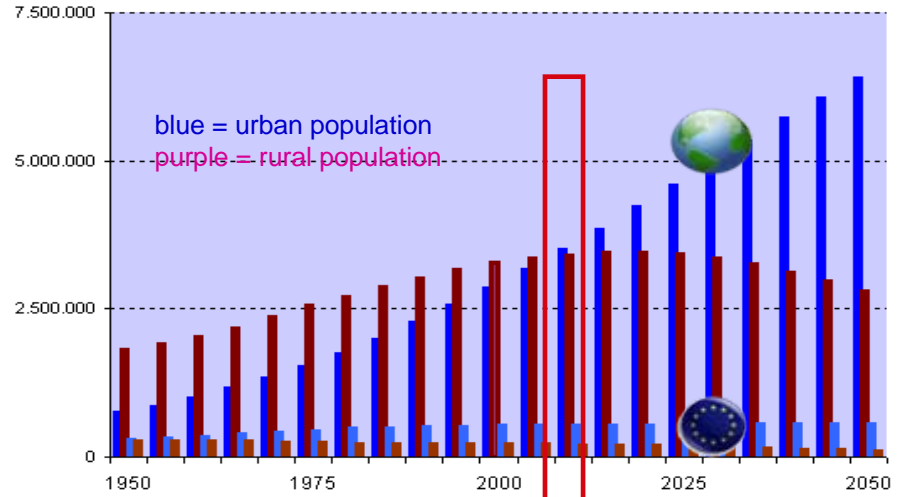


ICT for low-carbon, multimodal transport logistics

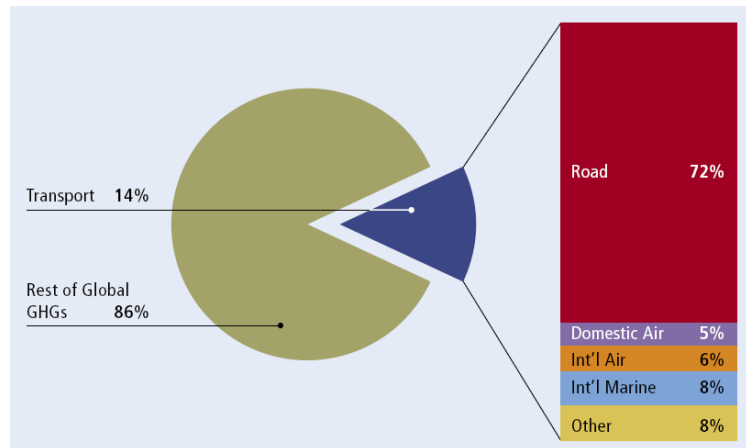
SRA update workshop e-safety forum
Brussels, 27 April 2010



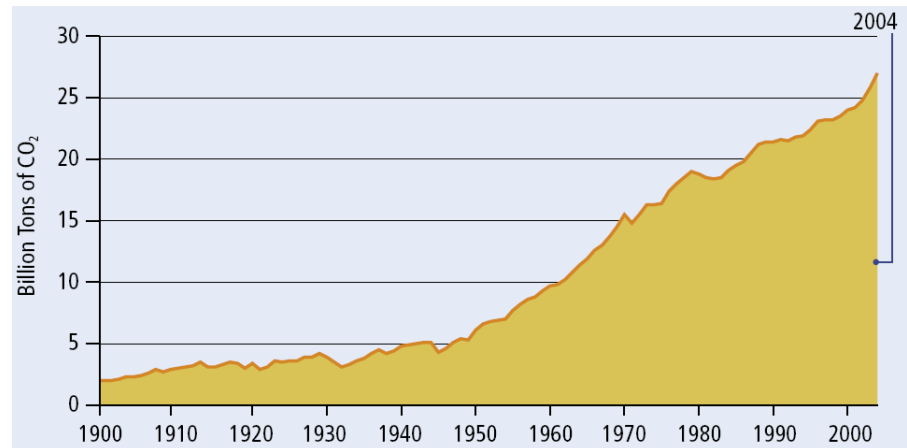
Prelude: selected sustainability statistics



World Population Index (source: UN 2007)



GHGs from Transportation (source: WRI)



Global Emissions of CO2 from Fossil Fuels, 1900-2004

Economic and environmental impacts of logistics



- Logistics is a main source of prosperity
 - globally 6.7 trillion US\$ (13.8% GDP)
 - Europe 1.2 trillion US\$ (13.3%GDP)
- Transport surge from globalisation
 - containers AP-EU +79% (1997-2003)
 - EU inland freight +26% (1993-2004)
- Despite the current economic crisis, efficient logistics networks will be key to digest future demand for mobility



- Transport emits 23% of all greenhouse gases due to energy consumption
- Freight uses about 35% of the energy consumed by all transport activities
- GHG emissions must peak latest 2015 and be reduced at least 50% by 2030 to limit average global warming to +2°
- Climate change is taking effect faster and more severely than projected

The role of ICT in green logistics



Information and Communications Technologies are key to sustainable logistics and transport. It is however important to take note that ICT are **enablers** for solutions rather than solutions in themselves !

ICT already feature in mainstream processes such as vehicle, warehouse or equipment operations, order management, or tracking and tracing. Some specific innovative contributions of ICT to improve energy efficiency in logistics are illustrated in the following examples.

ICT measures to support green logistics



Ecodriving assistance



Routing and guidance



Smart infrastructure



Intelligent cargo



Seamless information



Electronic documents

Eco-driving assistance

- Driver training may save up to 10% of fuel use but must be repeated periodically for lasting effect
- In-cab ICT systems can provide direct feedback to drivers through HMI regarding fuel efficiency, and allow self-benchmarking within platoons
- V2I systems can recognise entries and exits of commercial vehicles to sensitive or protected areas, and activate manually or automatically low-pollution or low-noise vehicle modes



Routing and guidance

- Operators attempt to optimise the circulation of vehicles and drivers for linehauls and deliveries
- Traffic flow statistics could improve results from static route planning algorithms, floating-car data can help spot deliveries to avoid local congestion
- ICT can assist the controlled and safe transport of outsize or dangerous goods through sensitive infrastructure like cities, bridges or tunnels



SMART TRUCK: THE GREENER AND BRIGHTER WAY



Smart infrastructure

- Registration, signaling, access and gating systems are used widely in e.g. airfields, terminals, warehouses
- V2I and RFID technology can be used also to permit freight transport, notably with low-emission low-noise vehicles, selective access to and prioritisation within certain infrastructures
- Examples, especially for the urban domain, include collective lanes or green traffic lights for goods and exclusive loading zones for clean delivery vehicles



Intelligent cargo

- RFID technology has opened new opportunities for managing cargo and cargo properties
- Mating of contactless cargo identifier with sensors e.g. for temperature allows instant diagnostics of contents without disturbance to packaging
- Smart logistics will require appropriate intelligence levels for each hierarchy layer (smartdust, internet of things, bundling of data streams for multiple units)



Seamless information & electronic documents

- Logistics chains serving a global market engage with multiple stakeholders and transport modes
- ICT can support co-modality by organising seamless information flows across organisational, geographical and modal boundaries in a harmonised framework
- Intelligent platforms for cargo management interface between private and public stakeholders to cover operational, security and customs requirements



FREIGHTWISE



INTEGRITY

