

JANUARY 2012

# **EDITORIAL**

*By Prof. H. N. Psaraftis Project Manager, SuperGreen project* 

**Progress in the SuperGreen** project has been according to plan. The second plenary SuperGreen workshop took place at Villa Pagoda, just outside Genova, Italy on September 12, 2011. It attracted an audience in the area of green freight logistics. The objective was to present project results achieved thus far and obtain stakeholder feedback on a number of technical issues that can affect the economic, social and environmental sustainability of green corridors. For more information on this workshop, please see the next section of the newsletter.

Throughout the rest of 2011 the project has been working full steam on WP3 (green technologies), WP4 (ICT), WP5 (recommendations on future R&D calls), and WP6 (policy recommendations).

An interesting development as regards the project took place in October 2011, when the European Commission unveiled its plans as regards TEN-Ts.

In line with the 2011 White Paper, the Commission's

proposal for a Regulation revising the TEN-T guidelines aims to redefine the long-term strategy for the TEN-T policy up to 2030/2050.

The establishment and development of a complete TEN-T, consisting of infrastructure for railways, inland waterways, roads, maritime and air transport is the main objective. On the 'conceptual planning' of the network, a duallayer approach, consisting of a comprehensive and a core network, has been selected. The comprehensive network constitutes the basic layer of the TEN-T and is, in large part, derived from the corresponding national networks. It should be in place by 2050 at the latest. The core network overlays the comprehensive network and consists of its strategically most important parts. It constitutes the backbone of the multimodal mobility network and concentrates on those components of TEN-T with the highest European added value: cross border missing links, key bottlenecks and multimodal nodes. The core network is to be in place by 2030 at the latest.





SuperGreen is co-founded by the European Commissior in the scope of 7th Research Programme





Figure 1 below shows the TEN-T core network vis-à-vis the SuperGreen corridors established in the summer of 2010 in the context of Task 2.1.

The figure is for land-based and inland waterway corridors only (a similar map exists for maritime corridors).



Figure 1. Overlap between the TEN-T core network (in black) and SuperGreen corridors (in green). Land-based and inland waterway corridors only.

One can notice the overlap, which is quite remarkable given the fact that the procedure for selecting the SuperGreen corridors in 2010 was quite different from the one followed for the establishment of the TEN-T core network in 2011.

All SuperGreen public deliverables can be found by visiting this link:

http://www.supergreenproject.eu/info.html

The deliverable pertaining to corridor selection is D2.1.

The next major project workshop is planned for April 17, 2012 (Gijon, Spain). The focus of this workshop will be on policy issues. Please stay tuned for more details, but please mark your calendars for this event!



# Second Plenary Workshop, Genova, 12th September 2011

**The second Plenary** SuperGreen Workshop took place in Genova, Italy, on 12th September 2011 to communicate on project progress and discuss with stakeholders about green logistics and relevant technologies. The workshop has been hosted by D'Appolonia, leader of the work package on Sustainable Green Technologies & Innovation.

The main objectives of the workshop were the appraisal of the extensive collections of Green Technologies and Information and Communications Technologies (ICT) suitable for application in selected Green Corridors. The workshop has been attended by 40 participants representing logistics service providers, carriers and transport companies, policy makers, and research institutions.

The Project Officer Ms Fleur Breuillin opened the workshop giving an overview of the evolving Green Corridors in the context of the Logistic Action Plan, the new White Paper on Transport Policy and the revised TEN-T Guidelines.

Then the coordinator gave an overview of the corridors benchmarking, from the selection of the Green Corridors and KPI for evaluation to the identification of the major actual bottlenecks, introduced the audience into the current status of the project.

Presentations on the identification, selection and possible application of sustainable and ICT technologies gave explanation on the approach applied in SuperGreen project to define the possible areas of application of technologies and how they could improve the sustainability performance of the corridors, once compared with current solutions.

Two parallel sessions have been also conducted to benchmark Green Technologies and smart ICTs on Green Corridors with the support of the stakeholders attended the meeting.

> Sara Fozza, Valerio Recagno – WP Leader D'Appolonia S.P.A.





## **Benchmarking Green Corridors**

**Benchmarking Green Corridors** involved a set of tasks aiming at evaluating, selecting and developing of the green corridor concept. Nine corridors were selected for studying and a set of KPIs was defined, the effects of changes in operational and regulatory framework were estimated and the benchmarking exercise in six corridors was performed on the basis of the six most important KPIs: CO2, SOx, Relative Transport Costs, Transport Time, Frequency and Reliability. Six workshops have been arranged for stakeholder consultation and evaluation of the results. The



Major bottlenecks in greening each one of the SuperGreen corridors were defined. Based on this and in combination with the work done in the project, common development areas for all corridors were defined. Development areas were identified in the following groups: Operations; Policies, regulations and legislation; Infrastructure; and ICT & technology. The major development areas concern new ICT systems, improvement of railway operations (infrastructure, operational, ICT), harmonization of national regulations, improvement of customs procedures, hinterland connections, and adequate capacity in all transport networks and transfer points. Improvements towards sustainability are needed in each one of the corridors for different purposes.

Several good practices to improve sustainability were also identified in all corridors and in all transport modes. The problem that arose was the lack of harmonization and co-operation. These are vital elements that are needed to be addressed in order to make use of the good practices more widely. Based on the identified common development areas and best practices the most favorable areas for improving sustainability are: Improvement of green supply chain design and management, harmonization and development of policies and regulations, development and harmonization of transport infrastructure and transport technology, harmonization and development of ICT solutions and transport documents, improvement of transparency of information and increase of cooperation in supply chains and transport systems and ensuring supply of good quality labor.

The figure summarizes the findings from the survey carried out in the project. The major common development areas and the best practices which facilitate the greening of transport corridors are presented. There are a lot of useful practices already developed. However many of these are not widely used because common desire and harmonization is lacking. With improved co-operation and harmonization in the supply chains the corridors would be greener.



### **COMMON DEVELOPMENT NEEDS**

#### Supply chain and transport operations

- Interoperability on railways
- Border crossings
- Safety and security
- Financing and insurance of vessels

#### **ICT and Technology**

- Need to develop new ICT systems
- Implementation of ERTMS
  - Harmonization of systems and data
- Improvements to RIS

#### Infrastructure

- Capacity of ports and rail & road networks
- Improvements of rail network
- Hinterland connections of ports
- Shallow water sections, insufficient lock capacities

### Policies, regulations & legislation

- Harmonization of national regulations
- Customs procedures
- Procedures with authorities

### **BEST PRACTICES:**

### Supply chain and transport operations

- Increase share of the "greener" transport modes and intermodal transports
- Consolidation
- "The new sailing"
- Carbon auditing

#### **ICT and Technology**

- Sensor evaluation platform
- Pathfinder
- ERTMS
- Share of FMS data
- Freight exchange platform
- IRIS and Donau River Information Services
- CESAR
- Cleanest Ship
- Electrical cars
- Alternative fuels/energy supply for sea

#### Infrastructure

- Electrification of all rail network
- River engineering on the Danube
- Joint Statement
- Port electricity
- Extension of road capacities
- Green Motorway concept

#### Policies, regulations & legislation

- NAIADES, PLATINA
- Reduction of SOx in IWT
- Railway packages to revitalize railways policy
- Better use of Channel Tunnel capacity
- Antitrust exemption, incentives

### MOST FAVOURABLE AREAS FOR IMPROVING SUSTAINABILITY:

- Improvement of green supply chain design and management
- Harmonization and development of policies and regulations
- Development and harmonization of transport infrastructure and transport technology
- Harmonization and development of ICT solutions and transport documents
- Improvement of transparency of information and increase of co-operation in supply chains and transport systems
- Ensuring supply of good quality labour

### Ilkka Salanne, Sanni Rönkkö – WP Leader Sito Ltd



# Sustainable Green Technologies and Innovations

**This activity aimed** at identifying Green Technologies to be applied in selected SuperGreen corridors with the purpose of improving the sustainability of selected corridors and solving identified bottlenecks.

In the second year of the project 50 sustainable technologies have been identified to be added to the previous 140 identified with the first round collection.

All the technologies have been analyzed and classified on the basis of their greening potential. At the end of the analysis 20 technologies have been considered relevant for the SuperGreen purposes and then are taken into consideration for further activities.

On the basis of the knowledge of the Partners, the selected technologies have been linked to the different sections (segments and nodes) of the SuperGreen corridors in order to identify possible areas of application. This process is accomplished through the definition and population of a Technology vs. Application Matrix; one matrix has been designed per corridor, giving a preliminary indication about the possible application of sustainable technologies (or family of technologies) and an assessment of their greening potential compared with standard solutions, thus indicating the importance of the technology for each application.

The information gathered within this process is made available via the SuperGreen Knowledge Base, a web based repository for browsing the results. The tool is available at the link http://88.32.124.84/SuperGreen/

As SuperGreen also aims at benchmarking the selected corridors with sustainable technologies suitable for specific segments and nodes, a comparison will be made with respect to a baseline, i.e., the current status of the corridors, and with respect to specific Transport Chains working on the corridors.

> Sara Fozza, Valerio Recagno – WP Leader D'Appolonia S.P.A.



**Work on WP4** (Smart Exploitation of ICT Flows) focused on several fronts: These included the completion of deliverable D4.2, and moving ahead on Tasks 4.3 and 4.4.

The purpose of Deliverable 4.2 (Define application areas for smart ICTs) is to identify application areas that are promising for using ICT and information flows towards the goal of optimizing environmental attributes of a supply chain, both context-wise and geography-wise. These application areas include specific modal links, nodes such as ports or freight yards, cargo corridors, multimodal chains, and alternative routes between specific points. The approach is holistic in the sense of encompassing also non-environmental attributes such as profitability, competitiveness, intermodal efficiency, cost-effectiveness and throughput-related parameters. A number of such application

### The ICT clusters are the following:

- Expert charging systems
- Centralised transportation
  management systems
- Decentralised transportation management systems

All the proposed ICTs would directly or indirectly promote fuel economy and hence less emissions and environmental friendliness. They would also hopefully promote ICT interoperability especially at cross-border settings, areas are defined and for each of them a list of performance attributes (both environment-wise and otherwise) is made, with specific functional linkages among them is compiled. It is linked with other Tasks of WP2 and other WPs of the project.

A specific methodology was used in order to come up with a set of possible ICT application areas capable of greening the transportation chain. This is attempted for all 9 corridors identified in Task 2.1. The task describes possible motivations and obstacles for greener transportation and proposes solutions linked with ICT systems. Each solution is analysed presenting the rationale, the motivation and the expected improvement in financial, environmental and quality based attributes (only in a qualitative sense at this phase). Also, ICT technologies are classified into "ICT clusters", according to the preliminary findings of the analysis.

- Broadcasting, monitoring & communication systems
- Safety systems
- E-Administrative Systems
- Emissions footprint calculator systems

which is very important from an EU policy perspective.

Progress on Tasks 4.3 and 4.4 (both finalising deliverables in early 2012) will be reported in future newsletters.

### Harilaos N. Psaraftis – WP leader National Technical University of Athens



**For Work Package 5** (WP5) – Recommendations for R&D Calls – the first meeting was organized in Trondheim on the 30th of May 2011, as a joint effort with the SuperGreen PMC meeting on the 31st. Chaired by Dr. Atle Minsaas the WP5 participants discussed several key issues

1. Identify unsolved transport bottlenecks, and perform a gap analysis regarding availability for alleviating technology and ICT solutions (Task 5.1).

for how to secure progress of work and distribution of tasks among the WP5 representatives. Key information already available for WP5 was presented by WP2, WP3 and WP4 leaders. Based on the work and findings done on the 9 identified SuperGreen corridors, the main objective of WP5 is twofold:

2. Based on the potential gaps; define and submit R&D recommendations for future calls (Task 5.2).

In terms of methodology, both tasks in WP5 will base their work on the results from the previous WPs 2, 3, and 4, respectively:

- Key Performance Indicators for benchmarking green corridors, and SuperGreen transport corridor definitions, from WP 2;
- Green technologies, application areas and greening potential from WP 3;

Further, the analysis of the identified bottlenecks in Task 5.1 are limited to the results from the SuperGreen corridor analyses, meaning that other bottlenecks that may exist will not be subject to investigation. However, regarding identified green technologies (WP 3) and e-freight solutions (WP 4), contributing to bottlenecks mitigation and removal, a gap analysis will be performed to determine what

- Improvement of green supply chain design and management
- Harmonization and development of ICT solutions and transport documents
- Harmonization and development of policies and regulations
- Development and harmonization of transport infrastructure
- From the work carried out so far, these 'common development needs' are likely to be leading for the R&D recommendations to be presented by T5.2. WP5 will deliver its two reports in mid January

 Smart ICT and information flows, application areas and corresponding greening potential from WP 4.

is available and what is needed to make the corridors greener according to the defined benchmarks. This potential gap makes the basis for potential R&D recommendations to be described in task 5.2.

Moreover, the initial findings from WP5 indicate that in order to secure establishment of Green Corridors, there are certain developments needs that must be supported;

- Availability of quality personnel
- Development and harmonization of transport technology, and
- Transparency of information and in creased co-operation in co-modal supply chains

2012 and two consecutive updated versions by mid January 2013.

Even Ambros Holte – WP Leader Marintek



# (Policy Recommendations)

Perhaps the most significant achievement in WP6 (Policy Recommendations) has been the completion of deliverable D6.1 (Analysis of regulatory framework). This document provided an overview of the regulatory framework that needs to be considered when developing the green corridor concept. A total of 35 policy documents, mostly of the EU but also of other international organisations, were reviewed in the framework of this task. Among them, the 2011 White Paper, which was released after submission of the first version of this report, enjoys a prominent position due to its significance. The analysis was performed in 8 themes (Strategic issues, Policy issues, Infrastructure, Logistics, Road transport, Rail transport, Maritime transport and ports, and Inland waterway transport).

In general, significant progress has been made by the European Commission during the last decade in creating a legal framework conducive to the needs of a modern European transport system. However, much remains to be done. Pending regulatory and market issues, most relevant to green corridor development are:

*Liberalisation of transport operations:* Despite progress made, some transport market segments are not yet fully and de facto liberalised.

• Regulation 913/2010, which aims to establish a European rail network where sufficient priority is given to international freight trains.

**Internalisation of external costs:** Many of the external costs of transport today are still not internalised.

Creation of a European transport network: The recently introduced concept of a dual layer planning approach with a 'core network' as the top layer is an effort by the Commission to address this problem and create a transport network with true European added value.

**The corridor approach:** Particularly important for green corridor development is the fact that the corridor approach is seen as the basic instrument for core network implementation, on the grounds that the consolidation of large volumes for transfer over long distances is key to efficient intra-EU freight transport.

**Interoperability** and co-modality: Market integration both within and between transport modes is still far from being achieved. Intermodal infrastructure is not sufficiently developed and exchanging data between the modes is difficult because of the co-existence of non-compatible modal ICT systems.

**The transport modes:** The emphasis placed by the EU transport policy documents on setting emission standards, deployment of ITS, and improvement of safety is common for all transport modes. Issues of particular importance for SuperGreen include:

• The intention of the new White Paper to further develop the 'European maritime transport space without barriers' into a 'Blue Belt' of free maritime movement in and around Europe so as to use waterborne transport to its full potential.

> Humberto Moyano – WP Leader Gijón Port Authority



# **SuperGreen Project Partners:**



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