Asia-Pacific Energy Leader's Summit
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Transport mitigation is not easy!

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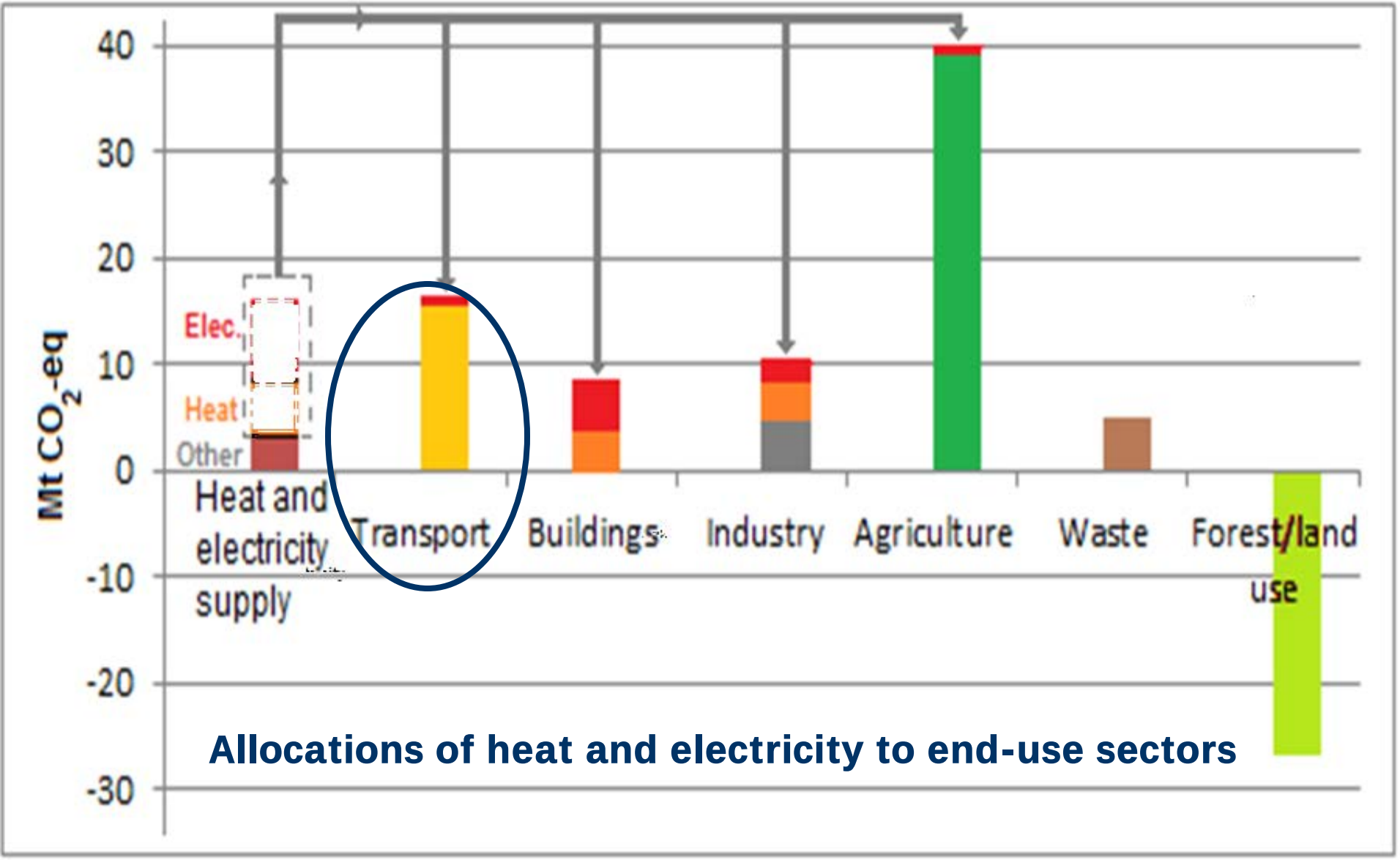
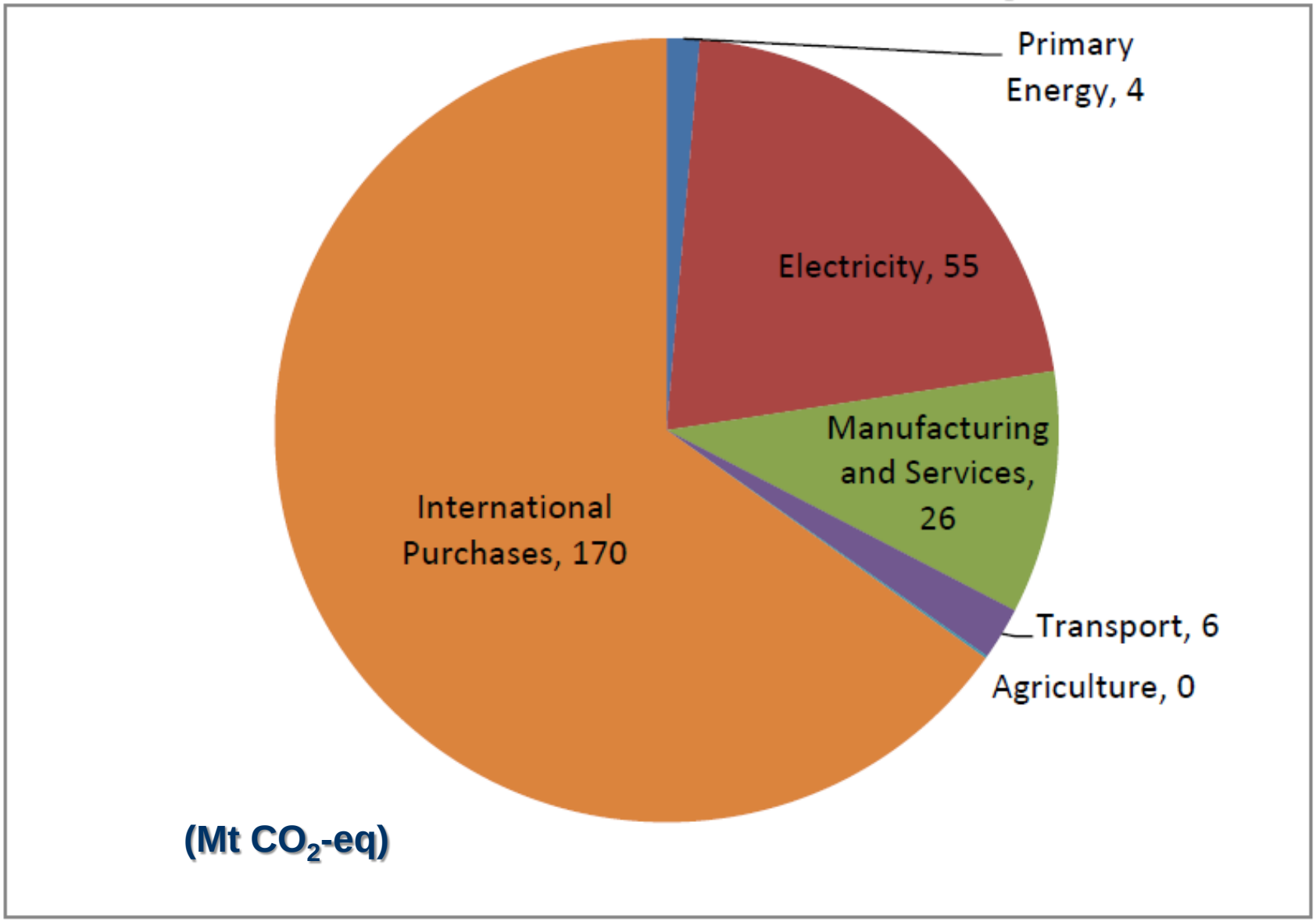
New Zealand's 2013 GHG emissions by sector

Gross 81.6 Mt CO_2-eq; Net (less forest sinks) 54.9 Mt CO_2-eq



Allocations of heat and electricity to end-use sectors

NZ GHG mitigation potential by source – cumulative emissions over 2021-2030 period.



Landcare Research modelling, 2015

TOTAL GHG emissions

Fuel carbon intensity ($gCO_{2\text{-}eq}/MJ$)

- Diesel
- Gasoline
- Biofuels
- Electricity
- Hydrogen

Energy intensity (MJ / km) (MJ / t km)

- LDV / HDV / Bikes
- Rail
- Marine
- Aviation
- Mass transit
- Cycling / walking

Journey (km / yr) (t km / yr)

- Distance to travel
- Combine trip objectives
- Avoidance
- Internet shopping

System - infrastructure modal choice

- Urban planning
- Roading / airports / railways / ports
- Choice between speed / comfort / cost / convenience


PLUG-IN HYBRID
New Zealand trial in partnership with
MASSEY UNIVERSITY
TE KUNENGA KI PUREHUROA


05
Namsan Tour


INTERNET MIX IN MINIMARKT
BECK'S
Flinkster

Freight transport

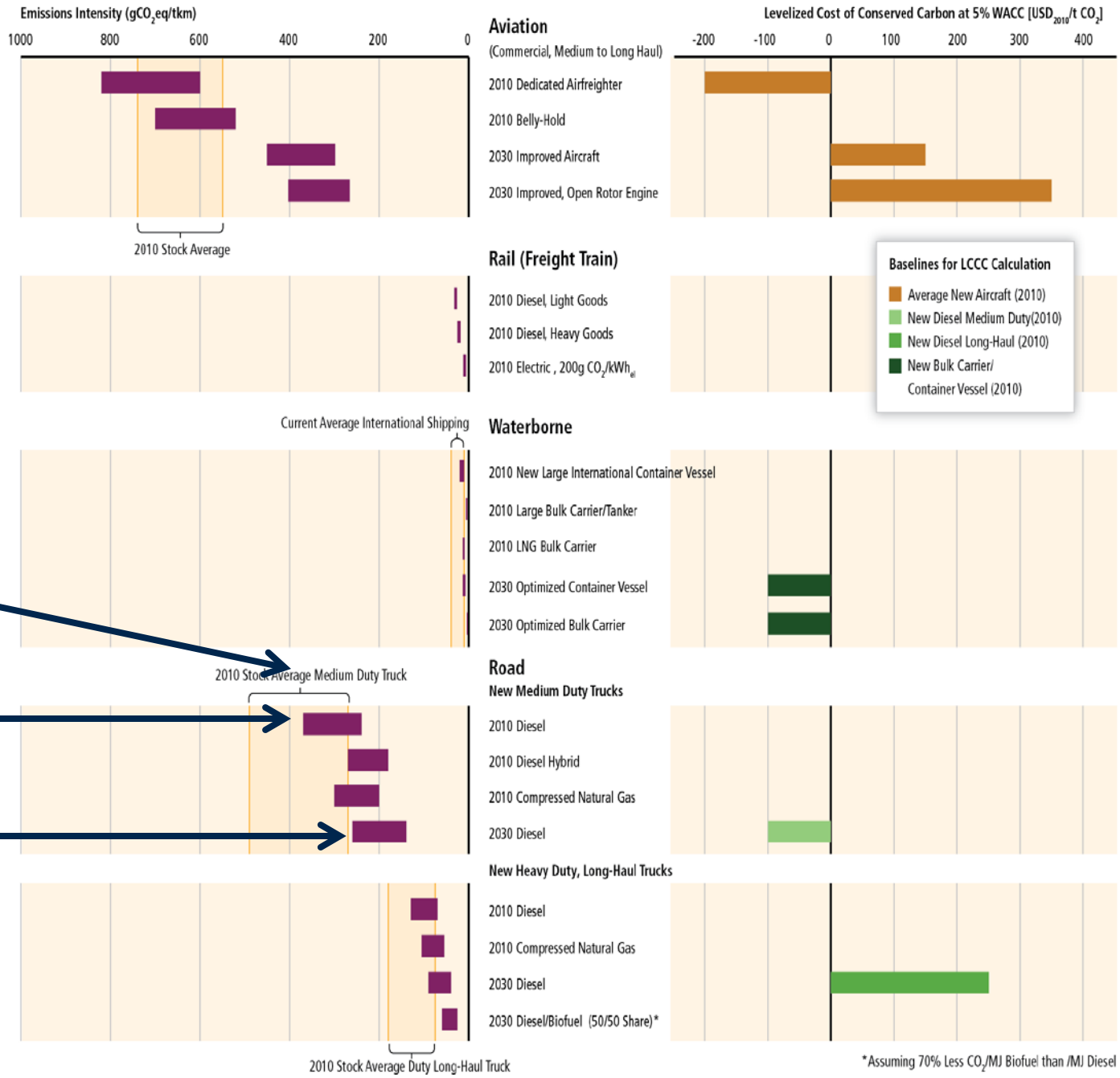
IPCC AR5 Mitigation, 2014. Chapter 8, Transport

Potential emission reductions (g CO_2 / t km) and mitigation costs ($/t$CO_2$) for the various modes of transport.

Stock average vehicle fleet compared with:

2010 new vehicles

Projected 2030 new vehicles and fuels.



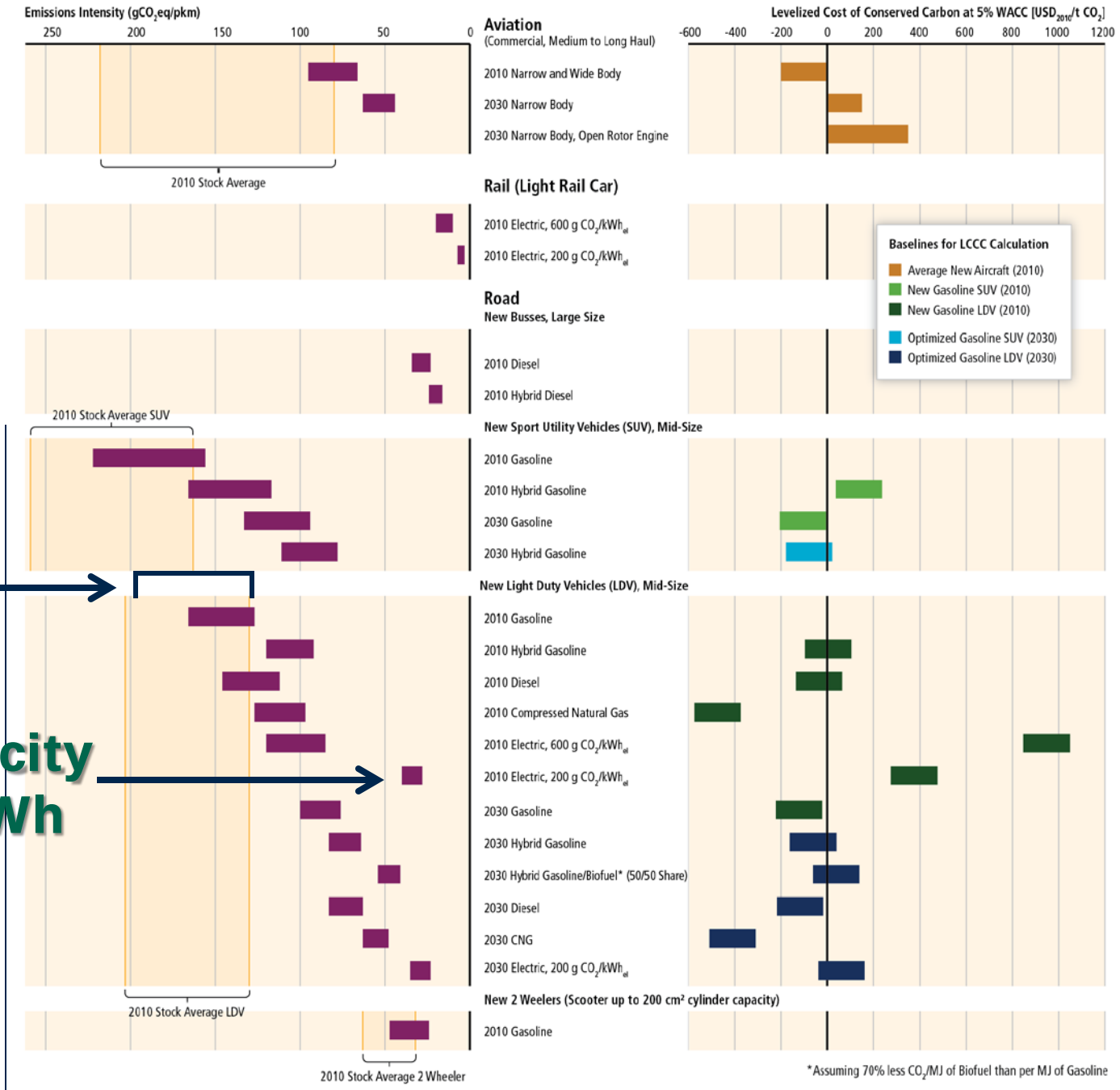
Passenger transport

IPCC AR5 Mitigation, 2014. Chapter 8, Transport

Potential emission reductions (g CO_2 / km) and mitigation costs ($/t$CO_2$) for various modes of transport.

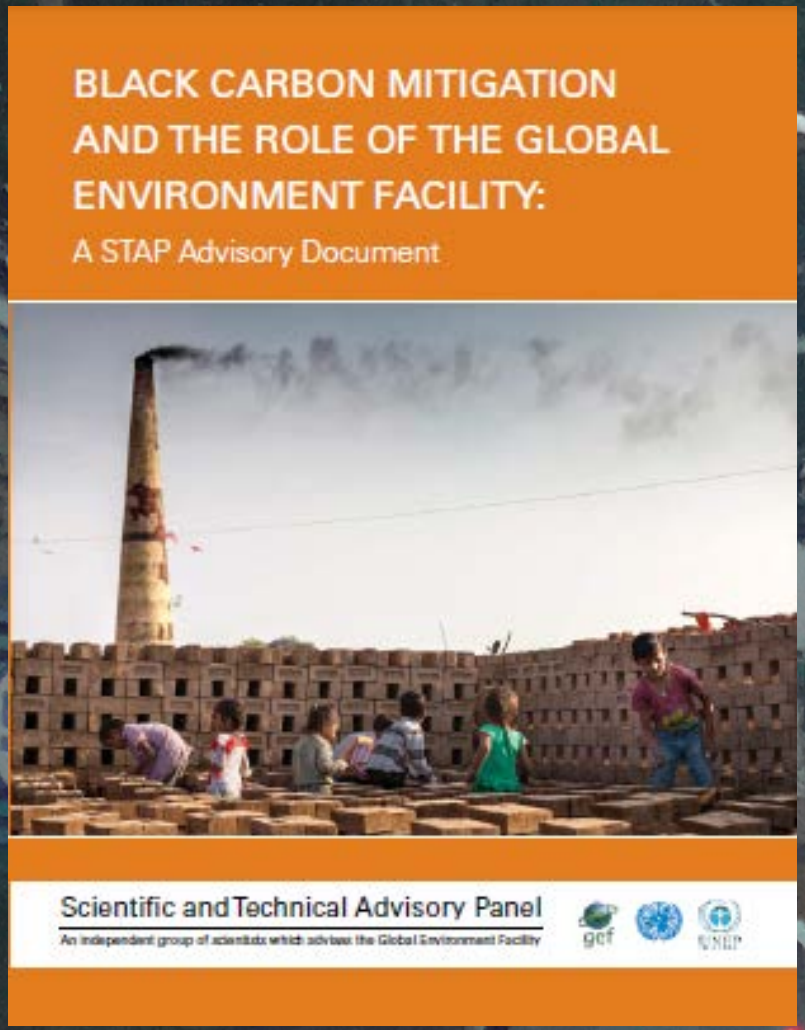
Stock average car fleet 2010

EVs with electricity at 200 g CO_2/kWh



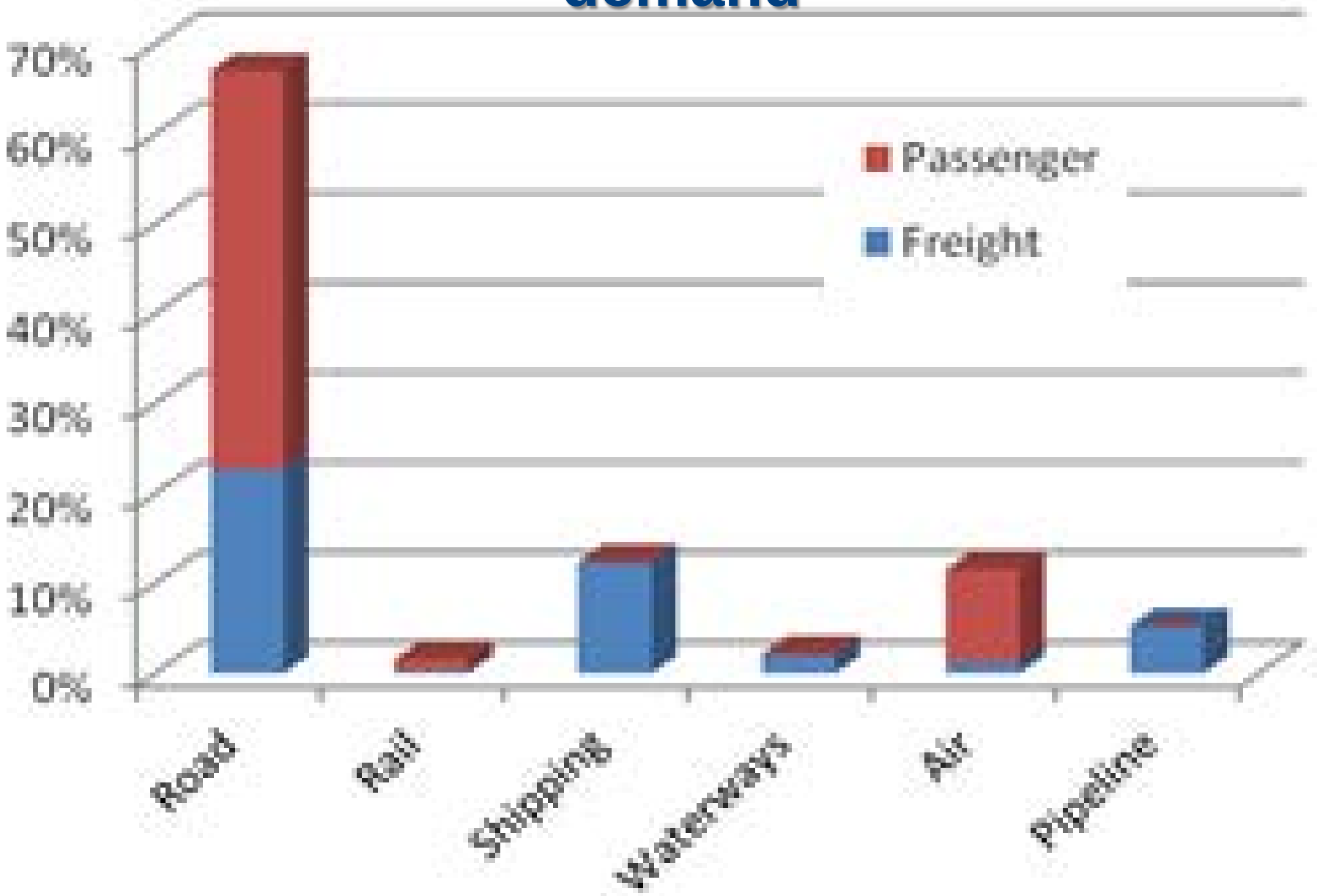
Key messages

- GHG emissions from the transport sector can be reduced e.g. by fuel efficiency standards to encourage lower emission vehicles.
- Light duty vehicle use can be reduced through urban design that prioritises walking and cycling, widely accessible public transport, and adoption of smart transport technologies.
- Large scale commercialisation of biofuels, such as for aviation, remain costly.
- Moving freight by rail or coastal shipping has much lower emissions per tonne than by road.



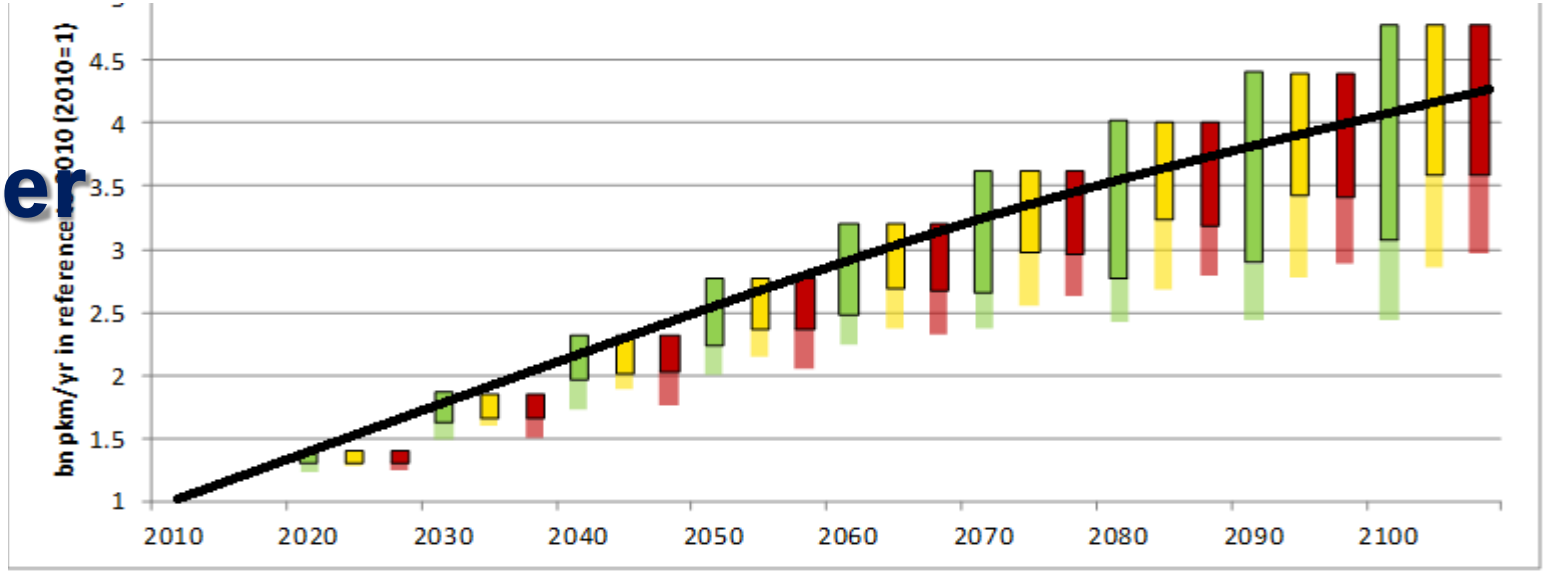
There are many co-benefits resulting from GHG emission reduction actions such as cleaner air and improved health.

Global shares of total transport energy demand

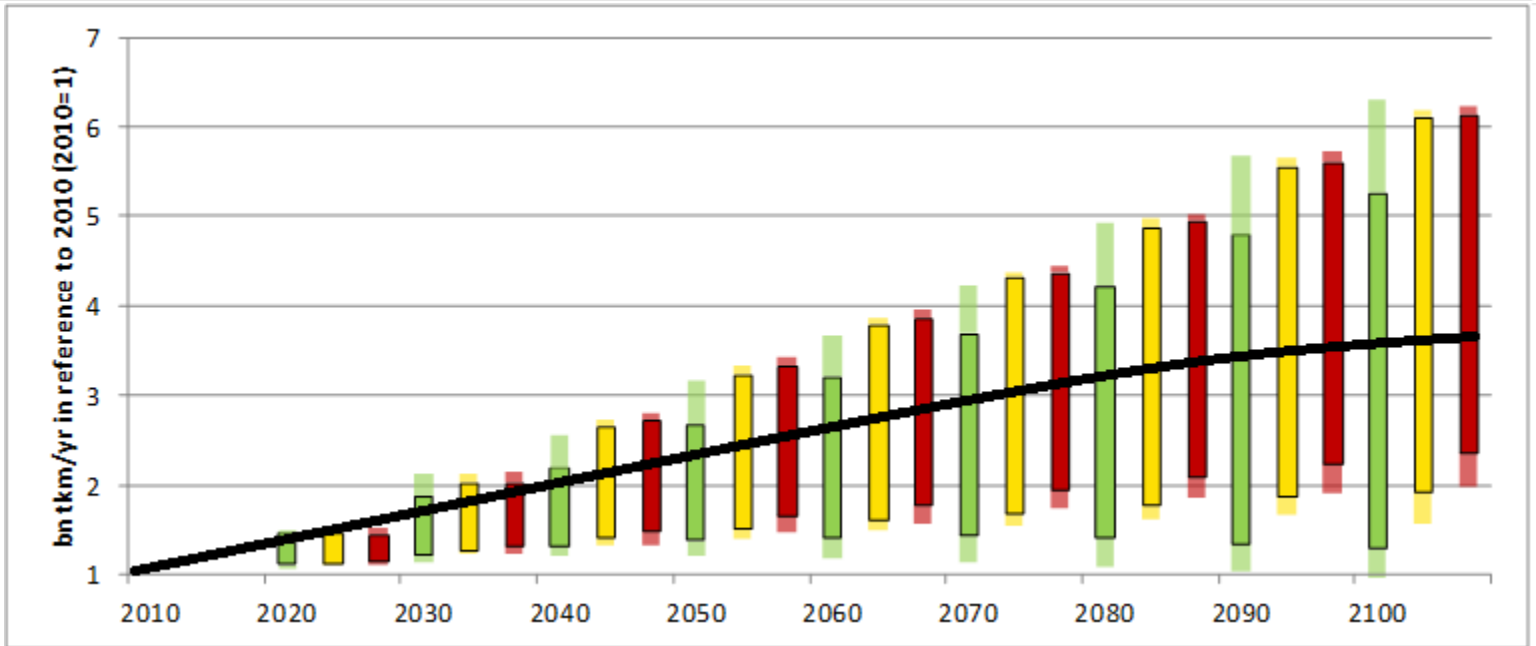


BAU global transport demand projections compared with 2010 baseline (>600 scenarios)

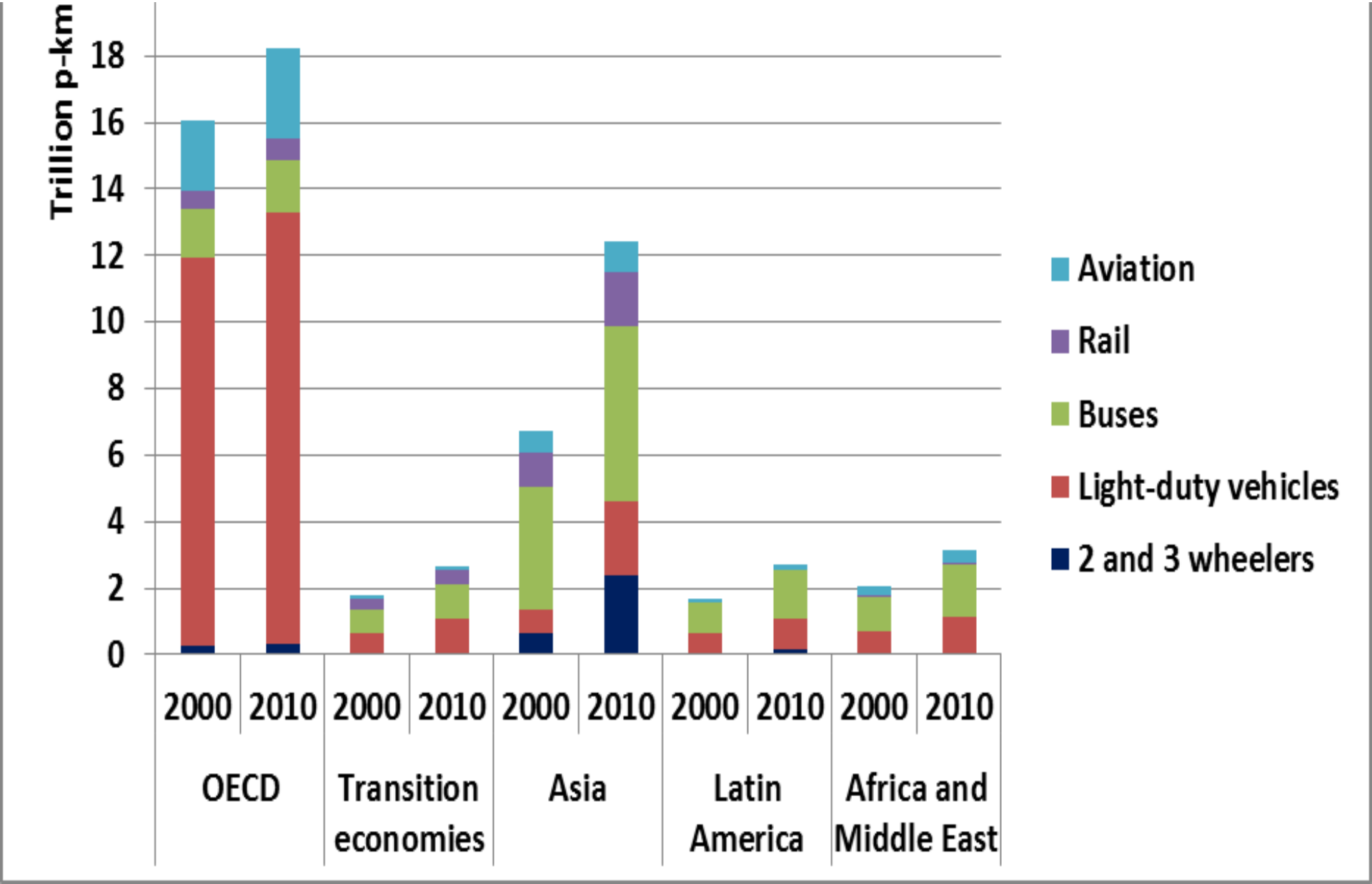
Billion passenger km /yr



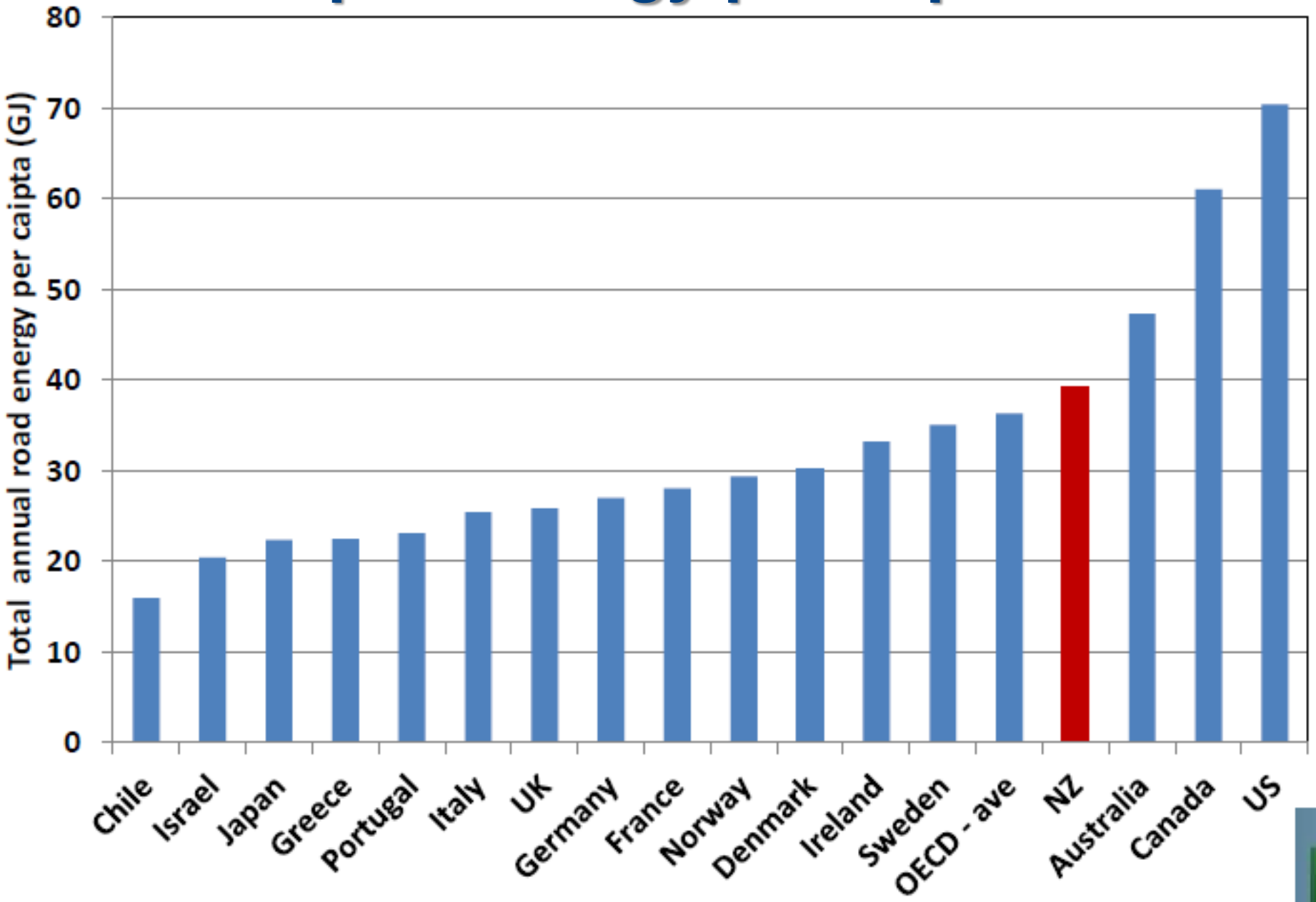
Freight billion t-km/yr

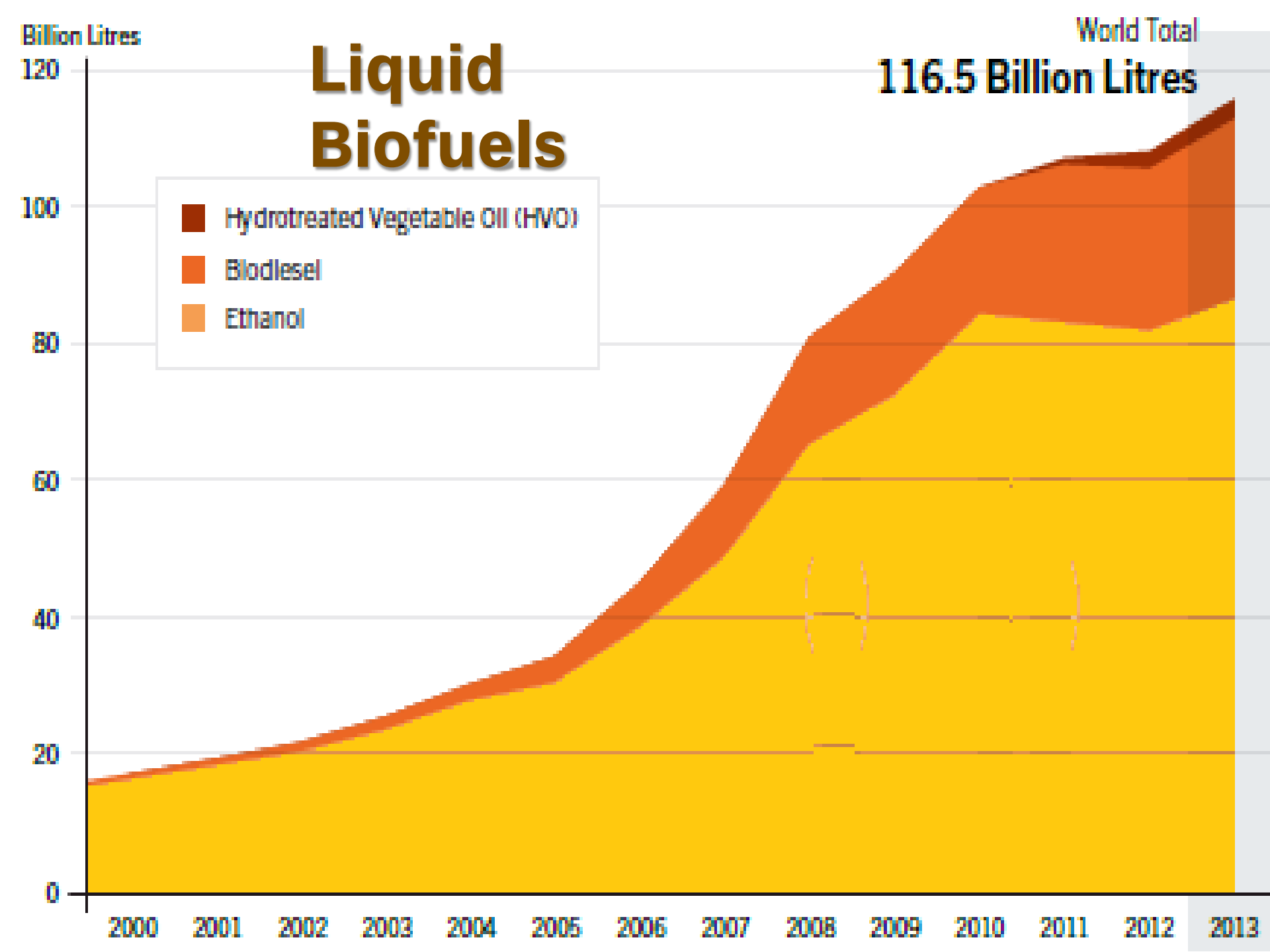


Regional differences in passenger transport modes.



Road transport energy per capita varies




Billion Litres
Liquid Biofuels
World Total
116.5 Billion Litres
Hydrotreated Vegetable Oil (HVO)
Biodiesel
Ethanol
120
100
80
60
40
20
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013