THE HEARTBEAT OF A VITAL NETWORK

STRATEGY

Interregional
Alliance for the
Rhine-Alpine Corridor
EGTC

THE HEARTBEAT OF A VITAL NETWORK

STRATEGY

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Interregional Alliance for the Rhine-Alpine Corridor EGTC

1 INTRODUCTION

1.1 THE EGTC RHINE-ALPINE

*"Where the regional and local interests along the Corridor
are represented in a bottom-up approach"*

The Interregional Alliance for the Rhine-Alpine Corridor (EGTC Rhine-Alpine) is a European Grouping for Territorial Cooperation (EGTC) founded in April 2015 with a head office in Mannheim, Germany. EGTC Rhine-Alpine started with ten members and has now grown into a community of 26 members from five different countries: the Netherlands, Germany, France, Switzerland and Italy. The EGTC Rhine-Alpine members are a composition of regional and municipal authorities, maritime and inland port authorities and a consortium in-house of Unioncamere and the Italian Chambers of Commerce (see Figure 1). This collaboration of regions, cities and ports reflects the bottom-up approach for which the EGTC Rhine-Alpine stands.
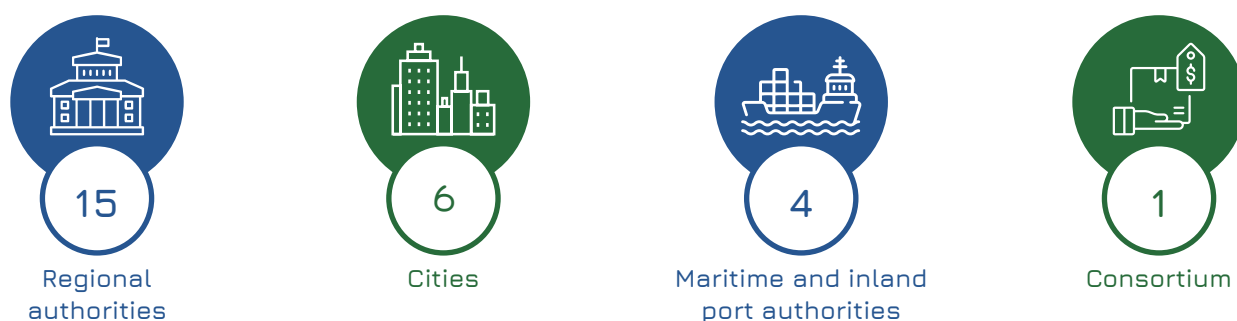
15	6	4	1
Regional authorities	Cities	Maritime and inland port authorities	Consortium

Figure 1: Overview of different member organisations

The main objective of the EGTC Rhine-Alpine is to facilitate and promote the territorial cooperation among its members and to jointly strengthen and coordinate the territorial and integrated development of the multimodal Rhine-Alpine Corridor from a regional and local perspective. The activities presented in Figure 2 provide a review of the collaborative efforts and progress made to date, clearly reflecting the foundations on which future actions will build.
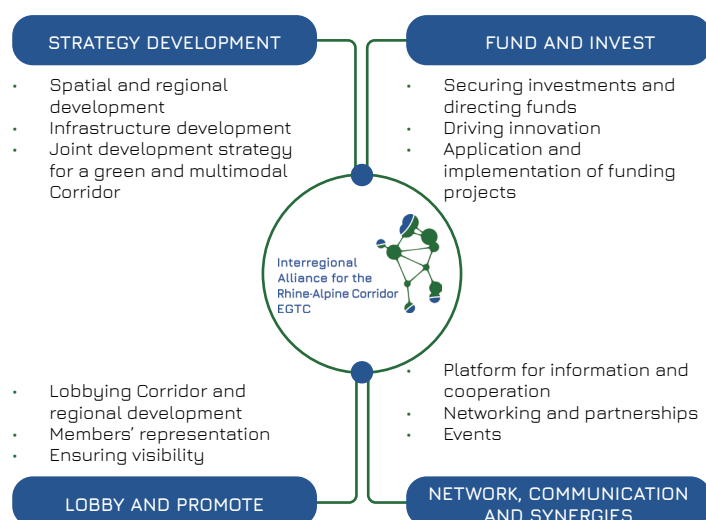
STRATEGY DEVELOPMENT
- Spatial and regional development
- Infrastructure development
- Joint development strategy for a green and multimodal Corridor

FUND AND INVEST
- Securing investments and directing funds
- Driving innovation
- Application and implementation of funding projects

Interregional Alliance for the Rhine-Alpine Corridor EGTC

LOBBY AND PROMOTE
- Lobbying Corridor and regional development
- Members' representation
- Ensuring visibility

NETWORK, COMMUNICATION AND SYNERGIES
- Platform for information and cooperation
- Networking and partnerships
- Events

Figure 2: Overview of EGTC Rhine-Alpine activities

ASSEMBLY

MANAGING COMMITTEE
VICE CHAIR — CHAIR — VICE CHAIR
DIRECTOR

OFFICE

EXPERT WORKING GROUP
CHAIR

ADVISORY BOARD
CHAIR

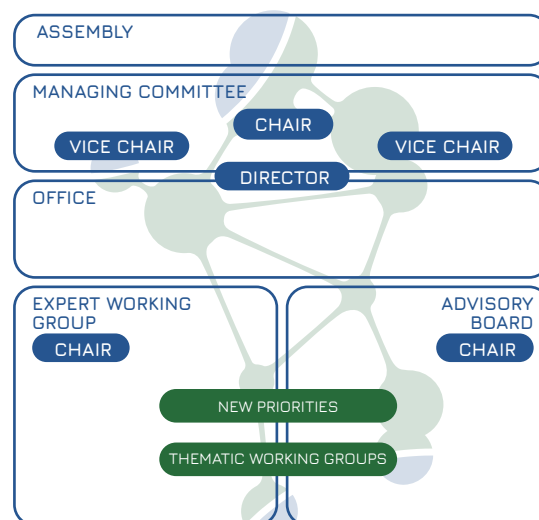NEW PRIORITIES

THEMATIC WORKING GROUPS

Figure 3: EGTC Rhine-Alpine Organigram

The organisational structure is straightforward, comprising a managing committee, an expert working group, and multiple thematic focus groups (see Figure 3). An advisory board consisting of representatives from science and research, economy, logistics enterprises and railway operators supports the EGTC Rhine-Alpine's activities. The EGTC Rhine-Alpine operates as a non-profit organisation, covering the operating expenses and joint activities of the group through annual membership fees.

1.2 THE NORTH SEA-RHINE-MEDITERRANEAN CORRIDOR

Until 2025, the EGTC Rhine-Alpine was solely focused on representing the Rhine–Alpine (RALP) Corridor, one of Europe's most critical freight routes. However, following the adoption of Regulation (EU) 2024/1679, which merged the Rhine–Alpine and North Sea–Mediterranean Corridors, the EGTC Rhine-Alpine faces the challenge to align with the newly established Corridor.

The NSRM Corridor integrates two historically significant transport networks, creating a seamless multimodal Corridor that spans eight European countries: Ireland, the Netherlands, Belgium, Luxembourg, France, Germany, Switzerland, and Italy. It encompasses 12,150 km of railways, 5,000 km of roads, and 5,030 km of inland waterways, covering a wide range of transport infrastructures, including rail, inland waterways, road, air transport, urban nodes, and rail-road terminals (NSRM Corridor).

Within this new development, the EGTC Rhine-Alpine still focuses on the Rhine–Alpine branch, yet is expanding its role to actively contribute to the NSRM Corridor. The EGTC Rhine-Alpine is encouraged to facilitate dialogue and collaboration between the European Coordinator of the NSRMED Corridor and the Coordinator of the Mediterranean Corridor, with the involvement of the Rhône-Alpes and Provence-Alpes-Côte d'Azur regions in France. While the Rhine–Alpine segment remains a key artery of the NSRM Corridor, the EGTC Rhine-Alpine aims to strengthen regional cooperation, promote multimodal solutions, and align transport policies with sustainability objectives. This strategic shift enables the EGTC Rhine-Alpine to enhance stakeholder collaboration, drive policy integration, and foster innovation within the evolving NSRM Corridor.

The maps below illustrate the rail networks of the former RALP Corridor and the new NSRM Corridor. This highlights the continued significance of the Rhine–Alpine Corridor within the new NSRM. Although the RALP Corridor remains unchanged in its structure, it has been integrated into the broader Corridor. Through its broader scope, the EGTC Rhine-Alpine seeks to facilitate cross-border cooperation and to ensure a more integrated and sustainable transport network.
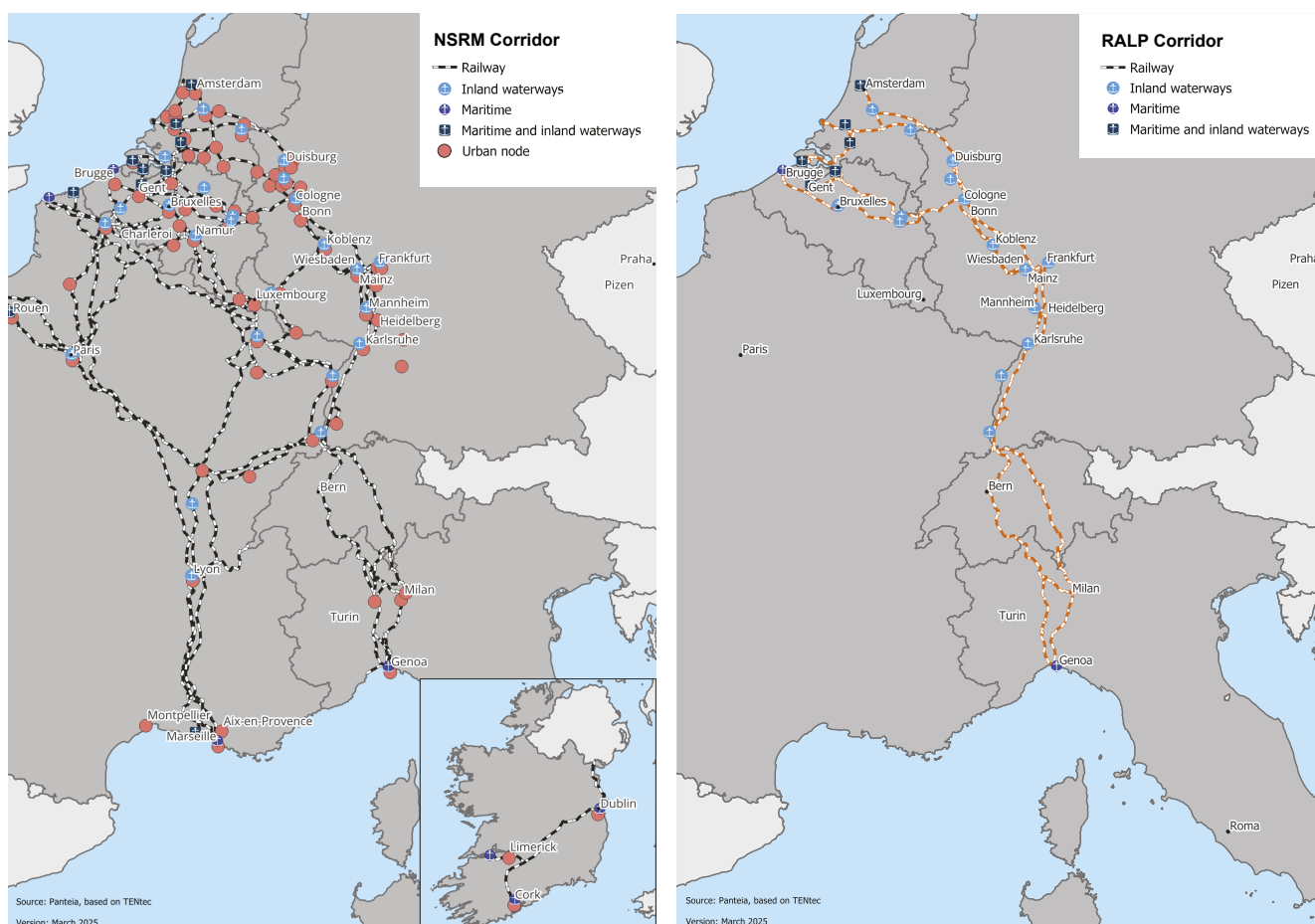

Figure 4: North Sea-Rhine-Mediterranean (NSRM) and former Rhine-Alpine Corridor (RALP). Source: TENtec.

2 DEVELOPING THE VISION

2.1 BACKGROUND

The previous Corridor Strategy, which emphasised integrated and sustainable planning along the Corridor, was developed as a part of the CODE24 project and updated in 2017. The project led to the creation of the EGTC Rhine-Alpine in 2015 and still guides its activities. Recent developments at the European level require an update to the strategy. In particular, in 2021, the European Commission presented a revision of the TEN-T Regulation of 2013 (European Commission, 2021), aimed at aligning the Trans-European Network Transport with the objectives of the European Green Deal and EU Climate Law.

The EGTC Rhine-Alpine is committed to aligning its strategy with the evolving landscape of the European transport sector. It acknowledges both the challenges and opportunities presented by the NSRM Corridor merger for advancing eco-friendly and smart mobility. To address this, the EGTC Rhine-Alpine has developed a new strategy for 2025-2030, focusing on balancing long-term and short-term strategies, enhancing engagement and communication, and improving regional and cross-border information sharing.

The EGTC Rhine-Alpine remains dedicated to shaping the future of the NSRM Corridor, ensuring it continues to be a key player in European logistics and transport networks through strategic planning and development. This includes a focus on spatial and regional development, infrastructure enhancement, and the creation of a green, multimodal Corridor.

This updated strategy was developed following an intensive 1.5-year consultation and discussion process involving the members, advisory board and external stakeholders.

2.2 VISION

The updated strategy envisions the NSRM Corridor as a connected, resilient, sustainable, and cohesive transport network for passenger and freight transport that fosters interregional development and collaboration while reflecting the needs and interests of its regions and communities.

The strategy aims to guide the Corridor's development through a collaborative, bottom-up approach that promotes a human-centric social and economic cohesion, and economic innovation, including support for the circular economy, alongside sustainable urban mobility and environmental goals. While the EGTC Rhine-Alpine seeks to align with European policy where relevant, it remains committed to representing and advocating for member interests to ensure that the Corridor's evolution genuinely reflects regional priorities.

As a key economic backbone, the Corridor is not an isolated route but a critical artery where multiple European Transport Corridors intersect such as North Sea-Baltic, Rhine-Danube, Atlantic, and Mediterranean routes. These connections reinforce its role as a trade Corridor and a hub of industrial and logistical activities, linking major urban and economic centres such as Rotterdam, Frankfurt, Mannheim, Strasbourg, Basel, Milan and Genoa. This overlapping network enhances regional and international accessibility, fostering innovation, economic growth, and sustainable development.

By strengthening cross-border connections, advancing modal shift, highlighting the importance of urban and logistical nodes and addressing essential transport issues, the EGTC Rhine-Alpine strives to support the decision-making processes acknowledged by all stakeholders. Through this, the Corridor remains a lifeline for European commerce and mobility and reinforces its role as a vital and strategic transport axis that drives Europe's economic resilience and competitiveness.

3 STRATEGY AND ITS PRIORITIES

3.1 STRATEGY APPROACH

The EGTC Rhine-Alpine's strategy approach is built upon three core principles: environmental sustainability, connectivity, and effective governance through coordination. These pillars ensure a balanced and forward-looking approach to territorial cooperation, with each one linked to a key priority represented in the triangular framework (see Figure 5 below).
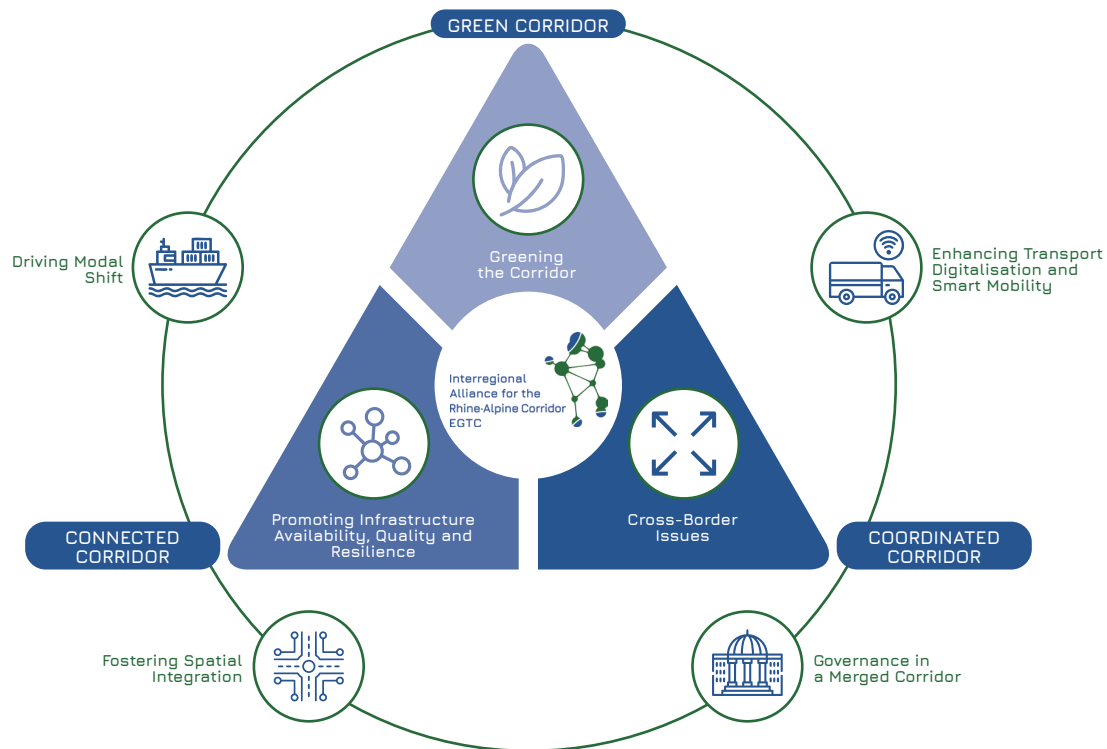

Figure 5: Main pillars and priorities of the EGTC Rhine-Alpine

The three main pillars - Green Corridor, Connected Corridor, and Coordinated Corridor - guide the EGTC Rhine-Alpine's strategic vision:

● Green Corridor
This pillar focuses on sustainability and innovation, with Greening the Corridor as its core priority. It aims to reduce environmental impact, promote eco-friendly logistics practices, and drive the modal shift towards greener transport solutions. Additionally, it emphasises the importance of Enhancing Transport Digitalisation and Smart Mobility to improve efficiency and sustainability.

● Connected Corridor
This pillar emphasises improved connectivity and regional cohesion. Its key priority is Promoting infrastructure availability, quality, and resilience, ensuring the efficient operation of multimodal transport systems. It also addresses Driving Modal Shift, encouraging a transition towards more sustainable transport modes and Fostering Spatial Integration and governance to strengthen the Corridor's overall connectivity.

Coordinated Corridor
● This pillar ensures effective governance and cross-border collaboration. The core priority is addressing Cross-Border Issues, streamlining decision-making, and enhancing coordination among stakeholders. A well-coordinated approach also requires strong Governance in a Merged Corridor, enhancing transport operations and Fostering Spatial Integration across different regions.

3.2 STRATEGY PRIORITIES

3.2.1 PILLAR I: GREEN CORRIDOR

Main priority: Greening the Corridor

The Green Corridor pillar focuses on promoting environmental sustainability along the Corridor through the core priority, Greening the Corridor, that aims to reduce emissions and encourage cleaner logistics and mobility practices.

This is supported by two other interconnected priorities:
- Enhancing Transport Digitalisation and Smart Mobility, which leverages digital tools to optimise transport efficiency;
- Driving Modal Shift, which promotes shifting freight from road to more sustainable modes like rail and inland waterways.

CONTEXT

Transport contributes about 25% of the EU's greenhouse gas emissions, primarily from road transport. Reducing these emissions by 90% by 2050 requires significant investment in decarbonising all transport modes, promoting zero-emission vehicles, and advancing clean technologies and renewable fuels (European Commission, 2023; EEA, 2024; EGTC, 2021). The objective of this priority is to take an integrated approach to ensuring the greening of transport on the Corridor and making it carbon neutral.

For passenger transport, the focus is on increasing electric vehicle (EV) adoption, electrification of rail lines and fostering long-distance (rail) public transport. Local and regional authorities can play a crucial role in deploying public charging points, fast-charging stations along motorways. and development of Clean Energy Hubs. Electrification of rail lines will decarbonise the rail sector even further and long-distance rail transport will provide a sustainable alternative to flying within Europe, taking into account strategies such as hourly based long-distance service, partial sped up services, multi-scale accessibility, integrated ticketing and timed-transfers.

Inland navigation also plays a crucial role in the Corridor. With initiatives such as RH2INE and CONDOR H2, the Corridor is already leading the way in making inland navigation more sustainable. Just as with vessels and vehicles, greening ports and terminals is equally part of the sustainability challenge. This includes measures such as hydrogen-powered shunting locomotives, providing onshore power connections for inland vessels and automated transport vehicles within the logistics nodes. Duisburg, for instance, is testing climate-neutral terminal operations through a local energy supply structure at the new Duisburg Gateway Terminal. The Ports of Savona, Vado Ligure, and Genoa are also involved in these efforts.

Achieving sustainability goals also requires addressing emerging workforce shortages in IWT, rail, and trucking sectors, which could impact the successful implementation of green initiatives in the mid- to long-term. The EGTC Rhine-Alpine is positioned to address this issue at the Corridor level, building collaboration among stakeholders and advocating for measures that support workforce development alongside green innovations.

The NSRM Corridor, being one of the busiest transport Corridors in Europe, faces several sustainability challenges including:
- **Environmental impact of freight transport**: Freight transport on the Corridor generates around 14.1 million tonnes of CO_2, primarily from road transport. Greening of road transport (Railtech, 2021; ESC, 2017) remains a key challenge. Establishing partnerships with private operators to position intermodality as a viable and sustainable freight solution (e.g., the RFI Easy Rail Freight platform). Furthermore, the establishment of Simplified Logistics Zones (ZLS) in Italy, including one covering the Port and Hinterland of Genoa, encompassing sections of the NSRM Corridor in Lombardia and Piemonte is crucial and focuses on integrating transport and logistics infrastructures with local and national economic sectors.
- **Insufficient charging infrastructure**: Despite growth in charging points, demand remains high, particularly for high power Direct Current (DC) connections of over 350 kWh and a stronger energy grid is needed to meet rising energy requirements (McKinsey, 2021; McKinsey, 2022).
- **Challenges with coordination**: Challenges remain in effectively synchronising national greening strategies of Member States and the cross-border interoperability of energy (infrastructure) is missing (Railtech, 2021; ESC, 2017).
- **Comprehensive green transition for mobility**: Incorporating diverse technological solutions in line with principles of technological neutrality and Best Available Technologies (BAT).

OBJECTIVES

- **Promoting green freight and passenger transport** (the use of low/ zero-emission vehicles and alternative fuels). Collaborative efforts focusing on creating incentives, setting standards, and developing supportive infrastructure to make sustainable transport the norm along the Corridor.
- **Supporting the uptake of sustainable transport means for freight and mobility** with emission-free vehicles and vessels, including road, rail, and inland waterways.
- **Promoting the development and use of alternative fuel infrastructure**, and promoting the energy transition and circular economy.

3.2.2 PILLAR II: CONNECTED CORRIDOR

Main priority: Promoting Infrastructure Availability, Quality and Resilience

The Connected Corridor pillar focuses on enhancing the physical and operational connectivity across the EGTC Rhine-Alpine Corridor. Its core priority, Promoting infrastructure availability, quality, and resilience, aims to ensure that transport infrastructure is reliable, future-proof, and capable of supporting seamless freight and passenger flows. This involves both maintaining existing infrastructure and investing in improvements that increase capacity, efficiency, and sustainability.

Three interconnected priorities complement this goal by addressing key aspects of connectivity:
- **Driving Modal Shift** encourages the transition to more sustainable transport modes, reducing congestion and environmental impact.
- **Fostering Spatial Integration** ensures better alignment between transport networks and regional development.
- **Governance in a Merged Corridor** focuses on harmonising regulations and procedures to improve the flow of goods and services across national borders to optimise transport efficiency.

CONTEXT

Ensuring reliable, efficient, and high-performing transport infrastructure is essential for maintaining the flow of goods and passengers across the Corridor. By prioritising long-term resilience, the Corridor can better withstand disruptions such as climate impacts or operational challenges while supporting sustainable growth and efficiency.

The Corridor faces capacity bottlenecks and missing links in road, rail and inland waterway transport. Much of the former Rhine-Alpine Corridor capacity is saturated and demand is projected to surpass available capacity. A 2024 EGTC Rhine-Alpine survey highlighted twenty important bottlenecks, notably the Upper Rhine Valley line and the Rhine between Iffezheim and Duisburg where water levels cannot be guaranteed (European Commission, n/d). While progress is being made, major projects like Emmerich - Oberhausen, Karlsruhe-Basel and the node of Milan should be completed to ease congestion. The Corridor also experiences operational bottlenecks, significant temporary capacity restrictions due to high construction activities all along the Corridor and high dwelling time at borders. There is a lack of sufficient funding for maintaining infrastructure. Additionally, financing new construction projects to relieve bottlenecks remains a significant constraint. Lastly, no unified approach as to the classification of bottlenecks has been agreed upon in the industry so far. Consequently, different government institutions and companies use different methods and frameworks for their classification.

In addition, the issue of infrastructure financing that is more independent of the acute public financial situation (as in Switzerland) should be given a greater role. To avoid situations like the one experienced after the Rastatt, Fréjus and Gotthard Tunnel incidents, as well as the collapse of the Morandi Bridge (motorway viaduct) which occurred in Genoa in August 2018, resilience should also be improved, particularly against climate incidents, through proper maintenance and developing functional alternatives to the main Corridor which provide redundancy and serve freight and passenger demand in their own right. Furthermore, in the Southern part of the Corridor area the following projects are of importance for the entire Corridor:
- Construction of the Third Rail Crossing and associated rail connections to the Port of Genoa and capacity upgrade of the Milan-Genoa railway Corridor;
- Enhancement of the Milan rail hub capacity and cross-border rail connections (IT-CH) for the Gottardo and Sempione tunnels;
- Construction of the Offshore Breakwater Dam at the Port of Genoa.

The topic of resilience is of special relevance given the current geopolitical tensions. It is important that the infrastructure is suitable for "dual-use" - both civilian and military - and that digital infrastructure is strong and protected against attacks from states or organisations outside of the EU.

OBJECTIVES

- **Obtain timely and secure funding for bottleneck removal projects** as well as for acute and continued maintenance of infrastructure.
- **Rapidly improve congested infrastructure** on rail (particularly nodes) and inland waterways.
- **Develop resilience** by creating redundancy with functional alternatives. Resilience aims at coping with the impacts of unexpected events and to prevent them as much as possible.
- **Increase infrastructure quality** to bolster load capacity of rail, waterways and terminals for freight.
- **Develop policy instruments to secure long-term funding** for infrastructure maintenance and safeguard its efficient deployment.
- **Further streamline bureaucratic processes** associated with planning and construction permits but retain a collaborative, considerate planning approach.

3.2.3 PILLAR III: COORDINATED CORRIDOR

Main priority: Cross-Border Issues

The Coordinated Corridor pillar focuses on fostering collaboration and alignment across the NSRM Corridor to ensure efficient and well-managed transport operations. Its core priority, Cross-Border Issues, addresses the need for harmonising policies, regulations, and operational standards to reduce delays and streamline the movement of goods and passengers across national boundaries.

Three interconnected priorities support this objective by improving the coordination:
- **Enhancing Transport Digitalisation and Smart Mobility** improves data exchange, traffic management, and decision-making.
- **Strong Governance in a Merged Corridor** ensures stakeholder collaboration.
- **Fostering Spatial Integration** aligns infrastructure development with regional planning.

Together, these efforts create a unified, efficient, and resilient transport network.

CONTEXT

Cross-Border Issues **from capacity constraints and infrastructure bottlenecks** affect the efficiency of transport. Additionally, **planning and decision making remains complex** between the various MSs and stakeholders involved, due to varying national regulations and infrastructure standards. **Rail constraints** include **limited capacity** and different electrification systems require the use of separate dedicated locomotives for border crossing. Besides technology, cross-border cooperation **between operators and terminals, further digitalisation**, and addressing language and cultural differences are necessary ([European Commission, 2022](#)). A **lack of harmonisation** and **poor public transport connections** further complicate crossborders travel. There is also a **need to improve the infrastructure quality at border crossings, and to address missing links.** Inland waterway capacity issues, such as lock capacity and water depth also require further attention ([European Commission, 2022](#)).

The Corridor **plays a crucial role in maintaining and enhancing the economic significance** of the European Union. It experiences high cross-border traffic volumes, particularly between Germany, the Netherlands, and Belgium, with substantial import and export flows, especially between Germany and the Netherlands, totaling over 42 million tonnes in 2022. In addition to these North-Western European flows, significant freight volumes are also observed

on key Alpine crossings, underlining the strategic importance of southern connections within the Corridor. Total road freight flows between Italy and Germany reach over 25 million tonnes. Moreover, flows between Italy and Switzerland exceed 8.3 million tonnes, reflecting intensive trans-Alpine traffic. Other notable connections include France and Switzerland (9.7 million tonnes) ([EUROSTAT](#)).

Technical and operational barriers, such as differing procedures between countries, further complicate seamless cross-border transport. The Corridor's extensive reach across multiple nations requires coordinated planning and development, aligning with broader EU policy objectives of territorial cohesion and single market integration. Enhancing multimodal transport connectivity, particularly at key urban nodes that link with other Corridors, is vital for efficiency. The uniform deployment of new technologies and innovation across borders is one avenue to addressing Cross-Border Issues effectively[1].

- **Benelux-NRW (North Rhine-Westphalia) Area**: This region faces severe rail capacity constraints, particularly at key cross-border routes between the **Netherlands, Belgium, and Germany**. Bottlenecks, such as the Venlo Yard, the single track Kaldenkirchen – Dülken and the poor connection between the Port of Antwerp and Ruhr Area limit freight efficiency. The quick realisation of the third track in the Betuweroute

1: In June 2024, the EGTC Rhine-Alpine held the 3rd Strategy Workshop online with their members to discuss Cross-Border Issues along the Corridor and thereafter launched a survey among their members to identify what the key issues and best practices are.

in Germany Zevenaar-Emmerich - Oberhausen is also essential. Public transport integration remains inadequate, with missing high-speed rail connections and a lack of a unified ticketing system for cross-border travel. Infrastructure projects, including rail and hydrogen initiatives, face delays due to coordination issues. A shortage of train personnel and missing links further complicate rail and inland waterway transport.

- The Upper Rhine Region (Germany, France, Switzerland): The Germany-Switzerland-France border region is characterised by frequent rail congestion and long dwelling times at key border crossings such as Basel. Planned infrastructure expansions in all three countries aim to address capacity issues, but operational stability, particularly in Germany, remains uncertain. Nevertheless, this region also offers good practice examples, where rail networks seamlessly cross borders, such as at Basel. Further investments are needed to secure and expand cross-border railway public transport while improving local multimodal connections, particularly bus links between railway stations and urban centres.

- Southern Region (Switzerland, Italy, and South of France): Capacity constraints between Italy and Switzerland, particularly in Ticino and

Lombardy, require expansion to support modal shift. A 2023 Memorandum of Understanding the Italian and French governments sets a framework for rail infrastructure improvements by 2035, including the Lyon-Turin base tunnel, multimodal hubs, integrated travel planning, and digital ticketing. Sustainable freight solutions are also being developed through projects such as Trenino Verde delle Alpi, LinkingAlps, and FENIX. In France, cross-border challenges between Lyon, Marseille, and neighbouring countries persist due to insufficient public transport coordination and infrastructure gaps. Addressing these barriers will be key to improving freight and passenger flows within the NSRM Corridor. Furthermore, Alpine crossing challenges, including restrictions and closures as well as the limited permeability of Alpine crossings due to unilateral restrictions imposed by participating countries further challenge the capacity requirements. Also, bottlenecks caused by congestion and service overlaps at the Milano infrastructure hub, a critical junction for north-south connectivity along the North Sea - Rhine - Mediterranean Corridor. Consequently, structural deficiencies in bridges and viaducts along the existing road network impose severe restrictions on the circulation of heavy goods vehicles.

OBJECTIVES

- Address capacity constraints and promote the quality of cross-border infrastructure and mobility system (operation and infrastructure in all the border sections of the Corridor).
- Promote harmonisation and interoperability, specifically the harmonisation of rules and techniques, data and way of measuring, road-toll collection systems, cross-border (intermodal) information systems, digital solutions to ease crossborder cooperation in transport.

Interconnected priority: Enhance transport digitalisation and smart mobility

CONTEXT

The Sustainable and Smart Mobility Strategy (2020) aims for seamless, safe and efficient connectivity through smart digital solutions and intelligent transport systems (ITS), connected, cooperative, and automated mobility (CCAM) and a cohesive multimodal system. This includes addressing the lack of harmonisation in traffic rules and poor coordination between MSs.

Key priorities include real-time data sharing across different modes, developing robust digital infrastructure like 5G connectivity and the European Rail Traffic Management System (ERTMS) for improved rail and air traffic management and reducing CO_2 emissions (5th Workplan for the Rhine-Alpine Corridor, 2022). The EU also promotes innovative technologies such as drones, autonomous vehicles, and clean urban logistics solutions with a regulatory framework that supports innovation while ensuring safety, security, and public trust.

The Corridor is undergoing a significant digital transformation to enhance its transport infrastructure and operations. Within rail, certain sections of the Corridor are being equipped with the European Train Control System (ETCS) Level 2, enabling cross-border train journeys for the European rail network. It involves installing electronic and digital interlockings and adapting existing signalling systems (Digitale Schiene, 2018). As of 2021, 44% of the Rhine-Alpine Corridor was ETCS- equipped (European Commission, 2022). Supporting the technological modernisation and resilience of the rail network is essential to reduce vulnerabilities caused by increased traffic, limited alternative routes, restricted communication nodes, and underdeveloped traffic management systems.

The River Information Service is fully implemented on German core network waterways. The EU funded project DIWa developed a masterplan for the further

digitalisation of inland waterways with shipping administrations of France, Belgium, the Netherlands and Austria (DIWa, 2023).

The Corridor is exploring the use of Internet of Things (IoT) and blockchain technologies to enhance network resilience and implement early detection systems. Significant financial investments are required to upgrade infrastructure and implement digital technologies (CCNR, 2023).

OBJECTIVES

- **Digitalisation of transport** to transform the Corridor into a smart, efficient, and sustainable network. New technologies and big data, particularly on passenger and freight demand and supply (e.g., paperless freight transport), can empower governments and public institutions to make informed decisions through data-driven planning and revolutionise cargo management.
- **Promoting innovation in smart mobility technology**, such as autonomous vehicles, drones, digital interlockings, among others, to support cleaner and more efficient transportation modes.
- **Leverage digitalisation and smart solutions** to facilitate bundling of freight and enable optimal multimodal shipping of freight, with the goal of enhancing the efficiency of logistics operations by enabling seamless transitions between modes.
- **Ensuring adequate mobility information services at transnational level** to make sustainable transport more accessible. This entails creating integrated platforms for real-time travel information, ticketing, and payment across various transport modes to overcome fragmented data and inadequate digital systems, making sustainable transport more accessible along the Corridor.

Interconnected priority: Driving Modal Shift

CONTEXT

Supporting and driving modal shift along the Corridor is one of the **most important prerequisites for reaching the goals of the transport policy of the EU and their MSs**. The EU's Sustainable and Smart Mobility Strategy (2020) reaffirms these modal shift targets: rail freight is expected to increase by 50% by 2030 and double by 2050, while inland waterways and short sea shipping are expected to increase by 25% by 2030.

The implementation of European Transport Corridors and fostering of pan-European cooperation of stakeholders supports creating and establishing efficient alternatives to road transport. In the coming years, there is a **need for the harmonisation of national regulations, operational and technical rules** to level out cross-border barriers. This includes the complete range of land-based transport on all modes for both passenger and freight. In particular, long-distance international and pan-European rail transport border crossing should be no longer a time-consuming process. Together with an efficient rail network, harmonised rules and standardised equipment, rail can be an even more

competitive alternative for road transport.
Currently, European night trains are experiencing a renaissance. Promoting the integrated development of urban nodes using strategic planning tools such as Sustainable Urban Mobility Plans (SUMPs), targeting both passenger and freight mobility.

The need for sustainable transport for freight and passengers along the Corridor, as well as rising congestion along roads, driver shortages and bottlenecks along the Corridor **necessitate a shift to other modalities**. Inland waterway transport and railway transport present greener and more efficient alternatives to road transport (European Commission, 2022). The EU Strategy on Sustainable & Smart Mobility (2020) looks to increase inland water transport by 50% and triple high-speed rail traffic by 2050. There are several infrastructure projects ongoing or planned to improve rail capacity and efficiency, such as the Karlsruhe-Basel rail section, the Frankfurt-Mannheim new and Zevenaar-Emmerich-Oberhausen rail section.

OBJECTIVES

- **Promoting modal shift** to more sustainable and efficient modes, specifically to rail and inland waterways.
- **Improving infrastructural conditions/investment** to support modal shift. This includes upgrading railways, inland waterways, and multimodal hubs to support the increased use of sustainable transport modes.
- **Exploring regulatory frameworks and revising state aid regulations** to strengthen financial incentives for modal shift, addressing the current imbalance where road transport accounts for 56% of freight costs. These frameworks aim to create a favourable environment for modal shift by addressing legal and logistical barriers.
- **Raising public awareness** about the environmental and economic benefits of modal shift to encourage behavioural changes. This includes exploring financial incentives to make sustainable transports more attractive.
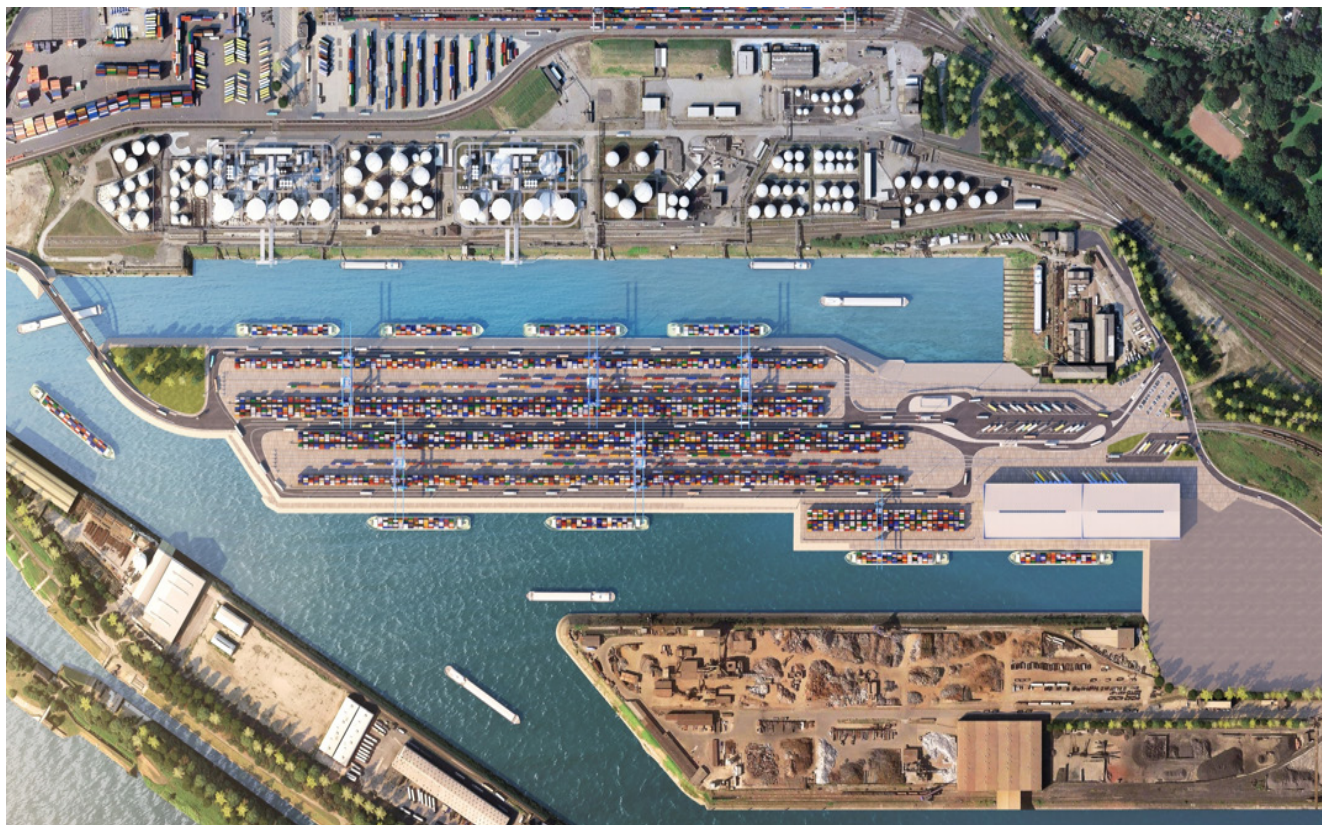
Figure 6: Europe's first climate-neutral container terminal based on hydrogen technology is being built in the Port of Duisburg | Source: Duisport, 2023

Interconnected priority: Fostering Spatial Integration

CONTEXT

Fostering Spatial Integration ensures cohesive development across the NSRM Corridor by aligning infrastructure, regional planning, and policies. In the connected Corridor, it strengthens multimodal accessibility by reducing fragmentation between transport nodes. This priority also supports policy harmonisation and cross-border collaboration, enabling smoother logistics and regulatory consistency.

The EU's Territorial Agenda 2030 supports territorial cohesion by integrating territorial development policies. However, integrating EU policies into national planning poses challenges, particularly in balancing land-use interests. MSs must navigate these challenges while leveraging EU support for regional agendas (PBL Netherlands, 2016; Schon, 2018). The Corridor lacks a unified regional development policy, complicating coordination due to its polycentric structure and numerous urban nodes. Urban nodes face considerable burdens for the Corridor and more support is needed (e.g. for the maintenance of municipal infrastructure, which is heavily burdened), particularly direct access to funds at European level (e.g. Connecting Europe Facilities).

OBJECTIVES

- **Better spatial integration of transport infrastructures**, with a focus on the role that multimodal passenger hubs and logistics nodes, especially ports, can have in urban regeneration projects, as well as learning from each other (best practices) about what can be done to limit nuisance. This includes ensuring the adequate design and implementation of nodes.
- **Development of a regional development policy for the Corridor**, mapping and characterising regional territories, urban nodes and logistics supply/delivery clusters, with reference to socio-economic, demographic and spatial features.
- **Coordination between urban nodes/ regions and macro-regions** to ensure accessibility to all regions, increasing connectivity between urban and rural areas by integrating the different modes of transport in multimodal transport hubs and multimodal freight terminals.
- **Preservation of open space and landscape along the Corridor**, which is critical to maintaining the environmental integrity of the Corridor. This requires balancing development with environmental conservation to protect natural resources and considering rail-oriented development to avoid urban sprawl.
- **Ensure access to smart, sustainable and affordable transport for all users**, including persons with disabilities or reduced mobility, to prevent and mitigate transport poverty.

Interconnected priority: Governance in a Merged Corridor

CONTEXT

The TEN-T revision is a response to the requirement to accelerate efforts to achieve the above mentioned objectives within the context of "Fit for 55" (European Commission, 2021). The TEN-T development aims to close existing gaps, remove bottlenecks and eliminate technical barriers that exist between the transport networks of EU Member States, reducing the environmental impact of transport, increasing network safety and resilience, strengthening the social and economic and territorial cohesion.

While striving for maximum stability of the existing TEN-T network, the merger of the Rhine-Alpine Corridor with North Sea-Mediterranean Corridor to the NSRM Corridor brings certain opportunities and challenges. While facilitating connectivity at the European level, there is no clarity about how to implement the merger and fully integrate the Corridors with one extended core network. There is uncertainty regarding the next steps of the merger and a plan of action needs to be developed. Merging two major Corridors requires significant coordination between different countries and stakeholders. Ensuring seamless integration and addressing potential regulatory and operational challenges would be crucial for the merger's success. The ongoing ESPON study 'PREPARED' (ESPON, 2025) will provide useful insights on these questions. It is important to note that once the Corridor Coordinator issues the next workplan in 2025/26 addressing these issues, there will be more certainty regarding pressing issues and actions.

OBJECTIVES

- Identifying and mapping the merger effects, possible exacerbation of Cross-Border Issues and the impact on synergies with other Corridors.
- Clarifying the implementation and integration of the merged Corridors and subsequently developing an action plan and next steps.
- Focus on spatial integration/interconnections, strengthening technical and infrastructural links.

4 OUTLOOK

4.1 NEXT STEPS

The development of the strategy has followed a bottom-up and collaborative approach, actively involving EGTC Rhine-Alpine members, the advisory board, and key stakeholders. Through this joint effort, three strategic pillars - Green Corridor, Connected Corridor, and Coordinated Corridor - have been established as the foundation for identifying key and interrelated priorities. These priorities have been translated into concrete actions, clearly assigned stakeholder roles and responsibilities, and a timeline, providing a structured and targeted pathway for the sustainable development of the Corridor.

To operationalise these strategic objectives, the EGTC Rhine-Alpine Roadmap 2025 - 2030 (presented in Section 4.2.) serves as a guiding framework that outlines the key actions and milestones needed to enhance the Corridor's efficiency, resilience, and sustainability. While the roadmap aligns with key milestones of the TEN-T framework to ensure efficiency and coordination in cross-border transport planning, the EGTC Rhine Alpine's strategic vision extends beyond transport infrastructure. The Corridor's development approach integrates sustainability, economic resilience, and regional cooperation to support a harmonised and optimised macroregional development. The roadmap, therefore, serves as a guiding structure rather than a rigid framework, allowing for adaptive implementation that reflects evolving regional priorities and policy landscapes. This ensures that EGTC Rhine-Alpine members maintain flexibility to pursue broader regional objectives alongside transport improvements, facilitating synergies between infrastructure investments, digital innovation, and sustainable urban and regional development. Through this approach, the EGTC Rhine-Alpine aims to create a Corridor that enhances connectivity while advancing long-term economic and environmental sustainability.
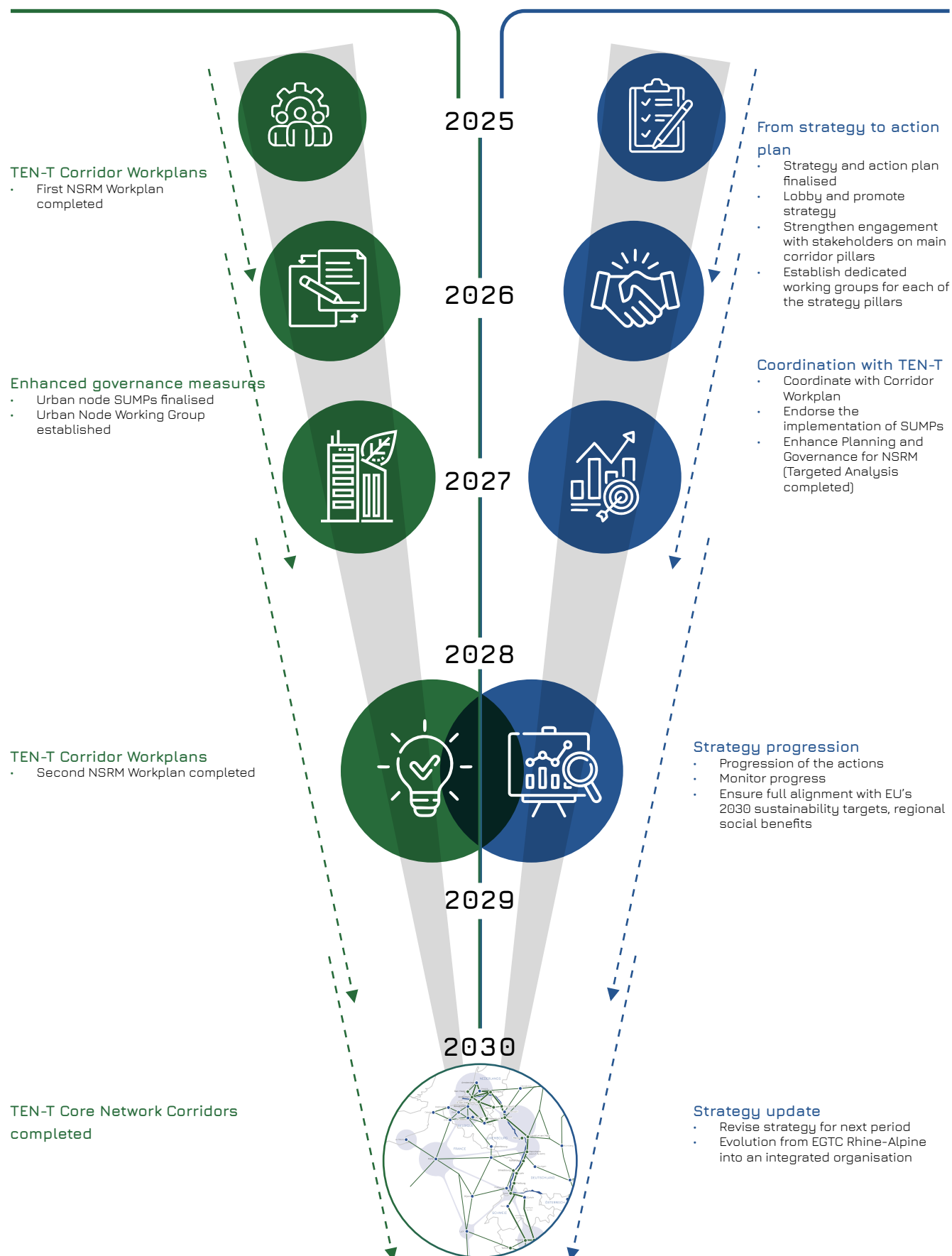
For the NSRM Corridor, the focus is on strengthening stakeholder engagement, forming working groups with a focus on urban nodes in addition to other already existing working group activities. By 2027, the emphasis shifts toward enhanced governance measures. Moving forward (2028–2029), the roadmap progresses with the completion of the 2nd NSRM Workplan, expansion of alternative fuel networks as well as deployment of smart and resilient infrastructure.

The EGTC Rhine-Alpine aims to integrate into the TEN-T Core Network Corridor and transition into the EGTC NSRM as a long-term governance framework to ensure enhanced policy alignment, digital innovation, and multimodal coordination. This transformation will enable the Corridor to expand its geographic scope, deepen cross-border collaboration, and integrate climate resilience and digital freight solutions at a macroregional scale. Beyond 2030, the EGTC Rhine-Alpine will focus on advancing decarbonisation efforts, strengthening governance structures towards a Green, Connected and Coordinated Corridor.

4.2 EGTC RHINE-ALPINE ROADMAP

NSRM

EGTC

2025

2026

2027

2028

2029

2030

TEN-T Corridor Workplans
- First NSRM Workplan completed

Enhanced governance measures
- Urban node SUMPs finalised
- Urban Node Working Group established

TEN-T Corridor Workplans
- Second NSRM Workplan completed

TEN-T Core Network Corridors completed

From strategy to action plan
- Strategy and action plan finalised
- Lobby and promote strategy
- Strengthen engagement with stakeholders on main corridor pillars
- Establish dedicated working groups for each of the strategy pillars

Coordination with TEN-T
- Coordinate with Corridor Workplan
- Endorse the implementation of SUMPs
- Enhance Planning and Governance for NSRM (Targeted Analysis completed)

Strategy progression
- Progression of the actions
- Monitor progress
- Ensure full alignment with EU's 2030 sustainability targets, regional social benefits

Strategy update
- Revise strategy for next period
- Evolution from EGTC Rhine-Alpine into an integrated organisation

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