The intermodal transport network in Sweden

ØRESUND LOGISTICS

www.oresund.org/logistics

Agenda

- Facts and Figures
- Øresund Logistics
  - Øresund Org
- Intermodal transportation in Sweden
- Case: Scandinavian Shuttle

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The Øresund Region

***3.6** million inhabitants*

***21 000** km² land area*

***170 000** companies*

***12** universities*

***165 000** students*

***4 000** foreign students*

***12 000** researchers*

***5** science parks*

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Øresund Org

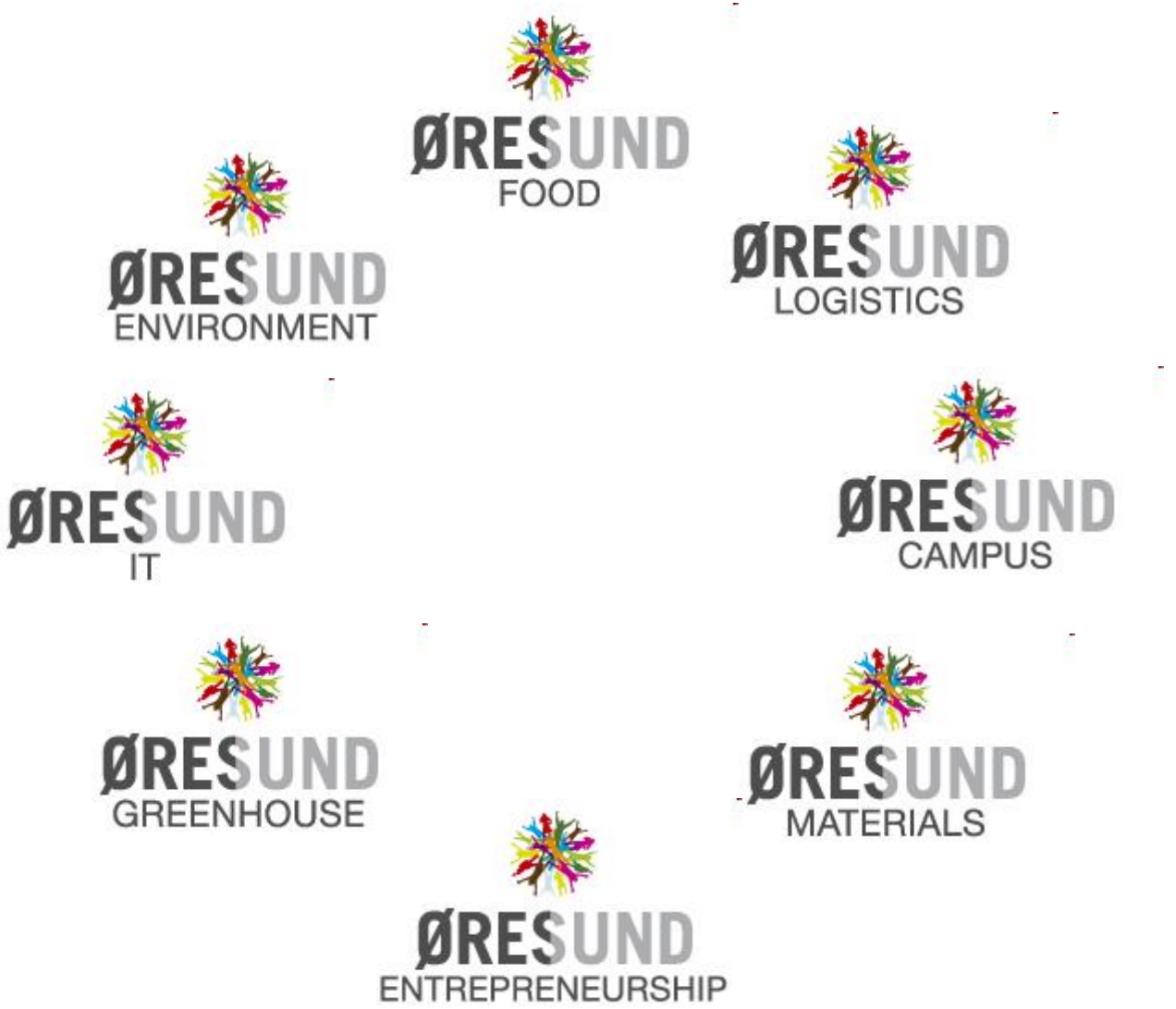
- Established in 1997
- Umbrella organization for the universities
- Cross-border collaboration
- Triple Helix Networks

ØRESUND
ORG

Goals

- Be one of Europe's foremost centres for higher education, knowledge production and knowledge transfer.
- Create a world leading science region.
- Increase crossborder integration.

The Øresund Family



Common activities

- **Networking** - foster networks among people and firms
- **Knowledge on knowledge** – spread knowledge, study and analyse the cluster
- **Initiate Research and Development projects –** work as a project generator and catalyst
- **Branding** - create regional brand, attract new companies, capital and talent to the region



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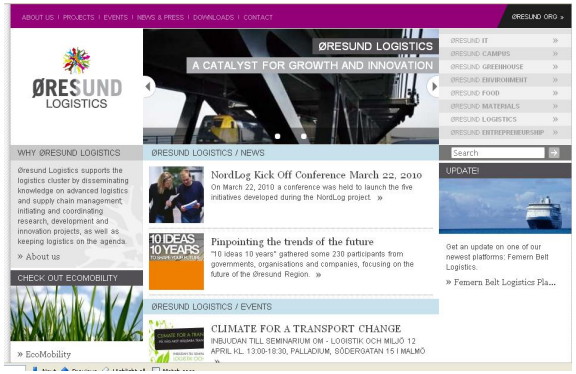
Activities, Øresund Logistics

- **Network activities**
  - Seminars, conferences, workshops
  - Intermodality, RFID, Traceability, Security, City Logistics….



- **Spread knowledge and information about logistics**
  - webpage www.oresund.org/logistics

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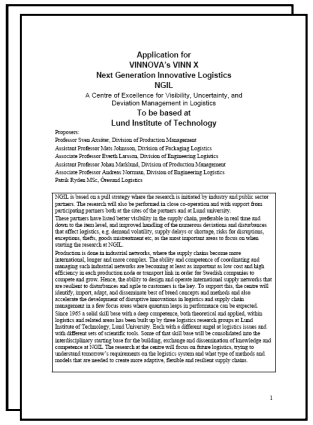
Activities, Øresund Logistics

- **Initiate research and development projects**
  - **Öresund EcoMobility**
  - **Marco Polo, Scandinavian Shuttle**
  - **NordLog – Nordeuropas Handels, Transport og Logistikklynge**
  - **Femern Belt Logistics Platform**
  - **SKEMA**



Application for
VINNOVA's VINN X
Next Generation Innovative Logistics
NGIL
A Centre of Excellence for Visibility, Uncertainty, and Deviation Management in Logistics
To be based at
Lund Institute of Technology

- **Marketing / Branding**
  - **In collaboration with regional marketing organizations**

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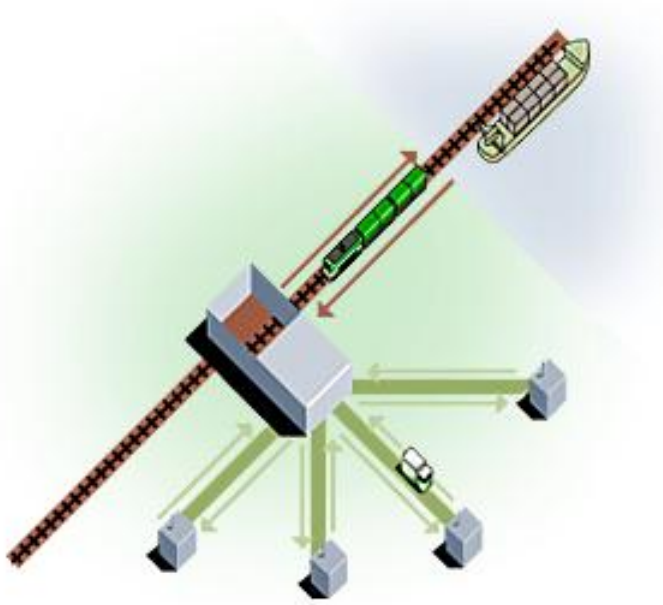
Intermodal transportation in Sweden

- **Green Cargo is the dominant company in Sweden**
- **Approximately 3000 persons employed**

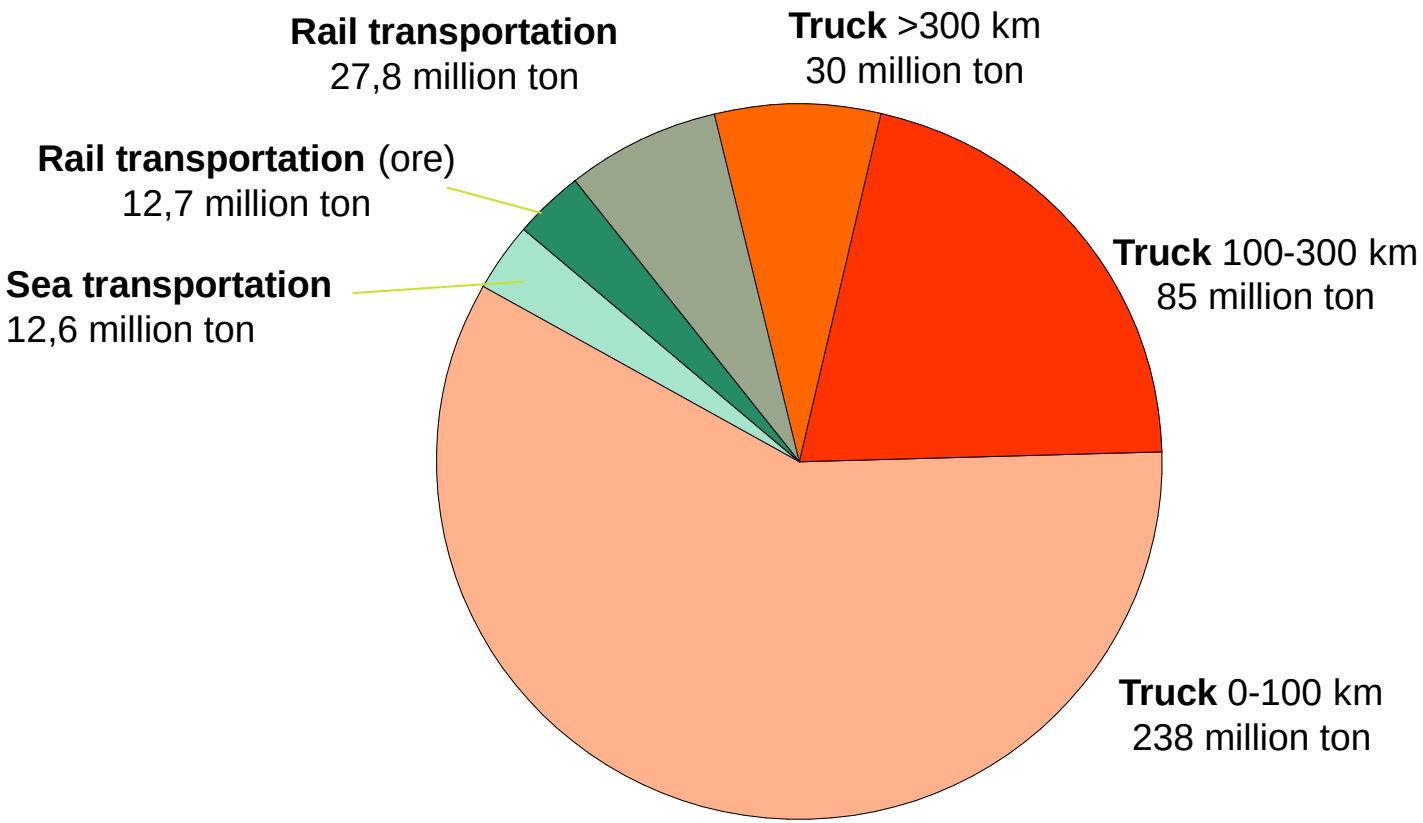
Rail goods operators in Europe (turnover 2008/2009):

DB Schenker, Germany	3 815 M ú
Rail Cargo Austria (RCA),	2 417 M ú
SNCF, France	1 600 M ú
PKP, Polen	1 273 M ú
Trenitalia, Italy	1 009 M ú
Green Cargo, Sweden	630 M ú
CFR Marfa SA, Rumania	544 M ú
EWS, Great Britain	465 M ú
ZSSK, Slovakia	459 M ú
Renfe, Spain	371 M ú

Source: SIKA



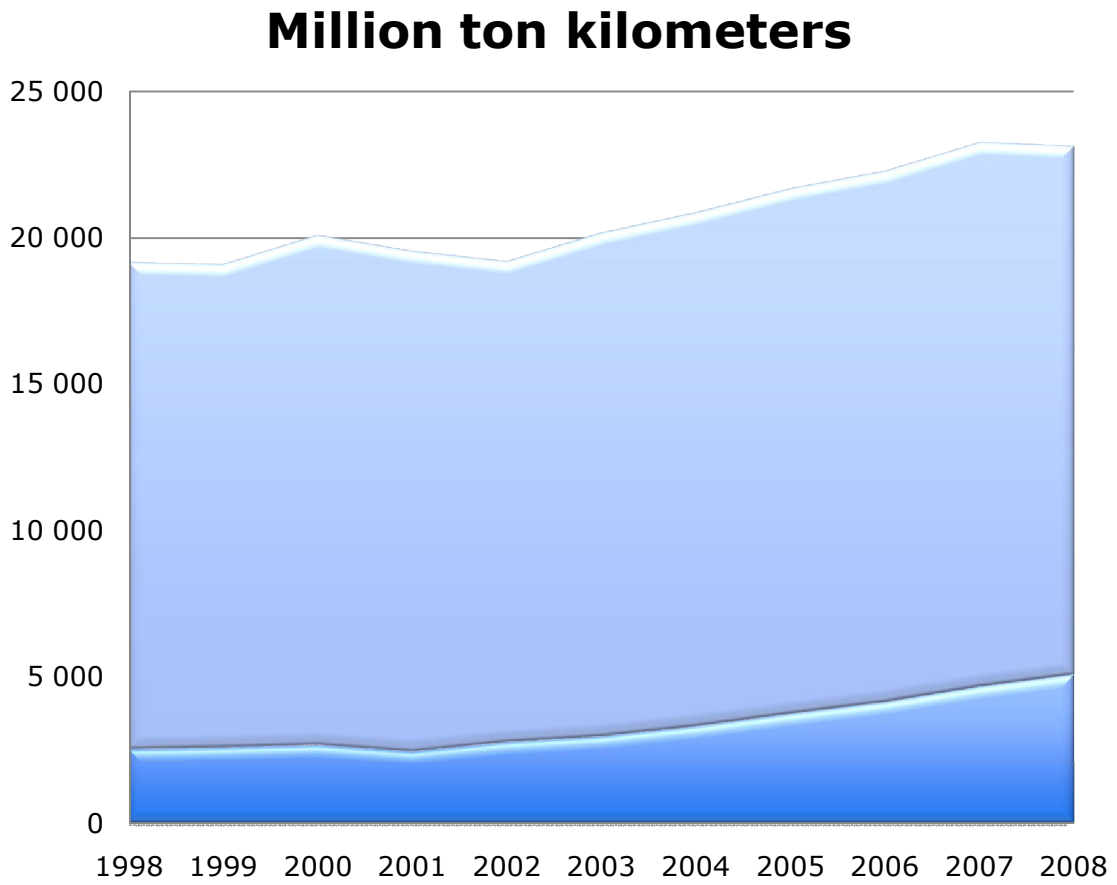
Goods volume transportation Sweden (domestic)



Source: SCB / SIKA

The total transport performance Sweden (rail goods)

Transport performance (million tonne-kilometres)



Source: Trafikverket and SIKA 2009

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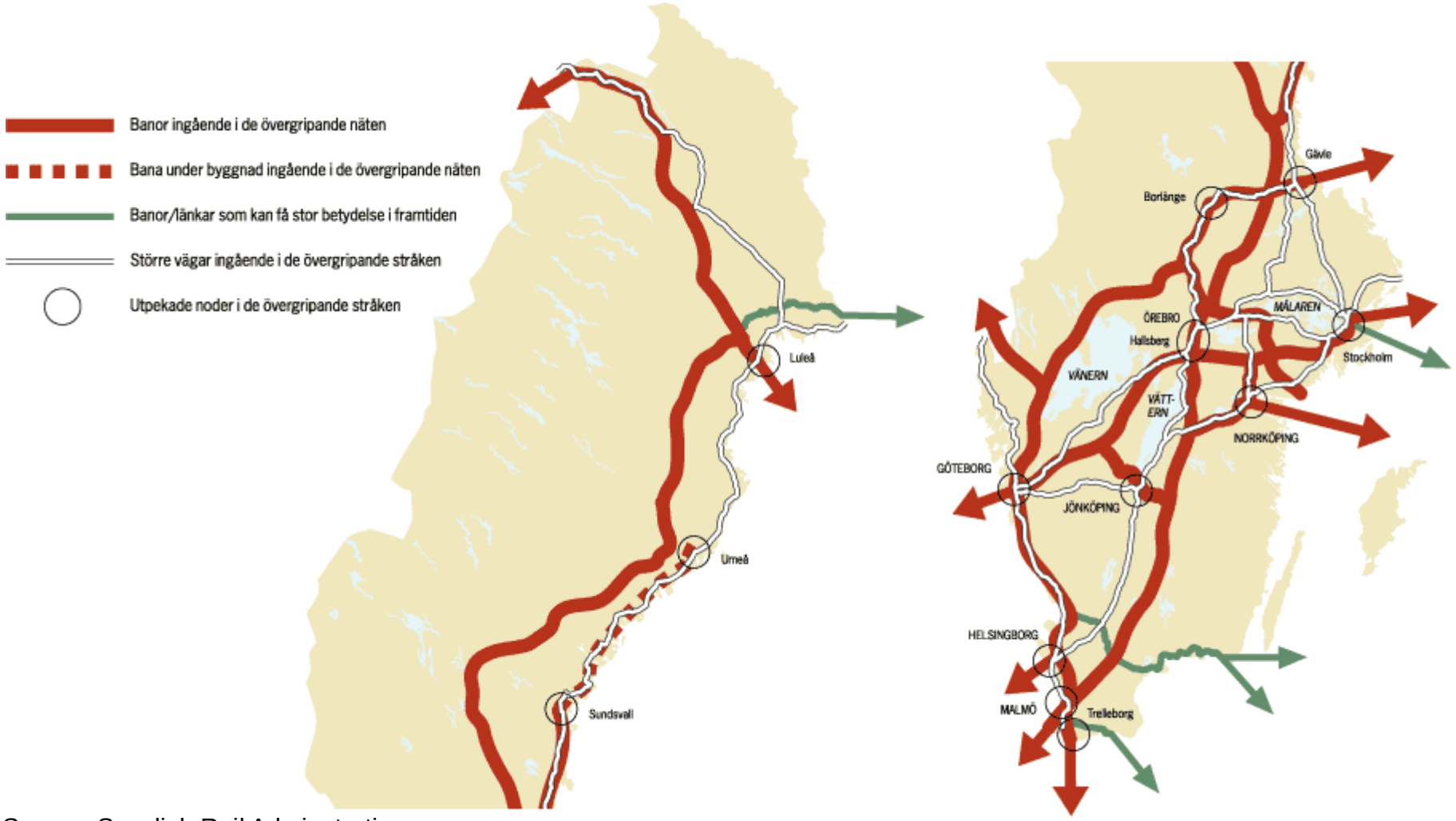
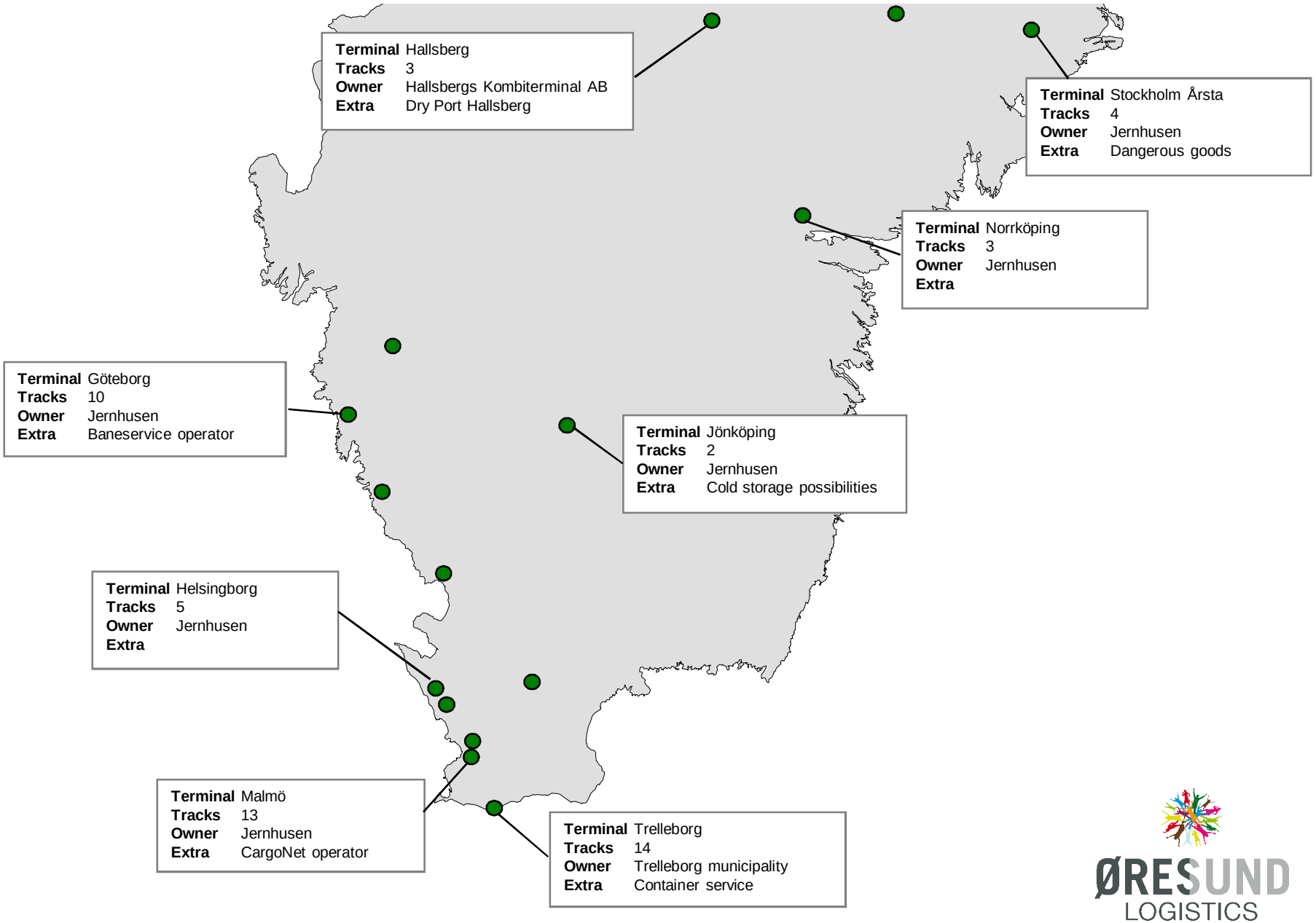
Strategic nodes in rail system



Source: Swedish Rail Adminstration



Source: Swedish Rail Adminstration

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Case:

Scandinavian Shuttle - Marco Polo Programme

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Marco Polo programme history

2001 ï ECôs ñWhite Paper - European Transport Policy for 2010: time to decideò

2003 - The Marco Polo programme was initated

The budget was approximately EUR **103 million** for the period; 2003-2006

Analysis of the first Marco Polo programme suggests that for every 1 EUR of subsidy spent, there are 10-15 EUR of external costs saved for society (avoiding congestions, accidents, pollution, etc.)

→ Marco Polo II was initiated 2007

MARCO POLO
NEW WAYS TO A GREEN HORIZON

Marco Polo programme

MODAL SHIFT ACTIONS
Focuses on shifting as much freight as possible under current market conditions from road to short sea shipping, rail and inland waterways.

CATALYST ACTIONS
Under this type of action, structural market barriers in European freight transport should be overcome through a highly innovative concept.

COMMON LEARNING ACTIONS
Enhance knowledge in the freight logistics sector and foster advanced methods and procedures of co-operation in the freight market.

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Marco Polo II programme

- Marco Polo II programme runs from 2007-13 and features:
- the programme budget increased from €102 million to **€450 million** Euros
- Two more themes:

1. TRAFFIC AVOIDANCE ACTIONS

2. MOTORWAYS OF THE SEA

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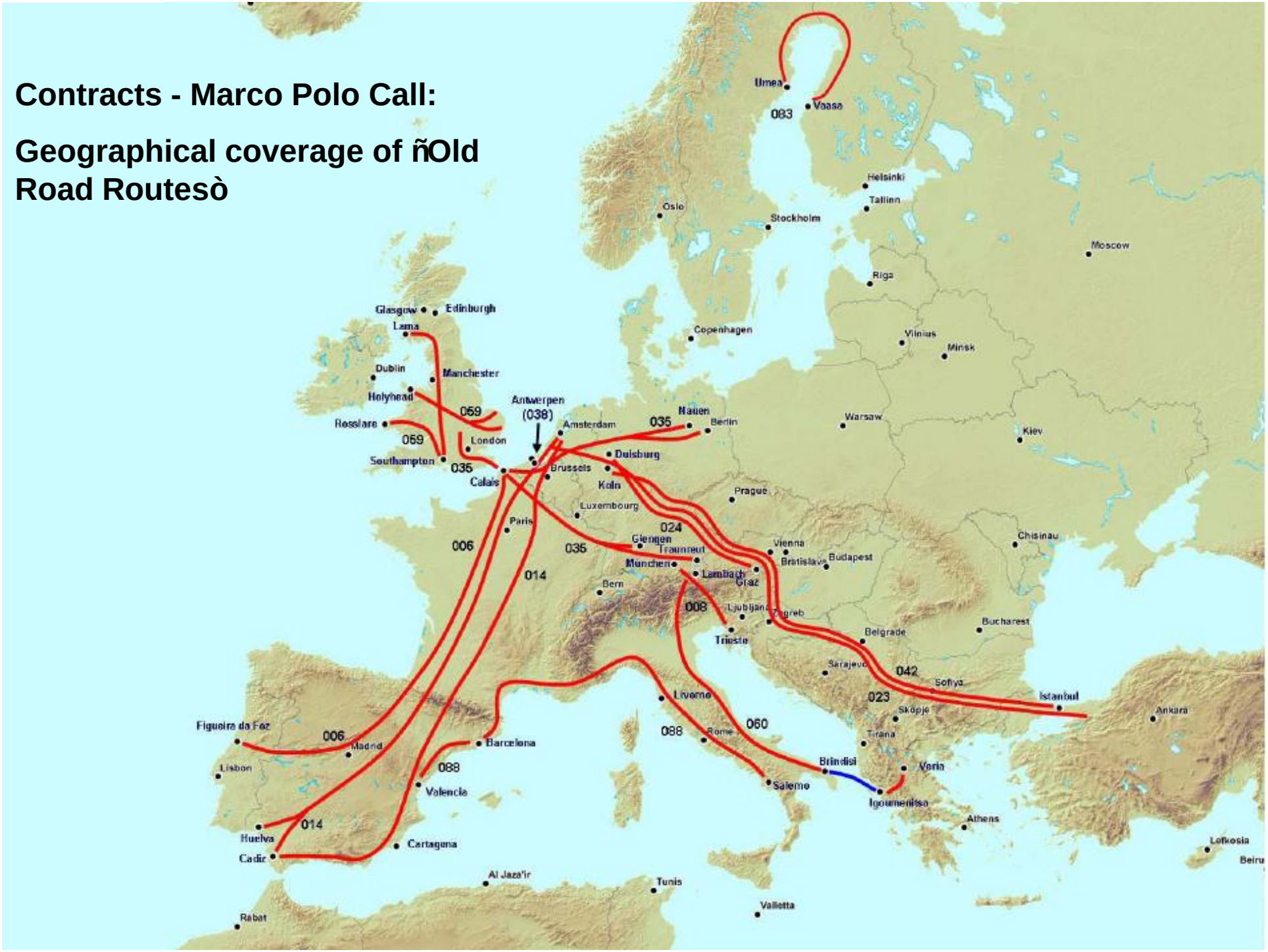
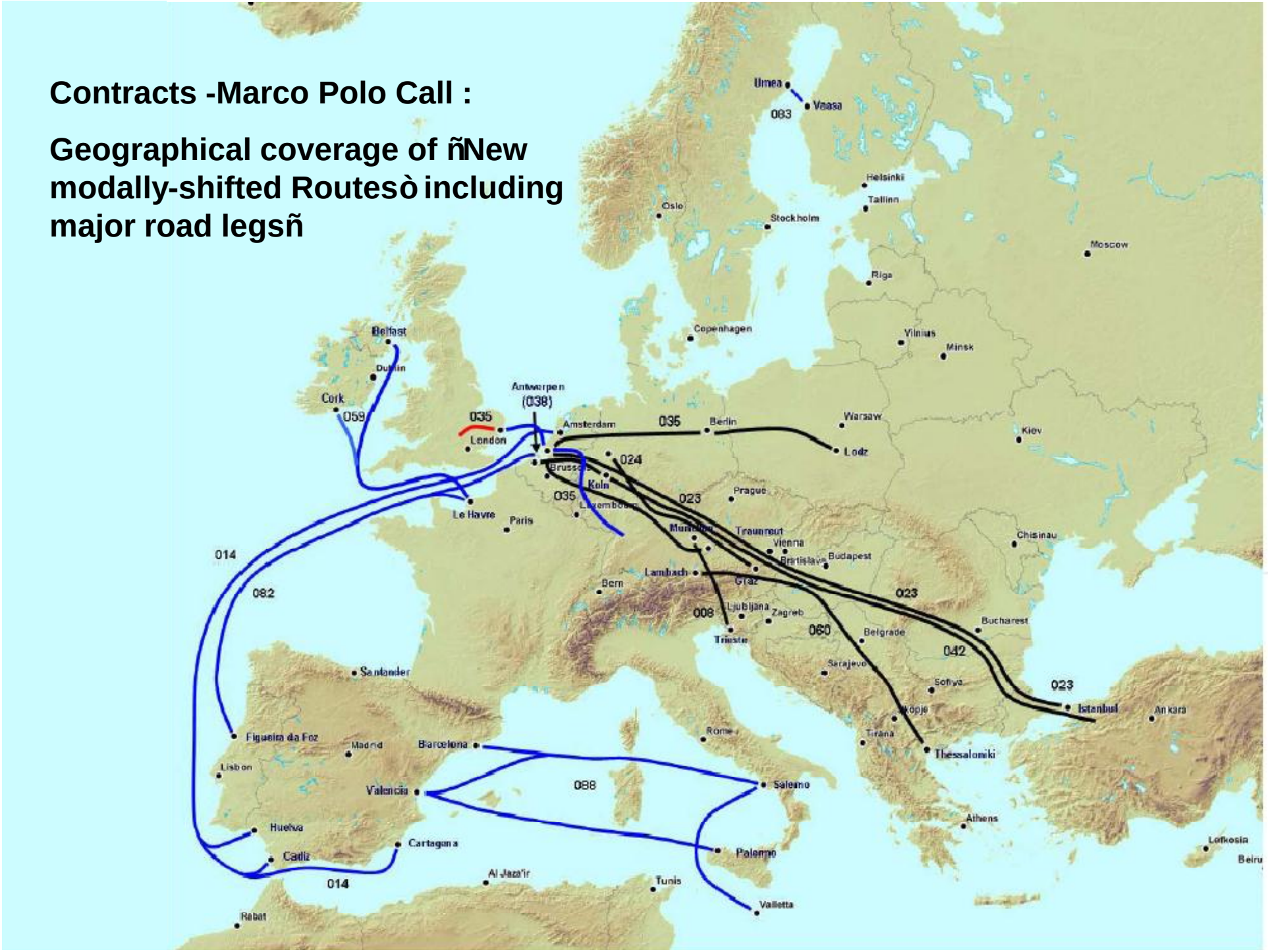
Contracts - Marco Polo Call:

Geographical coverage of ñOld Road Routesò

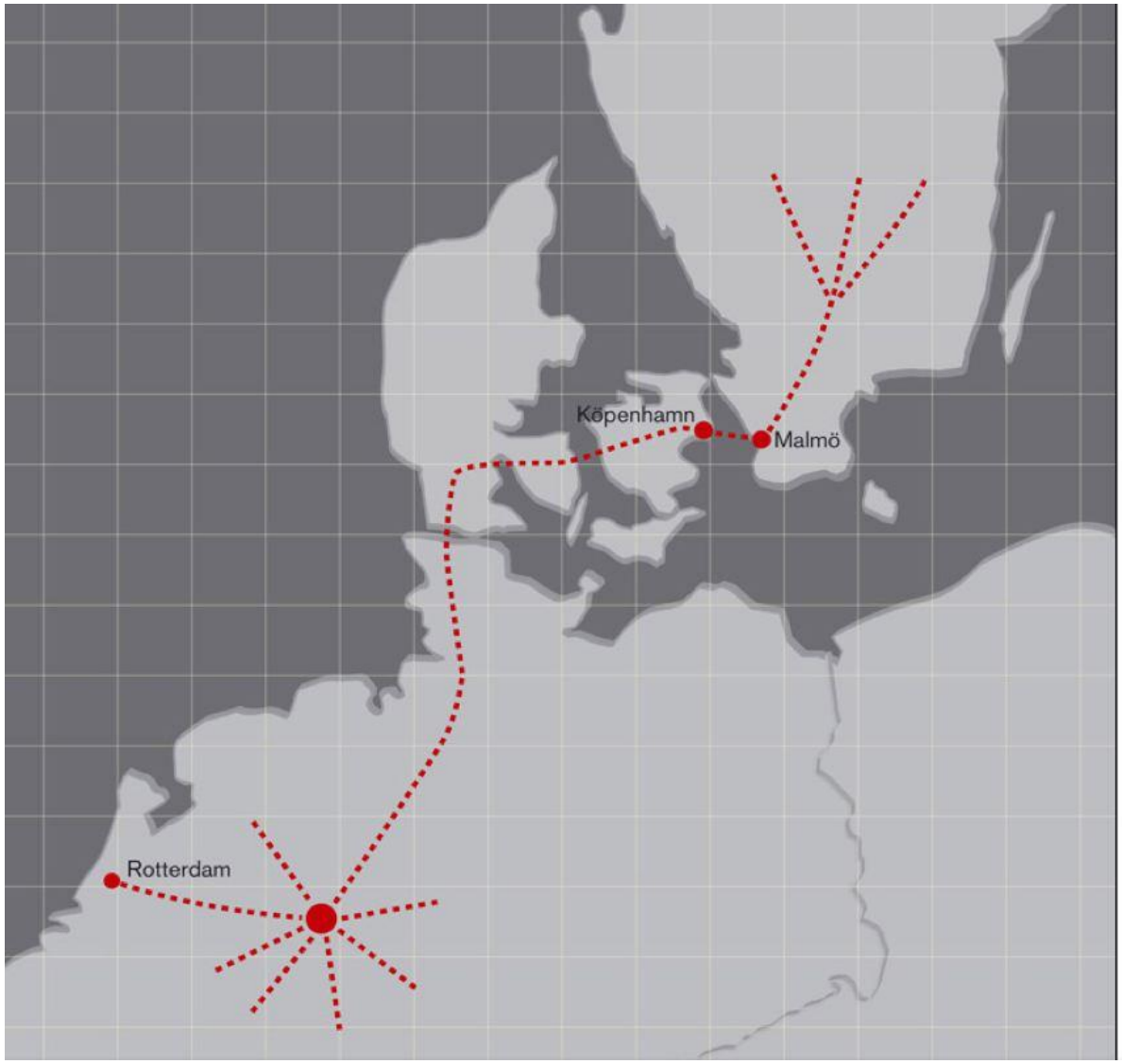


Contracts -Marco Polo Call :

Geographical coverage of ñNew modally-shifted Routesò including major road legsñ



Case: Scandinavian Shuttle



Scandinavian Shuttle

An efficient transportation link between the Continent and Scandinavia

Partners & Finances

Scandinavian Shuttle

Catalyst Action project

***Budget**: 17.000.000 Euro*

***Time**: 4 years; 2006-2010*

***EU Marco Polo Support:** 2.500.000 Euro*

***Environmental Benefits:** 27.000.000 Euro*

Case: Scandinavian Shuttle

Barriers and solutions for railway transportation

Three barriers	Three solutions
PUNCTUALITY / RELIABILITY	100% JUST-IN-TIME WITH TRACK & CORRECT
TECHNIQUE – DIFFERENT ATC (TRAIN CONTROL) AND ELECTRICAL SYSTEMS	LOCOMOTIVES WITH MULTIPLE SYSTEMS
MARKET – MONOPOLY, DIFFICULT FOR NEW OPERATORS / TRANSPORTERS	THE SCANDINAVIAN SHUTTLE IS OPEN TO EVERYBODY

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ATC and Electrical systems

Various train control (ATC) and electrical systems

Current situation: Sweden, Denmark and Germany – three different systems

Solution: Locomotives with multiple systems

Operator: Van Dieren Maritime

Case: Scandinavian Shuttle

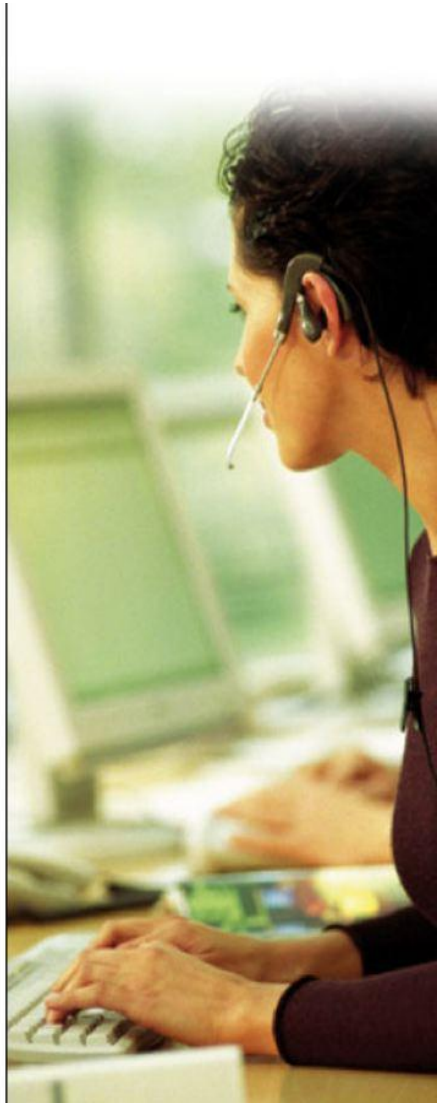
Track & Correct

A system for tracking in real time

A GPS/GSM module on the goods

Reports to the Reliability Control Center, RCC

Back-up transport if the goods are stuck along the line



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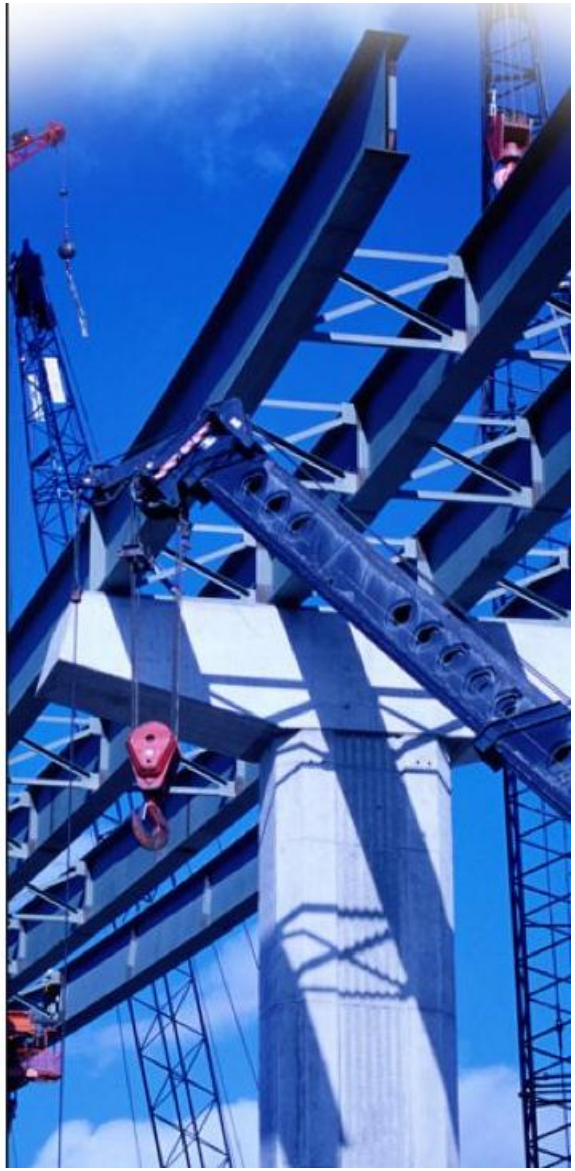
Back up system

Error report – measures taken

How does the RCC back-up system work?
Examples:

TRAILER NOT LOADED ONTO THE TRAIN (DELAY, LACK OF LOADING ROOM)	ROAD TRANSPORT ALL THE WAY
PALLET NOT LOADED ONTO THE TRAILER	TRUCK COLLECTS THE PALLET (URGENT: AIR FREIGHT)
THE ÖRESUND BRIDGE IS CLOSED	ROAD TRANSPORT/FERRY + RAIL TRANSPORT
THE GERMANY FERRY IS CANCELLED	TRAIN OR ROAD TRANSPORT VIA THE DENMARK/SWEDEN BRIDGES
TRAIN IS STUCK IN HAMBURG	ROAD OR AIR TRANSPORT TO DESTINATION
LOCOMOTIVE BREAKS DOWN	PRIORITY TO A BACK-UP LOCOMOTIVE
FREIGHT CAR BREAKS DOWN	CAR IS DISCONNECTED, GOODS GO BY TRUCK TO DESTINATION
TRAILER IS BROKEN INTO, GOODS ARE STOLEN OR DAMAGED	GPS/GSM MODULE ALERTS POLICE, NEW GOODS AIR TRANSPORTED TO DESTINATION



Case: Scandinavian Shuttle

1. DEEPSEA TRANSPORT

Unloading in Rotterdam

Loading directly onto train or barge

2. BARGE OR TRAIN

Daily departures, according to schedule

No costs for warehouses

Track & Correct

3. CROSS DOCKING

Cross docking, warehousing

Situated by river, railroad, airport and road

Track &Correct

4. TRAIN

Scandinavian Shuttle

Multiple locomotive

Daily departures, schedule

600 FTLs per week

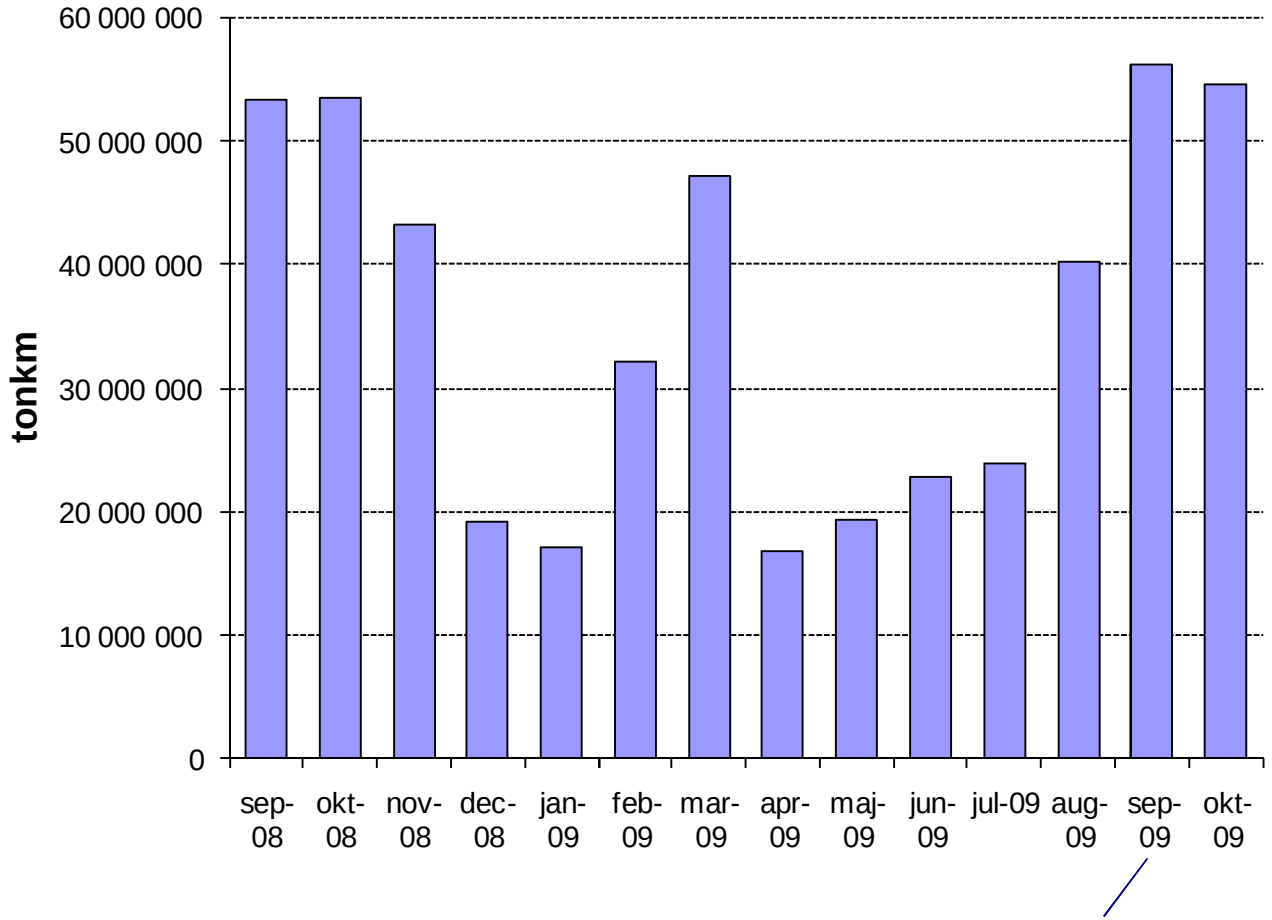
Track & Correct

5. DISTRIBUTION

Just-in-time

Door-to-door

Modal Shift, statistics



The accumulated goal on modal shift was reached: **927.000.000** tonkm

Equivalent to **100.000 trucks**

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2018 Godstransport och Logistik

Road pricing (S) ?

Road pricing (Dk) ?

Denmark

Toll

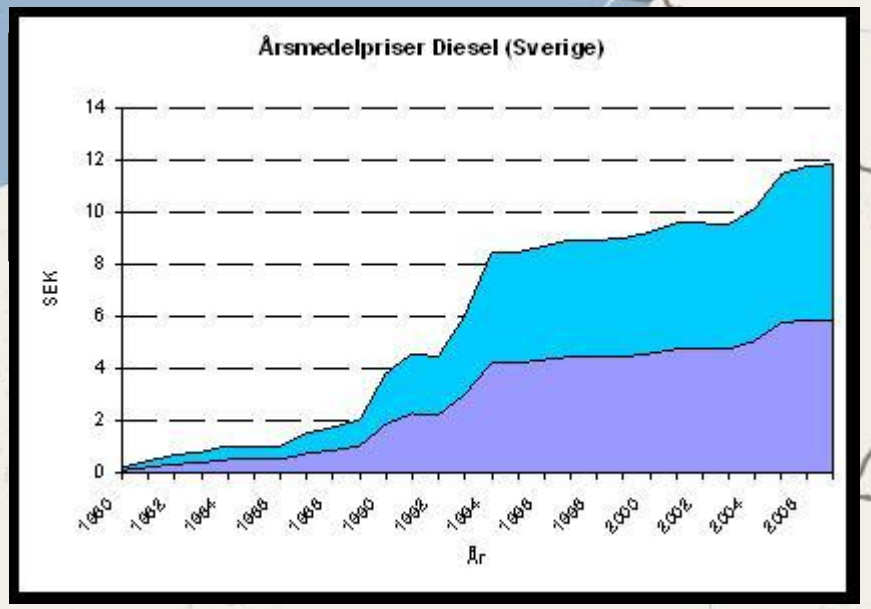
Toll

Toll

SECA

(Sulphur Emissions Control Area)

Road pricing (D)



Challenges

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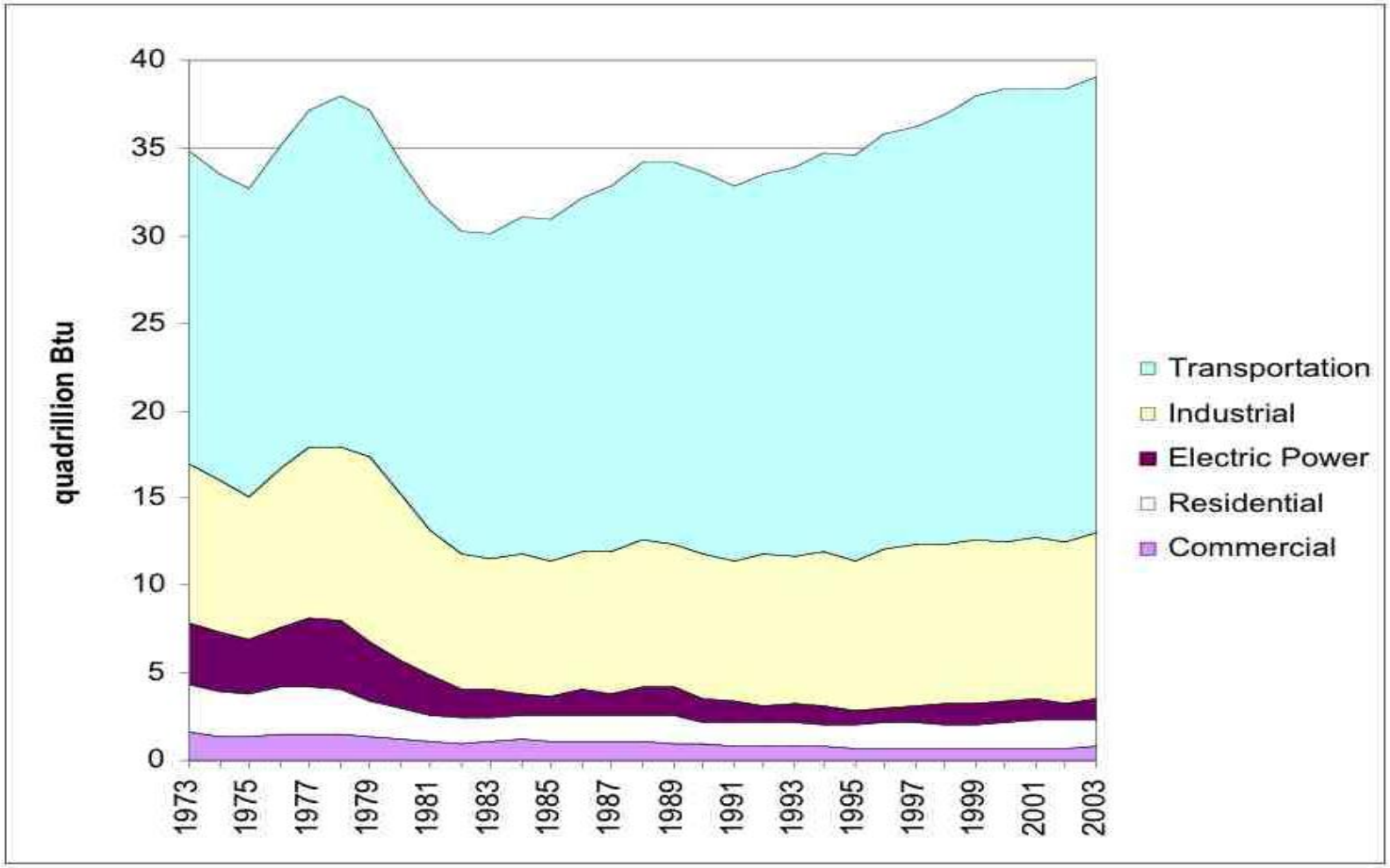
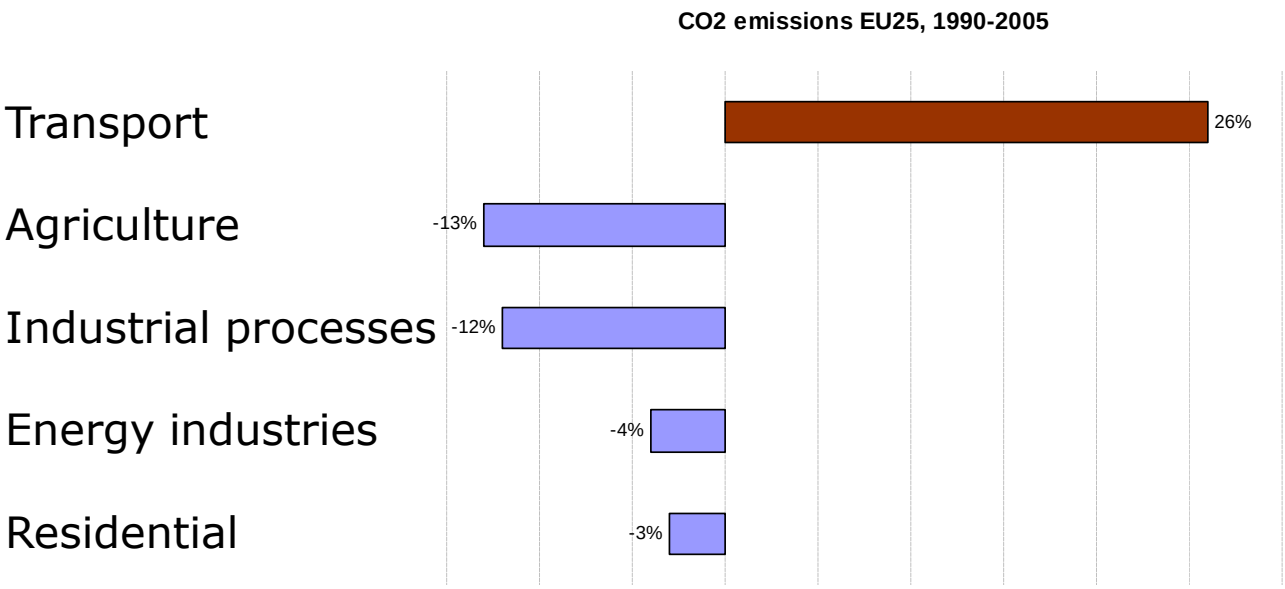
Oil consumption by sector



…and in Europe?

Transport: the only sector increasing CO_2emissions (EU25) 1990 -2005



Source: Eurostat

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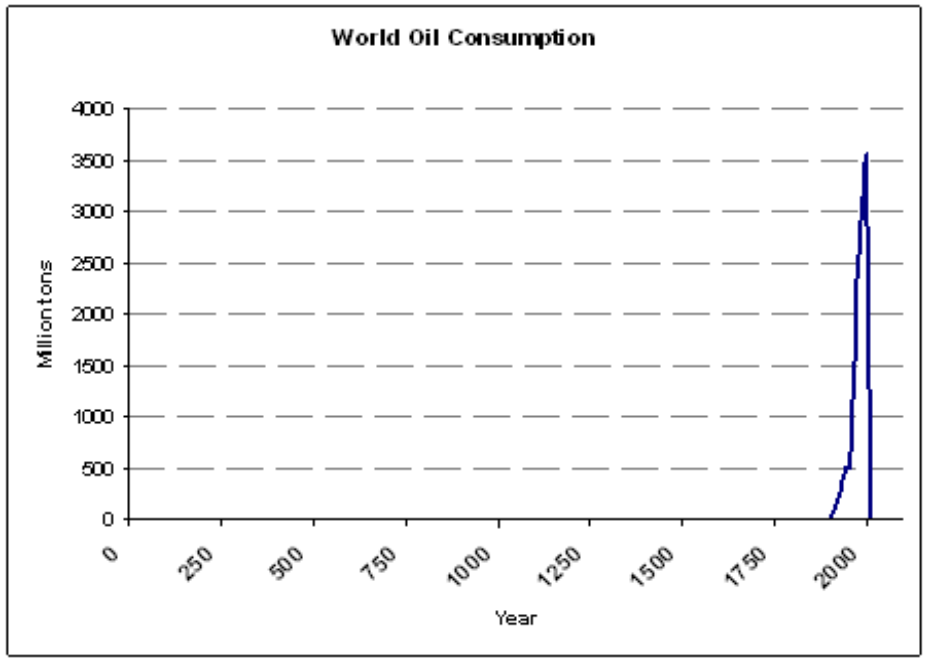
Challenges

World oil consumption



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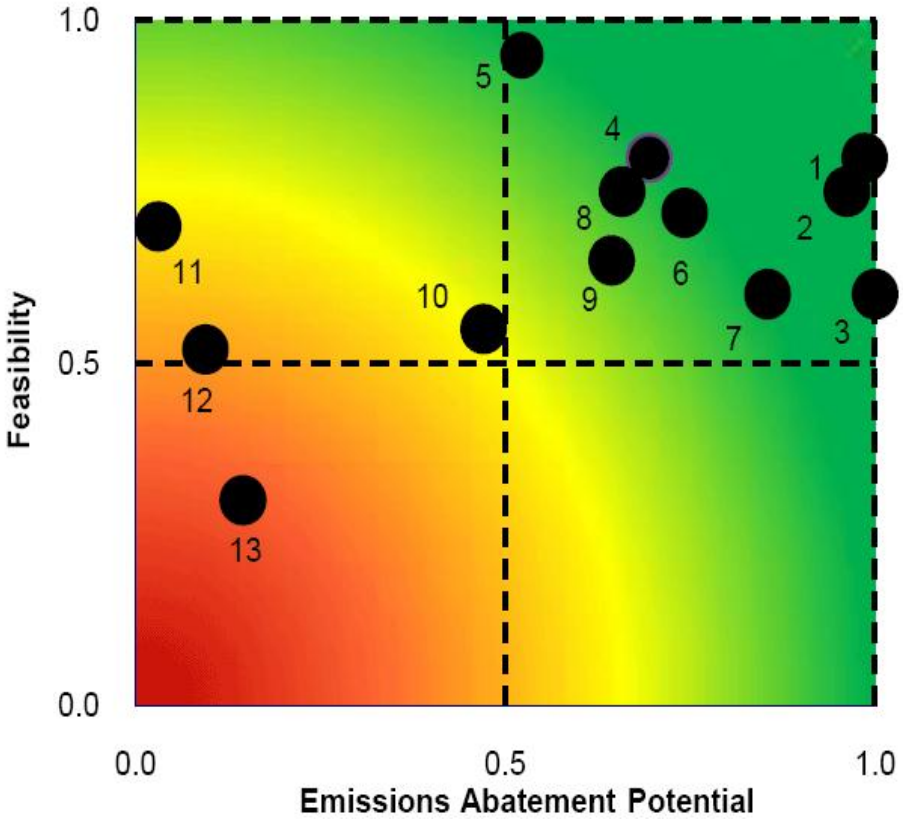
Opportunities



- 1 - Clean Vehicle Technologies
- 2 - Despeeding the Supply Chain
- 3 - Enabling Low Carbon Sourcing: Agriculture
- 4 - Optimised Networks
- 5 - Energy Efficient Buildings
- 6 - Packaging Design Initiatives
- 7 - Enabling Low Carbon Sourcing: Manufacturing
- 8 - Training and Communication
- 9 - Modal Switches
- 10 - Reverse Logistics / Recycling
- 11 - Nearshoring
- 12 - Increased Home Delivery
- 13 - Reducing Congestion

Source: Supply Chain Decarbonization; World Economic Forum; 2009

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Opportunities

Decarbonization Opportunity	Description
Clean Vehicle Technologies	Introduce clean and environmentally efficient technologies
Despeeding the Supply Chain	Decrease transport speed and increase load fill
Enabling Low Carbon Sourcing: Agriculture	Optimise the location of agriculture
Optimised Networks	Improve network planning through transformation projects
Energy Efficient Buildings	Minimise emissions from operating activities
Packaging Design Initiatives	Reduce weight and volume of packaging
Enabling Low Carbon Sourcing: Manufacturing	Optimise manufacturing location
Training and Communication	Provide training to road transport contractors and building operators
Modal Switches	Transfer freight from air and long-haul road freight to ocean, road and rail freight
Reverse Logistics / Recycling	Improve percentage of total supply chain waste which is recycled
Nearshoring	Transfer long-haul air and ocean freight to road and rail freight
Increased Home Delivery	Rely on alternate transport services to deliver goods home
Reducing Congestion	Introduce traffic management techniques

Source: Supply Chain Decarbonization; World Economic Forum; 2009

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for your
attention!

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