

Interreg
CENTRAL EUROPE



InterGreen
Nodes

InterGreen-Nodes

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REGIONAL ACTION PLANS OF GREENING NODES

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1. Introduction to the document

The following document is a compendium of eight Regional Action Plans which were developed within the project InterGreen-Nodes.

The regions and ports started from different levels, approaches and capacities in their own development. Therefore, to compile a valuable and equal output document all involved partners got action sheets to present their major tasks of greening nodes in their own responsibilities.

The following document delivers measures from the following regions/nodes:

- Berlin-Brandenburg
- Behala, Berlin Ports
- Mecklenburg-Vorpommern
- Port of Rostock
- Western Transdanubia
- Freeport of Budapest
- Port of Venice
- Interporto Bologna.

The following pages will present very briefly the major tasks of the nodes and regions in the century of transformation processes in the transport sector in central Europe, but also relevant beyond.

Individual supporting documents of some nodes will be available on the projects website.

2. Regional Action Plan of the capital region Berlin-Brandenburg and Behala Berlin ports - Improving transport chains via ports and inland waterways

The inland waterways network in the capital region Berlin-Brandenburg has traditionally been a driver of regional growth and a strong infrastructure for logistics in the 18th and 19th century. With the wide connections towards Baltic and North Sea as well as inwards to Poland, Czech Republic and within Germany, it served an important function for the growth of Berlin during that time and helped the whole region to prosper.

However, with the 20th century and the rise of road transport, the role of inland waterways transport has slowly declined, and now it only has a relatively small share of all transport modes. This is further reinforced by the fact that much inland waterway infrastructure is rather old and has not been modernised to fit larger boats and/or faster transportation. Similarly, inland waterway spaces are attractive for industrial and housing development, especially in close proximity to the city and within. This has already led to a significant loss of spaces along the waterways that are actually used for transportation.

With the Regional Action Plan, this development is addressed in both directions: first, the technological capacities of ports and infrastructure are improved by several measures that make the ports more efficient and more sustainable (Actions 1-3). Second, there is also an administrative push to secure transportation spaces along inland waterways and get a better use out of them (Actions 4+5).

The technological actions entail activities that fit well into the bigger picture of environmental and transport policy. They are actively seeking out different alternative fuels at the same time: CNG, hydrogen, and electricity. It is expected that all three will play different roles in the transition towards a decarbonised transport sector, which is also reflected in the different use cases. Especially the ELEKTRA push boat can be a very promising pilot action that would help the sector as a whole.

For the use of spaces along inland waterways, a major problem that was identified is the fact that the sector is often not heard in political discussions, while issues like housing are very prominently placed in the



debate. Additionally, a cross-departmental exchange has not been happening in a structured way. Both actions are aiming at these problems to secure the existing spaces for transport use and to safeguard already existing uses.

2.1. Regional Action Sheet: CNG fuel station

Goals	Replacing the diesel fuel driven Trucks with CNG ones and building a CNG fuel station
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input checked="" type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	The BEHALA owns 4 diesel trucks, which we would like to replace with CNG trucks. The problem is: there are no fuel stations nearby, so the refuelling process is not effective. So BEHALA wants to build an own fuel station at the port directly.
Involved stakeholder	BEHALA, Costumers, tenants of the port, government
Spatial needs & land development	A piece of land at the port and a gas pipeline
Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	~ 200k € for the fuel station, of which 41.000€ come from BEHALA and 150.000€ from state funding. The costs of ca. 250.000€ for each truck are not funded separately
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input checked="" type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

2.2. Regional Action Sheet: First hydrogen driven pushboat

Goals	Building the first hydrogen driven push boot worldwide: ELEKTRA
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input checked="" type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input checked="" type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	ELEKTRA will be hydrogen-driven, which is a novelty in inland waterways development and would contribute to the decarbonisation of this mode of transport
Involved stakeholder	BEHALA, Costumers, Technical University Berlin, government



Spatial needs & land development	Hydrogen / electricity fuelstation at the port
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input type="checkbox"/> short-term: 0-3 years <input checked="" type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	13.000.000 € the whole project, 615.131€ for BEHALA. The difference is founded from state budgets
CO₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input checked="" type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

2.3. Regional Action Sheet: Improving the charging infrastructure

Goals	Building 4 electric car loading stations
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input checked="" type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	To continue the development of electrocars at BEHALA carpool we want to install 4 loading stations (wallbox) at BEHALA port
Involved stakeholder	BEHALA, Costumers, tenants of the port, government
Spatial needs & land development	Infrastructure for electricity and some parking slots
Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	8000€ for BEHALA No funding
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input checked="" type="checkbox"/> low: 0-25%



2.4. Regional Action Sheet: Working Group on waterside spatial development

Goals	<ul style="list-style-type: none"> - To flag areas along canals and harbour areas that can be used and developed for water-connected freight transport - Maintaining a communication level between port organisations and administrations
Field of action	<input checked="" type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input checked="" type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	The relevant administrations have been working together through the drafting process of the regional action plan already and agreed to communicate further with the ports. They all met twice in workshops organised by the InterGreen-Nodes project already. Measures were developed and the further process for implementation will be discussed within the project life time.
Involved Stakeholder	Ports, public administrations Berlin and Brandenburg incl. temporary ports costumers
Spatial needs & land development	None (communication action)
Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Not known yet, but relevant for the next steps of implementation process.
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input checked="" type="checkbox"/> low This will help to safe emissions if the land use can focus on green development on the relevant areas, and if the communication helps to prioritize greener modes of transportation over other
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input checked="" type="checkbox"/> medium: 25-50% <input checked="" type="checkbox"/> low: 0-25%

2.5. Regional Action Sheet: Südhafen port expansion in Berlin

Goals	Increasing multimodal transport through Südhafen Provide means to switch transport chains away from roads and towards rail and waterways
Field of action	<input checked="" type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input checked="" type="checkbox"/> other: multi-modal transport
Brief description	At current state, the Südhafen port is underused despite its favourable location and good connection for multimodal transport. An expansion of the landside facilities will increase the goods lifted there and help with the modal ship

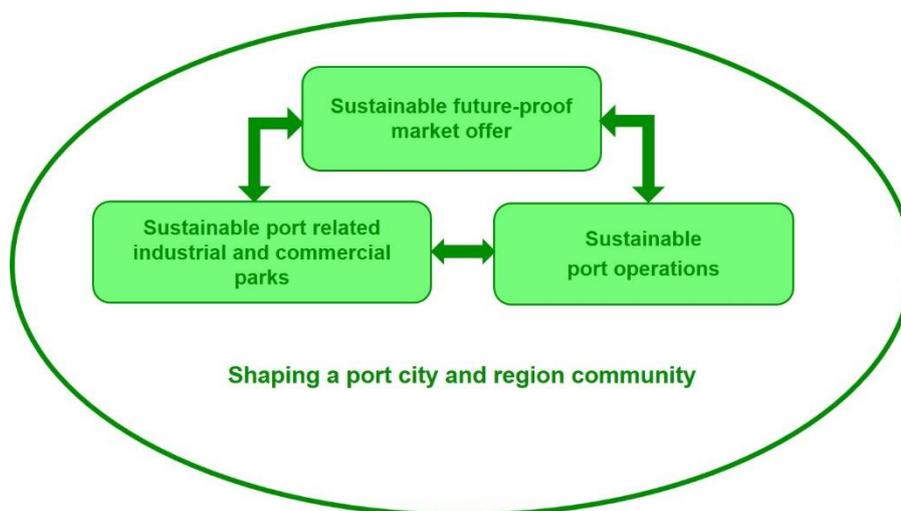


	Measures include the expansion and rebuild of the quay, a new bridge that allows for more inner-port shunting operations on the existing rail, and a new heavy goods warehouse plus loading infrastructure.
Involved Stakeholder	Behala Berlin Administration for Transport and Environment Local planning authority Berlin-Spandau
Spatial needs & land development	The area is already used for waterway transport and will be re-developed to have more capacity
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input type="checkbox"/> short-term: 0-3 years <input checked="" type="checkbox"/> medium-term: 3-7 years <input checked="" type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Financing through the Berlin state budget and Behala
CO₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low Important contribution to switch road-related transport chains away to rail and waterways
Regional added value (Please evaluate, if possible)	<input checked="" type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

3. Regional Action Plan: Seaports in Mecklenburg-Western Pomerania

The general action programme for the development of future-oriented, green, port-oriented commercial and industrial parks with the necessary development directions and options for action are described below as derived from the analyses conducted and the development potential considerations.

We identified four main fields of action closely interconnected:



1. **Sustainable future-proof market offer:** In order to ensure long-term port development as a regional location factor and essential element of regional economic development and value creation, sustainable



markets for port services and products of port-oriented industries must be identified and actively promoted.

This requires activities for:

- Transition from carbon to hydrogen to a regenerative energy economy: consequences for ports from the future elimination of traditional transport and the development of new freight flows.
- Identification of future transshipment goods, in particular energy sources of the future, their port infrastructure requirements, technical and organisational preparation.
- Actively participate in the conversion of maritime shipping to climate-neutral propulsion systems by developing fuel supply, production and storage offerings.
- Identification of pathways for the valuation of envelope/storage of fossil fuels of areas and plants no longer required in the future.
- Future customers must be identified and approached.

2. **Sustainable port related industrial and commercial parks** are an essential element of modern dynamic seaports and form an engine of the harbour development. In Mecklenburg-Vorpommern they are promoted by the state dialogue "Green Industrial Areas in M-V" and the label "G3" in the interest of climate protection and the transition to a carbon-free energy cycle.

This requires activities in the fields of:

- Sustainable area management including
 1. Regional spatial planning
 2. Minimization of land use and surface sealing
 3. Area planning for the preservation or restoration of biotope networks
 4. Widespread use of rooftop and wall mounted PV
 5. Use of loss areas and temporarily unused areas for energy production (PV, wind, geothermal energy, biomass production)
- Emission protection: e.g. noise protection measures, water protection, reduction of light emissions
- Eco-oriented location marketing and investment promotion
- Power generation on port grounds (focus on wind turbines and rooftop PV)
- Sector coupling industry/transport/settlement (expansion of heat/cooling networks, waste heat use, charging columns, hydrogen filling stations, public transport)

3. **Sustainable port operations** by increasing efficiency and using green forms of energy in the maintenance of port infrastructure, in cargo handling and in ship handling.

This requires activities in the fields of:

- *Shipping services*: onshore power supply (OPS), bunker options for fuels of the future, waste management, etc.
- CO₂-free cargo handling equipment
- Climate neutral port shipping
- Lighting: efficient, green, ecological and needs-oriented
- Water protection: environmentally friendly dredging, water supply/wastewater treatment
- Collection of sustainable port charges (environmental discount)

4. The **shaping of a port city and region community** is an overarching task closely related to the previous three field of action. It results from the social role of public ports at the interface between society, politics and economy. Improved communication and consensus building on port and port industry development issues enables efficiency improvements, reduced land use and environmental impact as well as supports long-term port development.

This requires activities in the fields of:



- Development of communication and cooperation with companies located and operating in the port as well as other stakeholders (e.g. port acting as energy manager)
- Development and implementation of a communication concept that is transparent about developments in the port, communicates strategies and concepts and absorbs suggestions and opinions from the city society and reacts to them as well as provides appropriate mechanisms and tools for its implementation.
- Development, testing and implementation of citizen participation procedures with expert moderation.
- Active participation in international port cooperation to promote concrete projects with counterparts, participation in regional organisations for opinion formation and transnational project development, especially in the Baltic Sea Region and in the Scandria corridor.

3.1. Regional Action Sheet: State dialogue “Green industrial areas in M-V”

Goals	Expansion of the state dialogue with a special focus on the commercial and industrial areas in the seaports (Rostock, Sassnitz-Mukran, Stralsund and Wismar) and their immediate surroundings
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input checked="" type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	<p>Fostering the sustainable development of port-related commercial and industrial parks by increasing the use of locally generated renewable energy (regional value creation) and of alternative mobility as well as by a sustainable land management</p> <p>Integration of these commercial and industrial areas into the regional network of the state initiative: Supporting local development through communication, stakeholder events and consulting services</p> <p>Encouraging and intensifying the exchange of local actors and the cooperation of local companies (resource efficiency/ industrial symbiosis)</p>
Involved stakeholder	Spatial planning authorities Port authorities Municipalities and economic developer Companies Energy producers State Energy and Climate Protection Agency
Spatial needs & land development	
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input checked="" type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	-
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input checked="" type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%



3.2. Regional Action Sheet: Sustainable development of green, port-related commercial and industrial parks

Goals	The goal is to transfer the approach of the “Green Industrial Areas (G ³)” to the port-related commercial and industrial sites in the seaports (Rostock, Sassnitz-Mukran, Stralsund and Wismar) and their surroundings within the framework of a study and to link it to the focus of the InterGreen nodes, the establishment of a green last mile.
Field of action	<input checked="" type="checkbox"/> spatial planning/ land-use planning <input checked="" type="checkbox"/> alternative drives <input checked="" type="checkbox"/> regenerative energy supply <input checked="" type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	Based on a comprehensive analysis of the port and commercial/ industrial areas, potentials for sustainable development in the fields of energy supply, mobility and digitalization were identified. Against the background of resource efficiency, potential for business cooperation and cluster initiatives was identified. The focus here is on sector coupling, in particular the production and use of green hydrogen. Using the example of the seaports of Rostock and Sassnitz/ Mukran, measures for the development of green, port-affine commercial and industrial areas in M-V were derived, covering the fields of action of spatial planning, energy, transport and digital infrastructure, as well as the implementation of a green last mile. In addition, transferable approaches in the fields of business development, communication and networking were identified.
Involved stakeholder	Spatial planning authorities Port authorities Municipalities State Energy and Climate Protection Agency
Spatial needs & land development	
Priority	<input checked="" type="checkbox"/> very high <input type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input checked="" type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	
CO₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input checked="" type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%



4. Regional Action Plan Port of Rostock

Seaports like the Port of Rostock face very strong development needs as the port land is heavily used, leased out to industrial production company or already paved to use it as traffic or storage area. The potential of port internal development actions are mostly utilized. To be able to respond to an increasing demand for port areas to use it as handling, storage, logistics and/or industrial production activities, additional land must be made accessible for port development actions. Such development actions are extremely time consuming and last most likely several years as a broad variety of stakeholders and local as well as regional authorities have to be incorporated. The biggest challenge, however, is to convince the residents and local society settled nearby the existing port area about the huge financial and socio-economic potential of port development actions. They often block or argue against such plans from the port operator with their own communication strategy and the try to stop or prolong a necessary development strategy. Both parties aim to push their interests to the public and in an extreme example to bring it to a court. Conflicts between different stakeholders like that should be avoided in any case, just to not endanger the port's development process. It is thus essential to develop a comprehensive communication strategy to transfer the port's interest to the general public before stakeholders with a critical view on that do the same and their statements and views are well-established.

Another important aspect with regard to port development actions results from environmental (legal) regulations. The most relevant aspects here are objectives of or requirements set by the European Water Framework Directive (WFD). This legal regulation commits all member states and consequently all other institutions and authorities to ensure a high quality of the water bodies in their responsibility. The Water Framework Directive as such can be seen as basis for all water protection actions. While defining port area development measures, the responsible environmental authority must consider this regulation, as it is obliged to ensure a good water quality in its territory. The challenge here is, that different port areas for different purposes like cargo handling, cargo storage and logistic implicate varying actions to cope with the WFD. It also applies to the area development for the settlement of port affine production companies and here generally much more. As overall objective, constructive measures (e.g. Rainwater treatment plants) shall be analysed and designed which are in line with requirements set by the Framework Directive, not only for existing port areas but also for currently unused land to be transferred/to be developed into future port areas. Already today, local or regional authorities demand appropriate measures, so the port landlord must look deeper into environmental definitions and consider ecological demands when the prepare future land development plans.

4.1. Regional Action Sheet: Port extension - Communication strategy

Goals	<ul style="list-style-type: none"> - Development of a comprehensive communication strategy to solve conflicts between different stakeholders in the framework of port development processes - Recapitulation of lessons learned from port development actions taken in other port locations during the last years as basis to define suitable strategies and solutions
Field of action	<ul style="list-style-type: none"> <input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input checked="" type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	With help of a communication strategy, the complex port extension projects shall be supported and the positive effects, the advantages to the local and regional community communicated. As any other project development or extension plan is affected by a strong and diverse opposition, the communication strategy shall pave the way for the port's



	arguments before those of the opponents settle in the general public and to find a cooperative way aiming at a joint solution.
Involved stakeholder	port authorities regional and local development authorities Citizens' movement environmental lobby organizations political stakeholders
Spatial needs & land development	The demand for future port areas is rising since many years, not only from an industrial perspective but also from a logistical aspect. Goods shipped via seaports gets bigger and bigger and handling volumes grow since years. A provision of additional port areas for handling, storage and logistics is consequently inevitable, necessary development steps have been initiated. Resulting conflicts between involved stakeholders and persons concerned must be solved to ensure the overall objective of a spatial development process: To bring sustainable and socio-economic interested in line
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input checked="" type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

4.2. Regional Action Sheet: Water protection actions in the context of port development tasks

Goals	<ul style="list-style-type: none"> - examination of the Water Framework Directive, national legislations, technical regulations and its main objectives with focus on Rainwater drainage systems to the water body via port areas dedicated to storage, handling, logistics activities and other port-related use - analysis of primary legal definitions from a European and German perspective relevant for port development actions - formulation and description of constructive actions to ensure the required water protection level with regard to specific land use options in seaports - for existing port areas as well as future port areas in development
Field of action	<input checked="" type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	With help of a qualified environmental consultant, the existing obligations set by the EU-WFD and national law are to be analysed, requirements defined and possible actions or solution suitable to port development measures defined.
Involved stakeholder	Regional/local authorities dealing with port development plans Environmental authorities approving port development plans Ecological groups



	Stakeholder from other industrial sectors
Spatial needs & land development	The main focus is on gaining knowledge and deriving of practical solutions and measures to ensure compliance with legal regulations and technical guidelines by port operators, transshipment companies and other stakeholders. The latter often argue that they are heavily affected from rain water flows originating in ports on the one hand but from the requirement to transfer land to be used as future water protection areas on the other (and v.v.). In addition, there is a need to develop the necessary water protection measures and the associated space requirements at a very early stage of the port development process.
Priority	<input checked="" type="checkbox"/> very high <input type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input checked="" type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	n/a
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input checked="" type="checkbox"/> very high: 75-100% (Good water quality in the [tourism] region) <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

5. Regional Action Plan Western Transdanubia - combining road freight with rail transport

Within the framework of this document, the possibilities of combining road freight with rail transport will be presented in Hungary focusing on Western Transdanubia. Hungary is located in Central Europe. The EU Member State with a population of nearly ten million is surrounded by seven states, five of which are also members of the EU.

The Western Transdanubian Planning Region is located in the nearest part of Western Europe. The region is the third most developed region in Hungary after the Central Hungary and Central Transdanubian regions. However, this development is relative, as the European Commission ranked the region 196th in the competitiveness ranking in 2019, based on the last analysis of the Competitiveness Index of 268 EU regions, while on the basis of GDP per capita it was ranked 192nd on a five-stage competitiveness scale (almost the weakest).

The geographical features of the region are excellent, but its current economic characteristics are still significantly influenced by some years of communist rule in some sectors. This, for example, also significantly determines the current development of transport. It is true that significant improvements have been made in the development of the road network and the rail network over the last three decades, but they can only catch up for decades of delay. Another important factor is that, unlike in the 19th century, Hungary does not have a direct seaport, only the river ports on the Danube. In terms of air traffic, the only real airport in the country is the Budapest Airport.

In the regional action plan, in addition to the current situation assessments described above, the possibilities and benefits of switching to multimodal transport will be analysed on the basis of the described above.



5.1. Regional Action Sheet: Increasing green and multimodal transport in Western Hungary

Goals	<ul style="list-style-type: none"> - Increasing multimodal transport West Hungary - Increasing green transport in West Hungary - Raising awareness of the importance of multimodal transport, green transport and logistic - Raising awareness of the potential in logistic in Western Hungary
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input checked="" type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input checked="" type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	compare to introduction part of the region. A deeper analysis is available on the projects website.
Involved stakeholder	Budapest Freeport Logistic GYSEV KTI János Mag
Spatial needs & land development	
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input checked="" type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	
CO₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low This will help to safe emissions if the land use can focus on green development on the relevant areas.
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input checked="" type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

6. Regional Action Plan Freeport of Budapest - Greening of the trimodal transport hub

The Freeport of Budapest was founded more than 90 years ago and soon became a major trimodal transport hub (largest of its kind) of Hungary, serving the area of capital and beyond, providing a river connection up and downstream on the Danube, linking the capital with the Danube-Rein-Main waterway network and to the Mediterranean region via the Black Sea. Till the 1980s - in the legal framework of one large state owned company - upon the operation of the port, it also had a fleet of 54 river-going and 6 ocean-going diesel cargo ships (and 58 passenger ships).

Due to the lack of the modernisation of the port infrastructure in the 1970-1990s, the selling of the cargo fleet and the declining role of waterway transport resulted the continues decrease of the water side transport. In the late 1990s-early 2000s the company was reorganized and a private port operator was selected via an open ten-der in 2006. The last 15 years have seen a complex modernisation programme of



the port's infrastructure - which is still underway - including all the 3 modes of transport (also an LNG terminal) and the extension of the port's operation with the building of new warehouses. Road and rail transport - especially containers - are growing rapidly however waterway transport is lagging behind due to various factors outside the remit of the port (navigability problems of the Danube, out-of-date cargo fleets) and now counts less than 5% of the total cargo volume of the port.

In the framework of this Action Plan e-mobility (alternative drives) is in focus (Actions 1-3) with the installation of solar panels, storage capacity, charges, infrastructure of an e-cargo fleet and replacement of diesel powered port equipment with electric which is part of the de-carbonisation process of the port. Actions 4 and 5 aiming alternative fuels with the constructions of the LNG terminal and a special heat storage barge (the first one is under construction meanwhile the second one is in a very early stage of research). Action 6 is about to involve stakeholders into the development of the low-carbon city logistics concept in Budapest as the port area has an optimal location and the waterway is not really in focus so far, meanwhile Action 7-8 are supplementary actions to further develop the traffic management system and use of block chain helping to use the port's services in a more optimal way, optimize traffic routes inside the port and reduce congestion and pollution.

6.1. Regional Action Sheet: Establishing optimised mass charging capacity for electric vehicles as infra-structural basis for e-city logistics centre

Goals	Development of infrastructural basis for e-logistics Reduce co2 emissions Sustainable port development
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input checked="" type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	The aim of the project is to build electric charging capacities that will serve the last mile of electric transport vehicles that would be in service in Budapest. Based on the location and facilities of the port, it is a suitable location for the establishment of such a charging station. The development of the system includes the installation of solar panels, the construction of energy storage capacity, the construction of charging capacity and the integration into a smart grid system.
Involved stakeholder	FBL MAHART Freeport Ltd ELMÜ (Electricity company) Solar energy development companies
Spatial needs & land development	Spatial needs for the freestanding solar panels: cca 3500m2, depending on the panels used
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Solar panels: cca. 182+58 million Huf Charging stations: cca. 230 million Huf Storage: cca.150 million Huf Smart grid: cca. 15 million Huf Funding: EU grants, HU grants, bank loan, own fund



CO ₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input checked="" type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

6.2. Regional Action Sheet: Using electric trucks in the last mile connections of intermodal freight transport from/to terminals

Goals	Reduce co2 emissions Reduce traffic noise Greening freight transport of Budapest Savings on costs
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input checked="" type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	<p>The last mile delivery is the most critical part of the distribution process of goods as it accounts for up to 28% of the total delivery cost. Therefore, emphasis must be given to the optimization of operational decisions related to this part of the supply chain.</p> <p>Therefore, in connection with the previous project proposal, building on the installed electric charging capacities, it will be possible to use electric trucks and vans in the last mile. Not only can emissions and noise reduction be achieved with EV use, but also significant cost savings in operating costs.</p> <p>The proposed project will facilitate the procurement of capacity-based quantities of electric trucks for haulage companies, for which subsidies are also available.</p> <p>To achieve major impact, at least 100 EV trucks should be deployed.</p>
Involved stakeholder	FBL MAHART Freeport ltd. EV truck manufacturers Shipping/haulage companies
Spatial needs & land development	No extra spatial needs, the required space appears in Project proposal no 1.
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	EV trucks: Estimated 150.000 Eur/truck In total: 15 Million Eur Funding: EU and HU funds, bank loan, own fund
CO ₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low 100 trucks, 100km ,co2:1000g/km Daily: 100x100x1000= 10 000 000 g Co2
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input checked="" type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%



6.3. Regional Action Sheet: Using electric powered goods carrier equipment in ports

Goals	Reduce co2 emissions Reduce traffic noise Greening freight manipulation within the port Savings on costs
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input checked="" type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	The aim of the project proposal is to replace many loaders operating in the Freeport of Budapest with environmentally friendly electrical machines. Currently, there are still a large number of diesel-powered equipment in the port, but with the development of technology, it will be possible to replace them. Electric equipment also means significant cost savings for terminal operators and reduces the environmental impact of the port and its surroundings.
Involved stakeholder	FBL MAHART Freeport ltd. Electric carrier equipment manufacturers Terminal operators in the port
Spatial needs & land development	No spatial development needed.
Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Costs: cca. 300 000 Eur/ reachstacker cca. 75 000 Eur/ forklift Funding: EU and HU funds, bank loan, own fund
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input checked="" type="checkbox"/> low: 0-25%

6.4. Regional Action Sheet: Implementation of “Heat barge” concept

Goals	Introduce innovative heat transport solution in Hungary Less heat waste Better utilization of IWW transport
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input checked="" type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	The projects aim to develop and implement the “Heat Barge” concept. The essence of the solution is to transport the loss heat generated in the



	factories and industrial facilities on the Danube and to utilize it in the district heating supply of Budapest. Facilities close to the Danube in Paks, Dunaújváros and Százhalombatta are excellent for this purpose. Implementation involves the construction of a barge capable of absorbing and storing heat at production sites and then dissipating it at the destination.
Involved stakeholder	FBL Mahart Freeport Ltd. Paks Nuclear Power Plant MOL Százhalombatta plant ISD Dunaferri Budapest District Heating Works (FŐTÁV)
Spatial needs & land development	The spatial need of the concept is reflected in the construction of the port connection of heat transfer and reception.
Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input type="checkbox"/> short-term: 0-3 years <input checked="" type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Costs can be estimated after detailed analysis before finalising the project proposal.
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input checked="" type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

6.5. Regional Action Sheet: LNG fuelling solutions for port cranes and port equipment

Goals	Greening the operation of port cranes and equipment Ensure operation in case of blackout Generate demand for the LNG terminal
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input checked="" type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	In the PAN-LNG-4-DANUBE project, an LNG terminal is being built in Freeport of Budapest, the works are currently underway. The goal is primarily to serve LNG-powered vessels, but in addition, any need can be met at the terminal. The propulsion of port equipment with this environmentally friendly fuel, from which it can be realized in port cranes, is at hand. The aim of the project is to convert suitable cranes into LNG powered and to purchase new ones based on demand. This can be applied not only for cranes, but for other equipment as well like reachstackers, forklifts, etc.
Involved stakeholder	FBL Mahart Freeport Ltd. LNG crane and port equipment manufacturers Terminal operators in the port
Spatial needs & land development	Spatial needs are already covered in the PAN-LNG-4-DANUBE project.



Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Costs can be estimated after detailed analysis before finalising the project proposal.
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input checked="" type="checkbox"/> low: 0-25%

6.6. Regional Action Sheet: Regular stakeholder forum for low-carbon city logistics concept in Budapest

Goals	Identifying stakeholders Endorse common thinking on eco friendly last mile transport Support of networking
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input checked="" type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	<p>The aim of the project is to hold a regular stakeholder forum in connection with the future logistics role of the Freeport of Budapest. The fundamentals of the forum comes from the previously held stakeholder meeting under the Interreg Central Europe TalkNET project.</p> <p>First aim is to listen to the ideas and opinions of the identified stakeholders within the pilot action on what the necessary circumstances are to complete the development plans of FBL and expand from a traditional inland port to become a green city logistics park in Budapest. The secondary aim was to establish closer acquaintance amongst the stakeholders to be able to create common thinking on the technical realization of low emission last mile delivery in Budapest. One of the identified problems in connection to city logistics is the lack of communication between the stakeholders according to the interviewed stakeholders.</p> <p>Within the framework of the project proposal, the forum would be held annually, and a summary publication would be prepared after each meeting, in which the most important findings and tasks would be presented.</p>
Involved stakeholder	FBL Mahart Freeport Ltd. Public bodies Port operators Investors Universities Logistics providers



Spatial needs & land development	No spatial development needs.
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input type="checkbox"/> short-term: 0-3 years <input checked="" type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Cost of organizing events: 10 000 Eur/ event Summary publications: 2000 Eur/ event Funding: EU funds through Transnational programmes
CO₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low No direct impact, but agreements achieved on the forum can lead to high Co2 savings.
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input checked="" type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

6.7. Regional Action Sheet: Smart automated road access control and intra-port road navigation system

Goals	Raise the level of security of the port Reduce access time at gates Helping the navigation inside the port
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input checked="" type="checkbox"/> other: orientation and traffic management system
Brief description	The investment proposed in this project is the extension of the pilot project implemented within the framework of the Interreg Central Europe Corcap project to the entire port. <ul style="list-style-type: none"> • License plate recognition software with authorization system • Automatic barrier opening based on license plate recognition • Centralized Monitoring and Control Office (Command Center) • Voice connection between access points, information points and the Command Center • Development of an event recording camera system, which records the type of vehicle and its immediate surroundings (make, type, cab) in a 30 sec time window • Outdoor electronic information boards that are clearly visible even in the sun • Possibility for tenants in the Freeport area and loading information into the system (eg: free, busy, expected waiting time, etc.) • Register all vehicles with entry and exit times, store data on a central computer (server) that is part of the system
Involved stakeholder	FBL Mahart Freeport Ltd. Terminal operators in the port Shipping companies Hardware and software developers



Spatial needs & land development	No major land development needed, only electricity supply and infocommunication connection required for the road access points, and navigation screens.
Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Costs: 200 million Huf Funding: EU funding, HU funding, own funds
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input checked="" type="checkbox"/> low: 0-25%

6.8. Regional Action Sheet: Blockchain-based integrated communication platform for business users along the logistic chain

Goals	Secure communication between parties Reduce administrative costs Reach higher level of digitalisation
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input checked="" type="checkbox"/> other: usage of blockchain to secure communication
Brief description	<p>The aim of the project is for the business users of the Freeport of Budapest to use the most secure communication channel possible with their partners in the supply chain. Currently, the most advanced technology for this is Blockchain, a decentralized, end-to-end communication channel.</p> <p>The proposal would lead to a system specification and a pilot project with a selected actor. The design keeps in mind that additional actors can join the system.</p>
Involved stakeholder	FBL Mahart Freeport Ltd. Terminal operators in the port Blockchain expert IT development companies
Spatial needs & land development	No spatial needs.
Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	System design: 50 000 Eur Pilot project: 60 000 Eur Funding: EU funds, HU Funds, own funds



CO ₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input type="checkbox"/> medium <input checked="" type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input checked="" type="checkbox"/> low: 0-25%

7. Regional Action Plan Port of Venice

The Port of Venice describes in the following action sheets various measures, which have to be taken in the future development of the port. A more detailed description of the fields of action are explained individually in the action sheets.

7.1. Regional Action Sheet: River cruises development for sustainable territory planning

Goals	<ul style="list-style-type: none"> - Assessing the territorial effects that could be generated by the enhancement of the existing offer of river cruise industry in Venice, analyzing which development dynamics are most suitable for the territorial reality investigated. - Identifying the areas of possible development and the functional actions for the development of cruising and its territorial integration.
Field of action	<input checked="" type="checkbox"/> SPATIAL PLANNING/ LAND-USE PLANNING <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	<p>The action included in the spatial planning/land-use planning field is developed from one of the studies implemented within the InterGreen-Nodes Project (D.T 2.1.2 Elaboration of spatial needs of nodes), which is the following one: "DRAFTING OF THE ANALYSIS FOR THE IDENTIFICATION OF THE DEVELOPMENT DYNAMICS OF RIVER CRUISING IN THE LAGOON AND ON THE PO RIVER"</p> <p>It deals with an analysis to identify the development dynamics of river cruising in the lagoon and on the Po river, acquiring the qualitative and quantitative elements to understand what the consequences and impacts of such possible growth could be for the ports of its competence and the territory that welcomes them, estimating the economic and environmental impacts.</p> <p>This analysis is aimed at evaluating the potential and opportunities for the territory linked to the possible growth of this sector with itineraries that have Venice, its lagoon and Chioggia as a base and /or stages characterizing the travel proposal, with possible developments then along the stretches navigable areas of the Port.</p>
Involved stakeholder	Public bodies, regulatory authorities, Harbour Master, cruise companies, local municipalities, services providers, maritime agents, cultural institutions, spatial planning experts and representatives
Spatial needs & land development	<ol style="list-style-type: none"> 1. Creation of a single entity for the management of the information of the entire system functional to the whole nautical sector, including the private pleasure craft and commercial sector. 2. Tool to combat hydrogeological fragility



	3. Structure the territorial offer in such a way as to facilitate the fluidity of the territorial relationships in order to distribute in the most liberal way the potential impacts
Priority	<input type="checkbox"/> very high <input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Information not available at the moment.
CO2 savings (Please evaluate, if possible)	<input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input checked="" type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

7.2. Regional Action Sheet: Multimodality development for sustainable connections

Goals	<ul style="list-style-type: none"> - Fostering intermodal connections between port and hinterland - Facilitating trades to and from Central/North Europe areas - Identification of structural and equipment facilities for the realization of a railway logistics platform inside port areas - Greening of the Port of Venice as a multimodal environmental friendly network - Last mile customs agreements
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input checked="" type="checkbox"/> other: INTERMODALITY
Brief description	<p>The actions included in the intermodality field is developed from two studies implemented within the Intergreen-Nodes Project (D.T 2.1.2 Elaboration of spatial needs of nodes), which are the following:</p> <p>1. „STUDY FOR THE ACTIVATION OF A CUSTOMS FAST CORRIDOR BETWEEN THE PORT OF VENICE AND THE ASTOLFO RAILWAY TERMINAL IN TREVISO“</p> <p>Customs activity, a crucial factor for efficient logistics, is an essential competitive element: a procedure that allows goods in a non-Union position to move within the community overcoming the old customs declarations The project of transferring containers in extra-EU position between the Port of Venice inland terminal and/or warehouses can be framed, given the current regulatory system in force, in the institute of the Controlled Corridor, a real customs best practice.</p> <p>Fast Corridor is the most evolved customs mode for transferring containers in extra-EU position between two points of the State. It is a flexible system, which provides for both road and rail mode, removing from the constraint to proceed with classic customs declaration of the transit, container for container.</p>

	<p>2. „ANALYSIS FOR THE DEVELOPMENT OF AN INTERMODAL PLATFORM FOR THE OPTIMIZATION OF THE TRAFFICS OF THE PORT OF VENICE TOWARDS THE NEW MARKETS OF CENTRAL EUROPE“</p> <p>Main aim is to promote and improve the coordination between the stakeholders of sustainable mobility in the hubs of central Europe, in order to enhance multimodal and environmentally-friendly transport solutions. It deals with a market analysis about the possibility to create an intermodal service from the port of Venice, highlighting the opportunity of an intermodal railway connection platform to outlet markets such as those of central and northern Europe, including the area of the Po Valley. Therefore, to this end, it is considered the opportunity to develop an intermodal connection platform between road and rail connected to maritime traffic, also through the setting up of a strategic plan in order to maximize traffic to new markets.</p>
Involved stakeholder	Customs Agencies, Railway Operators, Port terminals, Inland terminals, venetian logistics companies, Regulatory Authorities, Public bodies, productive sites, freight forwarders, shipping companies, port terminals
Spatial needs & land development	Infrastructuring of ares for a green logistics multimodal development
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Information not available at the moment.
CO2 savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input checked="" type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

7.3. Regional Action Sheet: Alternativ fuels deployment for sustainable freight operations

Goals	<ul style="list-style-type: none"> - reducing greenhouse gas emissions - achieving climate neutrality - reducing dependence on fossil fuels - enhancement of ports as potential clusters that bring together energy, industry and circular economy - infrastructuring ports as new clean energy hubs
Field of action	<input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input checked="" type="checkbox"/> ALTERNATIVE FUELS <input type="checkbox"/> overarching action fields, communication and public relations <input type="checkbox"/> other:
Brief description	In the “European Green Deal” (COM 2019/640) it is emphasized that in the transition towards zero-emission transport, the enhancement of ports as potential clusters that bring together energy, industry and circular economy is strategic; ports have great

	<p>potential to become new clean energy hubs for integrated electrical systems, hydrogen and other low-carbon fuels.</p> <p>NASPA, with its ports of Venice and Chioggia, plays a strategic role for the development and growth of the socio-economic context in which it is inserted. Actions planned in the alternative fuels filed will directly contribute to the fight against climate change through the implementation of green interventions allowing to guide the ports of Venice and Chioggia towards that ecological transition that will lead them to become a zero-emission system.</p> <p>In particular, the actions are focused on:</p> <ol style="list-style-type: none"> 1. Implementation of the OPS - Onshore Power Supply, 2. Actions to consolidate the logistics chain connected to Liquid Natural Gas (LNG) 3. Actions to promote the supply chain connected to the use of hydrogen (first study) 4. Replacement of old vehicles with electric and hybrid cars and machineries.
<p>Involved stakeholder</p>	<p>Shipping companies, port service suppliers, public bodies, port terminals</p>
<p>Spatial needs & land development</p>	<p>Actions and planning:</p> <ol style="list-style-type: none"> 1. Actions for the implementation of the OPS - Onshore Power Supply, in order to reduce polluting emissions from ships moored in port, during loading and unloading operations on the quay. 2. Actions to consolidate the logistics chain connected to Liquid Natural Gas (LNG) as an alternative fuel of transition for sea and road transport, with coming into operation of the new LNG storage terminal planned at the end of 2023. NASPA is working to implement the infrastructure for the development of the LNG connected logistics chain, even if the LNG market is not yet mature. In particular, NASPA is carrying out the following two main actions: <ul style="list-style-type: none"> ➤ NASPA, together with important port operators, is committed in the development of a supply, refueling and distribution network of LNG. The port of Venice will be the first port in the Adriatic to complete the supply chain for supplying and refueling of LNG for ships. The first LNG deposit in Porto Marghera will be realised with a capacity of 32,000 m³, promoted by the Venice LNG company. The new LNG port storage facility in Venice aims to supply the road, maritime and inland waterways transport modes. ➤ Construction of a barge for the transport of LNG by the Rimorchiatori Riuniti Panfido company, capable of transporting 4,000 m³ of LNG between storage terminal and ships to be supplied. 3. Actions to promote the supply chain connected to the use of hydrogen as an alternative fuel from renewable sources (so-called green hydrogen) with a reduced impact on the environment. 4. Replacement of old vehicles with electric and hybrid cars and machineries.
<p>Priority</p>	<p><input checked="" type="checkbox"/> very high <input type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low</p>
<p>Time horizon</p>	<p><input checked="" type="checkbox"/> short-term: 0-3 years <input checked="" type="checkbox"/> medium-term: 3-7 years <input checked="" type="checkbox"/> long-term: > 7 years</p>
<p>Costs & funding opportunities</p>	<ol style="list-style-type: none"> 1. OPS: CEF Programme, OWN FUNDS NASPA 2. LNG: CEF Programme, OWN FUNDS NASPA, PRIVATE FUNDS 3. Hydrogen: Interreg ITALY-CROATIA, SUSPORT Project 4. Electric/hybrid vehicles: OWN FUNDS NASPA / PRIVATE (to be confirmed within the Programme NEXT GENERATION EU - Green Ports), Interreg Italy-Croatia (SUSPORT Project)
<p>CO2 savings (Please evaluate, if possible)</p>	<p><input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low</p> <ol style="list-style-type: none"> 1. OPS: Currently, the reduction of CO2 emissions with cold ironing, is estimated to be around 30%. 2. LNG: The LNG Venice facility is expected to contribute to the reduction of particulate matters (PM) and NOx in the road sector,



	<p>since LNG produces 98% less PM and 60% less NOx than conventional fuels. Effects will increase from 2022 to 2030 as long the facility's throughput rises. In the maritime sector, LNG produces 97% less PM, nearly 100% less SOx, and 91% less NOx than conventional marine fuels. This positive impact in the port area will also increase from 2022 to 2030 along with the development of LNG-fuelled ships. In addition, the substitution of diesel and fuel oil by LNG combustion will generate 12% less CO2 than conventional fuels for the same period.</p> <p>3. HYDROGEN: It is foreseen the development of a Master plan with milestones for 2030 and estimations of emissions reduction will be possible.</p> <p>4. ELECTRIC/HYBRID CARS AND VEHICLES:</p> <ul style="list-style-type: none"> • CO2 emissions reduction of 15,52 ton/year, with respect to petrol and diesel cars. • E.g. n.2 Electric Rubber tyre gantry cranes (E-RTG) = annual reduction of approximately 120,400 kg of CO2e for each replaced RTG.
<p>Regional added value <i>(Please evaluate, if possible)</i></p>	<p><input checked="" type="checkbox"/> very high: 75-100%</p> <p><input type="checkbox"/> high: 50-75%</p> <p><input type="checkbox"/> medium: 25-50%</p> <p><input type="checkbox"/> low: 0-25%</p>

8. Regional Action Plan Interporto Bologna - Upgrading rail infrastructures to EU standards and fostering the use of alternative fuels

Interporto Bologna SpA is the managing company of the Bologna Freight Village. It was founded in 1971 and has three main objectives, in line with the provisions of the Italian law 240/90:

- To promote and support the development of intermodal rail freight transport in all its forms;
- To promote the concentration of warehousing and logistics activities in a single area equipped with railway terminals and services;
- To contribute to increasing the competitive advantage of the metropolitan and regional production system, thanks to an innovative offer of logistics and goods transport services.

The total area amounts to 4.200.000 sq. m, 665.000 of which are dedicated to the railway infrastructure and are composed of three terminals managed directly by Interporto Bologna through the HIL network contract with Terminali Italia, one of the companies owned by the Italian National Railways.

In 2019 the Italian Ministry of Transport and Infrastructures (currently Ministry of Infrastructure and Sustainable Mobility), issued a tender which gave the possibility to Interporto Bologna to obtain a funding amounting to € 4.300.000 which will be used to upgrade the terminals to European standards, having new rail track 750 m long.

The intervention is part of the industrial strategy of Interporto Bologna S.p.a., which foresees in the three-year period 2021 - 2023 a new positioning in the logistics and freight transport market, focusing in particular on upgrading the railway services, in the capacity offered and in the speeding up of procedures. In order to achieve this objective, the business area related to railway services takes into account the European reference framework, which points towards a constant increase in the length of goods trains, but above all the continuous research aimed at containing the costs and management times of load shedding typical of intermodal transport.



In the last years, Interporto Bologna S.p.a. began as well to redesign its position within the panorama of freight villages and, in general, within the logistics-intermodal platforms from a new perspective. It stems from the conviction that the evolutionary process underway in the sectors of intermodal goods transport and industrial and distribution logistics imposes important changes in the role that freight villages play. In this context, it will be up to the same management companies that have contributed to their creation to redesign the business model best suited to future scenarios.

If in the past it was the geographical-localisation factor that played a strategic role in the success of the major Italian freight villages, in the current phase, and even more so in the future, this will no longer be sufficient. The distinctive elements of each platform will be represented above all by the range of services offered to the companies located there. Given the same advantages in terms of location, factors such as the availability of tangible and intangible networks, telematic connection systems, intermodal connections on the main traffic routes, but also the quality of personal services, accessibility to other complementary nodes that characterise the territory, forming first-level logistics clusters (connections with ports, private logistics platforms and airports) on a national and international scale, will increasingly count.

Additionally, since its establishment, Interporto Bologna S.p.a. has paid special attention to environmental issues within the infrastructure and to the protection of the surrounding communities.

Particular attention is given to waste management, to the constant care of green areas and the management of noise, air and water pollution.

Within this framework, in 2020 Interporto Bologna concluded a new cooperation agreement with the ENI group, the main Italian oil and gas company, for the development of the existing fuel station. This agreement provides for the expansion of the plant and its adaptation to supply LNG, the new frontier of ecological fuel.

8.1. Regional Action Sheet: Alternativ fuels

Goals	<ul style="list-style-type: none"> - Increase the use of alternative fuels in freight transport - Decrease the environmental impact of the road transport - Enhance the technological infrastructure of the logistics nodes in terms of fuel and energy distribution
Field of action	<ul style="list-style-type: none"> <input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input checked="" type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input checked="" type="checkbox"/> other: foster alternative goods transport to the all-road
Brief description	<p>Interporto Bologna is strongly committed in implementing and building alternative fuels stations through partnership with industrial players. The new LNG station that will be opened at the end of 2022 inside the Bologna Freight village enlarges the existing petrol station and widens the offer for the truck companies operating within the node but also in the surrounding area, favouring and encouraging the road transport companies to shift from diesel trucks to LNG trucks.</p> <p>Furthermore, electric recharging points will be installed within the Freight Village infrastructure and feasibility studies on Hydrogen stations will be performed in the near future.</p>
Involved stakeholder	Interporto Bologna SpA, ENI, transport companies, trucks owners, energy providers, Administrations.
Spatial needs & land development	As regards the LNG Fuel Station, the area amounts to 6.000 sq m ca and it results to be the expansion of an existing traditional gas station. The station has to respect local safety regulations (gas management by operators, proximity to any storage areas for dangerous or flammable goods, etc.).
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low



Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input checked="" type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	The LNG fuel station required an investment of nearly 1,7 million, funded by ENI and cofunded by Interporto Bologna.
CO₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input checked="" type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

8.2. Regional Action Sheet: Revamping and enlarging the rail and intermodal infrastructures

Goals	<ul style="list-style-type: none"> - Elevate the rail and intermodal infrastructure to the Eu standards - Foster and enhance the usage of the intermodal transport - Increase the modal shift from road to rail
Field of action	<input checked="" type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input type="checkbox"/> overarching action fields, communication and public relations <input checked="" type="checkbox"/> other: foster alternative goods transport to the all-road
Brief description	The project foresees the upgrading of the intermodal terminal infrastructure in compliance with the European standards for the TEN-T core network: 750 m rail tracks, high-capacity automatic cranes, new terminal yard and safe parking areas for semitrailers and truck drivers.
Involved stakeholder	Interporto Bologna SpA, Rail Infrastructure Manager, Terminal Operators, Transport Ministry, Local Administrations, Terminal customers
Spatial needs & land development	The enlarging of the terminal infrastructure foresees nearly 120.000 sq m of new terminal area equipped with 4 new tracks 750 m long which will be built on a "green field" area. The safe parking area for semi-trailers will be realized by revamping an existing parking area of nearly 25.000 sq m.
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Upgrading of the rail terminal: <ul style="list-style-type: none"> - € 8 million of total investment (for the 1st phase implementation) funded directly by Interporto Bologna SpA for € 3,7 million + € 4,3 co-financing by the Italian Ministry of Infrastructure and Sustainable Mobility. - € 8 milion of total investment (for the 2nd phase implementation - TO BE STUDIED) funded directly by Interporto Bologna Spa + National funding opportunities + EU funding opportunities (i.e. CEF)
CO₂ savings (Please evaluate, if possible)	<input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input checked="" type="checkbox"/> very high: 75-100% <input type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%

8.3. Regional Action Sheet: Digitalization of the information flow related to freight transport

Goals	<ul style="list-style-type: none"> - Improve the efficiency of the terminal operations - Increase transport and freight visibility within the terminal - Improve the terminal accessibility and the collaboration with the other transport stakeholders
Field of action	<ul style="list-style-type: none"> <input type="checkbox"/> spatial planning/ land-use planning <input type="checkbox"/> alternative drives <input type="checkbox"/> regenerative energy supply <input type="checkbox"/> alternative fuels <input checked="" type="checkbox"/> overarching action fields, communication and public relations <input checked="" type="checkbox"/> other: foster alternative goods transport to the all-road
Brief description	<p>There is a high need for digitalization in the intermodal transport especially as regards the terminals. The European Commission is pushing through the TEN-T Corridors all the transport actors (including the nodes) to upgrade the level of collaboration through IT and digitalization of the information flow.</p> <p>Interporto Bologna is investing (and will continue investing in the next years) in that field by implementing a new eGate solution at the terminal entry gate. This investment allows to improve the operations by:</p> <ul style="list-style-type: none"> - automatize the gate-in/gate-out operations at the terminal, - reduce the errors related to manual activities, - improve the detection of problems on the loading unit. <p>Furthermore, the digital information related to the gate-in/gate-out of the cargo can be quick available to be shared with the relevant transport stakeholder.</p> <p>Future investments will be focused on RailGate portal (to automatize the controls on the incoming/outcoming cargo via rail) and on Advanced Yard Management Systems.</p>
Involved stakeholder	Interporto Bologna SpA, Rail Infrastructure Manager, Terminal Operators, Transport Ministry, Local Administrations, Terminal customers
Spatial needs & land development	No need for land/spatial development
Priority	<input type="checkbox"/> very high <input checked="" type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
Time horizon	<input checked="" type="checkbox"/> short-term: 0-3 years <input checked="" type="checkbox"/> medium-term: 3-7 years <input type="checkbox"/> long-term: > 7 years
Costs & funding opportunities	Interporto Bologna SpA direct investments. National co-funding opportunities Eu co-funding opportunities (i.e. CEF)
CO₂ savings (Please evaluate, if possible)	<input type="checkbox"/> high <input checked="" type="checkbox"/> medium <input type="checkbox"/> low
Regional added value (Please evaluate, if possible)	<input type="checkbox"/> very high: 75-100% <input checked="" type="checkbox"/> high: 50-75% <input type="checkbox"/> medium: 25-50% <input type="checkbox"/> low: 0-25%