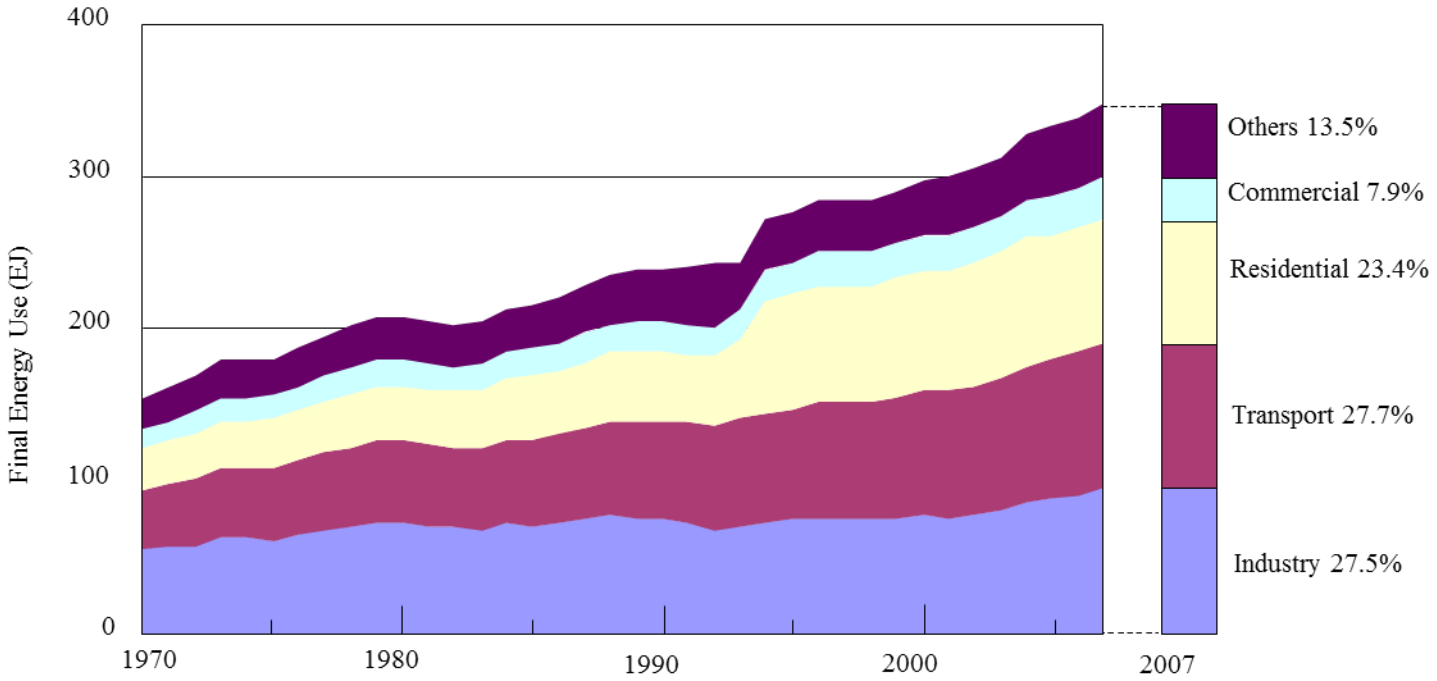
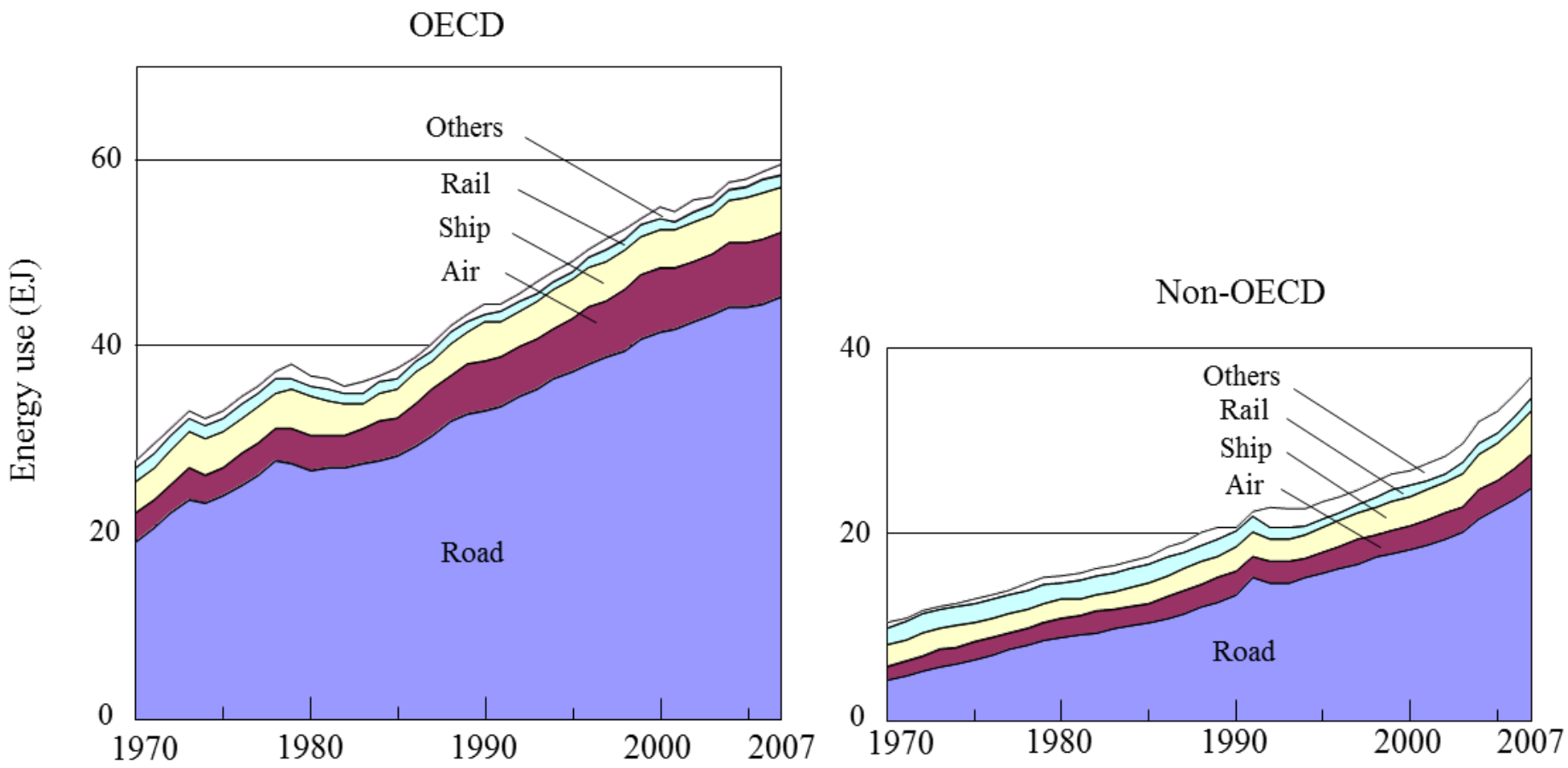
Energy End-Use: Transport

Global Energy Use in Various End-Use Sectors



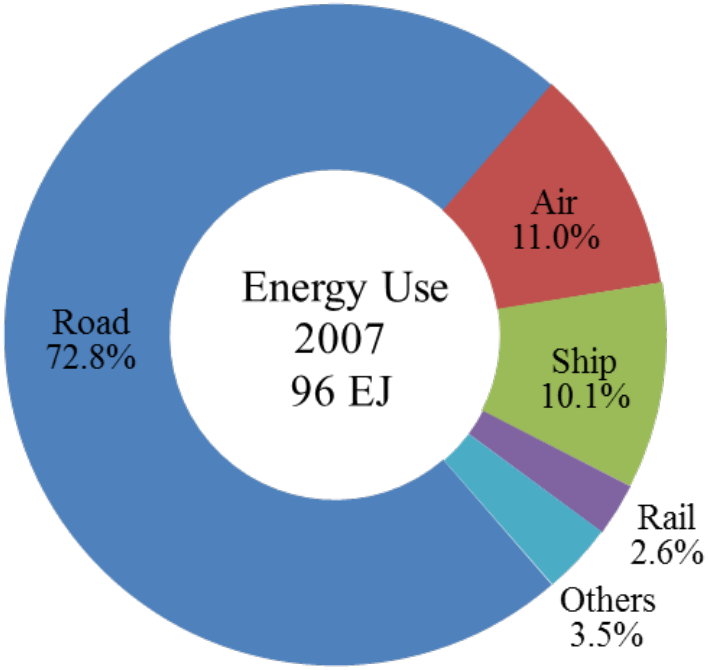
Energy End-Use: Transport

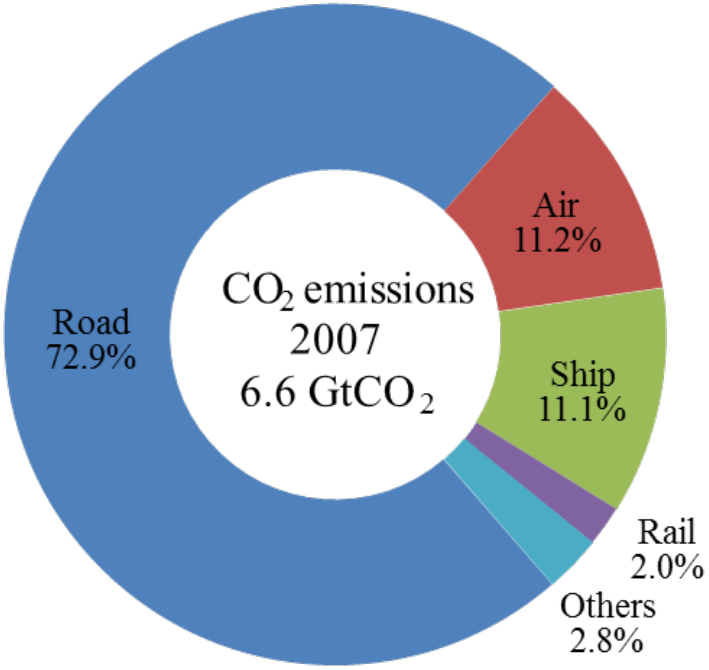
Transport Energy Use in OECD and non-OECD Countries by Mode



Energy End-Use: Transport

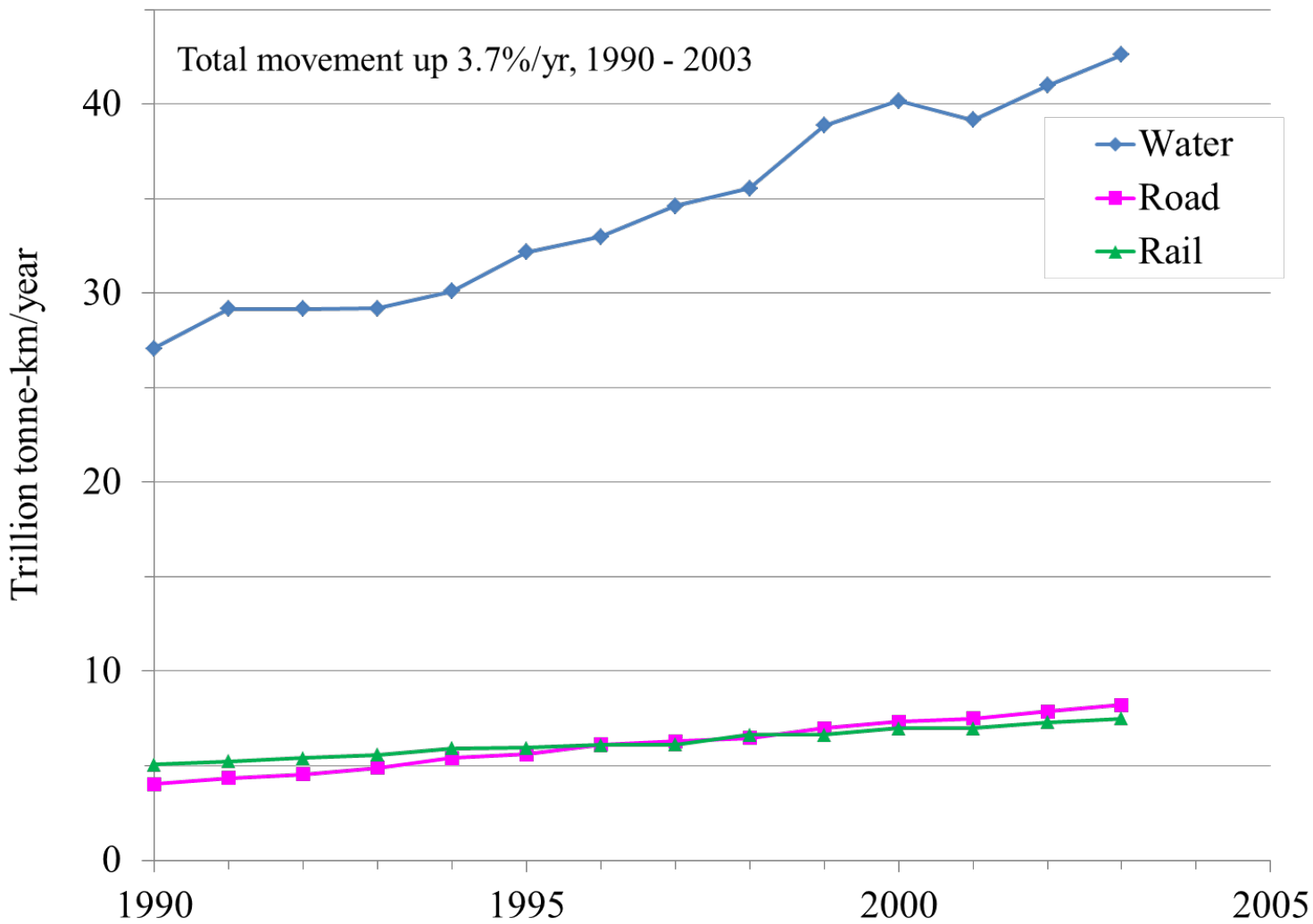
Modal Share of Global Energy Use and CO_2 Emission in Transport Sector





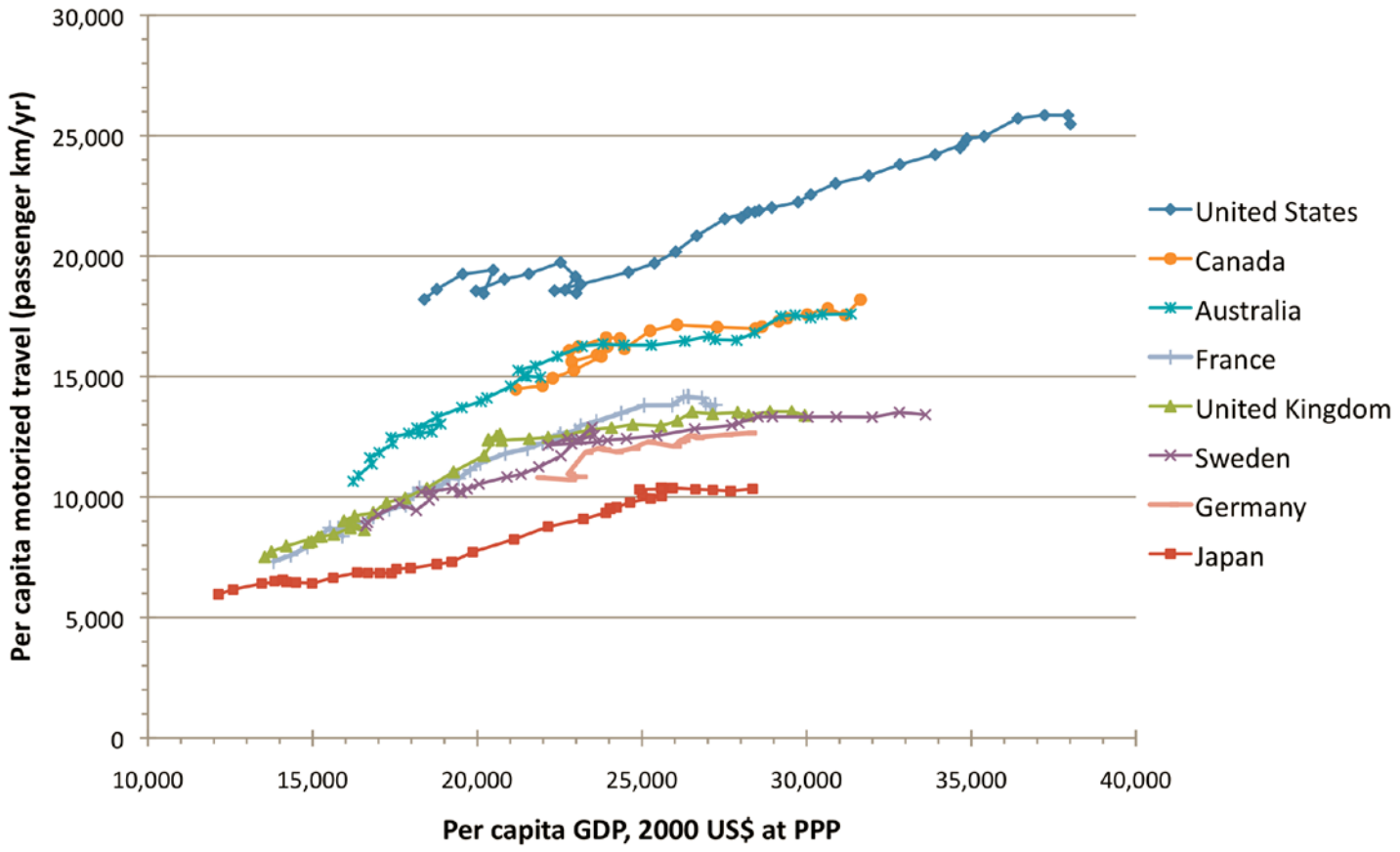
Energy End-Use: Transport

Global Freight Movement in Trillion Tonne-km/Year



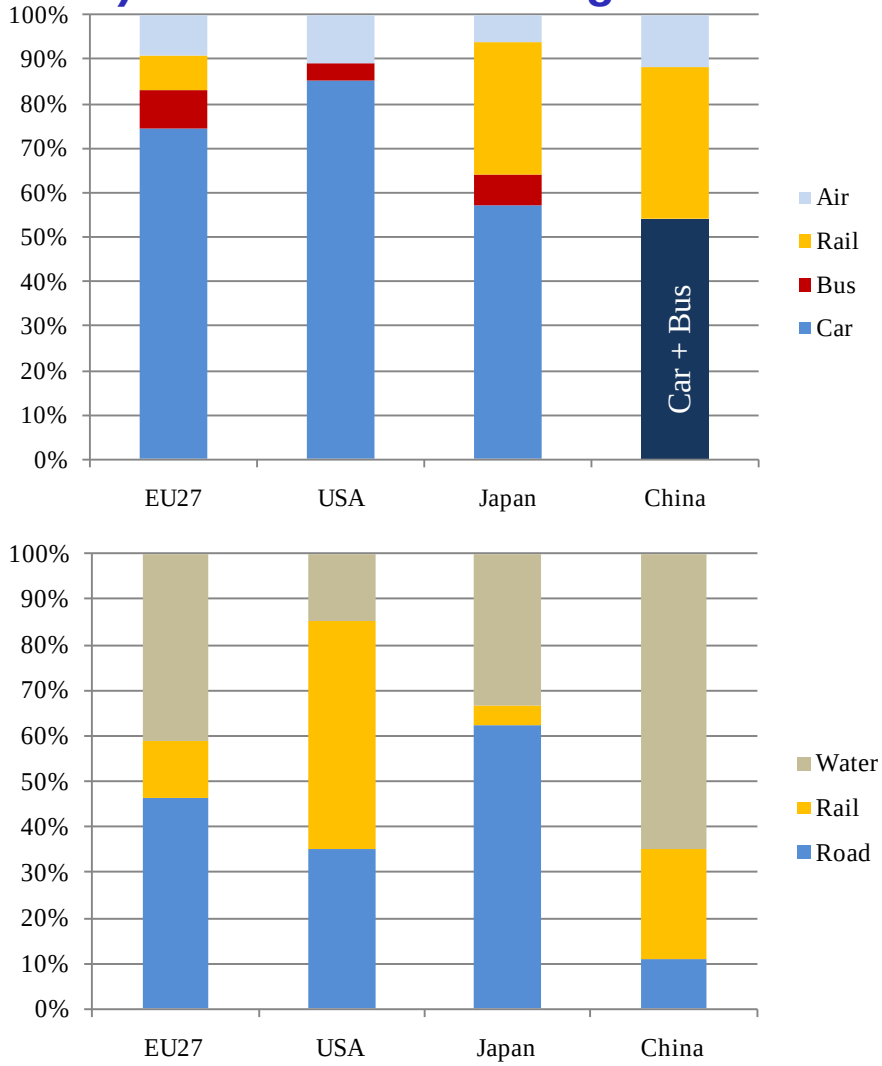
Energy End-Use: Transport

Passenger Motorized Travel in some OECD Countries



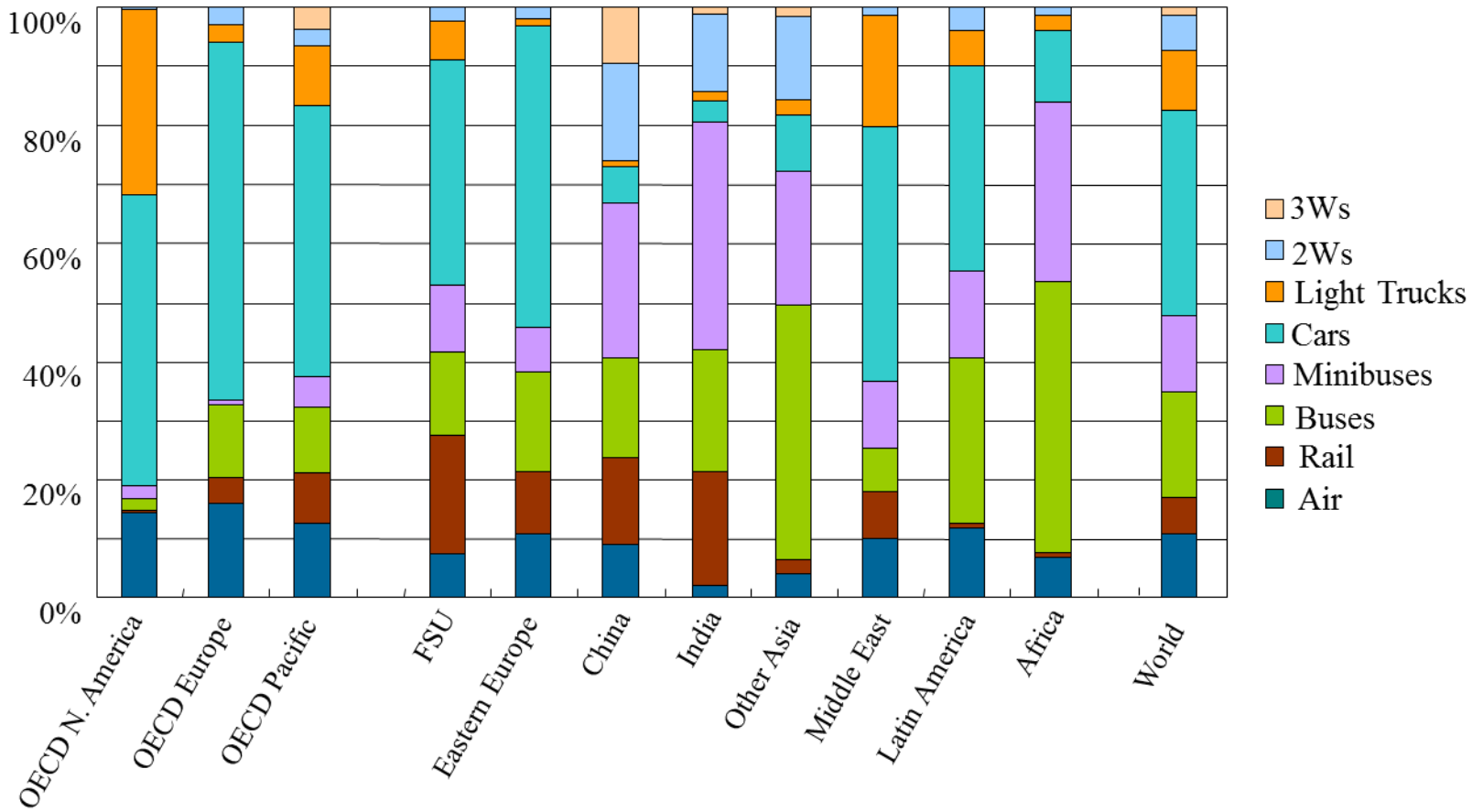
Energy End-Use: Transport

Modal Split of Passenger (Top) and Freight Transport (Bottom; Air Freight not Included) in Terms of Passenger-km and T-km



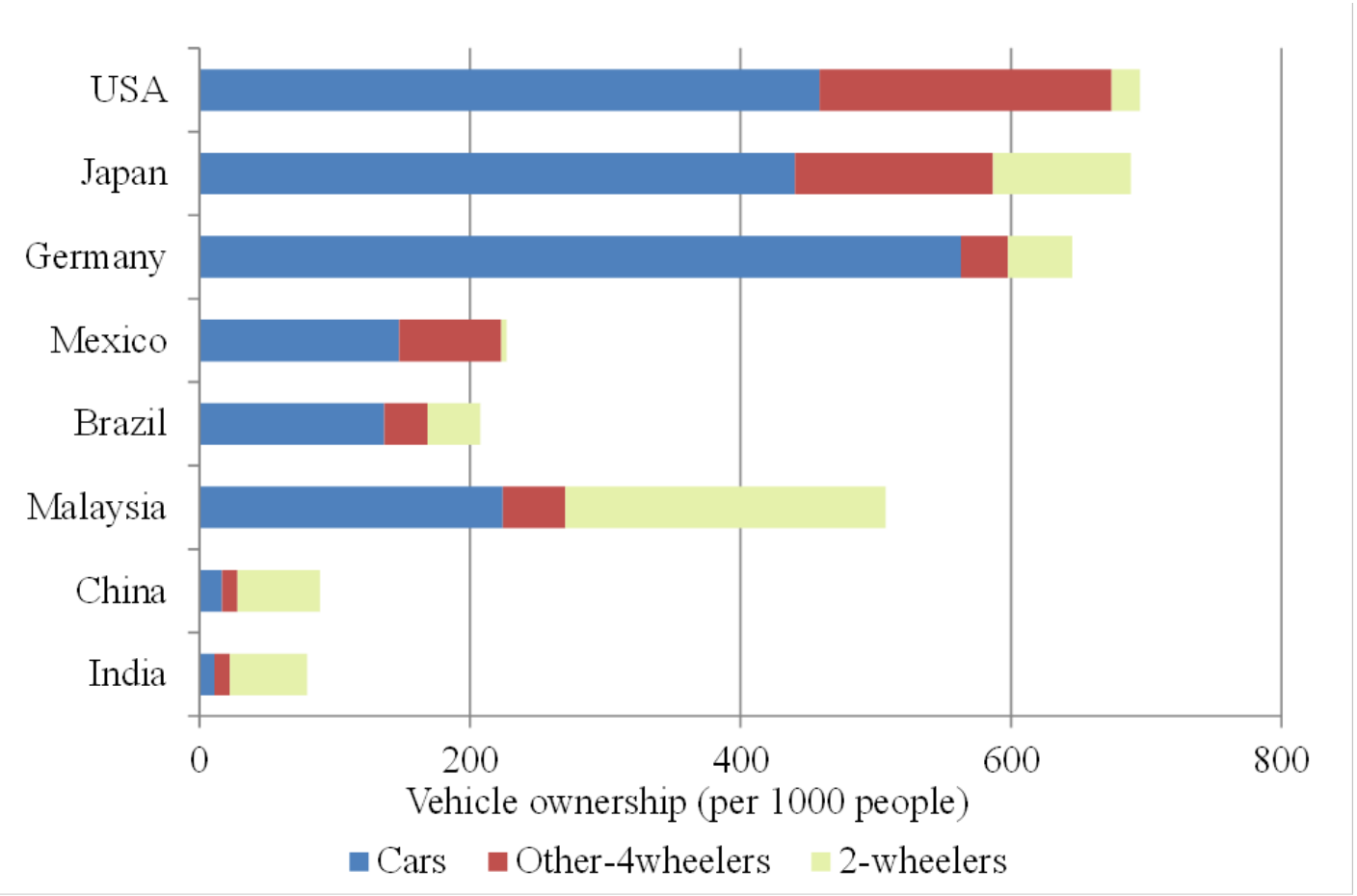
Energy End-Use: Transport

Estimated Motorized Passenger Travel Split By Mode

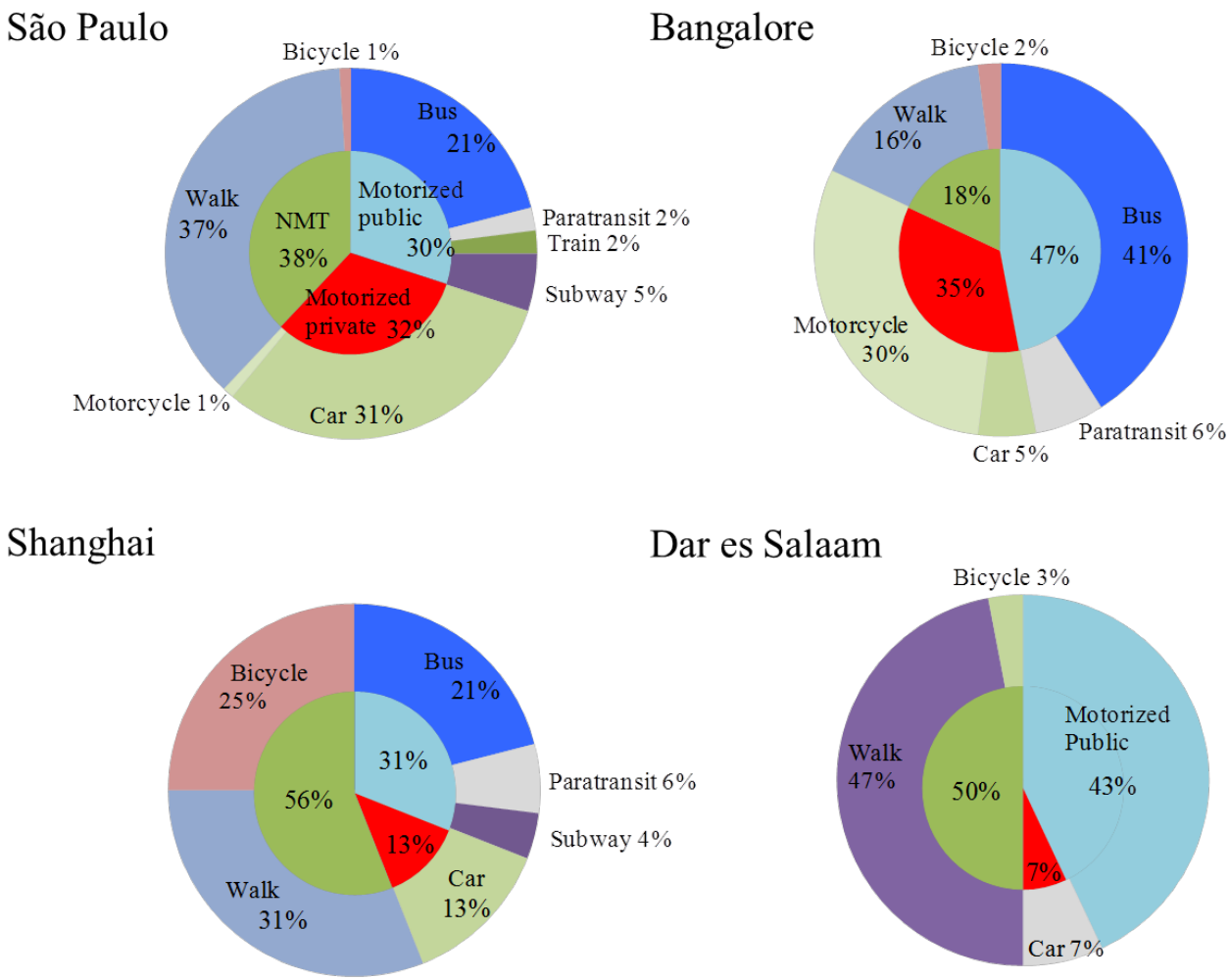


Energy End-Use: Transport

Vehicular Penetration in 2006 of Several Developed and Developing Countries

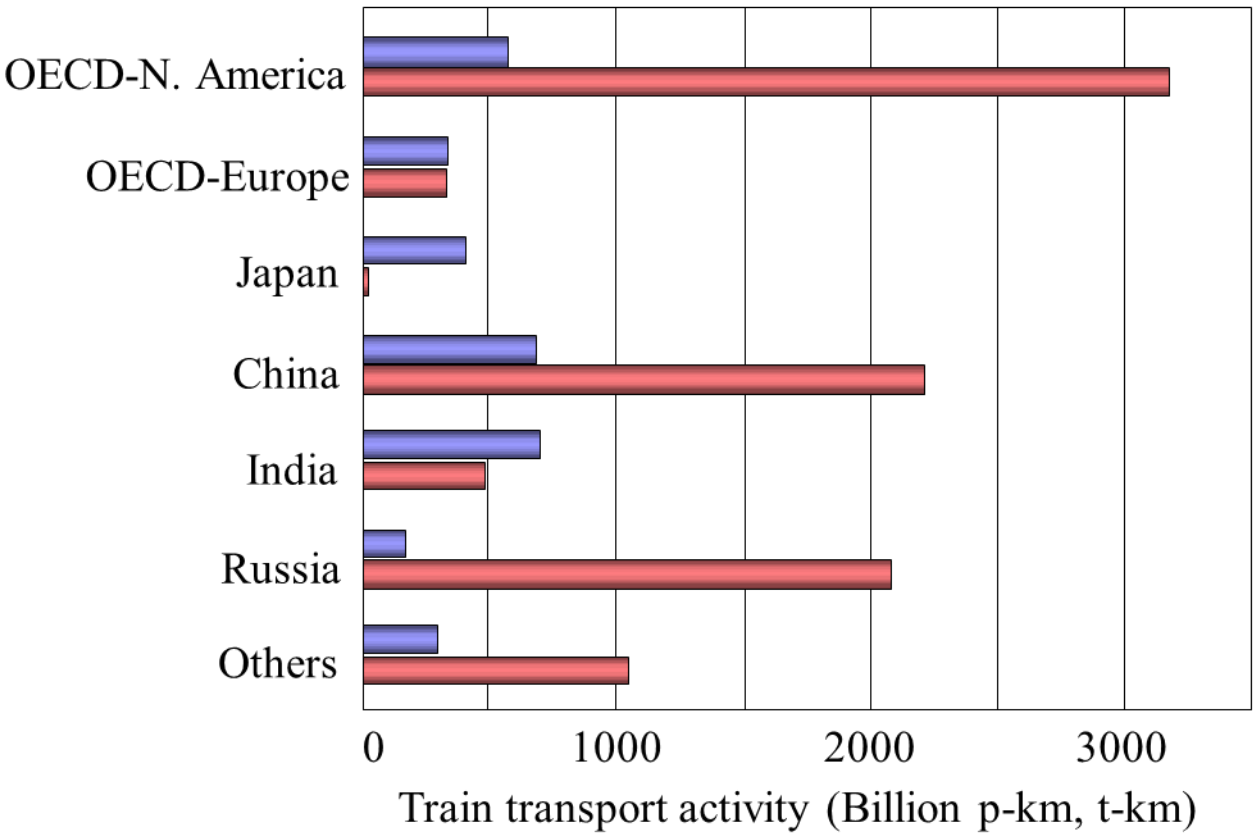


Passenger Transport Modal Shares of Several Cities in Developing Countries



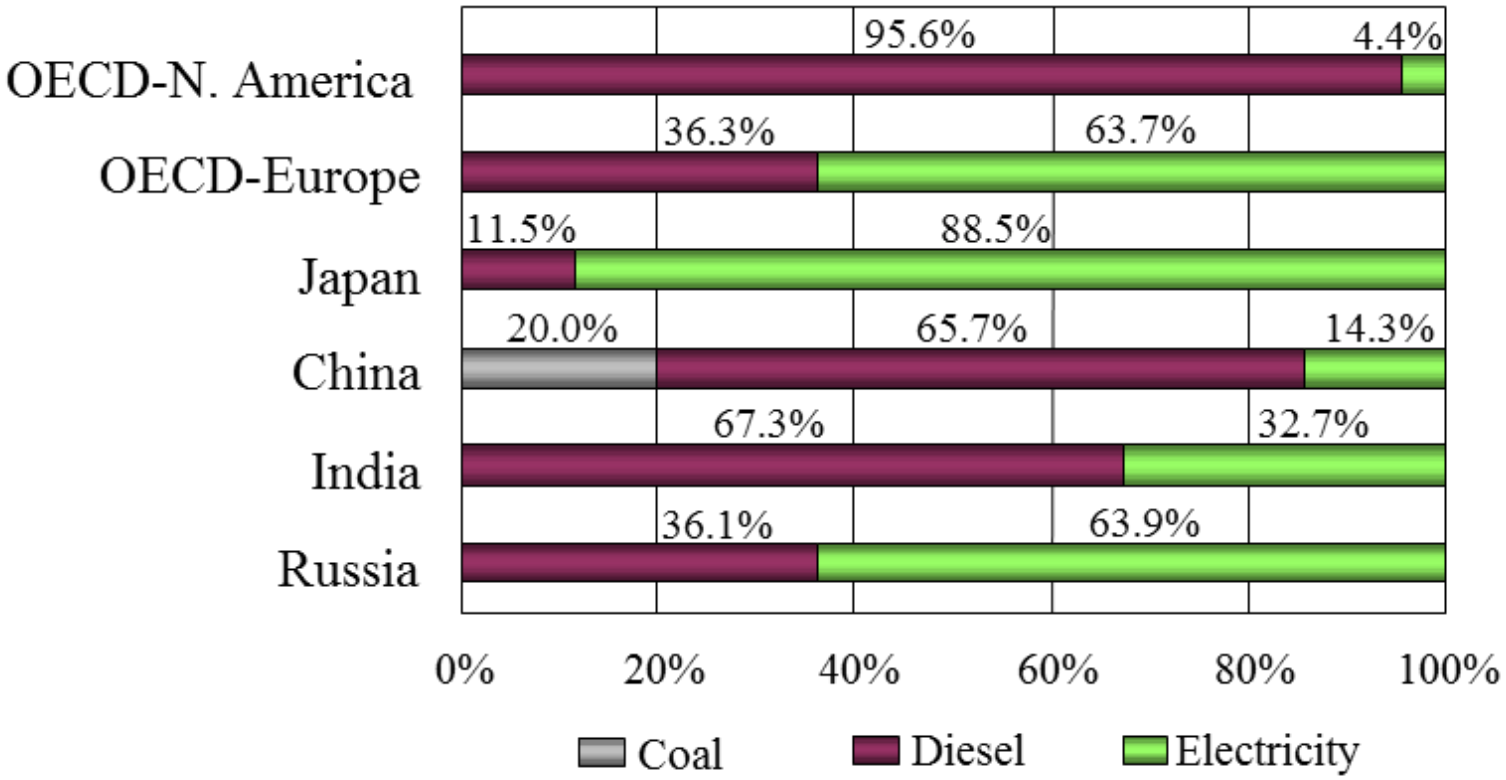
Energy End-Use: Transport

Railway Traffic in the Major Regions



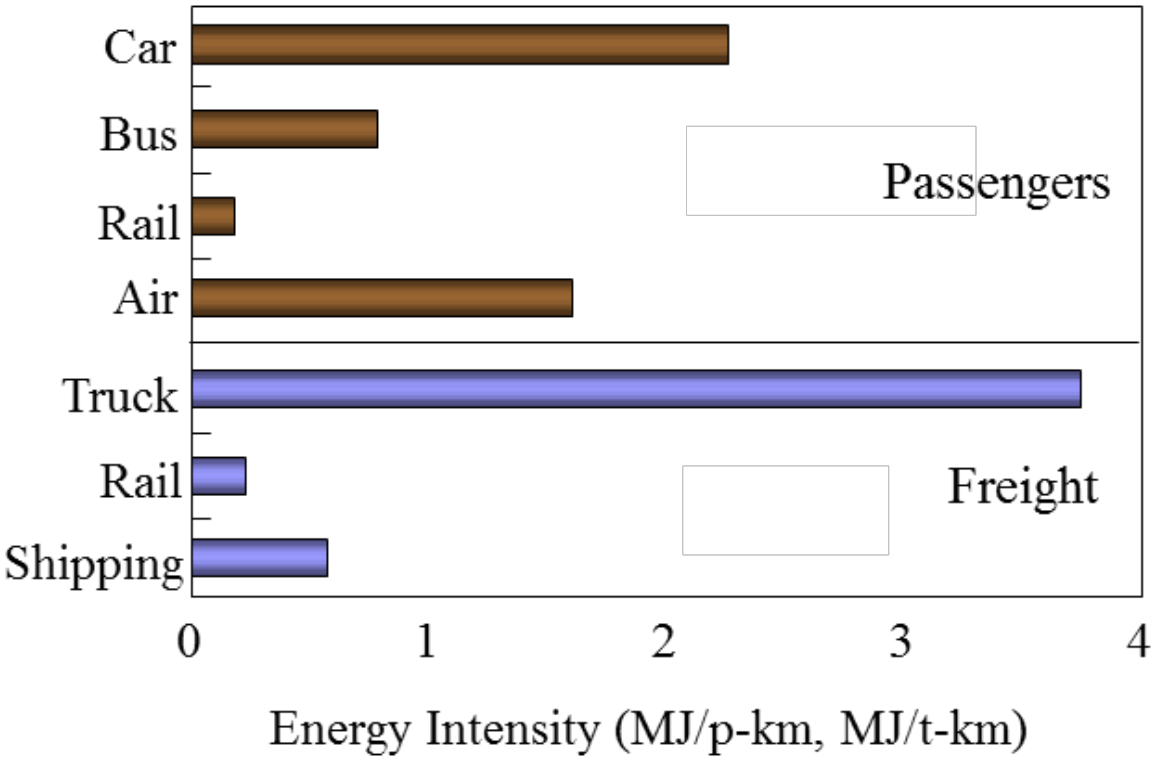
Energy End-Use: Transport

Energy Use in Railway Transport Systems in the Major Regions



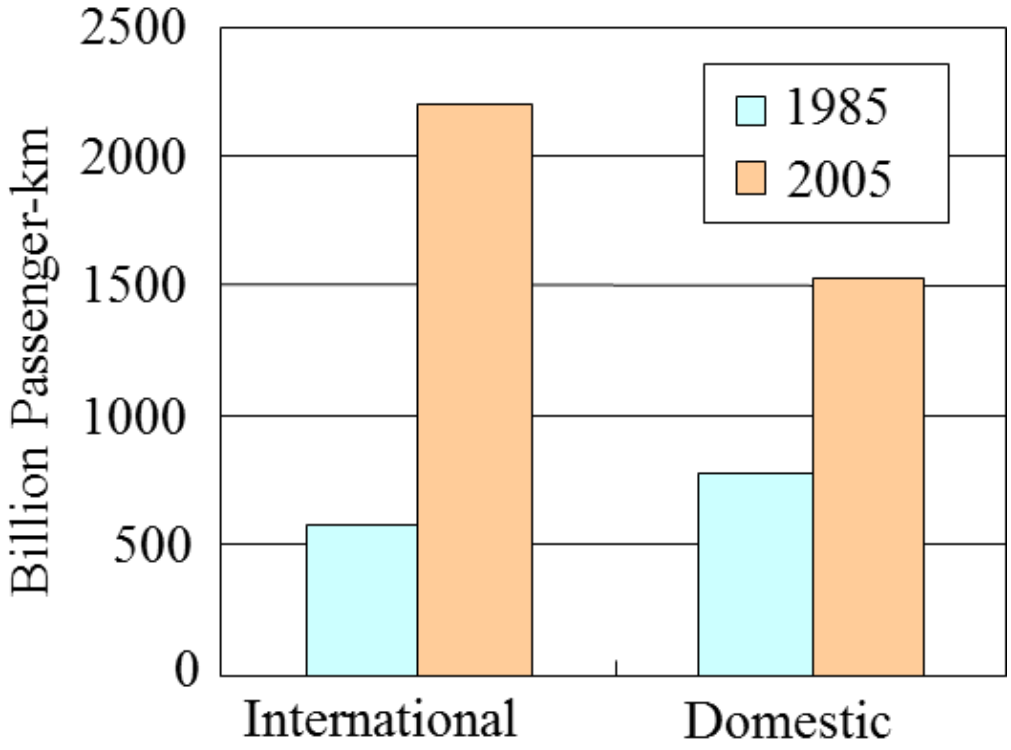
Energy End-Use: Transport

Energy Intensity of Domestic Transport System in Japan



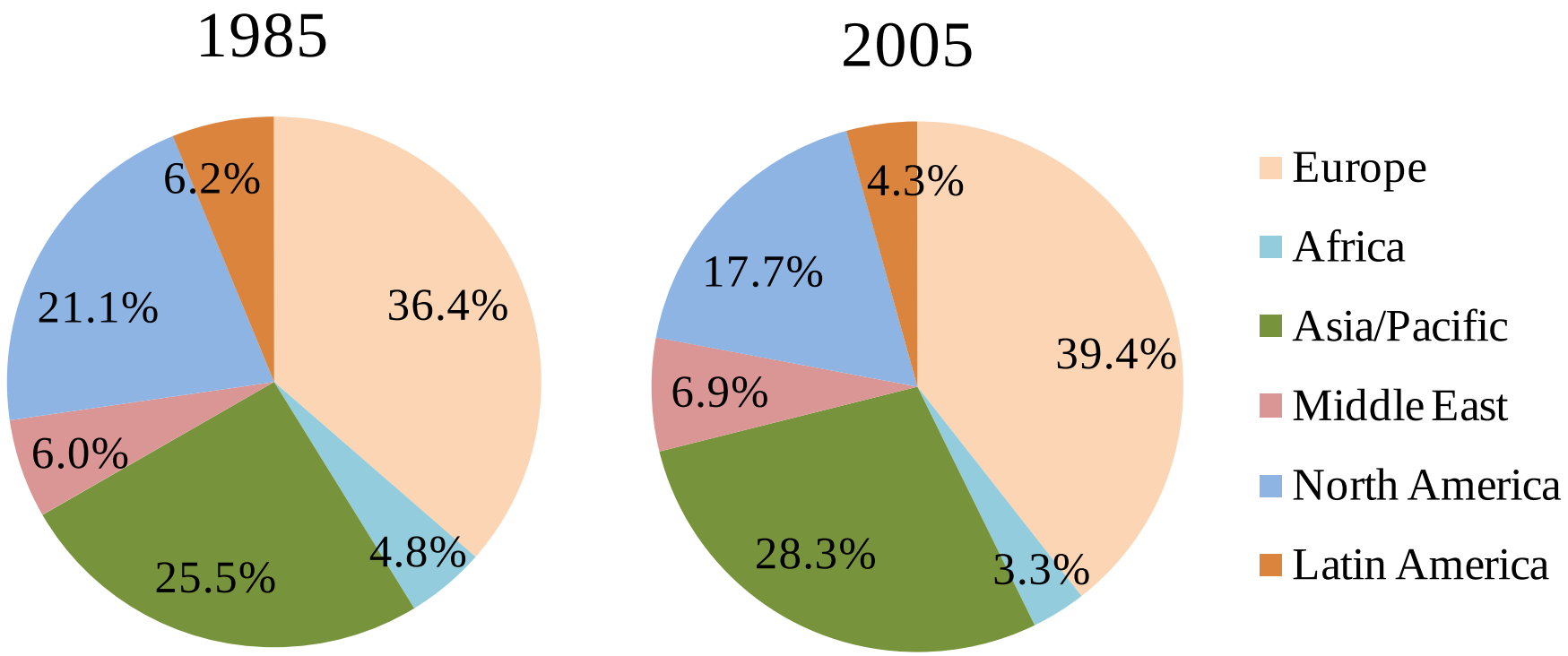
Energy End-Use: Transport

Trends in Schedule International and Domestic Traffic – World



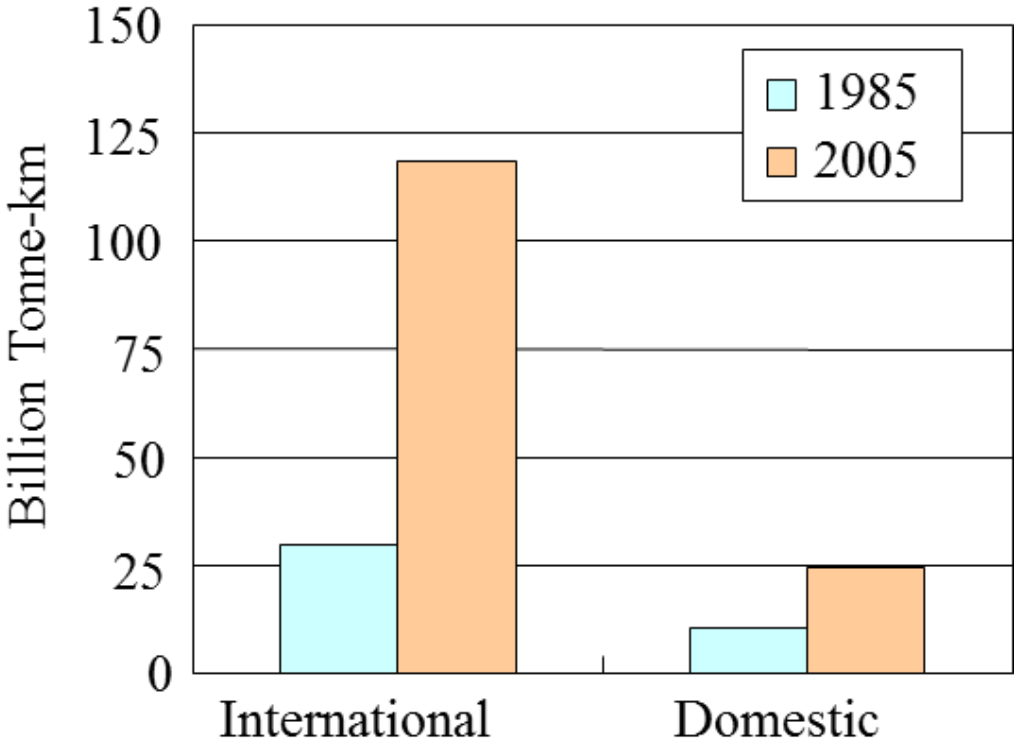
Energy End-Use: Transport

Regional Distribution Of Air Passenger Transpor



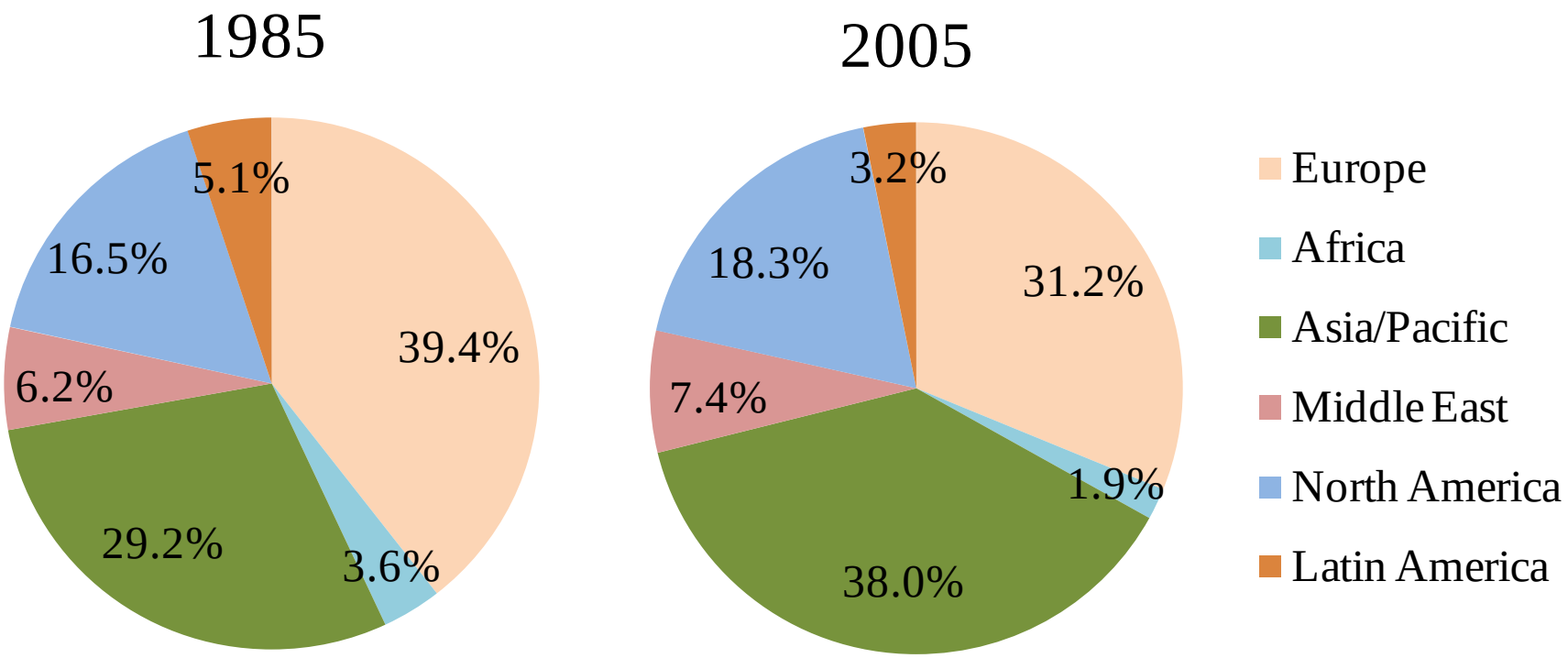
Energy End-Use: Transport

Trends in Scheduled International and Domestic air Freight Traffic – World



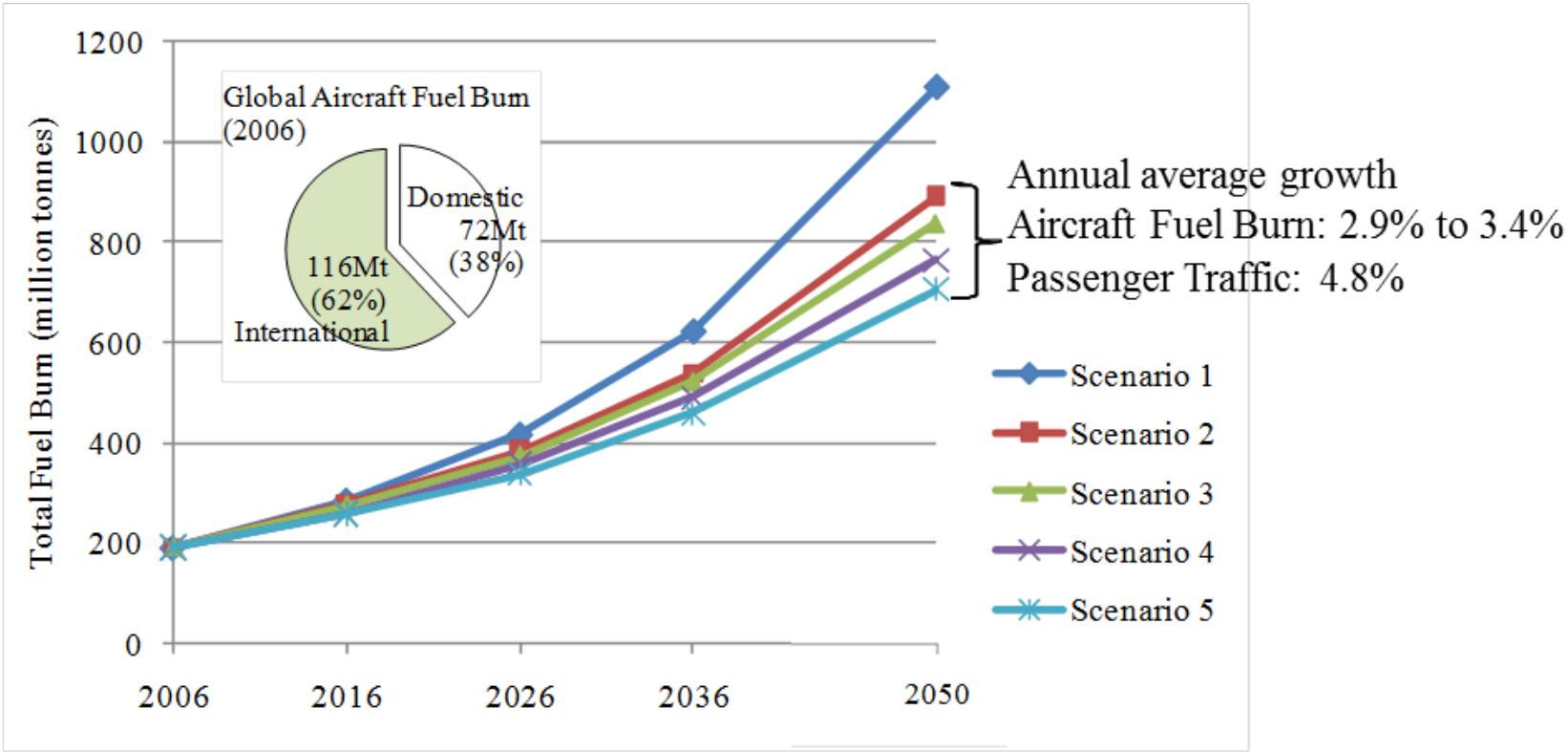
Energy End-Use: Transport

Regional Distribution of Air Transport



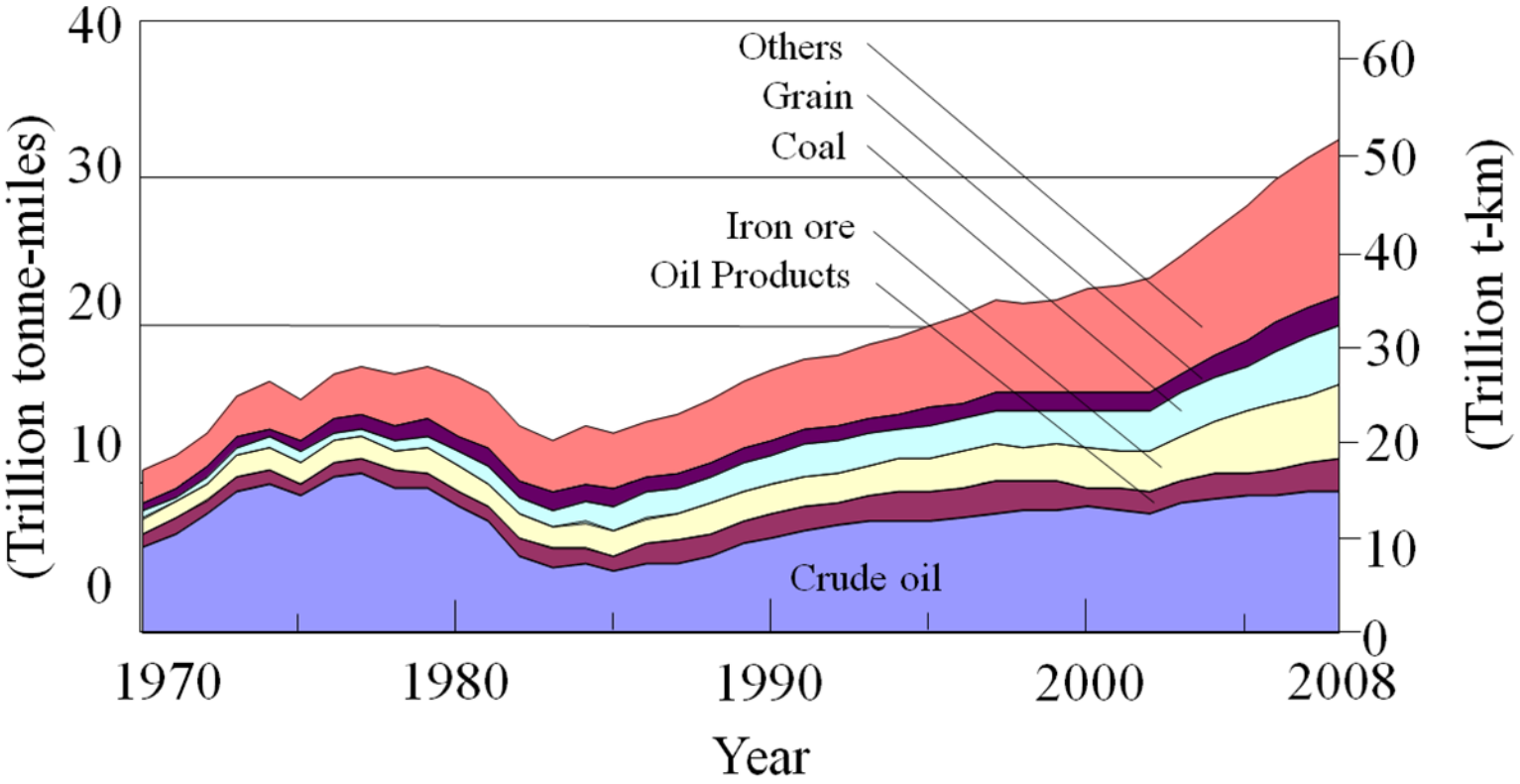
Energy End-Use: Transport

Global Aircraft Fuel Burn, International and Domestic Traffic Combined



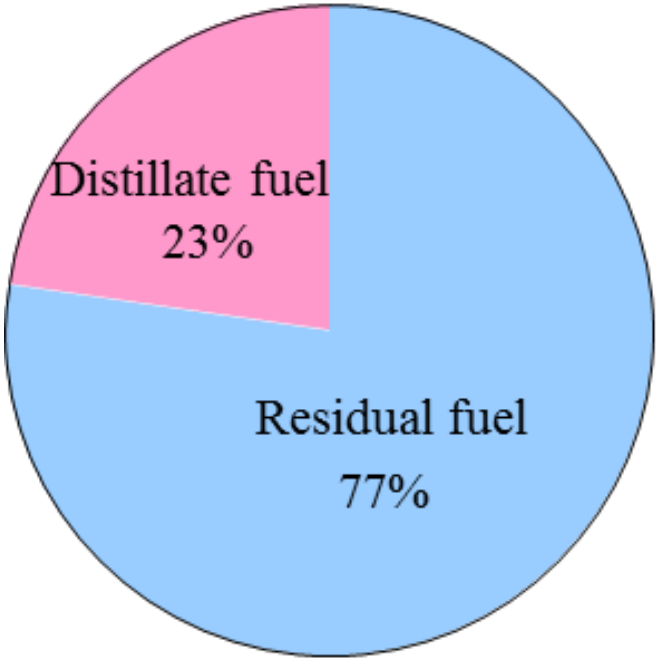
Energy End-Use: Transport

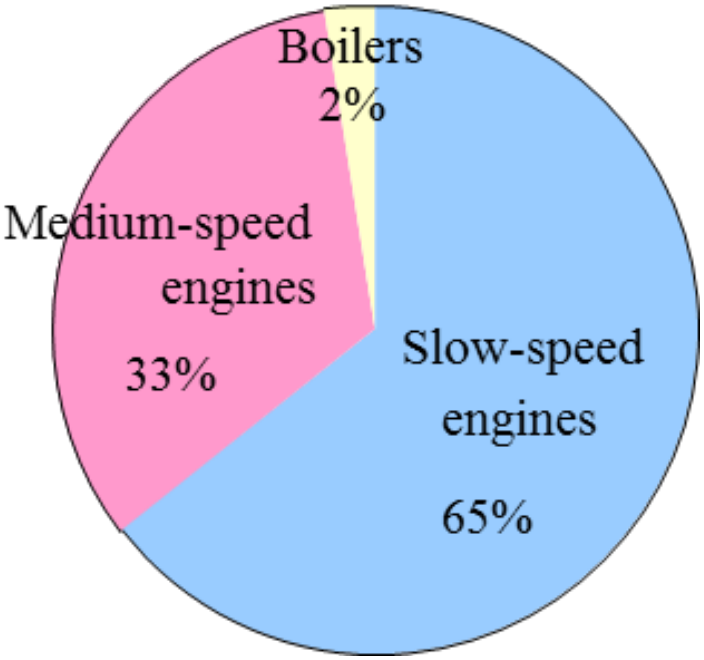
World Seaborne Trade



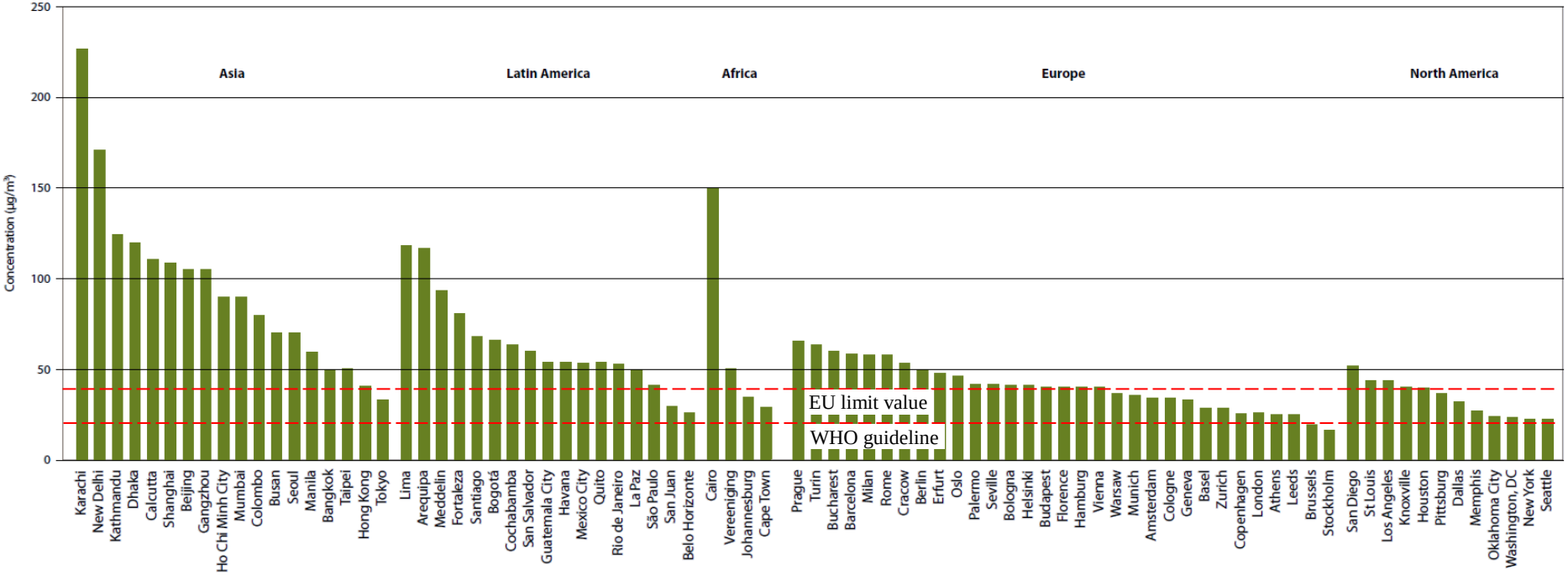
Energy End-Use: Transport

Share of seaborne shipping fuel consumption by fuel type and engines



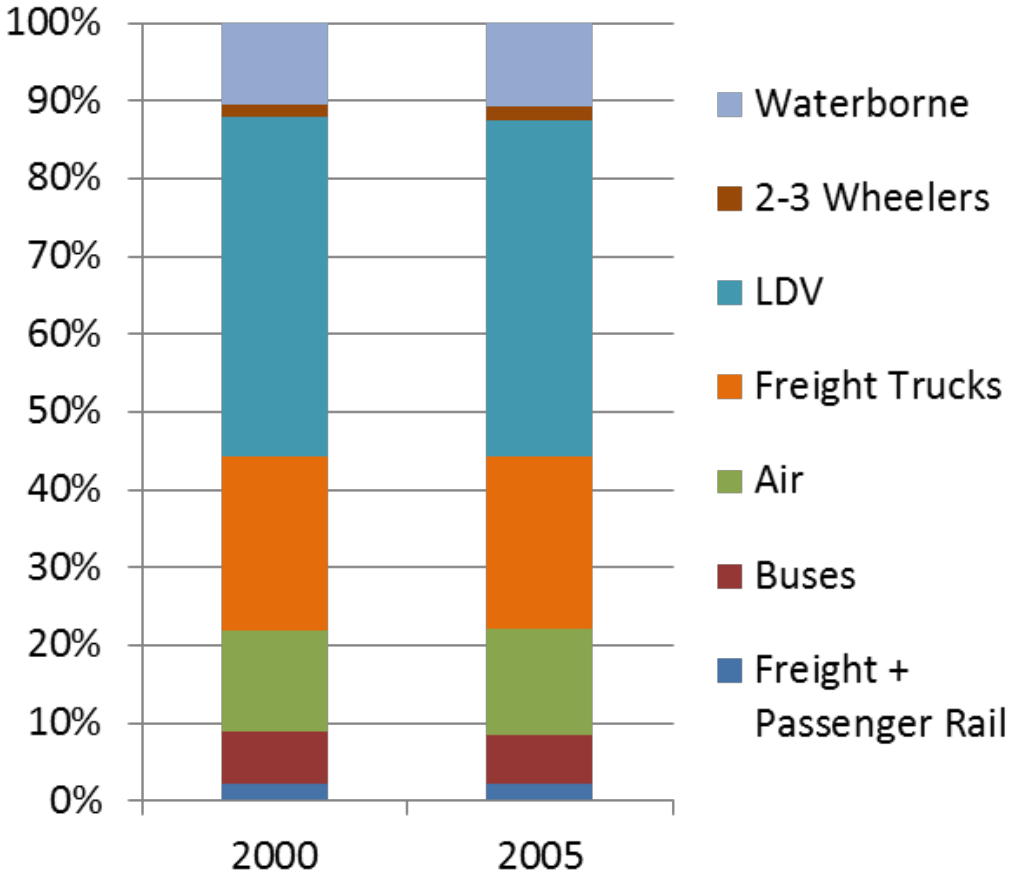


Annual Average PM 10 Concentrations Observed In Selected Cities Worldwide



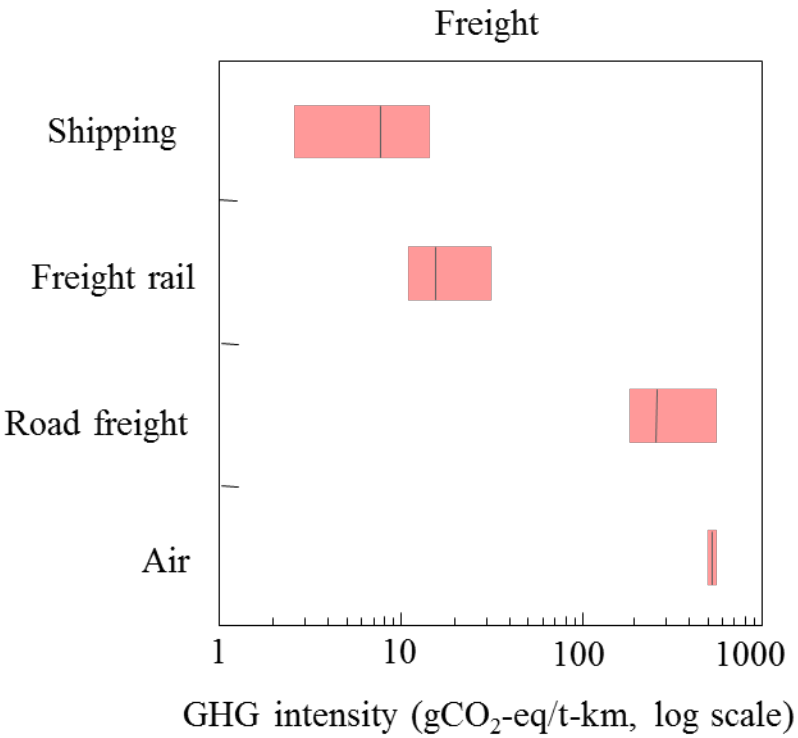
Energy End-Use: Transport

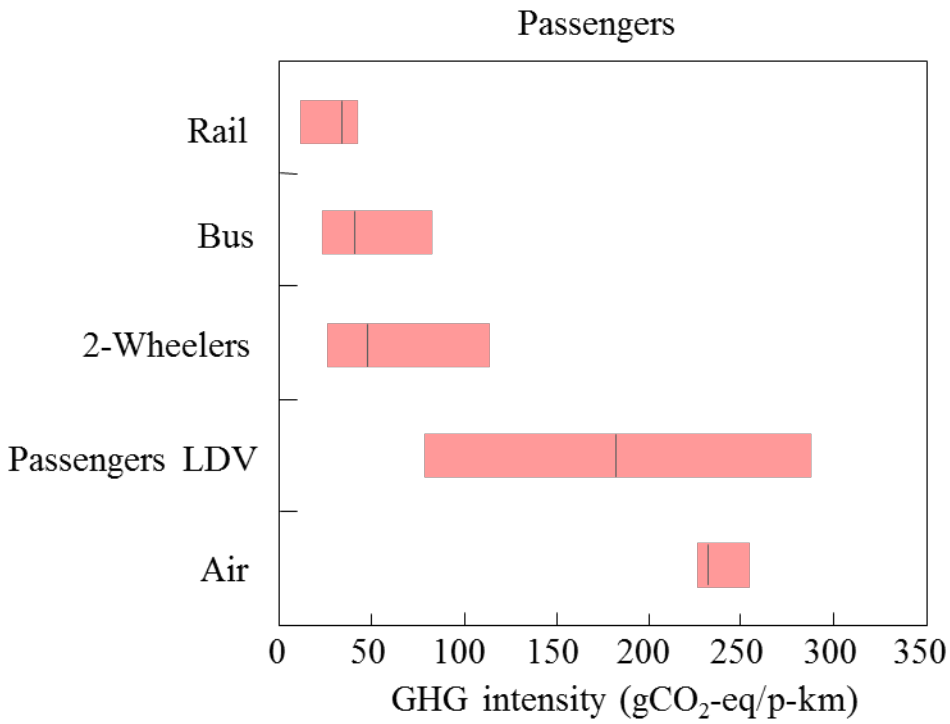
Modal Shares in World Vehicles in CO_2 Emissions



Energy End-Use: Transport

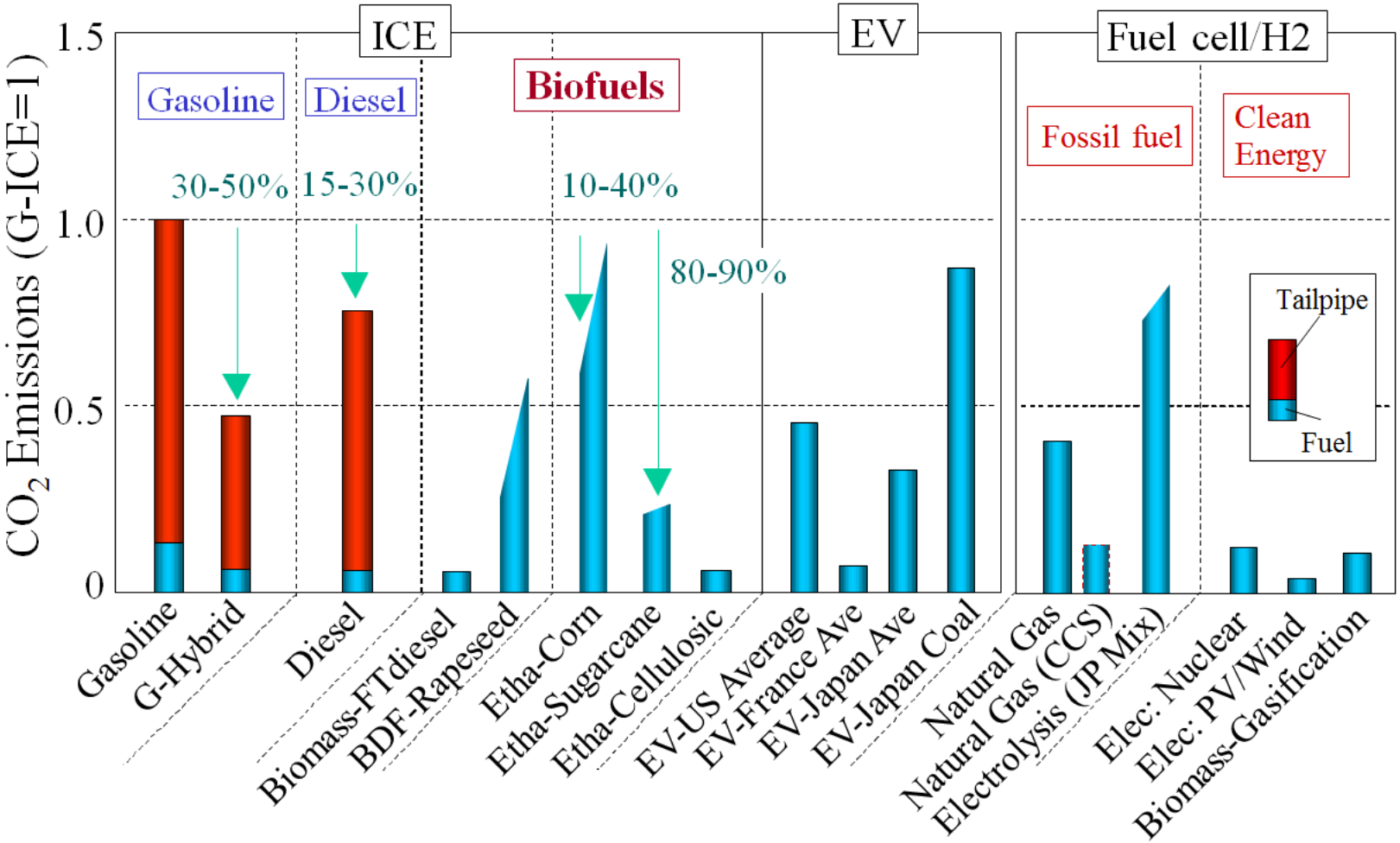
GHG intensity per mode





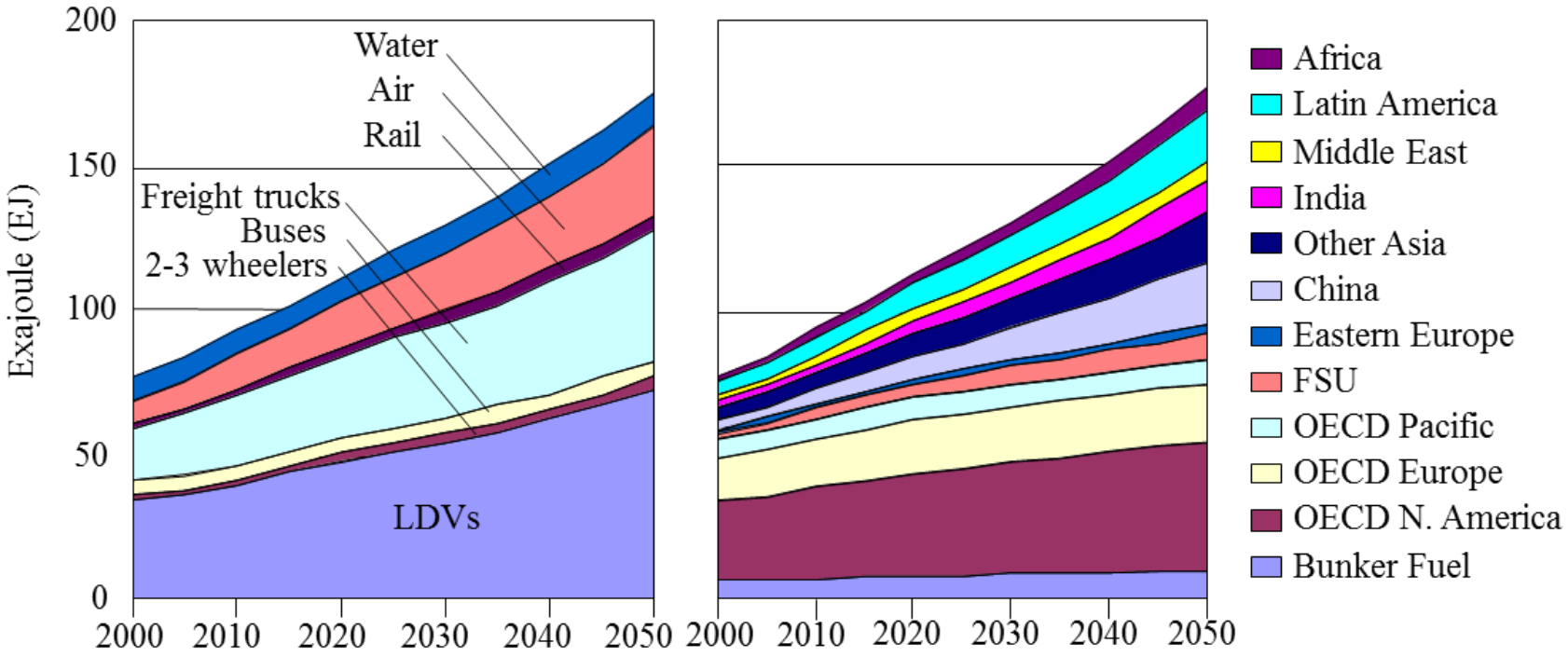
Energy End-Use: Transport

Well-to-Wheel CO2 Emissions by Vehicle Engine Type



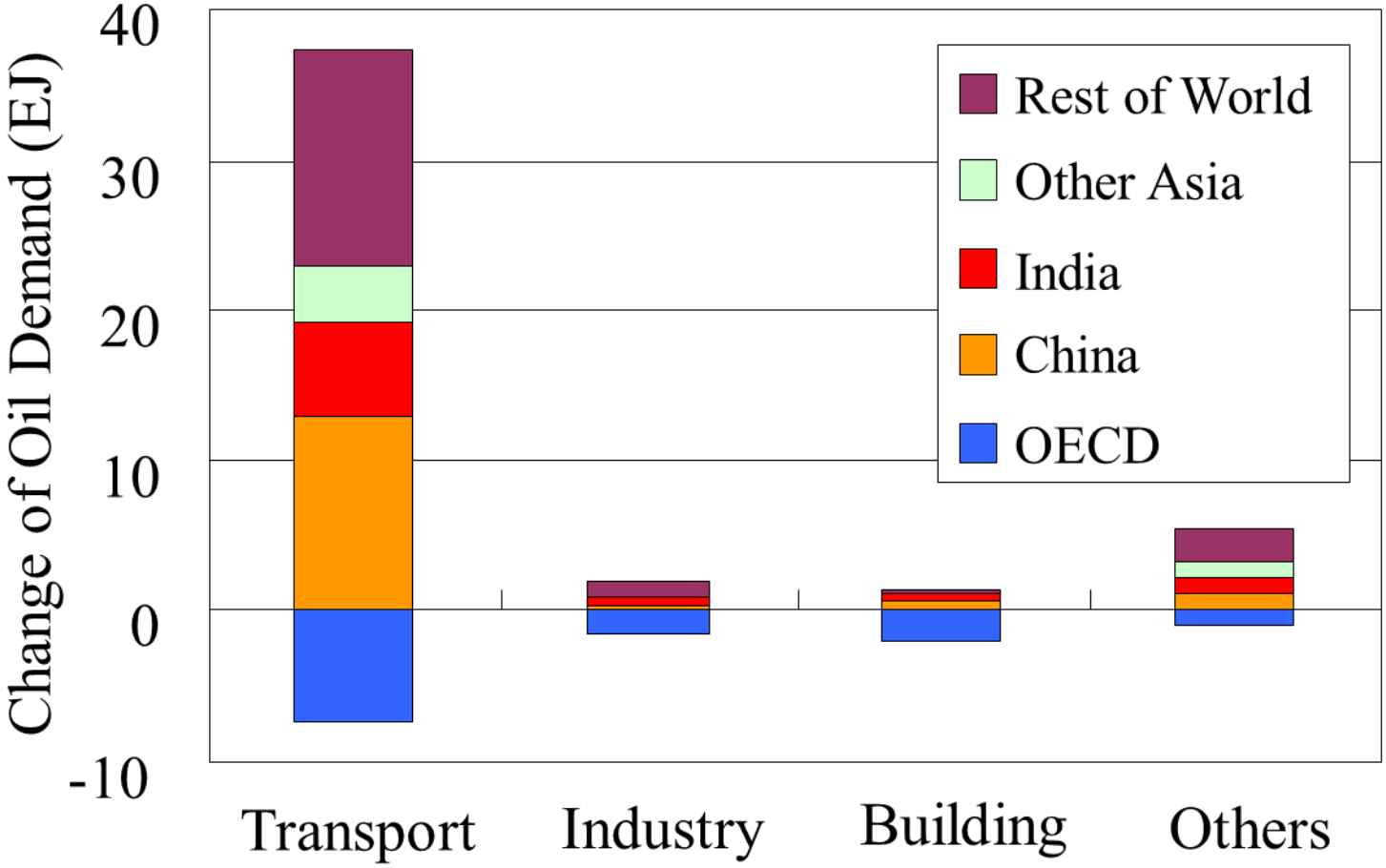
Energy End-Use: Transport

Projection of transport world energy use by mode and region



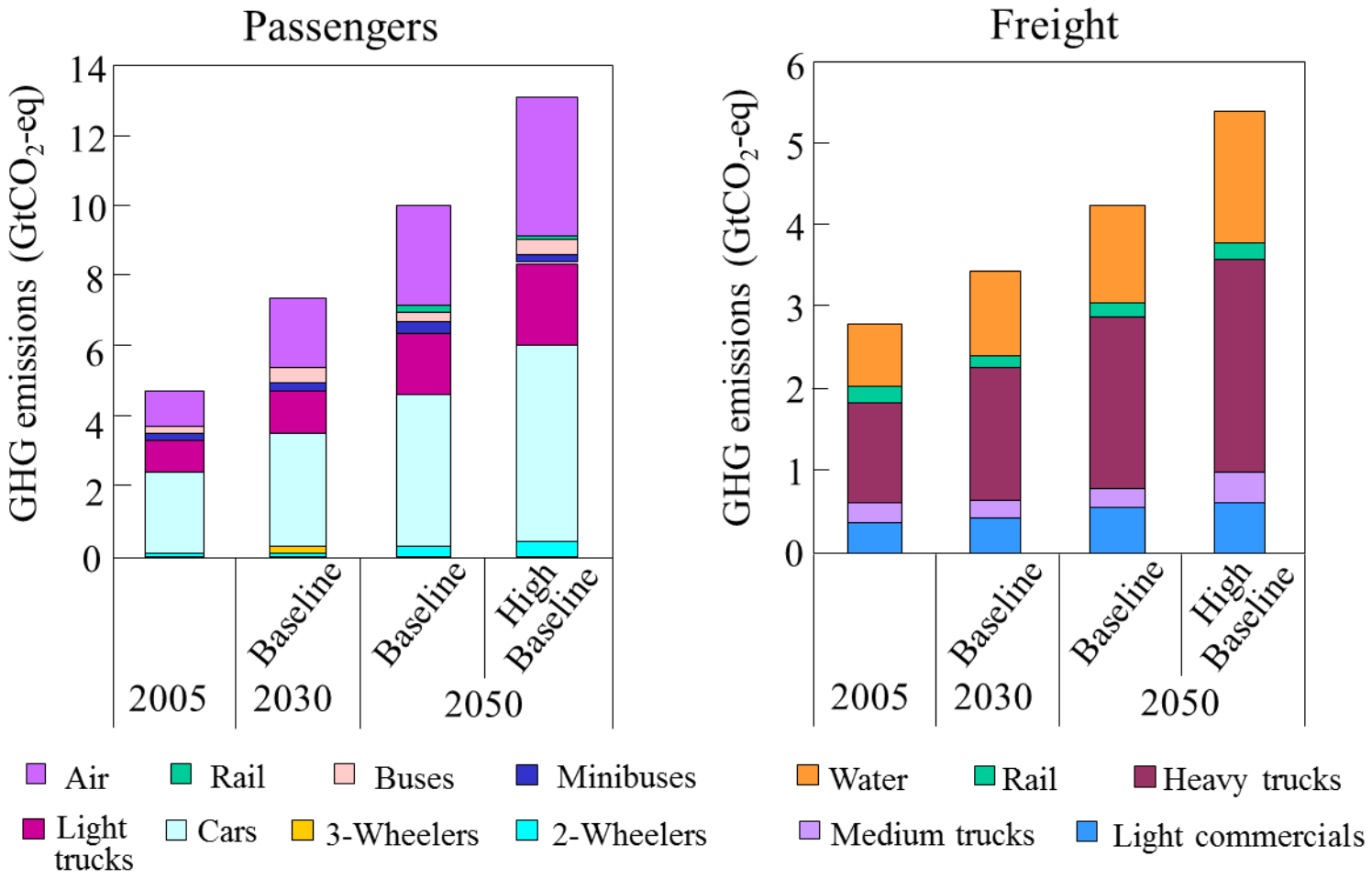
Energy End-Use: Transport

Reference Scenario: Projected Changes in Oil Demand

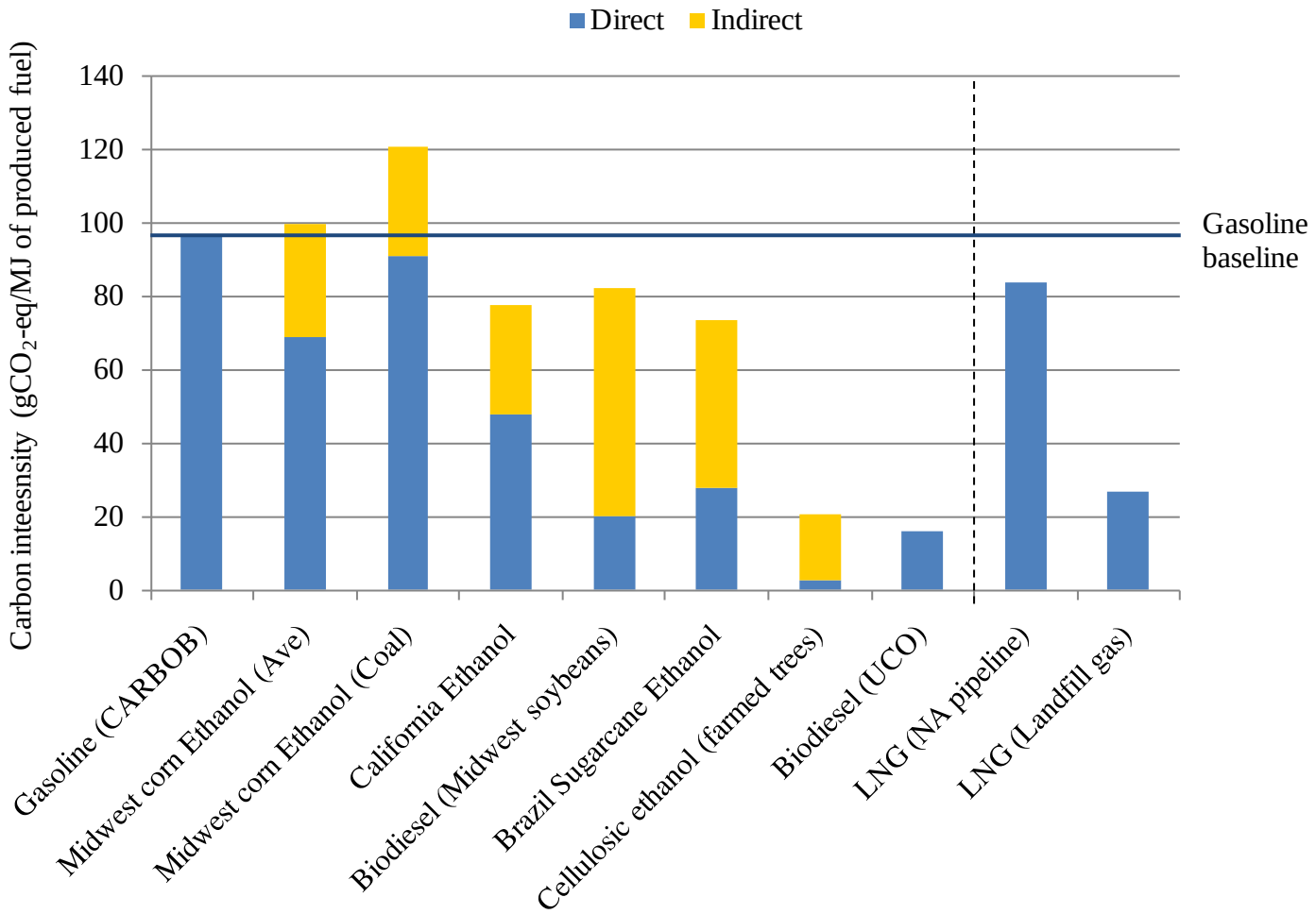


Energy End-Use: Transport

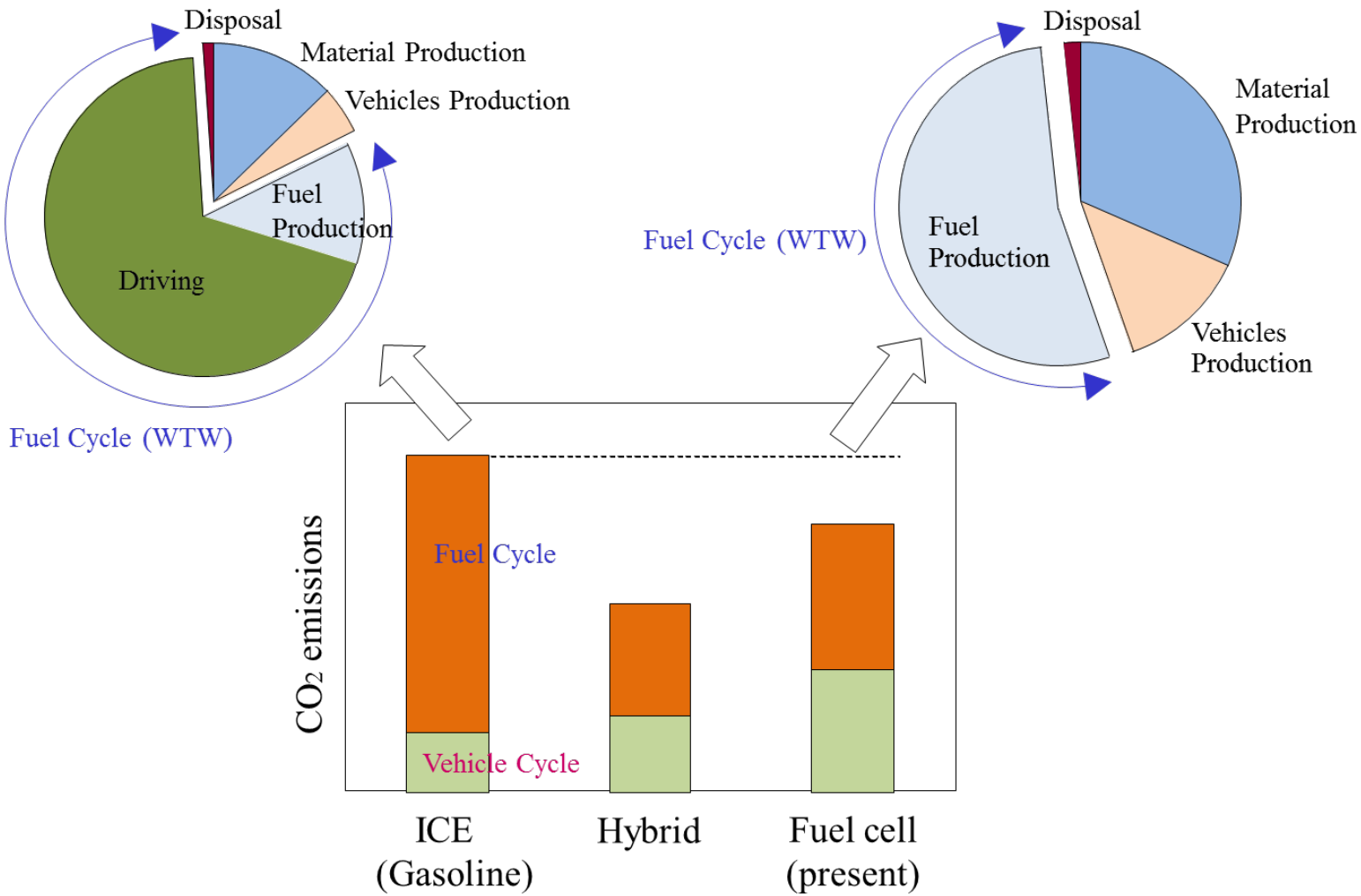
Passenger and Freight Transport GHG Emissions Baselines by Mode



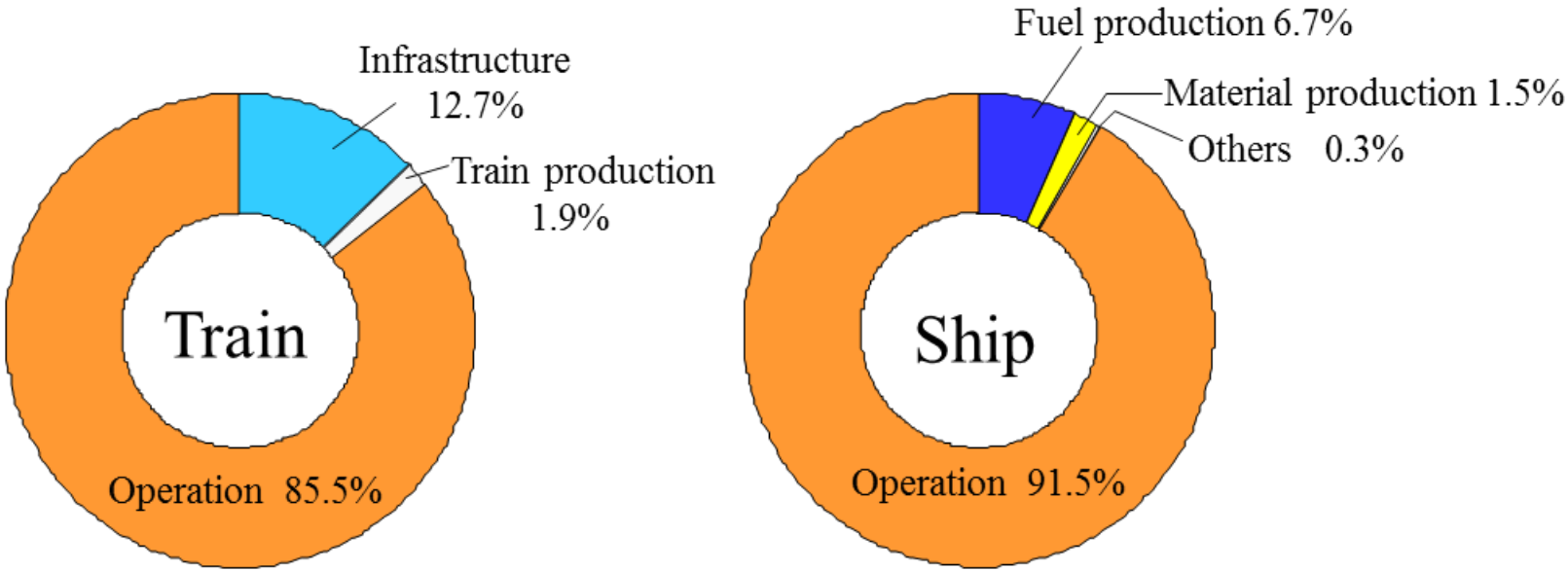
Carbon intensity of different biofuels as compared to gasoline



LCA for Passenger Vehicles



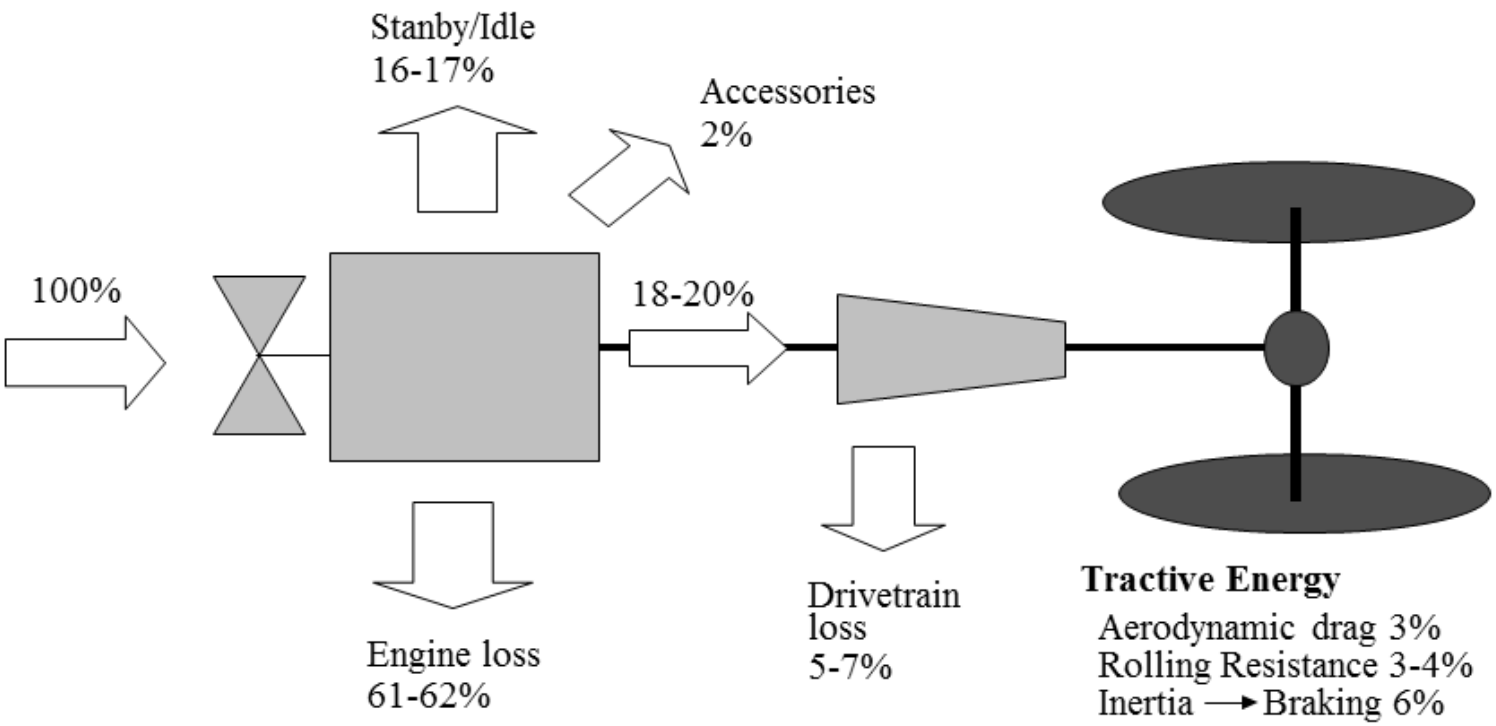
LCA for Trains and Ships



Relative Amount of Energy Required for Different Supply Chains and Well-to-wheel GHG Emission for Various Powertrain/Fuel Combinations

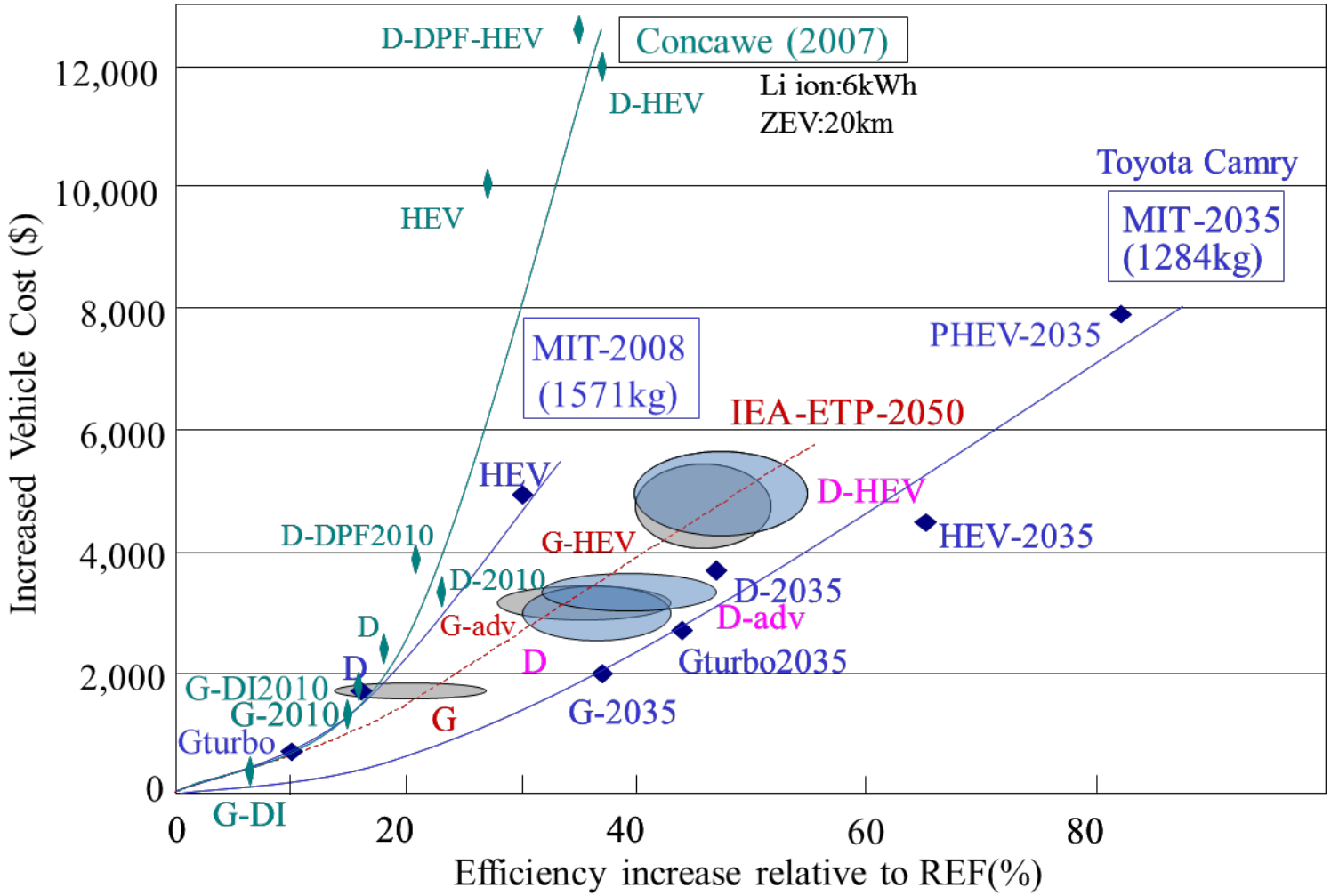
Energy End-Use: Transport

Energy use in a typical gasoline passenger vehicle



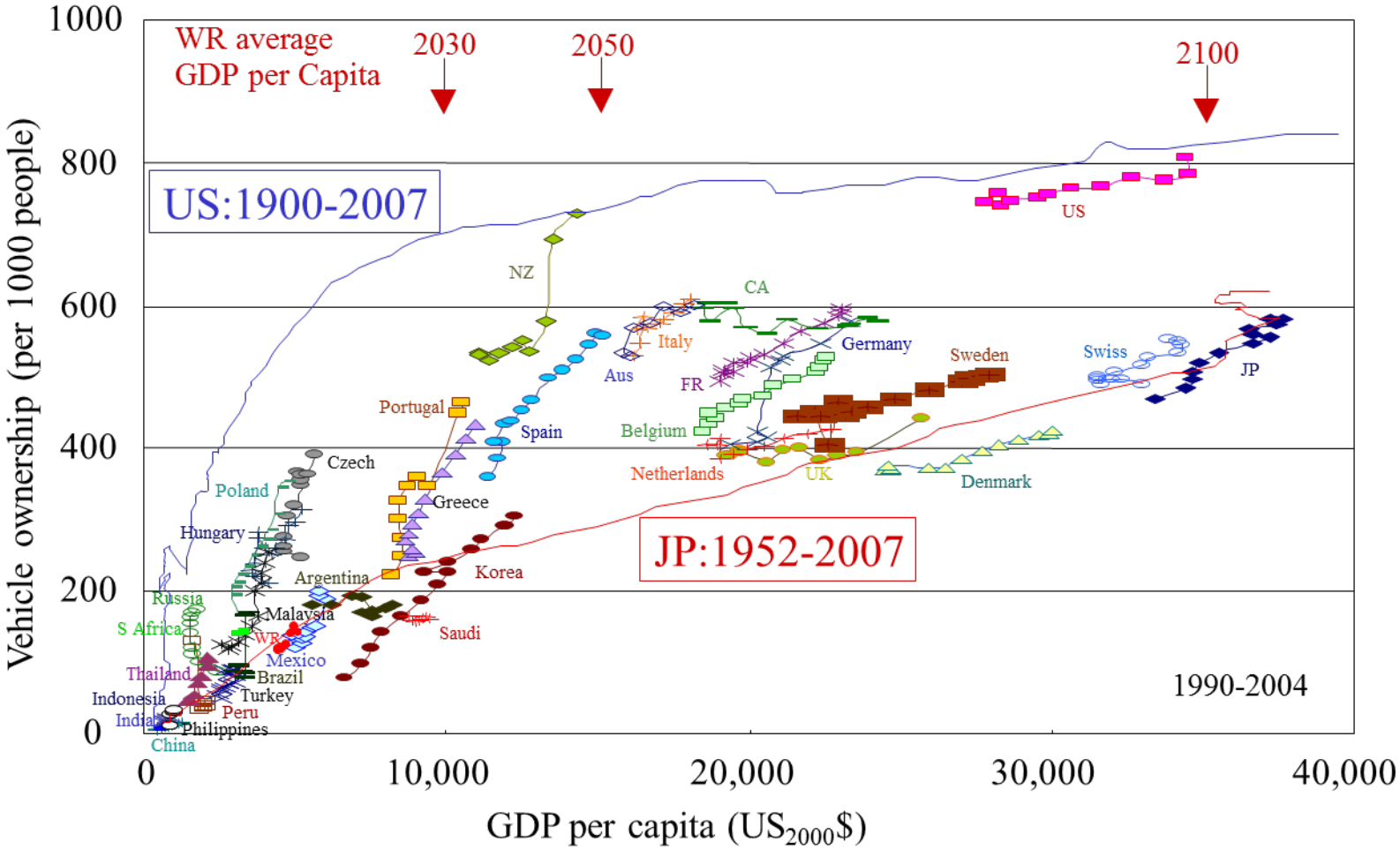
Energy End-Use: Transport

Price Increase of Vehicle Due to Efficiency Increase



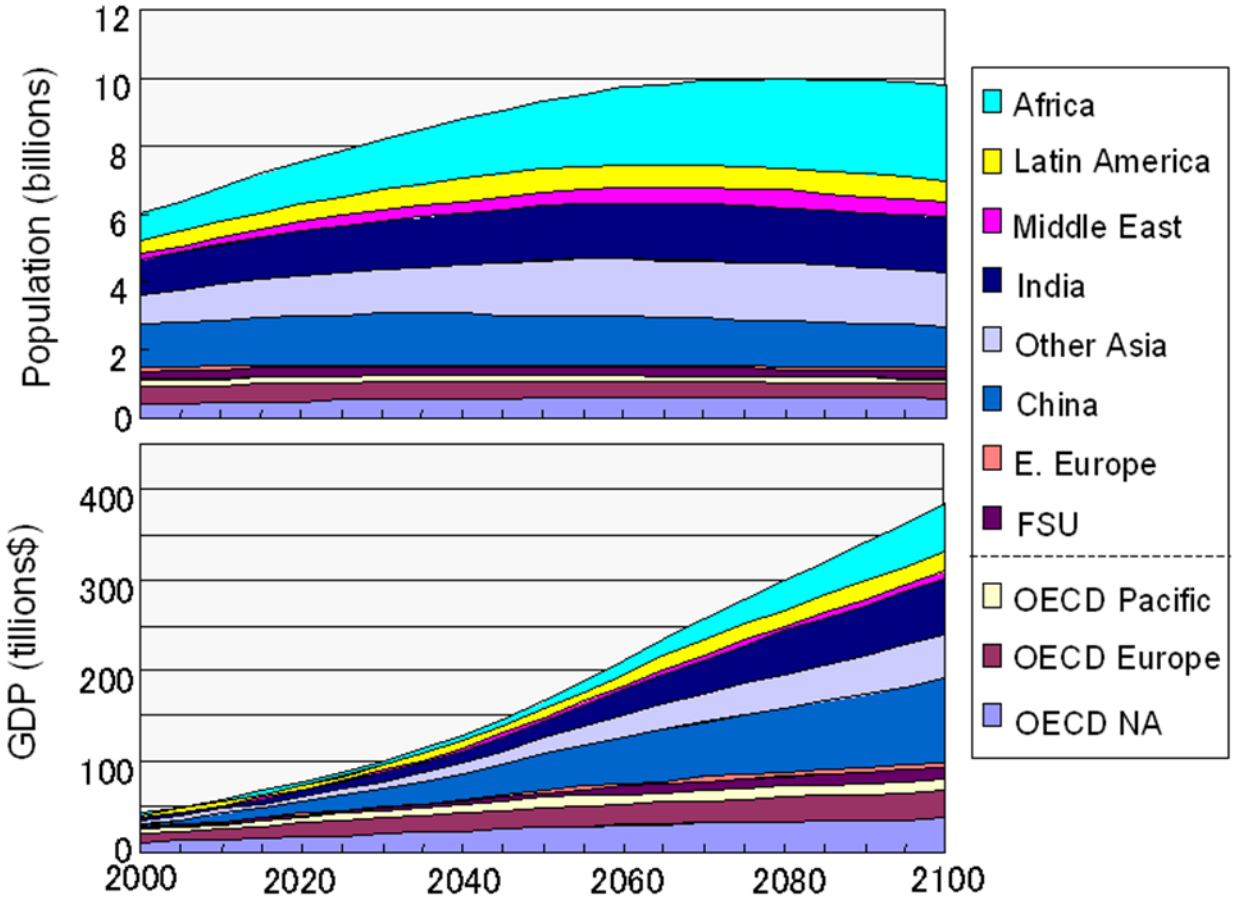
Energy End-Use: Transport

Historical Relationship Between Vehicle Ownership and GDP per Capita



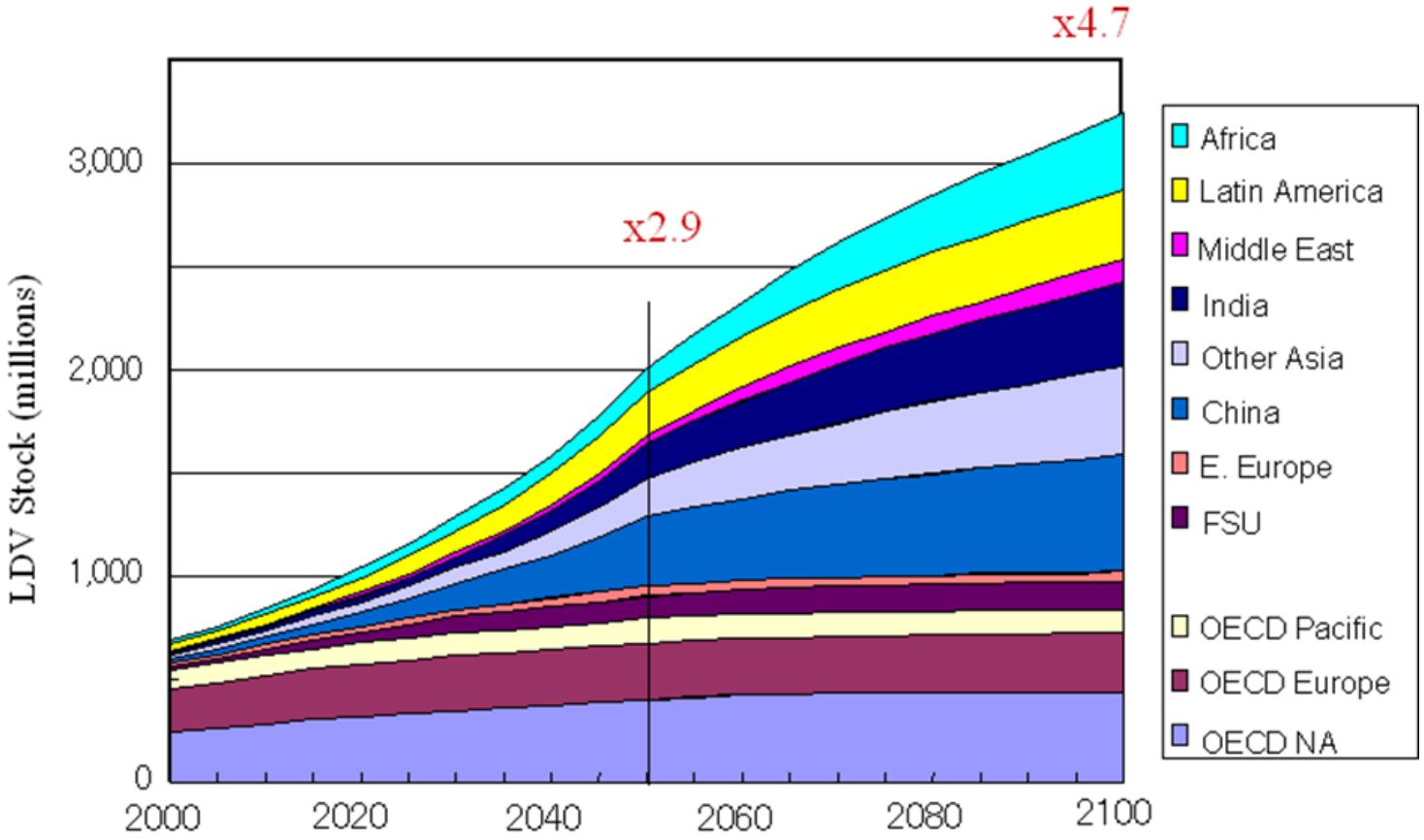
Energy End-Use: Transport

Growth of Population and GDP by Region

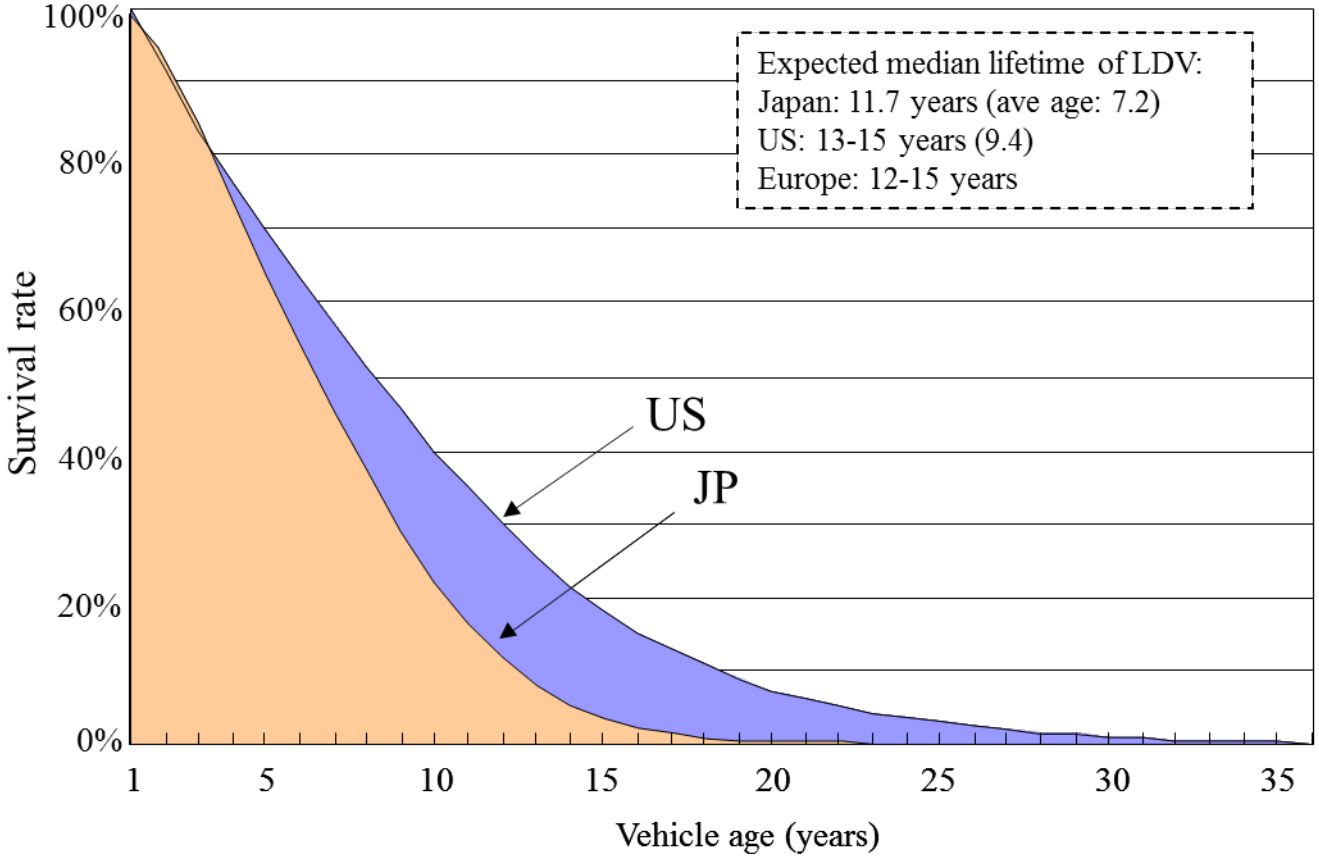


Energy End-Use: Transport

Total Stock of LDVs by Region

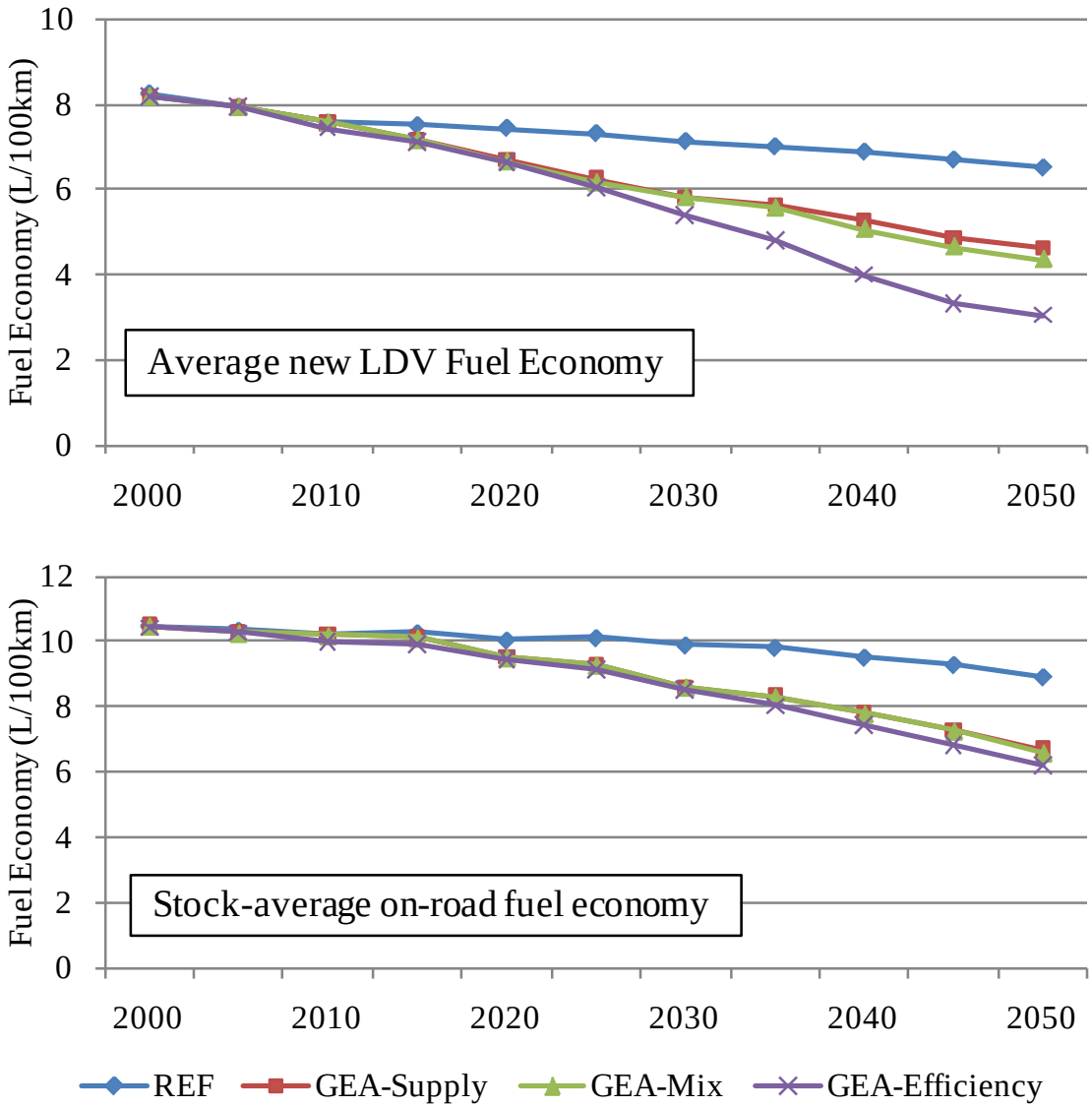


Comparison of Survival Rate for Passenger LDVs



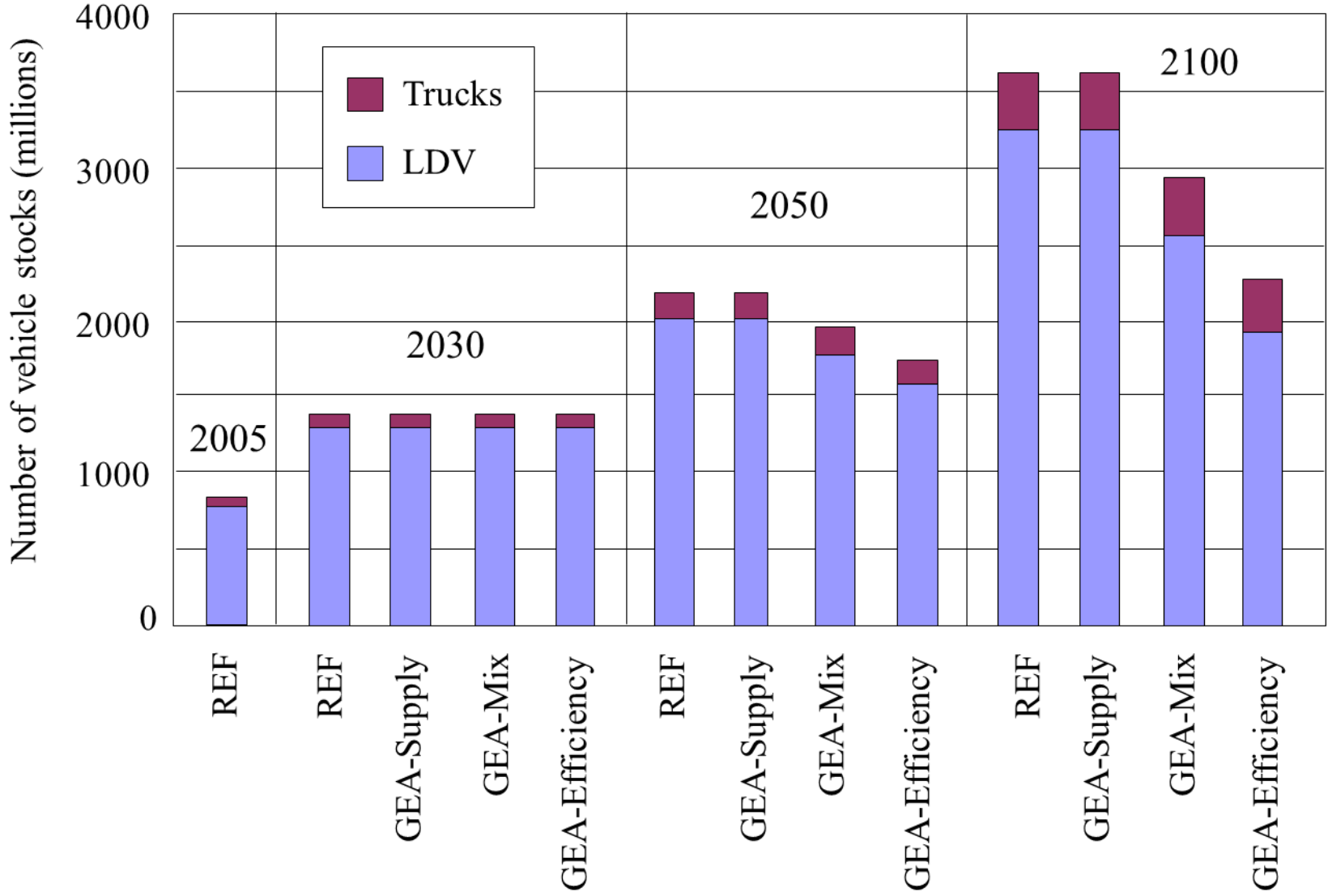
Energy End-Use: Transport

Trend of New Vehicle and Stock-average On-road Fuel Economy



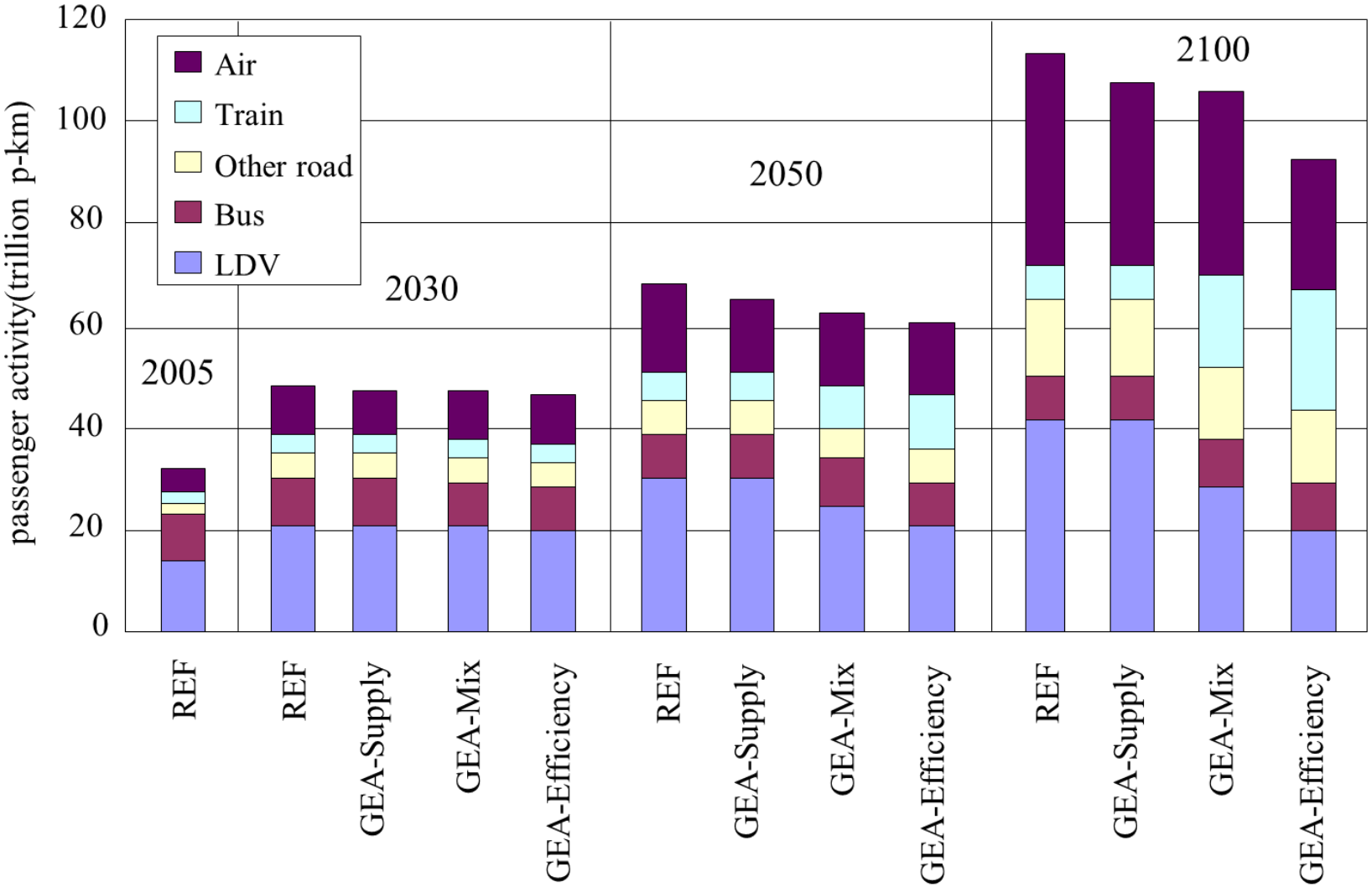
Energy End-Use: Transport

Growth of Stocks of LDVs and Trucks

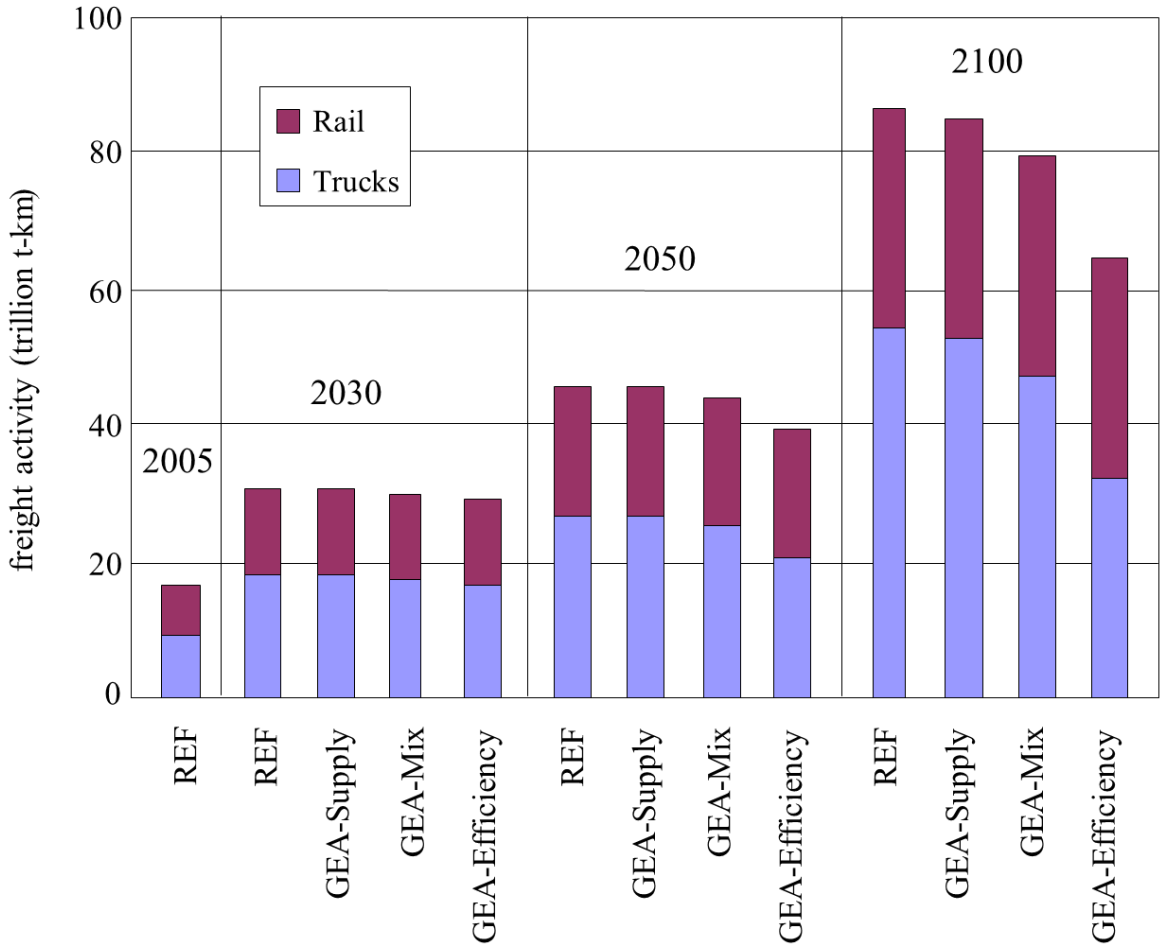


Energy End-Use: Transport

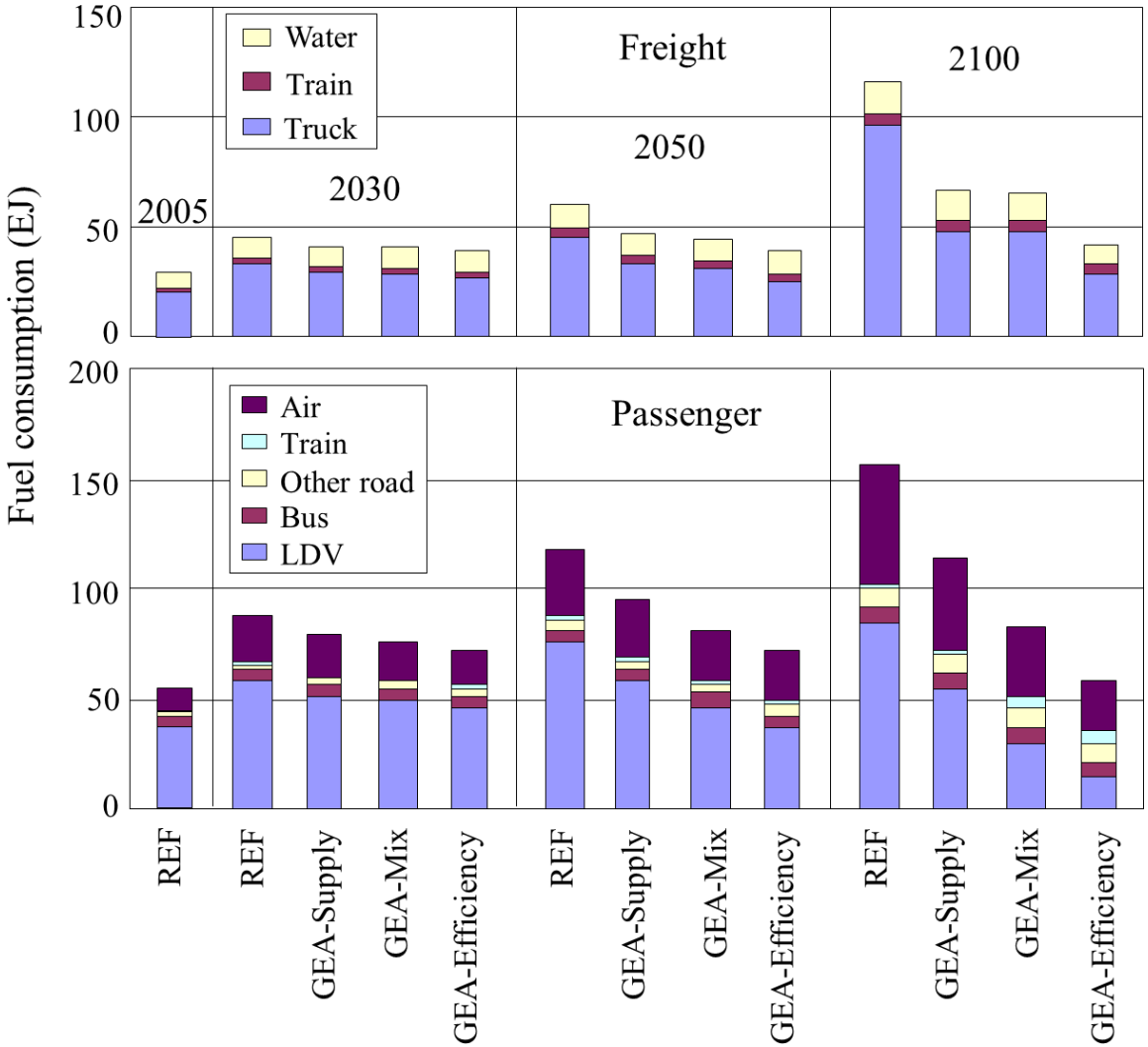
Growth of Passenger Transport Activity



Growth of Freight Transport Activity

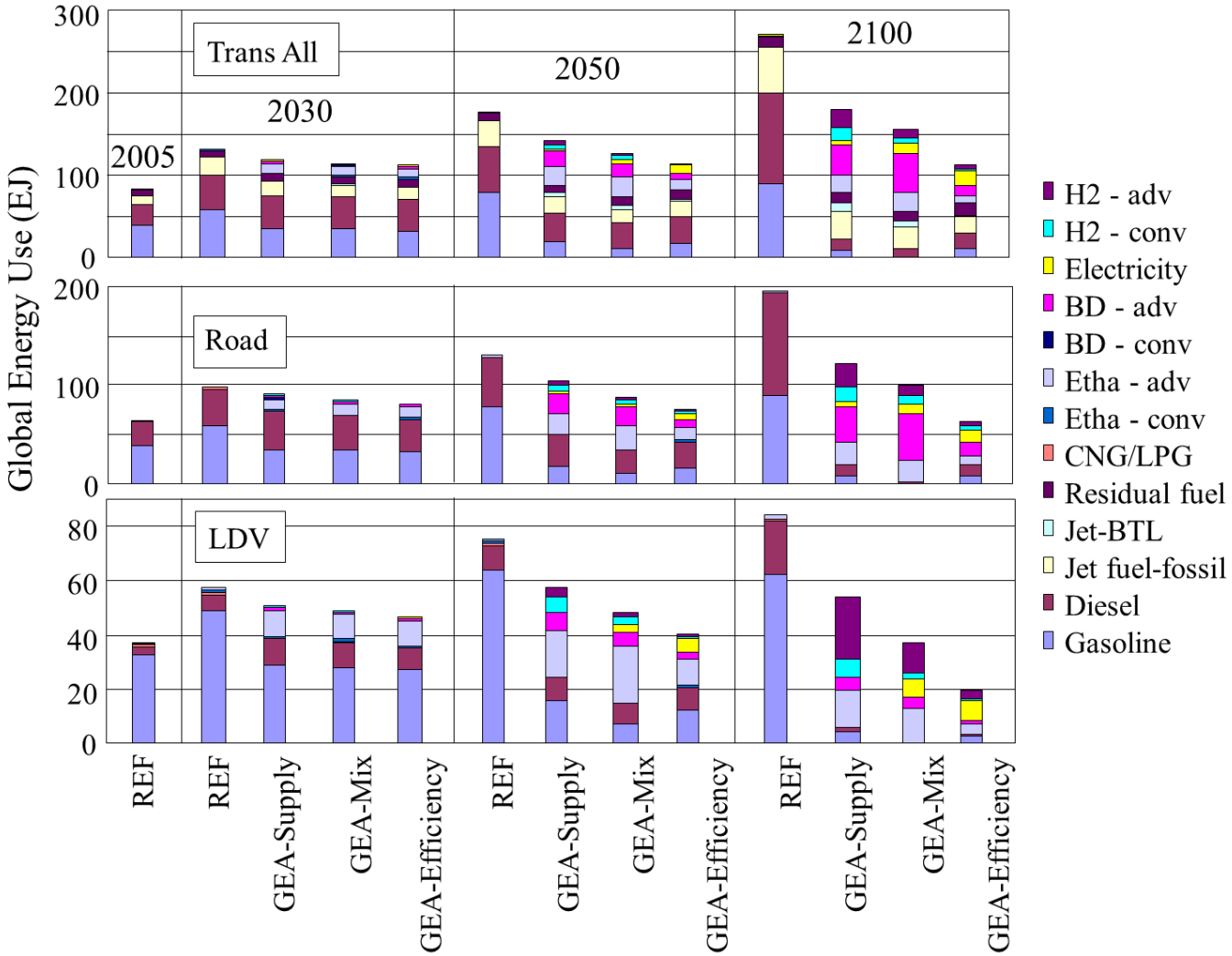


Fuel Consumption Projection for Both Passenger and Freight Transport by Mode



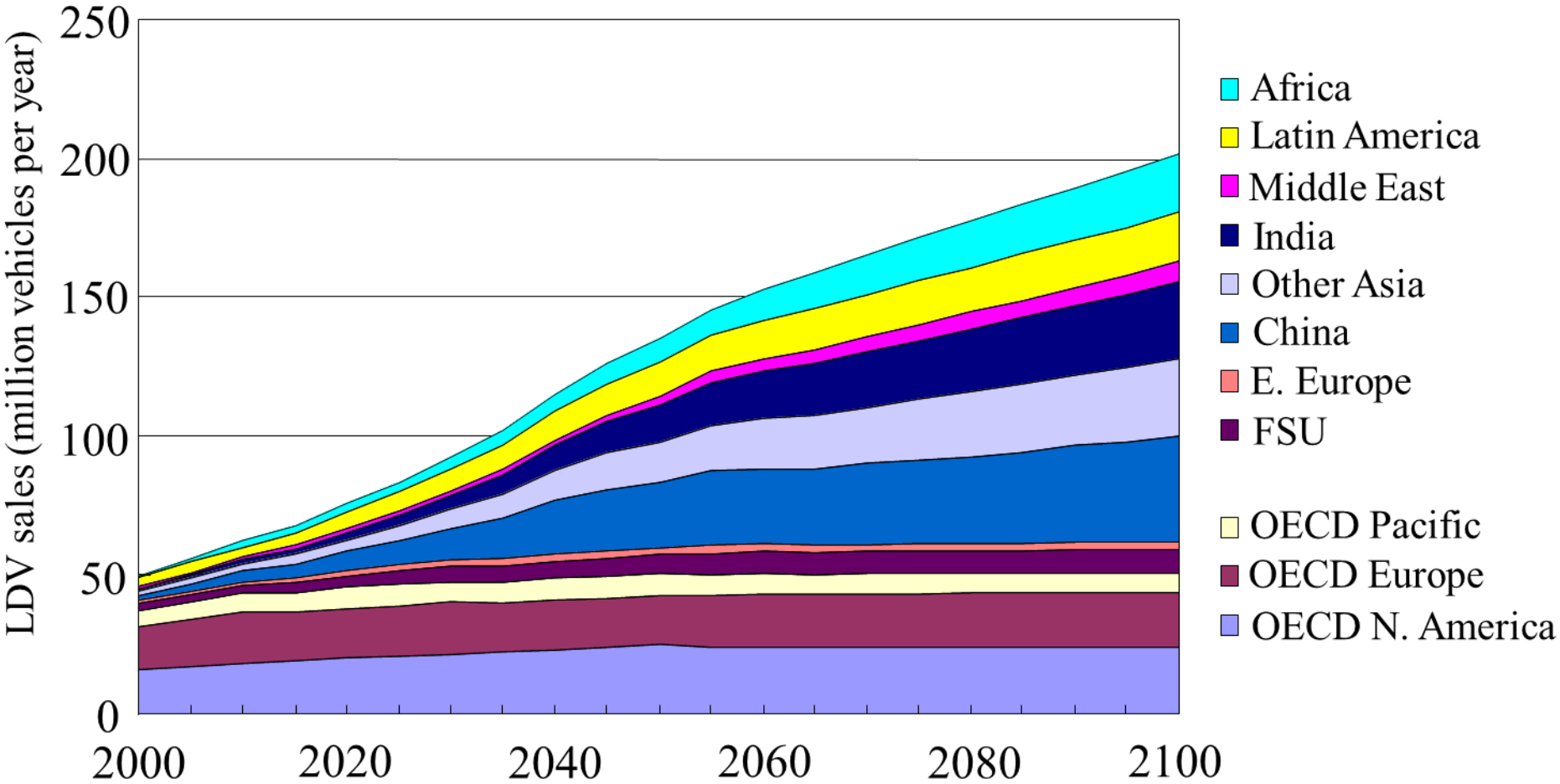
Energy End-Use: Transport

Worldwide Transport Fuel Use for the Whole Sector, Road Transport and LDV Only By Fuel Type



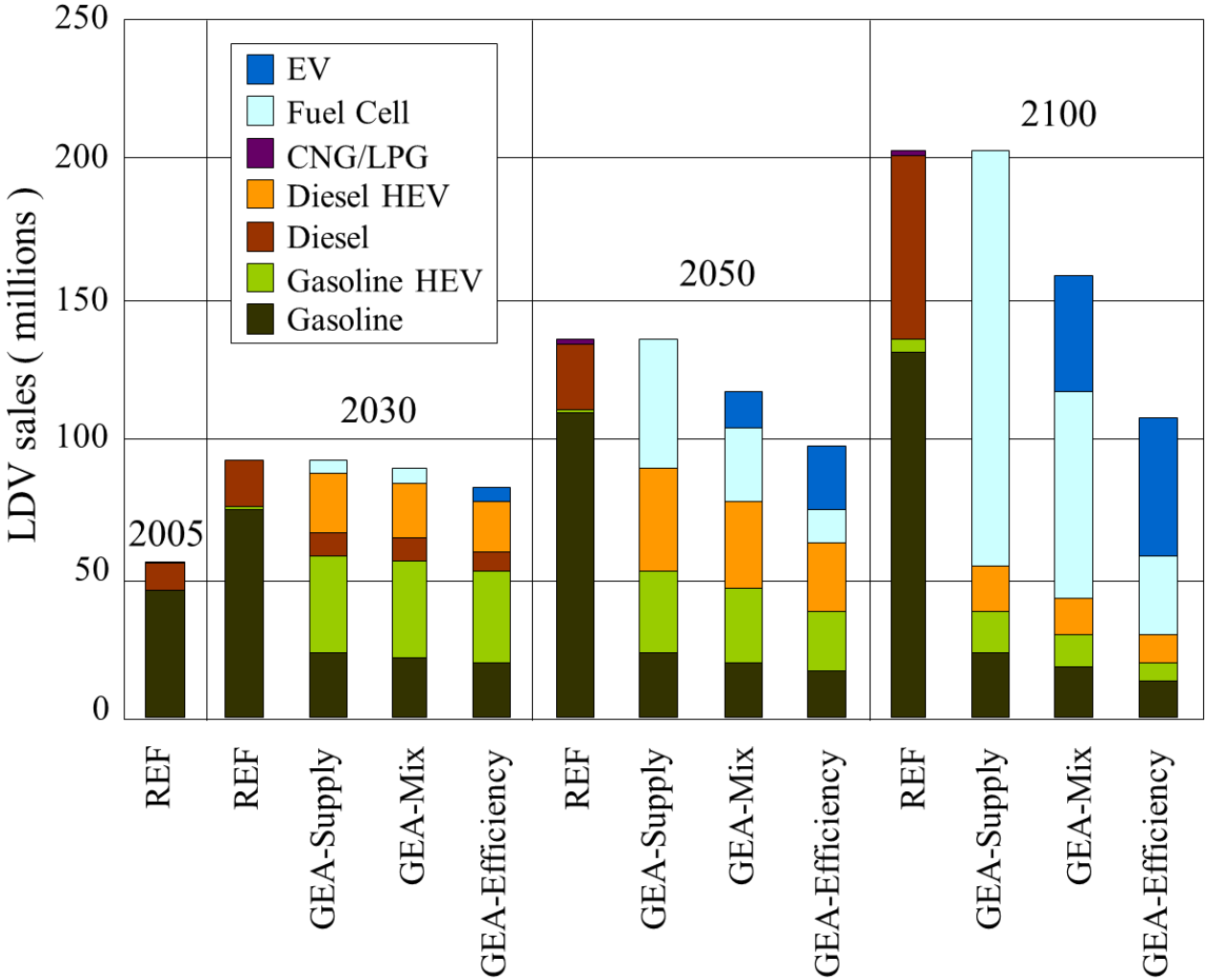
Energy End-Use: Transport

Worldwide LDV Sales by Region



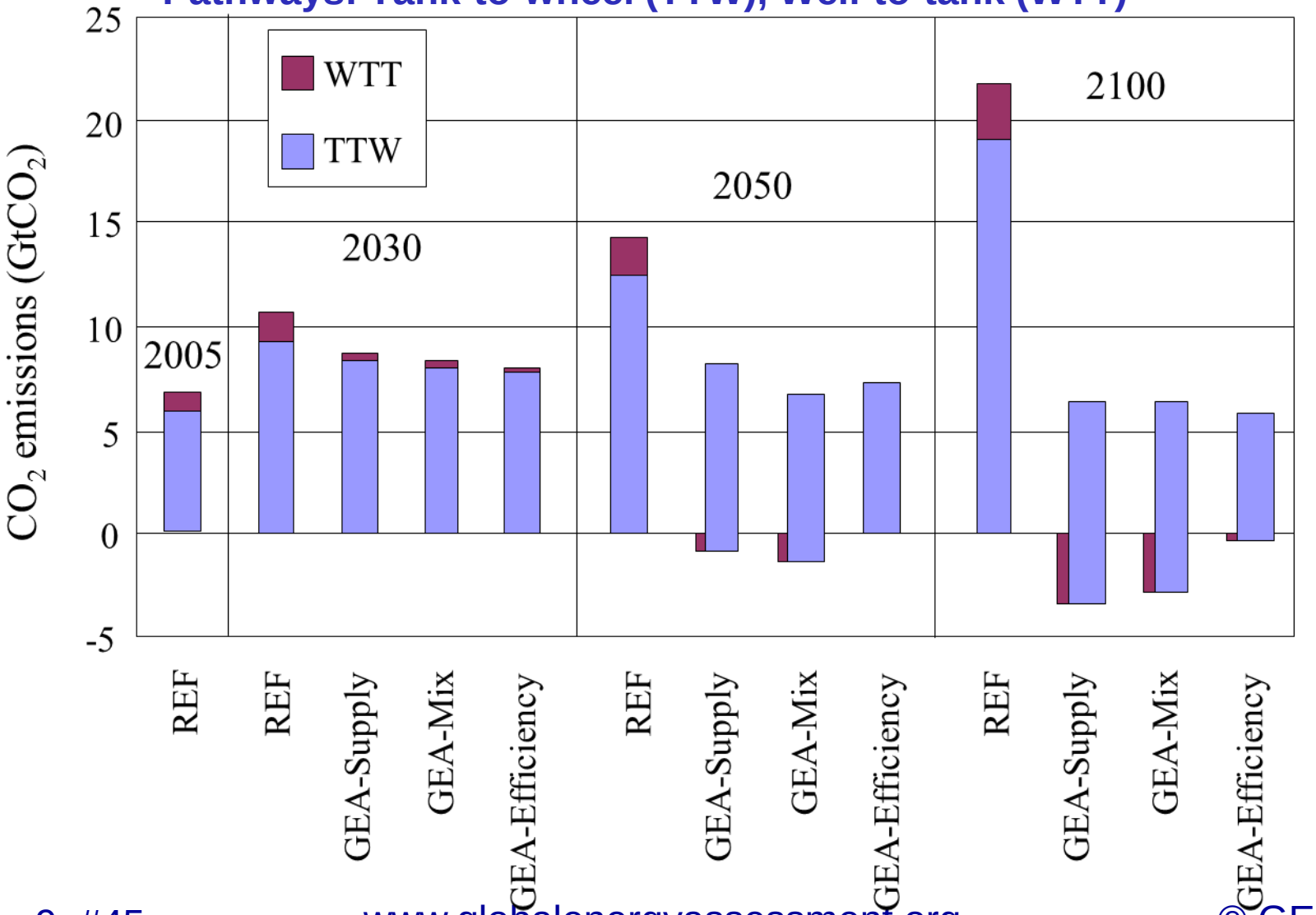
Energy End-Use: Transport

Worldwide LDV Sales by Vehicle Type



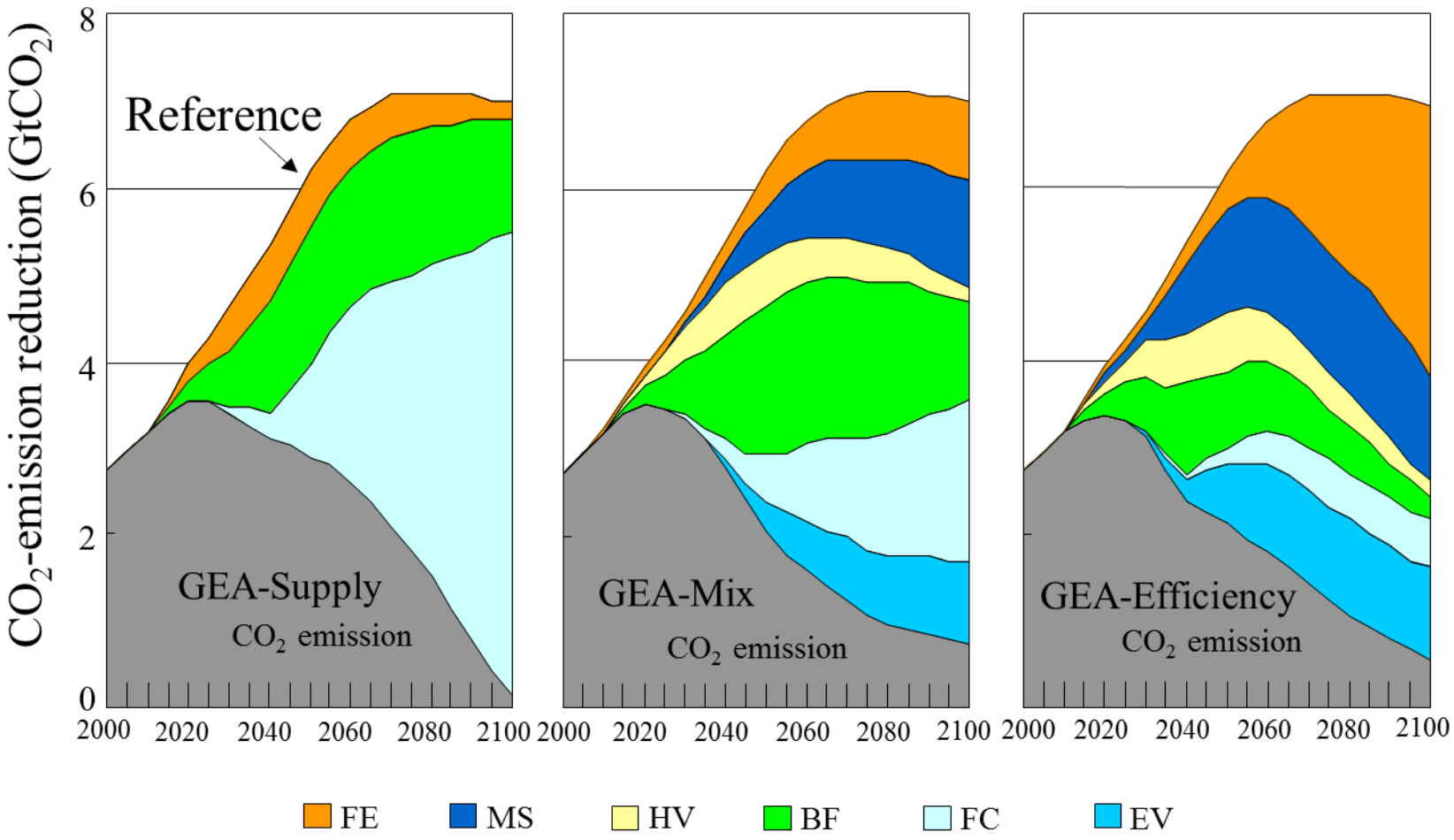
Energy End-Use: Transport

Well-to-wheel CO_2 Emissions from Transport Sector for Reference and GEA Pathways: Tank-to-wheel (TTW), Well-to-tank (WTT)



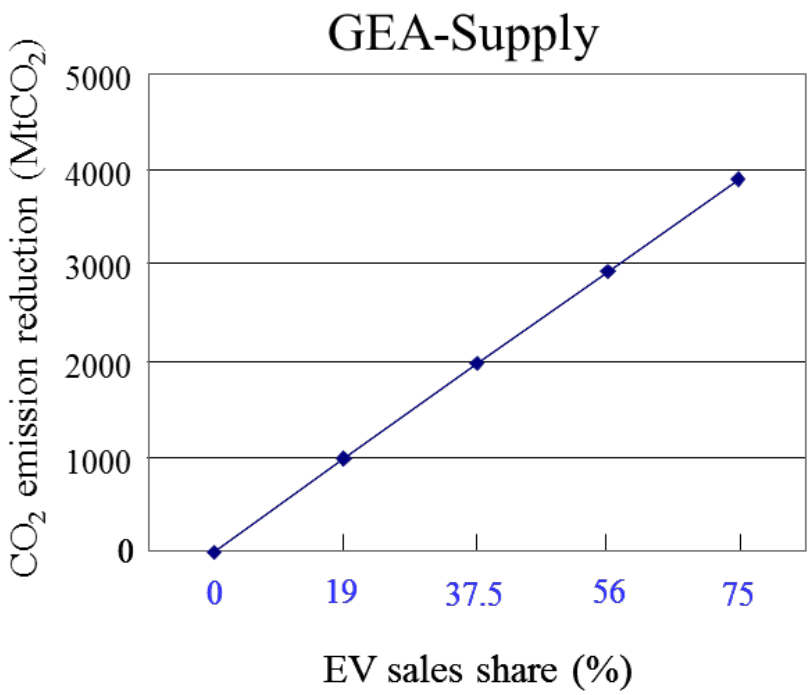
Energy End-Use: Transport

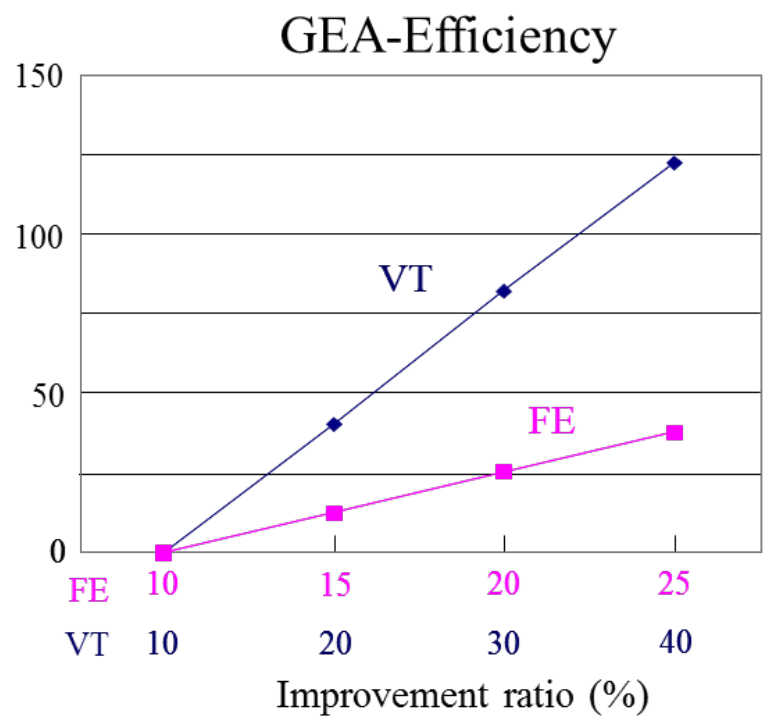
Reduction of Well-to-wheel CO_2 Emissions for LDVs from Reference Scenario in GEA



Energy End-Use: Transport

Sensitivity Analyses for the EV Share in the GEA-supply Pathway, and the Reduction Rate of Vehicle Driving Distance per Vehicle (VT) and Fuel Efficiency (FE) in the GEA-efficiency Pathways





Energy End-Use: Transport

Corridor Capacity of Different Modes of Transportation

A)							
	2 000	 9 000	 14 000	 17 000	 19 000	 22 000	 80 000
B) MJ/p-km	1.65-2.45	0.32-0.91*	0.1	0.24*	0.2	0.53-0.65	0.15-0.35
C) € p-km infrastructure	2 500-5 000	200-500	50-150	600-500	50-150	2 500-7 000	15 000-60 000
D) Fuel	Fossil	Fossil	Food	Fossil	Food	Electricity	Electricity

*Lower values correspond to Austrian busses, upper values correspond to diesel busses in Mexico city before introduction of BRT system.

Key:

A) Values are indicative for European and Asian cities and can vary significantly across cities, world regions, and particular situations. For example, BRT capacity can more than double with a second lane. Suburban rails in India can transport up to 100,000 passengers per hour.

B) Energy intensity in MJ per passenger km. SUVs can exceed depicted values for cars. Energy values for bus in the US are generally higher due to low ridership (Chester and Horvath, 2010). While BRT systems have similar energy efficiencies as normal busses, they provide signficant systemic energy savings via modal shift, small bus substitution, and reduction in parallel traffic (Schipper et al., 2009). BRT systems can also be converted from oil based fuels to electricity and hydrogen.

C) Estimated infrastructure costs in euros per passenger kilometer are highest for subway systems and heavy rail. Costs for bus system can be significantly lower than for individual motorized transport. Infrastructure costs for non-motorized transport are very cost competitive and can realize significant social benefits.

D) Dominant fuels are given for each mode.

Energy Intensity Standards of Passenger Cars Extrapolated from Current Fuel Efficiency Standards