Visegrad Fund

Best practices, government support and investment programs for the development of green and sustainable transport infrastructure in Romania

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The heart of modern transport systems.
The term implies a degree organization and control over freight movements that only modern technology could have brought into being.
It has become one of he most important developments in the transportation industry.

LOGISTICS

GREENNESS

It become a code-word for a range of environmental concerns, and is usually considered positively.
It is employed to suggest compatibility with the environment, and thus, is something that is beneficial.

GREEN LOGISTICS

an environmentally-friendly and efficient transport and distribution system.

How the logistics industry has responded to the environmental imperatives is not unexpected, given its commercial and economic imperatives, but by virtually overlooking significant issues, such as pollution or congestion, resource depletion, means that the logistics industry is still not very “green”

It is not a question of whether or not the logistics industry will have to present a greener face. Pressures are mounting from a number of directions that are moving all actors and sectors in the economy.

top-down approach

Government action will force a green agenda on the industry

Pricing

Legislation

Rise to the reverse logistics industry

bottom-up approach

Firms have found that by advertising their friendliness towards the environment and their compliance with environmental standards, they can obtain an edge in the marketplace over their competitors.

Empty moves

Recycling

Environmental management systems

ISO 14000 and EMAS (Environmental Management and Audit System)

In these systems firms receive certification on the basis of establishing an environmental quality control tailored to that firm, and the setting up of environmental monitoring and accounting procedures

THE HUB STRUCTURE CASE

Emerging of this logistic infrastructure meant the reorganization of transport networks in the last 20 years, for air, rail and maritime freight transportation.
It has reduced costs and improved efficiently through the consolidation of freight at hubs.

Despite the cost savings in many cases, the flows, modes and terminals that are used by pursuing logistical integration are the least sustainable and environmentally friendly.
The hub structure concentrates traffic at a relatively small number of terminals. This concentration exacerbates local environmental problems caused by freight, such as noise, air pollution and traffic congestion, notably at the urban level.

In addition, the hub structures of logistical systems result in a land take that is exceptional.
Airports, seaports and rail terminals are among the largest consumers of land in urban areas. For many airports and seaports the costs of development are so

The impact of warehouses goes beyond their greenhouse gas emissions. Warehouses add to the traffic of heavy and lighter goods vehicles. They cause noise and cover large areas of land, interfering with wildlife and rain water trickling into the ground, emission from the construction and operational emision

New design in accordance with LEED and BREEAM standards

Leadership in Energy and Environmental Design(LEED) framework by the US Green Building Council

Building Research Establishment Environmental Assessment Method (BREEAM) – Building Research Establishment (UK)

Both mesures the sustainability of warehouse and depending of overall score, the warehouse is ranking from ”pass” to ”outstanding” (BREEAM) or ”certified” to ”platinium” (LEED) – see the graphs from slide 6

In the construction phase, emissions are caused by the construction materials (timber, concrete etc.), demand for flexible processes (many doors, more height, additional floor strength for heavy goods or special storage arrangements like clean rooms or refrigerators) and construction operations (havy machinery, dust, etc.)

Efforts for sustainability in operational phase

The discussion is mainly focused on reducing the energy consumption of a site for temperature and humidity control, lights or handling equipment.

But the warehouse’s operational sustainability also consists in other aspects like using all resources more efficiently (water consumption is an issue to discuss) and reducing the waste generated by a site (i.e. packaging materials or wood pallets).

Green measures

Green energy – generate low carbon energy on-site or bought from green energy suppliers (off-site solar, wind or biomass solution)

From a sustainability perspective, the on-site solutions is seen as the preferred solution over the purchase of green energy from off-site sources.

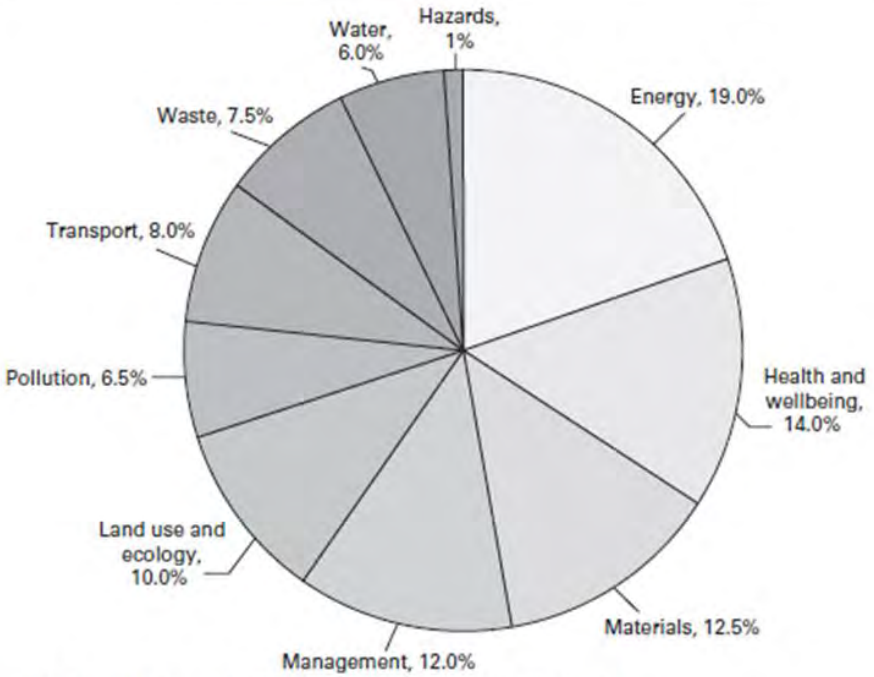
Solar panels, for example, are more likely to be installed if the warehouse user owns the facility or if the owner considers the solar panels as a worthwhile investment

The warehouse’s energy consumption and its environmental impact can also be reduced through the installation of energy- and water-saving technology, for example in updating temperature control or lighting systems.

GREEN WARE-HOUSE

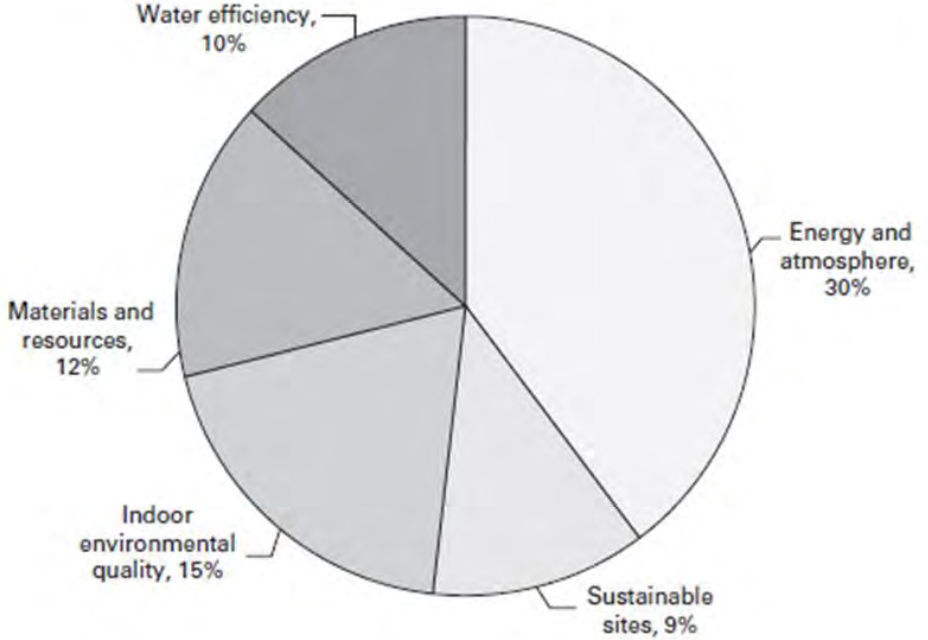
Nevertheless, next to the improvement of environmental issues there is also a large potential for cost savings by running warehouses more efficiently

BREEAM weighting factors for new constructions



NOTE BREEAM allows an additional 10 per cent category for 'innovation'

LEED weighting factors for new constructions



Source: David B. Grant, Alexander Trautrims, Chee Yew Wong, *Sustainable Logistics and Supply Chain Management,* 3rd Edition, Kogan Page Limited, 2023, p.88

Good practice exemple: CTP obtains the first BREEAM Outstanding certification for an industrial building in the Romanian portfolio (2022)

Located in the west of Bucharest, on the A1 Highway, CTPark Bucharest West is a regional logistics hub, covering both the Balkans area and regions such as Turkey and the Middle East, including Cyprus.
The BUW 20-21 building, with an area exceeding 100,000 m2, is the first warehouse to obtain the BREEAM Outstanding certification (2022), being a building whose energy needs are fully covered by the photovoltaic panels, installed on the roof.
The BUW 20-21 building has electric car chargers and is surrounded by trees, shrubs, birdhouses and other features that support biodiversity. Alaso, collected rainwater is reused for toilet flushing and irrigation.
In the selection of construction materials, priority was given to ecological products, which have EPD (Environmental Product Declaration) certifications.
The building consumes 46% less energy than the national reference building. The photovoltaic panel system installed on the roof of the building provides the entire electricity requirement, reducing the operational carbon footprint by 97%.

Ports can have a negative impact on the environment through the water, air or noise pollution, and through the construction of new port infrastructure, as well as maintenance and upgrading of the existing one (an impact on marine ecosystems due to dredging and civil works)

New investment in accordance with new "green" standards

Cargo volume of European ports has increased significantly in recent decades.

We constantly observe larger ships in operation and the ports must meet their requirements; they need to be ready to accommodate ever larger ships, and assure as short as possible stay in the ports

Higher productivity of ship to shore cranes and terminal mechanization is one of the most important factors of port's success, and ports need to modernize their facilities and adopt new technologies

Decarbonisation efforts

In 2020, 75% of goods coming to or leaving the EU were transported by ships. Today this number is higher

At the same time, the Paris Agreement on climate urges the ports to make decarbonisation efforts (https://unfccc.int/process-and-meetings/the-paris-agreement).

Europe wants to reduce the pollutant emissions from maritime transport with the introduction of regional Emission Control Areas. This can present many challenges as well as opportunities for the ports, in terms of: adjust terminal infrastructure, support multimodal transport, add alternative fuel infrastructure, develop off-shore marine renewable energies and other green technologies.

Green measures

Technological - that include more efficient engines, ship hulls and propellers, cleaner fuels, alternative fuels, devices to trap exhaust emissions, energy recuperation devices, "cold ironing" in ports, kiting systems, etc.

Logistics-based - that include speed optimization, optimized weather routing, optimal fleet management and deployment, efficient supply chain management, and others that impact the logistical operation.

Market-based - which can include fuel taxes, an Emissions Trading Scheme (ETS) or others.

GREEN PORT

A port in which the port authority and port users pro-actively and responsibly develop and operate, based on an economic green growth strategy (Sustainable Ports - A Guide for Port Authorities PIANC, 2014).

Good practices: Investments for the modernization of the CONSTANTA port

DP World is investing 38 million euros for the construction of a Ro-Ro platform and a multimodal terminal on an area of 12 hectares (4 ha of warehouses, 3 ha of access areas, 3 ha of adjacent spaces and support spaces, 2 ha of green, access control and security).

The storage capacity will be 14t/m2, the scanning capacity will be 60-70 containers/hour, directly upon unloading from the ship

The new platform is secured and digitized (IoT solutions and modern operating systems for terminals), so downtime will be reduced to zero for the transit of containerized goods

The date of completion - 2024

Good practices of government support.
Investment programs with the aim of encouraging ecological and sustainable freight transport in Romania.

European transport

- 11 July 2023 – The Commission proposed a package of measures to make EU freight transport more efficient and sustainable.
- The evolution of the sector will be a step forward in achieving the 90% reduction in transport emissions by 2050, as set out in the European Green Deal, while allowing the EU's single market to continue to grow.
- The package includes measures such as:

- improving the management of railway infrastructure,
- offering new incentives for the use of low-emission trucks,
- a common methodology that companies in the freight transport sector can use to calculate greenhouse gas emissions, etc.

The European Green Pact

- **Greening freight for greater economic gain with less environmental impact**
- **More sustainable and efficient freight transport**
- **A more efficient use of rail capacity**
- **New incentives for the use of low-emission trucks**
- **CountEmissionsEU: comparing carbon footprints**

Romania. Investment plan 2021 - 2030

- prioritization of investments constituting a favorable condition in view of the new multiannual financial framework,
- update of the implementation strategy of the General Transport Master Plan of Romania,
- reference framework document for the relevant public policies and for all institutions involved in achieving the national transport infrastructure objectives.

The General Transport Master Plan of Romania

- According to the General Transport Master Plan of Romania, the strategic objectives for the development of Romania's transport infrastructure are:
- Sustainability
- Safetythe / security of trnasport
- impact on the environment
- economic development
- dual use of transport
- infrastructur funding

STUDY: How Romania can achieve green transport.

- Using a more comprehensive method to assess the impact of CO2 on fuels: from the well to the wheel
- Generation of a regulatory framework dedicated to H2 for use in transport – green production, storage, transport, distribution, consumption;
- Developing a national strategy for the green hydrogen value chain, starting from production centers and building supply infrastructure around them, for easy public access to hydrogen supply
- Implementation of a legal framework for the fiscal treatment applied to alternative fuels; introducing a more favorable tax framework for transition fuels with low carbon emissions (CNG, LNG) and biofuels (biomethane, bioethanol) to make those renewable energy fuels more economically viable. In the case of H2, a regulatory framework is needed first
- Stimulating the development of CNG and LNG supply infrastructure through grants & subsidies
  Establishment of an Inter-modal Project Management Unit, bringing together rail, road, maritime and air transport specialists from the specialized departments within the ministries, as well as specialists in the field of logistics and inter-modal transport.
- Granting "state aid" on the basis of subsidies to rail freight operators, owners of specialized wagons and rolling stock that can be modernized, to cover the difference in costs between road and intermodal transport (made in the RO system -LA) through annual compensation funds from the state budget;
- Investments in the development of inter-modal centers in close proximity to logistics parks and industrial platforms (existing or potential): Timişoara, Oradea, Craiova, Sibiu, Braşov, Bucharest, Cluj Napoca, Galați, Iaşi, Bacău, Suceava, Târgu Mureş;
- Extending the sale of PHEV vehicles after 2035, given the low emission levels and high-performance technologies under development for this type of vehicle.
- Considering "mild hybrid" vehicles (mHEV) also as a lever for reducing emissions (transitional technology), thus being granted incentives and benefits similar to those for "full hybrid" vehiclesWeight bonus for light commercial vehicles fueled by alternative fuels up to 4.2 tonnes GWV, with driving license B; Trucks >18t with alternative traction solutions (EV/Gas/H2/Hybrid) can receive a bonus of max. 1 tonne for total GWV if technically approved by the OEM to partially compensate payload loss for heavier alternative propulsion solutions;
- Restriction of registrations of new conventional vehicles with internal combustion, starting from 2030;Implementation of distance-based tolling for heavy goods vehicles – based on the polluter pays principle and other principles of taxation for environmental protection,

STUDY: How Romania can achieve green transport.

- Stimulating the car fleet in Romania towards the latest EU emission standards and towards electric or CNG/LNG powered vehicles;
- Restricting registrations of new vehicles < Euro 4 until 2025Implementing low-emission zones and restricting the access of Euro 3, Euro 4 vehicles; assessing the feasibility of implementing zero-emission zones favoring BEV and PHEV vehicles;
- Green driving training and related skills monitoring should be encouraged and made legal requirements;Implementation of urban vehicle access restrictions (UVAR), favoring buses and coaches over cars;
- Increasing the number of parking spaces reserved for vehicles intended for taxi and/or "car sharing" services that use alternative fuels and ensuring their access to charging points;
- Implementation of a common national procurement process (inter-municipal) for vehicles used in public passenger transport in order to obtain more advantageous purchase prices for vehicles using alternative fuels;
- Reduction of annual tax, registration tax and ITP tax for vehicles using alternative fuels (including CNG / LNG); continued free parking for alternative fuel vehicles; continuation of tax exemptions for BEVs;Subsidizing the purchase of vehicles compatible with alternative fuels (including CNG / LNG);
- Extending the Rabla and Rabla Plus programs to commercial vehicles, also promoting the purchase of CNG / LNG compatible vehicles in line with incentives for fleet renewal and scrapping of old/polluting vehicles;
- Reduced taxation applicable to BEV fleet owners; additional incentive commensurate with accelerated transition to BEVs (reduced taxes or zero taxes on fleet fully converted to BEVs in less than 5 years);Exemption of public charging stations from connection fees and reinforcement tariffs;
- lower charges for electric charging;Reduction / capping of bus and coach ticket fees; the implementation of more favorable rates compared to those for cars;
- The development of a fleet of ecological buses and the development of environmental, economic and social impact assessment studies for the use of H2-based buses; assisting local authorities with funds to purchase green buses (gradually until 2030). In the first years, the program should also support the purchase of CNG and EURO-6 vehicles, and later it will focus on EVs;
- Increasing the financial threshold for direct purchases of BEVs to provide more flexibility to public bodies;Government grants to local authorities / possibly private entities to build park & ride systems;Developing the network of bicycle paths (>1000 km) (and storage spaces) in cities and ensuring connections with metropolitan areas;
- Accelerating the modernization works on the European Corridor Curtici – Simeria – Sighişoara – Braşov – Ploieşti – Bucharest – Constanța – the most important railway infrastructure project;

STUDY: How Romania can achieve green transport.

- Incentives and subsidies for the purchase of electric and H2-based motor vehicles and traction units;
- incentives and subsidies to replace aging shunting locomotives with battery or fuel cell locomotives;
- Increasing the use of electric traction in rail transport through investments in line electrification; in cases where electrification is not economically viable, it is necessary to use trains with hydrogen-based batteries or fuel cells;
- Implementation of the urban train concept in the big cities, especially connecting the city of Bucharest with its neighboring areas;
- Stimulating the local demand and supply of sustainable and alternative fuels in the activity of vessels plying on inland waterways; increasing the percentage of alternative fuels (including LNG, LPG and hydrogen) in the total fuel mix
- Accelerating the development of navigation infrastructure and improving the corridor on the Danube between Romania and Bulgaria, in order to stimulate sustainable freight transport;
- Subsidizing port fees charged for berthing ships powered by CNG or LNG, biomethane, hydrogen or electricity;
- Support the purchase of new boats powered by liquid biofuels, CNG or LNG, biomethane, hydrogen or electricity;Implementation of the RefuelEU Aviation program – boosting local supply and demand for sustainable aviation fuel to achieve a share of 2% of total aviation fuel consumption by 2025, 5% by 2030, 32% by 2040 and 75% by 2050 – according to the Fit For 55 package.