

## The CER Essay series

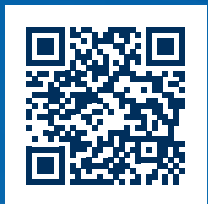
Where academic analysis  
meets business insight

# Investing in railways is a key decision for the EU's green future

by Associate Professor Jana Pieriegud, SGH  
and Krzysztof Mamiński, CEO of PKP

# CER Essays

The CER Essays initiative features a series of essays that show the rail sector as contributing not only to EU transport policy, but touching on different aspects of society at large. Topics covered by the initiative will range from modal shift, climate policy, infrastructure investment, high-speed rail, demography and more. Each essay will feature a different topic and be co-authored by a CER member CEO and a leading academic from the same country and will be used to spark debate among political stakeholders on the role of rail in the EU.



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# About the authors

Jana Pieriegud is a leading transport economist with a background in railway engineering and management as well as twenty years of experience in the R&D&I areas, market intelligence analysis and strategic consultancy for entrepreneurs and public administration. She is a Professor at the Institute of Infrastructure, Transport and Mobility at the Warsaw School of Economics (SGH). Her areas of research include the development of the TEN-T network and rail freight corridors between Europe and Asia, transport infrastructure funding, intermodal transport, competition on the railway market, and using green and digital technologies in transport and logistics.

She is an independent expert for a number of institutions and research and innovation agencies in Poland and abroad, such as: National Centre for Research and Development (NCBR), European Research Executive Agency (REA), Climate, Infrastructure and Environment Executive Agency (CINEA), and Austrian Research Promotion Agency (FFG). She is a member

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Jana Pieriegud has authored and co-authored in excess of 160 research papers and book chapters. She is a co-editor of monographs in the areas of Poland's transport system, future of network industries, digitalisation and new concepts of mobility. She has prepared a number of railway industry analyses that are internationally recognised: The Polish Railway Market 2020/21 (Embassy of the Kingdom of the Netherlands in Poland, 2021), Analysis of the potential of the development of rail container transport market in Poland (EC-DG REGIO, 2019), and Digital transformation of railways (SGH/Siemens/ProKolej Foundation, 2019).



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Krzysztof Mamiński has over 40 years of experience in the railway sector and has held managerial positions for more than 20 years. Since 2017 he holds the position of the President of the Board of PKP S.A. - Polskie Koleje Państwowe S.A. (Polish State Railways) and is co-responsible for the development strategy of the rail sector in Poland.

In 2021 Mr. Mamiński was appointed as the chairman of UIC – International Union of Railways, the world's largest railway organisation with its headquarters in Paris. At the same time, he is a Vice-Chairman of the CER Management Committee and member of the UIC European Regional Committee.

Krzysztof Mamiński is also a member of the Conference of General Directors

of the Organization for Cooperation of Railways (OSJD), where he actively advocates in favour of improving cooperation between Europe and other regions of the world.

From 1998 to 2002 he served on the board of Polskie Koleje Państwowe (Polish State Railways), holding the position of the Member of the Board in charge of restructuring and privatisation (1998-2000) and employee affairs (2000-2002). He is co-author of the concept of restructuring Polish railways, actively involved in the successful implementation of a new structure which takes into account the liberalisation of the European rail market.

Since 2002 he has continuously held a top position in the Polish association of railway employers, including several terms as President of the Board (2002-2003, 2005-2013 and 2017-present).

# Executive Summary

Railways, as an environmentally friendly and efficient mode of transport to move people and goods, have an important role to play in decarbonising transport as well as in the EU's economic growth and green future. A key prerequisite for this is the **sustainable financing of railways**, including:

- (1) **fair financing** through EU regulations ensuring a level playing field for different modes of transport;
- (2) **long-term financing** going beyond a seven-year financial perspective;
- (3) **comprehensive financing** of the entire railway system covering its components: railway infrastructure, railway stations and transhipment terminals, rolling stock, digital tools;
- (4) **service-oriented financing** for the development and maintenance of railway services, not just investment tasks.

Over the past decade, the European structural and investment funds, including the European Regional Development Fund (ERDF) and the Cohesion Fund (CF), have allowed Member States, particularly those with lower gross national incomes, to increase investments in the development of railway infrastructure. Significant support has been also obtained from the Connecting Europe Facility (CEF). At the same time, the need for further funding remains enormous. The required investment in rail lines as part of the implementation of the

Trans-European Transport Core Network between 2021 and 2030 is estimated at EUR 430 billion. An integral part of this policy is the development of the European High-Speed Rail (HSR) Network that will link major cities, urban nodes and airports and support the development of international passenger services.

The Polish example as the biggest beneficiary of the EU Cohesion Policy shows that EU funds help to significantly increase public investment in the development of railway infrastructure (annually from EUR 0.2 billion in 2000 to EUR 2.4 billion in 2020), railway stations and passenger rolling stock as well as accelerate private investments in the purchase of rolling stock for rail freight and the construction of rail-road transhipment terminals. Also, the proportion of expenditure between railways and roads has improved.

The main positive effects of increased investments in the development of railway infrastructure in Poland with the support of EU funds include a reduction in journey times and an increase in demand for passenger rail transport: the number of passengers using long-distance trains has almost doubled between 2014 and 2019. A stable growth trend has occurred in rail container transport: the number of TEU containers transported increased by 2.6 times between 2014 and 2021. At the same time, an increase in railway traffic volumes does not improve the modal split. In 2019, the share of railways represented only 7% in passenger and 11% in freight transport.

*EU funds help to significantly increase public investment in the development of railway infrastructure.*

## Executive Summary

The development of railway infrastructure is currently carried out within the framework of the National Railway Programme (KPK) complemented by four other multi-annual programmes: the Railway Station Investments Programme, the Programme for Supplementing the Local and Regional Railway Infrastructure until 2028 (the Railways+ Programme), the Programme for the Construction/Upgrading of Railway Stops as well as the CPK Programme as an initiative to develop high-speed rail links as part of a programme to create a new central airport in Poland (Solidarity Transport Hub or CPK).

Similarly to previous EU financial perspectives in the years 2021–2027, the railway projects in Poland will mostly be co-funded by the EU. The biggest investment will be through cohesion policy instruments (CF and ERDF) and delivered within two national operational programmes: the European Funds for Infrastructure, Climate and Environment Programme (EFICE) and the European Funds for Eastern Poland Programme (EFEP) as well as 16 regional ones (Regional Operational Programmes).

A major part of EU funding will also be through the Recovery and Resilience Facility (RRF) within the National Recovery Plan (KPO) as well as the Connecting Europe Facility (CEF 2) instrument for upgrading rail infrastructure along the TEN-T Core Network Corridors.

In Poland as in other EU countries, investment needs for the development of rail transport by 2030 as well as expenditure required to maintain railway systems significantly exceed the possibilities of public funding. **At the same time, the polluter-pays principle is not fully applied in the Member States. Neither the European Green Deal nor other EU strategic documents indicate specific financial instruments on how to create fair competition between rail and road transport.** After many years of unfulfilled expectations and a lack of success in meeting the EU's modal shift targets towards sustainable transport modes, such as railways, it is the right time to start discussions at EU decision-making level on how to implement concrete solutions for a sustainable, fair, comprehensive and long-term mechanism for financing railways in Europe.

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**Alberto  
Mazzola**

CER Executive Director

# Introduction

The railway business is a perfect example of a capital-intensive business with long-term returns on investment. To finance rolling stock, maintain and build new rail infrastructure while increasing digitalisation, rail companies must find adequate financial sources to go beyond customer-driven revenue streams, such as from national and European public sources as well as from the capital markets through credit institutions.

This CER essay outlines the basis for ensuring viable financial conditions for the rail system to prosper and to fully deliver its societal and environmental benefits. The text comments on the role of European regional and cohesion policies and the use of European Structural and Investment Funds (ERDF, Cohesion Fund) as well as the Connecting Europe Facility, the MFF budget line dedicated to co-fund projects that are included in the Trans-European Network for Transport.

Drawing from the Polish experience, the essay evaluates positively the role played by EU-driven policies but shows, at the same time, that these lines of funding cannot boost the development of the rail sector in a way that would be sufficient to enable the European Union to achieve, through modal shift, the goals set by the European Green Deal and the EU Strategy for Sustainable and Smart Mobility.

More is therefore needed, and the sector is actively reflecting upon possible additional solutions.

The revision of the current Multiannual Financial Framework in 2023-2024 may be able to deliver a little more, namely for those projects that qualify as

being consistent with the objectives of the Military Mobility Strategy. At the same time, in the context of the negotiations on the Fit for 55 legislative package and the revision of the EU Emission Trading System, the sector is asking to have access to a portion of the ETS revenues. High hopes are also put on the ultimate effects of the work the EU is doing in the context of Sustainable Finance – i.e. on the Taxonomy Regulation and the progressive adoption of its delegated acts, to re-orient private capital towards sustainable investments with secure long-term returns. Other further instruments, such as the wider ratification of the Luxembourg Rail Protocol for rail rolling stock or the increased role of the European Investment Bank through its new Transport Lending Policy as a fully-fledged climate bank could help gather the necessary financial resources and provide the European rail system with what it takes to lead the European green and digital transitions.

This essay invites EU policy and rail stakeholders to consider thoroughly all current funding and financing sources (including new ones not yet implemented) and also how best to prioritise the use of these resources.

A handwritten signature in blue ink, appearing to read 'Alberto Mazzola', written in a cursive style.



# Towards increasing investments in railways

Rail is the greenest and safest means of inland transport. As a low-carbon transport mode, it contributes to both energy security and the combating of climate change as well as to the achievement of the EU's policy objectives of reducing greenhouse gas emissions and removing congestion. Railways also contribute significantly to the development of the European economy and to the completion of the European Single Market. Importantly, rail transport proved to be the most resilient and reliable during the challenges of the COVID-19 pandemic. The recent war in Ukraine also showed clearly that railways play an essential role in supporting and transporting refugees from

conflict zones, whilst supplying humanitarian aid to those in the need.

An essential feature of the rail transport sector is its social role and the resulting public service obligations (PSO), including affordability, social tariffs, safety, and minimum quality standards. Efficient rail transport operation also requires the co-existence and compatibility of each of its subsystems and components, such as: railway infrastructure and stations, rolling stock, and control command and signalling on-board and trackside subsystems.



In recent decades, EU funds have become an important financing source for the development of rail transport, with significant results to date. European railways are the largest beneficiaries of EU funds (ERDF and CF). Although they do not meet the much greater needs of rail transport, in the last decade they have had a significant impact on modernisation and the revival of railways observed in recent years (especially in the EU cohesion countries).

Given the specificities and the huge investment needs in the rail sector, the currently proposed EU financial instruments, including the Connecting Europe Facility (CEF 2 Programme) and the new, albeit one-off, Recovery and Resilience Facility (RRF), may only deliver limited results. They are insufficient in the long-term perspective. Likewise, past experience with the use of financial debt instruments (European Fund for Strategic Investment (EFSI), InvestEU or green bonds) has shown their clear limitations, including in the area of attracting private capital and investors for rail infrastructure investment projects.

The aim of this essay is to show the role of EU funds for the current development of the rail sector, using the example of Poland as the largest beneficiary of EU funds, as well as the resulting strong need to further increase financing of railways in the EU. It is not only about ensuring the further development and modernisation of the railway sector (in particular its digitalisation, innovation, competitiveness), but above all strengthening the role of rail in ensuring safe and sustainable mobility in Europe and in achieving the EU's strategic goals of the European Green Deal and combating climate change. Moreover, it should speed up activities related to the implementation of the polluter-pays principle postulated by the railway sector for years, and initiate long-awaited discussions at the EU decision-making level on the sustainability of future financing of rail transport in Europe (beyond the period of one EU financial perspective).

## The role of EU funds for railways

The financing of rail investments in EU Member States traditionally involves the use of public funds for railway infrastructure development, including state budget and dedicated national funds, as well as the European structural and investment funds, in particular ERDF and CF. Other sources of funding include railway infrastructure managers' resources (revenues from infrastructure access fees) and loans. Local budgets are used to purchase passenger rolling stock. The purchase of passenger rolling stock can be financed from local budgets, while the costs of locomotives and freight wagons are paid by the railway undertakings, with the possibility of co-financing in the case of intermodal transport.

EU funds play an important role in co-funding railway projects, including Cohesion Funds for Member States that meet the requirements, and the CEF with the General Envelope for all Member States, and the Cohesion Envelope for those who meet the conditions. Cohesion policy funding is planned in close cooperation with support from CEF.

*The aim of this essay is to show the role of EU funds for the current development of the rail sector.*

Poland was the main beneficiary of EUR 8.1 billion in EU funds for rail projects between 2014 and 2020.

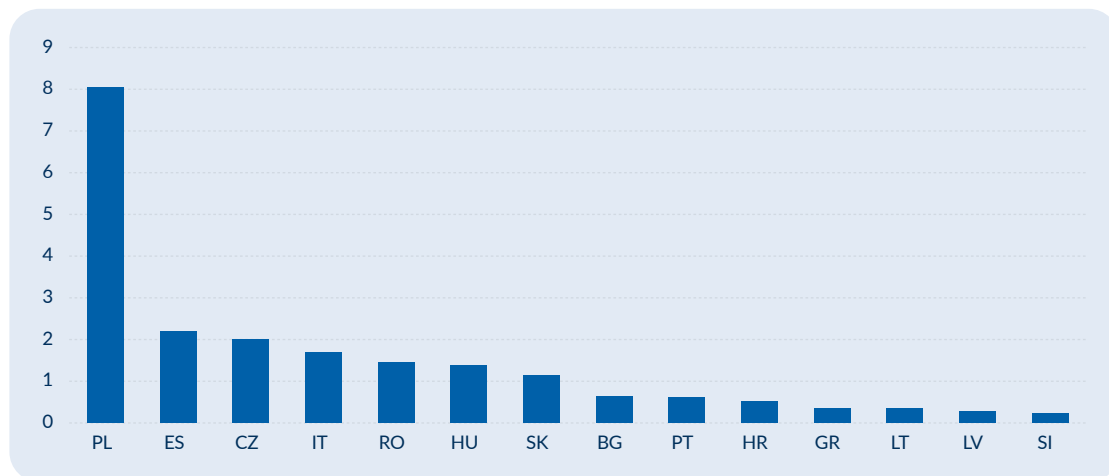
## The Cohesion Policy

Cohesion Policy as one of the EU financial instruments has invested in rail projects over many years. It aims to foster cohesion by improving the accessibility of all regions, including by supporting the development of TEN-T, in particular in regions that are less developed. In this framework, ERDF and CF provide significant support to rail investment for lines that are part of the Core and Comprehensive TEN-T Network and important connections to the TEN-T. Cohesion policy also supports investments in railway stations and rolling stock which are an integral part of the overall rail system and contribute to improving its competitiveness and the quality of services. Additional support for the deployment of rail-based solutions for sustainable and smart regional and local mobility (light rail, metro, tram) completes it further.

For the 2014-2020 programming period, 69% of the rail investments were financed from the CF (EUR 12.1 billion). In total, with ERDF, about EUR 18 billion have been injected in rail projects in the EU. This represents more than a quarter (27% in 2019) of all Cohesion Policy investments in the transport sector. In the period 2014-2020, the Cohesion Fund also transferred EUR 11.3 billion to the projects funded by the CEF. This amount was almost entirely dedicated to rail investments.

Poland was the main beneficiary of EUR 8.1 billion in EU funds for rail projects between 2014 and 2020, followed by Spain with an amount four times smaller – EUR 2.2 billion and the Czech Republic – EUR 2 billion (Fig. 1). These are followed by: Italy (EUR 1.7 billion), Romania (1.4 billion), Hungary (1.4 billion), the Slovak Republic (1.1 billion) and Bulgaria (0.6 billion).

**FIGURE 1: EU FUNDS ALLOCATION FOR RAIL INVESTMENTS\* FOR 2014-2020 BY MEMBER STATE (BILLION EUR)**

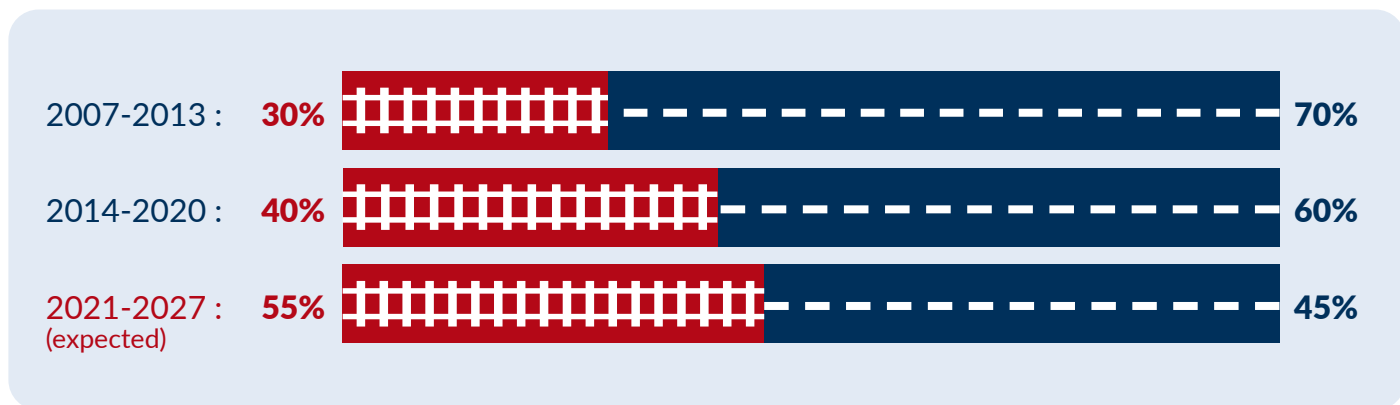


\* The European Structural & Investment Funds' database monitors four categories of the intervention fields: railways (TEN-T Core), railways (TEN-T Comprehensive), other rail investment; mobile rail assets.  
Source: Based on the EC-ESIF data.

Since 2001, Poland has been implementing the largest motorway and expressway construction plan in its history. Despite enormous needs in this

respect, in the last two EU financial perspectives, it increased the share of EU funds allocated to railways by 10 percentage points (Fig. 2).

FIGURE 2: EU FUNDS ALLOCATION BREAKDOWN IN POLAND: RAILWAYS VS. ROAD (%)



Source: own elaboration based on Ministry of Development Funds and Regional Policy data.

## The Connecting Europe Facility

The EU policy on TEN-T, energy and digital infrastructure has been a key political priority for nearly a decade. It aims to connect Member States and regions, ensure a sustainable and efficient transport infrastructure and a resilient Energy Union with a forward-looking climate policy. By providing targeted EU investment, CEF is a flagship funding programme with a key role in supporting the European Commission's priorities related to smart, sustainable and inclusive growth, and the European Green Deal objectives.

During the 2014-2020 financial period CEF allocated EUR 23.2 billion to transport actions, including EUR 11.3 billion reserved for the Member States eligible for cohesion funding. A predominant part of the CEF grants (71%)

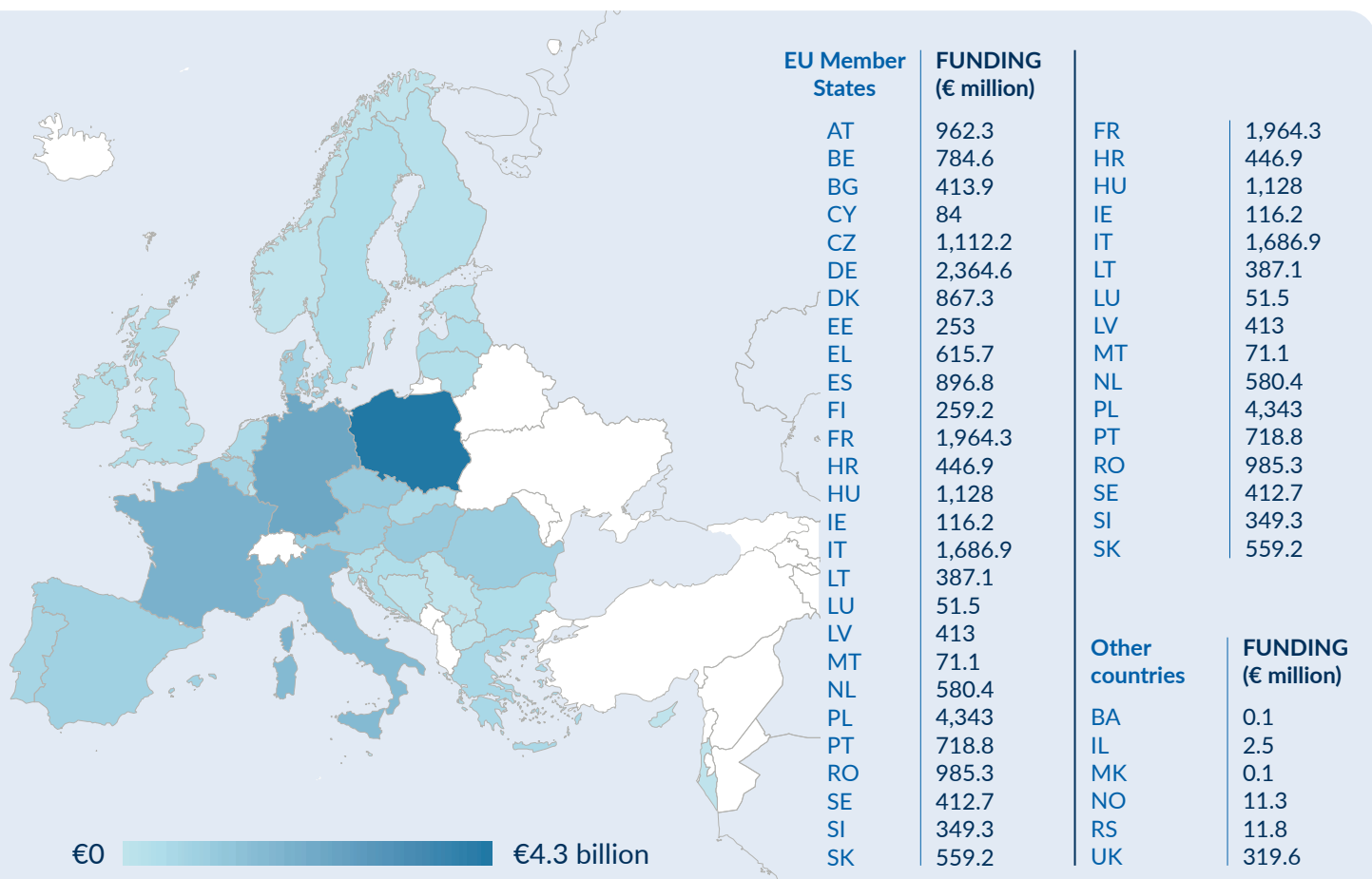
was allocated to railway projects. A total of 104 CEF Transport co-funded actions aim to adapt, upgrade and improve several thousand kilometres of railway lines all over Europe, including electrification of 2,052 km of tracks and sidings and improvement of 2,896 km of lines for freight transport. The total investment in these actions is EUR 18.1 billion, of which EUR 10.2 billion is EU supported. Furthermore, CEF Transport funds 74 actions implementing the European Rail Traffic Management System (ERTMS), which receive more than EUR 840 million in EU support, for a total investment of over EUR 1.5 billion. It contributes to both ERTMS track-side deployment (including 4,976 km of first development and upgrade on 885 km of railway lines) and on-board deployment<sup>1</sup>.

Poland as the largest beneficiary of the CEF Programme in 2014-2020, received EUR 4.3 billion

During the 2014-2020 financial period CEF allocated EUR 23.2 billion to transport actions

1 EC, CINEA (2022). *The Connecting Europe Facility Supporting European Infrastructure*, June, [https://cinea.ec.europa.eu/publications/investing-european-networks\\_en](https://cinea.ec.europa.eu/publications/investing-european-networks_en).

FIGURE 3: CEF TRANSPORT FUNDING FOR 2014-2020 BY COUNTRIES (MILLION EUR)



of EU support for transport (Fig. 3), of which EUR 3.6 billion for 35 railway infrastructure projects.

The CEF railway projects in Poland will result in 990 km of railway lines being upgraded and 27 km electrified. Upgrading works covers railway sections along the North Sea – Baltic and the

Baltic – Adriatic TEN-T Corridors, as well as rail access to the seaports in Gdansk, Gdynia, Szczecin and Świnoujście. Also, railway infrastructure at the main passenger nodes will be modernised. CEF funding will ensure shorter journeys between Warsaw and Szczecin, Cracow and Katowice, Wrocław and Poznan<sup>2</sup>.

<sup>2</sup> Ministry of Development Funds and Regional Policy (2021). Contribution of the Connecting Europe Facility (CEF) to the development of transport infrastructure in Poland, Warszawa, November, [https://www.funduszeuropejskie.gov.pl/media/105229/Album\\_CEF\\_2014-20\\_wersja\\_dostepna\\_ang.pdf](https://www.funduszeuropejskie.gov.pl/media/105229/Album_CEF_2014-20_wersja_dostepna_ang.pdf).

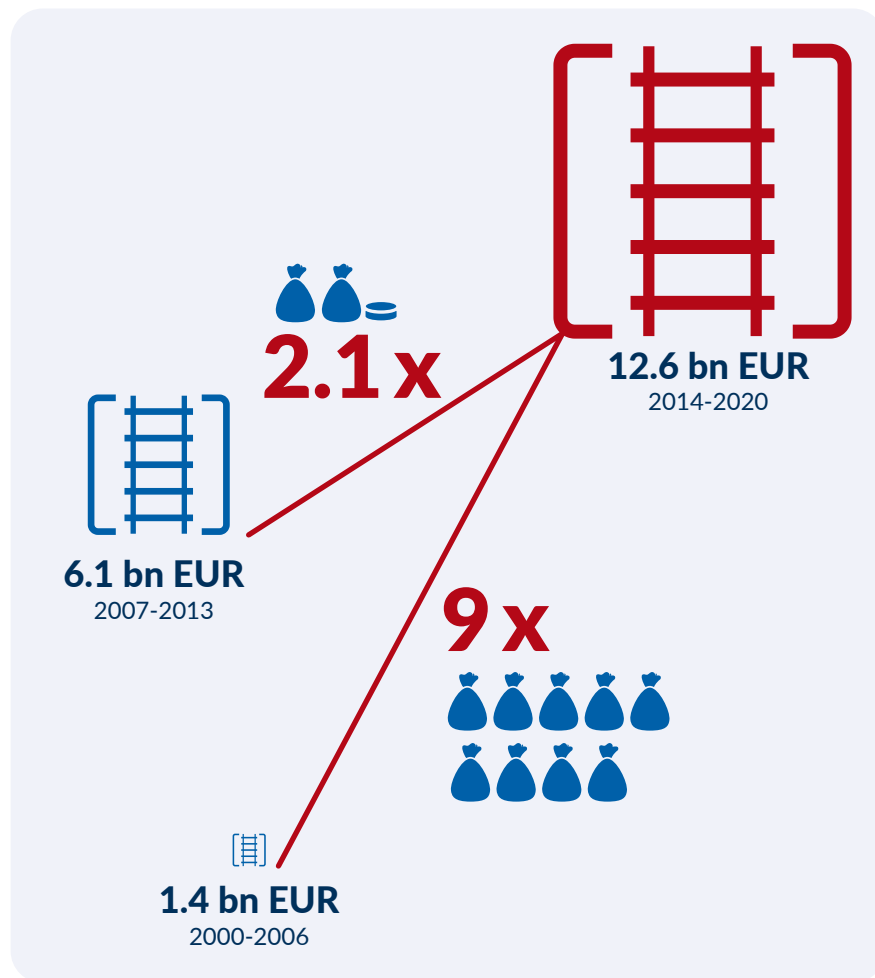
## Main effects of using EU funds in Poland

Poland is the biggest beneficiary of the EU Cohesion Policy. After joining the EU in 2004, it was possible to significantly increase investments in the development of railway infrastructure:

- Annual expenditure on railway infrastructure increased from EUR 0.2 billion in 2000 to EUR 2.4 billion in 2020. Moreover, the total investments in the years 2014-2020 were two times higher than in the period of 2007-2013 and nine times higher than in 2000-2006 (Fig. 4).
- 2020 was a record-breaking year, when the investment volume amounted to EUR 2.4 billion, almost 1.7 times more than in the seven-year period 2000-2006.

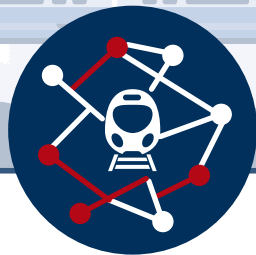
EU funds have a positive impact both on the improvement of quantitative parameters of the railway infrastructure as well as quality of service and accessibility of railways. The evaluation study conducted in 2019-2020 confirms that the projects funded under the Priority Axis 5 'Development of rail transport in Poland' within OPI&E 2014-2020 (within the Cohesion Policy) have resulted in the following main effects<sup>3</sup>.

FIGURE 4: INVESTMENT IN RAILWAY INFRASTRUCTURE IN POLAND IN 2000-2020 (BILLION EUR)



Source: own calculations based on PKP PLK data.

<sup>3</sup> CUPT (2020). Ocena bieżąca działań podejmowanych w ramach V osi priorytetowej Programu Operacyjnego Infrastruktura i Środowisko 2014-2020 oraz ich wpływ na poprawę konkurencyjności kolei - etap I, Gdańsk - Warszawa, [www.cupt.gov.pl/centrum-unijnych-projektow-transportowych/badania-i-ewaluacja/raporty-ewaluacyjne/#collapse13](http://www.cupt.gov.pl/centrum-unijnych-projektow-transportowych/badania-i-ewaluacja/raporty-ewaluacyjne/#collapse13).

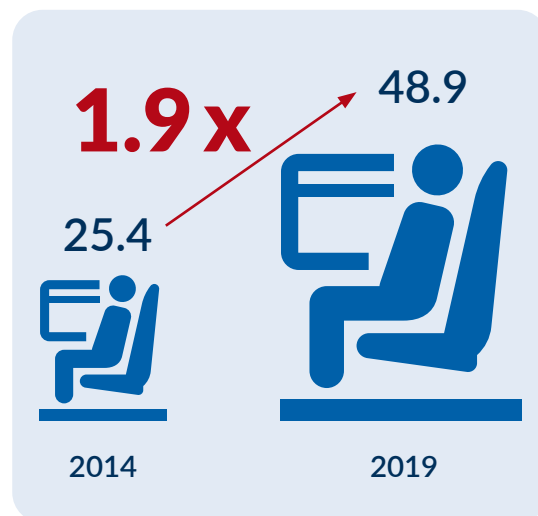


1.

### The improvement of the railway connections between major cities and important industrial and economic centres in Poland.

The investment in rail infrastructure upgrading and the purchase of new rolling stock for long-distance traffic (Pendolino trains) made it possible to shorten the travel time between Warsaw and Gdynia by 48 minutes, between Warsaw and Cracow by 22 minutes, between Warsaw and Katowice by 27 minutes, and between Warsaw and Wroclaw by 75 minutes. As expected, after completion of the investments co-financed from the OPI&E 2014-2020 funds, the average travel time by long-distance train between the major cities in Poland will finally be shortened by 36%.

FIGURE 5: THE NUMBER OF PASSENGERS CARRIED IN LONG-DISTANCE TRAFFIC IN POLAND (MILLION)



Source: PKP Intercity.



2.

### The strengthening of the role of rail in the integrated transport system.

The implemented projects resulted in a significant increase in demand for long-distance rail transport. As a result, the numbers of inter-city trains operated on different routes in Poland have grown in the last few years. For example, between 2010 and 2020, the number of direct trains between Warsaw and Gdansk increased from 10 to 18 trains per day in each direction. Since the launch of the Pendolino trains by PKP Intercity between major cities in Poland (Warsaw, Gdansk, Cracow, Katowice, Wroclaw), the number of passengers travelled using PKP Intercity trains has almost doubled: from 25.4 million in 2014 to 48.9 million in 2019 (Fig. 5). After two years of decline, record-breaking traffic was achieved in 2022. In the first half of 2022, 11% more passengers were carried than in January-June 2019, before the pandemic. This is also the best performance in 20 years of PKP Intercity operations.



3.

### Increasing the utilisation rate of railway systems in cities and urban areas.

The following growth in the number of passengers of urban and regional trains were recorded in the years 2010-2018: in Lower Silesia Province: +108%; in Łódź Province: +48%, in Mazovia Province: +26%; and in Pomerania Province: +14%. This is correlated with an increase in inter-city traffic.

The analysed projects funded under the 2007-2013 and 2014-2020 financial perspective also brought a positive impact on improving the competitiveness of railways on the transport market. However, the modal split is not improving: with a 7% share of railways and an 80% share of private cars in 2019.

## Financing the future of railways: call for key decisions

In the current decade, Poland is expected to remain the biggest beneficiary of EU funds, and investment in the upgrading of the existing network will be continued, while projects to build new rail lines are planned. The development of rail infrastructure is carried out within the framework of the National Railway Programme (KPK) complemented by four other multi-annual programmes dedicated to various elements of railway infrastructure.

**The National Railway Programme (KPK)** is the largest initiative for the development of railway infrastructure in Poland to date (9,000 km of track). It includes about 230 projects totalling more than PLN 76.6 billion (about EUR 17 billion), which are co-funded by the EU from the Multi-Annual Financial Framework 2014–2020. The development of railway transport until 2023 is supported by the Cohesion Fund under the following programmes: The Infrastructure and Environment Operational Programme 2014–2020 (OPI&E) – Priority Axis 5 ‘Development of rail transport in Poland’, The Operational Programme for Eastern Poland (OPEP) – Priority III Supraregional Railway Infrastructure, The Regional Operational Programmes 2014–2020 (ROPs) as well as by CEF.

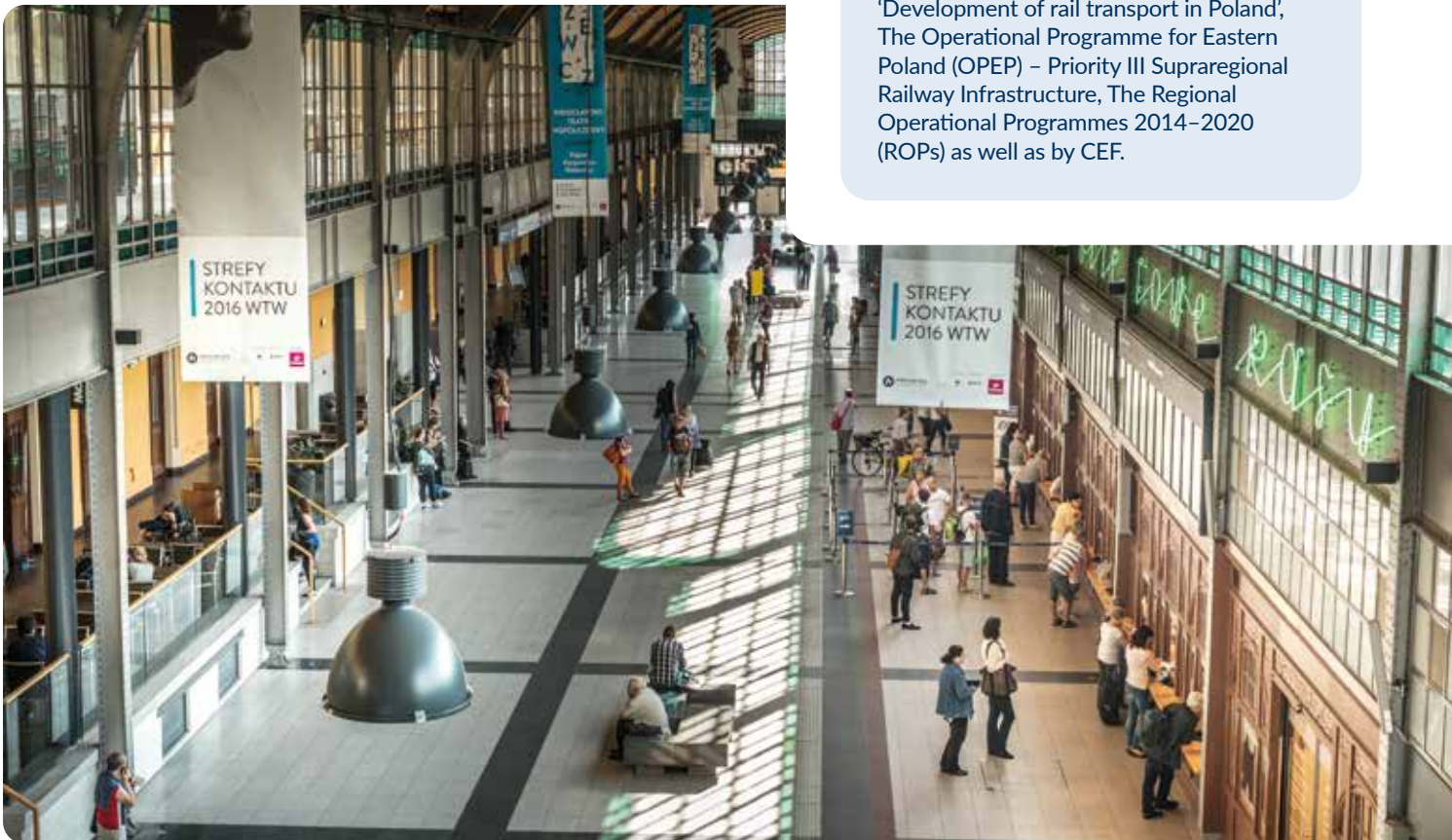
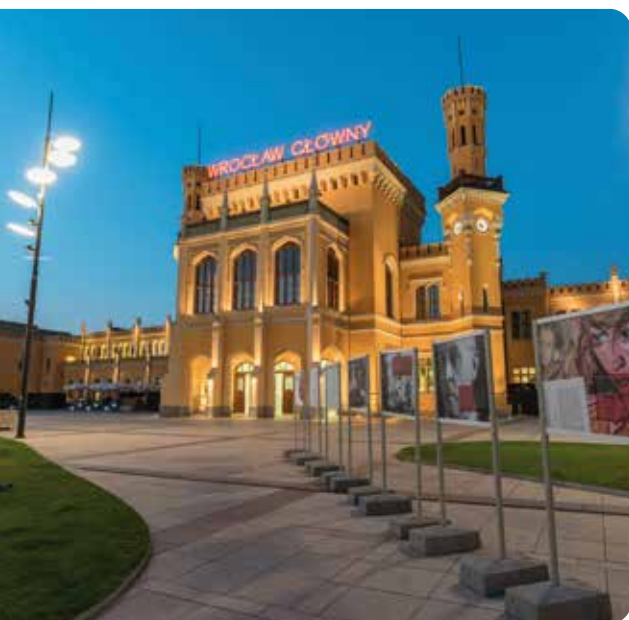




TABLE. INVESTMENTS PLANNED FOR RAIL INFRASTRUCTURE PROJECTS UNDER THE KPK UNTIL 2024

Project's category	2021	2022	2023	2024	IN TOTAL 2014-2024	
					million PLN	million EUR
The Cohesion Fund, of which:	8,775	10,672	9,082	2,509	56,381	12,257
- CEF	4,939	5,416	3,056	587	26,650	5,793
- OPI&E 2014-20	3,835	5,255	6,021	1921	28,906	6,284
OPEP	99	232	405	111	2,525	548
ROPs 2014-20	1,038	744	277	820	4,594	999
National projects	1,246	1,250	1,136	0	10,462	2,274
Programme for Civil Defence	43	58	24	5	260	57
<b>IN TOTAL, million PLN</b>	<b>11,201</b>	<b>12,955</b>	<b>10,924</b>	<b>2,626</b>	<b>74,222</b>	<b>-</b>
<b>million EUR</b>	<b>2,451</b>	<b>2,816</b>	<b>2,375</b>	<b>570</b>	<b>-</b>	<b>16,135</b>

Source of data: 2021 KPK annual report (2022), p. 17.



*The Railway Station Investments Programme for 2016–2023* provides for the implementation of 192 railway station investments for the total amount of PLN 1.95 billion (EUR 0.42 billion). As of the end of June 2022, 57 railway station projects had already been put into service. As expected, passenger services will improve and the railways will be integrated with other modes of transport.

*The Railway+ Programme until 2028* for supplementing the local and regional railway infrastructure is a tool for achieving the goals of state policy in the field of ensuring the communication accessibility of regions. This will mainly apply to towns with more than 10,000 residents who currently do not have access to passenger or rail freight. The basic investment component of this programme, under which it is expected that PKP PLK (programme executor), in cooperation with local government units, will implement projects aimed at developing a network

of railway connections to smaller towns. Almost PLN 6.6 billion (EUR 1.5 billion) will be allocated to its implementation in the years 2019–2028.

*The Programme for the Construction or Upgrading of Train Stops for 2021–2025.* Adopted in May 2021, this programme provides for the construction and upgrade of around 200 railway stops. The budget of the programme is PLN 1 billion (EUR 0.2 billion). The aim of the programme is to increase access of local communities to rail transport.

Furthermore, the first phase of the multi-annual *CPK's Investment Programme for 2020-2023* for the development a new national railway system consisting of ten major sections radiating from the planned new CPK international airport towards all regions of Poland, was established in 2021. The CPK railway system will be based on approximately 1,800 km of new high-speed rail and 2,400 km upgraded railway lines. The planned HSR lines will overlap with the TEN-T Network.

The largest own investment programme to date is *PKP Intercity S.A. Rolling Stock Strategy* comprising a total of 39 projects with a total value of around PLN 7.27 billion (EUR 2.58 billion). A total of 1,512 vehicles are to be upgraded, repaired, equipped with ERTMS/ECTS or purchased by PKP Intercity S.A.

The example of Poland shows that, despite significant though still insufficient EU support in relation to the needs of the rail sector, EU funds play an essential role and have had a significant effect on the development of European railways. In the years 2021–2027, the railway projects in Poland will mostly be co-funded through cohesion policy instruments (CF and ERDF) and delivered

within two national operational programmes: the European Funds for Infrastructure, Climate and Environment Programme (EFICE) and European Funds for Eastern Poland Programme (EFEP) as well as 16 regional ones (Regional Operational Programmes). Major EU funding will also be provided through the Recovery and Resilience Facility (RRF) within the National Recovery Plan (KPO) as well as the CEF 2 instrument for railway infrastructure upgrading along the TEN-T Core Network Corridors. However, these funds are not sufficient to meet the enormous effort that is required to secure EUR 2.5–3.0 billion annually for the development of rail transport in Poland in the coming decades, and preserve the effects obtained in the previous years. The governments of other European countries are also facing the same challenge.

Even greater needs are in the field of TEN-T. With a total budget EUR 25.8 billion for the 2021–2027 period, CEF transport remains a key funding instrument to complete the TEN-T Network. The Multi-Annual Work Programme for the years 2021-2023 foresees an amount of EUR 18 billion to be invested into transport infrastructure on the TEN-T. At the same time, the required investments to complete the infrastructure of the TEN-T Core Network is estimated to be EUR 750 billion (from 2016 until 2030). If the investments are equally spread over this period, the investment level for 2021-2030 amounts to EUR 500 billion. Railways, alone, need EUR 430 billion by 2030.

Despite the undeniable green competitive advantages of railways which are confirmed by numerous comparative analyses<sup>4</sup>, the polluter-pays principle is not fully applied in the Member

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4 See: IEA (2019). *The Future of Rail. Opportunities for energy and the environment*, January, <https://www.iea.org/reports/the-future-of-rail>; UIC, Sustainable Development Foundation (2015). *Railways and Green Growth. Why investing in railways leads to a better future*, [https://www.fondazionevilupposostenibile.org/wp-content/uploads/dlm\\_uploads/2016/07/Railways-and-Green-Growth.pdf](https://www.fondazionevilupposostenibile.org/wp-content/uploads/dlm_uploads/2016/07/Railways-and-Green-Growth.pdf).

States. One of the European Green Deal's guiding principles is that the 'price of transport must reflect the impact it has on the environment and on health'<sup>5</sup>. However, neither the European Green Deal nor other EU strategic documents indicate specific financial instruments on how to create a fair competition between rail and road transport<sup>6</sup>.

The voice on this matter was taken both by researchers and by national and international associations supporting the development of railways, such as: CER<sup>7</sup>, UIC, and UNIFE. Sustainable finance and significant shift of investments from road to rail is one of the six objectives which are to form the basis of the 2030 European Rail Vision promoted by the Europe on Rail - a European initiative led by Civil Society Organisations<sup>8</sup>.

*Marginal social-cost pricing, which includes a polluter-pays principle as well as user-pays principle is necessary to ensure that railway companies have a fair chance to compete with other modes of transport.*

*(CER, 2019)*

**Current EU policy continues to favour polluting modes of transport in the form of unfair competition (such as VAT exemptions for aviation fuel on international flights), and there is a lack of a permanent EU mechanism for the payment of external charges for polluting modes of transport as well as the stable EU funding mechanism for rail. This means that regardless of the EU's financial perspectives or the eligibility of states under the Cohesion Policy (given the sector's demonstrated needs), railways have no chance of playing a key role in the decarbonisation of the European transport sector and fulfilling the expectations for a modal shift (passengers and freight) as defined in the EU's Smart and Sustainable Mobility Strategy, including the take-up of short-haul flights and the construction of the trans-European HSR network for this purpose.**

**The EU green future needs a permanent solution for financing rail**, e.g. through the creation at EU level of a special instrument for railways (or sustainable transport in general) funded by charges and taxes on polluting transport and its users (implementation of the full polluter pays-principle), using revenue from the ETS, also from the Euro-vignette, which the Member States do not want to allow so far because they prefer to spend these funds on social security or other expenses. Such an EU fund/instrument could be managed e.g. within the framework of the already established CEF mechanism, in order to not create new structures and regulations (it would be free of ad hoc national political priorities) and would complement national efforts in this field. It could also support blending financing in combination with green bonds (compatible with the EU taxonomy), the Invest EU fund, or EIB financial instruments.

5 EC (2019). Communication from the Commission. The European Green Deal, COM(2019) 640 final, Brussels, 11.12.2019.

6 Haunold, V. (2020). Decarbonisation: Railways and the European Green Deal, Network Industries Quarterly, Vol. 22, No. 2, June, pp. 8-10, <https://www.network-industries.org/wp-content/uploads/2020/06/Decarbonisation-Railways-and-the-European-Green-Deal.pdf>.

7 CER (2021). No Green Deal without investments in rail infrastructure, Brussels, 16 September, [https://www.cer.be/sites/default/files/press-release/2021-09-17\\_CER\\_Rail%20Infrastructure%20Investment%20for%20the%20Green%20Deal.pdf](https://www.cer.be/sites/default/files/press-release/2021-09-17_CER_Rail%20Infrastructure%20Investment%20for%20the%20Green%20Deal.pdf).

8 European Rail Manifesto. Reaching EU Climate goals by making rail the first choice for European travel in 2030, 29 June 2022, <https://europeanrail.eu/portfolio/travel-and-rail-industry-partner-with-civil-society-calling-on-policy-makers-to-shift-to-rail/>

## Conclusion

Completion of the TEN-T and further development of railways in the EU Member States require enormous financial outlays. The need for investment in rail transport occurs at all levels: European, national, regional and urban. Effective policy decisions are needed to remain competitive and create a sustainable transport system in Europe, including beyond the EU. The rail sector itself has to complete its part of the TEN-T network, develop smart technologies in the new digital age and respond to changing customer needs and new security challenges using sustainable and cost-effective solutions.

Increasing the share of rail transport in the EU is an essential objective for decarbonising the economy and achieving the EU's climate goals. Today, there is no doubt that it will not be possible without the introduction of the polluter-pays and user pays principles as well as a stable funding system at EU level to complement the efforts of Member States.

Therefore, after long years of unfulfilled expectations of the European railway sector and a lack of success in meeting the EU's modal shift targets towards sustainable transport modes, such as rail, a critical time has come to start discussions at EU level on how to implement concrete solutions for a sustainable and long-term mechanism for financing railways in Europe (beyond the period of one EU financial perspective).

Undoubtedly, the implementation of appropriate EU regulations and provisions, ensuring the competitive balance of all modes of transport, is crucial and necessary - apart from adequate long-term financing of EU railway investments - for the further development of the railway sector in Europe, thus contributing to building the resilience of EU countries to global crises and preventing the negative impacts of climate change.

Polish State Railways and the European railway sector remain open to dialogue with the EU institutions in finding optimal solutions for Europe.

*In order to achieve the goals of the European Green Deal, ensuring the stable source for railways funding in connection with a level playing field for different modes of transport will be crucial for the future shape of mobility in the European Union.*

## List of abbreviations

<b>CEF</b>	Connecting Europe Facility
<b>CER</b>	Community of European Railway and Infrastructure Companies
<b>CF</b>	Cohesion Fund
<b>CPK</b>	The Solidarity Transport Hub – Central Communication Port
<b>CUPT</b>	Centre for EU Transport Projects
<b>EFEP</b>	European Funds for Eastern Poland Programme
<b>EFICE</b>	European Funds for Infrastructure, Climate and Environment Programme
<b>EFSI</b>	European Fund for Strategic Investment
<b>ERDF</b>	European Regional Development Fund
<b>ERTMS</b>	European Rail Traffic Management System
<b>EU</b>	The European Union
<b>HSR</b>	High-Speed Rail
<b>KPK</b>	National Railway Programme
<b>KPO</b>	National Recovery Plan
<b>MFF</b>	Multi-annual Financial Framework
<b>OPI&amp;E</b>	Infrastructure and Environment Operational Programme
<b>OPEP</b>	Operational Programme Eastern Poland
<b>PKP</b>	Polish State Railways
<b>PSO</b>	Public Service Obligation
<b>ROP</b>	Regional Operational Programme
<b>RRF</b>	Recovery and Resilience Facility
<b>TEN-T</b>	Trans-European Transport Network
<b>TEU</b>	Twenty-foot Equivalent Unit
<b>UIC</b>	International Union of Railways
<b>UNIFE</b>	European Rail Supply Industry Association

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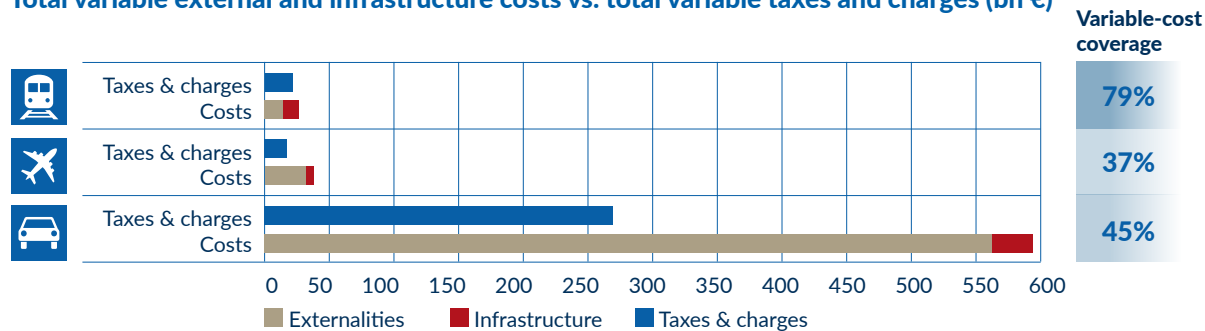
# Key facts



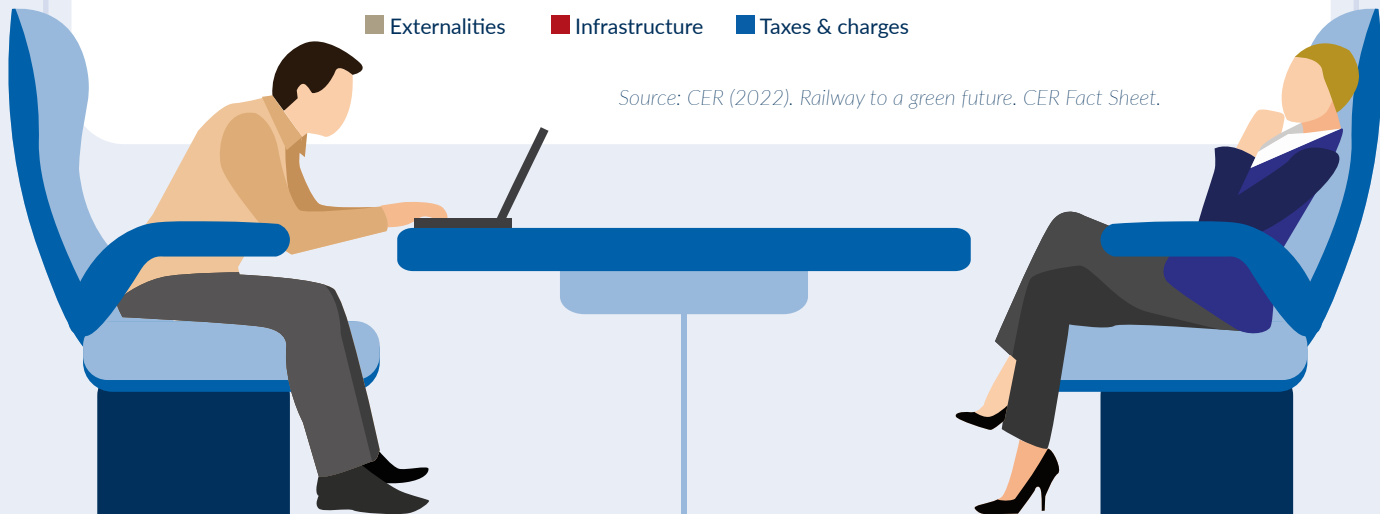
## Rail leads transport in variable-cost coverage<sup>9</sup>

Rail covers most of its costs to society through the taxes and charges it pays. This is most visible when looking at variable costs (those increasing and decreasing according to the amount of trains, planes or trucks a company is running, as opposed to fixed costs), which are recognised as the most relevant when assessing the 'user pays' and 'polluter pays' principles.

### Total variable external and infrastructure costs vs. total variable taxes and charges (bn €)



Source: CER (2022). *Railway to a green future*. CER Fact Sheet.



<sup>9</sup> European Commission, 2019: [https://transport.ec.europa.eu/transport-themes/sustainable-transport/internalisation-transport-external-costs\\_en](https://transport.ec.europa.eu/transport-themes/sustainable-transport/internalisation-transport-external-costs_en)

**GLOBAL ENVIRONMENTAL & CLIMATE POLICY AIMS (COP21/CMP11)**

**SUSTAINABLE DEVELOPMENT GOALS (SDGs)**

The EU strategies	THE EUROPEAN GREEN DEAL (December 2019)	ENERGY POLICY OF POLAND UNTIL 2040 (February 2021)	POLAND's strategies
	THE FIT FOR 55 PACKAGE (July 2021 proposal)	THE POLISH HYDROGEN STRATEGY 2030 (November 2021)	
	THE NEW EU STRATEGY ON ADAPTATION TO CLIMATE CHANGE (February 2021)	THE STRATEGY FOR RESPONSIBLE DEVELOPMENT UNTIL 2020 (with a perspective until 2030) (February 2017)	
Transport and Mobility Strategies	THE SUSTAINABLE AND SMART MOBILITY STRATEGY – PUTTING EUROPEAN TRANSPORT ON TRACK FOR THE FUTURE (December 2020)	THE SUSTAINABLE TRANSPORT DEVELOPMENT STRATEGY 2030 (2013, updated in September 2019)	Transport and Mobility Strategies
	THE TRANS-EUROPEN TRANSPORT POLICY (TEN-T)	THE DIRECTIONS OF DEVELOPMENT OF INTERMODAL TRANSPORT UNTIL 2030 (August 2022)	

**THE STRATEGIC FRAMEWORK FOR THE DEVELOPMENT OF RAIL TRANSPORT IN POLAND BY 2030**



THE NATIONAL RAILWAY PROGRAMME UNTIL 2023 (September 2015, updated in April 2022)	Multi-annual programmes for rail transport
THE RAILWAY STATION INVESTMENTS PROGRAMME FOR 2016-2023 (September 2016)	
THE PROGRAMME RAILWAYS+ UNTIL 2028 FOR REGIONAL AND LOCAL INFRASTRUCTURE (Dec. 2019)	
THE PROGRAMME FOR THE CONSTRUCTION OR UPGRADING OF RAILWAY STOPS FOR THE YEARS 2021-2025 (May 2021)	
THE CPK PROGRAMME. STAGE 1. 2020-2023 (November 2020)	

The EU funds and instruments	2021-2027 MULTI-ANNUAL FINANCIAL FRAMEWORK	THE PARTNERSHIP AGREEMENT FOR 2021-2027	Operational programmes in Poland	
	Just Transition Fund	THE COHESION POLICY: Cohesion Fund ERDF		THE EUROPEAN FUNDS FOR INFRASTRUCTURE, CLIMATE AND ENVIRONMENT
	EFSD: InvestEU Programme			The regional operational programmes (rops) ... European funds for eastern poland programme
	THE CONNECTING EUROPE FACILITY (CEF 2)			
	THE RECOVERY AND RESILIENCE FACILITY (RRF)			THE NATIONAL RECOVERY PLAN (KPO)   PART E: GREEN AND SMART MOBILITY

## **SGH Warsaw School of Economics Institute of Infrastructure, Transport and Mobility**

SGH with 17 double degree programmes (at Bachelor and Master levels) is one of the leading universities of economics in Europe. It cooperates with more than 300 partner universities around the world and it is a member of international organisations and networks. As the only top university in Poland SGH is a member of global alliance of leading schools, companies and NGOs in International Management Education (CEMS MIM).

Apart from teaching, scientific activity plays the main role at the university. SGH researchers conduct interdisciplinary studies and analysis for the needs of state administration, business and society. Their results constitute the basis for the development of knowledge, innovation and creativity, contributing to the improvement of the quality of life of societies and the creation of a low-carbon economy. The research activity concentrates in the institutes, chairs and departments comprised in five collegia.

Being part of the Collegium of Management and Finance, the Institute of Infrastructure, Transport and Mobility was established on 1 February 2019 on the basis of Department of Transport operating since 1968. The unit brings together leading experts specialising in rail, air and road transport, as well as in supply chains, intermodal transport, transport infrastructure funding, digitalisation in transport, new mobility concepts and smart cities.

## **Polish State Railways JSC**

The PKP Group combines public service with activities of a modern enterprise operating in open market economy. It is one of the largest Polish employers and the fourth largest European group of railway companies. The mission of the PKP Group is to build trust and a positive image of railways in order to increase sustainable modal shift and the role of rail transport in Poland and Europe.

PKP S.A. company plays the dominant role in the PKP Group, supervising and coordinating the activities of the Group's companies in order to ensure the highest quality of transport and logistics services for passengers and goods. PKP S.A. acts also as an active manager and investor. The company manages the majority of railway stations in Poland to ensure the highest standard of rail passenger services and also manages other real estates. As a one of the largest real estate owners in Poland, it does not only secure optimal use and management of railway land, but also initiates vital investments there.

PKP S.A. is an active member of all important international railway organizations such as the Community of European Railways and Infrastructure Managers (CER), the Union of International railways (UIC) and Organization for Cooperation of Railways (OSJD). It's also a member of the Advisory Committee of Rail Forum Europe - an initiative for rail promotion in the European Parliament. PKP S.A. has also their Representative Office in Brussels since 2002.

PKP Group companies constitute one of the leading European railways in building a sustainable transport system in the European Union and play an important operator role in Eurasian connections. PKP Group companies are also involved in the implementation of strategic EU corridors of the TEN-T core network: North Sea – Baltic Sea (Rail Baltica) and the Baltic-Adriatic Corridors.

## **CER**

The Community of European Railway and Infrastructure Companies (CER) brings together railway undertakings, their national associations as well as infrastructure managers and vehicle leasing companies. The membership is made up of long-established bodies, new entrants and both private and public enterprises, representing 71% of the rail network length, 76% of the rail freight business and about 92% of rail passenger operations in EU, EFTA and EU accession countries. CER represents the interests of its members towards EU policy makers and transport stakeholders, advocating rail as the backbone of a competitive and sustainable transport system in Europe.



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