Reducing CO₂ Emissions in Road Transport

What ITS can do …

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Overview

- Road Transport and CO₂
- Potential of ITS for CO₂ reduction
- EC Policies for Coordinated ITS Deployment
CO₂ Emissions of Road Transport (EU27)

- ENERGY INDUSTRIES: 2.6%
- INDUSTRY: 4.4%
- TRANSPORT: 37.0%
- HOUSEHOLDS: 22.8%
- SERVICES, ETC.: 22.2%
- OTHER (***)

Source: EEA 2008

CO₂ Emissions of Road Transport (EU27)

- CIVIL AVIATION: 0.8%
- ROAD: 15.3%
- RAILWAY: 12.2%
- NAVIGATION: 0.6%
- OTHER

Source: EEA 2008
CO₂ Emissions by Sector (EU27)

Source: EEA 2008

CO₂ Emissions by Transport Mode

Source: EEA 2008
Potential of ITS for CO₂ Reduction

- Intelligent Transport Systems (ITS) are a tool to achieve policy objectives
- Road safety and efficiency (reducing congestion) have always been the aim of ITS in road transport
  » ... but ITS can also contribute to environmental and climate change objectives
- CO₂ reduction needs to be tackled in many ways:
  » transport demand / mode choice
  » efficiency of vehicles
  » efficiency of traffic
  » driver behaviour
  » carbon intensity of the energy
Potential of ITS for CO₂ Reduction

- Roads toward a low-carbon future (McKinsey 2009)
  - improving traffic flow and driver behaviour most cost-effective solutions: overall reduction of -1.5% (2006-30)
  - Eco-drive: individual potential of -17%, mass scale -3%

- eSafety “ICT for Clean and Efficient Mobility” (2008)
  - no reliable quantitative estimate of impacts
  - most measures in an early stage of development
  - up to 25% reduction (if range of measures implemented in a long-term concerted programme)

  indirect impacts on CO₂ (2020)
  - business as usual: +15%
  - enabling actions for deployment: up to -4%

Main ITS applications for CO₂ reduction

- Transport demand / Mode choice
  - (multi-modal) travel information, journey planning
  - car-sharing, ride-sharing
  - road charging, integrated ticketing
  - access management
  - logistics, fleet management (avoidance of empty runs)

- Efficiency of traffic
  - traffic management
  - travel information, navigation
  - public transport priority

- Driver behaviour
  - eco-driving support, navigation
The Capacity Dilemma

1. ITS measures improve traffic flow
   » less congestion, less stop and go
   » less vehicle delay
   » reduced fuel consumption and CO2 emissions

2. Improved traffic flow can trigger travel demand
   » higher average speed >> more attractive road
   » induced demand >> more road traffic

Managing road and parking space
   » access management, road pricing
   » redistribution of road space
   » public transport priorities
   » holistic policy approach needed

Status of ITS Deployment in Europe

- fast technical development > mature applications
- fragmented uptake, large differences between and within countries
- low degree of intermodality

>> patchwork of national, regional and local solutions

Problem drivers:
   » lack of interoperability
   » lack of effective cooperation
   » privacy and liability to be clarified
ITS Action Plan & Directive Proposal
COM(2008)886 and 887

- part of the “Greening Transport” package (COM(2008)433)
  » initiatives aimed at making transport more sustainable
  (including the internalisation of external costs)
- aim: efficient, safe and green (road) transport and
  interconnections to other modes

Specific goals:
- accelerate and coordinate the uptake of ITS
- increase interoperability
- set up an efficient cooperation
- solve privacy and liability issues

ITS Action Plan: Priority Areas

- Optimal Use of Road, Traffic and Travel Data
- Continuity of Traffic and Freight Management
- Road Safety and Security
- Integration of Vehicle and Transport Infrastructure
- Data Protection and Liability
- European ITS Coordination
Proposal for a Framework Directive

- mechanism for exchange of information and for coordinated deployment
- common work on specifications
  - based on interoperability and open public standards
  - through a European ITS Committee
  - building on previous work (eSafety, research) and existing deployments
  - advice from stakeholder representatives
- deployment obligations for Member States

EasyWay – European ITS Deployment

- ITS deployment on the Trans-European Road Network & its interfaces with other transport modes
- 21 Member States, supported by EC under the multi-annual TEN-T Programme (2007-09 €100 mill., overall budget 2007-13: € 1.5 bill.)
- traffic management, traveller information, freight & logistics, ICT infrastructure
- first evaluation trends for traffic management
  - improved network operations resulted in reductions in CO₂ emissions by around 4%
Conclusion

- ITS contribute to CO$_2$ reduction in road transport in a cost-effective way best when European-wide deployed in a coordinated way.
- Road capacity needs to be carefully managed.
- Deployment of ITS today is rather slow and fragmented.
- The **ITS Action Plan and Directive proposal** aim to accelerate and coordinate ITS deployment on the roads including interfaces to other modes.

More information

**ITS Action Plan and Directive**


Thank you for your attention!