

# Challenges in Addressing Climate Change in IA of Modal Shift Projects – A Case Study or...

Charlotta Faith-Ell

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# How to not ruin the party

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# Background

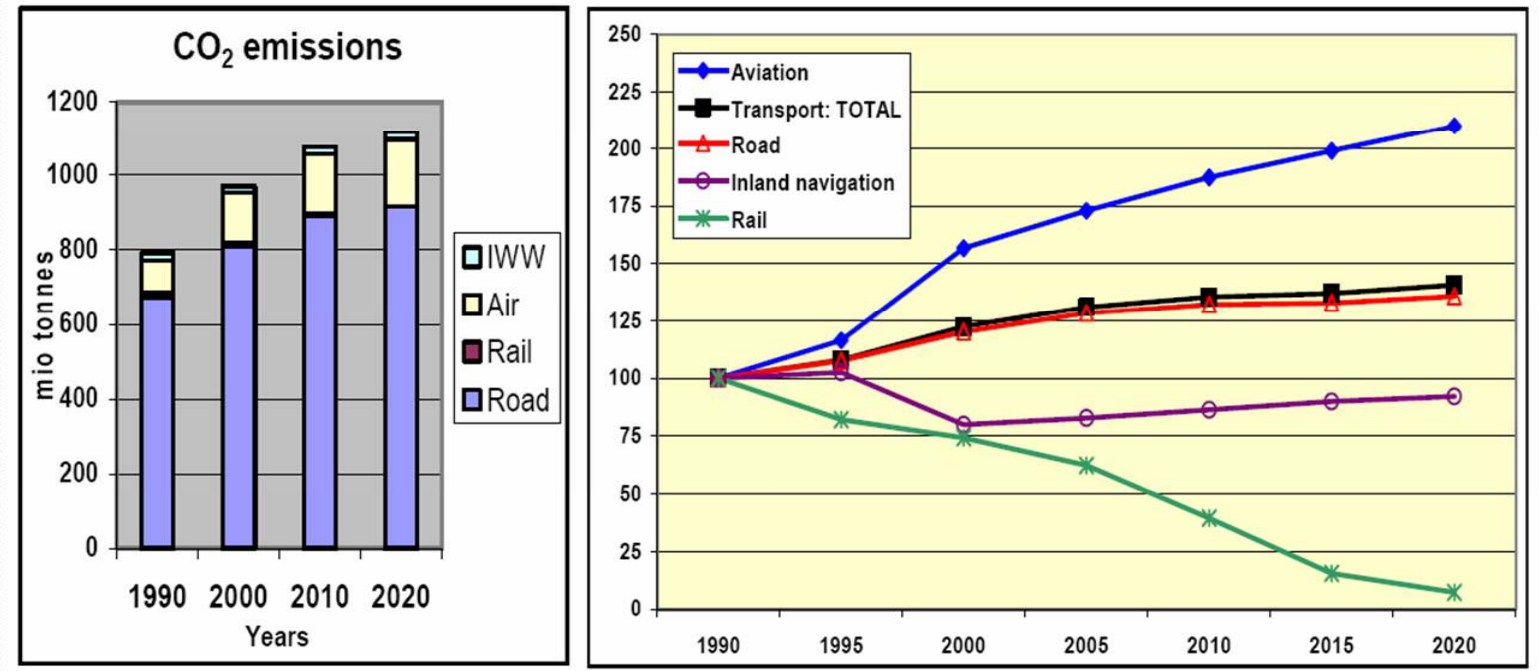
The transport sector represents 30 % of the total energy consumption in Europe

The CO<sub>2</sub> emissions are estimated to increase with 4.7 % from the year 2000 to the year 2030

Suggested goal by the EU: 20 % reduction of green house gases until the year 2020 compared with the 1990 levels

# Climate and energy

Expected evolution of CO2 emissions from transport by mode (1990=100)



Source: COM (2006) 314

# Climate and energy – comparison road and railway

## Energy consumption

Road traffic accounts for 25.2 % of the total energy consumption of the transport sector

Railway traffic accounts for 0.8 % of the total energy consumption of the transport sector

## Energy efficiency

Trucks                      72.4 toe/Mtkm

Freight train            5.5 toe/Mtkm



# The FERRMED project

## Overall Objective of the Project:

- To match Freight Supply and Demand during the period 2007 - 2025 in the FERRMED Great Axis area of influence and
- to optimise traffic between the different modes of transportation with a view to taking up 30-35% of the land traffic onto rail by
- implementing FERRMED Standards and improving capacity, intermodality and interoperability of rail in the Great Axis Network.



# Impacts discussed in the SEA

## Positive impacts from modal shift

- Reduction of GHG emissions from freight traffic
- Release of road space that can be used for person traffic => less need for new roads

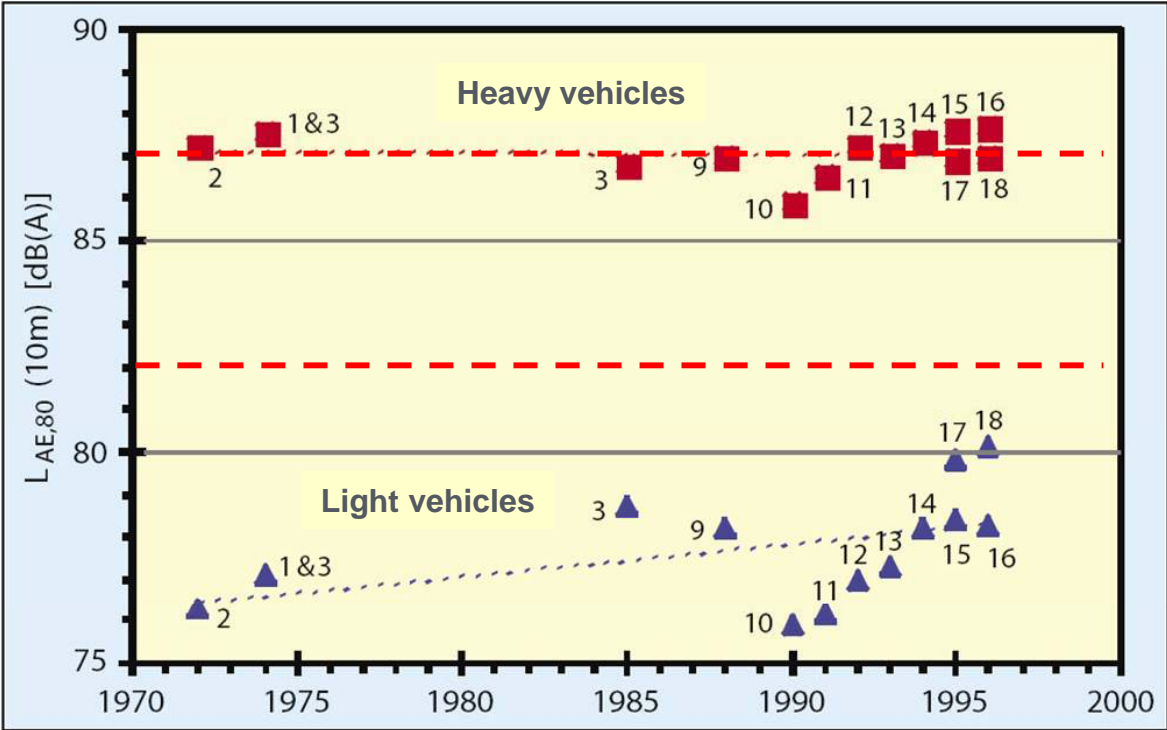
## Negative impacts from modal shift

- Increase of GHG emissions from personal traffic as a result of the release of road space (large parts of the European transportation system are suffering from congestion)
- Increased noise (in built up areas)
- Emissions to air (mainly particles from breaks)
- Barrier effects and fragmentation
- Hazardous materials
- Secondary impacts

⇒ **A conflict between the positive and negative impacts**

# Noise – Comparison of road and railway

Limiting values  $L_{pAeq,Tp}$   
for the pass-by noise of  
freight wagons



Sources: Sandberg & Ejsmont, 2002 and Directive 2006/66/EG



# Emissions to air

## Particles (PM10, metals)

- Mainly a problem in tunnels and at stations under ground
- Not a problem at open air stations

## Main impact

Human health

## Sources

Wear particles from brake systems, wheels, rails, overhead wires and pantographs



# Lessons learned

- Climate Change is a difficult issue to deal with in IA
- Scale – how  
(CC = global <-> fragmentation =regional)
- How to relate emission data to for example fragmentation or loss of bio diversity
- Need to develop transportation models that generates future scenarios in the same manner (currently different (incompatible) models for personal traffic and freight traffic as well as for rail and road traffic)
- Need for pedagogic explanations on potential conflicts
- We need to learn ways how to not ruin the party

