



The project is funded by the European Commission's
Directorate-General Environment



EU Transport GHG: Routes to 2050?

Review of projections and scenarios for transport
in 2050 (Task 9 Report V)

Partners



Layout

- The studies
- Emission and demand projections
- Options and measures
- Conclusions
- Propositions

Context of the review of scenarios

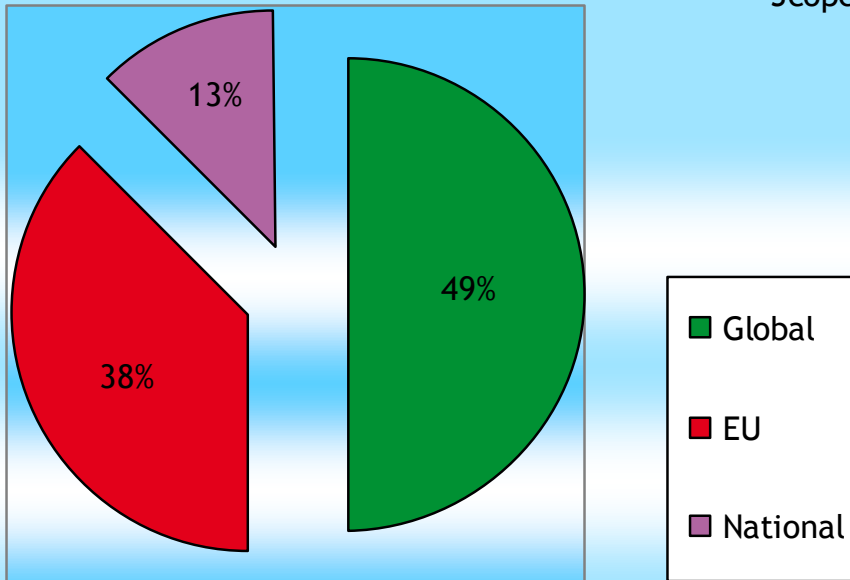
- Many studies on future scenarios of GHG emissions
- Review of these provides a wider context
- Comparison of assumptions regarding options and policy instruments
- Information for the development of the illustrative scenarios

Studies

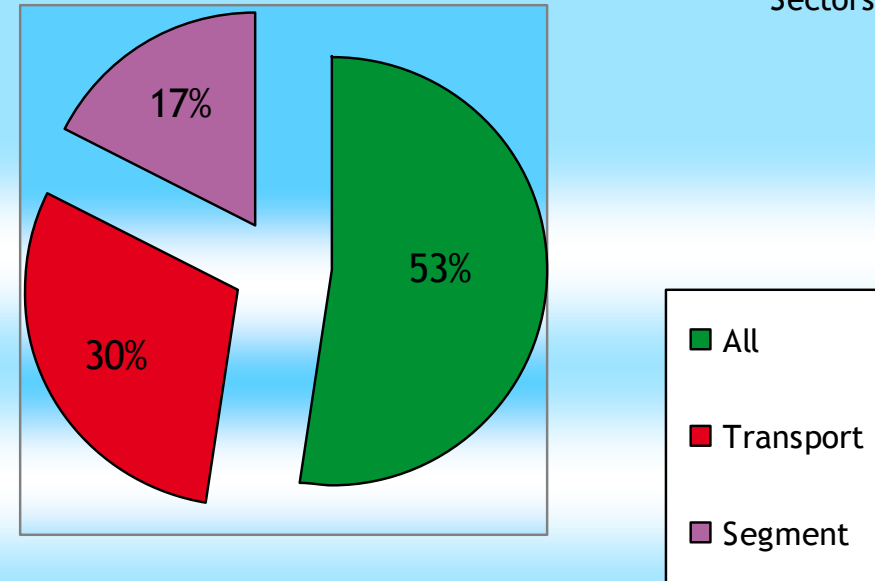
- Very similar and very different
 - Method:
 - Back casting
 - Modelling the future
 - Discussing the future
 - Extrapolating trends
 - Objective:
 - Low carbon future, research agenda, energy mix
 - Likely future, indication of required change, Indication of potential
 - Degrees of freedom
 - Energy sectors (Is electricity used in transport attributed to power generation or transport?)
 - Passenger vs. Freight
 - Road vs. non road
 - Individual modes (which ones are included?)
- WBCSD, 2005
IPCC, 2007
EC, 2008
WEC, 2009
ICCR et al., 2004
CGPC, 2006
McKinsey & Company, 2009
Shell, 2008
WEC, 2007
ECN, 2007
ERRAC, 2007
EC, 2007
PBL, 2009
MCRIT, 2009
VLEEM Consortium, 2005
WWF, 2009
Meyer et al., 2007
IEA, 2008
CE, 2007
OECD/IEA, 2009
ERTRAC, 2009
RECIPE, 2009

Studies – geographical scope and sectors

Scope

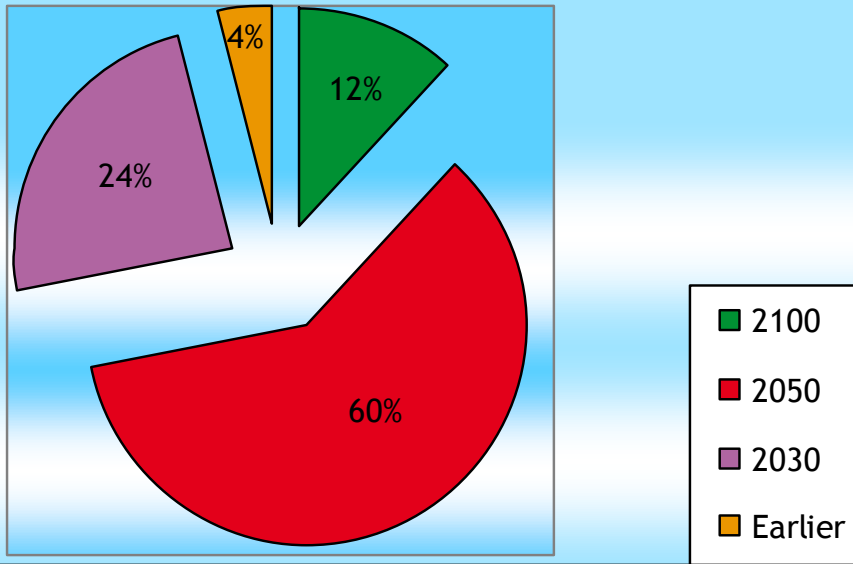


Sectors

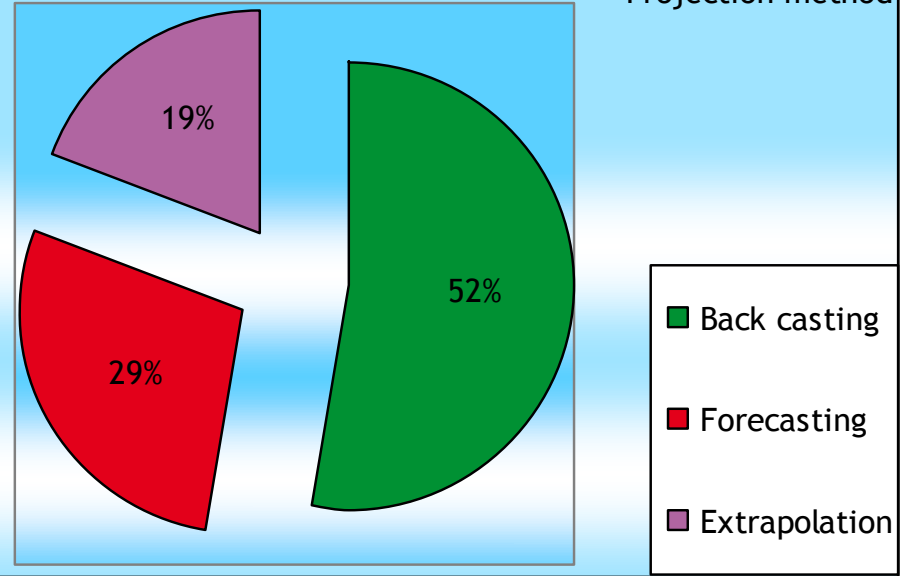


Studies – projection year and method

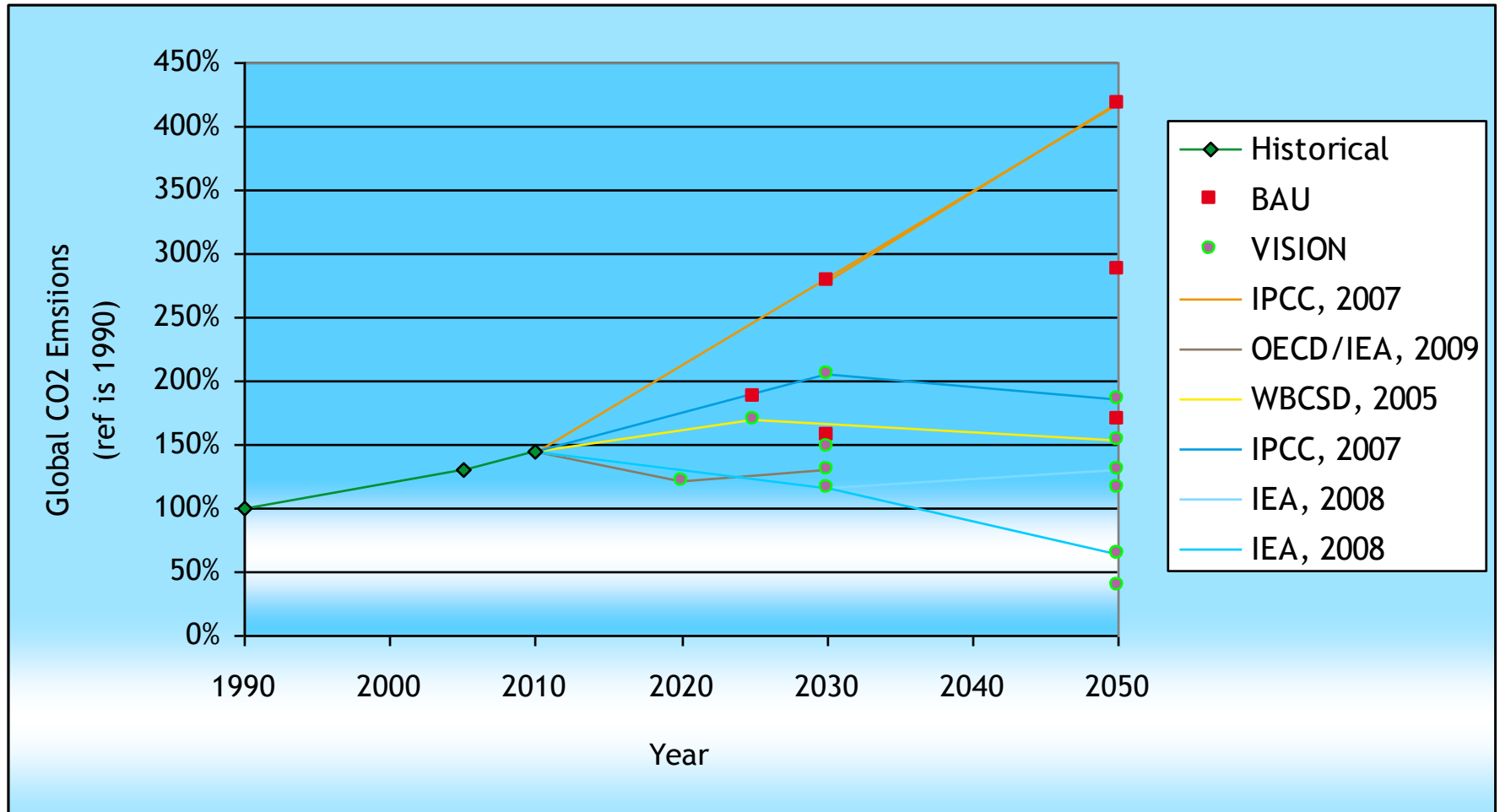
Projection year



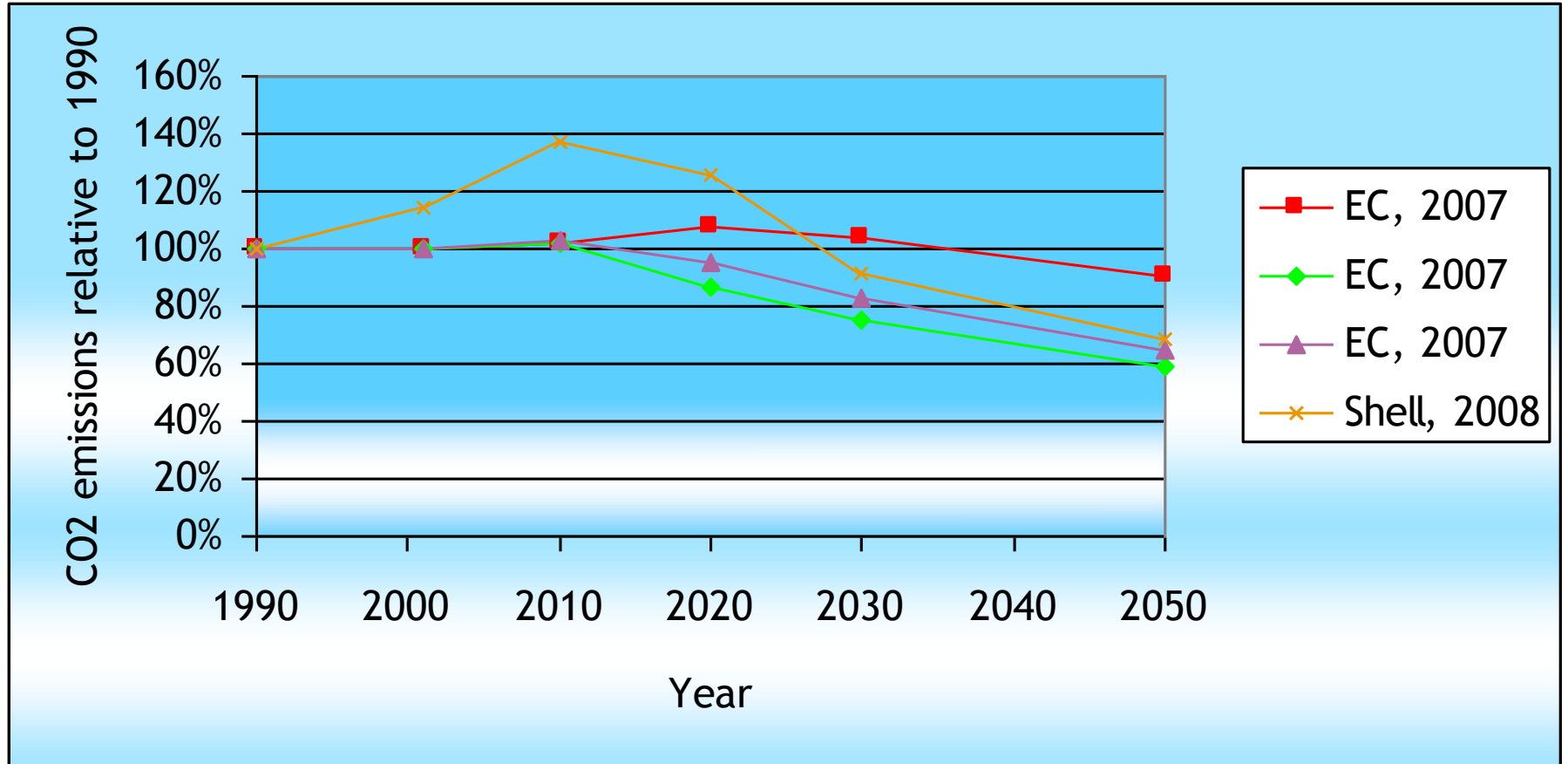
Projection method



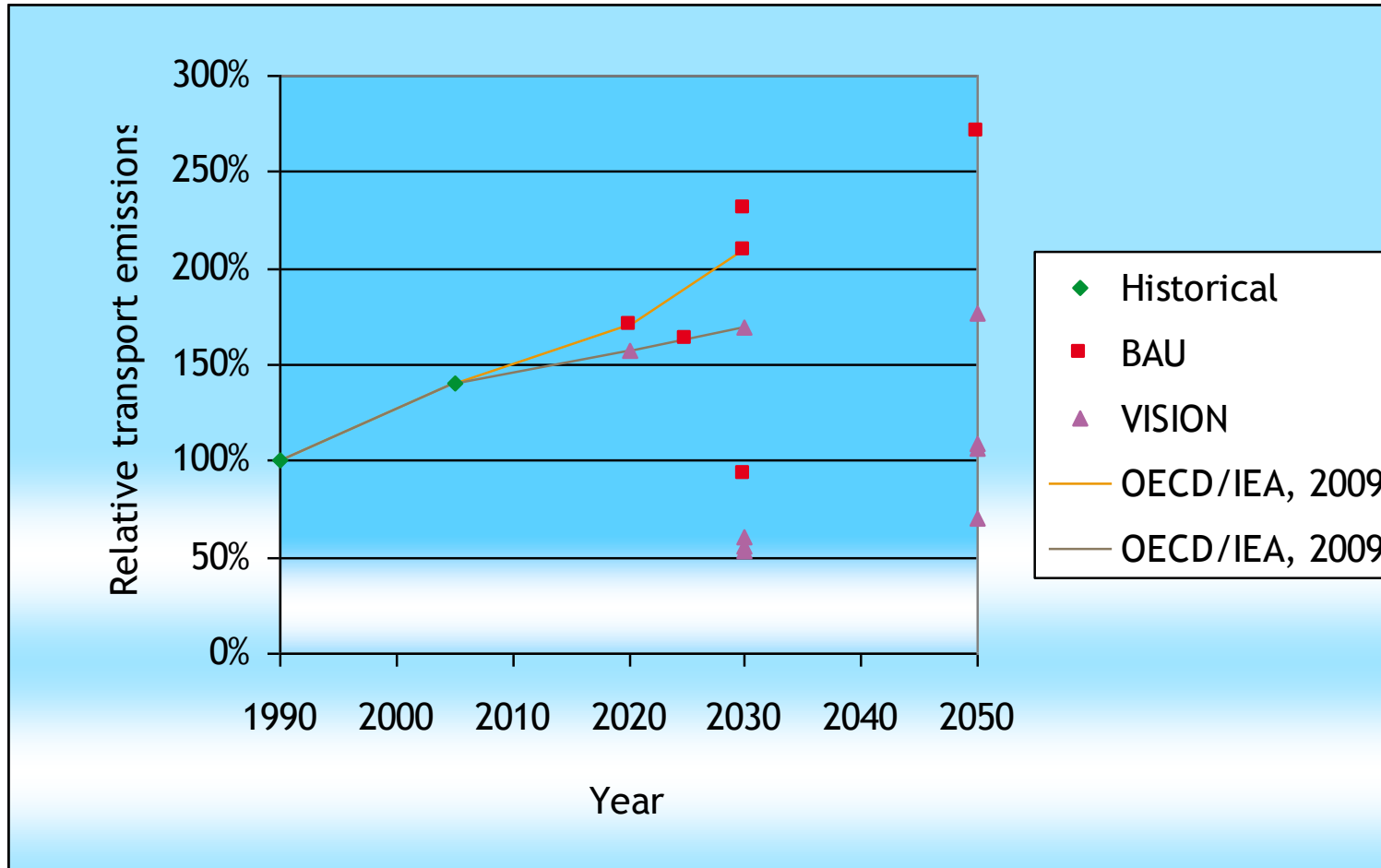
Global Emissions for all sectors



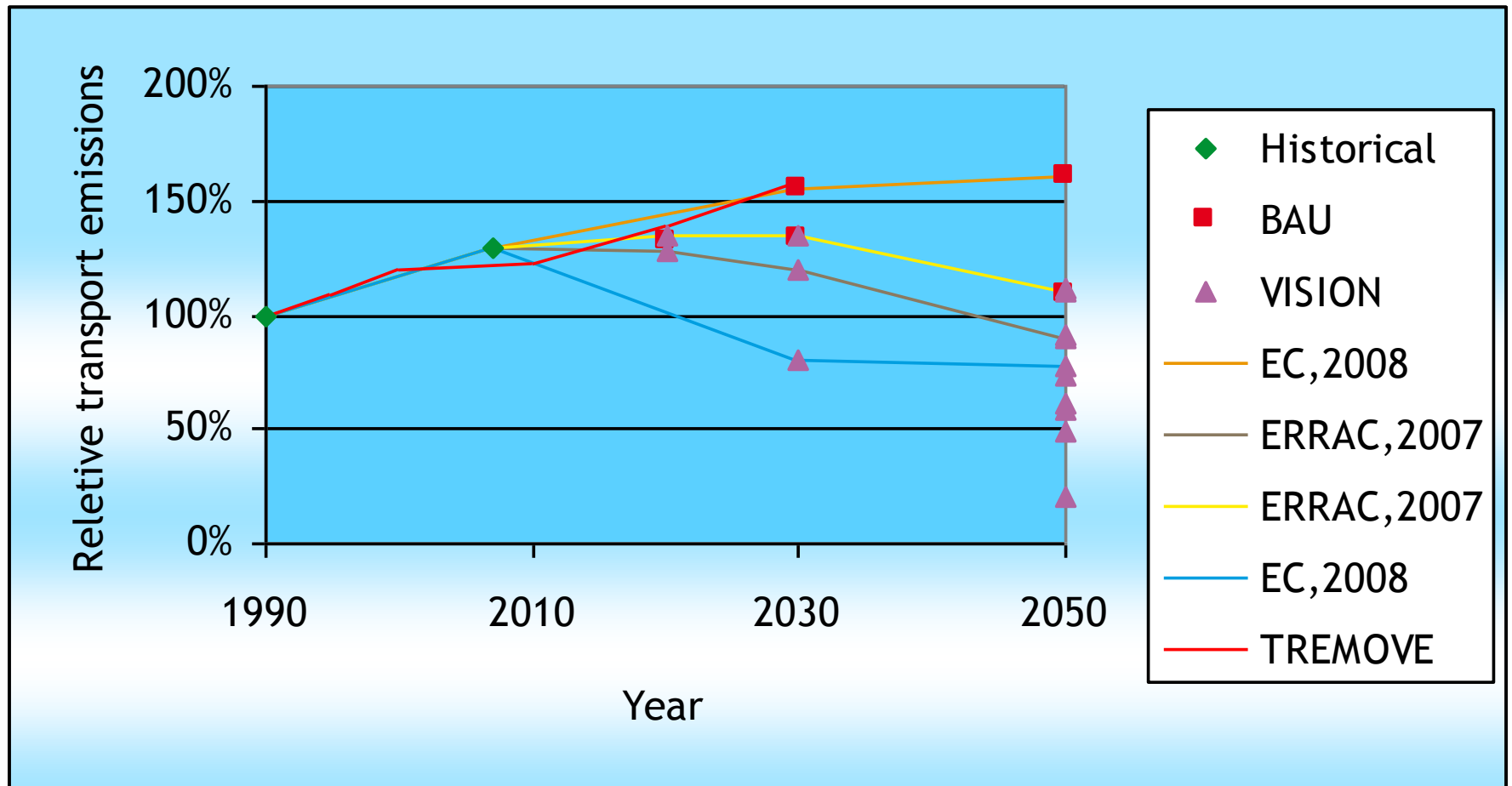
European Emissions for all Sectors



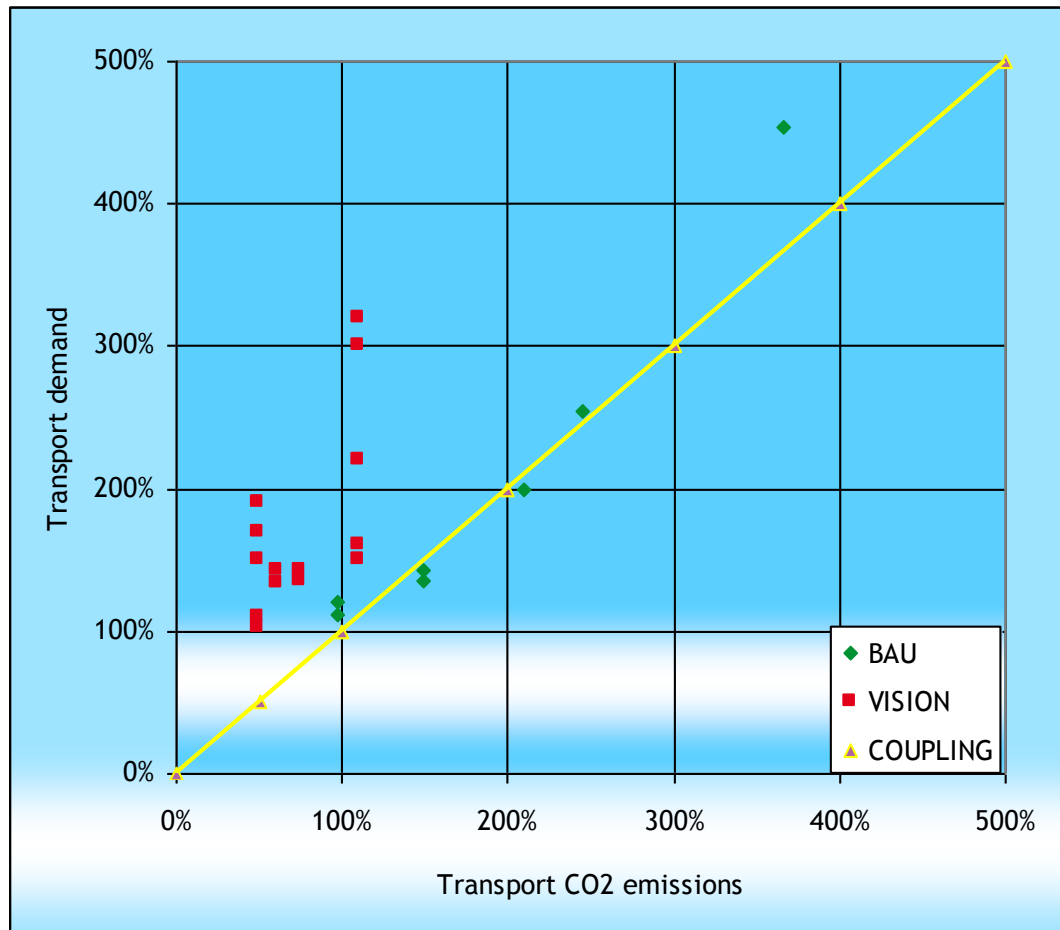
Global Transport Emissions



European Transport Emissions



Demand



Demand

BAU

Transport segment	Outlook year	Demand increase
aviation	2050	455%
freight	2020	120%
freight	2030	143%
freight	2050	255%
Passenger	2020	112%
Passenger	2030	135%
passenger	2050	200%

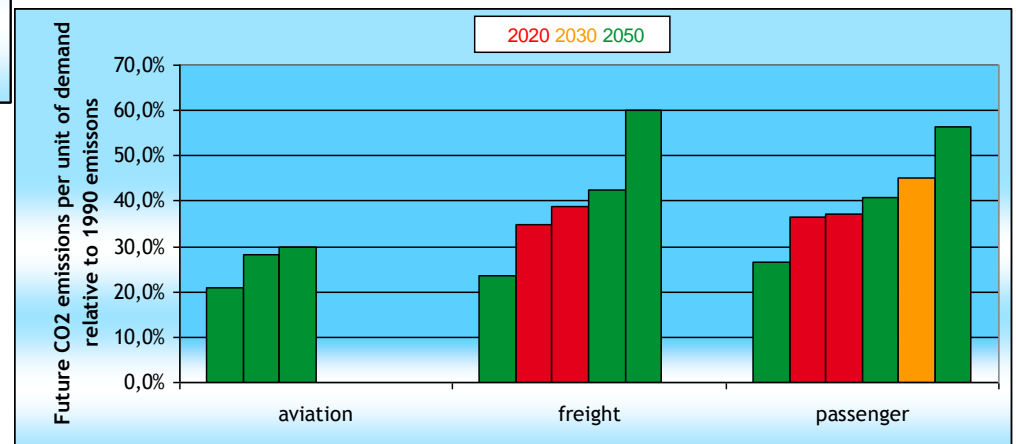
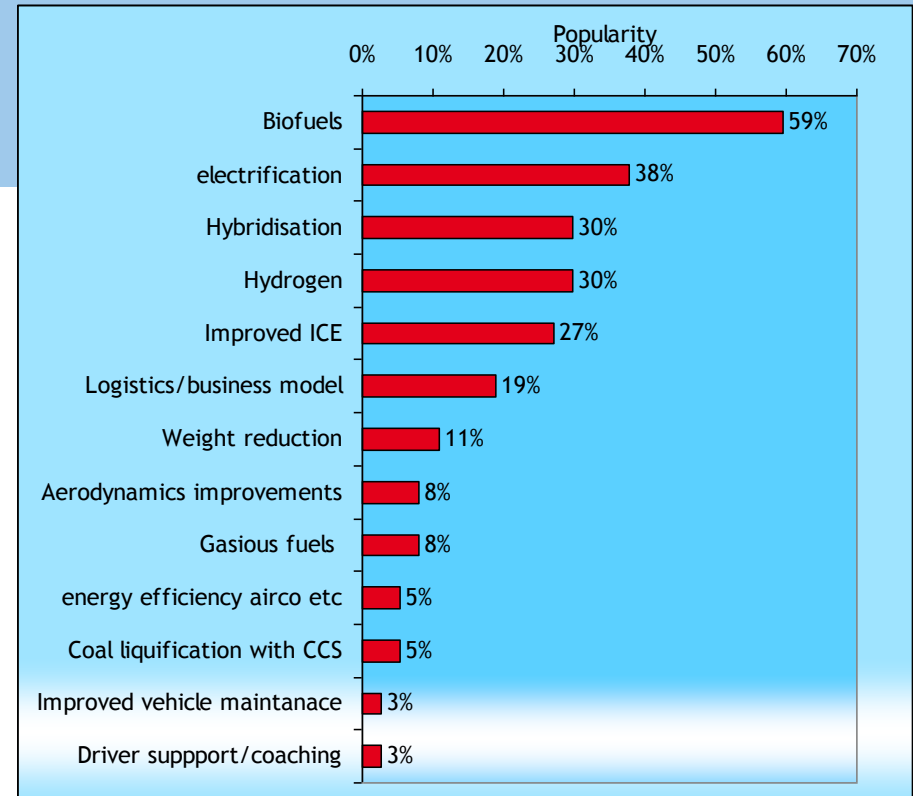
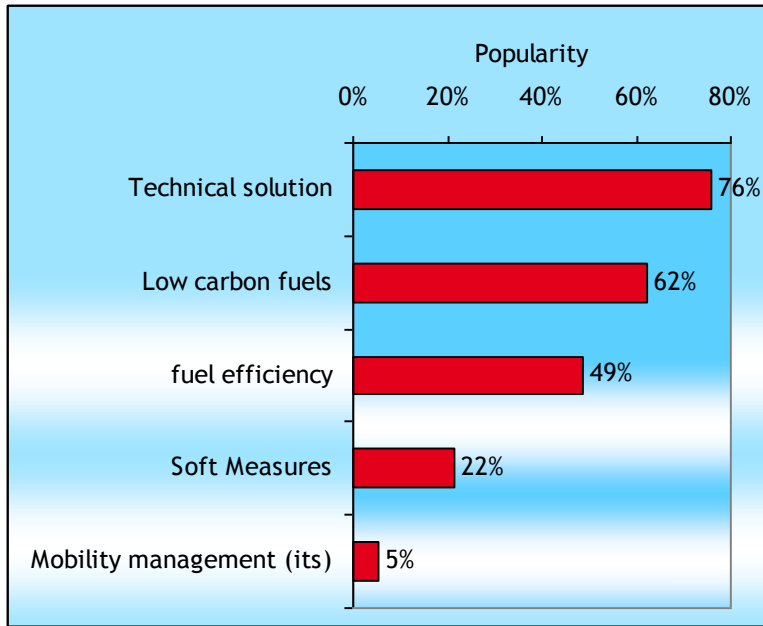
VISION

Transport segment	Outlook year	Demand increase
aviation	2050	300%
aviation	2050	190%
aviation	2050	320%
freight	2020	103%
freight	2020	143%
freight	2030	143%
freight	2050	170%
freight	2050	150%
Passenger	2020	110%
Passenger	2020	134%
Passenger	2030	135%
Passenger	2050	150%
Passenger	2050	160%
Passenger	2050	220%

Conclusions on Emission and Demand projections

- BAU
 - Global emissions increase; EU emissions will stabilise
 - Global transport emissions will increase (200%)
 - EU transport emissions will increase (150%)
- VISION
 - Emissions will be lower than BAU
 - Few studies show a decrease below 1990 levels in Global emissions
 - EU total emissions will decrease (up to 60% compared to 1990)
 - **Transport emissions will reduce in the same order of magnitude**
- Demand
 - Will increase both in BAU and VISION
 - More than half the VISION scenarios assume technology decreases emissions faster than demand increases

Technical options



Technical Options

- Most studies assume a largely technical solution
- Biofuels (but where do they come from?)
- More CO₂ reduction in passenger than in freight
- Most innovations in passenger road transport
- Focus on ROAD

Non Technical Options

- Less detailed descriptions
- Most common options:
 - Improvement of spatial planning (other options)
 - Improved logistics (several %)
 - Change in travel behaviour / Demand reduction (not reported)
 - Fuel efficient driving (1-2%)
 - Competition with technology
 - Modal shift (up to 5% of total reduction)
 - Road will dominate
 - Most important freight to rail/shipping or aviation to HSR

Policy instruments

- Meta policy
 - How to make policies vs. the policy to make
 - Non economically restrictive
 - Long term/stable
 - Not technology specific
 - Agreement between stakeholders
 - Policy against public opinion?
- Common elements
 - International cooperation
 - Support research & aid for developing technologies
 - Efficiency or Emission standards
 - Internalisation
 - Demand reduction will only curb growth
- ACT NOW or else!

Conclusions

- BAU emissions will increase; EU emissions will stabilise
- Few reduction scenarios show reduction in the order of 80% compared to 1990
- Transport emissions are expected to reduce with the same order of magnitude as total over all sectors
- Information on Road modes dominates
- Demand will increase both in BAU and vision scenarios
- Technological options are dominant in scenarios
- International cooperation is the key
- We must act now to be able to achieve a high level of reduction at an acceptable cost

Optional: Discussion

- Demand is almost unanimously expected to increase. Technology will then have to achieve the efficiency target AND compensate for the increase. Can this be realistic?
 - Demand increase in EU 170% => can technology decrease emissions from 170% to 20% or even 50%: this requires efficiency improvements of 70-90%)
- Aviation and international shipping receive less attention than the other modes. While aviation is expected to increase by a factor of 4 and international shipping transports an enormous volume of freight.

Optional: Technologies

