



INTERNATIONAL UNION
OF RAILWAYS

unity, solidarity, universality

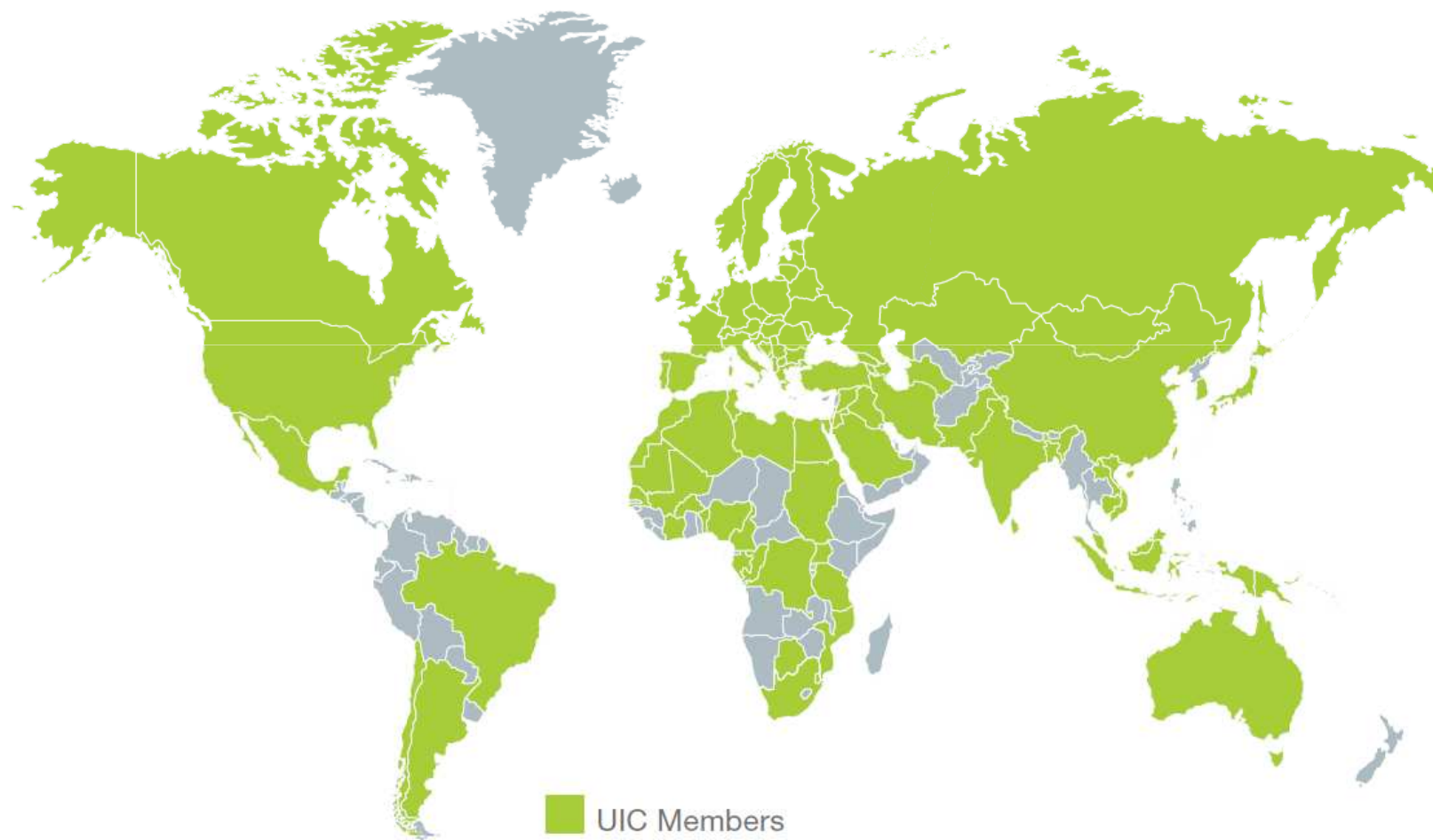
Rail is the backbone of sustainable transport

Environmentally sound, safe and affordable

Nick Craven, 21 June 2013

International Union of Railways (UIC)

200 members worldwide



UIC Mission

**Promoting the development of rail transport
at world level,
in order to meet challenges
of mobility and sustainable development**

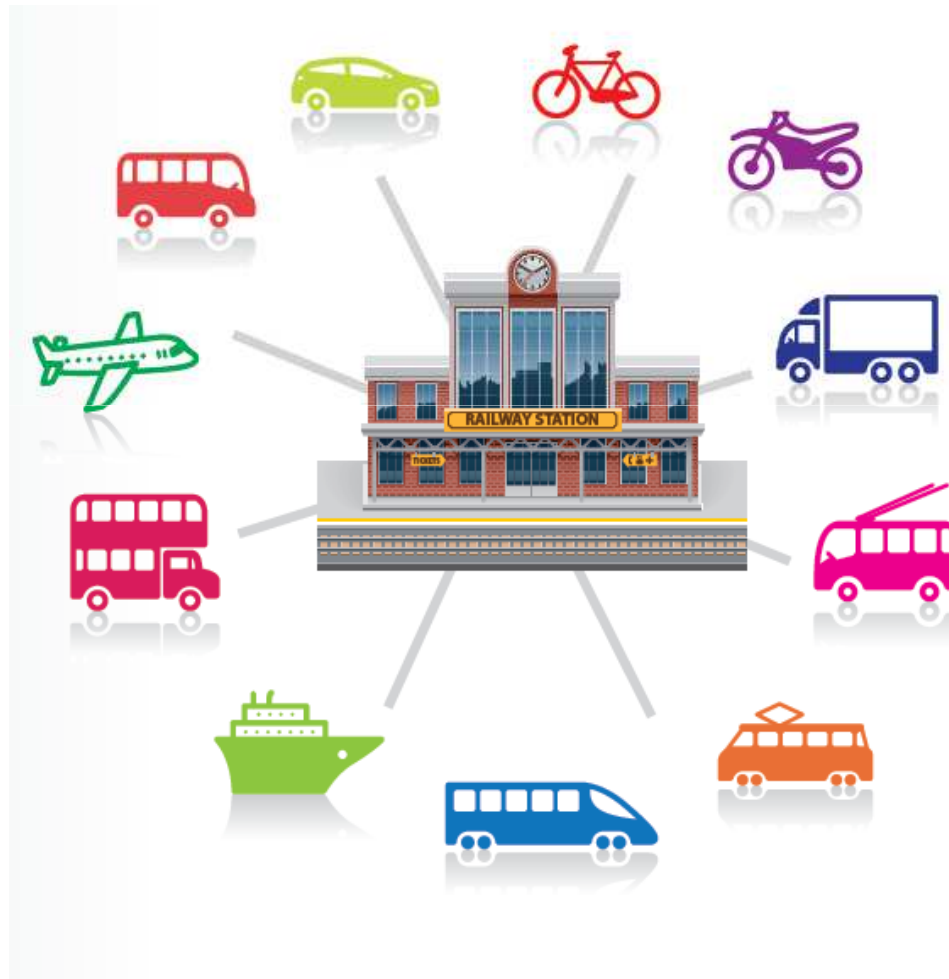
The UIC Declaration for Sustainable Mobility and Transport

- **Objectives**
 - Sets out UIC vision for sustainable development
 - Asks UIC members to make a public declaration and provide regular progress reports
- **The declaration has 18 commitments**
 - Reduce environmental impacts and improve service to customers and society



Signed by 50 UIC members, including **Ministry of Railways, China; Russian Railways; Indian Railways; JR-East, KTZ, Kazakhstan; Taiwan HSR Corp; all major European railways.**

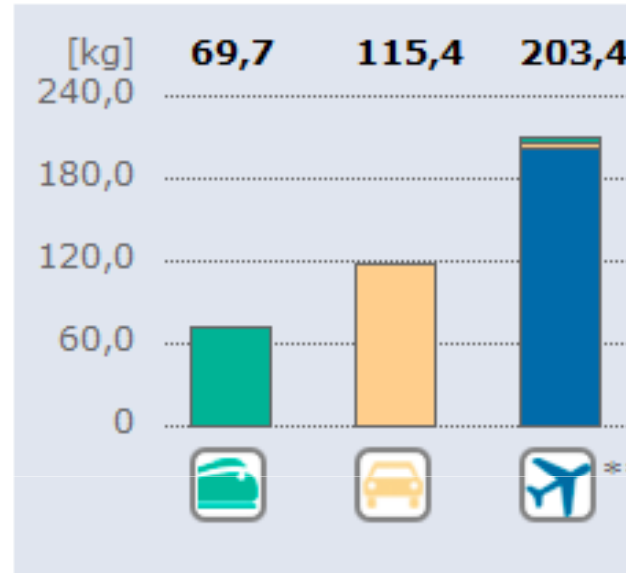
Rail is the backbone of attractive and sustainable door-to-door mobility



My journey - Paris to Berlin



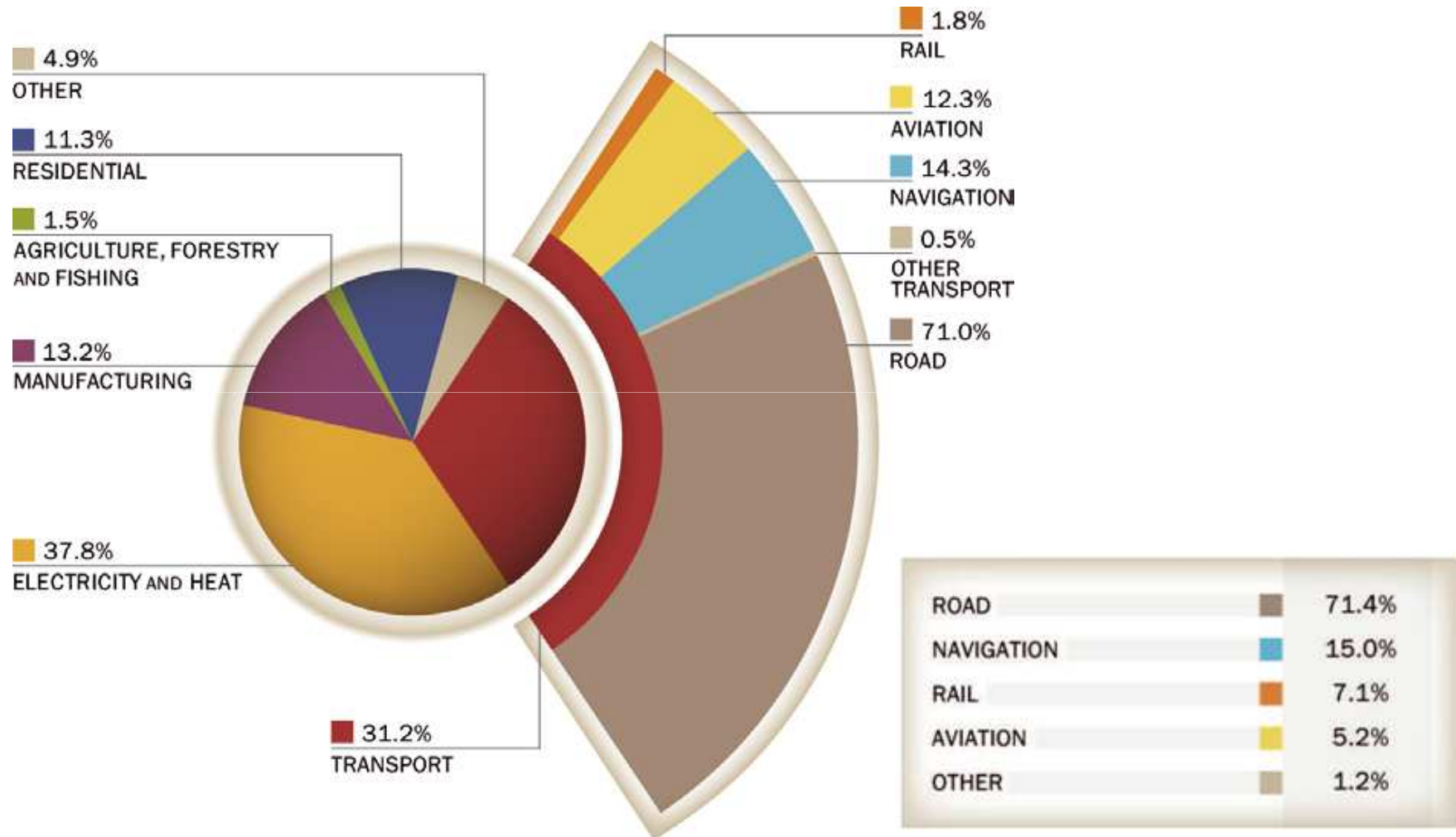
www.ecopassenger.com



i Carbon dioxide
greenhouse-gas, global warming

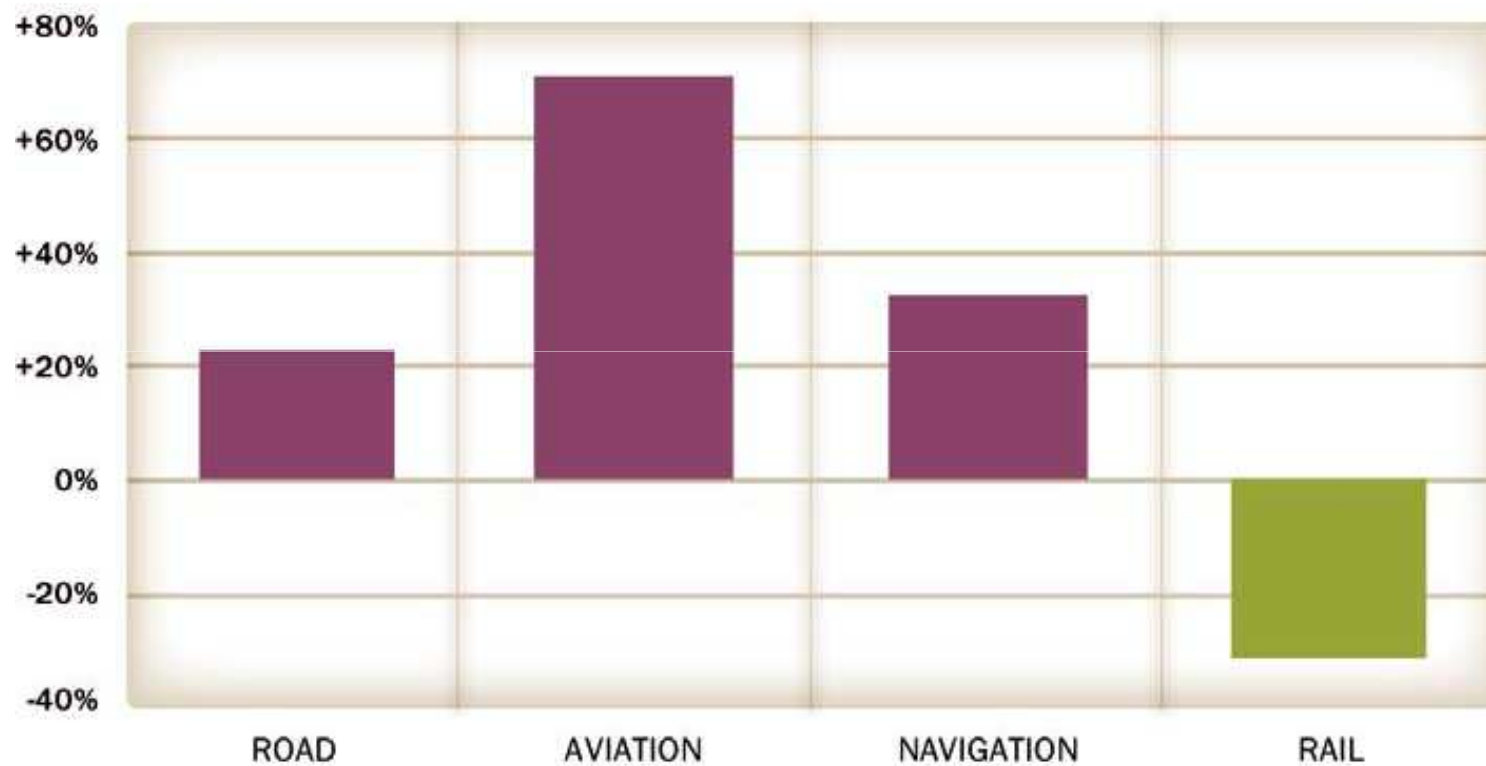
	Start/Destination	Details	Duration	Products
	PARIS EST [FR] BERLIN HBF (TIEF) [DE]	from We, 19.06.13, 20:05 to Th, 20.06.13, 08:28 → Details → Map → Google Earth → sooner → later	12:23	CNL 455
	PARIS EST [FR] BERLIN HBF (TIEF) [DE]	Middle class; Diesel EURO 3; → Details → Map	9:07	Car
	PARIS EST [FR] BERLIN HBF (TIEF) [DE]	Flight from Charles De Gaulle Airport, Paris to Tegel Airport, Berlin.	3:32	Train, Aircraft, Car

EU27 - Total CO₂ Emissions by sector



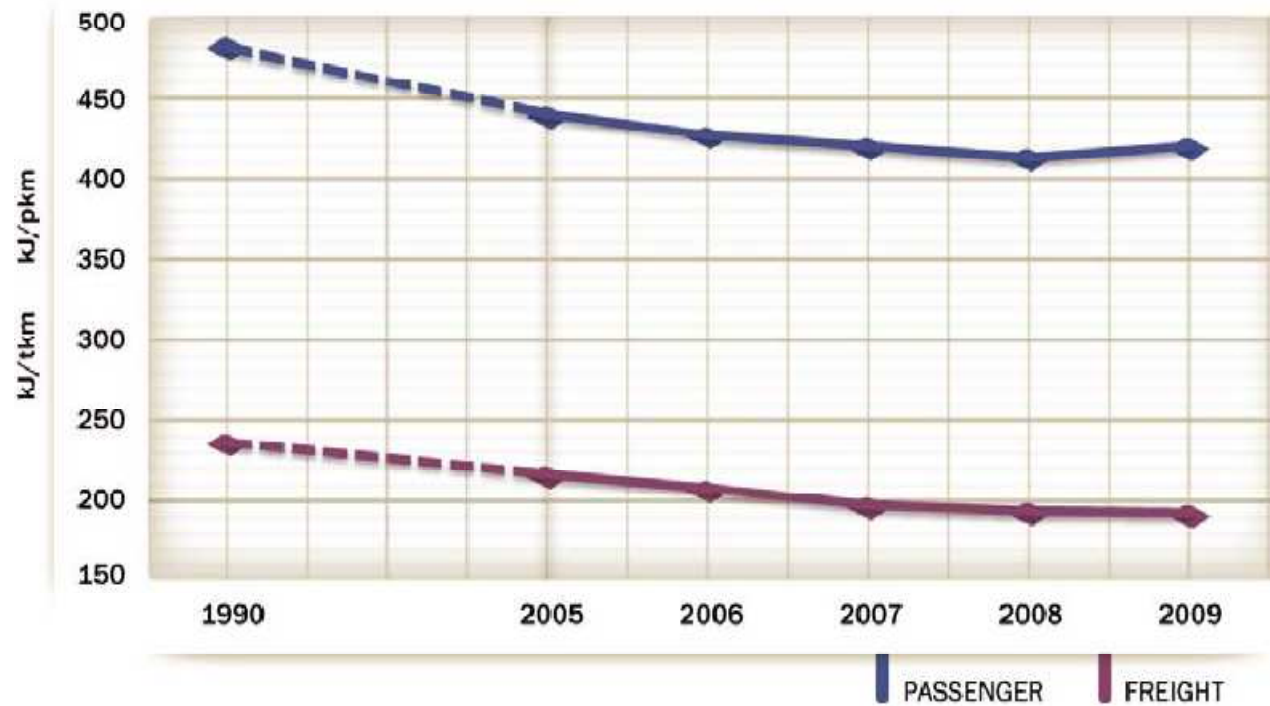
Source: UIC-IEA Handbook 2012

EU27 - Change in CO2 total emissions from fuel combustion by mode, 1990-2009



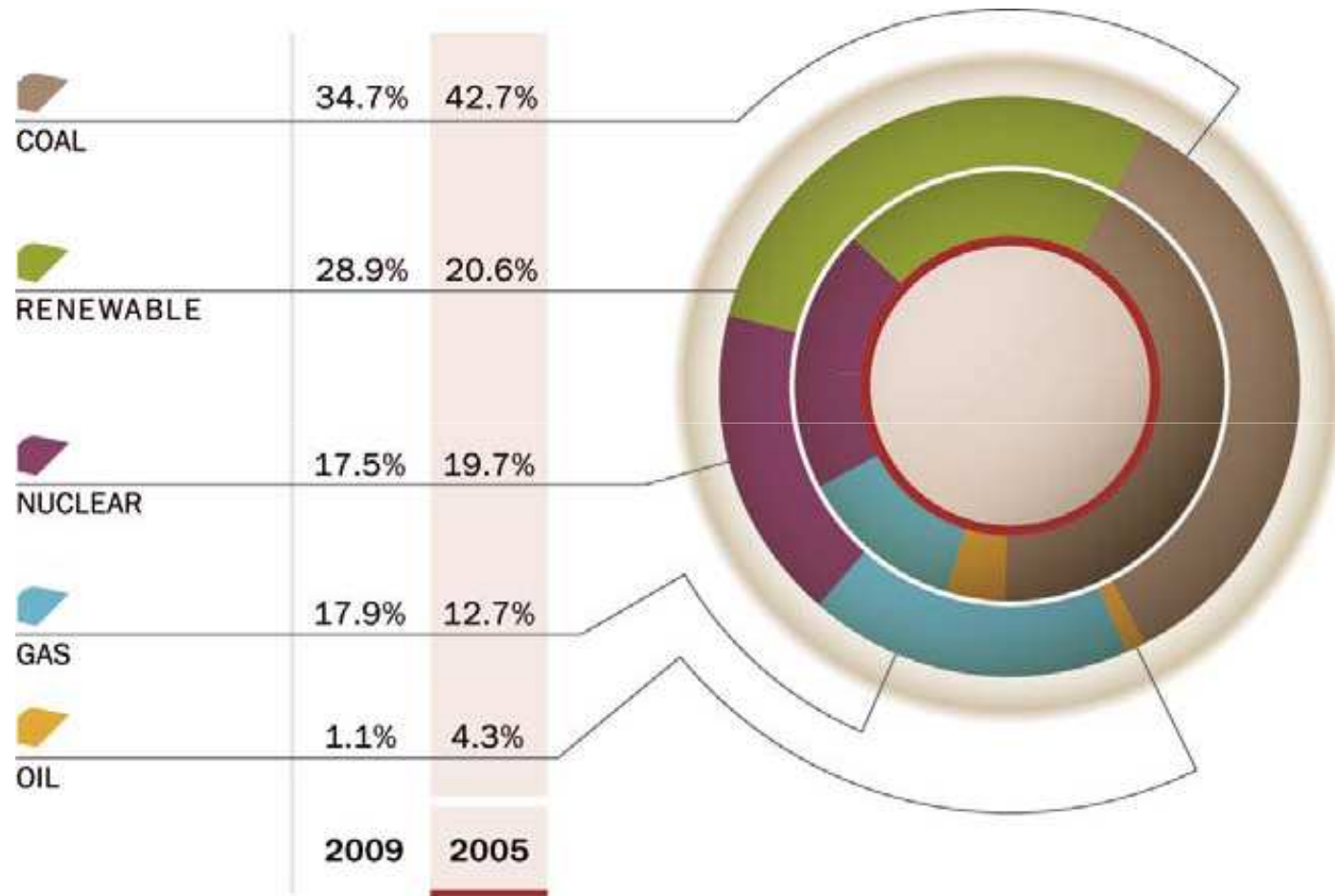
Source: UIC-IEA Handbook 2012

Specific energy consumption by train, 1990-2009 (kJ/pkm, kJ/tkm)



	1990	2005	2006	2007	2008	2009	Δ 1990 2009
PASSENGER (KJ/PKM)	478.8	437.8	425.6	418.7	411.0	418.7	-13%
FREIGHT (KJ/TKM)	234.0	214.8	205.3	195.4	192.1	190.5	-19%

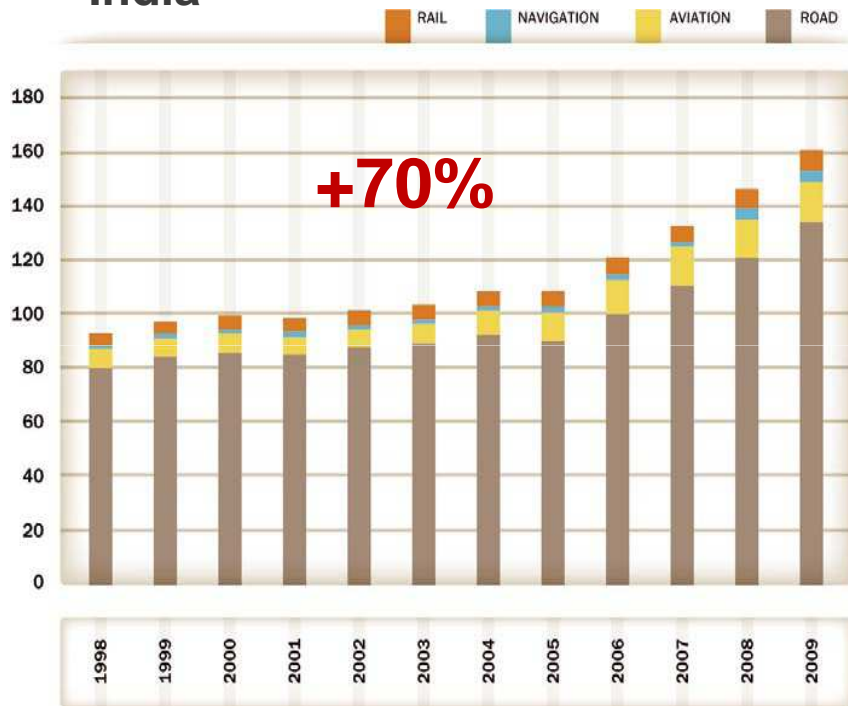
European rail electricity mix, 2005 inside - 2009 outside



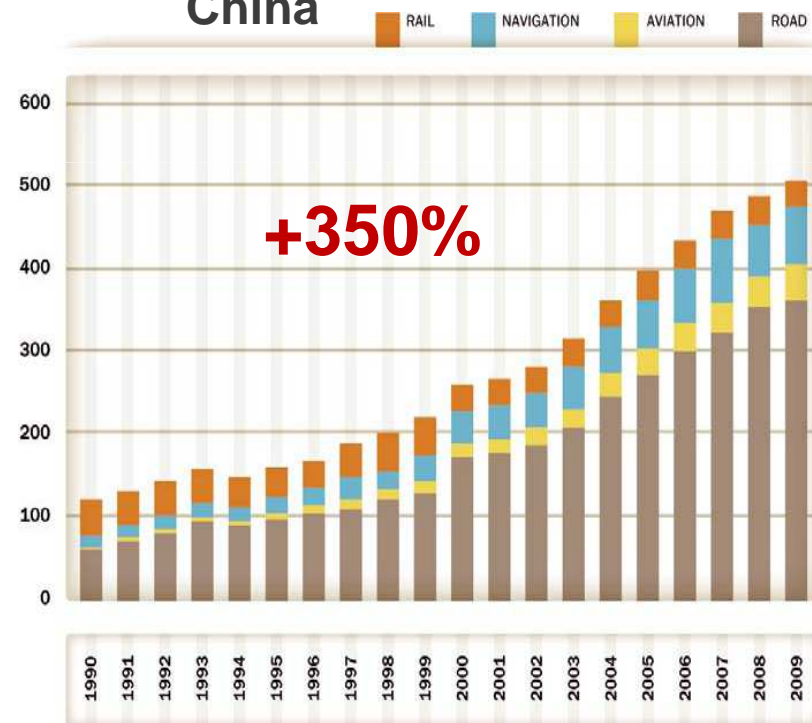
Source: UIC-IEA Handbook 2012

Transport CO2 emissions by mode, 1998-2009 (million tonnes)

India



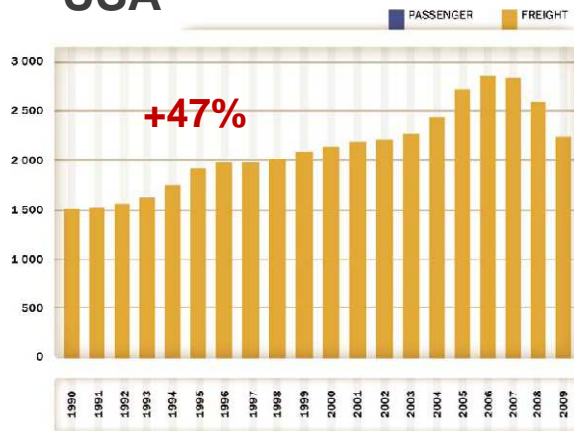
China



Source: UIC-IEA Handbook 2012

Railway activity 1990 – 2009, (billion transport units)

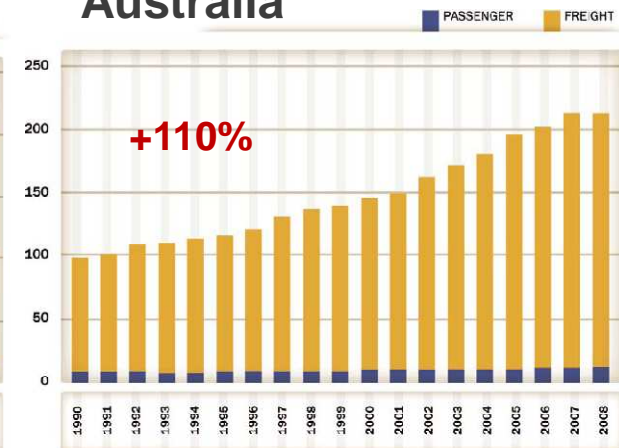
USA



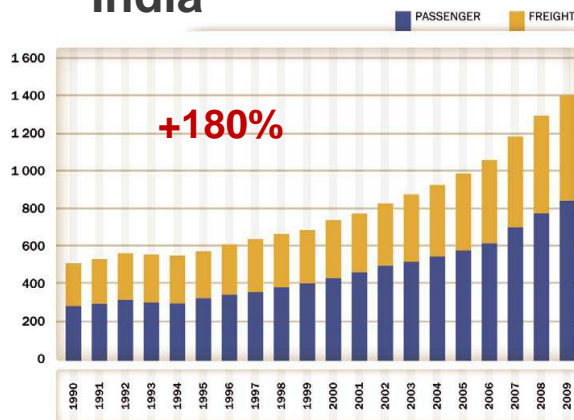
Russia



Australia



India



China



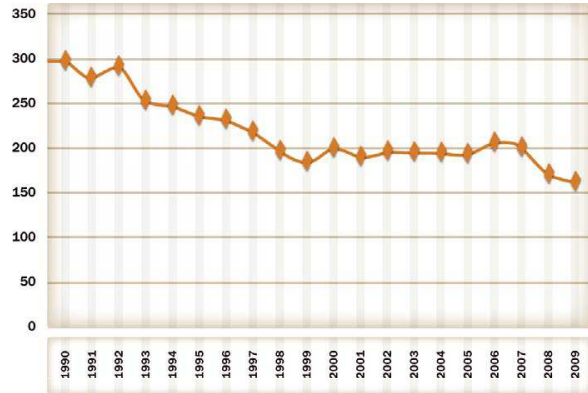
Iran



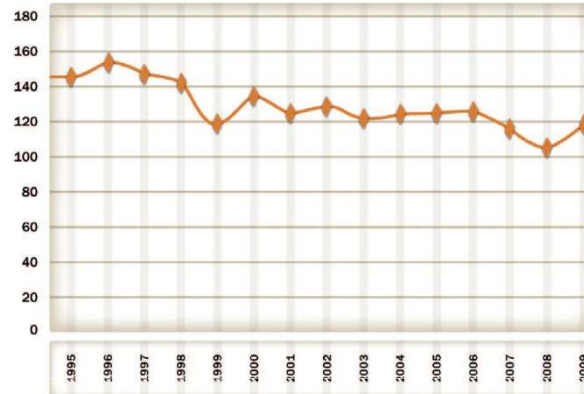
Source: UIC-IEA Handbook 2012

Railway specific energy consumption, (kJ/transport unit)

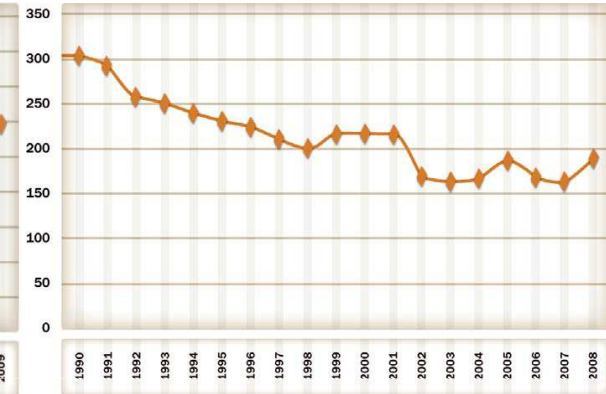
USA



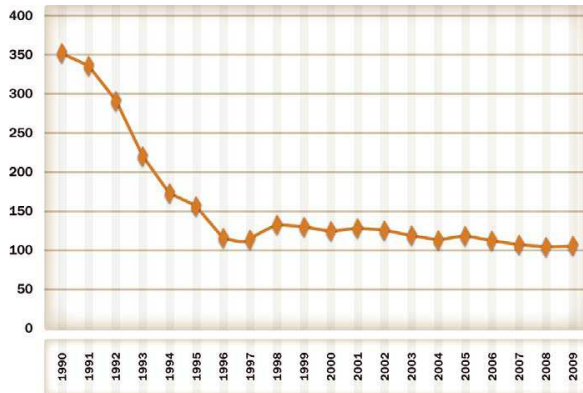
Russia



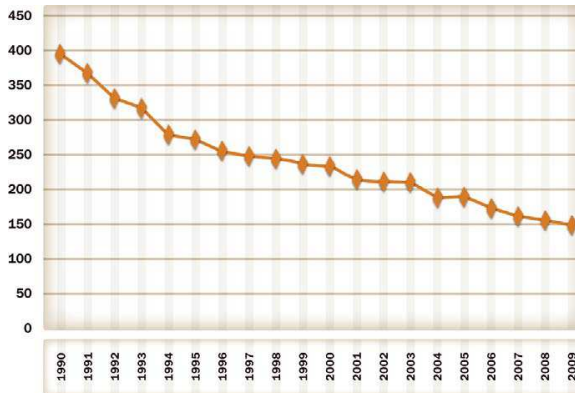
Australia



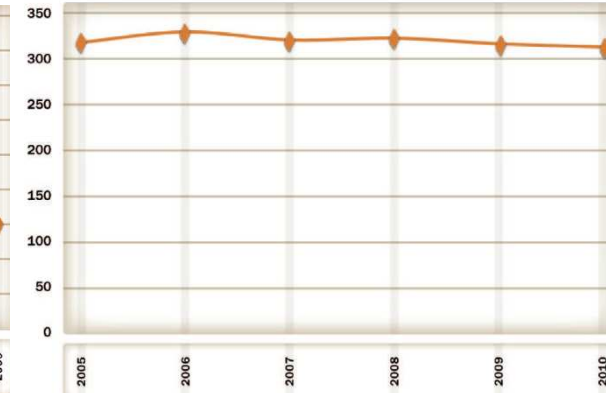
India



China

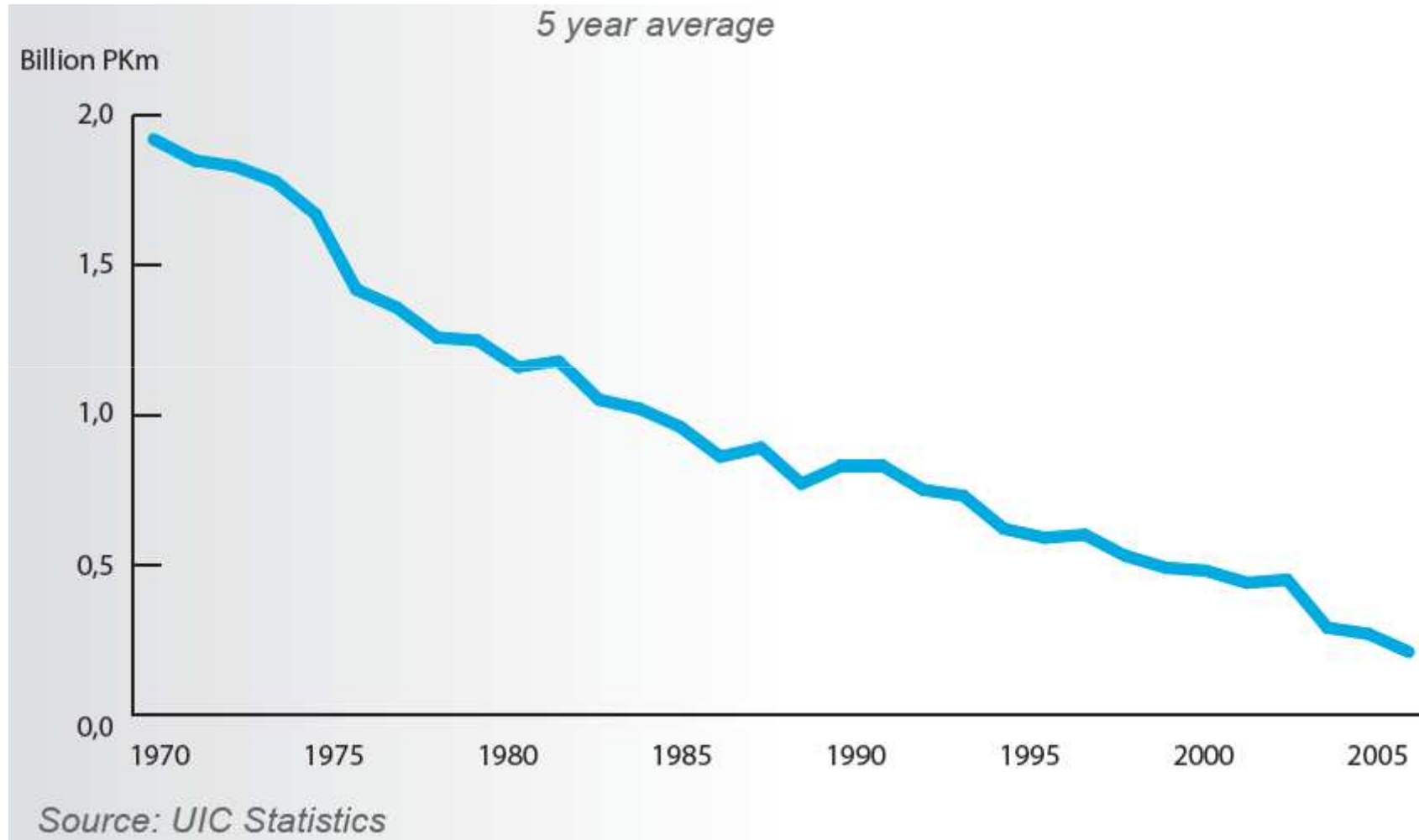


Iran



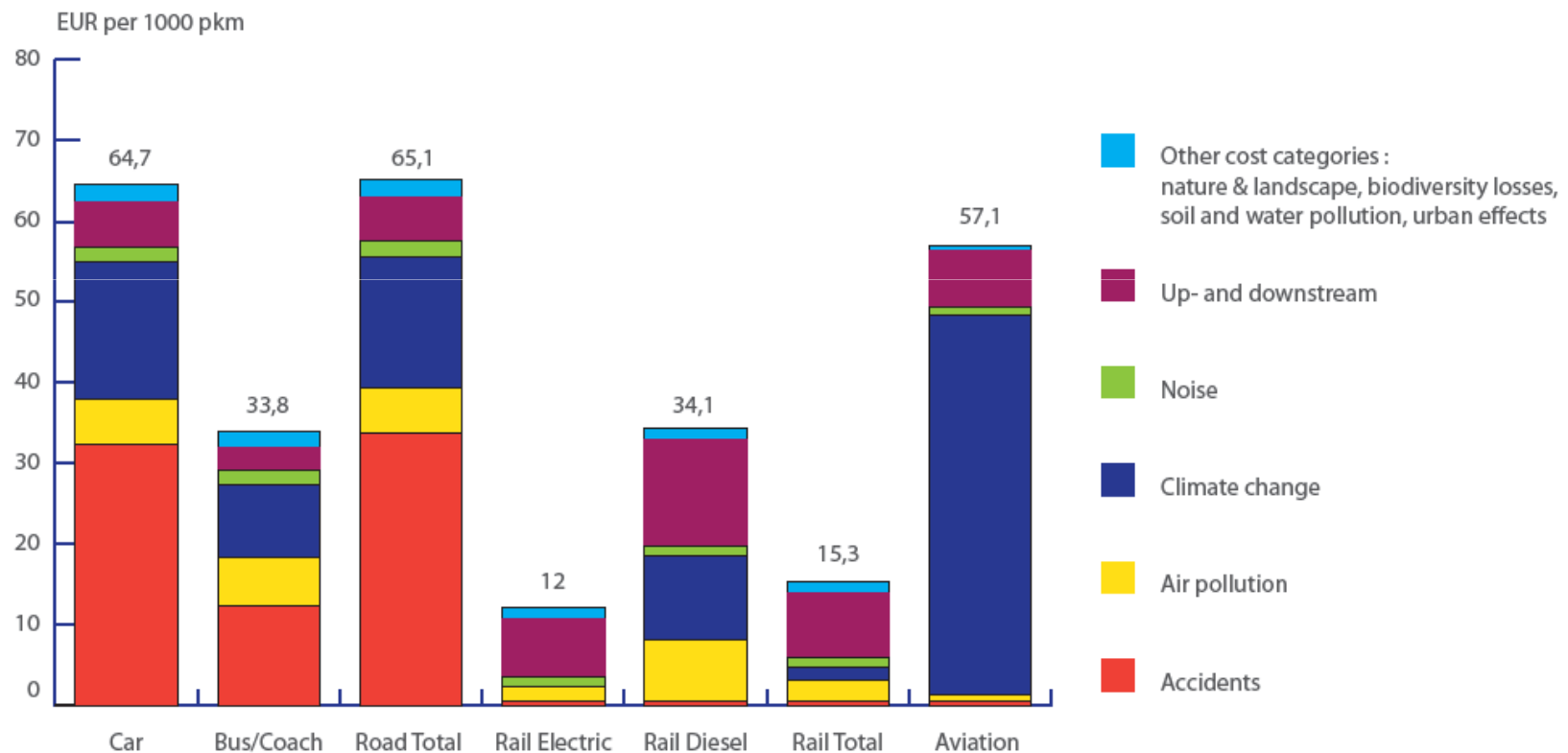
Source: UIC-IEA Handbook 2012

Railway passenger fatalities in Europe per billion PKm



Affordability & external costs

Figure 4: Average external costs 2008 for EU-27: passenger transport (excluding congestion) without motorcycles and mopeds⁶



Source: UIC External costs study

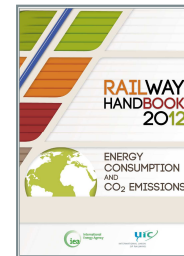
■ ■ ■ Thank you for your kind attention

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For further information please visit: www.railway-sustainability.org

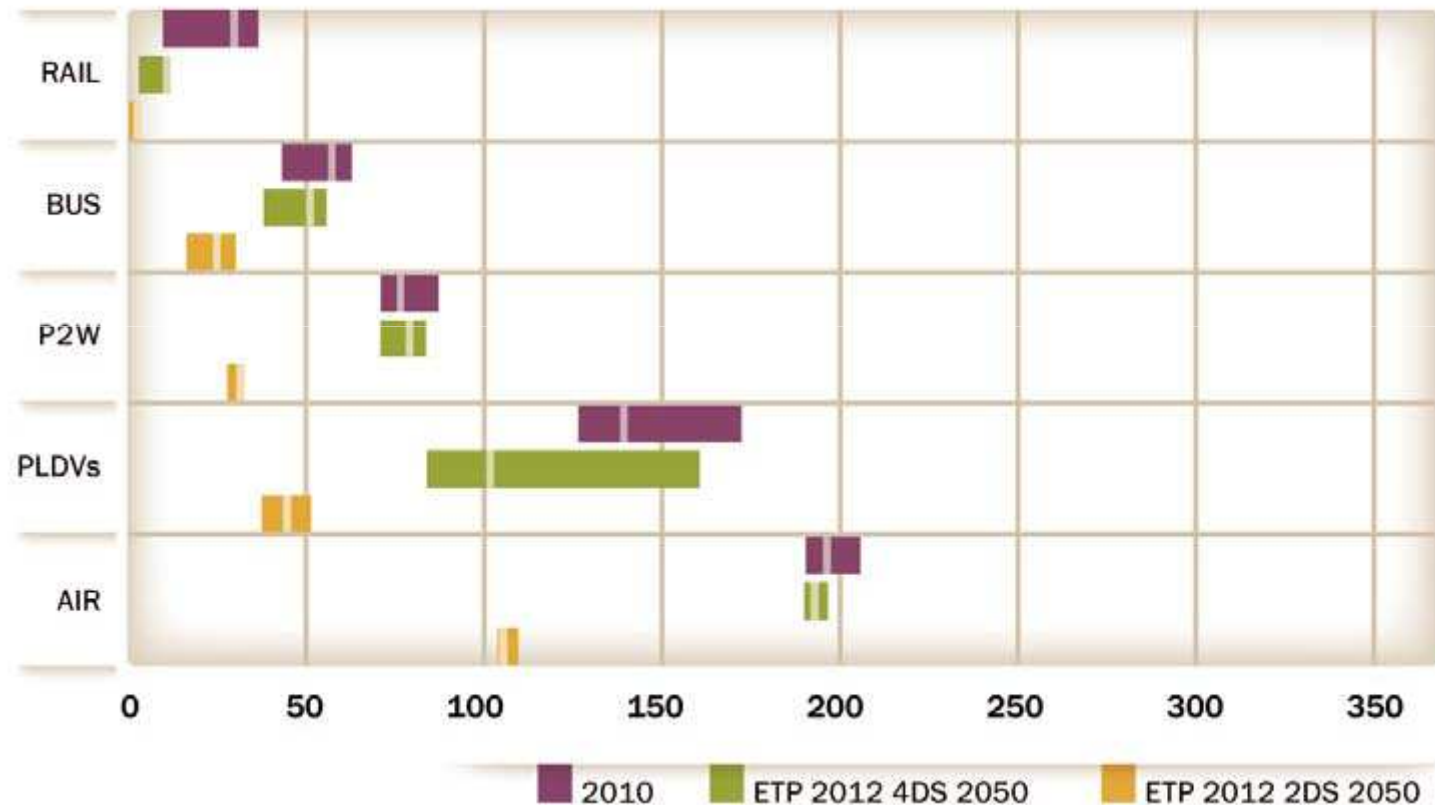


http://www.uic.org/IMG/pdf/uic_sustainability_declaration_final.pdf



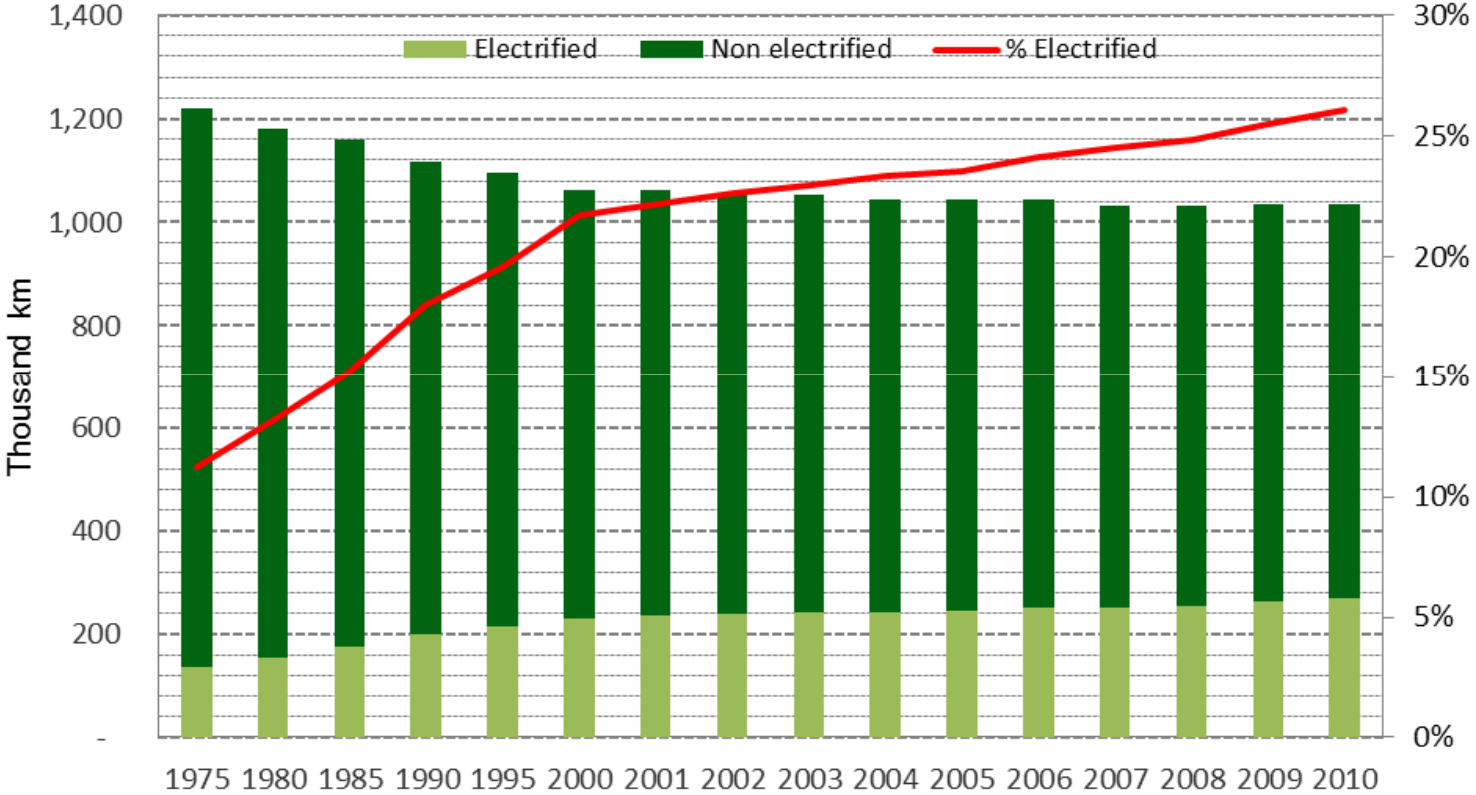
<http://uic.org/spip.php?article3005>

EU27 evolution of the GHG intensity of motorised passenger transport modes, 2010-2050 (WTW gCO₂/pkm)

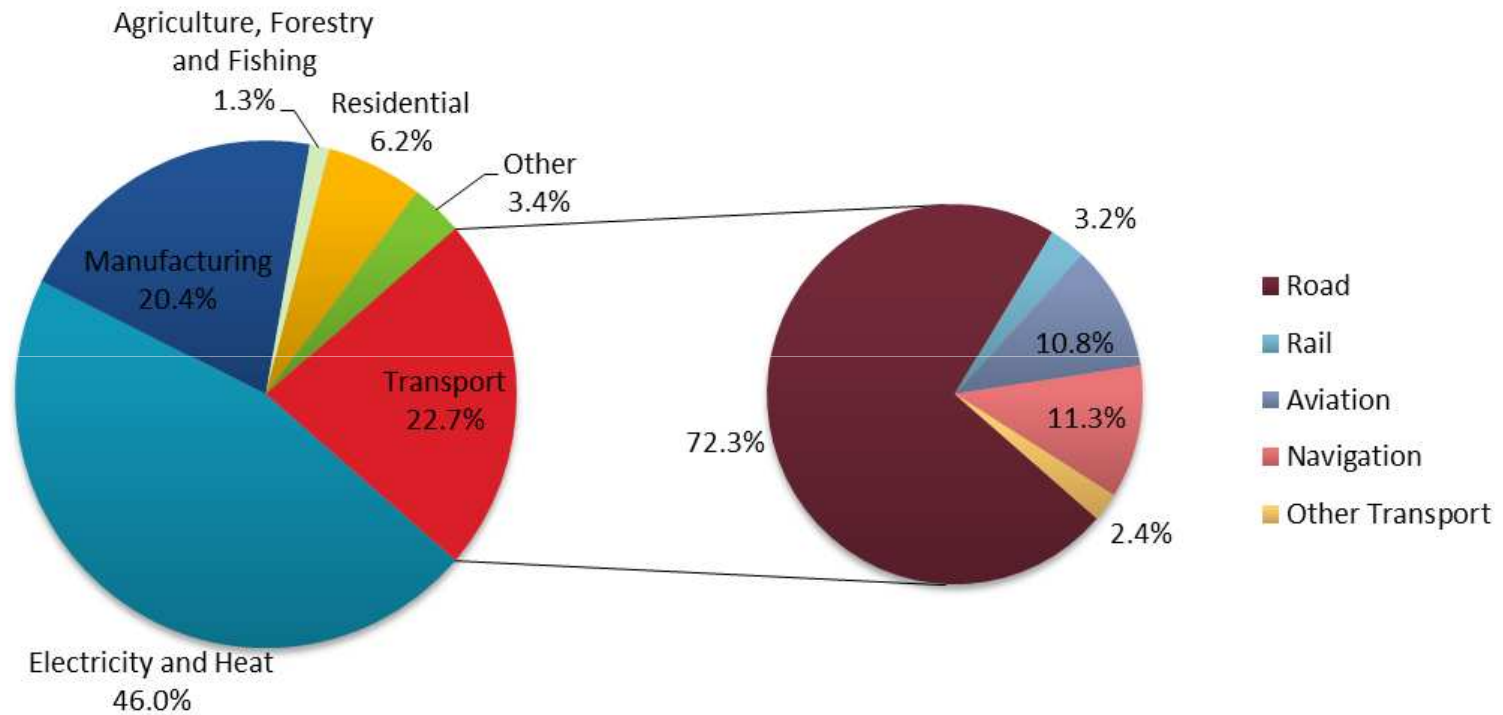


Source: UIC-IEA Handbook 2012

Electrification of world railway lines

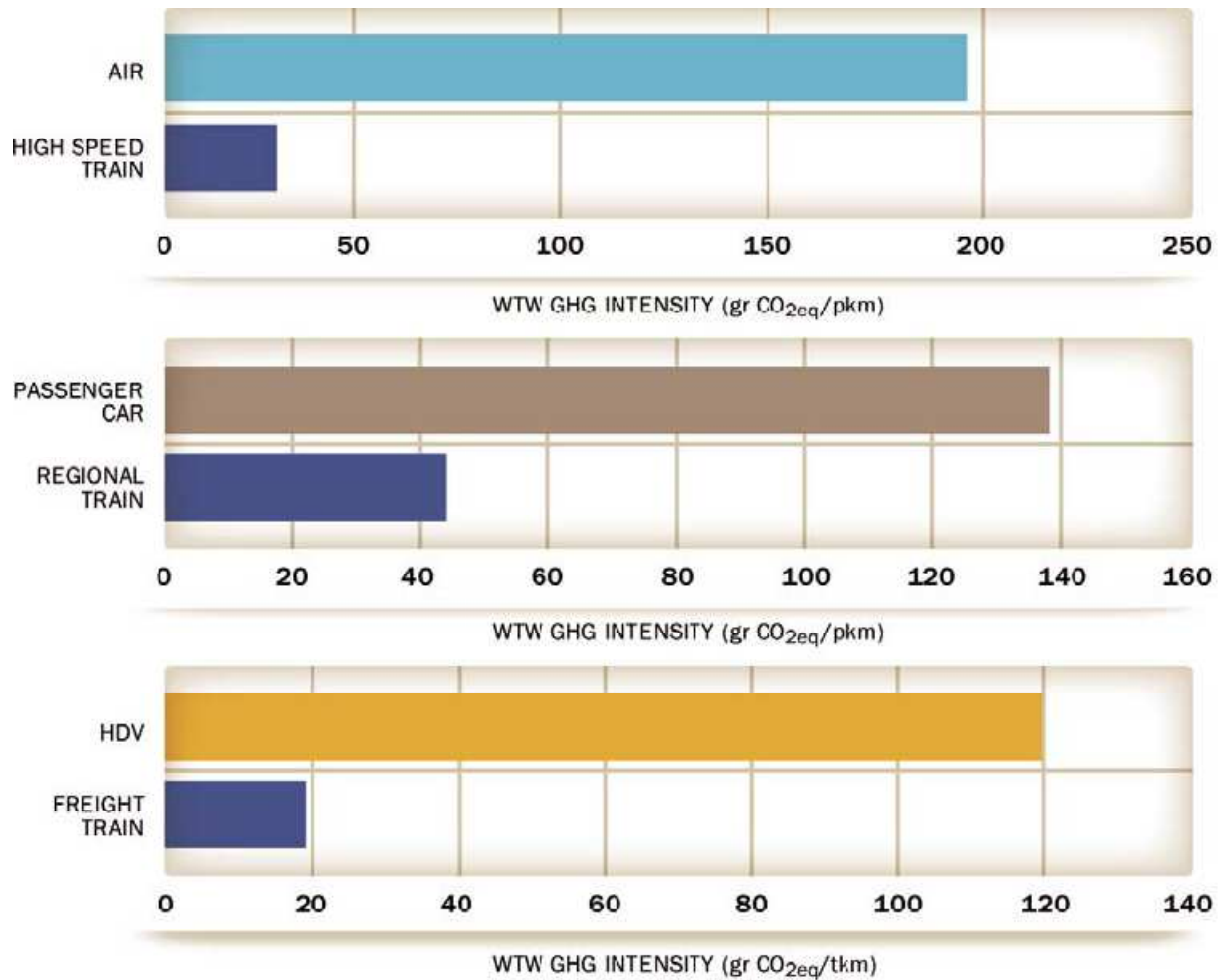


Global CO₂ Emissions from fuel combustion by sector 2010



Source: Elaboration by Susdef based on IEA (2012a), IEA (2012b), IPCC (2006) and IEA (2008).

CROSS INDICATORS: Plane vs highspeed, car vs regional, freight train vs HDVs EU average



Source: UIC-IEA Handbook 2012