



Transport and Climate Change

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Werner Rothengatter

Universität Karlsruhe (TH)



Transport and Climate Change

- **Biggest Chaos Dominates Policy**
- **Long-term Challenges**
- **What Transport Can Contribute**
- **Starting now**



Biggest Chaos Dominates Policy

- **Financial Turbulences**
- **Protection of the Industry**
- **A Big Chance is Being Missed**
- **National Egoism versus Global Necessities**



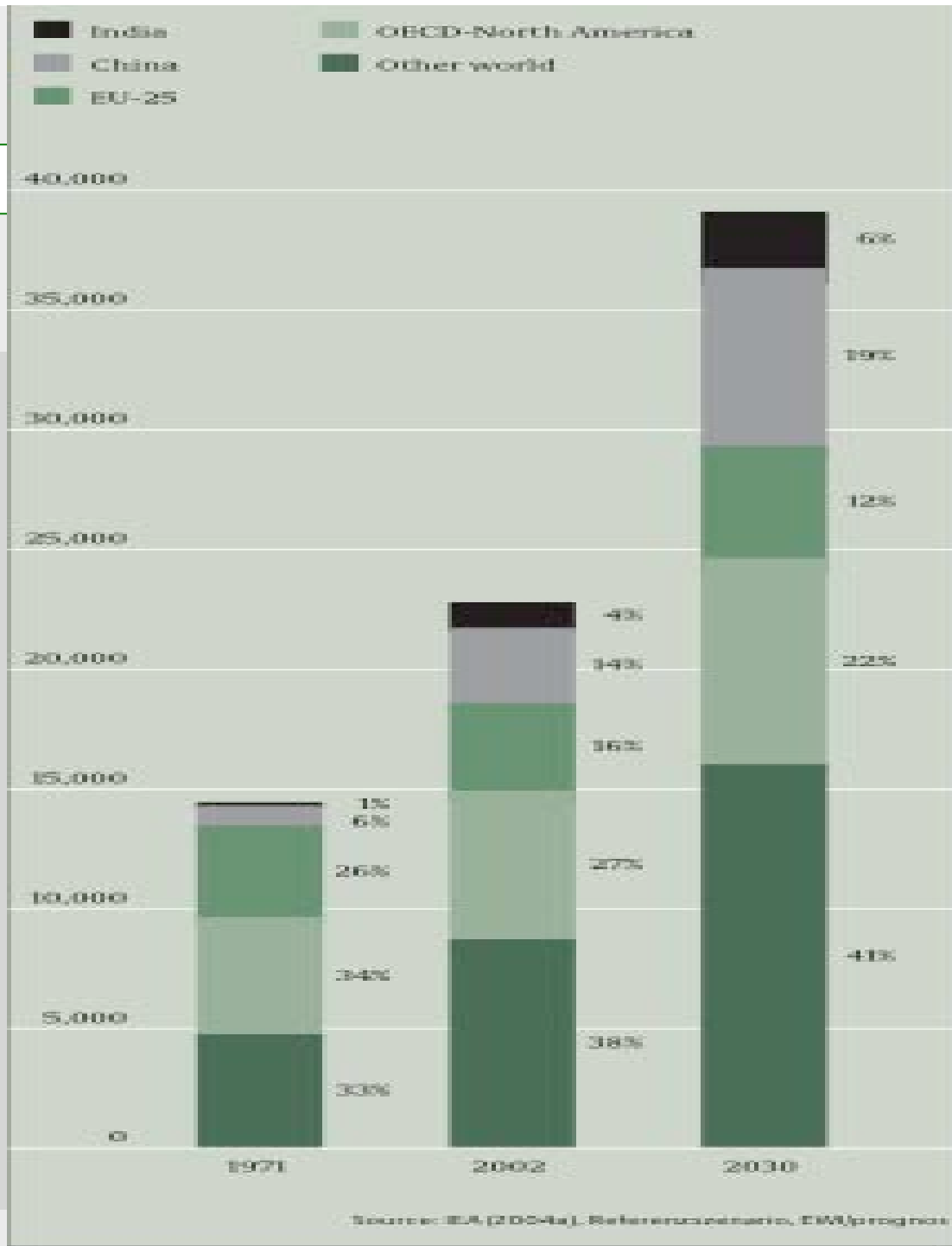
Long-term Challenges

- **Energy Forecasts**
- **Transportation Forecasts**
- **IPCC and Stern Reviews**
- **Starting now**



CO₂-Emissions

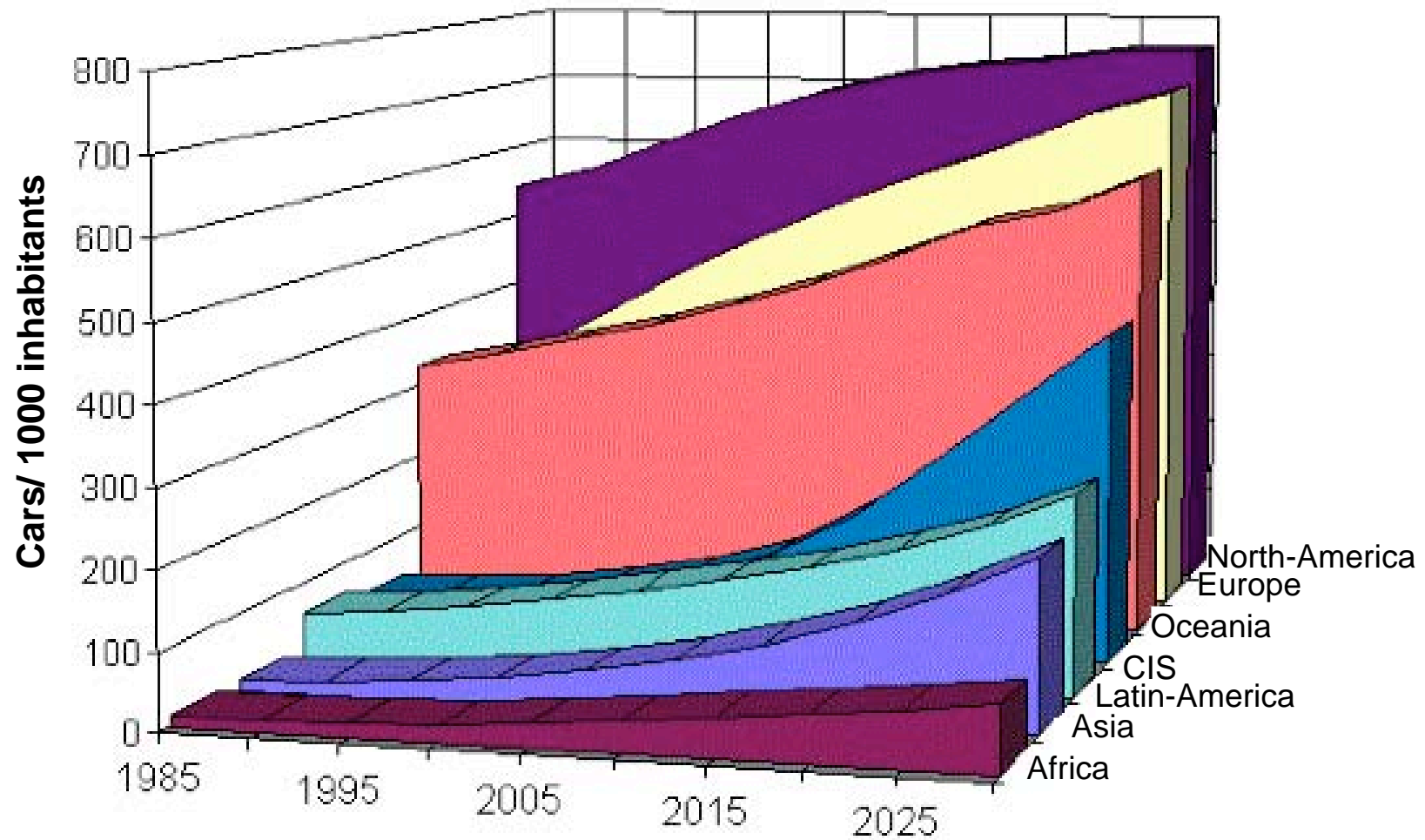
World-Wide 1971- 2030



EWI/Prognos
2005

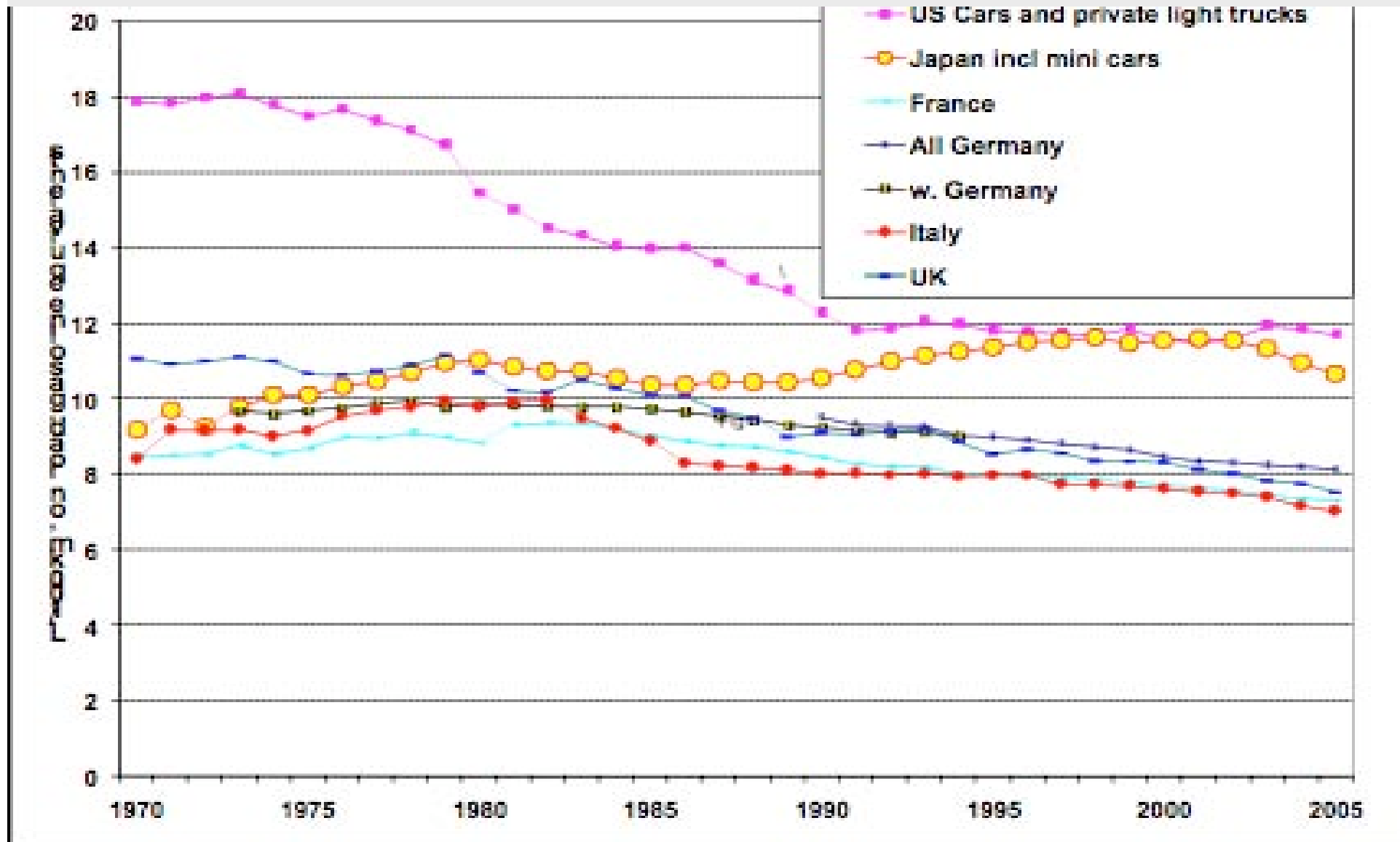


Global Motorization



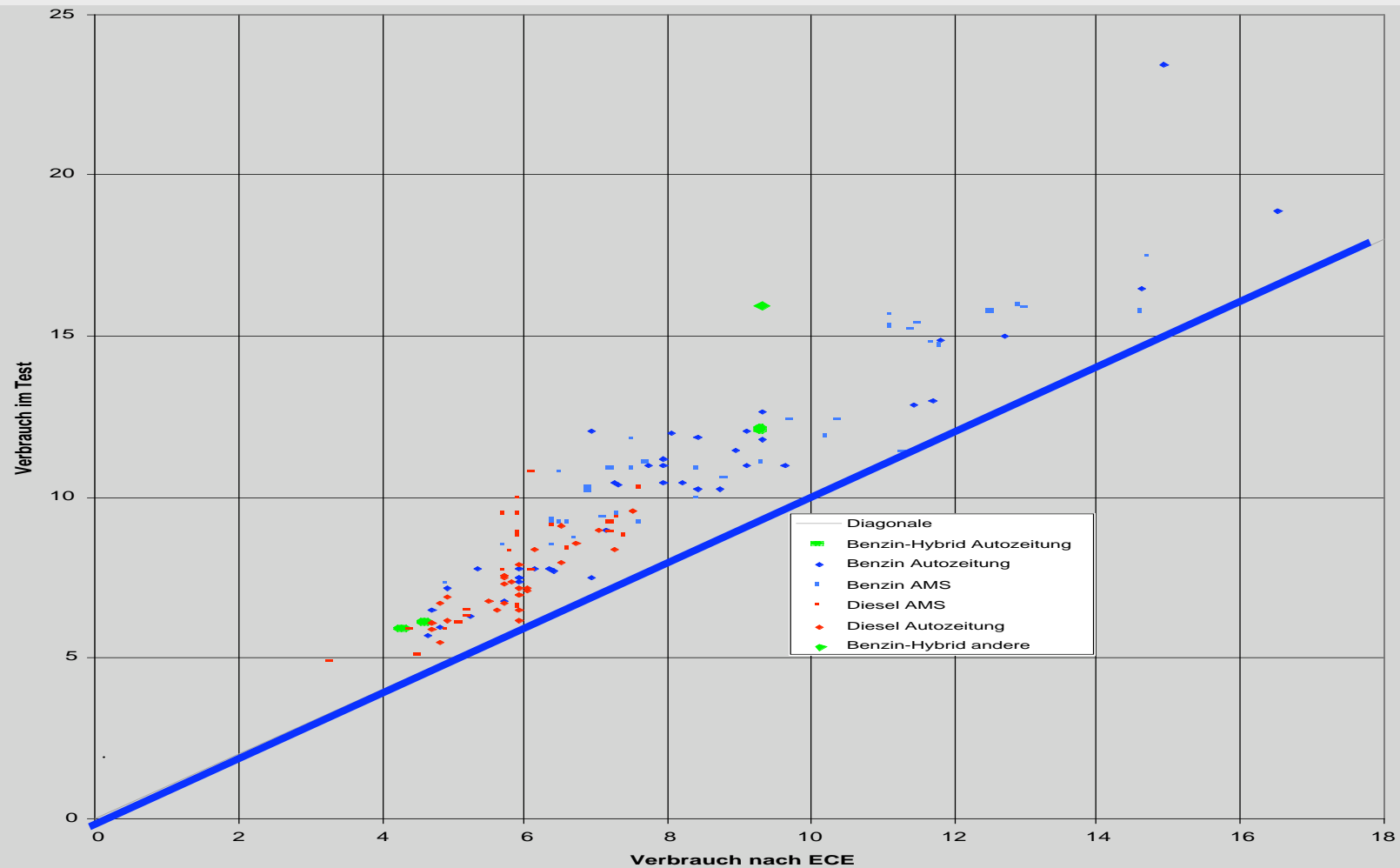


Development of Average Fuel Consumption





Comparison Norm/ Tested Consumption 2007



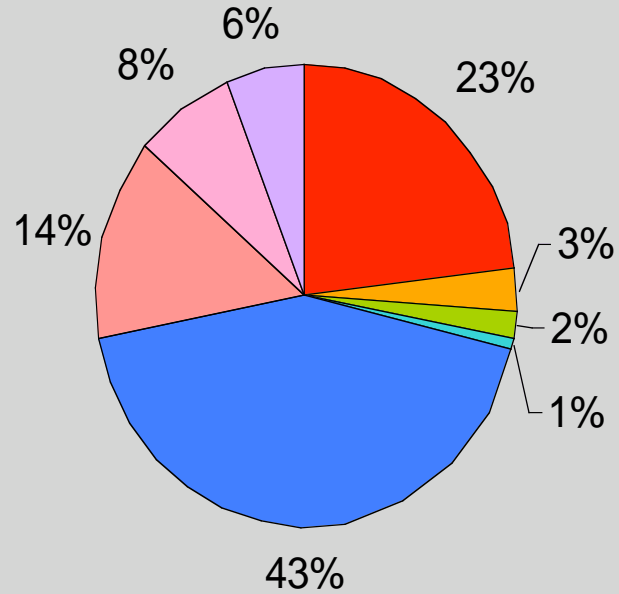
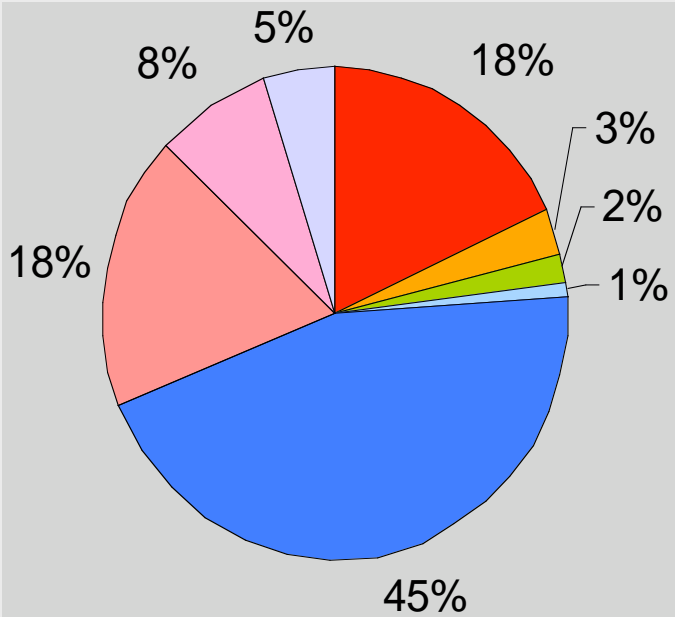


Producers of CO₂

World

OECD

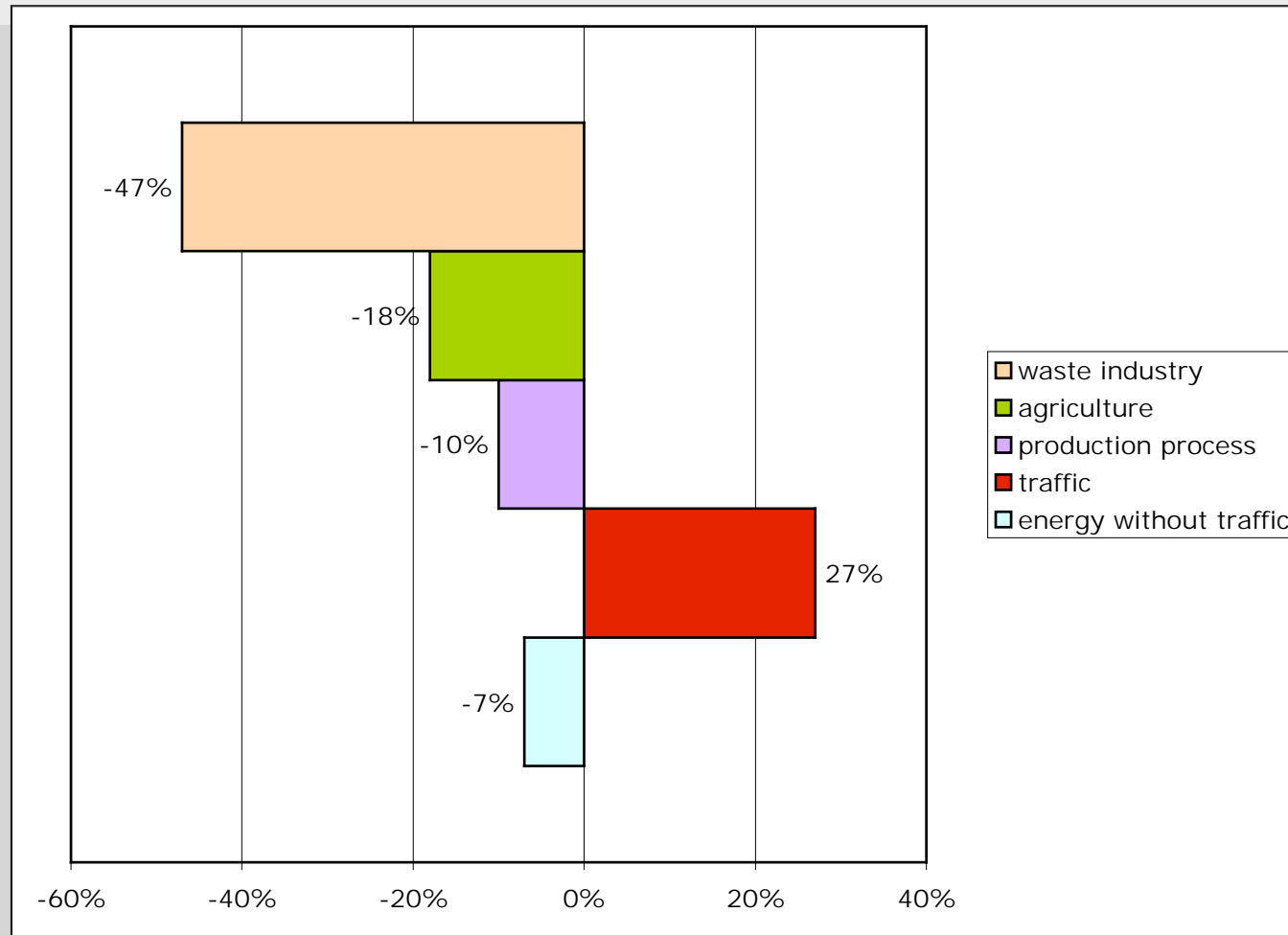
- road
- air
- waterways
- other transport t
- energy
- production
- households
- other sectors



Source: OECD/ECMT 2007



Expected Change of Emissions 1990/2010 by Sectors





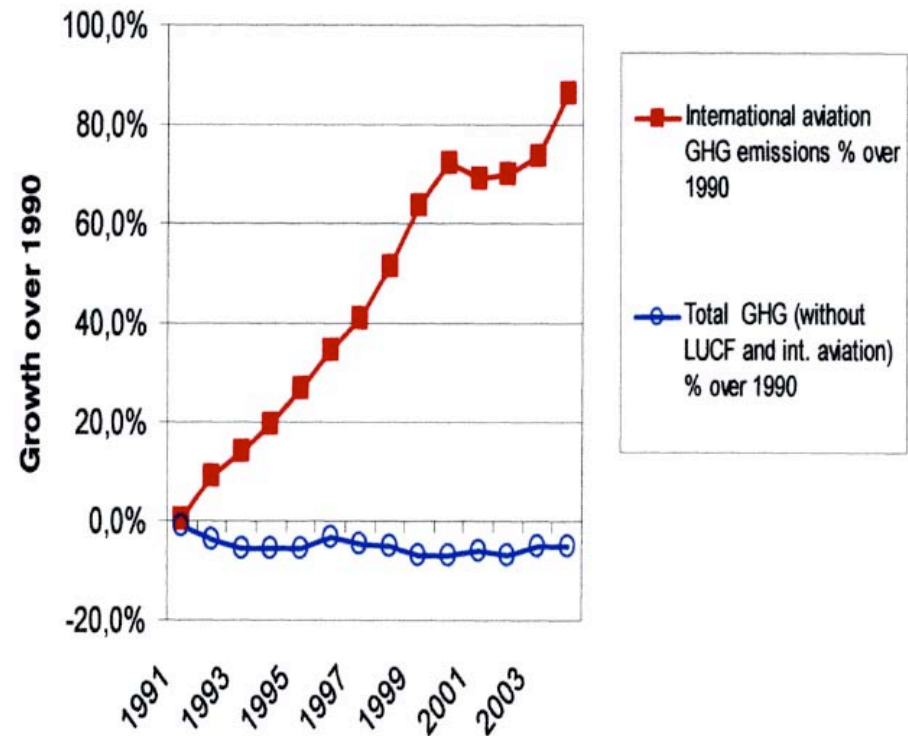
What Transport Can Contribute

- **Reduction at all? Arguments against!**
- **On the Average Transport Emissions Can be Reduced by ca. 20% 1990/2020 in Industrialized Countries!**
- **Concerted Effects of Energy Prices and Policy Actions**
- **Some Examples**



Aviation

Development of EU-25 International aviation GHG emissions





EU Draft Directive 2006: ETS

Problems with Aviation

- **Mobile and international nature of emission sources**
- **Relatively low share of aviation**
- **Main trading instrument of Kyoto P.: Assigned Amount Units (AAU) not granted for internat. aviation**
- **List of 14 policy options to be checked**



EU Draft Directive 2006: Scenario

- **All departing flights**
all arriving and departing
- **Only CO₂**
multiplier of 2 for non-CO₂
- **Auctioning 20% of allowances off**
share of 40%
- **Stabilisation at 2005 levels**
use of CDM and JI
- **Price per allowance**
6, 15, 30 €



Scenario Results Comparison with BAU

Geographical coverage	Reduction by 2015		Reduction by 2020	
	%	Mt CO ₂	%	Mt CO ₂
Intra EU flights	36%	31	45%	44
EU - All departing flights	36%	77	46%	115
EU - All arriving and all departing flights	36%	122	46%	183



Impact of Trading CO₂ Certificates



**Frankfurt FRA- London
LHR
A 321-100
Km: 695
CO₂: 10.4 t price/ton: € 30
Value of certificate: € 312
Value per PAX: € 2.50**



**Frankfurt HHN- London STN
B 737 800
Km: 572
CO₂: 8.2 t price/ton € 30
Value of certificate: € 246
Value per PAX: € 1.60**



Result Aviation

No Major Reduction Compared With 1990 Emission Values Possible

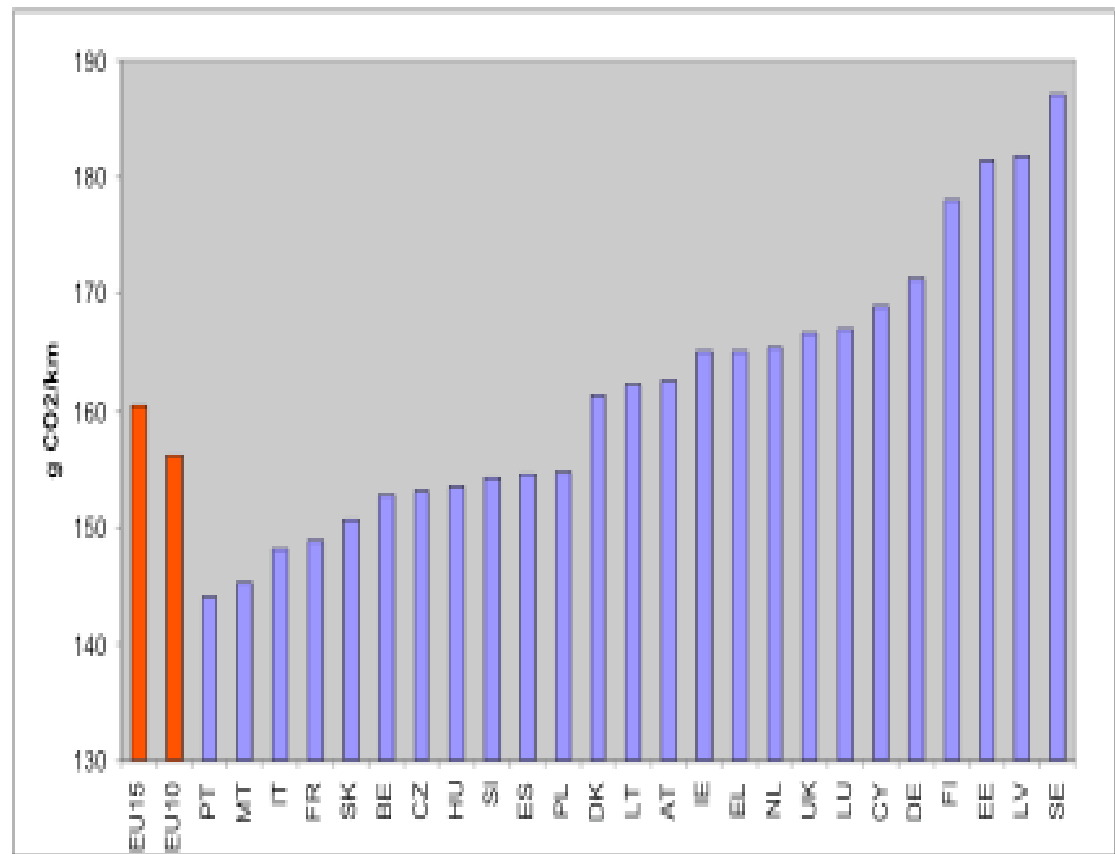
But Stabilization or Modest Decrease Compared with 2005 Values

**Incentives Can be Set Accordingly:
ETS, Starting/Landing Fees, Tax Harmonization**



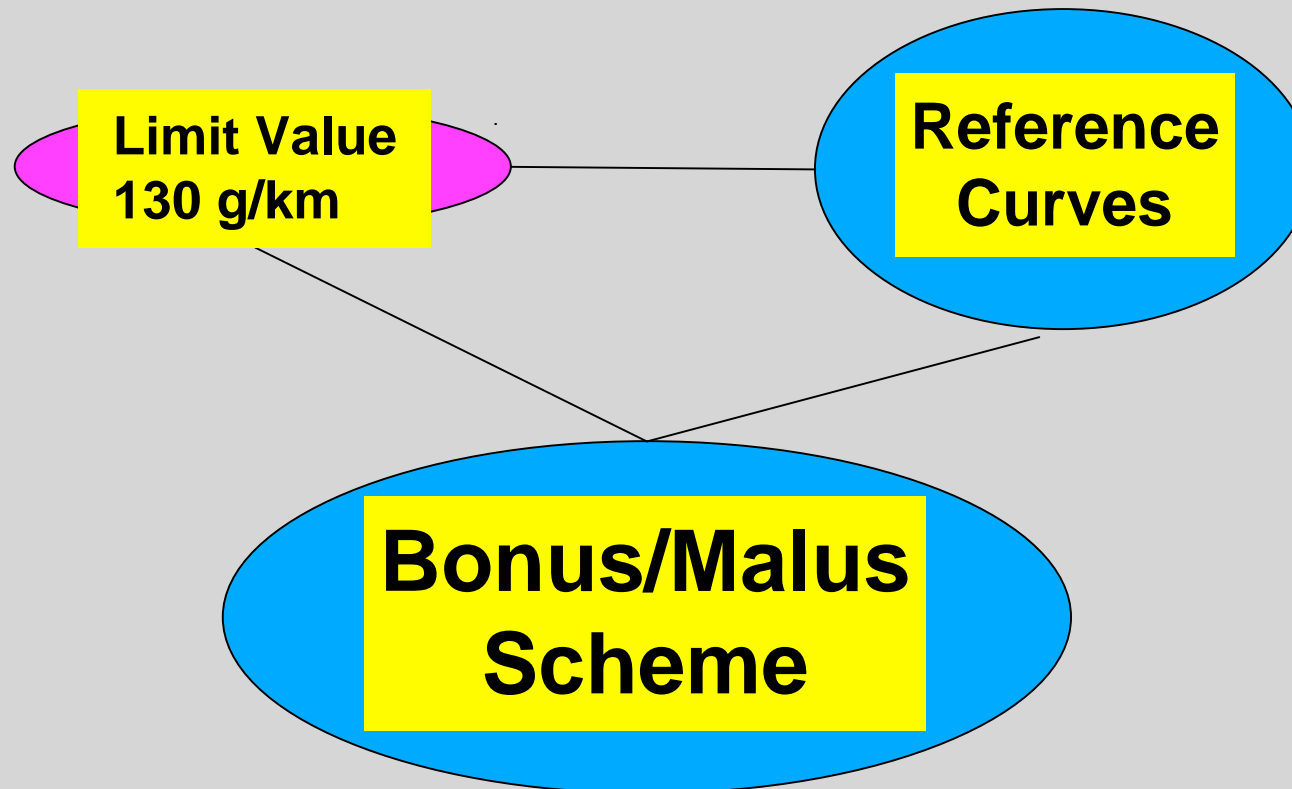
Car - Emissions

295 vs 116 g/km 2006





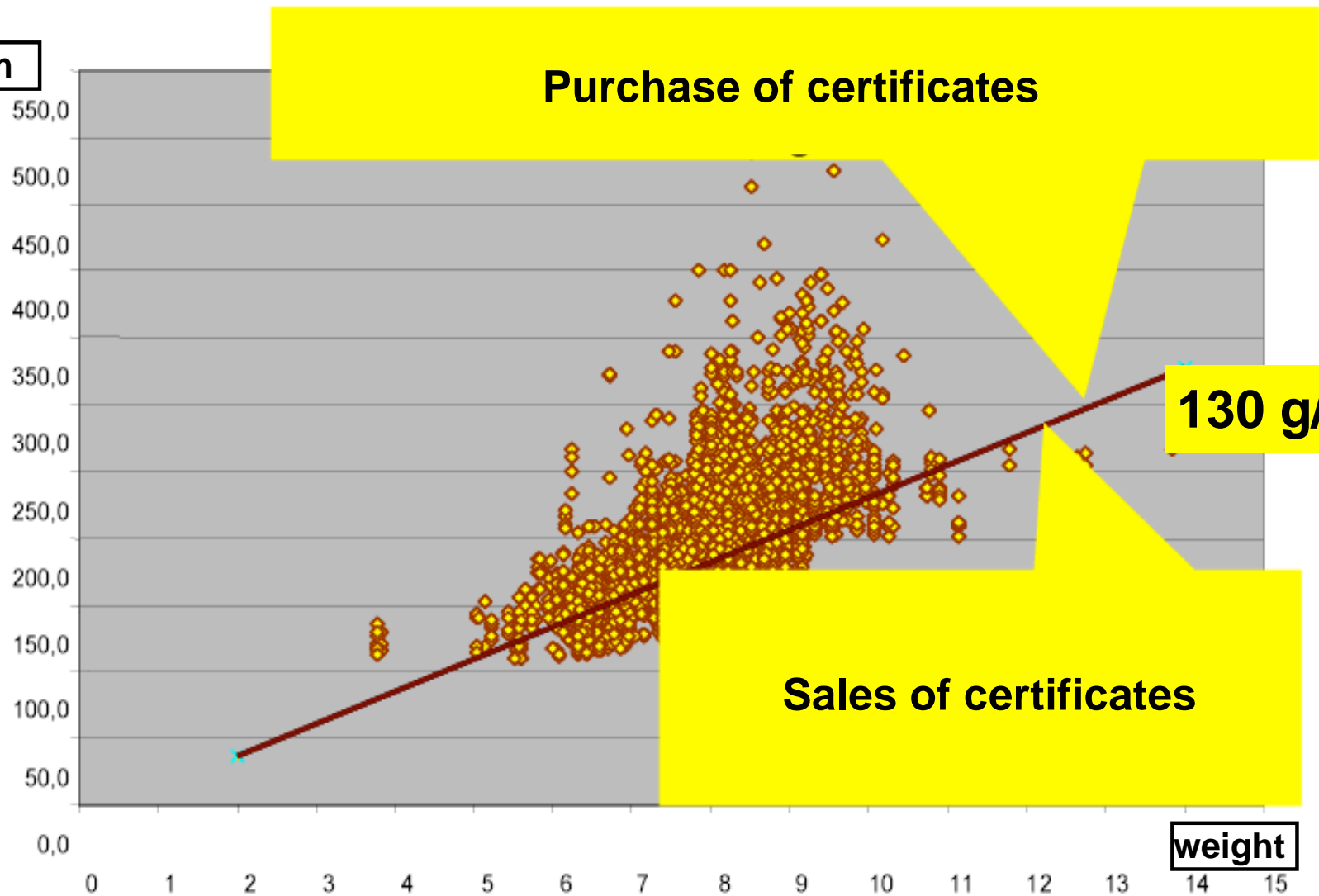
Emissions Control Scheme for Cars





Closed Trading or Bonus/Malus Scheme

gCO₂/km



Quelle zu



Closed Trading or Bonus/Malus Scheme

gCO₂/km

550,0
500,0
450,0
400,0
350,0
300,0
250,0
200,0
150,0
100,0
50,0
0,0

Payment 20/35/60/95 €/g/km

130 g/km

Compensation/Fleet

weight

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Quelle: z1



City-Tolling in London, Stockholm, ...





295 vs 116 g/km 2006



Car - Emissions

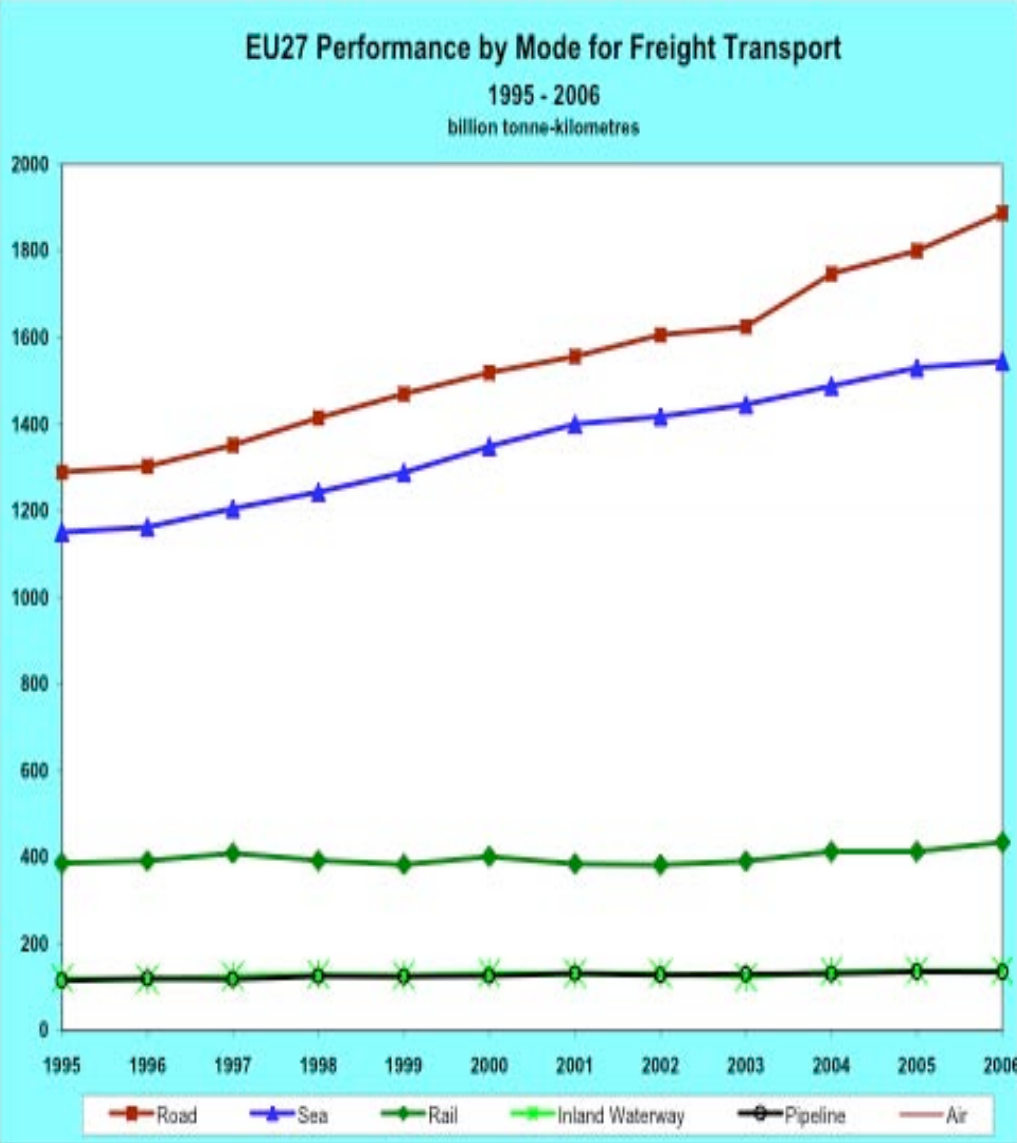
Results:

**Reduction Targets Achievable
Without Compromising the
Functionality of Passenger
Transport**

**Problems: Prestige, Premium
Cars, Company Cars**

**Main Problems in the Developing
World**

Freight Transport and Logistics



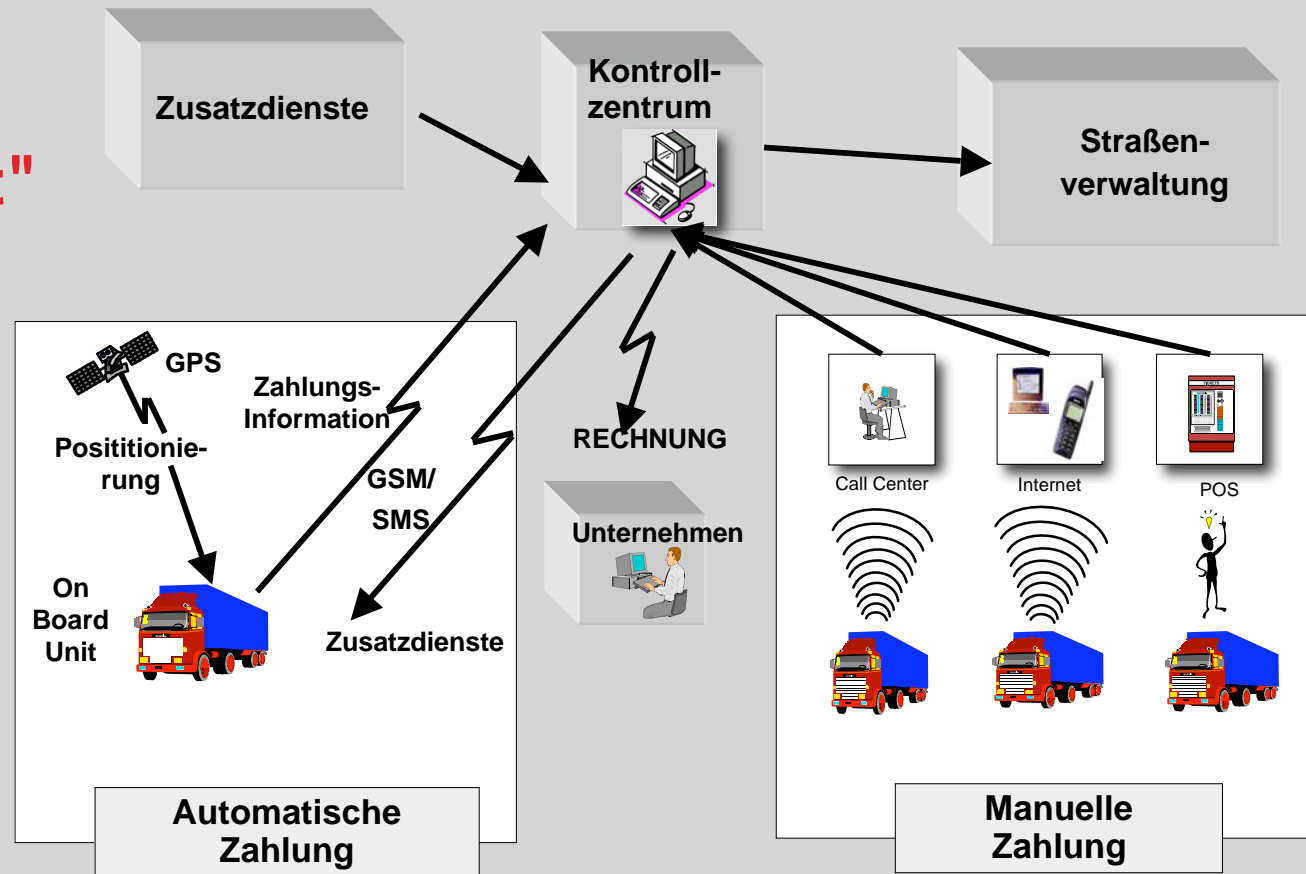


Potential in Freight Transport

- **Propulsion Technology (Limited)**
- **Information Technology (Limited)**
- **Driver Education (Moderate)**
- **New Logistic Concepts (High)**



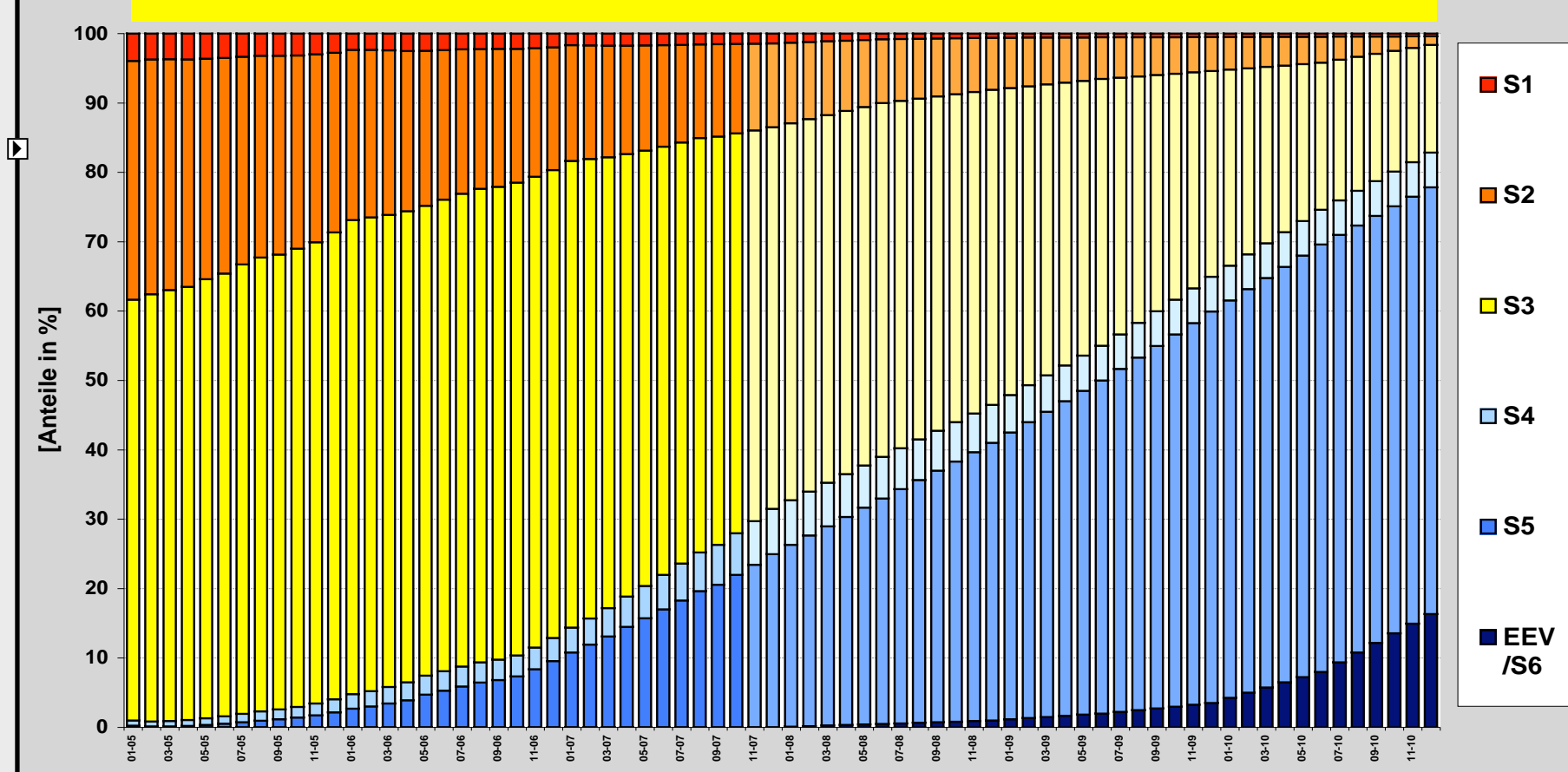
Payment System "Toll Collect"





Target-based Differentiation: Euro Categories

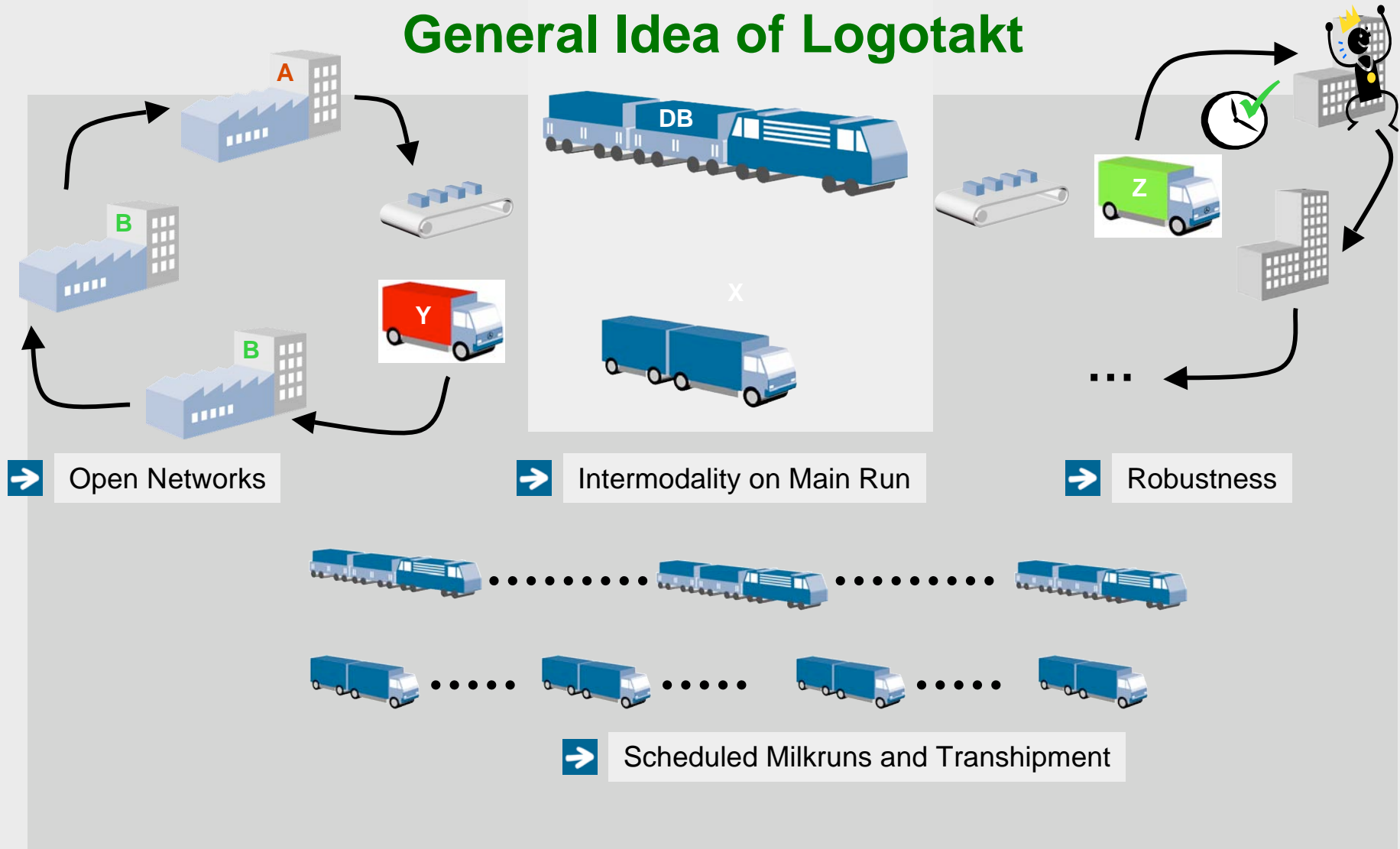
Development of Truck Fleet by Euro Categories in Germany





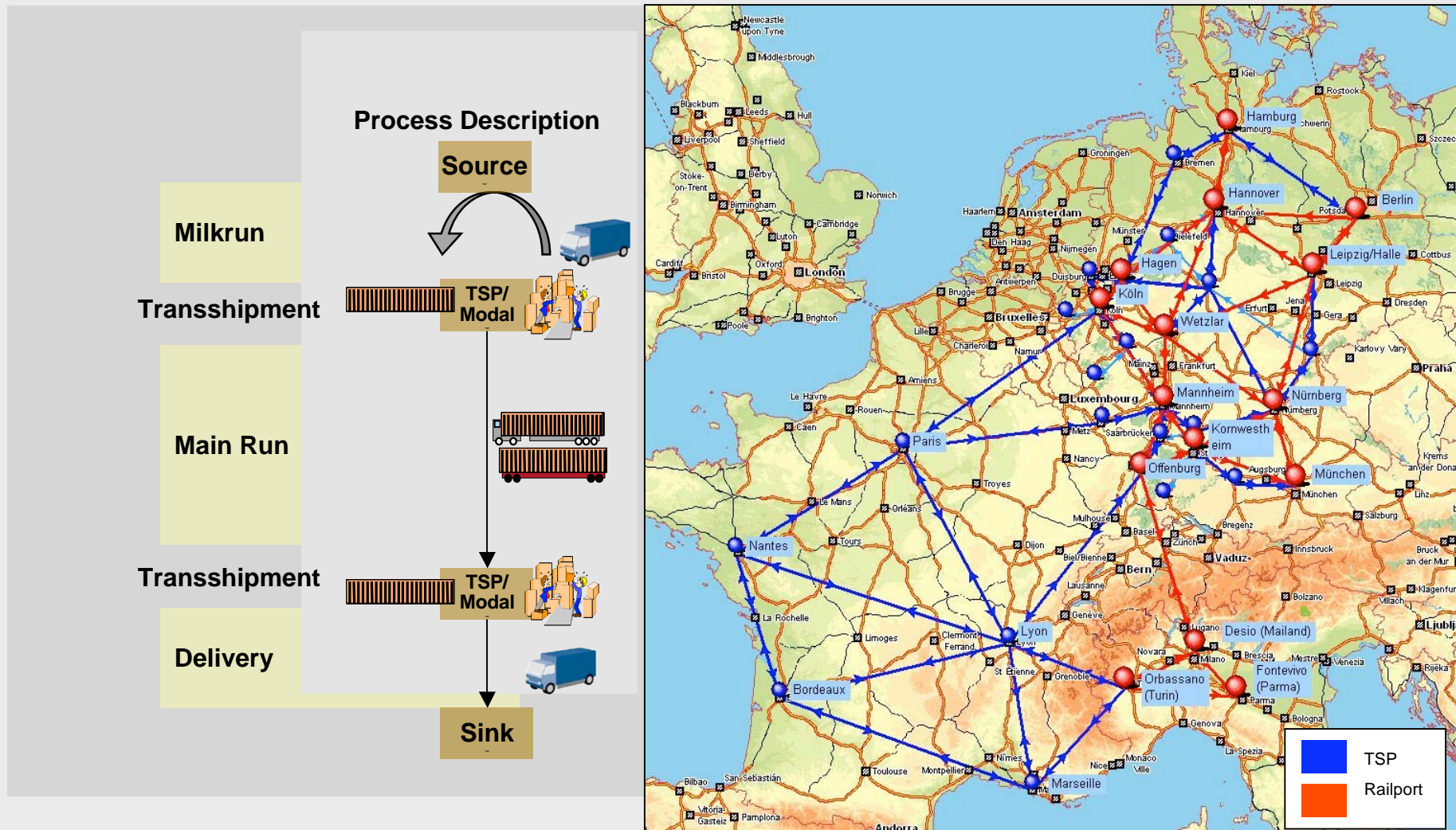
Potential of Logistics

General Idea of Logotakt





Processes, Railports, Transshipment Points





Freight Transport and Logistics

High Reduction Potential Through

- Driving Behaviour
- Logistic Process Optimization
- New Logistic Concepts



Potential of Cooperative Logistics and Open Networks Widely Unexplored.



**Clear Targets
Clear Strategies
Clear Roadmaps**

**No Exemptions
or Smart Rules
For the Transport
Sector**

Start Now