


# Pricing policies for reducing CO<sub>2</sub> emissions from transport


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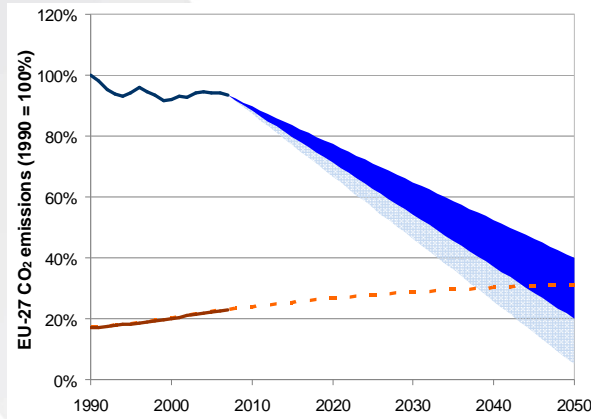
► Overview of contribution

- Context: climate change challenge for transport
- Aims of transport pricing: mix of theoretically 'first best' & 'second best'
- Pricing instruments in an effective policy strategy
- Conclusions



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## ► Climate change challenge for transport



## ► Potential aims of transport pricing

In general:

- Influencing behaviour to improve the efficiency of the transport system (environmental, social economical)
- Generating revenues, e.g. for infra or mitigation measures
- Increasing fairness (polluter/user pay), level playing field

Specific for climate policy - provide incentives for:

- Shift to fuel efficient vehicles and energy carriers (by tax/charge differentiations)
- Higher vehicle utilisation
- Modal shift
- Curb down transport demand growth

## ▶ Pricing for climate policy: theoretically 'first best' & 'second best'

Theoretically 'first best' (Marginal Cost Pricing):

- Provides incentives for all GHG reduction options
- Carbon based fuel tax or Emission trading

'Second best' instruments needed for:

- 'First best' not sufficient for meeting targets (very high levels needed)
- Real world is not the perfect world of economists (e.g. split incentives)
- Revenues needed for covering infra costs (modal shift & alternative energy carriers)
- Other external effects e.g. air pollution, noise, accidents, congestion

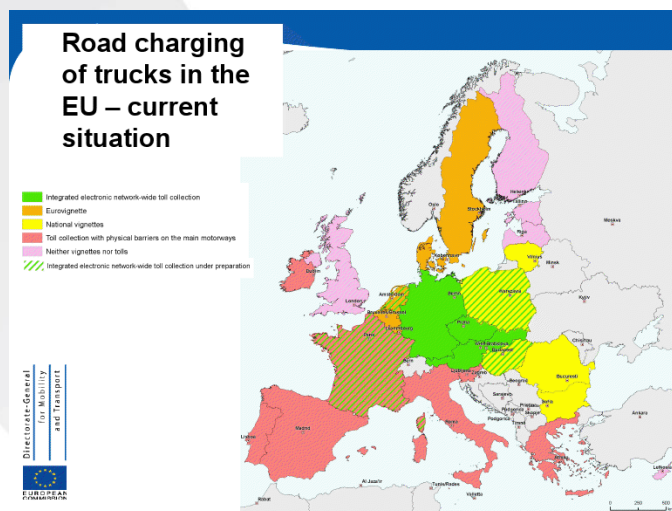
## ▶ Fuel taxation and ETS

- Different situations in different modes
- Various aims of fuel excise duties
- €50 per tCO<sub>2</sub> is about 11 €-ct/litre (petrol) or 13 (diesel) €-ct/litre
- Relatively high taxes needed achieving for considerable impacts:  
10% higher fuel price = 4% (HGV) to 6% (cars) less fuel consumption
- Possible steps:
  - Abolishment of exemptions
  - Additional (carbon based) fuel taxes for road
  - Emission trading for (some) transport modes

## ► Infrastructure charging

- First-best for internalising external cost of air pollution, noise, accidents and efficient way to reduce congestion without inducing more traffic
- For HGV:
  - Eurovignette Directive enables charging full infra costs
  - Amendment for internalisation enables higher charge levels
  - Schemes in Germany, France, Austria, Switzerland, Czech Rep., etc.
  - Climate impacts from demand and some modal shift effects
- For passenger cars:
  - Various proposals but no nationwide scheme implemented
  - Important welfare benefits (particularly on congestion)
  - GHG reduction important co-benefit, particularly when applied on all roads - for NL estimated at about 15%

## ► Road charging develops



## ▶ Other pricing instruments for limiting transport growth and modal shift

- Remove explicit and implicit transport subsidies, e.g.:
  - Company car taxation (50% of new cars is bought by companies!)
  - Tax exemptions for travel expense declaration
  - Differences in VAT regimes
  - Infrastructure costs not covered by any charges
- Urban congestion charging
- Parking fees and permits
- Ticket taxes for aviation
- Land use taxation



## ▶ Pricing instruments for low carbon vehicle technology

- Differentiation of:
  - Vehicle purchase taxes
  - Annual circulation taxes
  - Company car taxation (effective examples in the UK and NL)
  - Potentially also parking fees (e.g. exemptions for EVs)
- Impact of recent, budget neutral shift to CO<sub>2</sub> based purchase taxes in NL estimated at 5%
- Part of broader policy framework: vehicle regulation, labelling, etc.
- Implementation at national level - coordination of tax basis at EU level

▶ Key pricing elements of a climate policy for transport

- Overall carbon based incentive (fuel tax and emission trading)
- Infrastructure charging for infrastructure and other external cost: combat congestion without increasing transport volumes
- Differentiation of vehicle related taxes and charges to stimulate fuel efficient vehicles
- Removal of explicit and implicit tax exemptions and subsidies

▶ **Thank you for your attention!**

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