



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



# EU Transport GHG: Routes to 2050?

## TASK 2

Identifying transport's potential contributions to  
future GHG reduction

1st Stakeholder Event  
Friday 27th March 2009, Brussels

[www.eutransportghg2050.eu](http://www.eutransportghg2050.eu)



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- Review of the IPCC SRES scenarios
- Review of the IEA ETP scenarios
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- Comparison with the trend
- Assessment of additional effort to meet EU 2050 targets

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## **Objective: To review broader context:**

- Overall GHG reduction targets
- Contribution of other economic sectors to these emission reductions
- The role that transport should play in this context

## **Output:**

Paper on transport's potential contribution to future GHG reduction targets

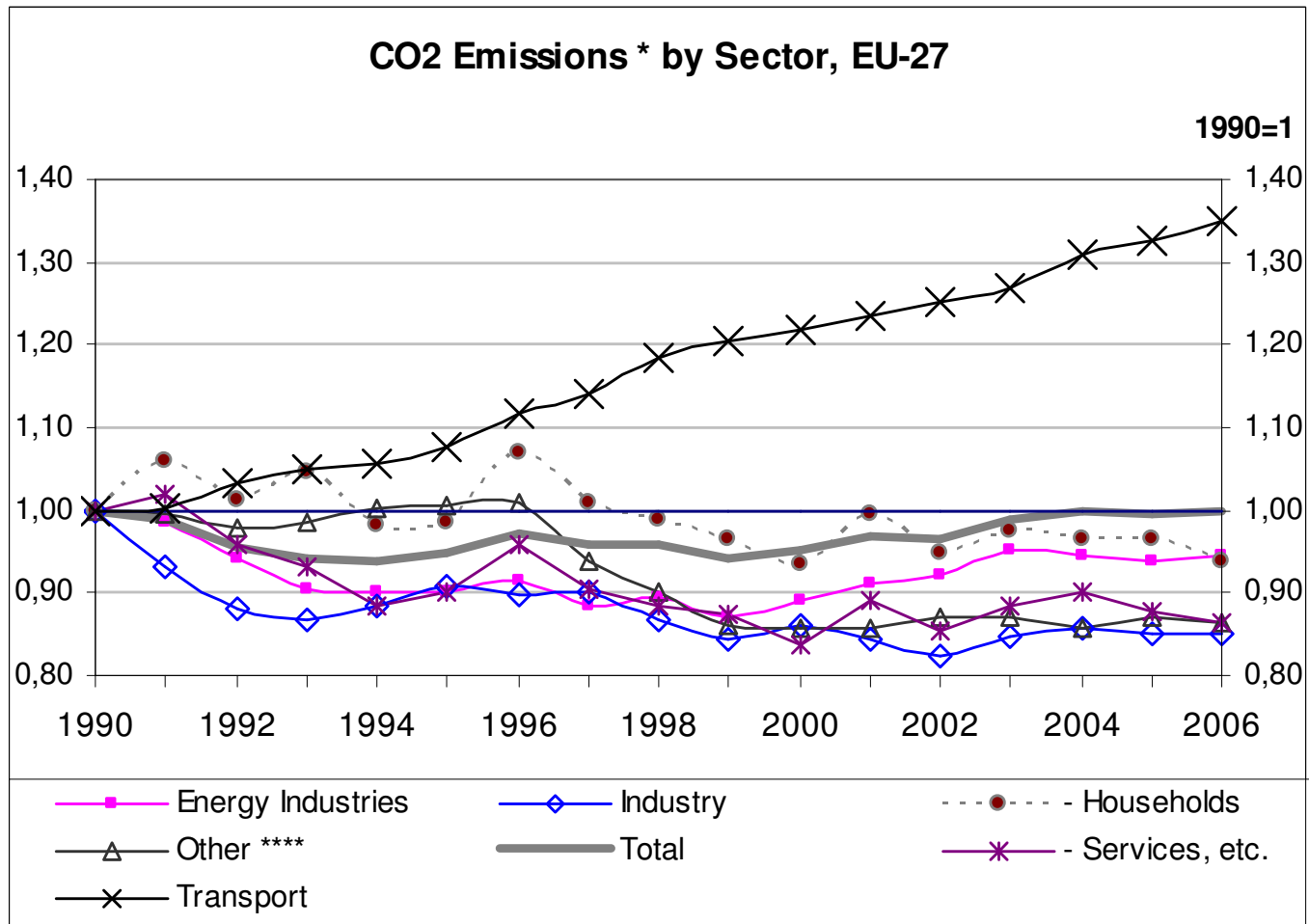
## **Partners involved:**

Lead:



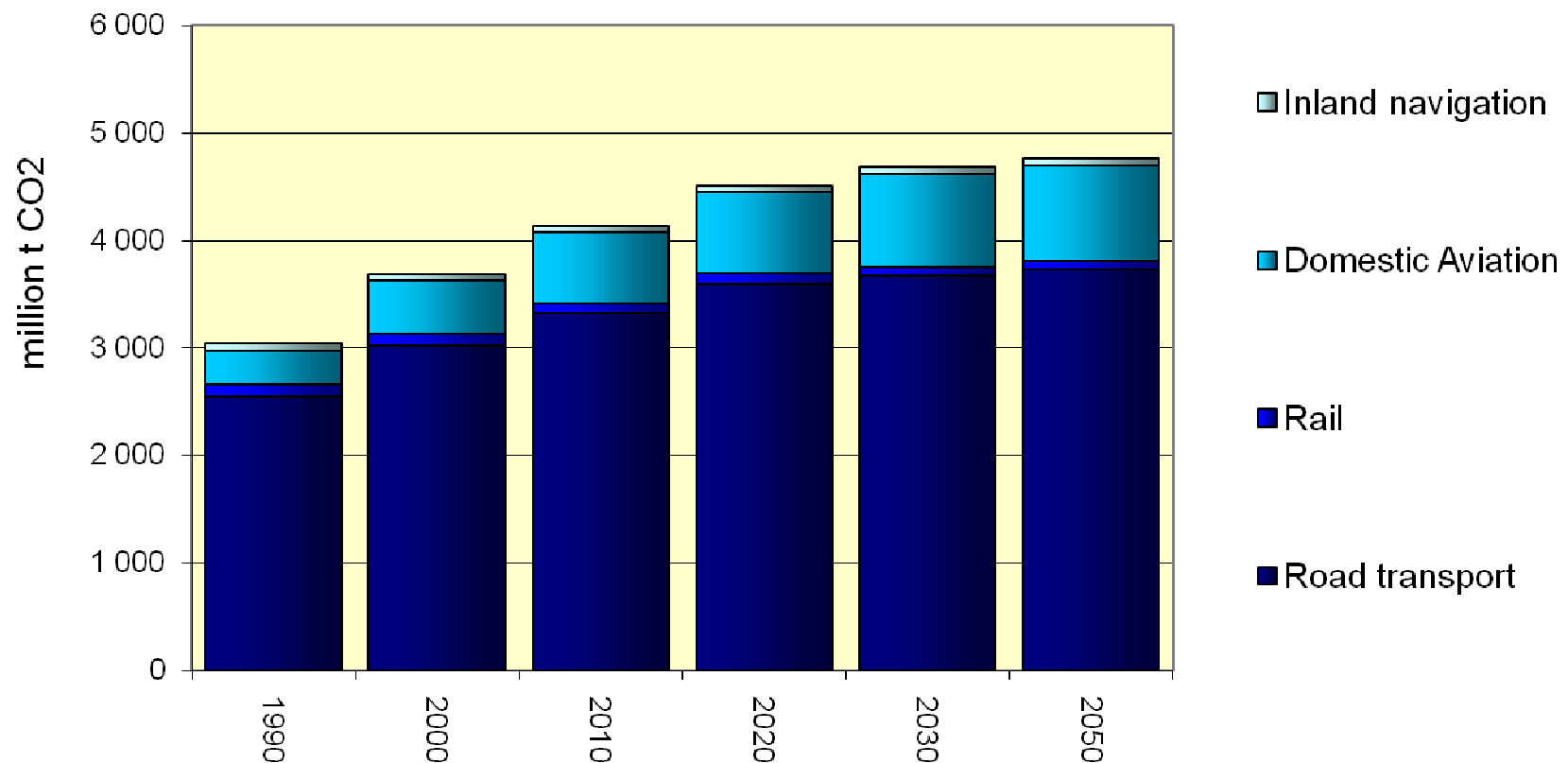
Also involved: AEA, CE, ISIS

# GHG emissions by sector EU-27 (indexed)



Source: DG TREN Energy and transport in figures 2007-2008

# CO2 emissions projection by end-users in the EU-27, in Millions tonnes of CO2

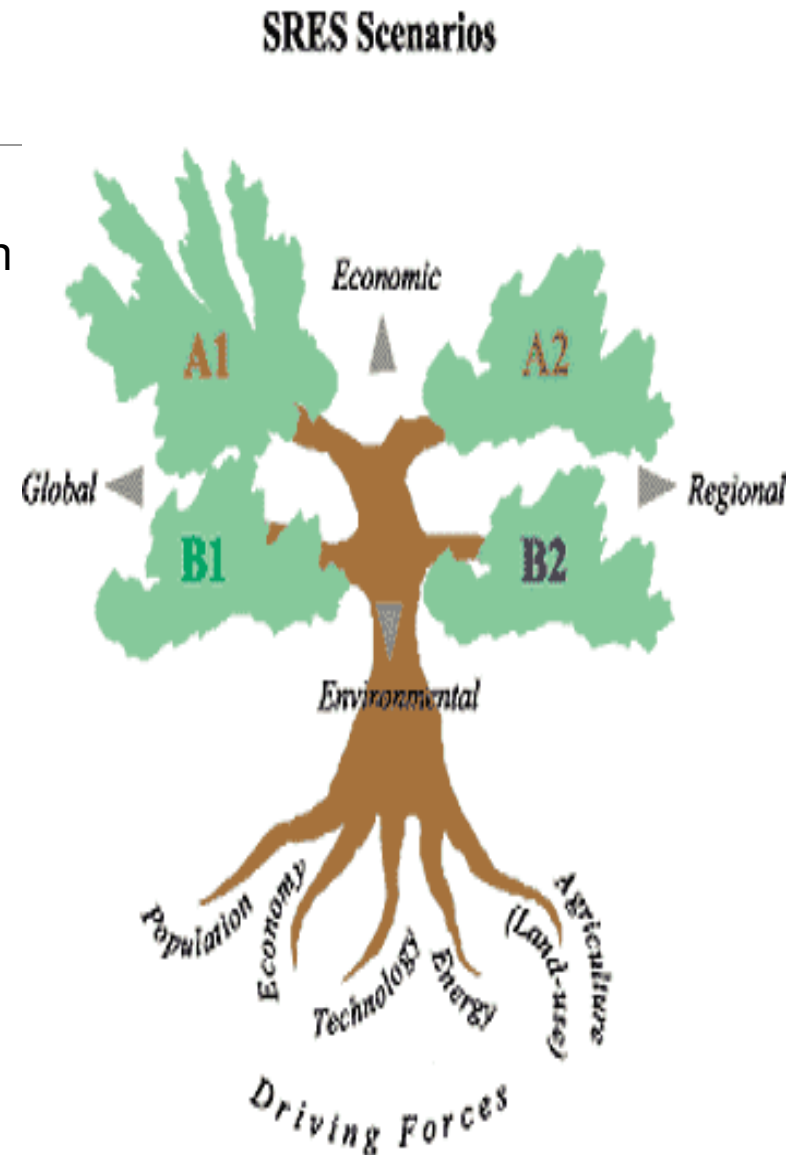


Source: Backcasting approach for sustainable mobility, JRC-EC, 2008

- **A1** - very rapid economic growth, low population growth, and the rapid introduction of new and more efficient technologies.

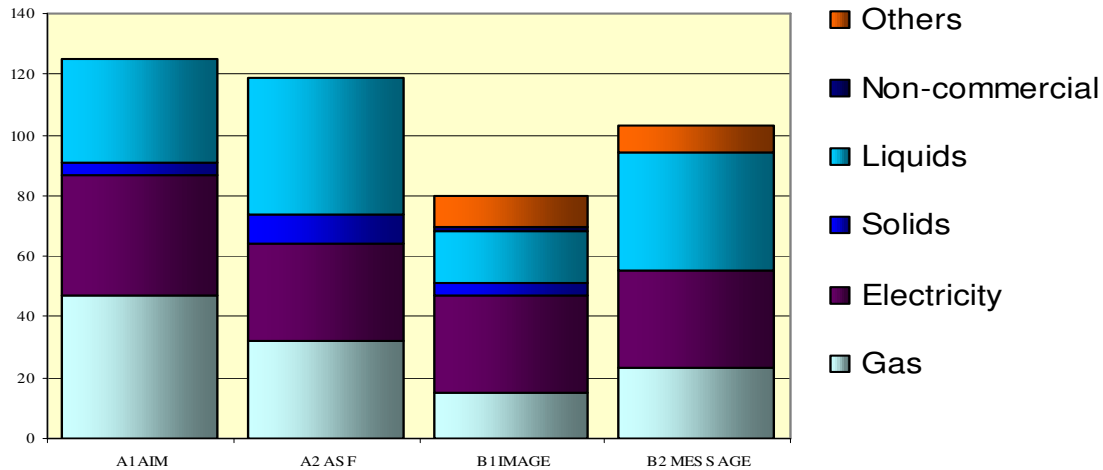
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- **A2** - a very heterogeneous world. High population growth, economic development is primarily regionally oriented and per capita economic growth and technological change are more fragmented and slower than in other storylines.
- **B1** - a convergent world with the same low population growth as in the A1 storyline, but with rapid changes in economic structures and the introduction of clean and resource-efficient technologies.
- **B2** - a world in which the emphasis is on local solutions to economic, social, and environmental sustainability. Moderate population growth, intermediate levels of economic development, and less rapid and more diverse technological change than in the B1 and A1 storylines.

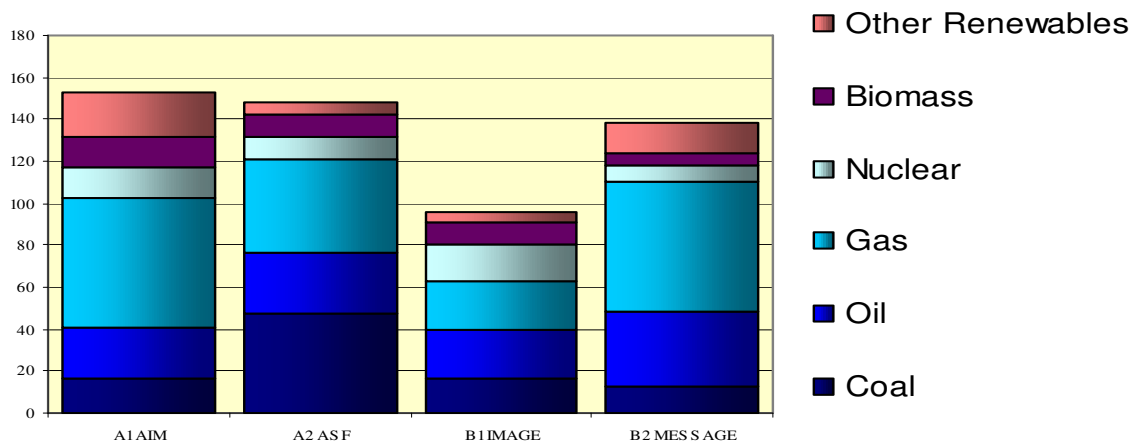


# Final and primary energy use in 2050 for SRES marker scenarios

Final Energy Use [EJ]

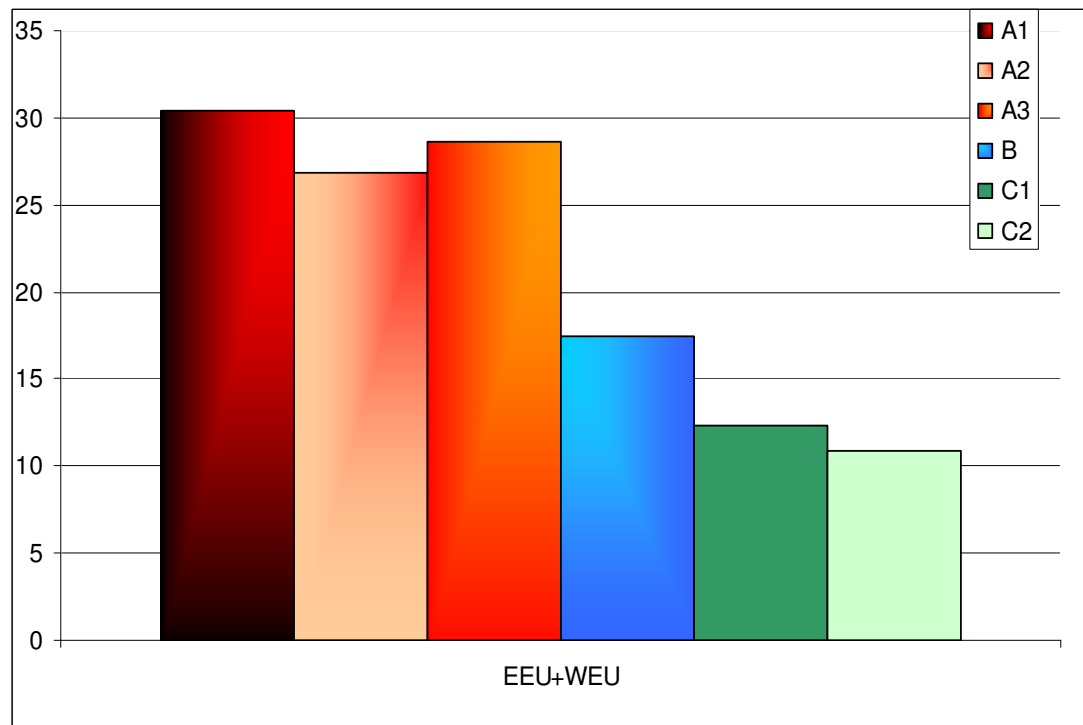


Primary Energy Use [EJ]



Source: IPCC, SRES

- SRES scenarios make **no specific assumption for transport**
- Final energy consumption in transport [EJ] in 2050 for IIASA scenarios



- Case A – High growth
- Case B – Middle course
- Case C – Ecologically driven

# Link between SRES and IEA ETP

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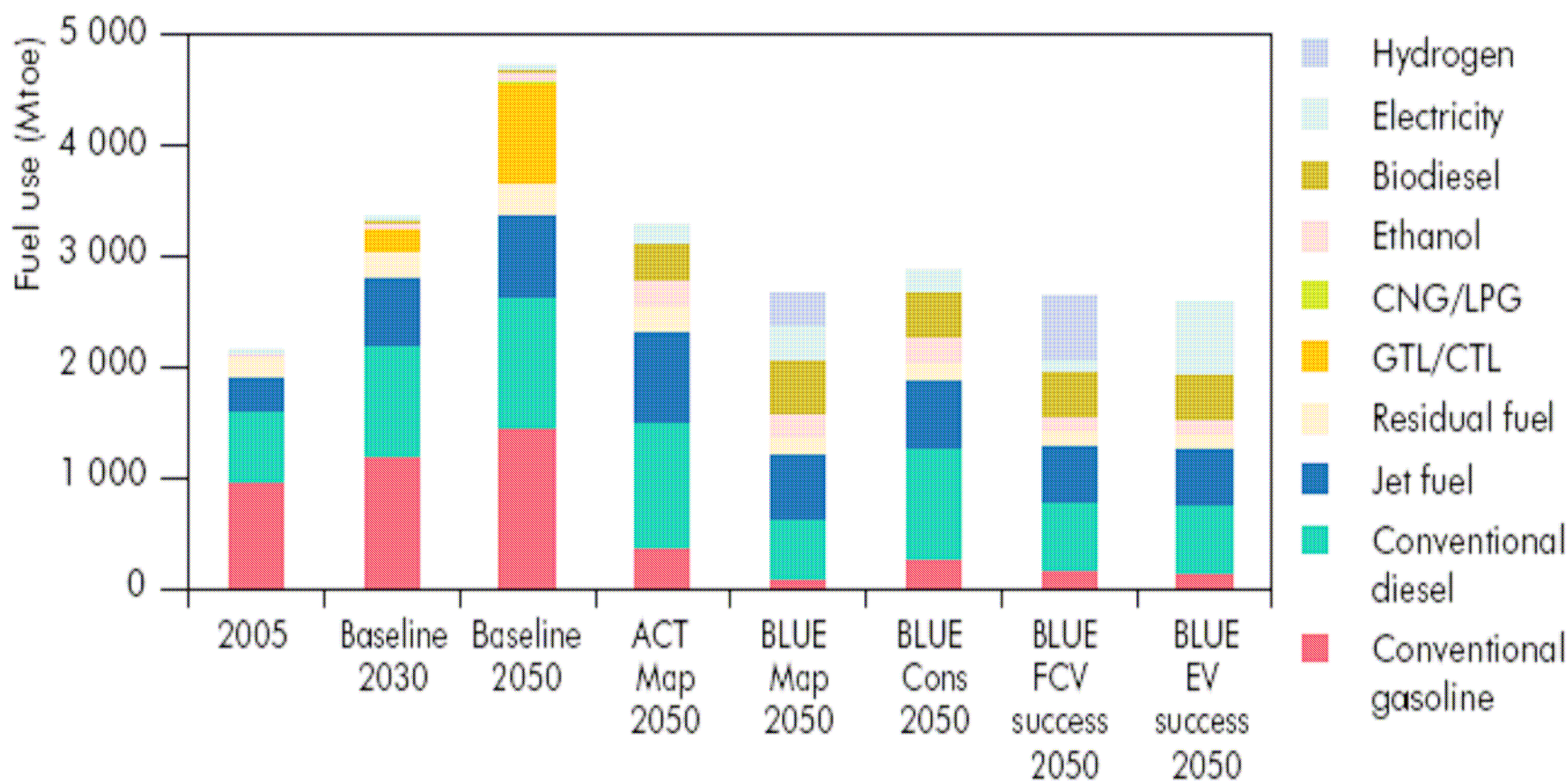
- Global primary energy use in 2050:
  - SRES scenarios 642-1611 EJ
  - IEA ETP Baseline 971 EJ
  
- IEA ETP Baseline → A2 marker scenario (SRES)

## 4 variants of BLUE scenarios have been analyzed

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- BLUE Map (a combination of high efficiency, biofuels, electric vehicles and hydrogen fuel cell vehicles)
- BLUE EV success: a variant that is optimistic with regard to the development of electric vehicles
- BLUE FCV success: a variant that is optimistic with regard to the development of H2 fuel-cell vehicles
- BLUE conservative: a variant where neither EVs nor FCVs are assumed to achieve cost reductions sufficient for them to begin deployment. As a result, this scenario has higher transport CO2 emissions than the other BLUE variant scenarios.

# Transport energy use in the Baseline, Act Map and Blue Map scenarios, 2005-2050

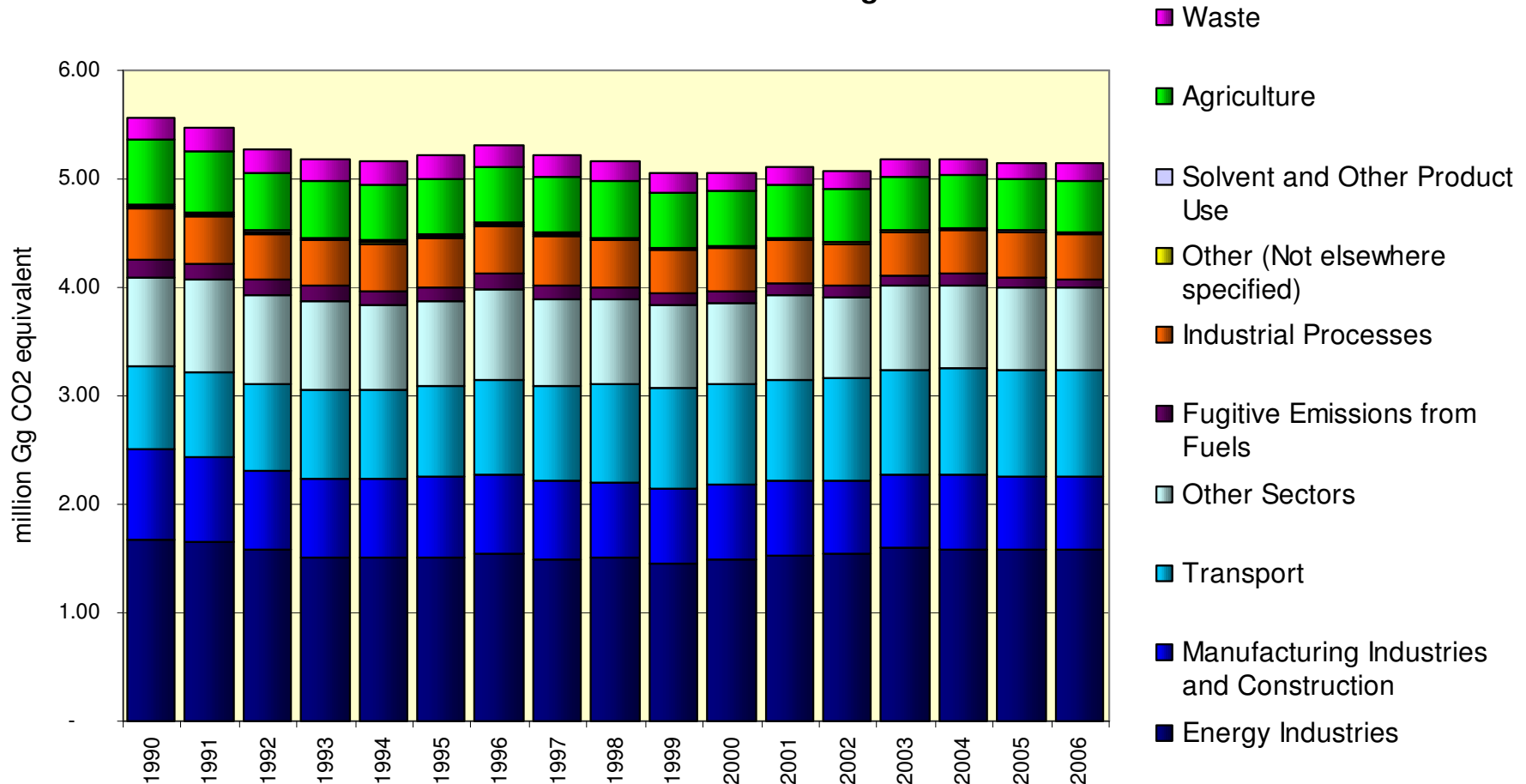


Baseline	<b>BLUE Map</b>	<b>BLUE Cons</b>	<b>BLUE FCV</b>	<b>BLUE EV</b>
197 EJ	113 EJ	119 EJ	112 EJ	109 EJ

Source: IEA, EPT 2008

# Comparison with the trend

GHG emissions excluding LULUCF



Source: National submissions to UNFCCC for the 25 EU Annex I parties (excludes Malta and Cyprus)

- **Transport 0.75 Gt CO<sub>2</sub> → All other sectors 1.3 Gt CO<sub>2</sub> [-60%]  
0.3 Gt CO<sub>2</sub> [-80%]**
- **Summary of GHG emissions [Gt CO<sub>2</sub>] from transport in 2050 for EU-27**

<b>BLUE MAP</b>	<b>target -60%</b>	<b>target -80%</b>
0.75	0.31	0.16

# Conclusions

