

Kyrgyz Republic

Rail Sector Profile

Population (2023)
6.7 Million

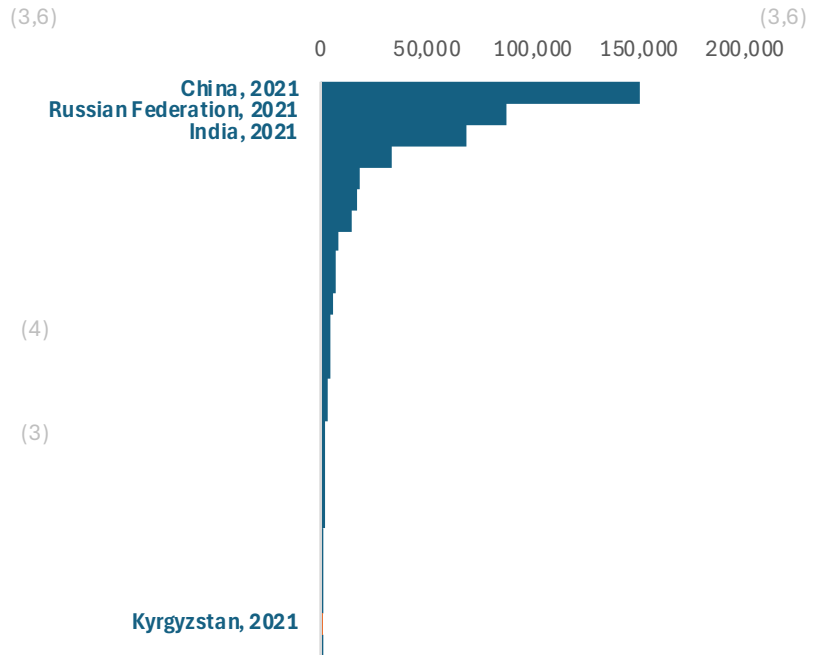
Gross domestic product (GDP), PPP (2022)
41.7 Billion USD (1,2)

PPP = Purchasing power parity

Heavy Railway

Heavy rail route length (2021)
417 km (3,6)

Heavy railway route lengths in Asia-Pacific (kilometers)



Between 2000 to 2021, Kyrgyzstan added 0.0 kilometers of heavy railway routes, expanding 0.0% annually

Single-track routes (2012)
100.0%

Double-track routes (2020)
8.8% (4)

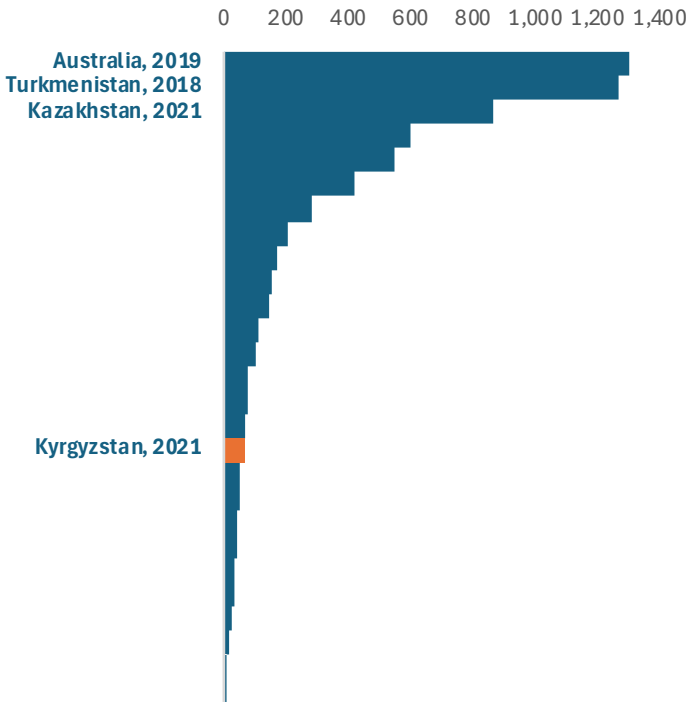
Electrified routes
n.d. (3)

Availability per capita
63.9 kilometers per million population

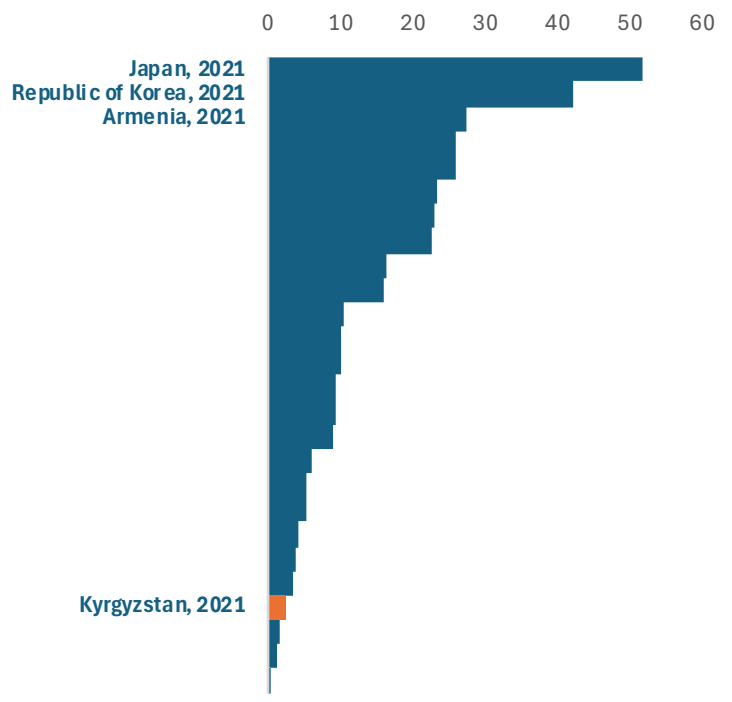
Density per sqkm
2.2 kilometers per thousand sqkm (3,6)

sqkm = square kilometer

Availability per capita in Asia-Pacific



Density per sqkm in Asia-Pacific



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Urban Railway

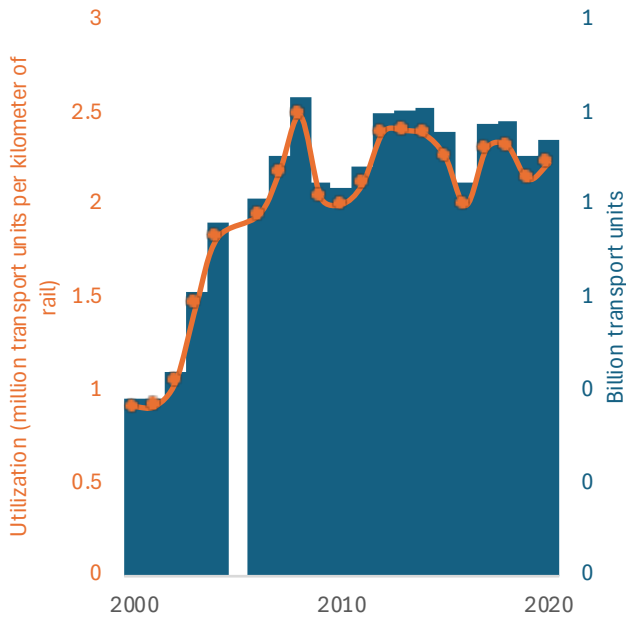
Metro length (2021) n.d.	Light rail transit (LRT) length n.d.	Urban rail availability per capita in Asia-Pacific (4)
Number of cities with urban rail systems (2021) 0		(4)
Urban rail availability per capita (2021) n.d.		(4)

Activity

Passenger-kilometers (PKM) (2020) 7 million	Tonne-kilometers (TKM) (2020) 937 million	(3)
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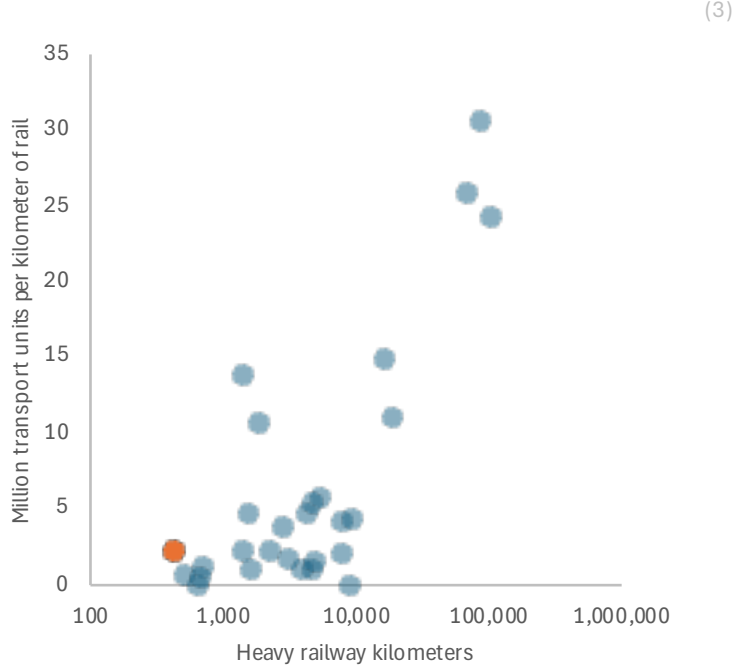
Between 2000 to 2020, PKM decreased annually by -8.9%. Between 2000 to 2020, TKM increased annually by 5.2%

Transport units and utilization trend



Transport units = passenger-kilometers + tonne-kilometers

Utilization of railways in Asia-Pacific

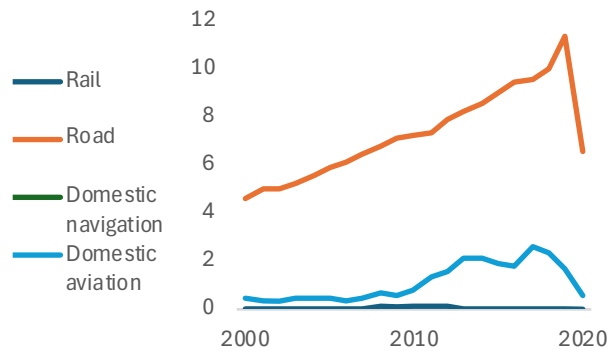


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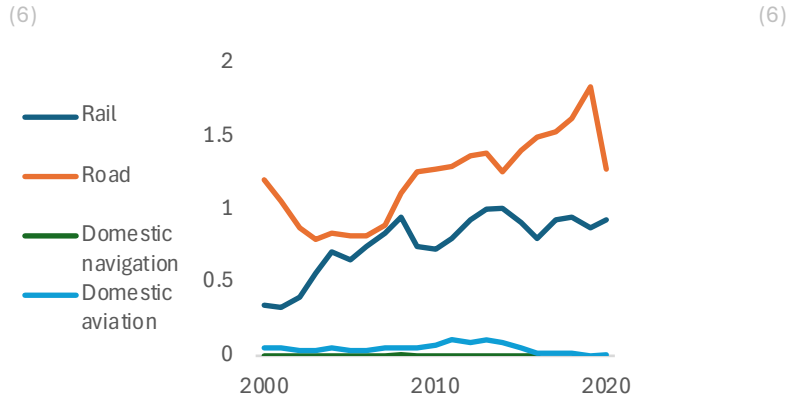
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Mode Share

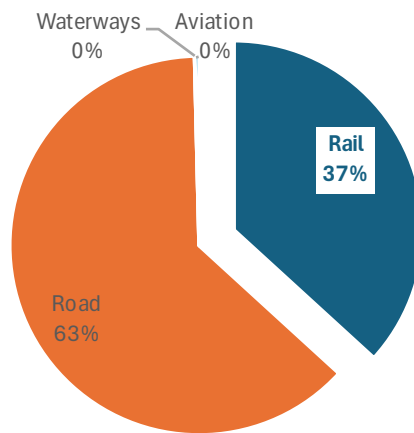
Passenger transport activity (billion passenger-km)



Freight transport activity (billion tonne-km)



Freight transport mode share (2018)



Energy

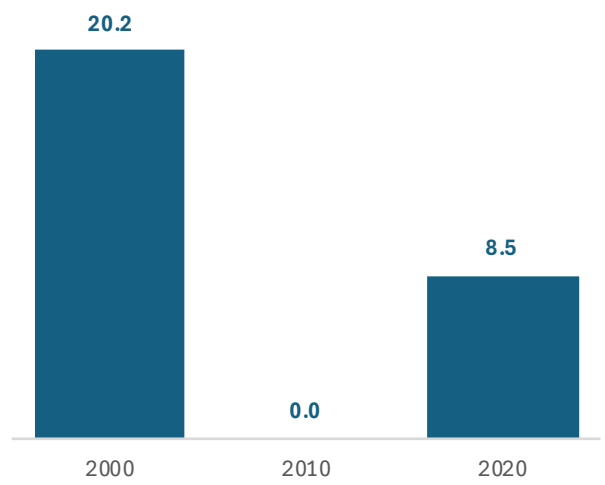
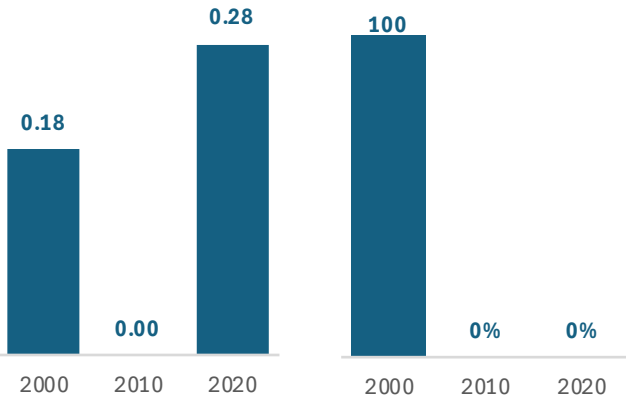
Rail diesel consumption (2018)
1 thousand tonnes

Rail electricity consumption (2006)
84 million kWh

Rail energy intensity with GDP (MJ per USD, PPP)

Rail energy consumption (PJ)

Share of electricity in rail energy consumption



PJ = petajoule

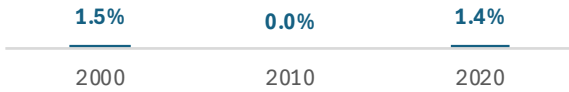
MJ = megajoule

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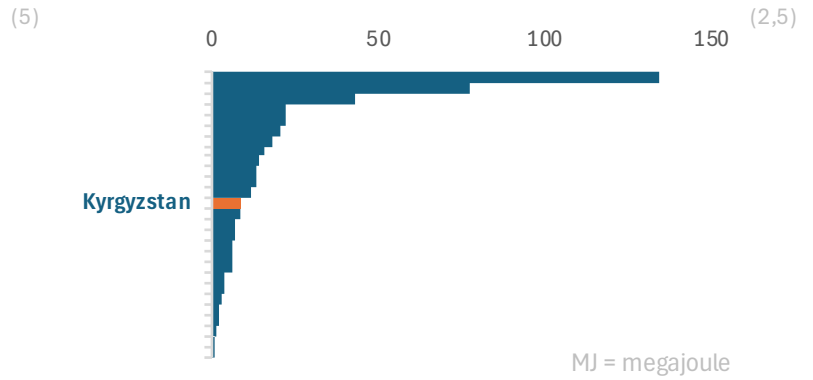
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Energy

Share of rail in total transport energy consumption

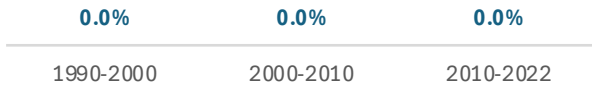


Rail energy intensity with GDP in Asia-Pacific (MJ per USD, PPP, 2020)



Rail CO2 emissions (2022)
24 thousand tonnes

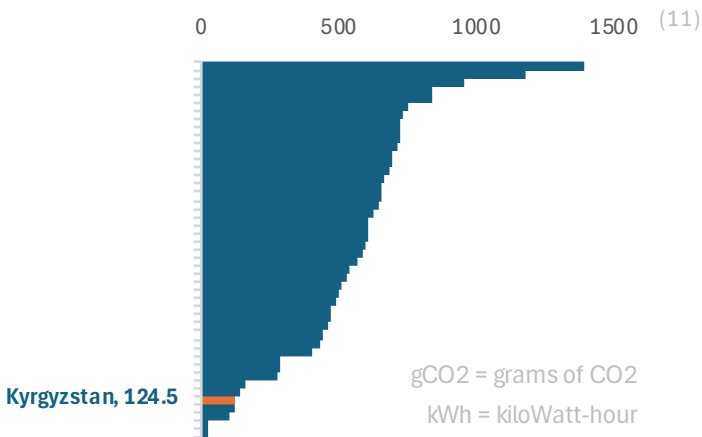
Rail CO2 emissions annual average growth



Share of rail in transport CO2 emissions (1990-2022)

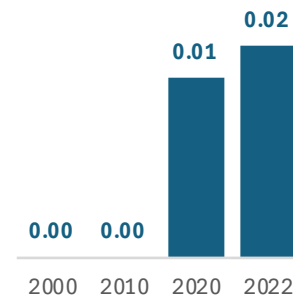


Grid emission factors (gCO2/kWh, 2021)

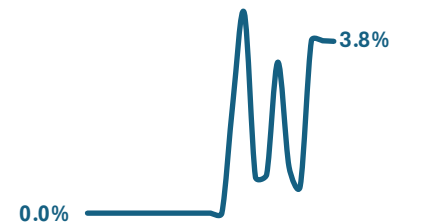


PM 10

(10) Rail air pollutant emissions (thousand tonnes)

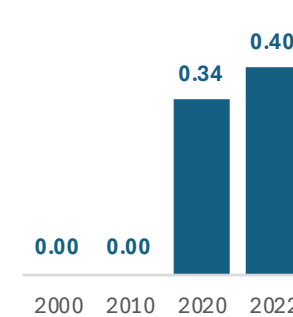


Share of rail in transport air pollutant emissions (2000-2022)



NOx

(10) Rail air pollutant emissions (thousand tonnes)

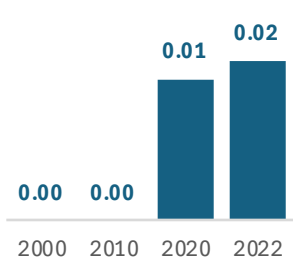


Share of rail in transport air pollutant emissions (2000-2022)

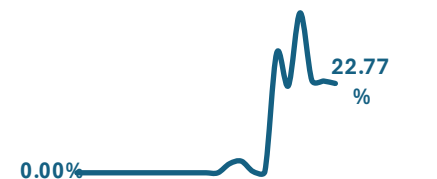


SOx

Rail air pollutant emissions (thousand tonnes)



Share of rail in transport air pollutant emissions (2000-2022)



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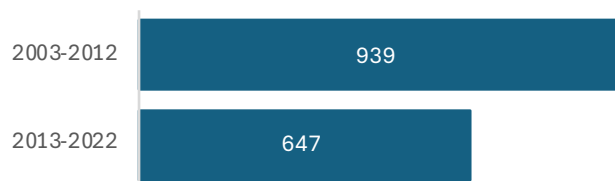
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Investment

Public-private partnership (PPP) investments in rail (Million USD)	Official development assistance (ODA) in rail (Million USD)
(17)	(18)

Share of rail in transport PPP	Share of rail in transport ODA
Between 2000-2015	Between 2002-2015
n.d.	n.d.
Between 2016-2022	Between 2016-2021
n.d.	n.d.
(17)	(18)

Import value (Million USD)	National investment in rail - capital expenditure (0)
(20)	n.d.
	(19)



Includes locomotives, railcars, passenger coaches, freight wagons, rail fixtures, rolling stock parts, and containers

Digitalisation

Internet speed (2022)	Digital readiness index (2021)
Broadband	-0.1/2.5
51 Mbps	(8)
Mobile	
25 Mbps	
Mbps = Megabits per second	(9)

Others

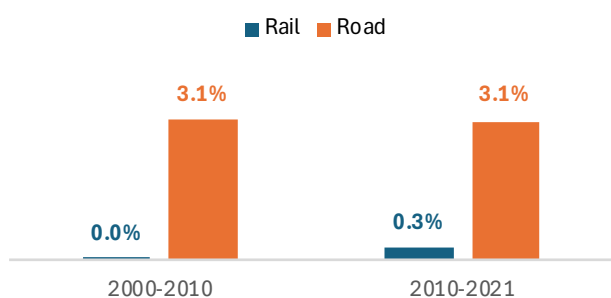
Share of transport in gross value added (GVA) (2022)	Average annual losses to rail infrastructure due to all potential hazards (2023)
6.9%	0.32 mln. USD
(12)	(21)
Quality of railway infrastructure (2017)	Share of rail infrastructure in multihazard average annual loss to transport infrastructure (2023)
2.4/7	13.3%
(13)	(21)
Percent of firms identifying transportation as a major constraint - services (2015)	Efficiency of train services (2019)
15.3%	2.8/7
(14)	(16)

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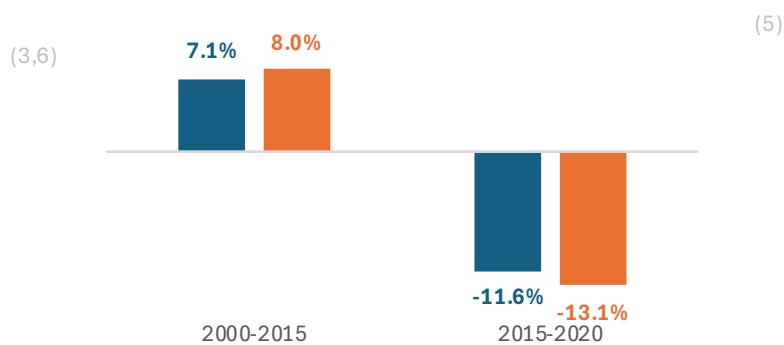
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Benchmarking Rail and Road Sectors

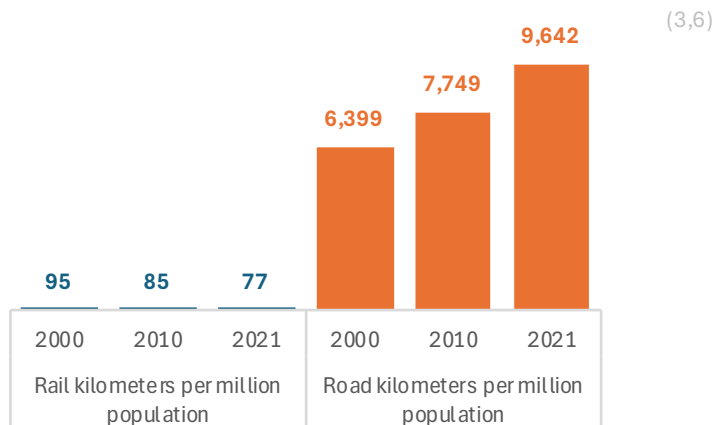
Infrastructure annual average growth of rail (including HSR, LRT, and metro) vs. road



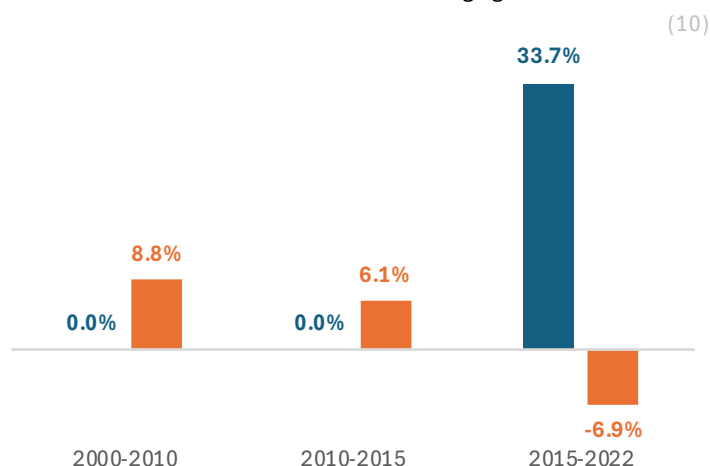
Rail vs. road energy consumption annual average growth rate



Rail (including HSR, LRT, and metro) vs. road infrastructure availability per capita



Rail vs. road CO2 emissions annual average growth rate



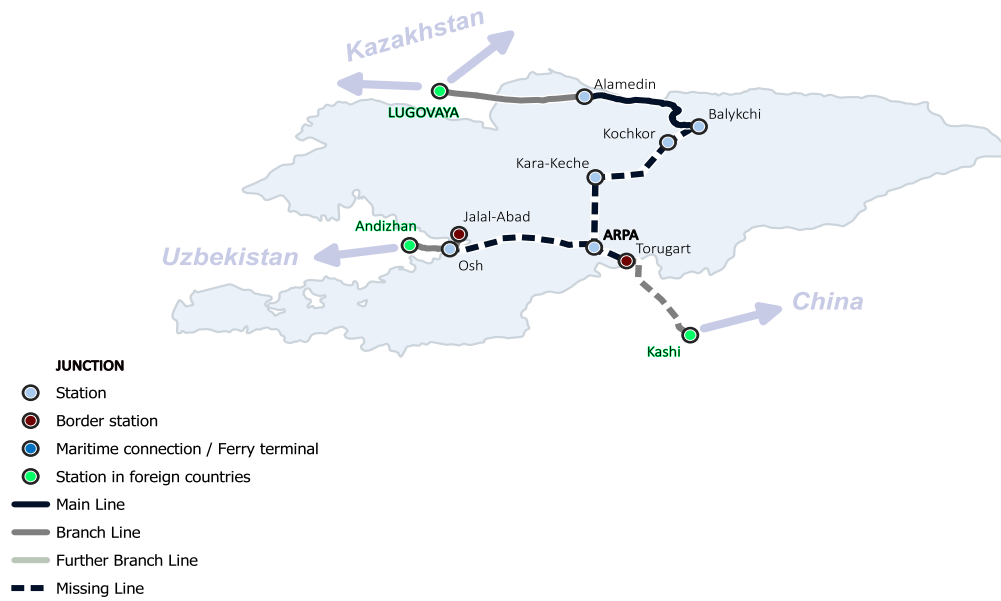
Sources

- (1) UN Population Database (2022), <https://population.un.org/wpp/>
- (2) World Bank (2022), <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD>
- (3) International Union of Railways (2021), <https://uic-stats.uic.org/>
- (4) Rapid Transit Database (ITDP, 2022), <https://www.itdp.org/rapid-transit-database/>
- (5) UN Energy Statistics (2021), <https://unstats.un.org/unsd/energystats/dataPortal/>
- (6) Country Official Statistics
- (7) Rail Company
- (8) OOKLA (2023), <https://worldpopulationreview.com/countries/internet-speeds-by-country/>
- (9) CISCO (2022), <https://www.cisco.com/c/en/us/about/csr/research-resources/digital-readiness.html>
- (10) Emissions Database for Global Atmospheric Research (EC, 2023), <https://edgar.jrc.ec.europa.eu/>
- (11) Ember (2023), <https://ember-climate.org/data-catalogue/yearly-electricity-data/>
- (12) UN Statistics (2022), <https://unstats.un.org/unsd/snaama/Downloads>
- (13) World Economic Forum (2019), http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- (14) World Bank (2020), <https://datacatalog.worldbank.org/dataset/enterprise-surveys>
- (15) Koks, et al. (2019), <https://www.nature.com/articles/s41467-019-10442-3>
- (16) World Economic Forum (2019), https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- (17) PPI Database (World Bank, 2023), <https://ppi.worldbank.org/en/ppi>
- (18) Organisation for Economic Co-operation and Development (OECD) (2022), <https://stats.oecd.org/Index.aspx?DataSetCode=CRS1#>
- (19) Country Data
- (20) Trademap (ITC, 2024), <https://www.trademap.org/>
- (21) Global Infrastructure Risk Model and Resilience Index (CDRI, 2023), <https://giri.unepgrid.ch/>

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Kyrgyz Republic Rail Network



Border Crossings to/from Kyrgyz Republic

Source: UNESCAP

Country	Border Crossing
Kyrgyzstan - Kazakhstan	Bishkek-Lugovaya
Kyrgyzstan - Uzbekistan	Osh-Andizhan

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Trans-Asian Railway Lines in Kyrgyz Republic

Source: UNESCAP

Line	Length (km)
Bishkek – Balykchi	168
Border with Uzbekistan – Osh	80
Kochkor – Border of China (missing link)	308
Arpa – Osh (missing link)	185
Balykchi – Kochkor (missing link)	59

Total distance 800 km

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Infrastructure and Activity

- **Heavy Rail Infrastructure:** Kyrgyz Republic has a limited heavy rail network of 417 kilometers, primarily single-track. There has been no significant expansion in recent years.
- **Urban Rail Infrastructure:** The country lacks any rapid urban transit systems.
- **Activity:** Passenger transport has declined, while freight transport has increased. Rail utilization remains relatively low.
- **Energy Consumption:** The rail sector's energy consumption is minimal, primarily relying on electricity. However, specific data on the share of renewable energy in rail electricity consumption is unavailable.

Emissions and Investments

- **Emissions:** The rail sector contributes a small portion of overall transport emissions, reflecting its limited scale.
- **Investments:** Public-private partnership investments and official development assistance in the rail sector have been negligible.

Other Key Trends

- **Digitalization:** Kyrgyz Republic lags in digital readiness, which could impact the adoption of advanced rail technologies.
- **Infrastructure Quality:** The quality of railway infrastructure and train service efficiency are rated relatively low.
- **Adaptation and Resilience:** The vulnerability of rail infrastructure to climate hazards is moderate compared to other transport modes.

Policy Landscape

- **Key Policy Documents:** Several policy documents address the rail sector, emphasizing infrastructure expansion, electrification, and general improvement. However, there is a lack of specific targets and timelines for decarbonization. Several policy documents shape the development of the railway sector in Kyrgyz Republic:
 - **ORDER OF THE GOVERNMENT OF THE KYRGYZ REPUBLIC of September 30, 2014 No. 558:** This document outlines the main development routes for rail transport in the country between 2014 and 2020.
 - **Voluntary National Review on the Implementation of the Sustainable Development Goals in the Kyrgyz Republic 2020:** This report provides an overview of the country's progress on achieving the Sustainable Development Goals, including those related to sustainable transport.
 - **RESOLUTION OF THE CABINET OF MINISTERS OF THE KYRGYZ REPUBLIC of July 1, 2021 No. 55:** This resolution establishes the Ministry of Transport and Communications, responsible for overseeing the development of the transport sector, including railways.
 - **Development Programme of the Kyrgyz Republic for the period 2018-2022:** This program sets out the country's development priorities, including those related to infrastructure and transport.
 - **National Development Strategy of the Kyrgyz Republic for 2018-2040:** This long-term strategy outlines the country's vision for development, including goals for sustainable and resilient infrastructure.

Policy Priorities and Opportunities

- **NDC Gaps and Alignment:** While Kyrgyz Republic's Nationally Determined Contribution (NDC) mentions sustainable transport, there is a need for more concrete goals and actions related to rail decarbonization. The alignment of current policies with NDC objectives is not entirely clear.
- **Electrification:** Further electrification of the rail network, coupled with increased renewable energy generation, could significantly reduce emissions.
- **Energy Efficiency:** Improving energy efficiency in rail operations can contribute to emissions reduction.
- **Modal Shift:** Promoting a shift from road freight to rail, especially for long-distance transport, can help lower overall transport emissions.
- **Climate Resilience:** Investing in climate-resilient rail infrastructure is crucial to ensure the network's long-term viability.
- **Digitalization:** Embracing digital technologies can enhance operational efficiency and passenger experience.
- **Modernization:** Utilize digitalization to improve operational efficiency, safety, and the overall passenger experience.
- **Collaboration:** Continue to foster public-private partnerships and international cooperation to accelerate the development and modernization of the rail sector.

Conclusion

Kyrgyz Republic's rail sector presents both challenges and opportunities in the context of climate change. While current emissions are low, there is significant potential for decarbonization through electrification, energy efficiency, and modal shift. A clear policy framework with ambitious targets and concrete actions is needed to realize this potential and ensure the rail sector contributes to Kyrgyz Republic's climate goals.

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