Technology Fact Sheet

Transport management systems[i] /http://climatetechwiki.org/technology/transport-management/

General description

Intelligent Transport Systems (ITS) apply information and communication technologies to vehicles and to transport infrastructure. This may increase the reliability, safety, efficiency and quality of transport systems. ITS has a supporting role for the successful implementation of transport emission reduction strategies such as low-carbon fuels, energy efficient vehicles, public and non-motorized transport, mostly by supporting a more efficient organization of the transport system. ITS can be applied to both passenger and freight transport and all modes. Examples of ITS include electronic road pricing, online travel information, vehicle-to-vehicle communication, computerized traffic signaling and automatic and eco-driver assistance. Automatic driver assistance could for example inform the driver about the ideal speed to pass the next green traffic light, whilst eco-driving systems inform the driver whether he is driving in the most fuel-efficient manner and how he can improve his driving style.

Implementation

The UK Department for Transport strategy includes the following objectives for ITS (DfT, 2005):

- Improving road network management, including road pricing.
- Improving road safety, by reducing collisions, casualties and deaths.
- Better travel and traveler information, helping to match supply and demand by providing better information so that travelers can make informed choices on when and how to travel.
- Better public transport on the roads, supporting more reliable, more accessible, safer and more efficient services.
- Supporting the efficiency of the road freight industry.
- Reducing negative environmental impacts.
- Supporting security, crime reduction and emergency planning measures.

Implementation barriers

- High initial investments and chicken-and-egg problem, i.e. decision makers only recognize the need for investments once they experience the benefits of a fully functional ITS system.
- Complex implementation process due to roll-out to large numbers of end-users
- Technological complexity
- Uncertainty regarding costs, benefits and public acceptance
- Protection of privacy, security and legal issues
- High data requirement for ITS operations

GHG emissions reduction (megatons CO_2 equivalent) – data not available.

A recent study has shown that several in-vehicle or infrastructure ICT applications can lead to significant reductions in CO_2 emissions (Klunder et al., 2009),

Impact on development priorities:

a) Social

- Reduce traveling times;
- Congestion relief;
- Road safety improvement.

b) Economic

- Increased transport efficiency;
- Increased energy security;
- improved balance of payments.

c) environmental

- Efficient use of lands;
- Improved local air quality.

d) other

Investments– data not available.

Costs for the various ITS applications may include:

- Investments in infrastructure, e.g. toll gantries, traffic detectors, road-side information displays and communication systems
- Investments in vehicles, such as on-board electronic meters, GPS systems
- Investments in travel time information systems
- Policy implementation, including awareness campaigns
- Operation and maintenance of the systems

Operation and maintenance costs– data not available.

GHG reduction costs– data not available.

Technology lifetime– data not available.

Other

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[i] This fact sheet has been extracted from TNA Report - Technology Needs Assessment for climate change mitigation - Republic of Moldova. You can access the complete report from the TNA project website **http://tech-action.org/**