

Kazakhstan

Transport Climate Profile

Population (2024)
19.8 million

Urban population
58%

Rural population
42%

Below 18 y.o.
36%

Above 60 y.o.
13%

Population density
7 persons per sqkm

Subregion
(1) **Central and West Asia**

Income class
Upper middle income

Gross domestic product
(1) (GDP PPP, 2022)
604.75 billion USD

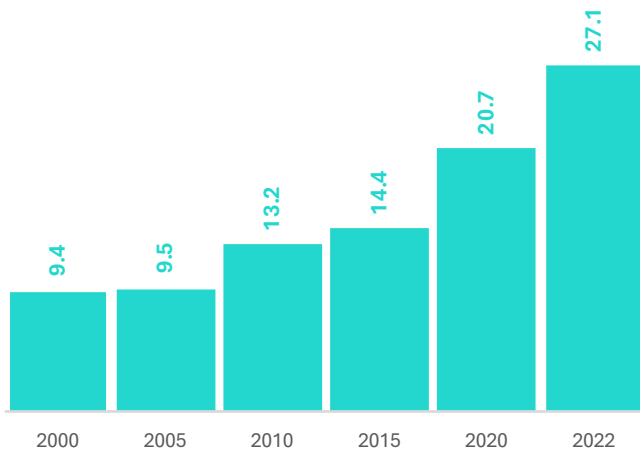
GDP per capita (PPP, 2022)
31,176 USD (1,2)
(2)

(1) Domestic consumption per capita, tonnes (2024)
26.6 tonnes (3)

(1,2) *Domestic consumption is the total amount of materials directly used in the economy (used domestic extraction plus imports), minus the materials that are exported.*

Transport and Climate Change

Transport fossil CO2 emissions, million tonnes



(4) *In 2010, transport contributed 5.4% of total fossil CO2 emissions. By 2022, transport contributed 11.0%.*

Share of transport CO2 emissions by mode (2022)

| Road **99.9%** (4)
| Rail **0.1%**

| Navigation **0.0%** (4)
| Aviation **0.0%**

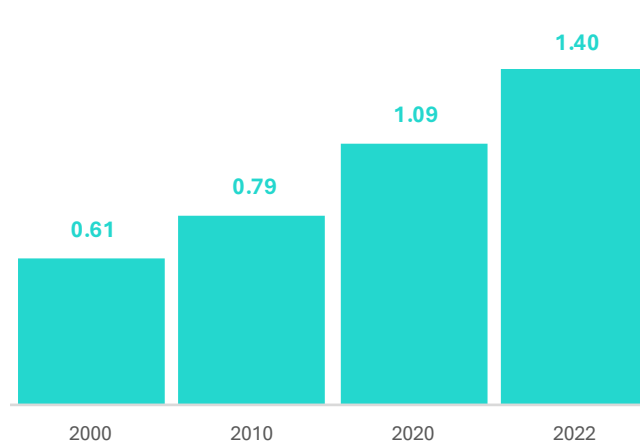
Navigation and aviation only includes domestic transportation

Between 2000-2015, road transport contributed 90.8% in transport fossil CO2 emissions. Between 2016-2022, road transport contributed 97.6%.

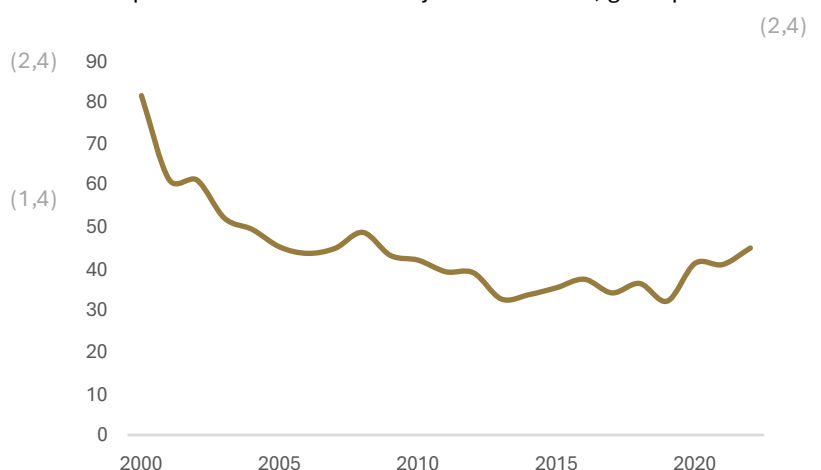
Transport CO2 emissions intensity with GDP, 2022
44.8 gCO2 per USD

Asia-Pacific average is 33.2 gCO2 per USD

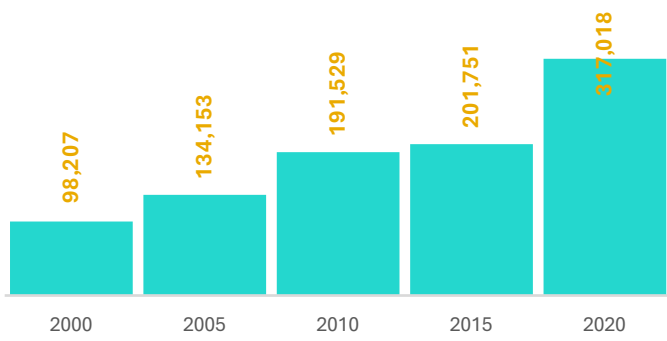
Transport fossil CO2 emissions per capita, tonnes



Transport CO2 emissions intensity with GDP trend, gCO2 per USD



Transport energy consumption, terajoules

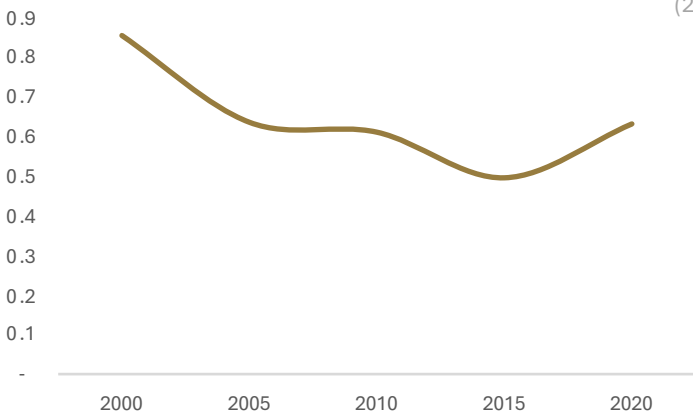


Transport energy intensity with GDP, 2020

0.6 MJ per USD

Asia-Pacific average is 0.5 MJ per USD

Transport energy intensity with GDP trend, MJ per USD

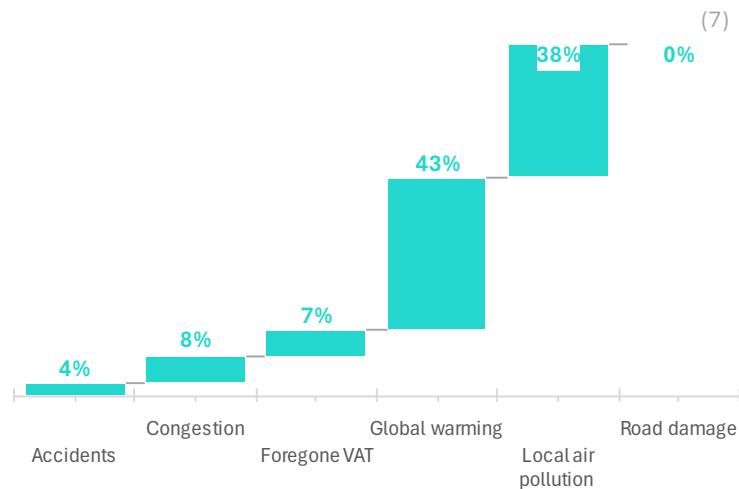


Transport fossil fuel subsidies, cumulative from 2010 to 2022

17.54 billion USD

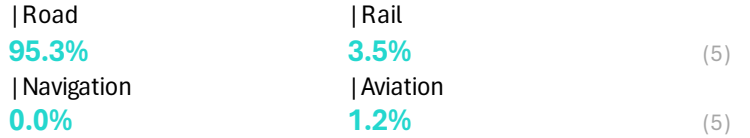
2.8% of Asia-Pacific total

Implicit fossil fuel subsidies due to externalities



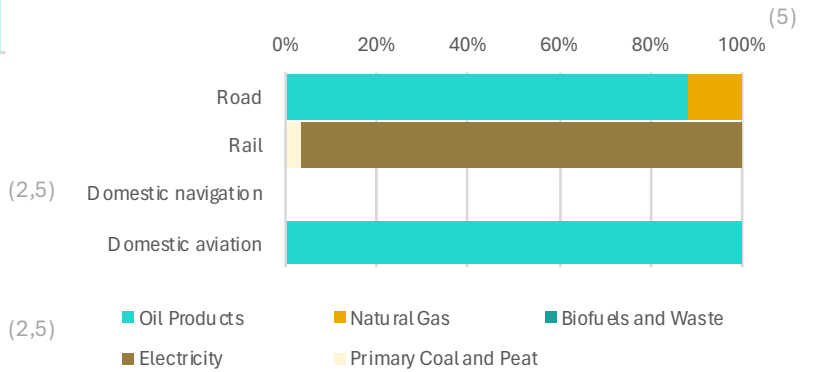
Data includes all sectors and all fuel types

Share of transport energy consumption by mode (2020)



Navigation and aviation only includes domestic transportation

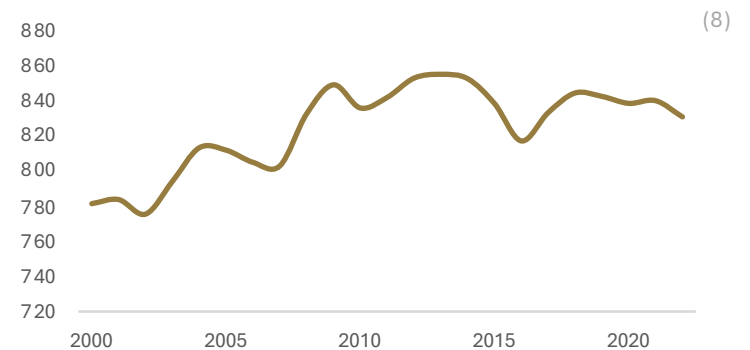
Share of transport energy consumption by source (2020)



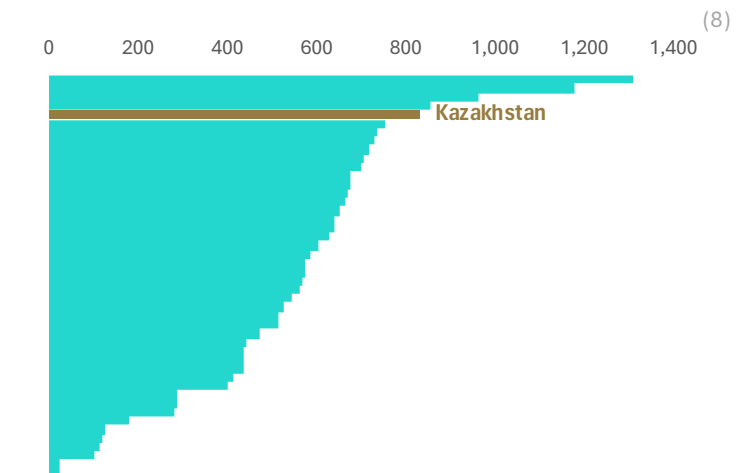
Grid emission factor (2022)

830.4 gCO₂ per kWh

Grid emission factor trend, gCO₂ per kWh



Grid emission factors in Asia-Pacific, gCO₂ per kWh



Vehicle Fleet

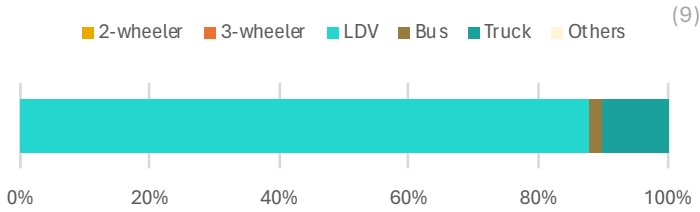
Road vehicles (2022)
4.45 million vehicles

Road vehicle motorization rate (2022)
229 vehicles per thousand population

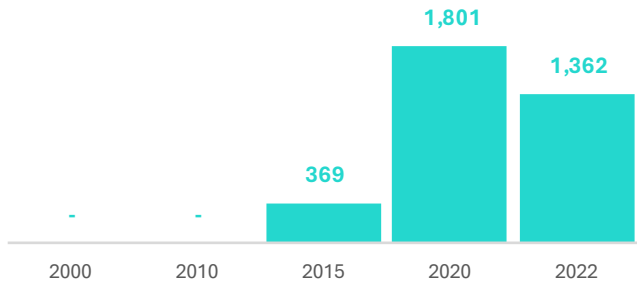
Road vehicles include 2- and 3-wheelers, LDVs, buses and other informal public transport, trucks, and other unclassified types

In 2000, Kazakhstan had 82 vehicles per thousand population. By 2022, this has increased to 229 compared with Asia-Pacific average of 577 in 2022.

Share of vehicles by type



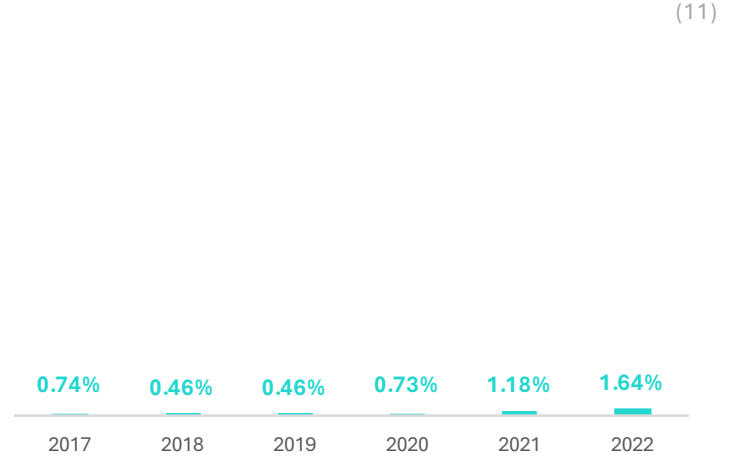
Bus vehicle production, units



Electric road vehicle import value (2017-2022)

(9) | Total **168.1 million USD** | Hybrid-electric **75.4 million USD** (11)

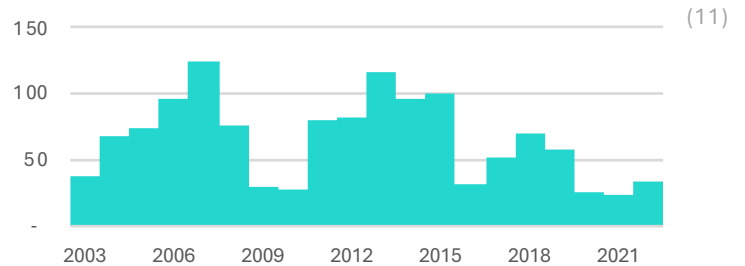
(1,9) Electric road vehicle share in total road vehicle import value trend



Bus import value (2017-2022)

404.8 million USD (11)

(10) Bus import value trend, assuming 2015=100



Adaptation

Average annual losses to transport infrastructure due to hazards (2023)

32.14 million USD

Share of average annual losses due to hazards, by mode (2022)

Road	35%	Rail	61%
Ports	0%	Airports	4%

National road vulnerability index ranking (2023)

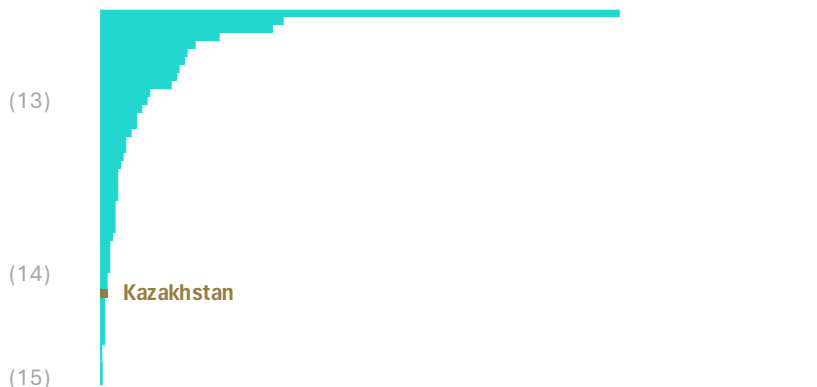
n.d.

Share of population in low elevated coastal zones (2018)

n.d.

Average annual losses to transport infrastructure due to hazards, as a share of GDP, in Asia-Pacific (2023)

(12) 0.00% 0.10% 0.20% 0.30% 0.40% 0.50% (12)



Urban Transport

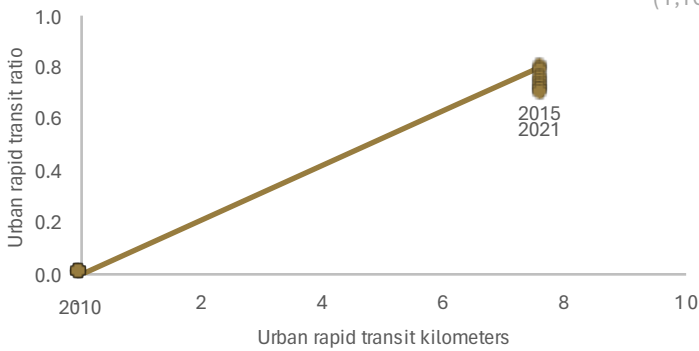
Urban rapid transit length (2021)

| BRT **None** | LRT **None**
 | Metro **8 kilometers**

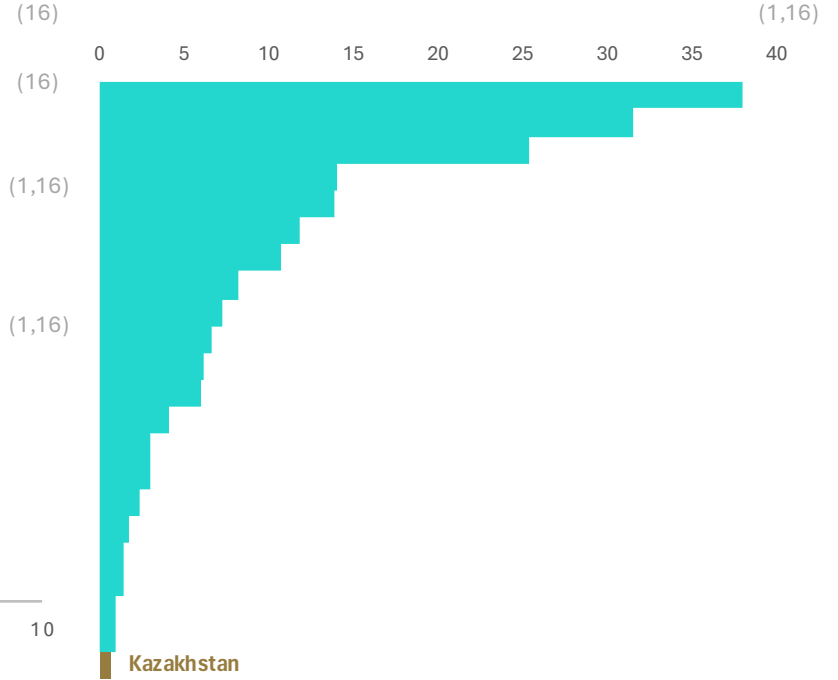
Urban rapid transit ratio (2021)

0.69 kilometers per million urban population

Urban rapid transit ratio, kilometers per million urban population (2000-2021)



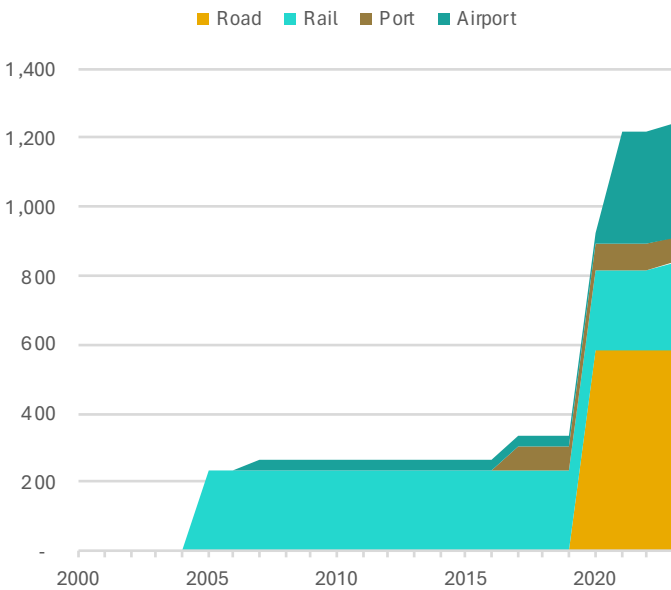
Urban rapid transit ratio in Asia- Pacific, kilometers per million urban population (2021)



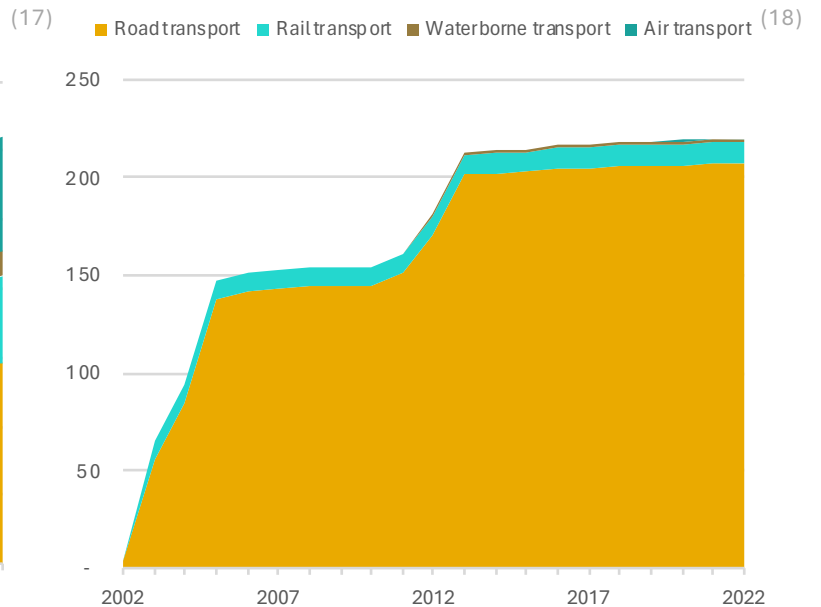
Based on 2015 estimates, only 23% of the population could reach the nearest city in 30 minutes, another 11% could reach in 1 hour, and another 30% could reach only after 3 hours.

Transport Investment

Public-private partnership investments in the transport sector, million USD

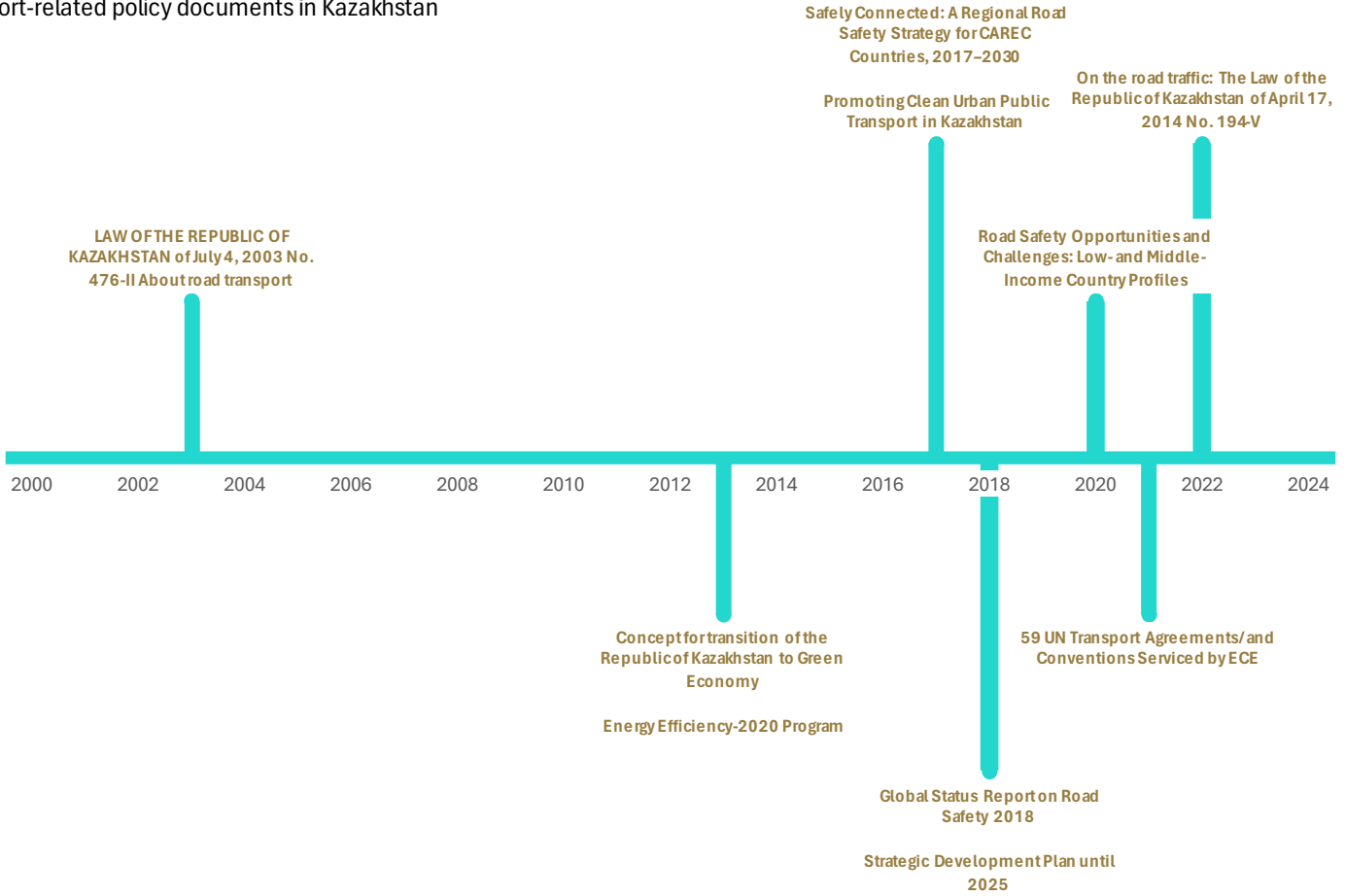


Official development assistance in the transport sector, million USD



Transport Climate Policy Documents

Transport-related policy documents in Kazakhstan



Selection made based on the number of climate change mitigation and adaptation

Nationally Determined Contributions

<p>Updated Nationally Determined Contribution of the Republic of Kazakhstan (adopted in 2023)</p>	Mitigation measures	Road transport	Rail transport	Domestic navigation	Domestic aviation	Urban transport
	Mitigation targets	Yes				
	Adaptation measures					
	Adaptation targets					

Long-term Strategies

<p>None</p>	Mitigation measures	Road transport	Rail transport	Domestic navigation	Domestic aviation	Urban transport
	Mitigation targets					
	Adaptation measures					
	Adaptation targets					

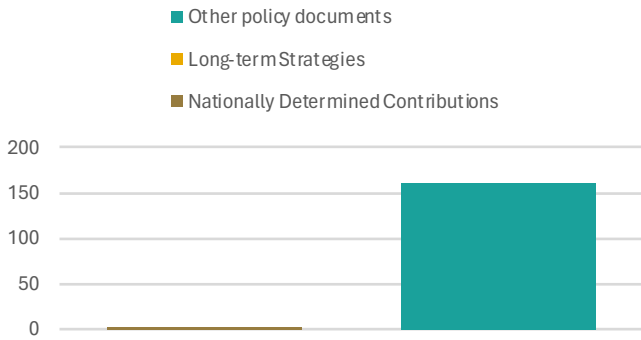


Developed with the support of:

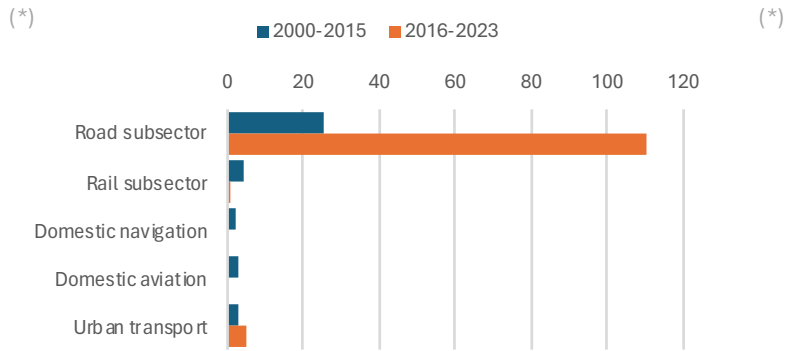


Transport Climate Policy Overview

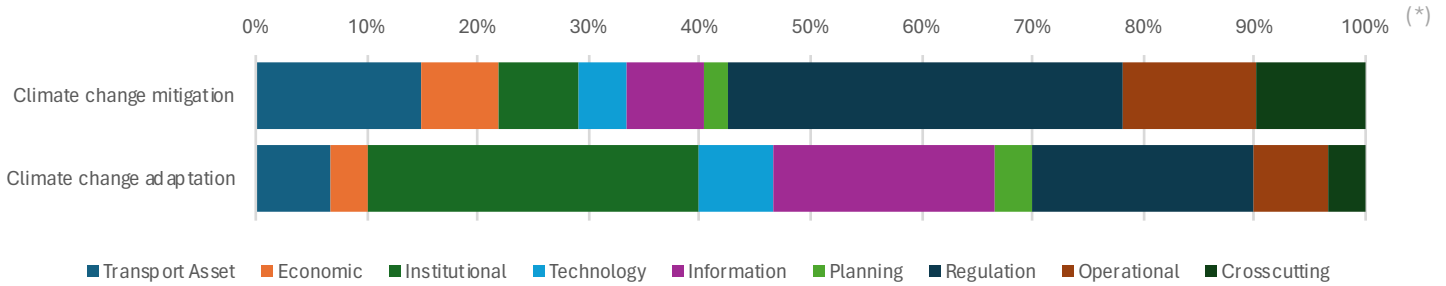
Number of measures by source



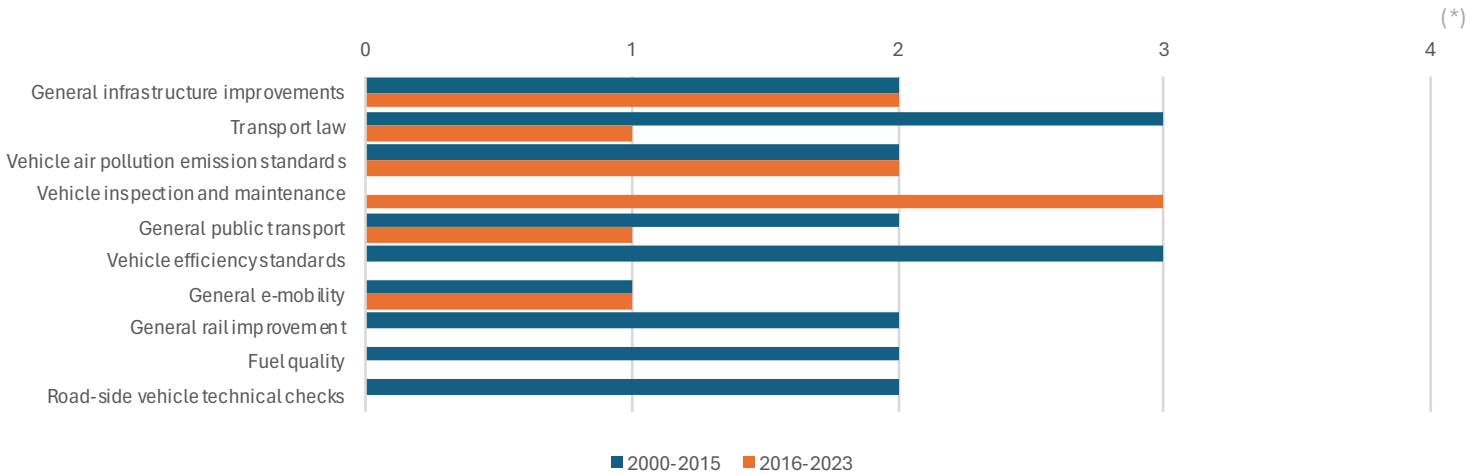
Number of climate change measures by subsectors



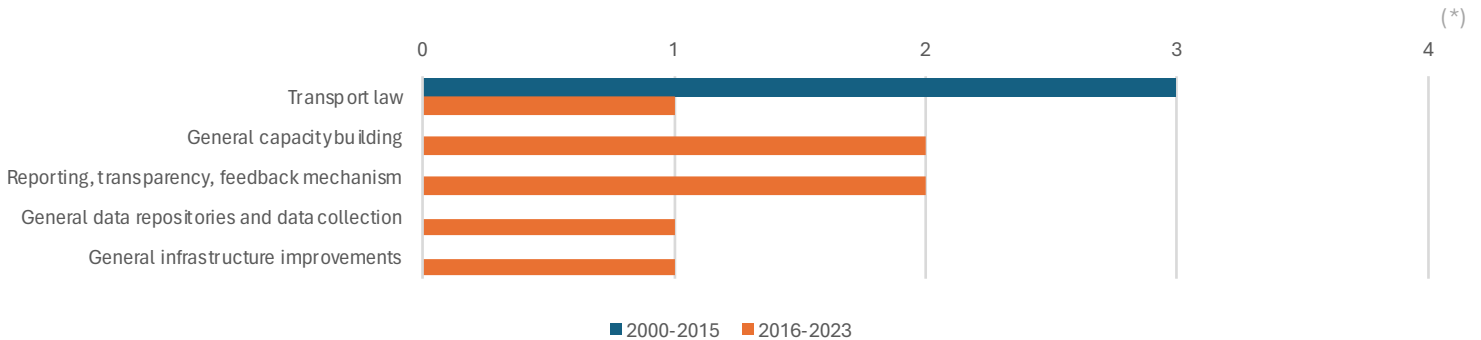
Transport-related climate change by framework



Climate change mitigation top 10 typology, number of measures



Climate change adaptation top 5 typology, number of measures



Climate Change Mitigation Policy Measures - Road Transport

Policy document	Year	Measures
On the road traffic: The Law of the Republic of Kazakhstan of April 17, 2014 No. 194-V	2022	Active transport infrastructure expansion, General active mobility, General data repositories and data collection, Vehicle inspection and maintenance, General transport asset management, General parking measures, Accreditation of driver training agencies, Accreditation of vehicle inspection centers, Road-side checks on overloading, Vehicle air pollution emission standards
59 UN Transport Agreements/ and Conventions Serviced by ECE	2021	Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts which can be fitted and / or be used on Wheeled Vehicles 1998, Convention on Road Traffic 1968
Global Status Report on Road Safety 2018	2018	Automated enforcement of speed limits, Design standards for sidewalks and bicycle paths, National speed law, Speed limits on urban roads <= 30 kph, Speed limit on rural roads <= 70 kph, Speed limit on motorways <= 90 kph
LAW OF THE REPUBLIC OF KAZAKHSTAN of July 4, 2003 No. 476-II About road transport	2003	Road-side vehicle technical checks, Technical standards for general transport infrastructure, Define roles and accountabilities across agencies, Involvement of subnational government for transport activities, Transport law
Energy Efficiency-2020 Program	2013	Vehicle scrappage scheme, Energy efficient vehicle purchase incentives, Development of other transport-related plan/ policy, Vehicle efficiency standards
Concept for transition of the Republic of Kazakhstan to Green Economy	2013	General infrastructure improvements, Fuel quality, Road-side vehicle technical checks, Vehicle scrappage scheme, General transport demand management, Vehicle air pollution emission standards, Vehicle efficiency standards, General vehicle improvements
International Energy Charter	2015	Fuel quality
Safely Connected: A Regional Road Safety Strategy for CAREC Countries, 2017–2030	2017	General infrastructure improvements, Vehicle inspection and maintenance, Technical standards for road infrastructure, Technical standards for general transport infrastructure, General international conventions, Request for financial support to develop transport, Technology and knowledge transfer, Training of enforcement authorities, General capacity building, General transport institutional reform, Reporting, transparency, feedback mechanism, Transport law, Passenger and freight load limits
ORDER OF THE MINISTER OF INVESTMENTS AND DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN of March 31, 2015 No. 389 About establishment of requirements for transport energy efficiency	2015	General e-mobility, Vehicle efficiency standards
Strategic Development Plan until 2025	2018	General infrastructure improvements, Travel time improvement, Intelligent transport systems (ITS), Logistics hub
Promoting Clean Urban Public Transport in Kazakhstan	2017	General public transport
ENVIRONMENTAL CODE	2007	Low-emission vehicle zones
ORDER OF THE MINISTER OF INVESTMENTS AND DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN of May 29, 2015 No. 671 About approval of regulations of the state service in the field of road transport	2015	Road-side checks on overloading
Updated Nationally Determined Contribution of the Republic of Kazakhstan	2023	Traffic management
INTEGRATED ANNUAL REPORT OF NATIONAL COMPANY KAZAKHSTAN TEMIR ZHOLY JSC FOR 2021	2021	Vehicle air pollution emission standards
Road Safety Opportunities and Challenges: Low- and Middle-Income Country Profiles	2020	Vehicle inspection and maintenance, Vehicle import inspections, Vehicle restrictions (import, age, access, sale, taxation)

Climate Change Mitigation Targets - Road Transport

Policy document	Target year	Targets
Concept for transition of the Republic of Kazakhstan to Green Economy	2030	SOX, NOX emissions into environment = European levels of emissions

Climate Change Mitigation Policy Measures - Rail Transport

Policy document	Year	Measures
ORDER OF THE MINISTER OF INVESTMENTS AND DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN of March 31, 2015 No. 389 About establishment of requirements for transport energy efficiency	2015	General e-mobility
Strategic Development Plan until 2025	2018	General infrastructure improvements
Concept for transition of the Republic of Kazakhstan to Green Economy	2013	General rail improvement
Energy Efficiency-2020 Program	2013	General rail improvement
LAW OF THE REPUBLIC OF KAZAKHSTAN of December 8, 2001 No. 266-II About rail transport	2001	Transport law

Climate Change Mitigation Policy Measures - Domestic Navigation

Policy document	Year	Measures
ORDER OF THE MINISTER OF INVESTMENTS AND DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN of March 31, 2015 No. 389 About establishment of requirements for transport energy efficiency	2015	General e-mobility
LAW OF THE REPUBLIC OF KAZAKHSTAN of July 6, 2004 No. 574-II About inland water transport	2004	Transport law

Climate Change Mitigation Policy Measures - Domestic Aviation

Policy document	Year	Measures
I.O'S ORDER. MINISTER OF TRANSPORT AND COMMUNICATIONS OF THE REPUBLIC OF KAZAKHSTAN of May 16, 2011 No. 279 About approval of the Instruction on the organization and air traffic maintenance	2011	Air traffic management
Energy Efficiency-2020 Program	2013	Aircraft fleet renovation
ORDER OF THE MINISTER OF INVESTMENTS AND DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN of March 31, 2015 No. 389 About establishment of requirements for transport energy efficiency	2015	General e-mobility

Climate Change Mitigation Policy Measures - Urban Transport

Policy document	Year	Measures
Promoting Clean Urban Public Transport in Kazakhstan	2017	LPG/ CNG/ LNG, General public transport, Coordinate planning across government agencies
Concept for the Development of the Fuel and Energy Sector until 2030	2014	General alternative fuels
Strategic Development Plan until 2025	2018	General infrastructure improvements
ENVIRONMENTAL CODE	2007	Low-emission vehicle zones
Concept for transition of the Republic of Kazakhstan to Green Economy	2013	LPG/ CNG/ LNG
Global Status Report on Road Safety 2018	2018	Speed limits on urban roads \leq 30 kph

Climate Change Adaptation Policy Measures

Policy document	Year	Measures
Promoting Clean Urban Public Transport in Kazakhstan	2017	Coordinate planning across government agencies (Sub-sectors: Urban transport)
LAW OF THE REPUBLIC OF KAZAKHSTAN of July 4, 2003 No. 476-II About road transport	2003	Define roles and accountabilities across agencies, Involvement of subnational government for transport activities, Transport law (Sub-sectors: Road transport)
INTEGRATED ANNUAL REPORT OF NATIONAL COMPANY KAZAKHSTAN TEMIR ZHOLY JSC FOR 2021	2021	General capacity building (Sub-sectors: NA)
Safely Connected: A Regional Road Safety Strategy for CAREC Countries, 2017–2030	2017	General international conventions, Request for financial support to develop transport, Technology and knowledge transfer, General capacity building, General transport institutional reform, Reporting, transparency, feedback mechanism, Transport law (Sub-sectors: Road transport)
On the road traffic: The Law of the Republic of Kazakhstan of April 17, 2014 No. 194-V	2022	General data repositories and data collection, General transport asset management, Reporting, transparency, feedback mechanism (Sub-sectors: Road transport)
Strategic Development Plan until 2025	2018	General infrastructure improvements (Sub-sectors: Road transport, Rail transport, Urban transport)
LAW OF THE REPUBLIC OF KAZAKHSTAN of December 8, 2001 No. 266-II About rail transport	2001	Transport law (Sub-sectors: Rail transport)
LAW OF THE REPUBLIC OF KAZAKHSTAN of July 6, 2004 No. 574-II About inland water transport	2004	Transport law (Sub-sectors: Domestic Navigation)

Notes



(*) Policy measures and targets were extracted from policy documents as listed in the ATO National Transport Policies Database

<https://bit.ly/ATOpolicyrepository>

References

- (1) UN Population Database (2022), <https://population.un.org/wpp/>
- (2) World Bank (2022), <https://data.worldbank.org/>
- (3) Global Materials Flow Database (UNEP, 2023), <https://www.resourcepanel.org/global-material-flows-database>
- (4) Emissions Database for Global Atmospheric Research (EC, 2023), <https://edgar.jrc.ec.europa.eu/>
- (5) UN Energy Statistics (2021), <https://unstats.un.org/unsd/energystats/dataPortal/>
- (6) Fossil Fuels Consumption Subsidies 2022 (IEA, 2022), <https://www.iea.org/reports/fossil-fuels-consumption-subsidies-2022>
- (7) Climate Change Dashboard (IMF, 2024), <https://climatedata.imf.org/pages/access-data>
- (8) Ember (2023), <https://ember-climate.org/data-catalogue/yearly-electricity-data/>
- (9) Country Official Statistics
- (10) International Organization of Motor Vehicle Manufacturers (OICA, 2023), <https://www.oica.net/production-statistics/>
- (11) Trademap (ITC, 2024), <https://www.trademap.org/>
- (12) Koks, et al. (2019), <https://www.nature.com/articles/s41467-019-10442-3>
- (13) Coalition for Disaster Resilient Infrastructure (CDRI, 2023), <https://giri.unepgrid.ch/facts-figures/building-infrastructures>
- (14) Koks, et al. (2023), <https://iopscience.iop.org/article/10.1088/2634-4505/acd1aa>
- (15) Environmental Vulnerability Indicators (UN, 2018), <https://www.un.org/development/desa/dpad/least-developed-country-category/evi-indicators-ldc.html>
- (16) Rapid Transit Database (ITDP, 2022), <https://www.itdp.org/rapid-transit-database/>
- (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#>

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