
TRANS-EUROPEAN TRANSPORT NETWORKS: PILLARS OF ECONOMIC COHESION AND MOBILITY IN THE EUROPEAN UNION

Ionuț IORDACHE

“Alexandru Ioan Cuza” Police Academy

Abstract: *THIS ARTICLE ANALYZES THE DEVELOPMENT STRATEGIES OF THE TRANS-EUROPEAN TRANSPORT NETWORKS (TEN-T) AND THEIR IMPACT ON MOBILITY AND ECONOMIC COHESION WITHIN THE EUROPEAN UNION. THE TEN-T NETWORKS REPRESENT A KEY INITIATIVE FOR THE MODERNIZATION OF TRANSPORT INFRASTRUCTURE, CONTRIBUTING TO THE INTEGRATION OF VARIOUS MODES – ROADS, RAILWAYS, AIRPORTS, AND WATERWAYS – INTO A CENTRALIZED AND INTEROPERABLE NETWORK. INITIATIVES SUCH AS "PROJECT BONDS" AND THE CONNECTING EUROPE FACILITY ARE ESSENTIAL FOR ATTRACTING THE NECESSARY FUNDING FROM BOTH THE PUBLIC AND PRIVATE SECTORS. THE ANALYSIS FOCUSES ON THE PROGRESS IN IMPLEMENTING THESE STRATEGIES, PROVIDING CONCRETE EXAMPLES, SUCH AS ROMANIA, WHERE DEFICIENCIES IN ROAD AND RAIL INFRASTRUCTURE POSE A MAJOR OBSTACLE TO INVESTMENT AND ECONOMIC GROWTH. THE ARTICLE EMPHASIZES THE IMPORTANCE OF A ROBUST LEGISLATIVE FRAMEWORK AND EFFICIENT FINANCIAL MECHANISMS FOR THE DEVELOPMENT OF A SUSTAINABLE AND COMPETITIVE TRANSPORT NETWORK, THUS CONTRIBUTING TO REDUCING EMISSIONS AND PROMOTING SUSTAINABLE MOBILITY.*

Keywords: TEN-T, SUSTAINABLE MOBILITY, EUROPEAN INFRASTRUCTURE, PUBLIC-PRIVATE INVESTMENTS, ECONOMIC COHESION.

Contact details of the author(s): Email: iordache.john@yahoo.com

1. INTRODUCTION

The Trans-European Transport Networks (TEN-T) are a fundamental element in the economic and social architecture of the European Union, aiming to create modern infrastructure that ensures the efficient transport of people and goods. In the current context, marked by the need to ensure sustainable mobility, reduce carbon emissions, and strengthen economic cohesion, the development of these networks is indispensable for achieving the European Union's strategic objectives in terms of competitiveness and economic growth.



TEN-T is designed to connect European regions into a coherent and interoperable network, thus contributing to reducing regional disparities and integrating economic markets. This infrastructure facilitates the free movement of people, goods, and services, supporting the process of European integration and the development of a solid and balanced economy.

The Connecting Europe Facility and the "*Project Bonds*" initiative were designed to attract the financial resources needed for these projects by mobilizing both public and private investments. These instruments are essential for expanding and modernizing transport infrastructure, helping to reduce economic disparities and support less developed regions. The modernization of railway, port, and road infrastructure is a priority to ensure adequate connectivity and sustainable transport across the European Union.

This article analyzes the strategic directions for the development of the Trans-European Transport Networks, highlighting their role in facilitating connectivity and mobility at the European level. The article examines the main policies and financial instruments, while also presenting relevant examples from various member states. Furthermore, it emphasizes the need for effective collaboration between national authorities, the private sector, and European institutions, discussing the challenges that may arise in the implementation of these projects and potential solutions for overcoming them, to ensure sustainable and efficient mobility in the European Union.

2. MAIN TEXT

The regulatory framework for transport at the European Union level is based on Title VI of the Treaty on the Functioning of the European Union (TFEU, 2012, Titlu IV), which serves as the general legal basis for this field. Additionally, regulations concerning the Trans-European Transport Networks are specifically outlined in Title XVI - Trans-European Networks, with particular emphasis on Articles 170-172, which shape the strategic objectives for their development. (TFEU, 2012, art. 170-172)

Article 170 establishes the legal framework for trans-European networks in the fields of transport, telecommunications, and energy, situating them within the broader context of the objectives set forth in Article 26 of the TFEU, namely the creation of an internal market that facilitates the development of infrastructure necessary for economic integration. The objectives of these networks are clearly oriented towards the citizens of the European Union and economic actors in various regions, enabling them to benefit from the advantages of being members of the European community.

The European Union is determined to develop an interconnected, interoperable, and open transport system, based on the principle of free competition, covering the entire European region, including isolated areas, islands, landlocked, or peripheral regions. This commitment is reflected in the provisions of Articles 170-172 of the TFEU, which set out the priorities and guidelines for trans-European projects.

To achieve these objectives, the European Union has established several strategic directions, including the definition of common guidelines encompassing the general objectives, development guidelines, and priorities for the trans-European networks. These include adopting measures aimed at enhancing the level of interoperability, with a focus on applicable technical standards and financial support provided to Member States for the implementation of projects of common interest, including through community funding instruments such as the Cohesion Fund. (Fondul de Coeziune, 2013)

To promote projects of common interest, the European Union emphasizes collaboration with Member States, ensuring their involvement in all relevant stages, from planning to implementation. Additionally, the European Commission and the Council play key roles in establishing and adopting



the necessary guidelines and measures, in accordance with the ordinary legislative procedure and in cooperation with the Economic and Social Committee, as well as the Committee of the Regions.

For the implementation of specific projects involving the territory of a Member State, that Member State's consent is required, thereby providing additional assurance regarding respect for national interests. This balanced approach reflects the Union's commitment to creating a functional framework for cooperation in the development of trans-European networks, thus giving them an imperative and binding character by including them in the text of the Treaty.

1. Development and Strengthening of the Trans-European Transport Networks (TEN-T)

A significant moment in the evolution of trans-European networks was the meeting in Essen in 1994, where several priority projects in the field of energy infrastructure were established. Decision No. 1254/96/EC of June 5, 1996 outlined the directions and guidelines regarding the trans-European energy networks, aiming to identify common, reliable, and economically efficient projects that would contribute to achieving sectoral objectives in the field of electricity.

In the context of the European Union's expansion, with the accession of a considerable number of new Member States, Decision No. 1364/2006/EC of September 6, 2006, was adopted, which brought new directions for the trans-European energy networks (TEN-E), repealing the guidelines of 1996 and 2003. This decision aimed at updating and diversifying supply sources, strengthening connections with countries outside the European Union, and creating links between the energy networks of the new Member States, thereby ensuring access to TEN-E, including for more remote or landlocked regions. (N. Deaconu, 2015, p.11)

The European Union has identified and established several categories of projects for funding, such as:

- **Projects of common interest**, related to gas and electricity networks, which require moderate investments and are economically efficient;
- **Priority projects**, which are treated with particular importance and require priority funding from the European Union;
- **Projects with a European character**, which meet the conditions to be considered priorities and have a major impact on internal and cross-border transport capacity.

These projects target the following measures:

- **Utilizing renewable energy sources** and establishing efficient connections between production means and facilities;
- **Applying modern and efficient technologies** that reduce losses and minimize environmental risks associated with energy transport;
- **Developing energy networks** in isolated and marginal regions, ensuring diversification of energy sources;
- **Connecting existing networks in the European Union** with those of newly admitted Member States and other countries outside the community area.

As a result of these measures, during the period 2007-2013, the European Union allocated approximately 150 million euros for the development of TEN-E networks. Additionally, in 2007, four European coordinators were appointed to oversee the implementation of these projects.

In the telecommunications sector, Decision No. 2717/95/EC of November 9, 1995, set directions for the development of the digital network for integrated services (EURO-ISDN), aiming to establish a common European broadband network. Subsequently, Decision No. 1336/97/EC of June 17, 1997 outlined the directions for trans-European telecommunications networks, identifying the priorities and applications necessary for strengthening economic and social ties, including the use



of satellites for network development. These directives were later amended by Decision No. 1376/2002/EC of July 12, 2002, establishing the criteria for selecting and funding projects of common interest.

2. Strategic Objectives of the Trans-European Transport Network (TEN-T)

To implement the concept of free movement of people, goods, and services at the community level, the European Union began developing the Trans-European Transport Networks (TEN-T) even before the Maastricht Treaty. After its entry into force, plans were formulated for the pan-European corridors, known as the TEN-T networks.

In recent years, the institutions of the European Union have emphasized the need to revise the legislative framework concerning the TEN-T networks, aiming to make them more efficient and harmonized. The European Parliament and the Council adopted Decision No. 661/2010/EU, which reformed the guidelines regarding TEN-T, thereby repealing some previous decisions and establishing maps and deadlines for the realization of the trans-European network.

In 2013, the European Parliament approved the new directions and guidelines for TEN-T, with the aim of completing the core transport network by 2030 and the comprehensive network by 2050. Regulation No. 1315/2013 prioritized sustainable mobility and the efficient interconnection of national infrastructures. (UE, 2013)

The entry into force of Regulation No. 1315/2013 aimed at expanding the TEN-T networks, and through the resolution of September 9, 2015, titled "Implementation of the 2011 White Paper on Transport: assessment of progress and the way forward towards sustainable mobility," the importance of transport in the economic life of citizens was highlighted. It was emphasized that investments in infrastructure are essential for achieving the objectives concerning the trans-European networks.

In the transport sector, the focus is on eliminating bottlenecks, building missing links, improving cross-border networks, and ensuring efficient long-term transport systems. Additionally, there is an aim to reduce carbon emissions and improve the accessibility of transport infrastructure by enhancing the connectivity and interoperability of transport services.

In the energy sector, the Connecting Europe Facility aims to increase market competitiveness, enhance the level of energy security in the EU, and develop sustainable energy networks that integrate renewable resources.

In the telecommunications sector, the goal is to support core services and activities related to broadband networks through grants and public procurement.

In the 2021-2027 period, the Connecting Europe Facility benefits from a budget of €33.71 billion, allocated across the transport, energy, and digital sectors. This allocation aims to support the development of trans-European infrastructure and contribute to the European Union's connectivity objectives. (UE, 2021)

3. Integration and Harmonization of Transport Networks in Europe

A sustainable and competitive European Union depends on efficient connectivity, both within the Union and in its relations with the rest of the world. Developing a well-interconnected and interoperable transport infrastructure requires long-term strategic planning and investment at the European Union level. The Connecting Europe Facility (CEF) was created as a centralized funding program for transport, energy, and telecommunications infrastructures, with the overall objective of promoting projects that contribute to completing the Trans-European Transport Network (TEN-T).

The CEF aims to address market failures and support projects that bring added value at the European level, mobilizing additional investments from the private sector. The interconnection of



transport networks is based on rigorous planning and allows for the development of integrated networks by supporting investments that have a clear European dimension. Priority is given to projects targeting cross-border connections, completing missing links, and eliminating bottlenecks.

The Connecting Europe Facility (CEF) for the 2021-2027 period funds projects aimed at supporting the development, modernization, and interconnection of transport, energy, and digital infrastructures within the European Union. This effort contributes to the creation of integrated and sustainable trans-European networks, with a particular emphasis on promoting decarbonization, green transport, and the use of renewable energy sources, aligning with European environmental objectives for 2030 and commitments under the European Green Deal. (European Parliament, 2018)

Estimates by the European Commission indicate that the investment needs for the core TEN-T network are considerable, and achieving the connectivity and sustainability goals required for a green economy necessitates extensive funding. CEF 2.0, by integrating synergies between the transport, energy, and digital sectors, aims to create interconnected and interoperable networks that support the economic competitiveness of the European Union and contribute to reducing carbon emissions.

A strategic objective of the CEF 2021-2027 is to strengthen the complementarity of transport modes and support military mobility, facilitating the efficient and safe movement of goods and people within the European Union. Moreover, the program supports the development of high-capacity digital infrastructures, including 5G, and the modernization of energy infrastructures to increase energy supply security and facilitate the integration of renewable sources.

The majority of CEF funding is provided through grants, with these funds being directed towards projects that offer regional and Union-wide benefits. Thus, trans-European, interoperable, and interconnected networks are essential for boosting the economic competitiveness of the European Union, contributing to the achievement of sustainable mobility goals and the realization of a robust and resilient European single market.

4. Strategic Perspectives for the Development of Trans-European Transport Networks and Their Implications

With the adoption of the European Sustainable and Smart Mobility Strategy for 2021-2027, European institutions have updated infrastructure priorities, emphasizing the modernization and integration of transport infrastructure into a core network to support sustainable and efficient transport. These measures contribute to achieving the European Green Deal and the climate targets for 2030.

The Connecting Europe Facility (CEF) 2021-2027 plays a significant role in funding trans-European infrastructure, supporting the sustainable development of transport, energy, and digital networks. The current strategy focuses on the development of smart networks, carbon emission reduction, and the integration of renewable energy sources. Initiatives like "*Project Bonds*" have been phased out and replaced with more efficient financial instruments for attracting investments, such as green transition funds and support for critical digital infrastructures. (Comisia Europeană, 2023)

The strategy also aims to create a core TEN-T network that integrates the ten trans-European transport corridors and supports horizontal projects, such as SESAR, for air traffic management. The European Union intends to complete a comprehensive network by 2050, supporting the free movement of people, goods, and services.

The new strategy emphasizes the development of major TEN-T network nodes, setting clear criteria for their selection based on strategic importance, traffic volume, and cross-border



connectivity. These nodes include capitals and major economic centers. Statistical data and traffic volume analysis are essential for setting the development directions for infrastructure.

Through the measures implemented, the TEN-T network becomes essential for reducing carbon emissions by 55% by 2030, in line with new European targets. Integration and interoperability of transport systems are priorities for achieving a sustainable and competitive economy.

A relevant example remains the situation in Romania, where the modernization of railway infrastructure and ports is necessary to improve connectivity and attract foreign investment. Rapid intervention for infrastructure modernization is crucial for stimulating economic growth and complying with European Union environmental standards.

3. CONCLUSIONS

The Trans-European Transport Networks (TEN-T) are an essential element of the European Union's infrastructure policy, acting as a catalyst for economic integration and sustainable mobility. By strengthening connections between European regions, TEN-T not only facilitates the mobility of people and goods but also contributes to reducing regional disparities and enhancing economic and social cohesion. Integrating less developed regions into the European economic circuit allows for reducing development gaps and supporting sustainable economic growth.

The implementation of the Connecting Europe Facility, along with other financial initiatives, has enabled the mobilization of resources necessary for the modernization and expansion of transport infrastructure. These funds, mobilized from both the public and private sectors, have facilitated the realization of projects of common interest, aimed at improving connectivity and supporting disadvantaged regions. However, the success of these initiatives depends on close cooperation between national authorities, the private sector, and European institutions to effectively overcome the challenges associated with implementation and ensure the harmonious integration of networks at the European level.

TEN-T is not just a simple infrastructure network but also a strategic tool for developing a sustainable and efficient transport system, both economically and ecologically. By promoting sustainable transport, reducing carbon emissions, and encouraging the use of renewable energy sources, the European Union aims to achieve its long-term development objectives, including those set out in the European Green Deal. Thus, the TEN-T networks contribute to building a green and competitive economy, providing significant benefits to European citizens and the business environment.

In conclusion, the development and consolidation of trans-European transport networks are particularly important for achieving modern, efficient, and sustainable infrastructure in the European Union. The success of these efforts depends on the continued commitment of Member States and a common vision that promotes competitiveness, economic cohesion, and sustainability. The European Union must intensify its efforts to ensure an interconnected transport system, adapted to future challenges, that supports economic development and improves the quality of life for all its citizens.

REFERENCES

- Diaconu, N. (2015). *Reglementările Uniunii Europene între tendința asigurării securității interne și necesitatea respectării dreptului la viață privată*, Nr. 2(27).
- European Commission. (2013). Cohesion Fund and Financial Support for Projects of Common Interest. Official Journal of the European Union, L 193/2013. Retrieved <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013R1316>
- European Commission. (2013). Regulation No. 1315/2013 on Trans-European Transport Networks. Official Journal of the European Union, L 348/2013. Retrieved <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013R1315>
- European Commission. (2021). Connecting Europe Facility (CEF) 2021-2027. Retrieved https://ec.europa.eu/transport/themes/infrastructure_en
- European Commission. (2021). European Sustainable and Smart Mobility Strategy 2021-2027. Retrieved https://transport.ec.europa.eu/transport-themes/mobility-strategy_en
- European Commission. (2023). Investments in Trans-European Infrastructure - Assessment and Proposals for Future Funding. Brussels. Retrieved <https://ec.europa.eu/project-bonds-report-2023>
- European Parliament. European Green Deal. Retrieved <https://www.europarl.europa.eu/factsheets/en/sheet/21/european-green-deal>
- European Union. (1995). Decision No. 2717/95/EC of 9 November 1995. Official Journal of the European Union, L 183, 11.7.1997.
- European Union. (1996). Decision No. 1254/96/EC of 5 June 1996. Official Journal of the European Union, L 161, 29.6.1996.
- European Union. (1997). Decision No. 1336/97/EC on the Guidelines for Trans-European Telecommunications Networks. Official Journal of the European Union, L 183, 11.7.1997.
- European Union. (2002). Decision No. 1376/2002/EC amending Decision No. 1336/97/EC. Official Journal of the European Union, L 200, 30.7.2002.
- European Union. (2006). Decision No. 1364/2006/EC of 12 October 2006. Official Journal of the European Union, L 262, 22.09.2006. Retrieved <http://data.europa.eu/eli/dec/2006/1364/oj>
- European Union. (2012). Articles 170-172 of TFEU on Trans-European Networks. Retrieved <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12012E170>
- European Union. (2012). Treaty on the Functioning of the European Union (TFEU), Title VI. Retrieved <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12012E%2FTXT>
- World Bank. Report on Infrastructure in Romania and Connectivity Issues. Retrieved <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/>