Reducing CO$_2$ from transport:
What is happening in Europe?

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Overview

★ EU legislation
★ Developments in EU transport GHG emissions
★ New car legislation
★ Heavy Duty Vehicles
★ VMT
★ Economic instruments
★ Conclusions
EU transport CO$_2$ legislation: Summary

ROAD

★ EU legislation sets mandatory CO$_2$ emission standards for new cars and vans for 2015 and 2017 respectively as well as targets for CO$_2$ emissions in 2020.
  ◀ Cars - Regulation (EC) No 443/2009
  ◀ Vans - Regulation (EU) No 510/2011

★ Other EU legislation complements these, e.g.:
  ◀ Gear shift indicators - Regulation (EC) No 661/2009
  ◀ Tyre rolling resistance labelling - Regulation (EC) No 1222/2009
  ◀ Maximum tyre rolling resistance - Regulation (EC) No 661/2009
  ◀ Car labelling - Directive 1999/94/EC
  ◀ Public procurement - Directive 2009/33/EC
  ◀ Fuel greenhouse gas (GHG) intensity - Directive 2009/30/EC

★ Development of a strategy for reducing GHG from Heavy Duty Vehicles

AVIATION

★ Inclusion of aviation in the EU Emission Trading Scheme
  ◀ Directive 2008/101/EC

SHIPPING

★ Analysis of policy options in relation to maritime transport.
Developments in EU transport
GHG emissions

GHG emissions EU27

Transport including international bunkers. Remaining sectors excluding LULUCF.
Developments in EU transport GHG emissions

Decomposition of Transport CO₂ Emissions

- 1990 >> 2000
  - Average annual % change:
    - CO2: 1.98%
    - Activity: 1.85%
    - Modal Choice: 0.85%
    - Energy Intensity: -0.71%

- 2000 >> 2010
  - Average annual % change:
    - CO2: 1.29%
    - Activity: 0.61%
    - Modal Choice: 0.25%
    - Energy Intensity: -0.66%
    - Carbon Intensity: -0.29%
EU aviation and shipping emissions

- Total aviation
- Total navigation
Legislation covers all flights to and from EU airports.
Airlines will be fully included in the scheme from 2012.
Emissions cap based on historic average annual emissions between 2004 and 2006.
2012 cap set at 97% of historic emissions.
2013 - 2020 set at 95% of historic emissions.
15% of allowances to be auctioned in 2012.
3% of allowances reserved for new or fast-growing operators.
Tonne-kilometre data monitoring and reporting for application of free allowances.
Emissions monitoring and reporting for surrendering allowances.
EU average road fuel price

- Diesel price
- Petrol price
Registration of new passenger cars in the EU27 in 2010 by their specific CO₂ emissions (distribution function)

- Median CO₂ emission: 135 gCO₂/km
- Average CO₂ emission: ≈ 140 gCO₂/km
The graph illustrates the real-world CO2 emissions for different test cycles and fuel types. The x-axis represents the Test Cycle CO2 emissions per km, while the y-axis shows the Real World CO2 emissions per km. The lines indicate the emissions for gasoline (red), diesel (purple), and a test cycle (blue). The emissions increase as the test cycle emissions increase, showing a linear relationship. The graph is adapted from www.tno.nl.
Average Fuel Consumption (Gross Vehicle Weight 38/40 t)

Source: LASTAUTO OMNIBUS TESTREPORTS 1967-2009
Status: 10/2009
No specific EU policy objective on traffic volume.

▸ Actions mainly at Member State level
▸ May be mainly driven by other local concerns such as noise, air quality, landscape, e.g:
  ✮ Low emissions zones – see www.lowemissionzones.eu
  ✮ Sectoral lorry ban – Austria
    http://www.tirol.gv.at/themen/umwelt/luft/nachtfahrverbot/
  ✮ Congestion charges – London, Stockholm

▸ Promotion of alternatives to road freight
  ✮ Rolling road
  ✮ Incentive programmes eg “Marco Polo”
    http://ec.europa.eu/transport/marcopolo/
Internalisation of external costs an EU policy objective.

- Eurovignette sets framework for HDV road user charges.
  - Latest revision permits some charging of external costs

- Road user charges in Member States
  - German HDV charges on main road network
  - Plans for HDV charges on main road network in France
  - Netherlands abandoned intended road charging system
  - Toll motorways in many countries

- Congestion charging
  - Introduced in London and Stockholm
  - Approx 15% reduction in traffic
  - Public support
Wide range of policies enacted by EU to manage transport GHG emissions.

Most recently implemented so too early to draw conclusions on their impact.

Most analysis suggests further policy action needed to reduce emissions in line with EU goals.

Further work underway in a number of areas e.g. shipping and HDV.
Thank you