solutions for logistics

MARKET PLACE SEMINAR

RAIL TRANSPORT CONNECTING CONTINENTS
DEVELOPMENT OF NEW SOLUTIONS IN RAIL FREIGHT

Istanbul 2009
22-23 October

Intermodal solutions between Europe and Turkey : Ekol's Green Logistics via Intermodal Transportation

EKOL

Agenda

- Company Overview
- Our Intermodal Solution

Ekol at a Glance

- Establishment : 1990
- Number of Employees : ~ 2,000
- Total Number of Invoiced Customers : ~ 7,600
- Turnover in 2008 : 152 million Euro
- Indoor Storage Area : over 300,000 m2
- Number of Vehicles : ~ 1050

Agenda

Company Overview

Our Intermodal Solution

Ekol's Block Train in Co-Operation with Kombiverkehr

- **Start date** : 17 October 2008
- **Departures** : Round trip twice a week between Ludwigshafen and Trieste
- **Departure and Arrival** : Ludwigshafen,Monday – Trieste, Tuesday
  Trieste, Tuesday – Ludwigshafen, Wednesday
  Ludwigshafen, Friday – Trieste, Saturday
  Trieste, Saturday – Ludwigshafen, Sunday
- **Capacity** : 32 trailers per departure
- **Loading Unit** : Tilt or Box (Hanging garments) Mega Trailer

Project Definition Future Plans

- ***Short-term plans***

  Increase round trip 3 times a week between Ludwigshafen and Trieste, starting in **first half of 2010.**

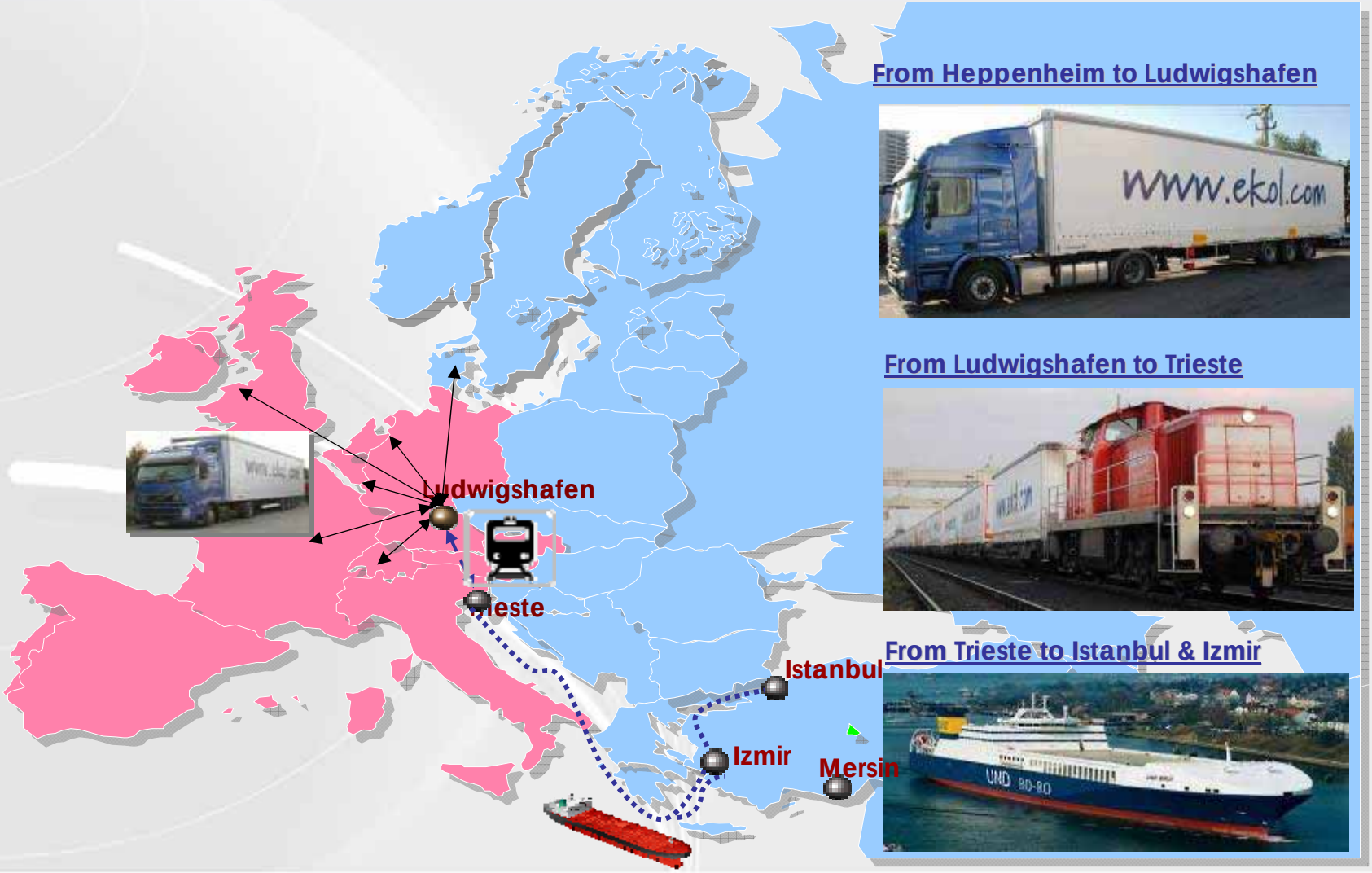
- ***Mid-term plans***

  Round trip 5 times a week (daily departures) starting in **second half of 2010.**

Volumes

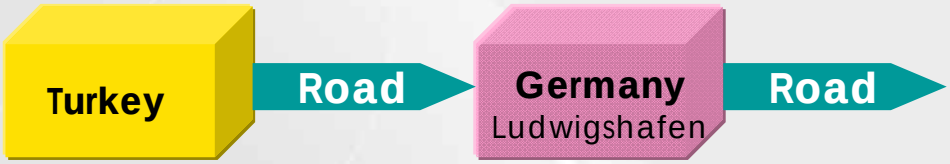
- 2008 - 18 Trips/14.000 to. general cargo
- 2009 - 82 Trips/67.000 to. general cargo
- Until 2011 (planned) - 500 Trips/416.000 to. general cargo per year

Project Definition Intermodal



Transportation Models

Model – 1 Road Transportation

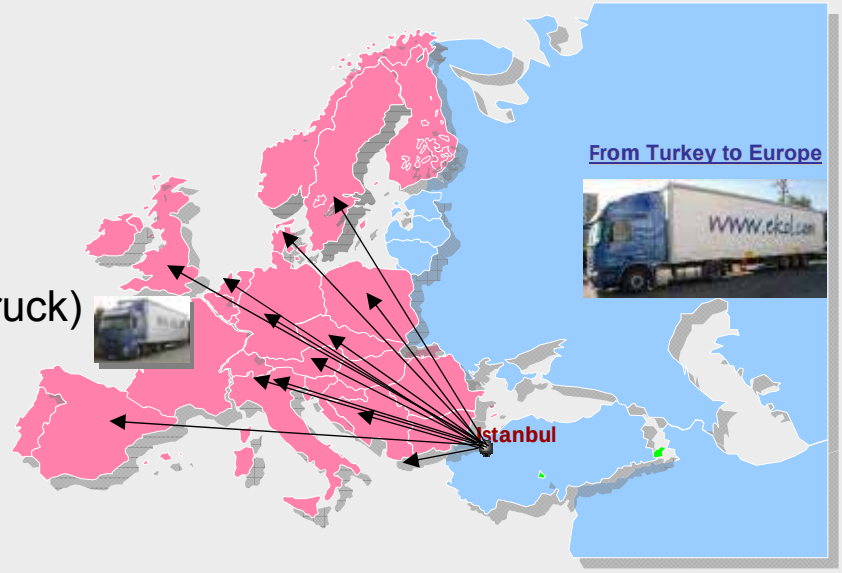


Model – 2 Roro & Road Transportation

Model – 3 Roro & Rail Transportation

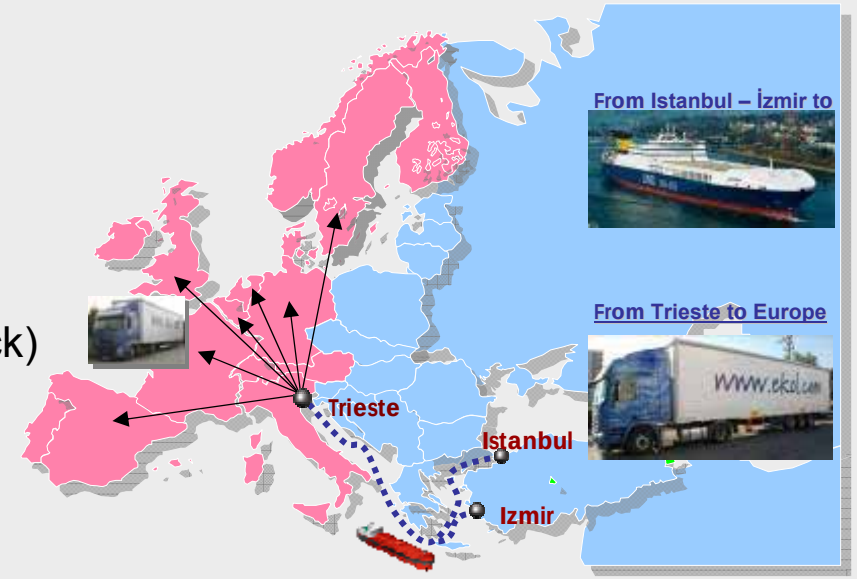
Transportation Models Road

- **Route :** From Turkey to Europe (via Balkans)
- **Concept:** Direct deliveries to the destination
- **Av. Roundtrip Route Distance:** 7.000 km (by truck)
- **Total Roundtrip Route Duration:** 15 days



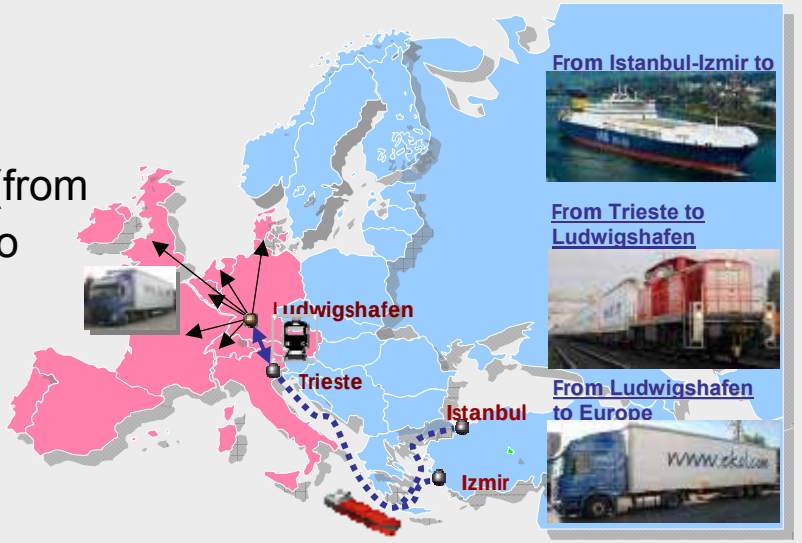
Transportation Models RoRo & Road

- **Route :** Turkey – Trieste - Europe
- **Concept:** RoRo (from İstanbul/İzmir to Trieste),
  Road (from Trieste to Europe)
- **Av. Roundtrip Route Distance:** 4.000 km (by truck)
- **Total Roundtrip Route Duration:** 18 days



Transportation Models RoRo & Rail – Current

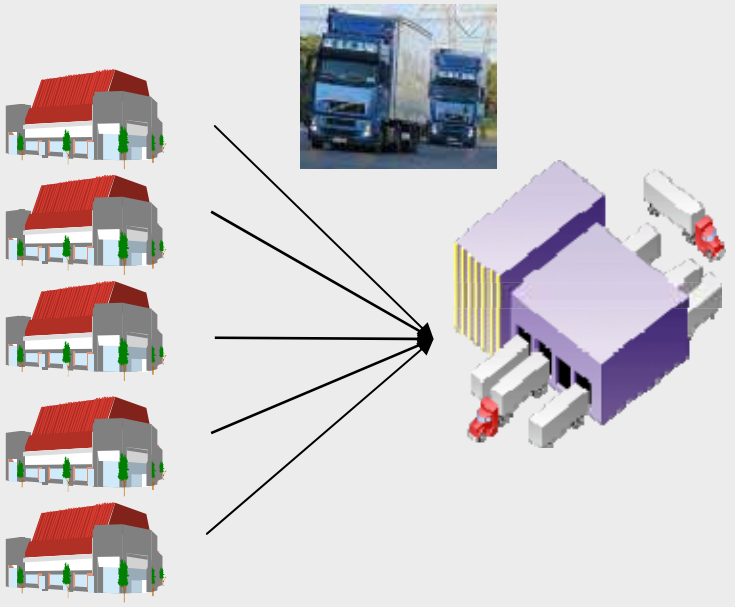
- **Route :** Turkey – Trieste – Ludwigshafen – Europe
- **Concept:** RoRo (from İstanbul/İzmir to Trieste), Rail (from Trieste to Ludwigshafen), Road (from Ludwigshafen to Europe)
- **Av. Roundtrip Route Distance:** 2.000 km (by truck)
- **Total Roundtrip Route Duration:** 16 days



Project Definition Process Flow ex Turkey

Collecting orders → Planning → Loading Ship → Ship transport → Unloading ship& loading train → Train Transport → Unloading train& loading trucks → Distribution to Customers

Goods are collected from the customers and carried to Ekol warehouse by trucks

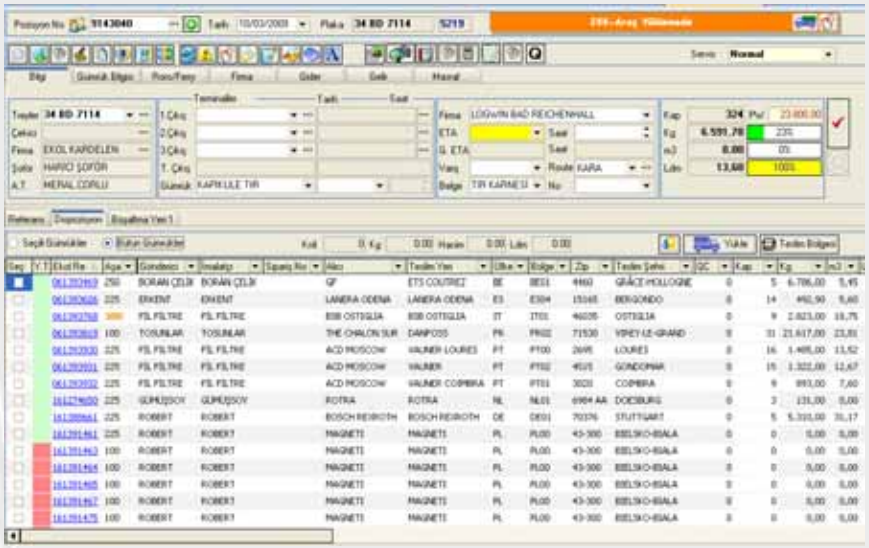


CUSTOMERS

EKOL Warehouse

Project Definition Process Flow

Customers orders are collected in the order pool of the system and consolidated to available trucks. Trucks then take the trailers to the port where they will be loaded to ferry



Project Definition Process Flow

Collecting orders → Planning → **Loading Ship** → Ship transport → Unloading ship& loading train → Train Transport → Unloading train& loading trucks → Distribution to Customers

The trailers are loaded to ferry.

Project Definition Process Flow

Collecting orders → Planning → Loading Ship → **Ship transport** → Unloading ship& loading train → Train Transport → Unloading train& loading trucks → Distribution to Customers

Ferry departs from Istanbul or Izmir port and the trip lasts three days to Trieste port.

Project Definition Process Flow

Ferry arrives to Trieste port. Here the trailers are unloaded from ferry and loaded to train

Project Definition Process Flow

Collecting orders → Planning → Loading Ship → Ship transport → Unloading ship& loading train → **Train Transport** → Unloading train& loading trucks → Distribution to Customers

The train departs from Trieste station on evening time. The trip from Trieste to Ludwigshafen takes 24 hours

Project Definition Process Flow

Collecting orders → Planning → Loading Ship → Ship transport → Unloading ship& loading train → Train Transport → Unloading train& loading trucks → Distribution to Customers

Train arrives to the Ludwigshafen terminal. Trailers are unloaded from the train through the night and binded to German plated Ekol trucks.

Project Definition Process Flow

From Ludwigshafen, goods are transported via German trucks through the Europe including UK, Spain, Benelux, France, Denmark and Germany

24 hours delivery	48 hours delivery
Germany, Benelux, North France, South England, Switzerland, Kopenhagen	Ireland, Spain, South France, North England

Project Definition Advantages

- Environmental Impacts
- Passing international roads with less transit documentation.
- Negative effects of weather conditions are eliminated
- Nonstop driving during weekend
- Same lead time for standard service considering other transportation models

Project Definition Bottlenecks

- Delays because of loco-changing.
- Variable Informationflow, various contact points.
- Lack of efficient follow up process for original shipping documents.
- Damages on trailers during loading / unloading
- Tariffs are uncompetitive with roadfreight due to low fuel prices.

Environmental Impacts Results

- **Savings per trailer for a Roundtrip;**
  - 5000 km motorway
  - Fuel 1600 lt
  - 5.520 kg CO2
  - 25,86 kg NOx
  - 3,98 kg NMHC
  - 0.70 kg Particles

Environmental Impacts

- Intermodal system is one of the important improvement for green logistics
- Ekol preferes intermodal transportation due to the following benefits
  - Climate protection
  - Fewer pollutant emissions
  - Noise reduction
  - Energy conservation
  - Decrease CO_2 footprint

Environmental Impacts

Abbr.	Description	Reasons for inclusion
PEC	Primary energy consumption	Main indicator for resource consumption
CO_2	Carbon dioxide emissions	Main indicator for greenhouse effect
NOx	Nitrogen oxide emissions	Acidification, eutrophication, eco-toxicity, human toxicity, summer smog
SO_2	Sulphur dioxide emissions	Acidification, eco-toxicity, human toxicity
NMHC	Non-methane hydro carbons	Human toxicity, summer smog
Partic-les	Exhaust particulate matter from vehi-cles (mainly diesel combustion), com-position: all particle sizes, about 80% PM 2.5, 90% PM 10 (by mass)	Human toxicity, summer smog
Dust	Total exhaust Particles from vehicles and from energy production and pro-vision (mainly power plants, refineries, sea transport of primary energy carri-ers), composition: all particle sizes, about 80% PM 2.5, 90% PM 10 (by mass)	Human toxicity, summer smog

Environmental Impacts Results

- **When 500 Roundtrips per year is achieved, its impact on environment will be;**

Emission rates	Total Savings
Motorway usage *Km*	80.000.000
EC *Megajoule*	1.333.573.102
CO_2 *Tons*	88.320
Fuel *lt*	25.600.000
HC *Kg*	63.550
NOx *Kg*	413.784

Ekol, Partner of Cream Consortium

- Ekol is a member of Cream (Customer-driven Rail-freight services on an European mega-corridor based on Advanced business and operating Models) Consortium since 01.10.2008. The CREAM project is a research and development project co-financed by the European Commission in the 6th framework programme. Its intention is to develop further the rail freight and intermodal transports on the corridors to/from Turkey. One workpackage is foreseen to further develop the trimodal transport chain Ferry·Rail-Road. The freight flow and transport concept that now became our dedicated Ludwigshafen –Trieste train falls totally in the scope of the works.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Logistics for a better world
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