTERS,  
we support the enhancement  
of life in all our services and our  
philosophy.

HS-lines could help:

- Spread of Economic Activities
- Improve and balance the environmental conditions



# The Sustainability of High Speed Operation

Ready for takeoff.....

## Transportation Policy

To get the best environmental results from High Speed Mobility there is a need for:

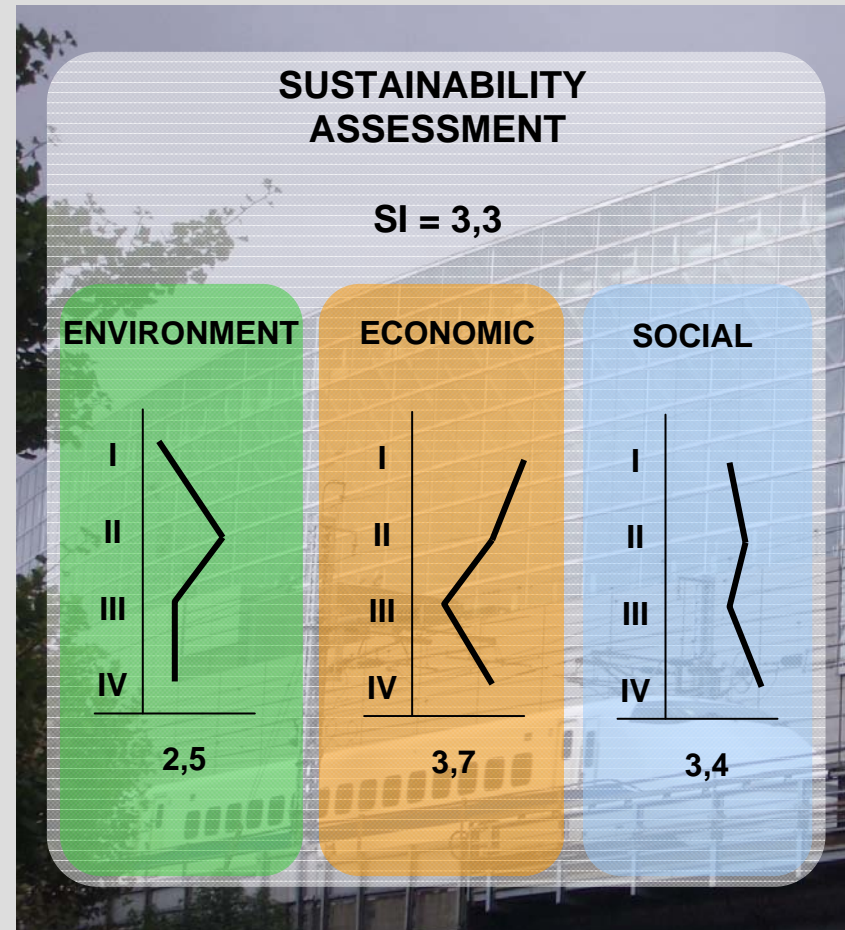
- ❑ A fair competition between all transport modes and therefore
- ❑ An equal treatment of the different modes, on taxes, noise restrictions, production green-house gasses and so.



# The Sustainability of High Speed Operation

We all have a responsibility toward shaping a sustainable future for high speed rail:

- ❑ Consider environmental, social and economic dimensions when making decisions
- ❑ Identify barriers to progress and work to overcome these
- ❑ Remember that road and aviation transport are on the defensive and working hard to surpass high speed rail



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The logo for Lloyd's Register, featuring the words "Lloyd's Register" in a bold, white, serif font. The text is centered between two horizontal white lines.

**LIFE MATTERS**

The Lloyd's Register Group works to enhance safety and approve assets and systems at sea, on land and in the air – because life matters.