OVERVIEW OF PROGRESS

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The SuperGreen project

- Project full title: Supporting EU's Freight Transport Logistics Action Plan on Green Corridors Issues
- Type of project: Coordination and Support Action
- Financed through: 7th Framework Programme
- Duration: 3 years
- Official start: 15 Jan. 2010
- Consortium: 22 partners from 13 countries
- Leader: National Technical University of Athens
- Total budget: 3,453,747 EUR
- EC contribution: 2,634,698 EUR

supergreen

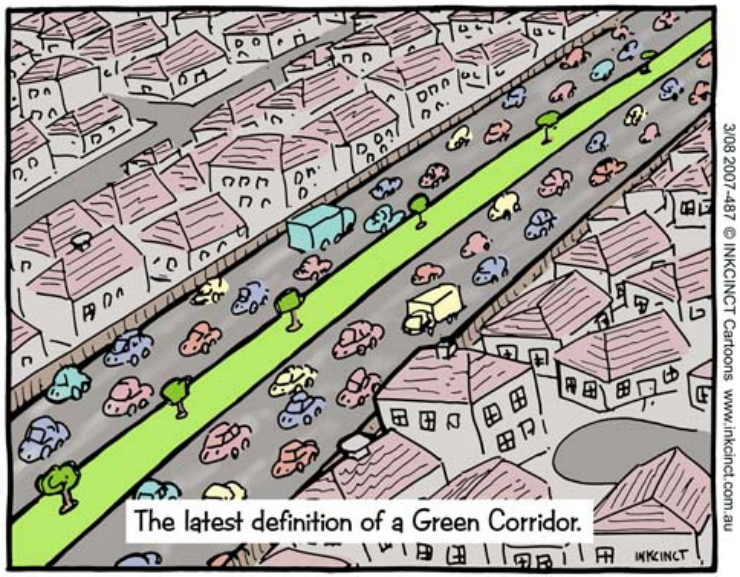
Project objectives

- Give overall *support and recommendations* on green corridors to EU's Freight Transport Logistics Action Plan
- *Encourage co-modality* for sustainable solutions
- *Benchmark* green corridors based on selected KPIs covering all aspects of transport operations and infrastructure (emissions, internal and external costs)
- Conduct a programme of *networking activities between stakeholders* (public and private)
- *Deliver policy recommendations* at a European level for the further development of green corridors
- Provide *recommendations concerning new calls for R&D* proposals to support development of green corridors

What is a green corridor?

EU Commission:

Green Corridors are a European concept denoting long-distance freight transport corridors where advanced technology and co-modality are used to achieve energy efficiency and reduce environmental impact

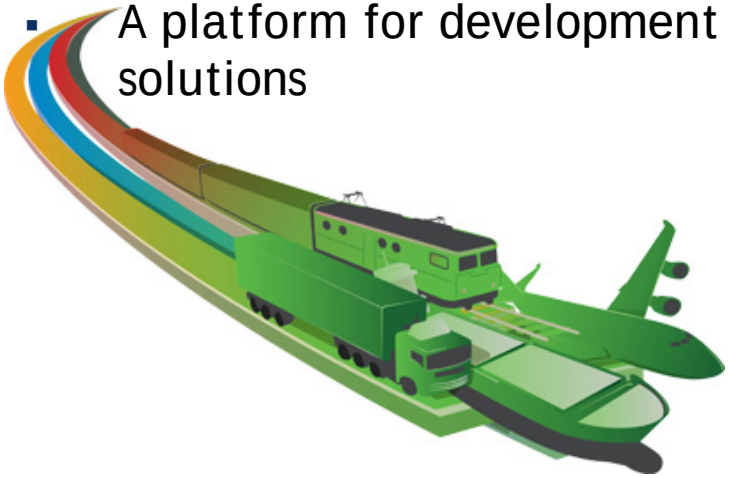


What is a green corridor?

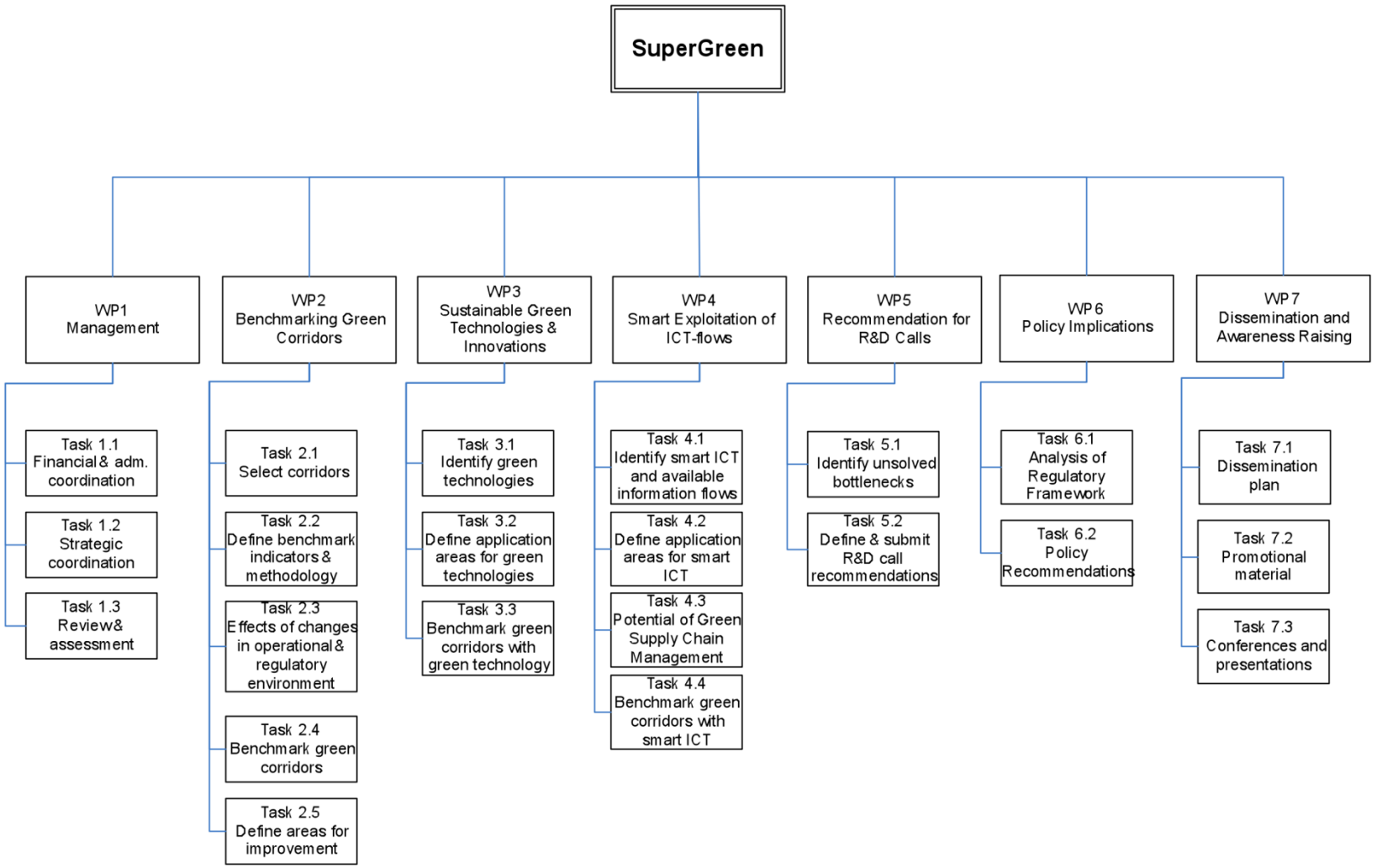
Swedish Ministry of Transport:

A green transport corridor is characterised by:

- Sustainable logistic solutions
- Integrated logistic concepts with utilisation of co-modality
- A harmonised system of rules
- National/international goods traffic on long transport stretches
- Effective and strategically placed transhipment points and infrastructure
- A platform for development and demonstration of innovative logistic solutions



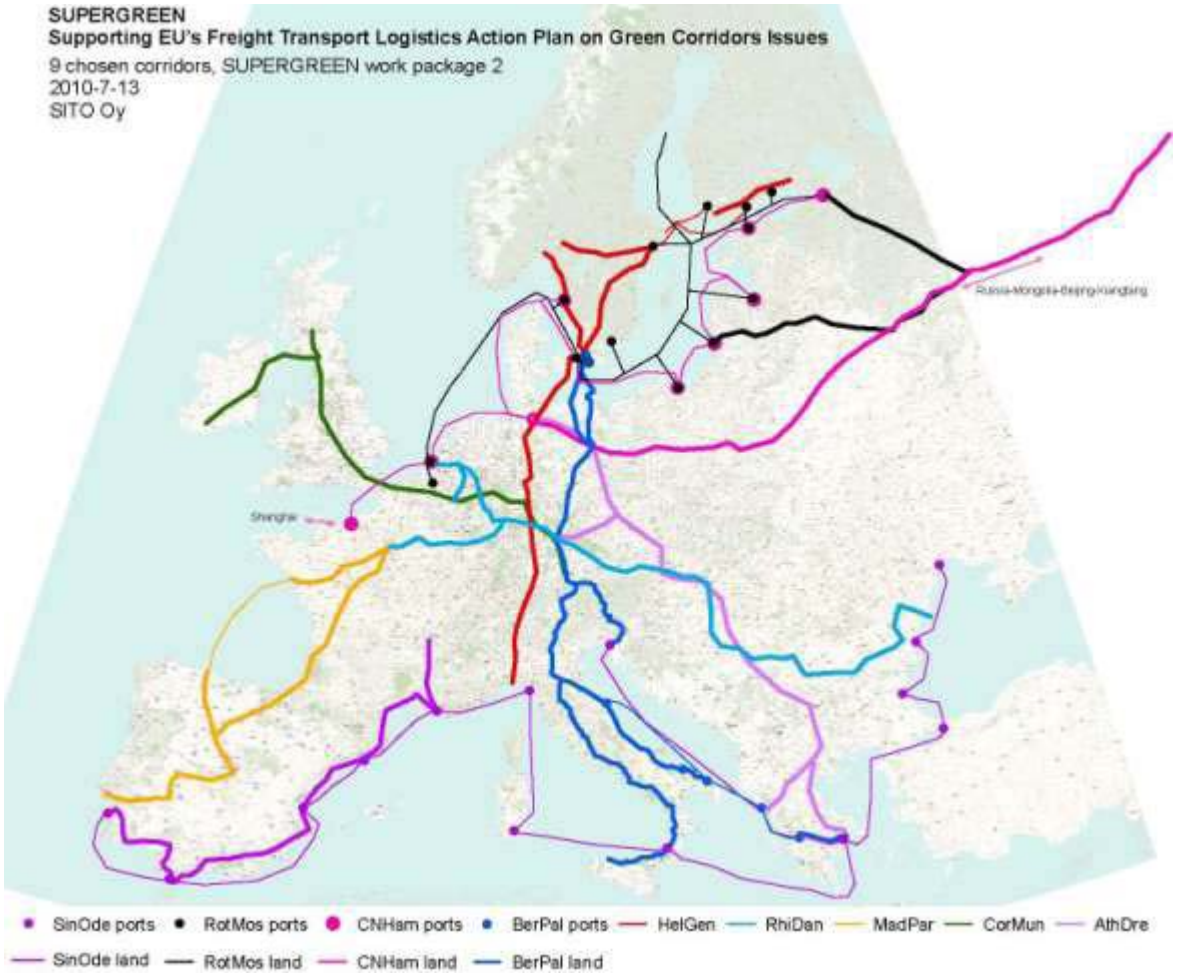
SuperGreen work package structure



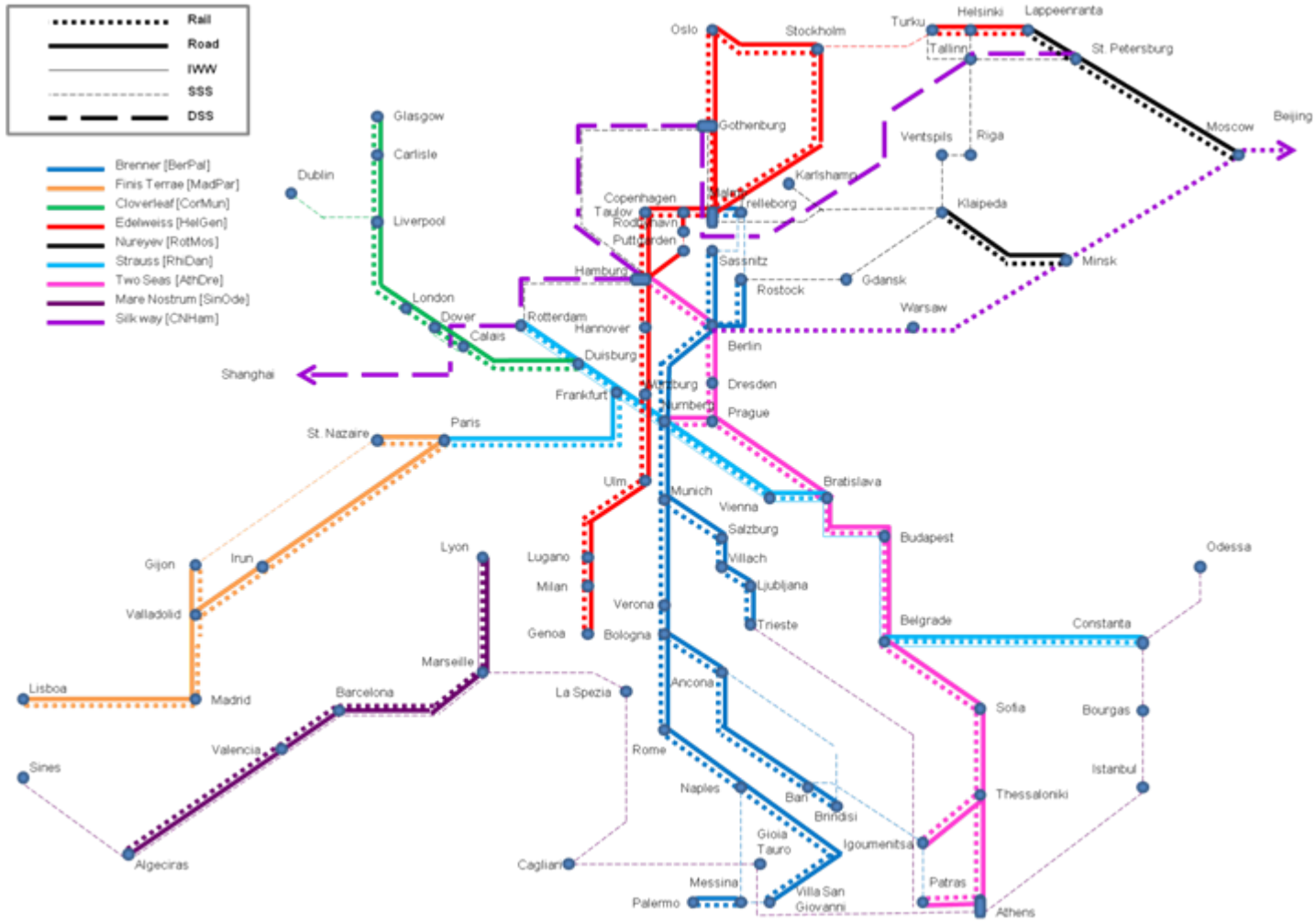
SuperGreen Corridors

BRIEF DESCRIPTION- BRANCHES	NICKNAME
Malmö-Trelleborg-Rostock/Sassnitz- Berlin-Munich-Salzburg-Verona-Bologna-Naples-Messina-Palermo Branch A: Salzburg-Villach-Trieste (Tauern axis) Branch B: Bologna-Ancona/Bari/Brindisi-Igoumenitsa/Patras-Athens	**Brenner**
Madrid-Gijon-Saint Nazaire-Paris Branch A: Madrid-Lisboa	**Finis Terrae**
Cork-Dublin-Belfast-Stranraer Branch A: Munich-Friedewald-Nuneaton Branch B: West Coast Main line	**Cloverleaf**
Helsinki-Turku-Stockholm-Oslo-Göteborg-Malmö-Copenhagen (Nordic triangle including the Oresund fixed link)- Fehmarnbelt - Milan - Genoa	**Edelweiss**
Motorway of Baltic sea Branch: St. Petersburg-Moscow-Minsk-Klapeida	**Nureyeev**
Rhine/Meuse-Main-Danube inland waterway axis Branch A: Betuwe line Branch B: Frankfurt-Paris	**Strauss**
Igoumenitsa/Patras-Athens-Sofia-Budapest-Vienna- Prague-Nurnberg/Dresden-Hamburg	**Two Seas**
Odessa-Constanta-Bourgas-Istanbul-Piraeus-Gioia Tauro-Cagliari-La Spezia-Marseille-Barcelona-Valencia-Sines Branch A: Algeciras-Valencia-Barcelona-Marseille-Lyon Branch B: Piraeus-Trieste	**Mare Nostrum**
Shanghai-Le Havre/Rotterdam-Hamburg/Göteborg-Gdansk-Baltic ports-Russia Branch:Xiangtang-Beijing-Mongolia-Russia-Belarus-Poland-Hamburg	**Silk Way**

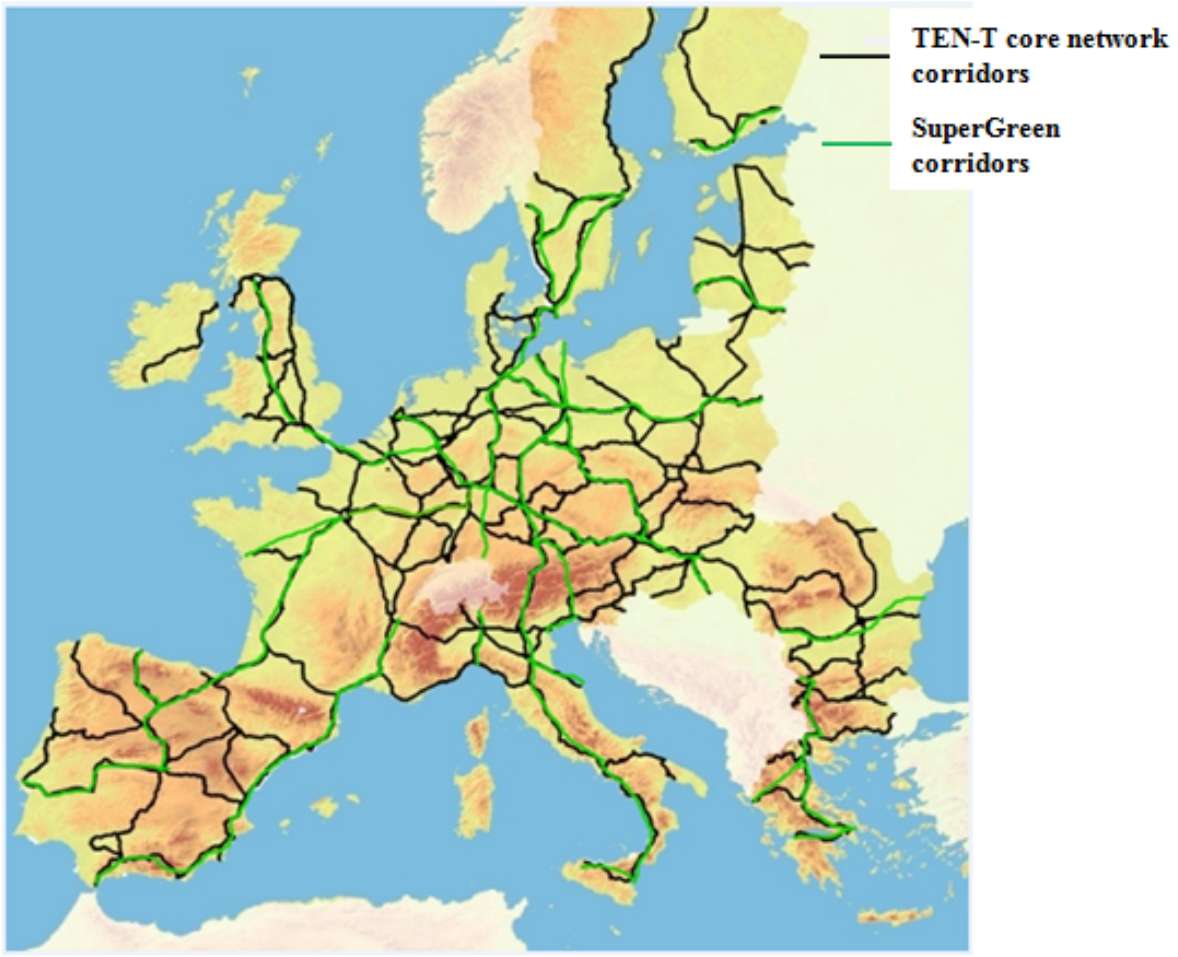
SuperGreen Corridors



SuperGreen Corridors



TEN-T Core network corridors (2011) vs SuperGreen corridors (2010)



TEN-T core network in metro format

The initial set of KPIs

Efficiency	Absolute cost	€/tonne
	Relative cost	€/ton-km
Service quality	Transport time	hours
	Reliability (time precision)	% of shipments on time
	Frequency of service	number per week
	ICT applications	scale 1-5
	Cargo security	incidents/shipments
	Cargo safety	incidents/shipments
Environmental sustainability	CO_2-eq	g/ton-km
	SOx	g/1000 ton-km
	NOx	g/1000 ton-km
	PM_{10}	g/1000 ton-km
Infrastructural sufficiency	Congestion	average delay/ton-km
	Bottlenecks	scale 1-5
Social issues	Land use (urban & sensitive areas)	% of buffer zone
	Traffic safety	fatal.& ser.injur./mio ton-km
	Noise	% of length >50/55 dB

The most important KPIs

Relative transport cost (to the user)	€/ton-km
Transport time	hours
Reliability (on-time delivery)	% of shipments
Frequency of service	number per year
CO_2-eq emissions	g/ton-km
SOx emissions	g/ton-km

Various workshops for external consultation

Results of the Brenner corridor (pilot)

KPIs	Intermodal	Road	Rail	SSS
Cost (€/tkm)	0.03 – 0.09	0.05 – 0.07	0.05 – 0.80	0.04
Av. speed (km/h)	9 – 41	19 – 40	44 – 98	23
Reliability (%)	95 – 99	50 – 99	50 – 100	100
Frequency (no/year)	26 – 624	104 – 2600	208 – 572	52
CO_2 (g/tkm)	10.62 – 42.11	46.51 – 71.86	9.49 – 17.61	16.99
SOx (g/tkm)	0.02 – 0.14	0.05 – 0.08	0.04 – 0.09	0.12

- Wide range of values due to different characteristics of the segments comprising the corridor
- Low speed of road transport signifies delays in terminals

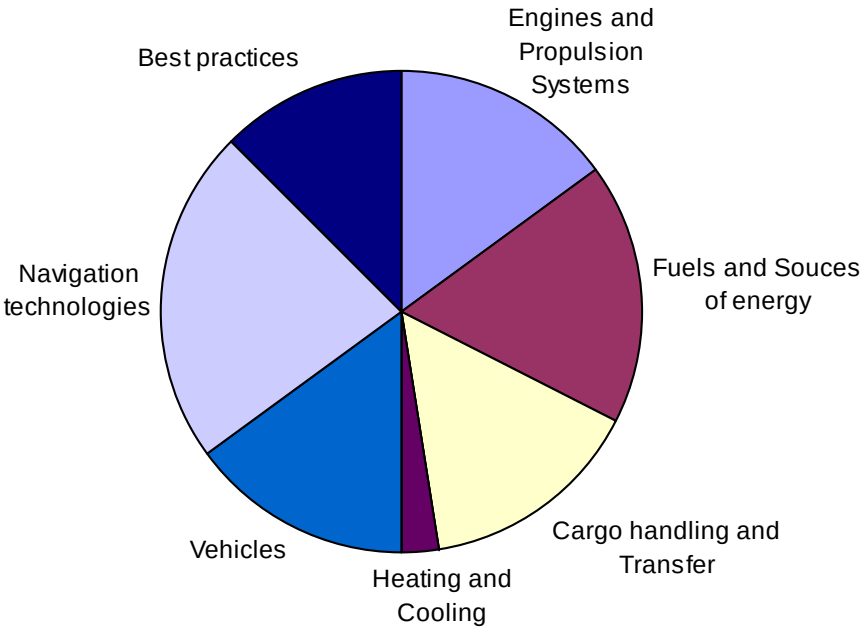
Benchmarking results (all corridors)

Corridor	Mode	Cost (€/tkm)	Av. speed (km/h)	Reliability (%)	Frequency (no/year)	CO_2 (g/tkm)	SOx (g/tkm)
Brenner	Intermodal	0.03-0.09	9-41	95-99	26-624	10.62-42.11	0.02-0.14
	Road	0.05-0.07	19-40	50-99	104-2.600	46.51-71.86	0.05-0.08
	Rail	0.05-0.80	44-98	50-100	208-572	9.49-17.61	0.04-0.09
	SSS	0.04	23	100	52	16.99	0.12
Cloverleaf	Road	0.06	40-60	80-90	4.680	68.81	0.09
	Rail	0.05-0.09	45-65	90-98	156-364	13.14-18.46	0.01-0.02
Nureyev	Intermodal	0.10-0.18	13-42	80-90	156-360	13.43-33.36	0.03-0.15
	SSS	0.05-0.06	15-28	90-99	52-360	5.65-15.60	0.07-0.14
Strauss	IWT	0.02-0.44	-	-	-	9.86-22.80	0.01-0.03
Mare Nostrum	SSS	0.003-0.20	17	90-95	52-416	6.44-27.26	0.09-0.40
	DSS	-	-	-	-	15.22	0.22
Silk Way	Rail	0.05	26	-	-	41.00	-
	DSS	0.004	20-23	-	-	12.50	-

- The EcoTransIT World web-based calculator was used for estimating emissions

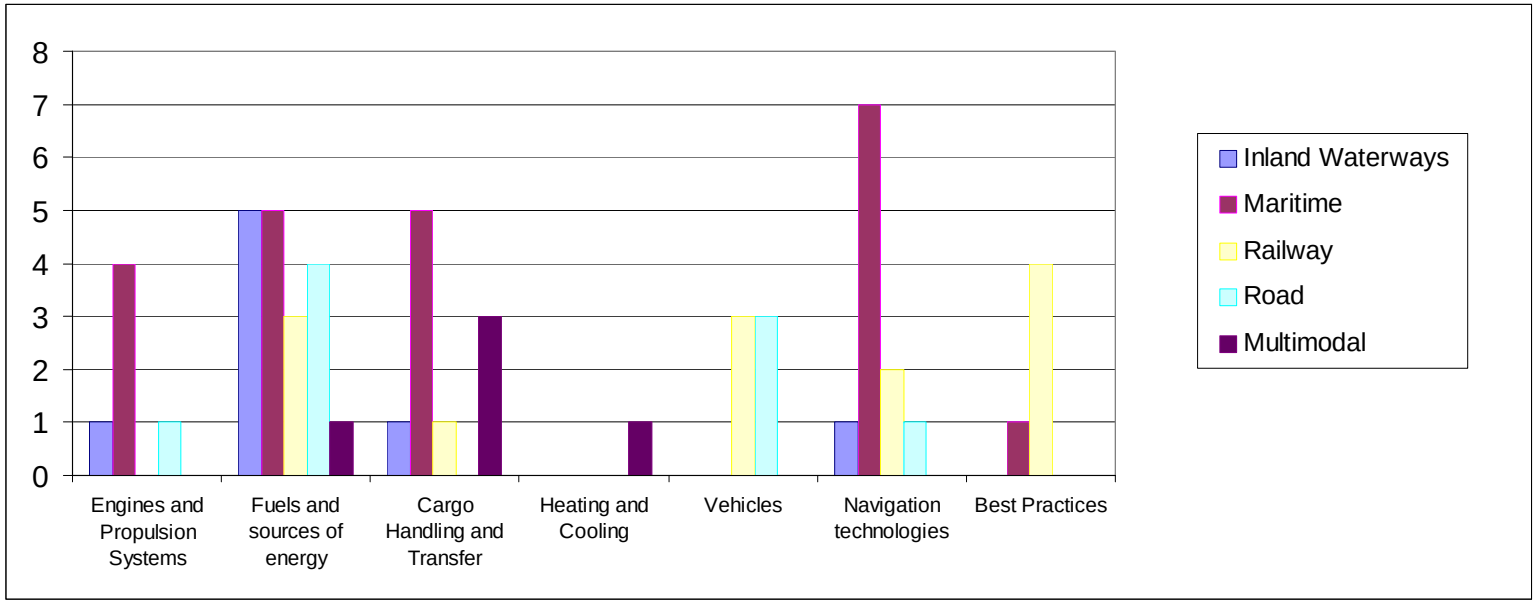
Benchmarking of green technologies

- A total of 138 innovative technologies have been analyzed to identify the most promising in terms of greening potential.
- They have been grouped in 6 categories ranging from ‘very important’ to ‘irrelevant’.



Benchmarking of green technologies ii

- 40 technologies (~30%) belong to the first two categories ‘very important’ and ‘important’.
- Considering the transport mode, the total number of applications grows up to 57.



The 7 ICT "clusters"

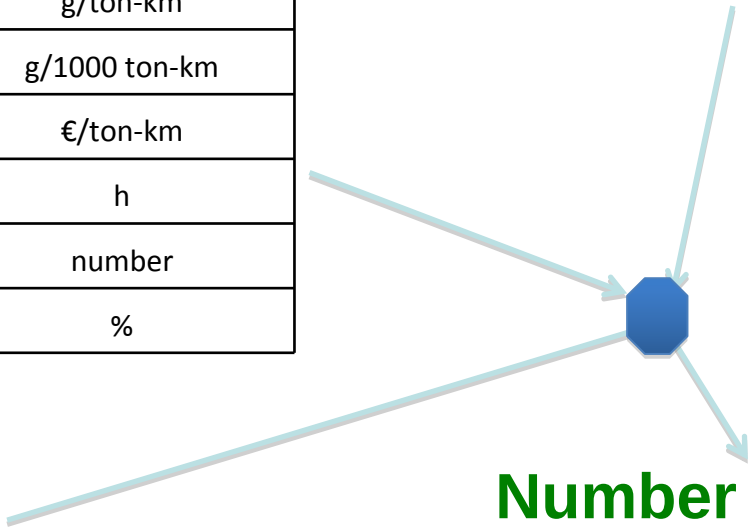
1. EXPERT CHARGING SYSTEMS
2. CENTRALIZED TRANSPORT MANAGEMENT SYSTEMS
3. DECENTRALIZED TRANSPORT MANAGEMENT SYSTEMS
4. BROADCASTING, MONITORING AND COMMUNICATION SYSTEMS
5. SAFETY SYSTEMS
6. E-ADMINISTRATIVE SYSTEMS
7. EMISSIONS FOOTPRINT CALCULATOR SYSTEMS

Benchmarking of ICTs

Set of KPIs

KPI	Unit
CO2 emissions	g/ton-km
SOx emissions	g/1000 ton-km
Relative transport cost	€/ton-km
Transport time	h
Frequency, services per year	number
Reliability, on time deliveries	%

List of corridors:
All 9 corridors



List of ICT Technologies:
7 ICT clusters
13 ICT systems

Number of corridor/mode/ICT scenarios: 15

ICTs per mode and per corridor: 15 "scenarios"

	Corridor	Transportation Modes	ICT Cluster (Application)
1	Mare Nostrum	SCM	Broadcasting, monitoring & communication systems (SMARTBOX)
2	Brenner	Road Rail	Expert charging systems (congestion charging) Centralised transportation management systems (ERTMS)
3	Two Seas	Maritime	Broadcasting, monitoring & Communication systems (Broadband communication: WiFi/WiMAX, digital VHF, GNSS: GPS, Glonass, Galileo)
4	Silk Way	Maritime Rail	Emissions footprint calculator systems (emissions sensors) Centralised transportation management systems (ERTMS)
5	Edelweiss	Road	Emissions footprint calculator systems (Speed limits on the highway depending on CO2 emission values)
6	Finis Terrae	Maritime Rail	E-Administrative Systems (JUP) Centralised transportation management systems,(ERTMS)
7	Strauss	Inland waterways	Centralised transportation management systems (RIS) Expert charging systems (river tolls)
8	Nureyev	Maritime	E-Administrative Systems (fretis) Centralised transportation management systems (assign icebreakers to ships)
9	Cloverleaf	Road	Decentralised transportation management systems (platooning), Safety systems (adaptive speed control)

Plans ahead

- Finalize benchmarking of green technologies and ICTs
- Finalize remommendations for further R&D
- Finalize policy recommendations
- Disseminate!

BE SURE NOT TO MISS!

- SuperGreen final event

- Jan. 11, 2013

- Gothenburg, Sweden

Thank you for your attention

www.supergreenproject.eu

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