

World Energy Congress 2013
Future of transport: Decarbonizing growth

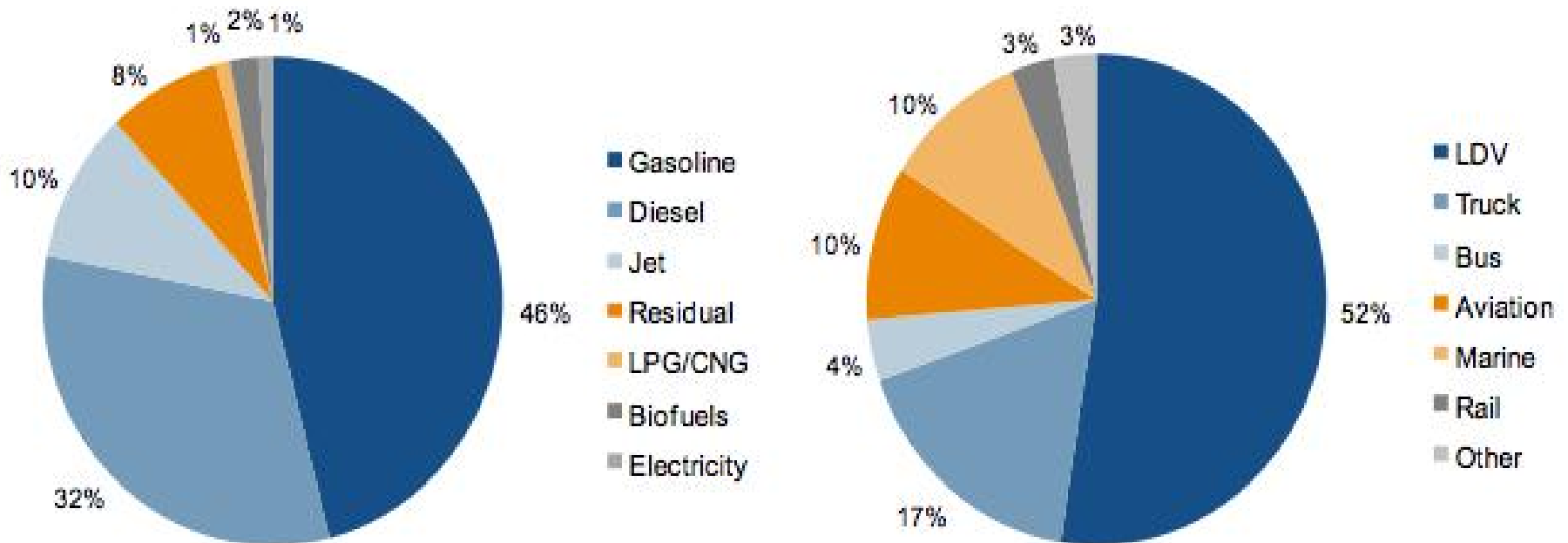
Natural gas and LNG: a part of the solution

Jérôme Ferrier
President IGU

Transport energy by source and mode 2010

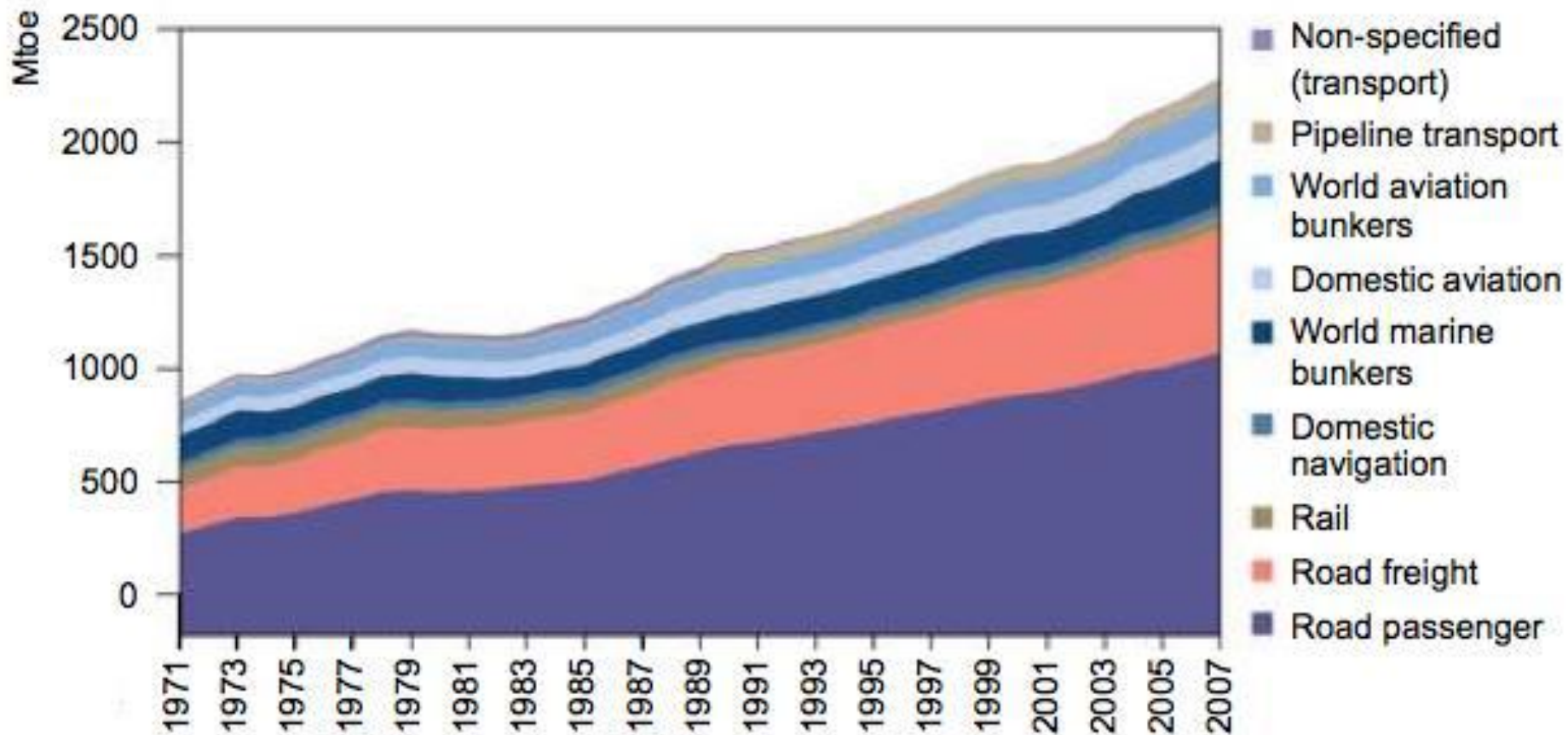
(Source: WEC Transport Scenarios 2050)

Total: 2,2 Gtoe



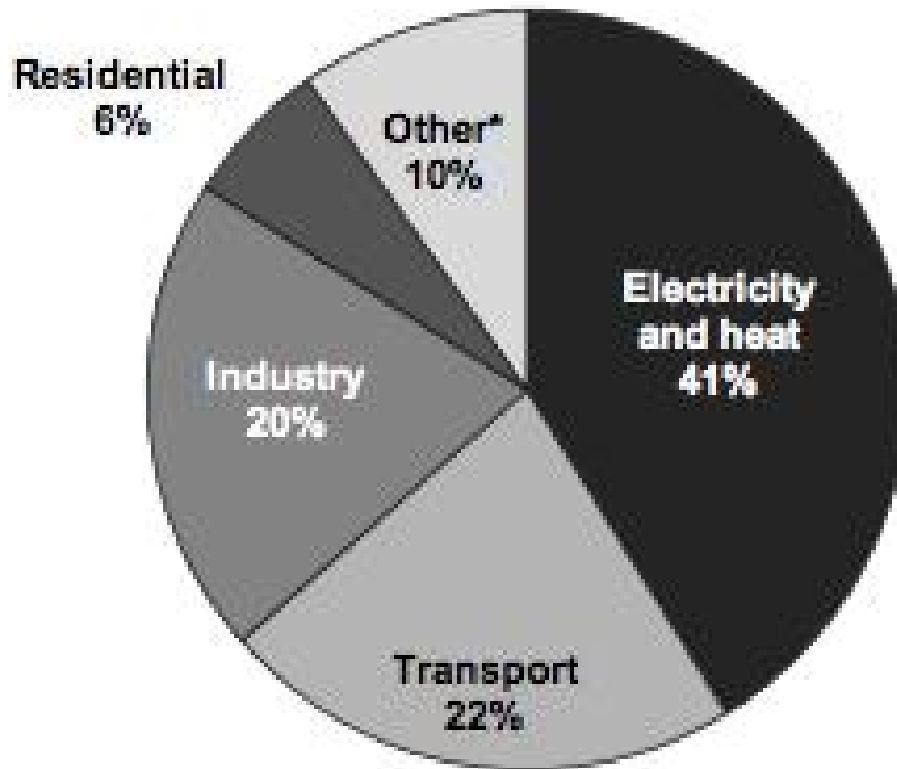
Global transport energy use by mode (Mtoe)

(Source: IEA, *Energy Technology Perspectives*, 2010)

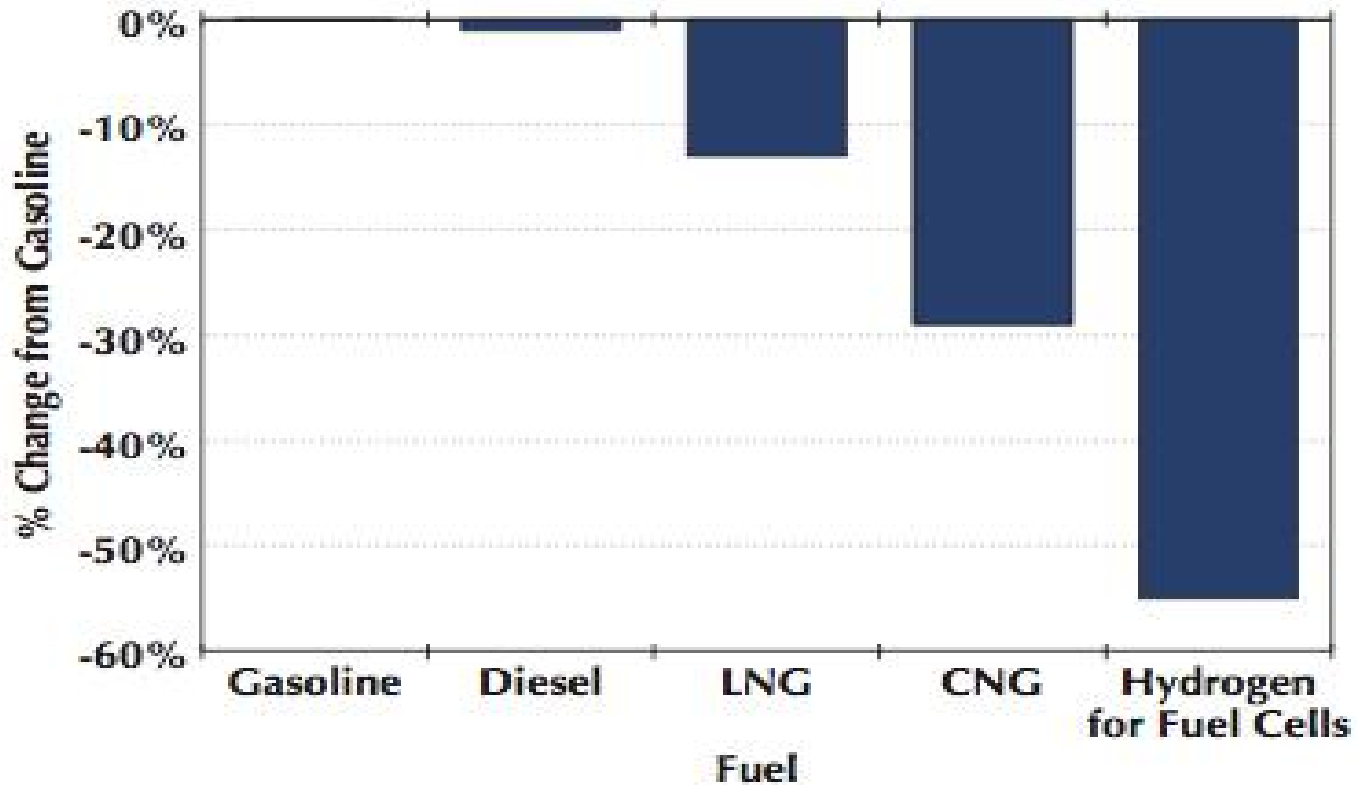


Global CO2 emissions by sector in 2010

(Source: IEA)

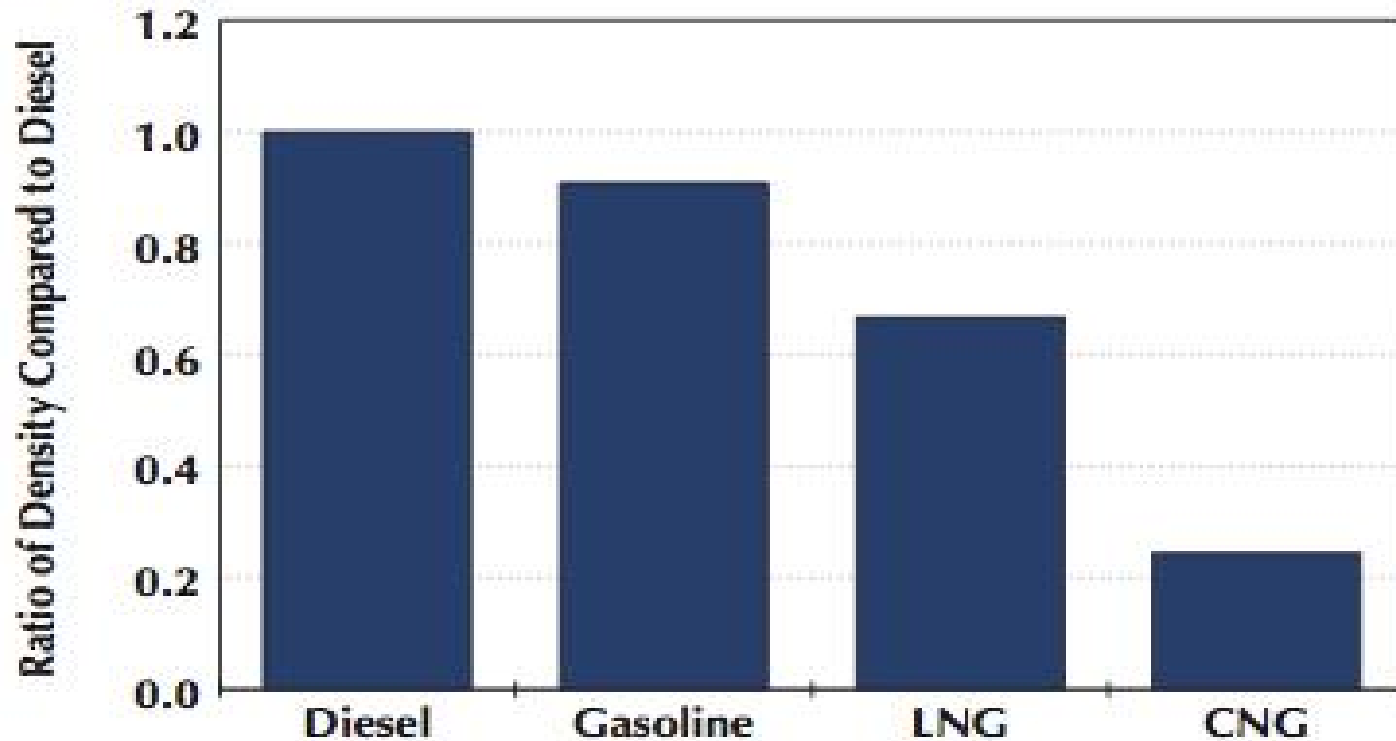


Carbon print reduction in transportation



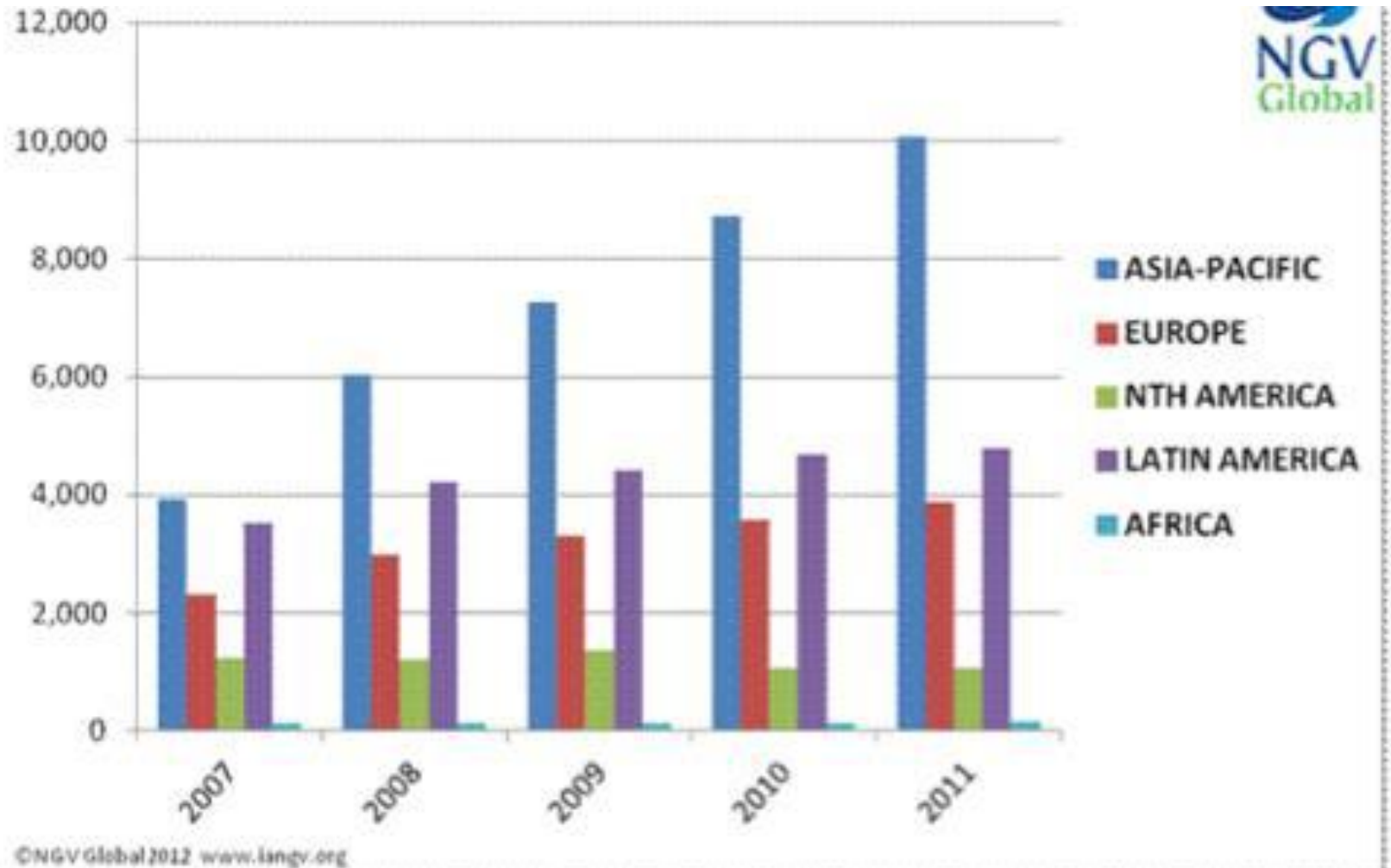
Source: California Air Resources Board, "Proposed Regulation to Implement the Low Carbon Fuel Standard," March 5, 2009. Table ES-8. Available at: http://www.arb.ca.gov/fuels/lcfs/030409lcfs_isor_vol1.pdf

Comparison of energy density between transport fuels



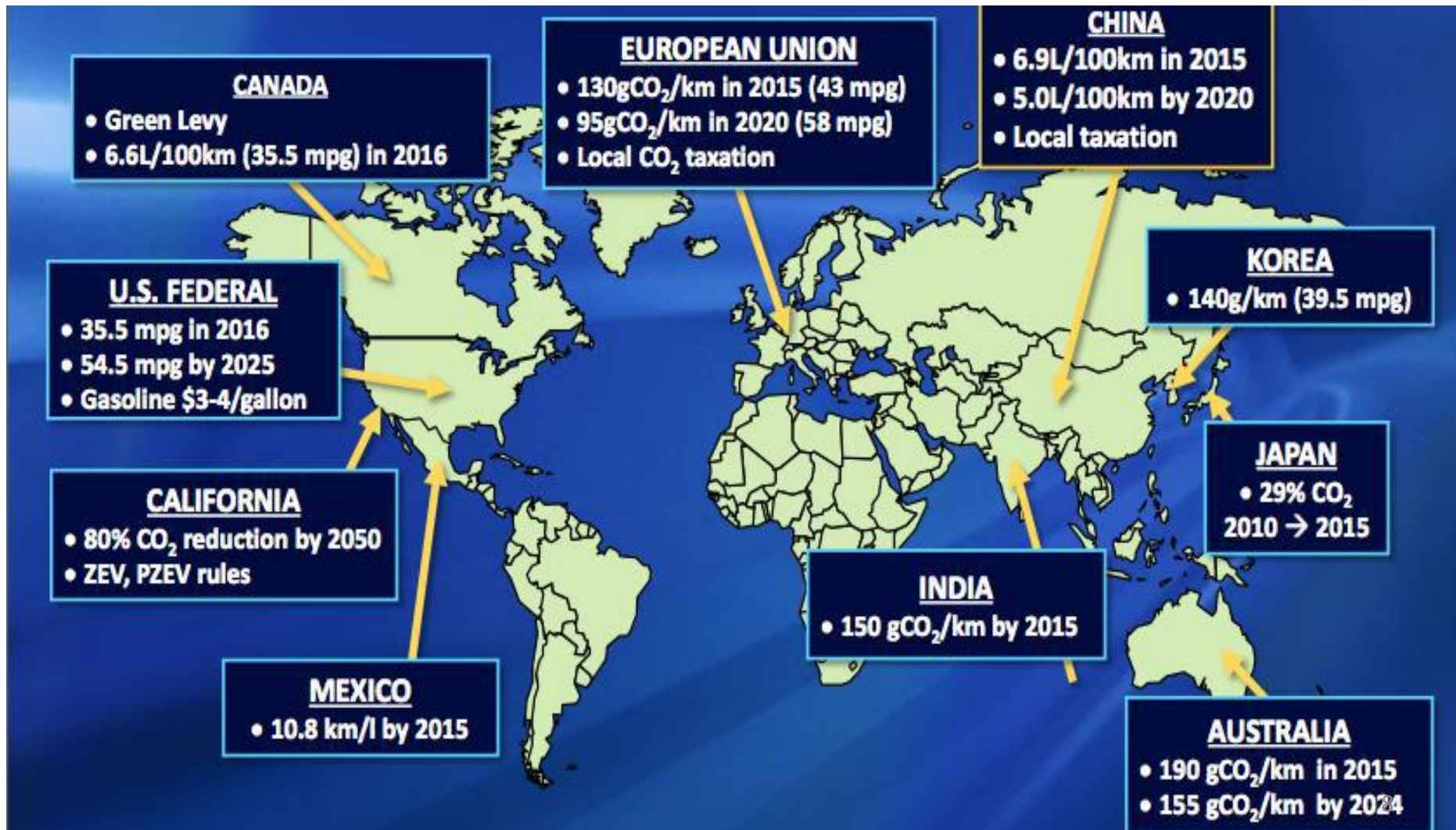
Source: Energy Information Administration, "Annual Energy Outlook 2010 with Projections to 2035," 2010. Available at: http://www.eia.gov/oiaf/aeo/otheranalysis/aeo_2010analysispapers/factors.html

Natural gas fuelling stations (number by region)

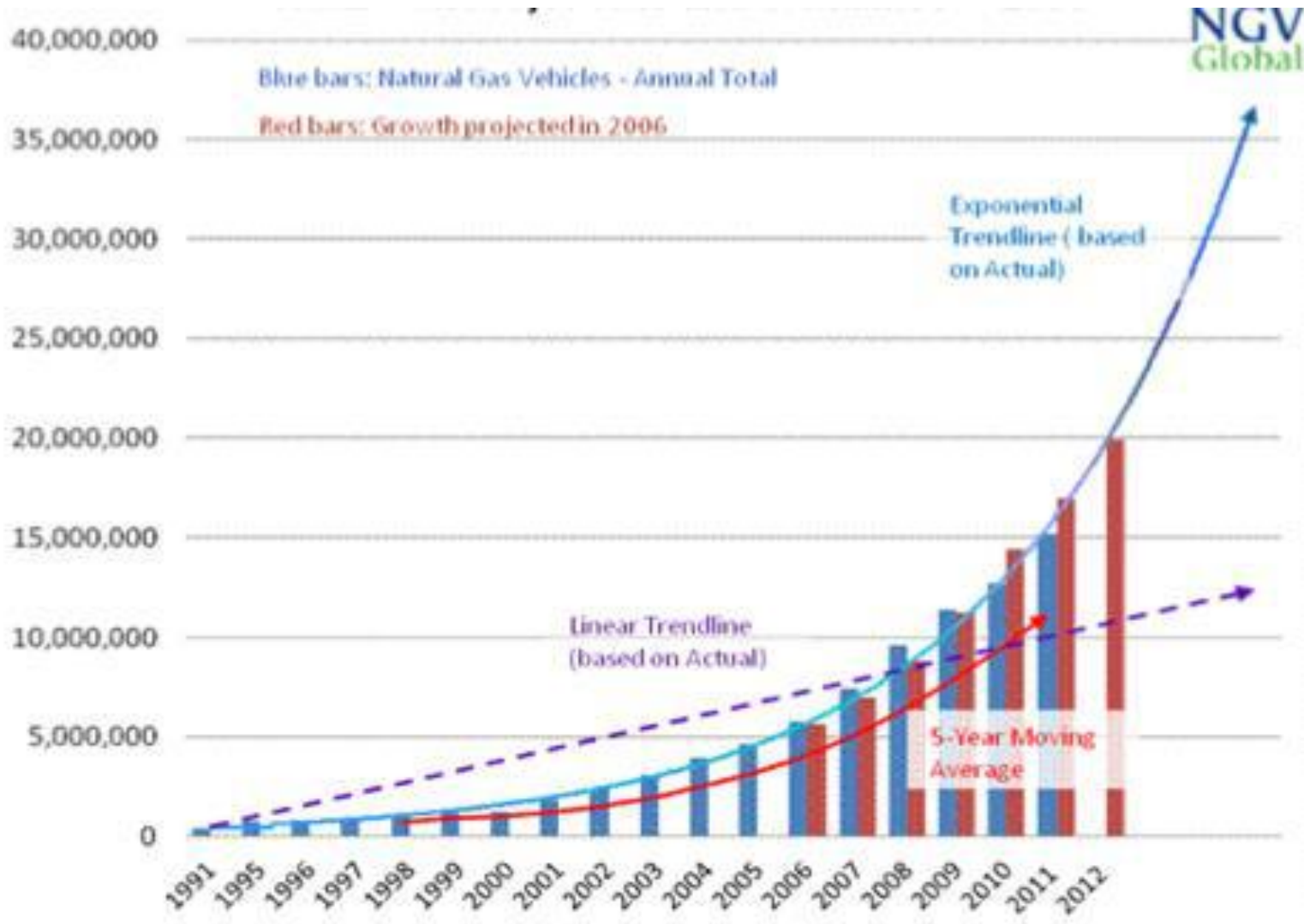


Emission performance targets for transport

(Source: NGV Global)



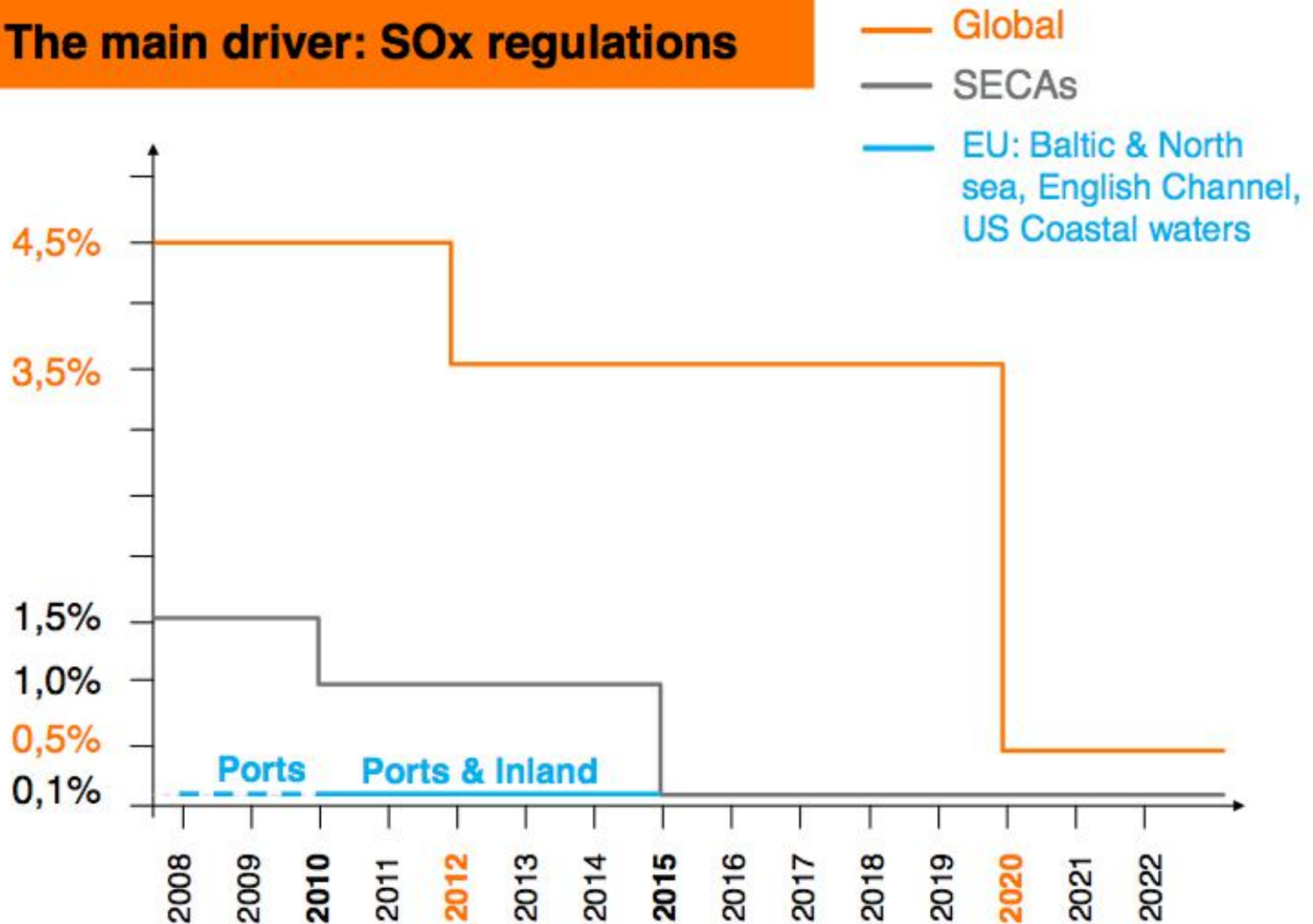
Natural gas vehicles growth worldwide



SOx standards global and regional

(Source: Wartsila)

The main driver: SOx regulations



NOTE: today's average %S in HFO is 2.7

Potential shares of various bunker fuels in time

