PROFIT TO SHARE

Green logistics corridors as a strategic tool for decarbonisation

Key concepts and opportunities

Francesco Barontini Accociated partner – Infrastructures & Transport

Definitions

"Green corridors" is an EU concept introduced in 2007 that aims at developing **integrated**, **efficient** and **environmentally** friendly transportation of freight between major hubs and by relative long distances.

Green corridors are currently in the development stage and key stakeholders seek to establish a **shared vision** and **identify suitable trade routes for zero-emission supply chains**.

Since green corridors are complex, **their success depends on the cooperation of all actors in** the value chain rather than a single stakeholder.

Their implementation depends on fuel producers, logistics providers, port authorities, vessel operators, cargo owners, regulatory bodies, and investors, with each driving zero-emission transportation modes.

Key challenges include **regulatory alignment**, **infrastructure upgrades**, **fuel costs**, **stakeholder coordination, technology standardization and digitalization**, and **market uncertainty**, all critical for their long-term viability.

ம்

Examples





Case A - Single-point green corridors

establish zero-emission shipping routes around a particular location, i.e., a port hub allowing round-trip bunkering. Prepost haulage are realized with low or zero emission transport services. Typically, Ro-Ro and Ro-Pax based services relies on this organization.

Case B - Point-to-point green corridors are single-route green corridors between 2 ports.

Typically, more niche segments (bulk) based around a commodity transportation route or Ro-Ro/Ro-Pax services.

Pre-post haulage are realized with low or zero emission transport services.

 \equiv

Examples

 \equiv





Case C - Network green corridors establish routes between more ports

where vessels can rely on a wide availability of alternative fuels. Typically, container-based services relies on this organization. Pre-post haulage are realized with low or zero emission road or rail services.

Case D - Network green corridors establish routes between more ports and intermodal terminals where vehicles rely on a wide availability of alternative fuels and the intermodal integration avoids the use of road transport.

Typically, supply chain managed by one global logistics player.

Cpts

Global overview

 \equiv

Cargo owners are interested in reducing the emissions produced, especially Scope 3. They plan transport solutions, in order to provide refuelling possibilities for their suppliers within their premises or along the routes. **Ports** are key nodes of the transport chain, the should ensure **availability of alternative fuels**, investing in infrastructures and promoting agreements with the fuel producers. Shipping companies and transport operators are at the heart of global supply chains, they invest in solutions for retrofitting the fleet. Transport routes are selected based of the availability of refuelling infrastructures in maritime ports.

Low emission multimodal solutions are implemented for the transshipment of goods.

Intermodal solutions

based on regular rail transport services are used to avoid emission on the long distances.

Key players



- Infrastructure investments to ensure the availability of alternative fuels and the possibility of intermodal integration
- Coordination between actors
- Law enforcement (ETS)

Contransport Companies	
Take the risk of	•
investing in new	
technologies by	
innovating the operating	
models	
Organize transport	

- Organize transport chains based on the availability of alternative fuels infrastructure
- providers Ensuring integration between different transport systems and operators of the entire chain, also to guarantee transport safety,

Technology

- security and reliability
- Ensuring a collaborative approach between multiple actors



Investing in alternative fuel production and distribution systems with low short-term profits and market returns

٠

• Ensure fuel availability along the supply chain in line with the political priorities (TEN-T)



- Manage the entire logistics chain and promote collaborative logistics models between different suppliers
- Promote sustainability policies through appropriate reporting systems

The high complexity of the integration process requires an approach based on **pilot projects**. To date, according to the Global Maritime Forum, there are over **50 initiatives** in the world based on green maritime logistics corridor. Preliminary analysis on the **availability of alternative fuel infrastructure**, the **regulatory obligations** and the **final impacts in terms of costs & benefits** represent a fundamental step for the success of the projects.

ດ

Opportunities: European programmes

Innovation fund

The Innovation Fund, financed by EU Emissions Trading System revenues, is one of the world's largest funding programmes for the demonstration of innovative low-carbon technologies. The Fund focuses on **highly innovative clean technologies and big flagship projects** with European added value that can bring significant emission and greenhouse gas reductions.

Budget availability: €40 billion from 2020 – 2030, **€28 billion to be assigned** Next deadlines: Q1 2026

Connecting Europe Facilities 🔶

The Alternative Fuels Infrastructure Facility (AFIF) is the specific instrument that aims at supporting the deployment of Alternative Fuel supply infrastructure (but also vehicles), contributing to decarbonising transport along the TEN-T network. **The Fund focuses on available commercial clean technologies and high mature projects**.

Budget availability: €2.5 billion from 2021 – 2027, €578 million to be assigned Next deadlines: Q1 2026

In most cases EU grants represent the actual "green light" for project's implementation, by **reducing the investment's profitability risk and the use of own resources for initial CAPEX**. In case of lack of EU funding, weak financial arguments might obstacle the start of the project, deriving from the **uncertainty on the future cash flows**.

What is financed?

Innovation fund

Clean energy production and infrastructure:

- Renewable energy and clean-tech manufacturing
- Renewable fuels of Non-Biological Origin (RFNBO)
- Hydrogen production and installation

Clean energy conversion and storage:

- Energy storage solutions, batteries
- Electrolysers, fuel cells, and heat pumps

Industrial decarbonisation:

- Carbon Capture and Storage and Carbon Capture and Utilisation
- Innovative electrification systems replacing fossil fuels in industry

Sustainable mobility manufacuring:

 Manufacturing of electric vehicle batteries (road LDV & HDV, Public transport)

Connecting Europe Facilities 🛹

Electricity recharging infrastructure:

- Road LDV & HDV
- Public transport
- Inland waterway and maritime vessels, and vessels for port operations
- Electrification of port and airport operations

Hydrogen refuelling infrastructure:

- Road LDV & HDV
- Public transport
- Inland waterway and maritime vessels, and vessels for port operations
- Railways
- Electrification of port and airport operations

Ammonia & Methanol bunkering infrastructure:

 Inland waterway and maritime vessels, and vessels for port operations

Synergetic infrastructures

- On-site electricity generation and hydrogen production based on renewable energy sources
- Electricity grid connection
- On-site electricity storage equipment

 \equiv

Projects and technolgies financed in the period 2020-2025

Innovation fund

Fuels and technologies financed for transport (€ mln)

Hydrogen	1.416,8
Carbon Capture, Storage and Utilization	1.053,0
Innovative technologies (V2G, wind etc)	384,4
Batteries and Energy Storage	336,4
Renewable Fuels (SAF, biofuels, methanol etc.)	112,0

Connecting Europe Facilities

Fuels and technologies financed for transport (€ mln)

Electric	1.279,4
Hydrogen	370,4
Electrolyser (synergetic)	25,2
Solar panels (synergetic)	22,4
Methanol	16,6
Ammonia	13,6
Grid connection (synergetic)	7,3
LNG	4,3
Cold Ironing	3,2

Transport modes financed (num. of projects)



Transport modes financed (num. of projects)



 \equiv

12.

Thank you





Francesco Barontini

Associated partner f.barontini.@ptsclasc.om +393388799412