

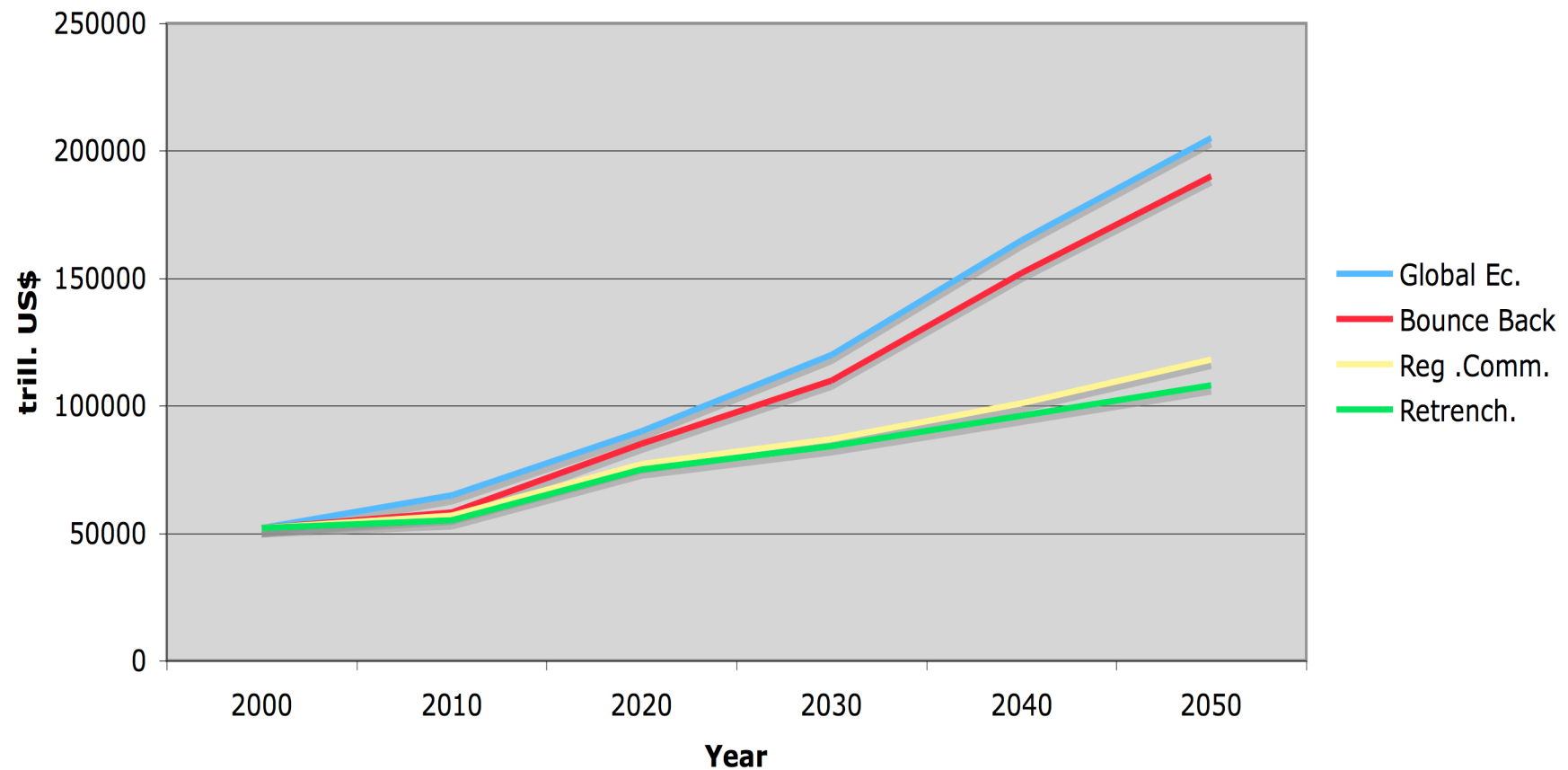
A Carbon-free World for Freight Transport and Logistics

Werner Rothengatter

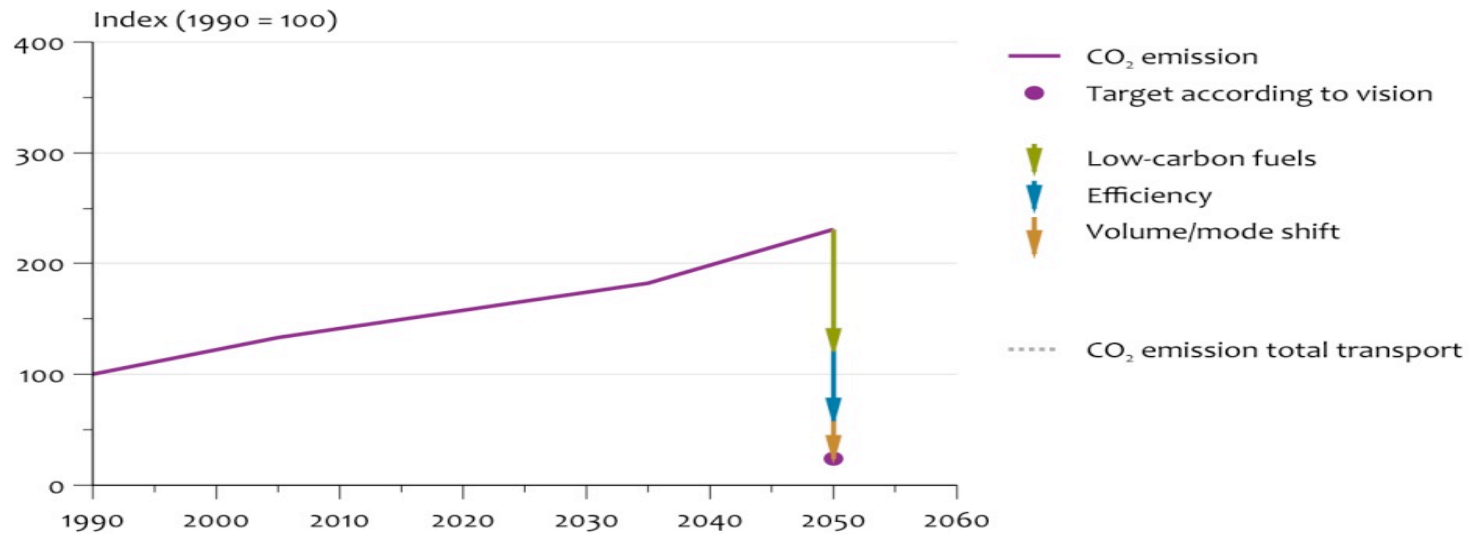
Karlsruhe Institute for Technology

Scenarios of ITF for the Development after the Economic Crisis

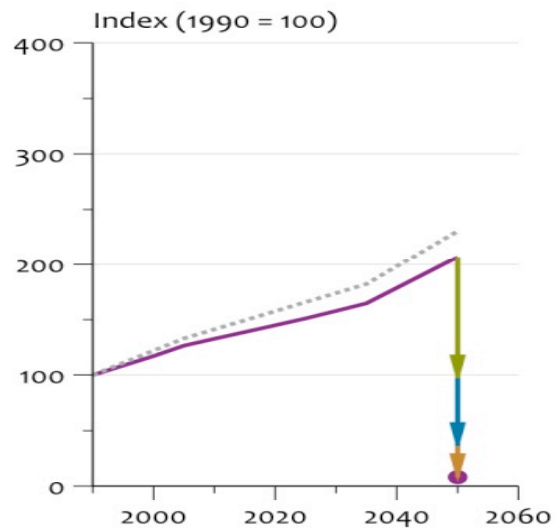
ITF Scenarios of Economic Development



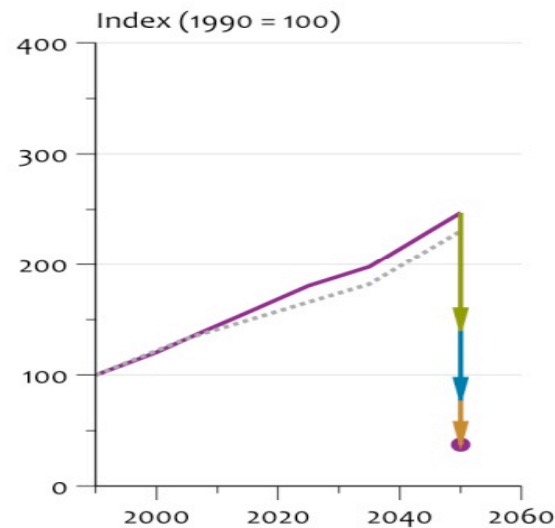
Total transport sector



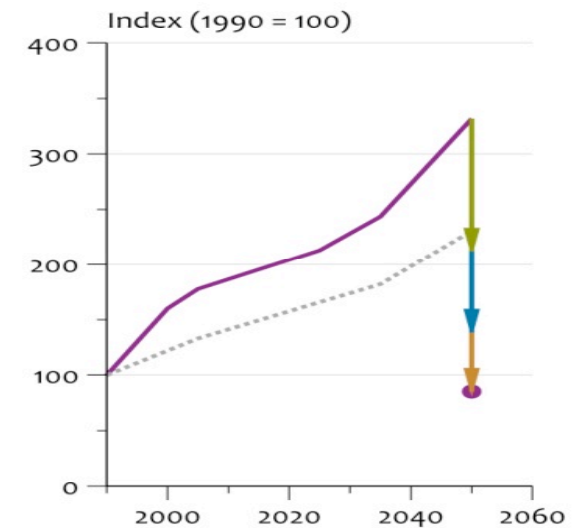
Passenger transport (road, rail)

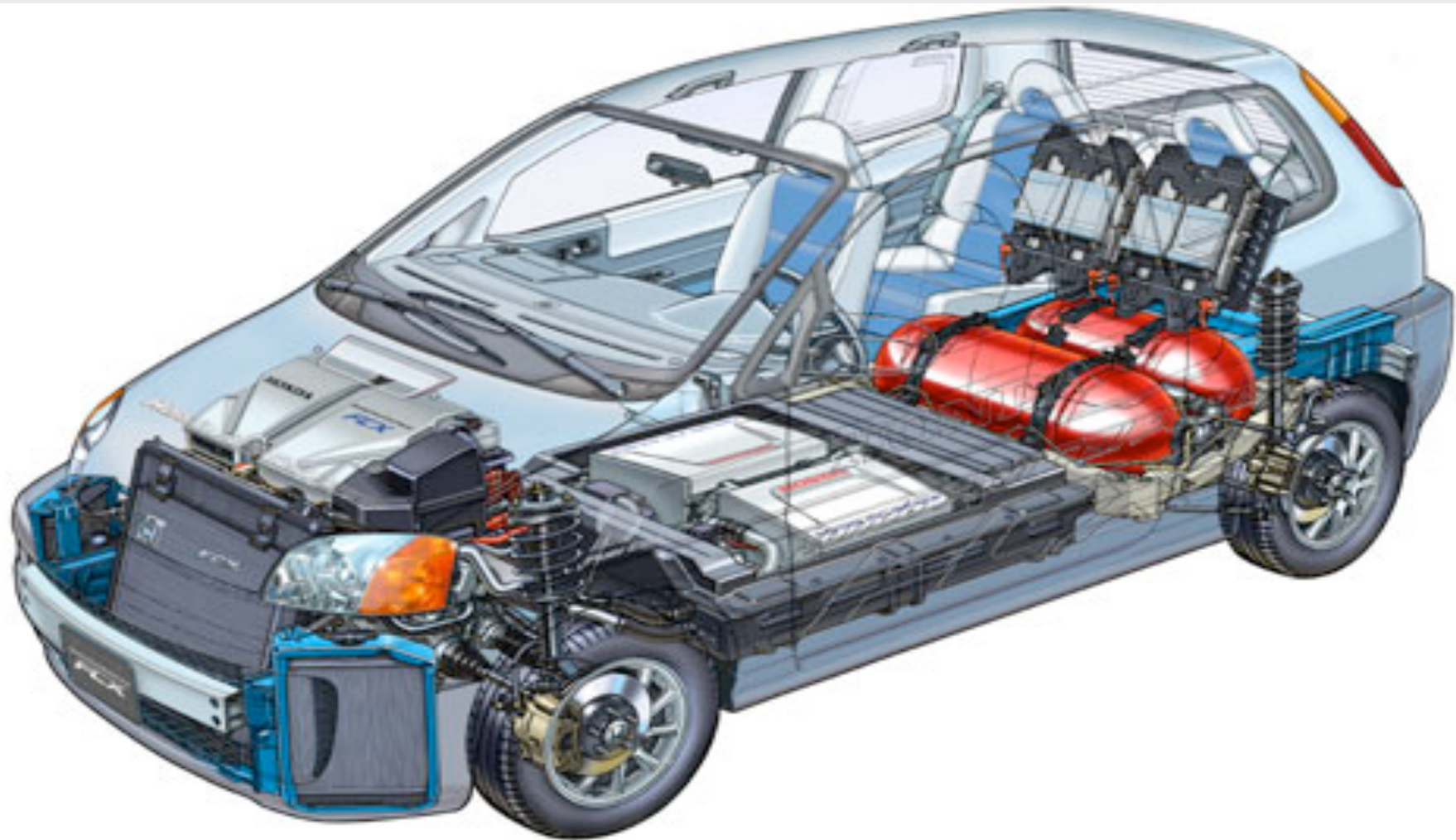


Freight transport (road, rail, water)



Aviation (domestic and within EU)

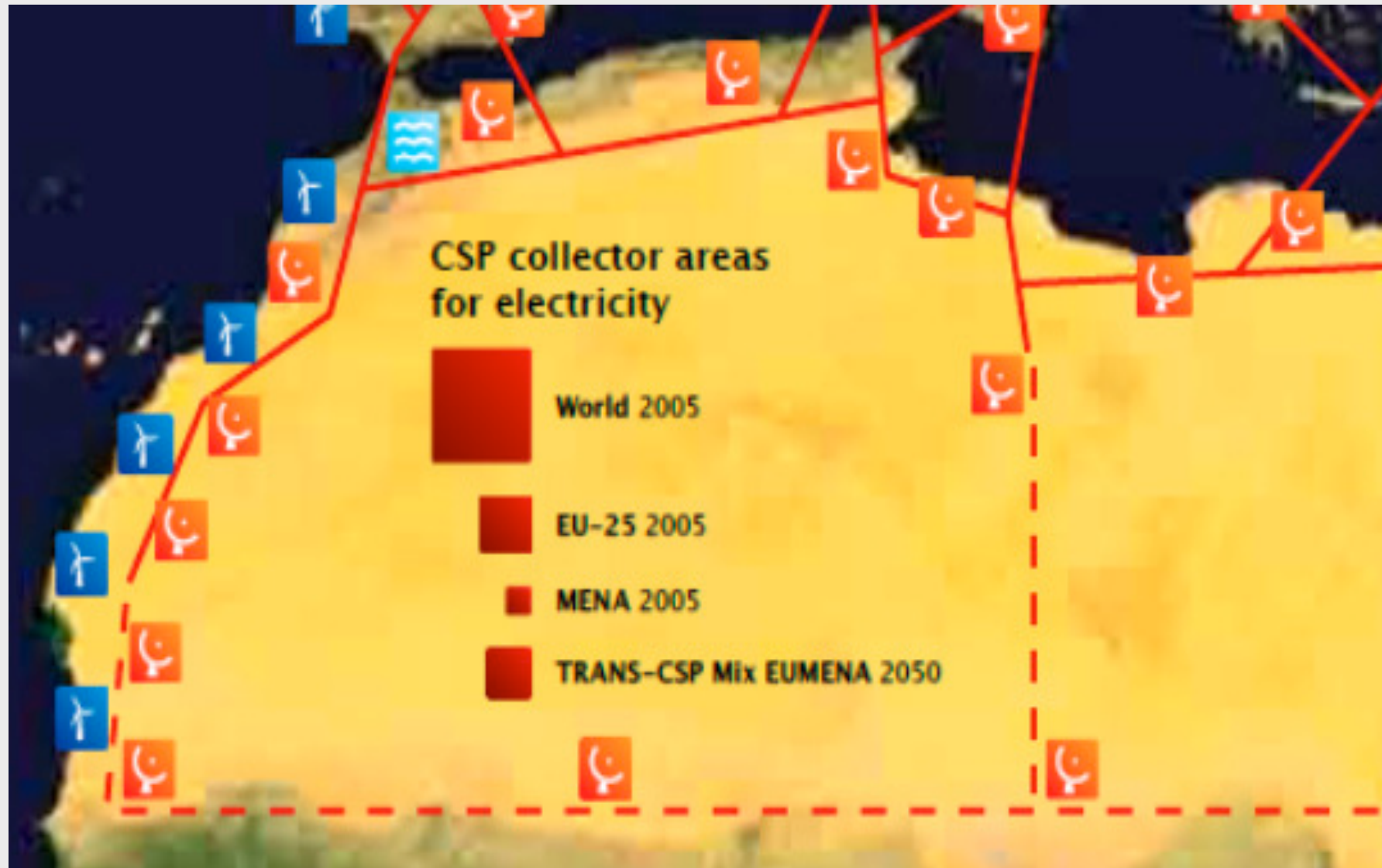




Oil: An Energy Source with Increasing Risk



Sun Collector Areas in the Sahara Desert





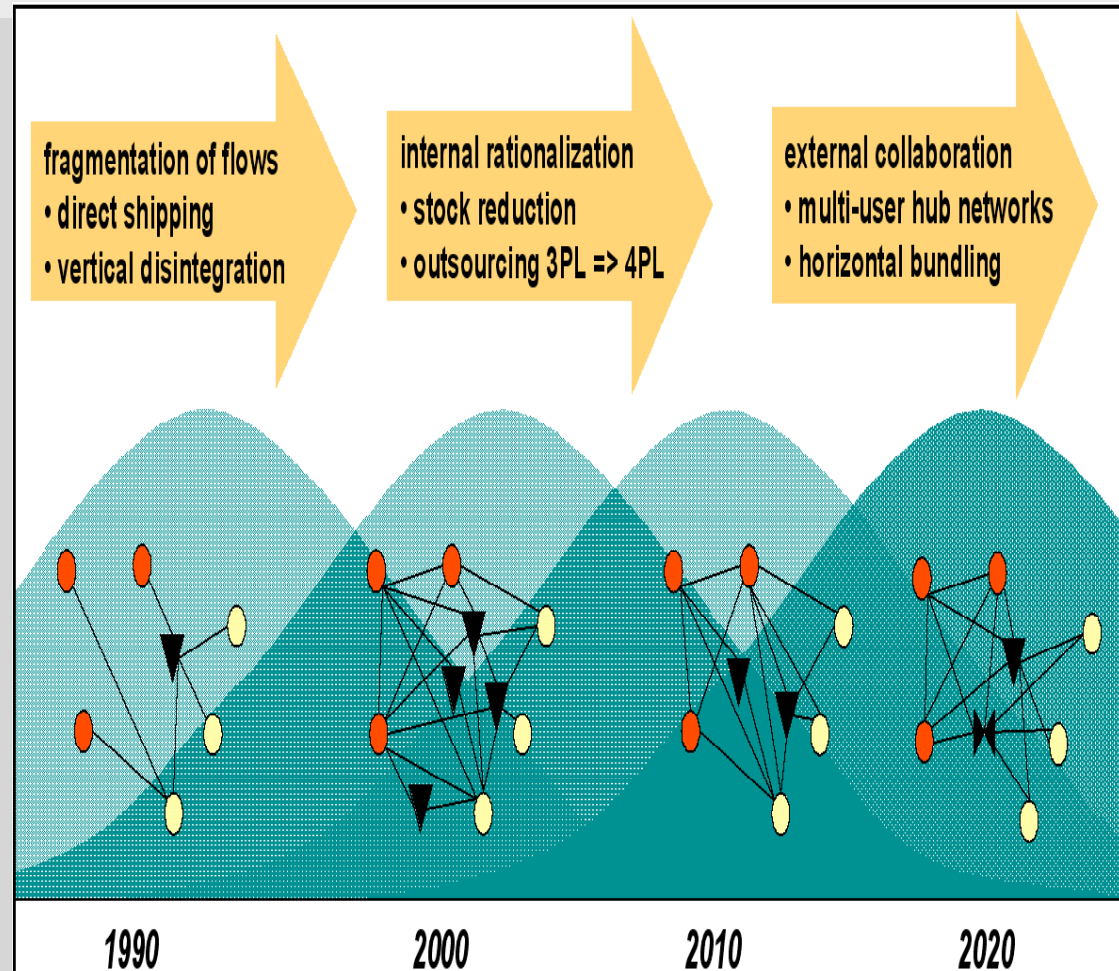
Algae Farming for Producing Biofuel of the Third Generation



Algae Farming

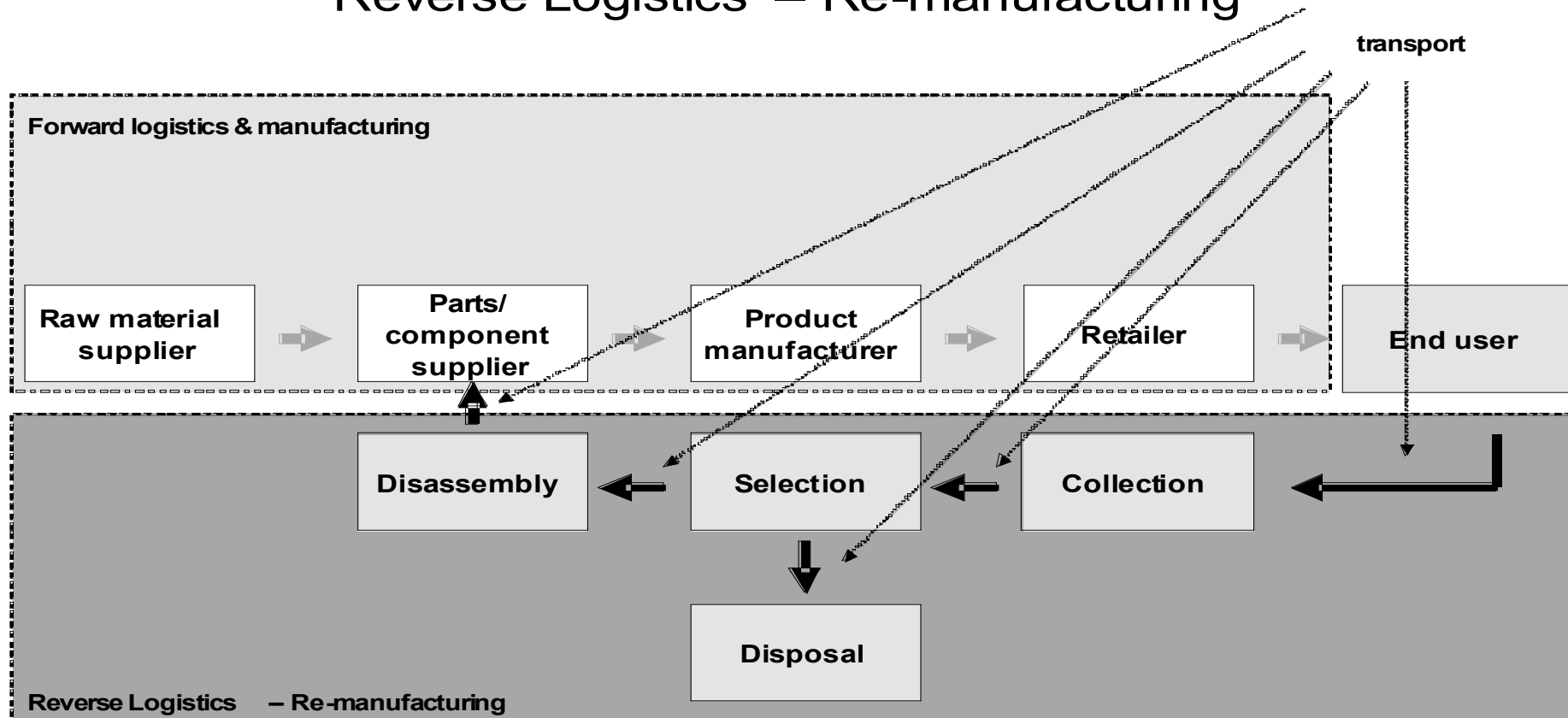


Example for Endogenous Development of Logistics: Collaborative Logistics



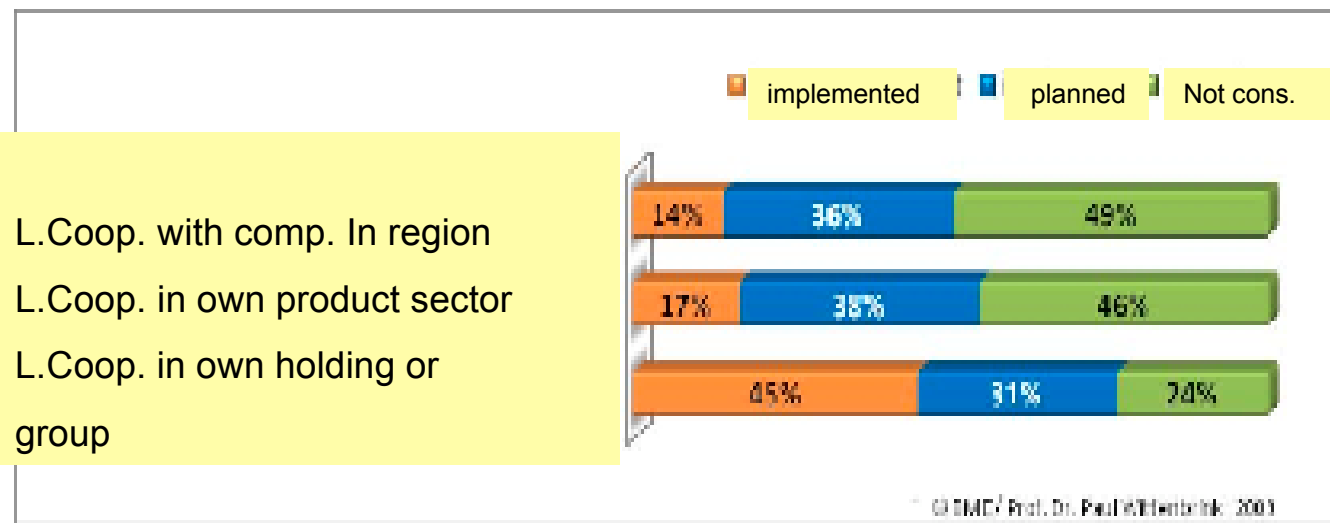
Source: Tavasszy et al. 2009

Reverse Logistics – Re-manufacturing

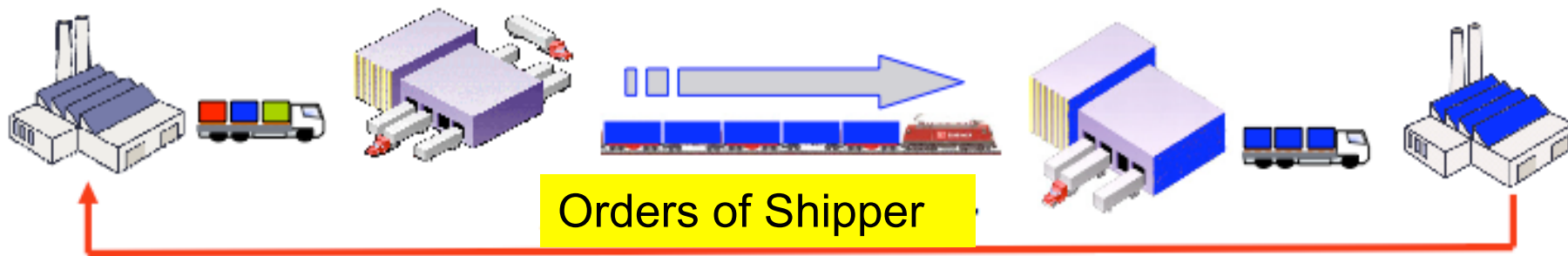


Preferences of the Industry for Cooperative Logistics in Germany

Type of Cooperations



Railports: A New Concept for Railway-based Logistics



Requirements of the Shipper

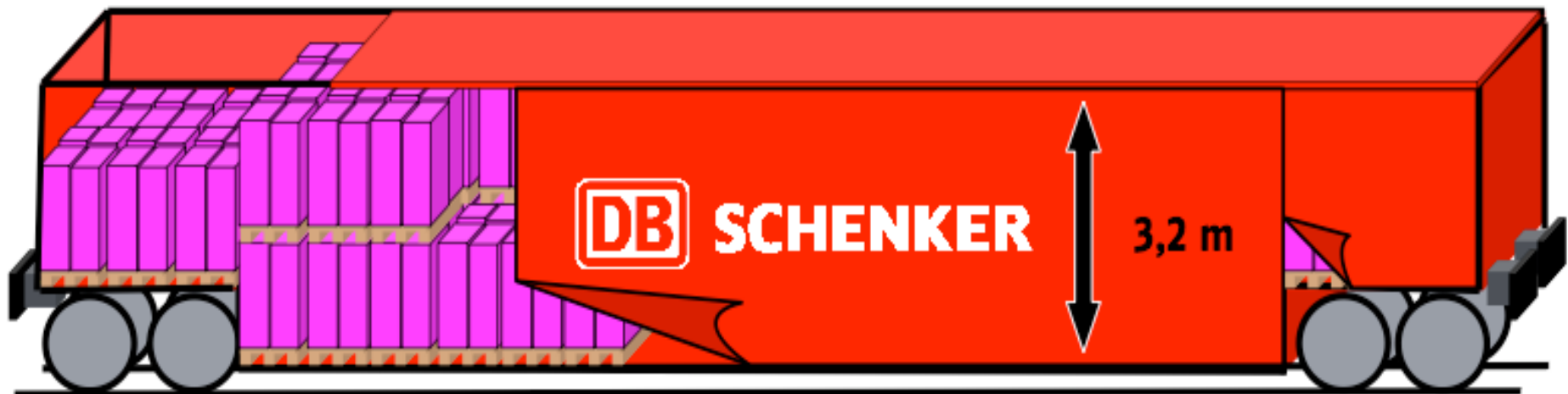
- min. capital empl.
- reliability, JIS
- no inventory
- VAS at TP

Service of Rail Company

- min. transshipments
- all services at TP
- priority ordering
- scheduled train service

Modal Shift Road -> Rail

Often new production systems for rail transport needed.
New transshipment points, new rolling stock, new
organisation

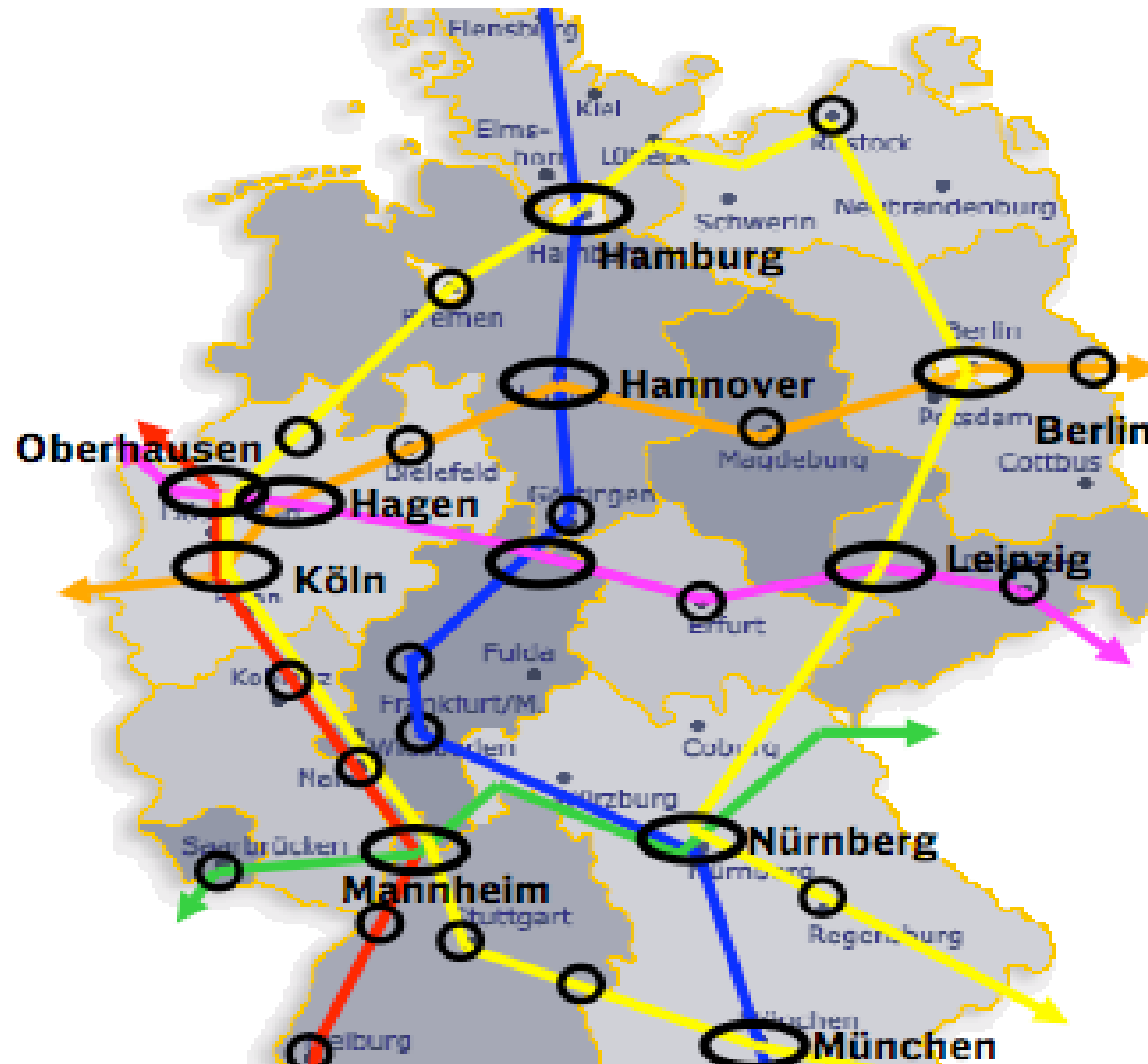


Railport System



- Transshipment Road-Road
- Transshipment Road-Rail

DB Schenker
Prod. System
For Pallet
Sized
Consign-
ments



Flensburg	⇔ Kufstein	+3h	25 h
Salzburg	⇔ Passau	+8 h	54¾ h
Emmerich	⇔ Basel	+4 h	18½ h
Aachen	⇔ Frankfurt (Oder)	+3 h	20 h
Kaldenkirchen	⇔ Bad Schandau	+2 h	17½ h
Saarbrücken	⇔ Cheb	+1 h	12½ h

Articulated Truck Moving on Interchange Platform



Moving Semi-Trailer on Wagon

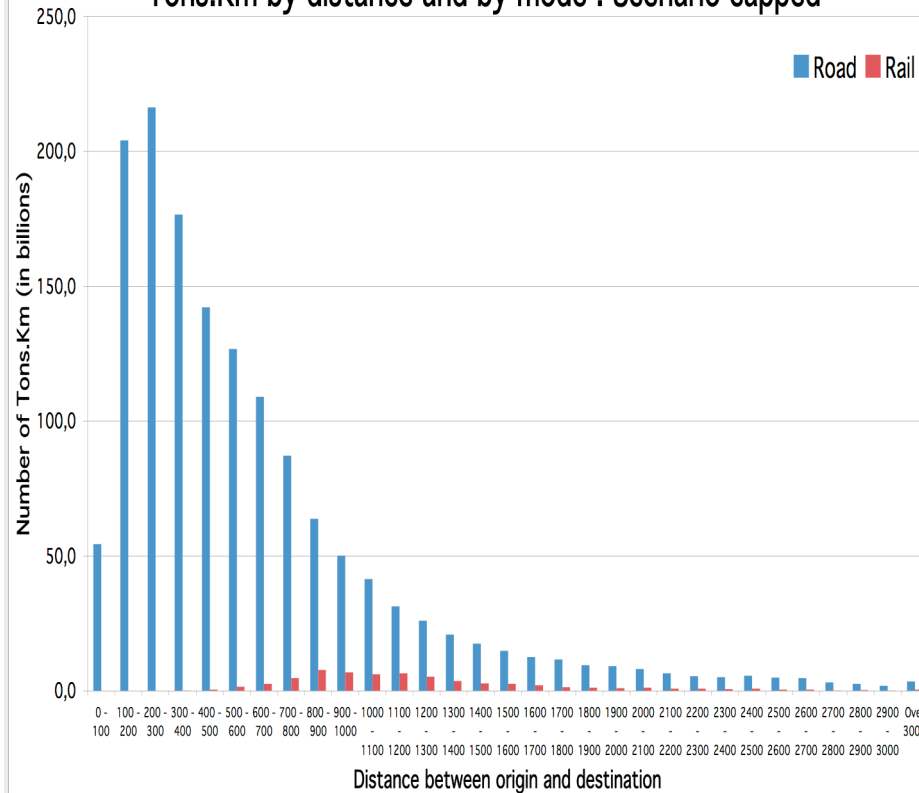


Cargo-Beamer: Train Leaving Platform

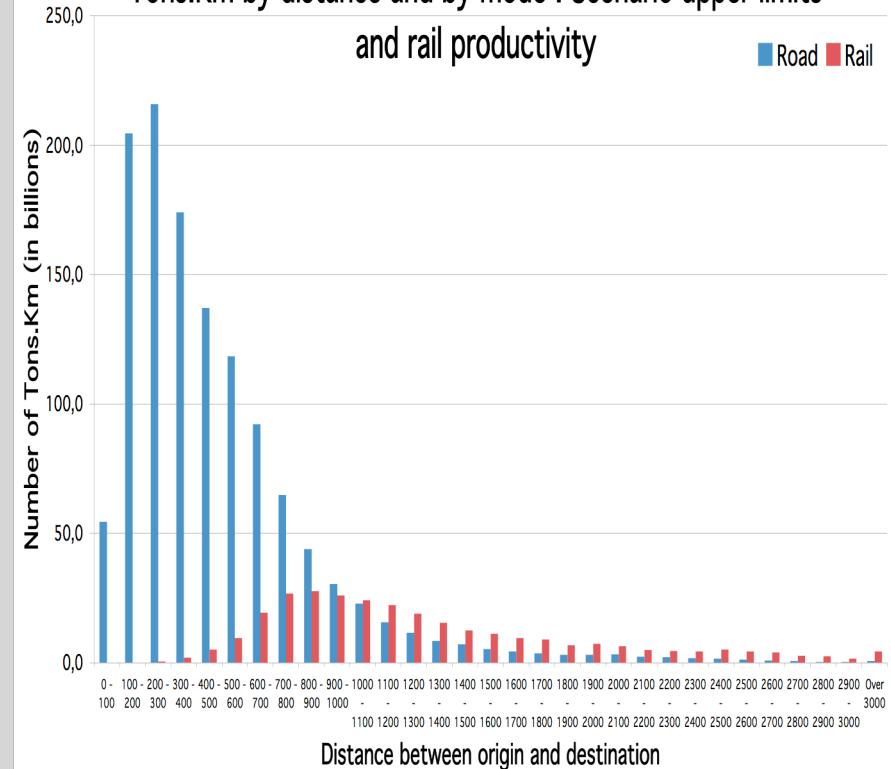


Potential of Railways in Europe Dependent on Transport Distance, Non-bulk Cargo

Tons.Km by distance and by mode : Scenario capped

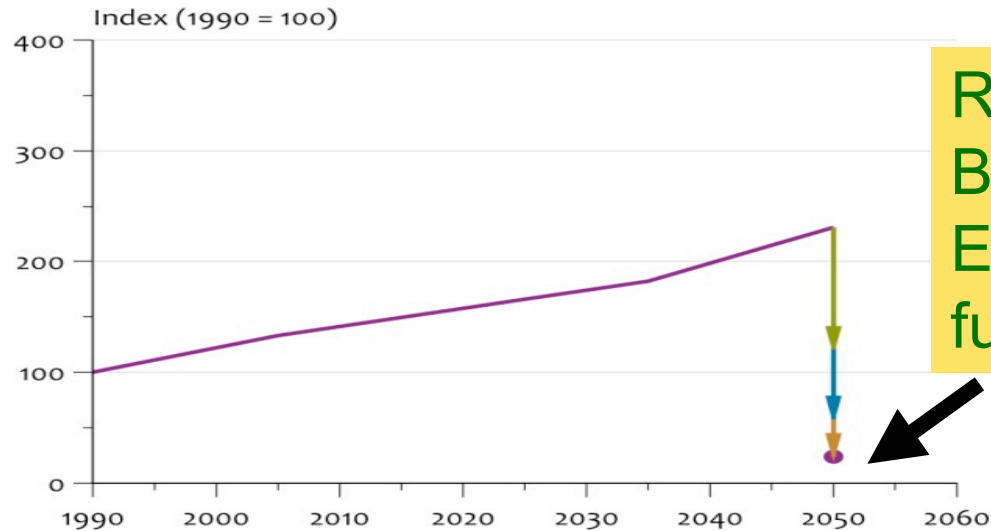


Tons.Km by distance and by mode : Scenario upper limits
and rail productivity



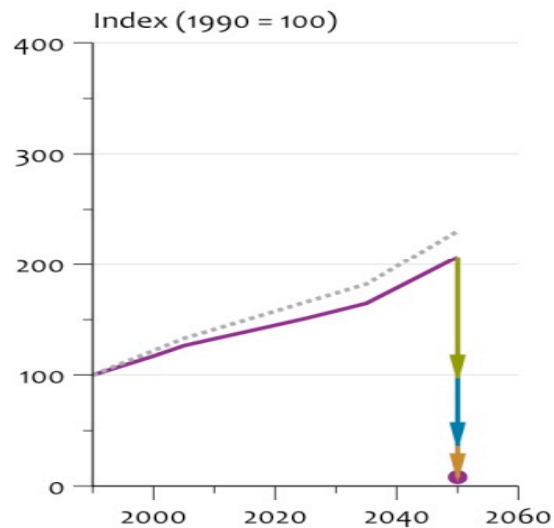
Route towards low-carbon transport system EU

Total transport sector

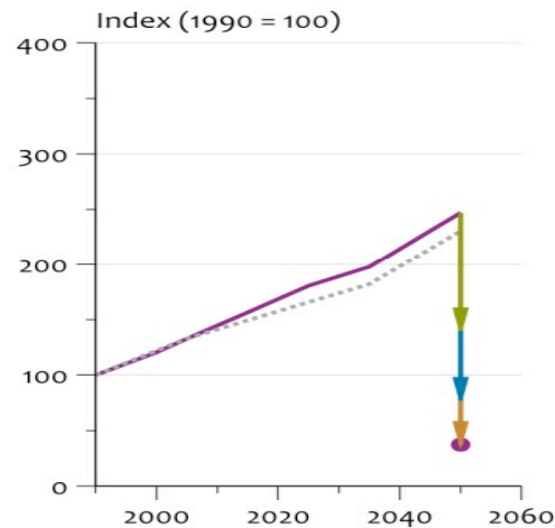


Right Lane to Zero Carbon:
Big Jumps for Renewable
Energy Production and Bio-
fuels of the 3rd Generation

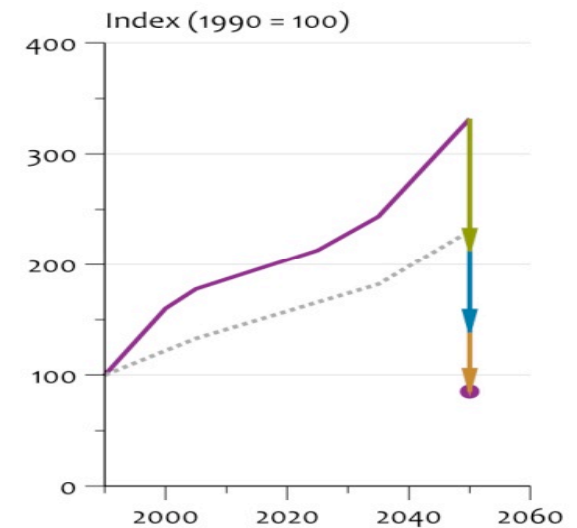
Passenger transport (road, rail)



Freight transport (road, rail, water)



Aviation (domestic and within EU)



More Cooperation of Different Transport Modes is Necessary

