European Commission
DG Research

Global Rail Freight Conference

Saint Petersburg
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EU TRANSPORT RESEARCH

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Rail Sector
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Green Rail !
European Freight
Cleaner & Less Congested
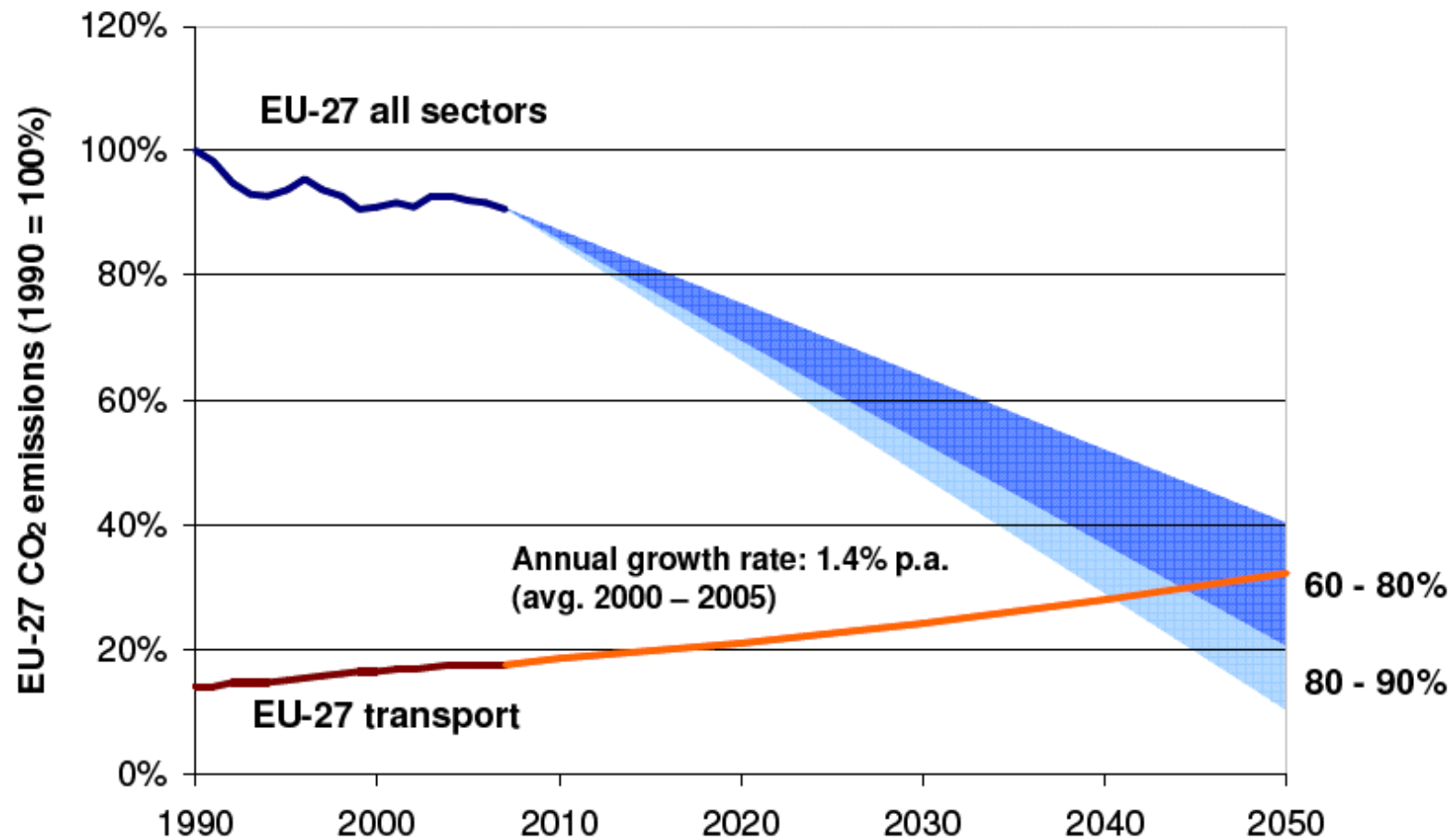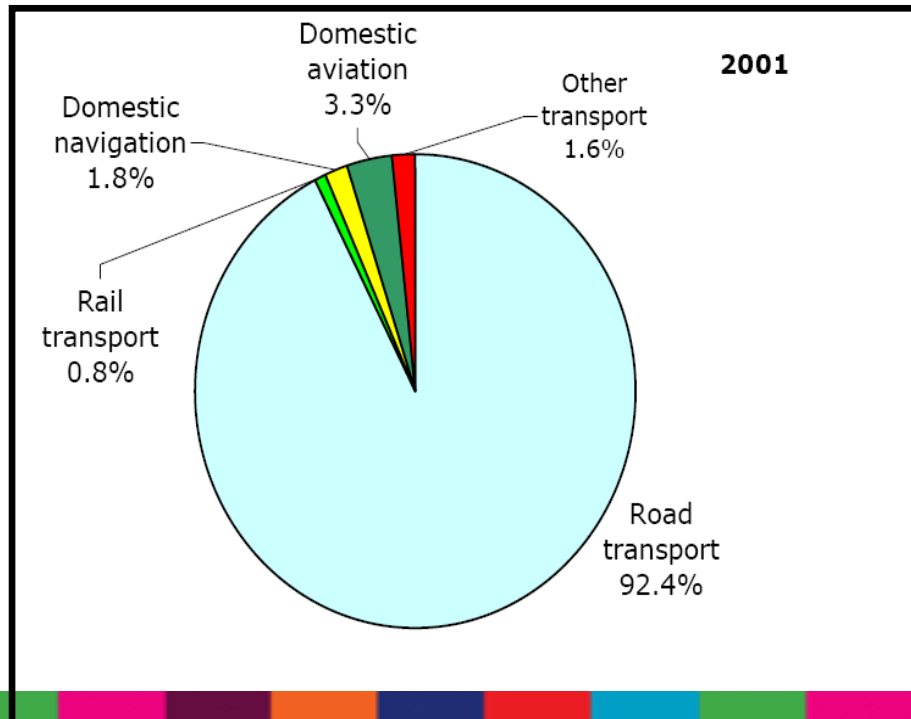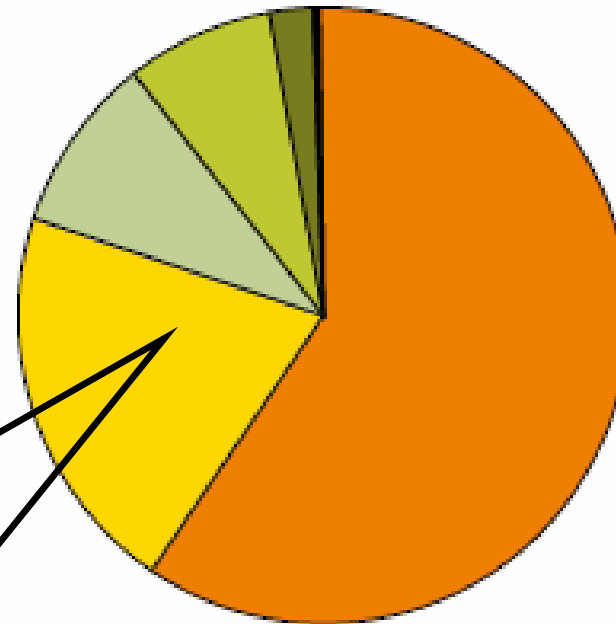
Transport Emissions The Problem !

EU Greenhouse Gas Emissions

- Energy use excluding transport 59 %
- Transport 21 %
- Agriculture 9 %
- Industrial processes 8%
- Waste 3 %

2001

- Domestic aviation 3.3%
- Other transport 1.6%
- Domestic navigation 1.8%
- Rail transport 0.8%
- Road transport 92.4%

Note:
International aviation and maritime transport are excluded from EU commitments under the Kyoto Protocol (Art. 2.2)

Can Rail provide the answer ?
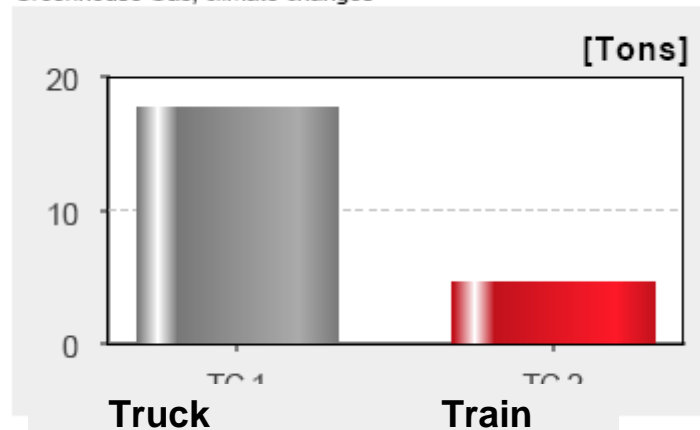# Two examples:

Brussels – St. Petersburg
Carbon dioxide
Greenhouse Gas, climate changes

[Tons]

Truck   **Train**
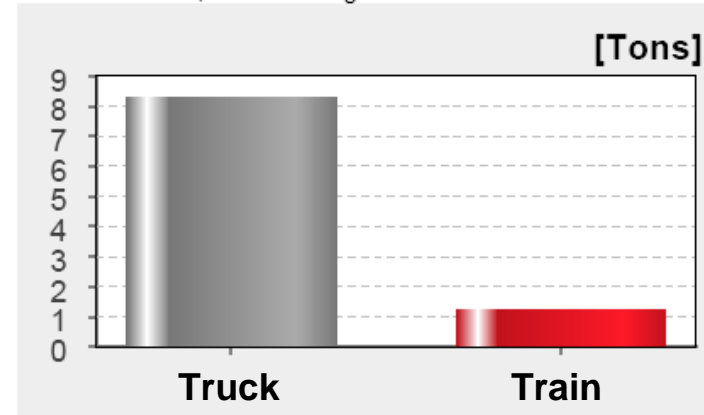
100 tonnes, average goods
Source: EcoTransIT
www.ecotransit.org

Rotterdam – Genova
Carbon dioxide
Greenhouse Gas, climate changes

[Tons]

Truck   **Train**

100 tonnes, average goods
Source: EcoTransIT www.ecotransit.org

Why Rail Freight ?

Green ! **Transport accounts for 25% of EU C02 emissions, yet <u>electrified</u> trains <u>can</u> account for near zero C02 & diesel is twice as fuel efficient as road.** *. Rail is the only fully developed electrified mass transport mode!*

Reduced Congestion! **Each train can take several hundred trucks of the road.**

Efficient: **Trains carry large volumes from hub to hub, ideal for bulk transportation and port traffic.**

EU27 Performance by Mode for Freight Transport

1995 - 2008

billion tonne-kilometres
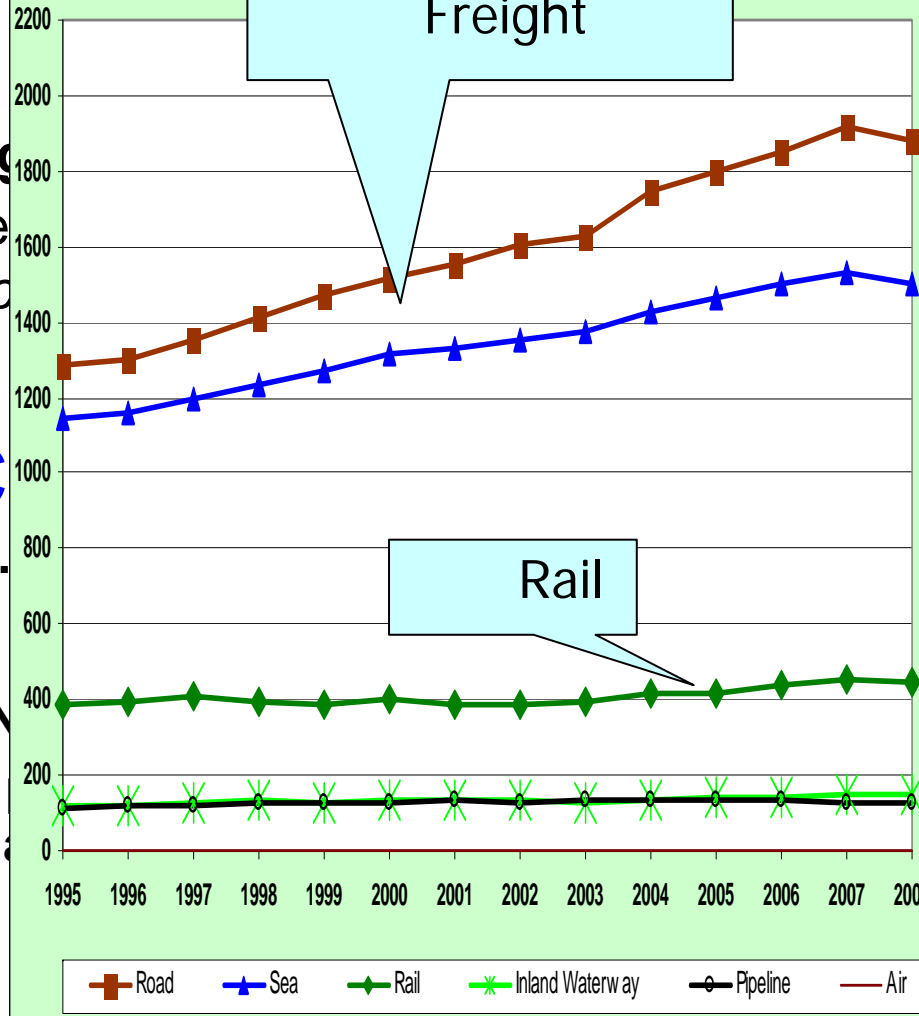
Road and Sea Freight

Rail

?

Green ? **Freig** mme to
fit composite brake **tric** *(cost
of replacement, la*

Reduced C growth is
slow or decreasing. needs ?

Efficient ? N between
modes. Unreliable- st" freight.
Often not operable

Legend: Road | Sea | Rail | Inland Waterway | Pipeline | Air

- **European <u>Transport Policy White Papers</u> (2001, 2006... 2010) Common themes:**
  - ➡ Linking Transport modes, Comodality towards the optimum sustainable sollution; Expansion of Rail freight (Now 40% central Europe, only 8% in EU)
  - ➡ Trans European Freight Corridors (smoother cross border, one stop shop etc). Rail freight "freeways"
  - ➡ Eliminating bottlenecks *(e.g. congestion, frontiers)*
  - ➡ Opening markets, interoperability, Charges to encourage efficiency and competition.
- **3 rail packages: Directives towards interoperability and opening the rail market.**
- **Rail Industry technology platform (ERRAC: http://www.errac.org) Vision for 2020: "tripling the share in volume of rail freight transportation".**
- **Regulation concerning "a European Rail network for competitive freight"**
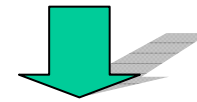
Transport Emissions

$$\text{Total Emissions} = \text{Output} * \frac{\text{Energy}}{\text{Output}} * \frac{\text{Emissions}}{\text{Energy}}$$
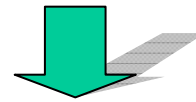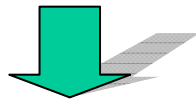
Level of activity	Energy intensity	GHG intensity

Demand Management (Virtual) Accessibility Land planning

Exploit strengths of each mode Network optimisation Efficient vehicles

Switch to cleaner fuels

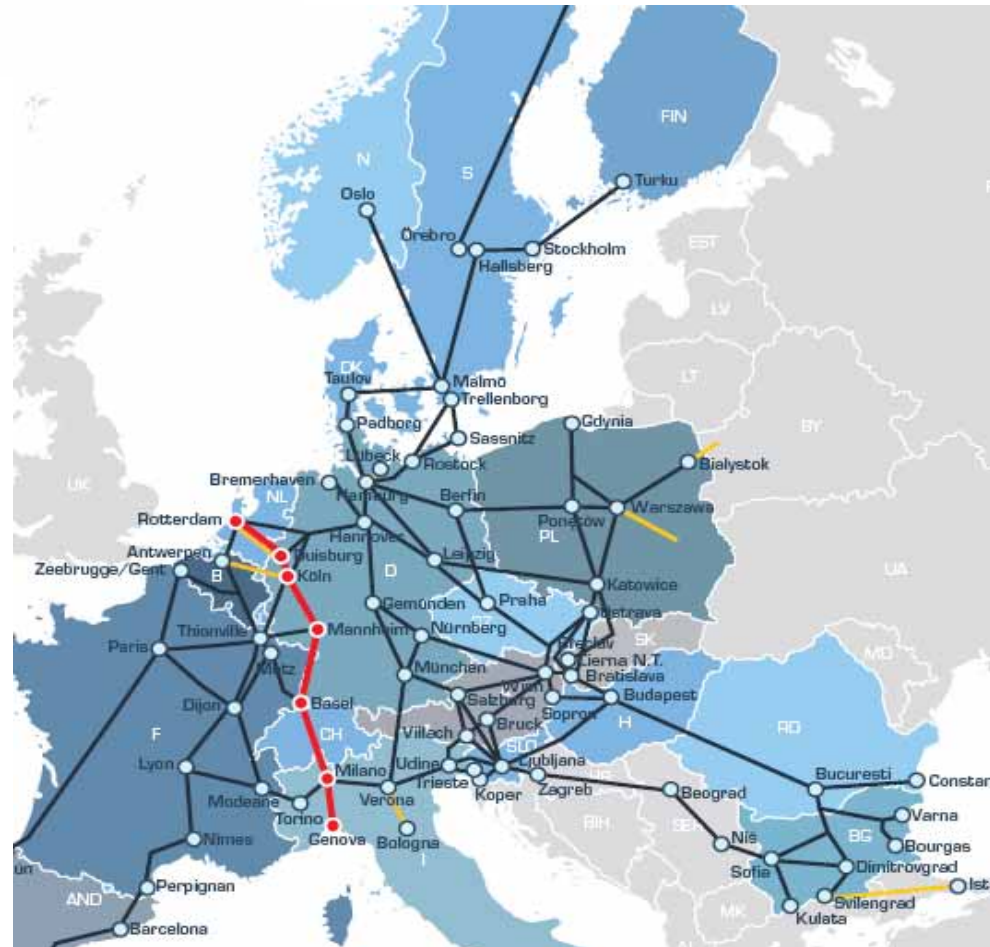COOPERATION

How to tackle

- **Freight Corridors:**
  - ➡ First Corridor Rotterdam Genoa.
  - ➡ Largest Volumes
  - ➡ Seamless across borders
  - ➡ Priority freight
  - ➡ "one stop shop"
- **3 rail package directives**
  - ➡ Market Liberalisation
  - ➡ Interoperability
- **Research and Innovation supporting interoperability and smarter technological solutions ***

EUROPEAN COMMISSION
Community research

- **FP7 (2007 to 2013) Budget €51 Bio;**

- **Transport theme (including Aeronautics): 4 Bio**

- **Surface Transport , so far €510M.**

- **Typ 1/4 to 1/3 towards Rail**

- **20th July 2010 New call, €91.25M (Rail €26M).**

Non-nuclear Actions of JRC 3%

Health 12%

Food, Agriculture & Biotechnology 4%

Transport (incl. Aeronautics) 8%

Nanotechnology, Materials & Production 7%

Energy 5%

Environment (incl Climate Change) 4%

Information & Communiocation Technologies 18%

Socio-ecomomic Sciences 1%

Space 3%

Security 3%

Ideas (European Research Council) 15%

People (Marie Curie Actions) 9%

Capacities (Infrastructures, SME, INCO, etc.) 8%

FP7 2010 Rail freight Research

Topics targeted:

- **Carbon footprint of logistic chains and integration within logistic management tools.**

- **Fast implementation of near market technologies to improve rail freight competitiveness.**

- **Low density high value freight.**

- **Heavy Freight, vehicle track systems.**

Example Freight Projects under negotiation

- **Cofret: €4M+, 14 partners**. Building upon existing techniques and establishing methodologies that will enable accurate and adaptable measurement of complete supply chain carbon footprints from different modes, including transhipment, cooling etc.

- **SUSTRAIL : €10M project 30 leading industrial, operator and academic partners,** (Includes Petersburg Transport University) towards rail vehicle track systems for heavy freight.

- **Marathon :€4.8 M, 17 partners,** Effective, management and market uptake of longer and heavier trains on faster high-volume Trans European freight corridors. 17 partners including important European operators.

- **VEL-Wagon: €1M project, 4 partners**. Developing a lighter longer wagon that can accommodate a variety of intermodal loading units and also be efficient for non-intermodal traffic

Opportunities For Support !

July 20th 2010 Publication Call FP7-SST-2011-RTD-1
Deadline 2nd December 2010
Total €91.25 million

- **Non EU organisations are welcome in project teams**. (Typ there must be also be at least 3 different country EU member or associated state organisations).

- **EU support of 50%,75% or 100%** (Depending on organisation & cost type.)

- **Topics include:**

    - **Interoperability.**
    - **Reducing freight derailments and impacts.**
    - **Systems operation management for passenger and freight customer needs.**
    - **Cost effective improvement of rail infrastructures (be particularly relevant to networks of central and eastern Europe).**
    - **Urban and Interurban shipments.**
    - **Efficient interfaces between modes.**
    - **Coordination action: Improving and exploiting capacity**
    - **E freight solutions and supply chain management.**

Thank you for your attention !

Further Information

➡ FP7 Transport Research:
http://ec.europa.eu/research/transport/index_en.cfm

➡ FP7 General : http://cordis.europa.eu/fp7/home_en.html

➡ FP7 Calls: Participant Portal
http://ec.europa.eu/research/participants/portal/appmanager/participants/portal

➡ Transport National contact points:
http://cordis.europa.eu/fp7/ncp_en.html

➡ Rail Industry research Contact ERRAC: http://www.errac.org/

Peter Crawley:

Sustainable Surface Transport: DG Research

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