

# Azerbaijan

## Green Roads Profile

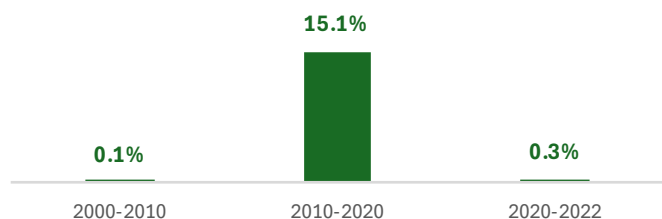
### General

Road length (2022)  
**78,349 kilometers**

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

Income class  
**Upper middle income**

Average annual growth rate of road length



Population (2024)  
(1) **10.5 million**

Land area  
**83 thousand sqkm** (2,3)

Urban population  
**58%**

Rural population  
**42%** (2)

Gross domestic product (GDP PPP, 2022)  
**180.81 billion USD**

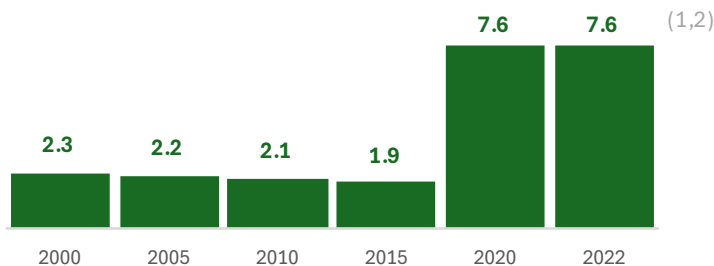
GDP per capita (PPP, 2022)  
**17,456 USD** (2,3)  
(3)

*Azerbaijan's road network is comprised of 9.4% motorways, highways, and primary roads and 90.6% secondary roads, local roads, and other roads*

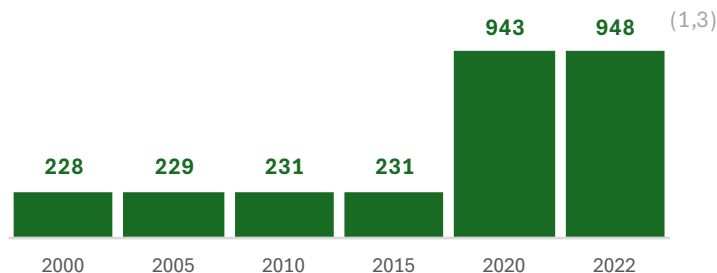
Road infrastructure availability (2022)  
**7.6 kilometers per thousand population**

Road infrastructure density (2022)  
(1,2) **948 meters per square kilometer** (1,3)

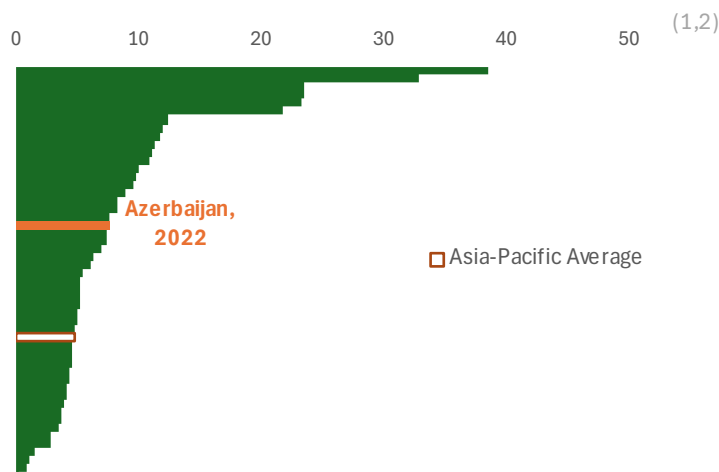
Road infrastructure availability trend, kilometers per thousand population



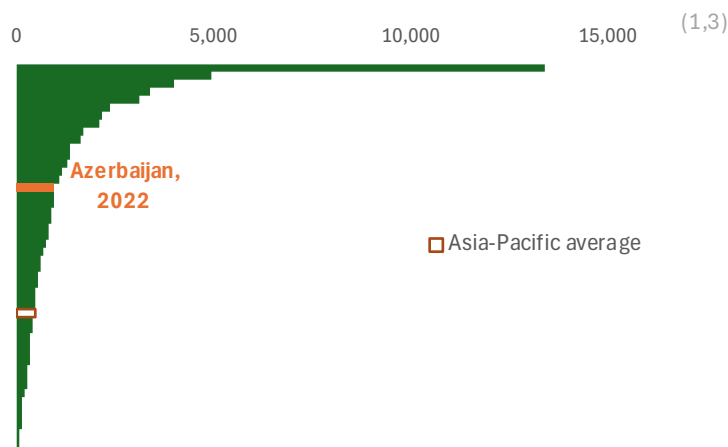
Road infrastructure density trend, meters per thousand population



Road infrastructure availability in Asia-Pacific, kilometers per thousand population

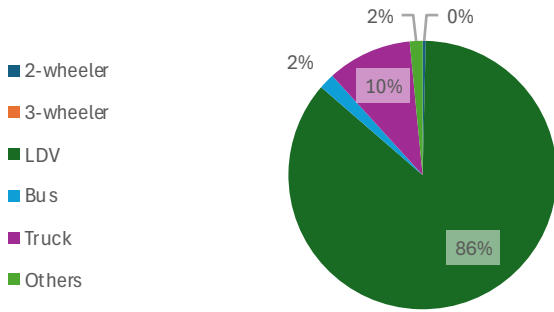


Road infrastructure density in Asia-Pacific, meters per square kilometer



Road vehicles (2022)  
**1.65 million vehicles**

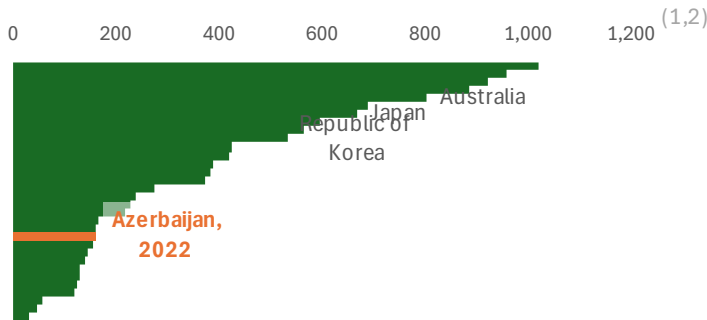
Share of vehicles by type



Motorization rate (2022)  
**159 vehicles per thousand population**

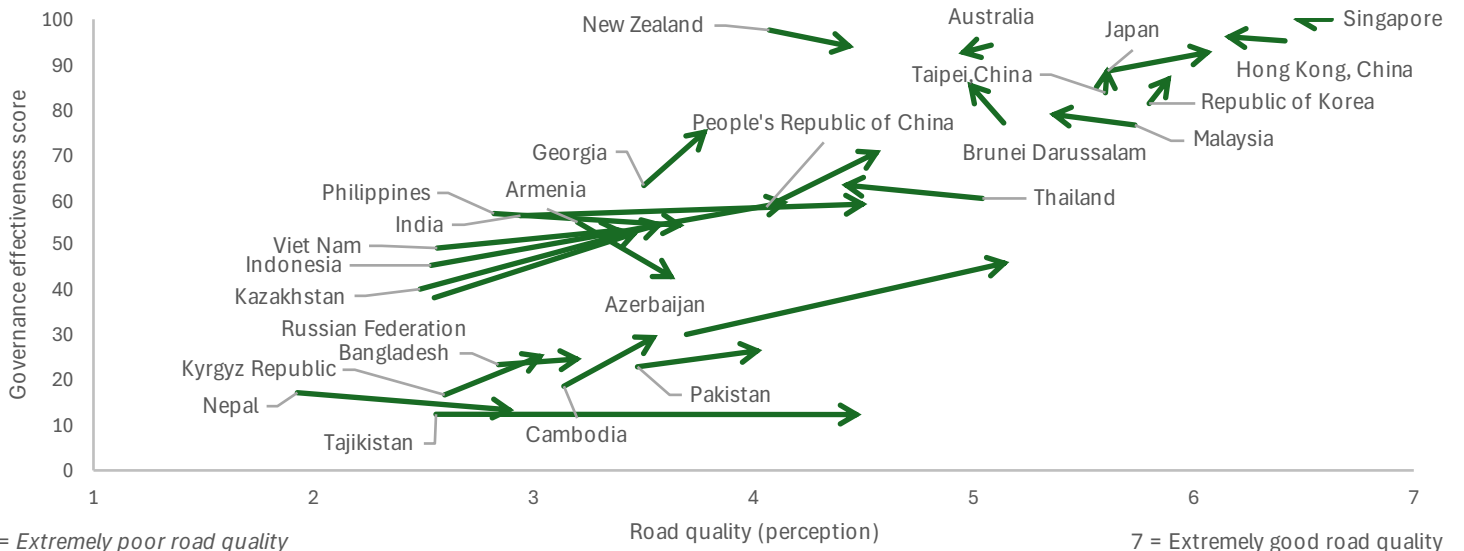
*In 2000, Azerbaijan had 54 vehicles per thousand population. By 2022, this has increased to 159 compared with Asia-Pacific average of 577 in 2022.*

Motorization rate in Asia-Pacific, vehicles per thousand population



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

Road quality (perception) vs. governance effectiveness score (2009-2019)



1 = Extremely poor road quality

7 = Extremely good road quality

Public-private partnership investments in road sector, cumulative million USD

(1)

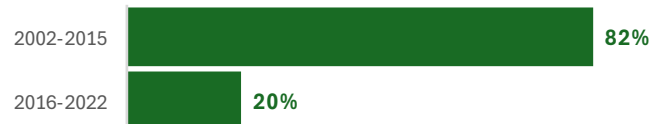
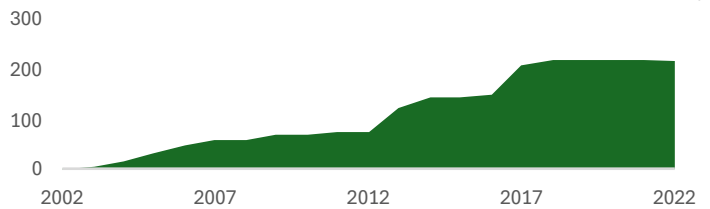
Share of road in total public-private partnership investments

Official development assistance in road sector, cumulative million USD

(5)

Share of road in total official development assistance

(5)



Developed with the support of:

Quality of Life and Fostering Inclusive Growth

Rural access index (2023)

**83%**

(6)

Based on 2015 estimates, only 46% of the population could reach the nearest city in 30 minutes, another 20% could reach in 1 hour, and another 28% could reach only after 3 hours.

Rural population without access to all-season roads (2023)

**0.75 million**

(2,6)

Logistics performance index score (2023)

**n.d.**

(10)

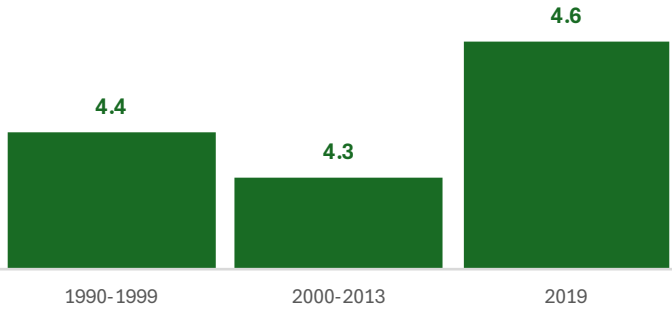
National street network disconnectedness index

(7)

| Infrastructure score

**n.d.**

(10)



This indicator is a summary scalar measure for street-network sprawl describing connectivity of local street networks across the world

Logistics performance index ranking trend

(10)



Road crash fatalities (2019)

**676 deaths**

(8)

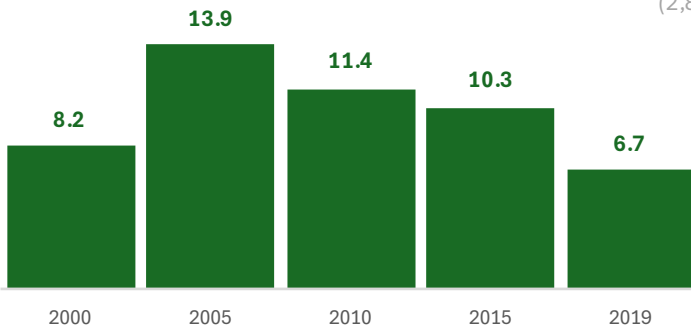
Road crash fatality rate per 100 thousand population

(2,8)

Percent of firms choosing transportation as their biggest obstacle - Manufacturing (2009)

**2.3%**

(11)



Asia-Pacific average is 15.7 fatalities per 100 thousand population

Percent of respondents answering high/very high - Level of Fees and Charges on Road transport (2018)

**33.0%**

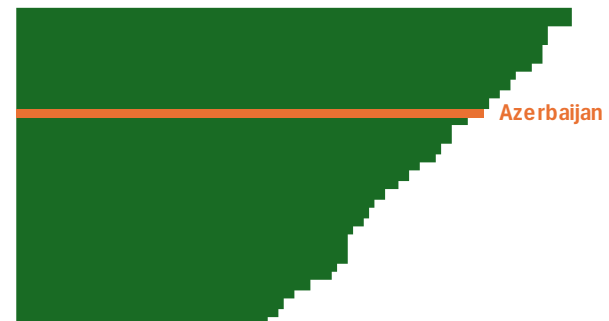
(11)

Level of fees and charges for less than full truck loads are considered

Mean speed in Asia-Pacific, kilometers per hour (2022)

(9)

0 20 40 60 80 100 120



Mean speed (2022)

**89 kilometers per hour**

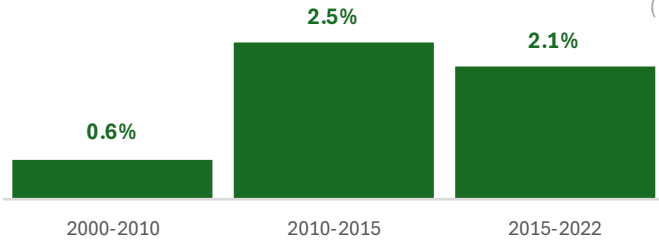
(9)

Employment in transport sector (2022)  
**286.6 thousand employees**

Share of transport sector in total employment (2022)  
 (12) **5.5%** (12)

Average annual growth rate of transport sector employment

Share of females in total transport sector employment (2022)  
 (12) **23.6%** (12)



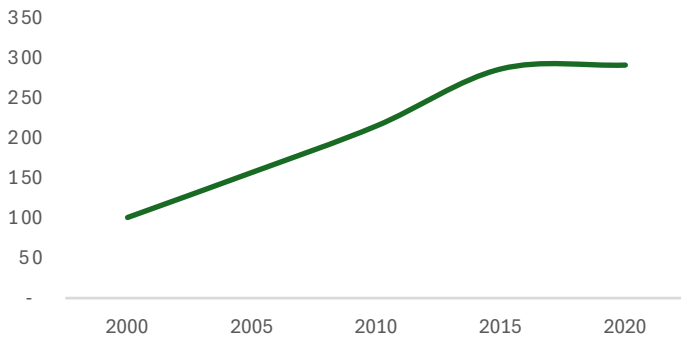
## Decarbonization

Road transport energy consumption trend

Assuming 2000 value as base (100)

(13)

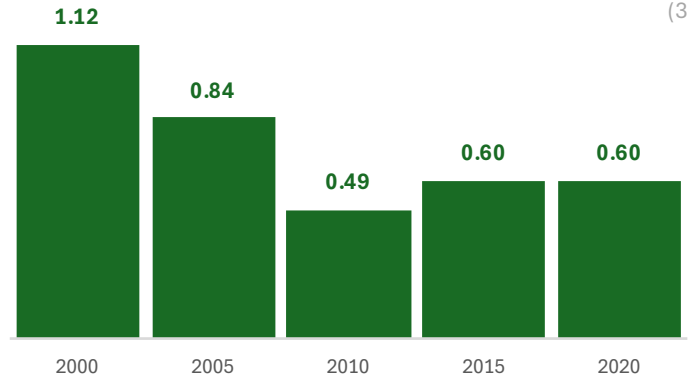
*91% of Azerbaijan's transport energy consumption is in the road sector.*



*Between 2000-2010, Azerbaijan's road transport energy consumption grew 7.9% annually. Between 2010-2020, road transport energy consumption grew 3.1% annually.*

Road transport energy intensity with GDP, TJ per USD (PPP)

(3,13)



*Asia-Pacific average is 0.4 MJ per USD in 2020*

Grid emission factor (2022)

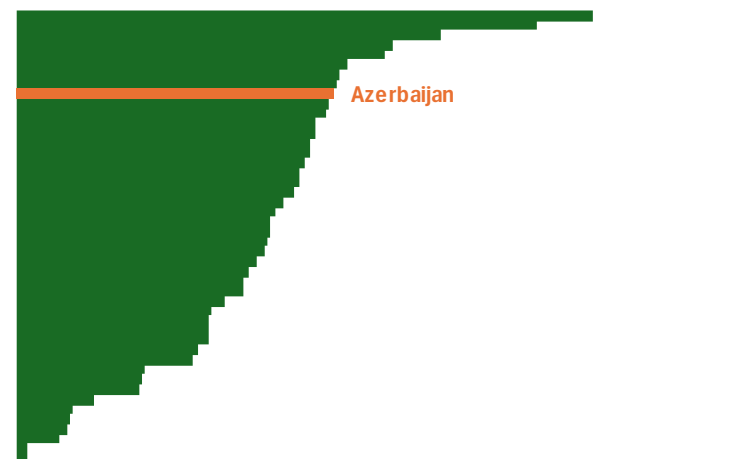
**719.4 gCO<sub>2</sub> per kWh**

(14)

Grid emission factors in Asia-Pacific, gCO<sub>2</sub> per kWh

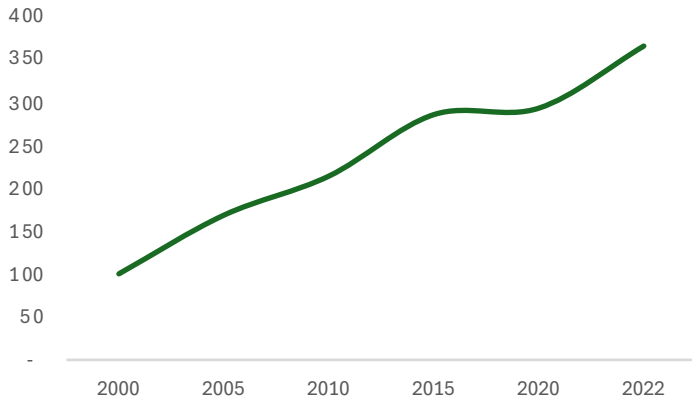
(14)

Grid emission factor trend, gCO<sub>2</sub> per kWh

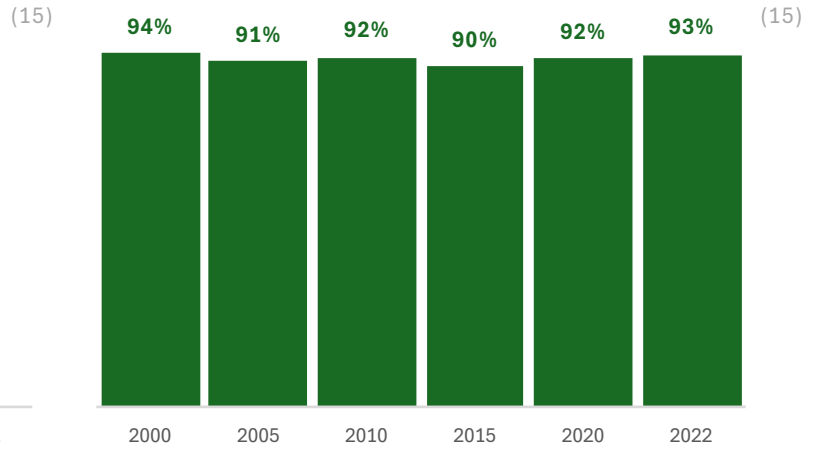


### Road transport CO2 emissions trend

Assuming 2000 value as base (100)



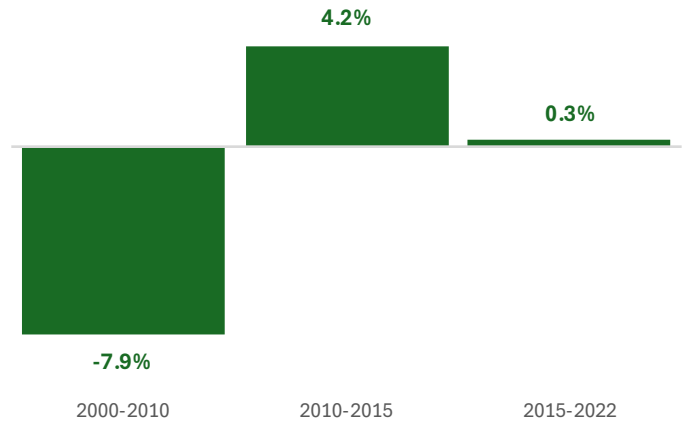
### Share of road transport in total transport CO2 emissions



Between 2010-2019, Azerbaijan's road transport fossil CO2 emissions was growing 5.2% annually. After the COVID-19 pandemic, road transport CO2 emissions was growing 11.7% annually.

### Road transport CO2 emissions intensity with GDP trend

(3,15)



### Transport fossil fuel subsidies, cumulative from 2010 to 2022

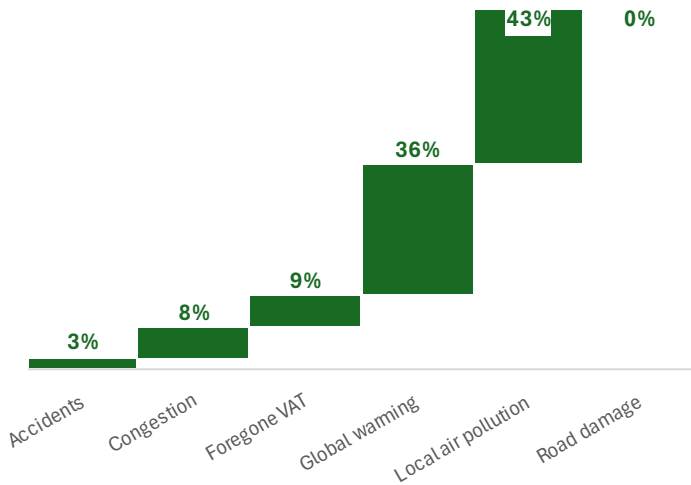
**8.79 billion USD**

1.4% of Asia-Pacific total

(16)

### Implicit fossil fuel subsidies due to externalities

(17)



Data includes all sectors and all fuel types

## Climate Resilience and Disaster Preparedness

Expected annual damages to road and rail infrastructure due to hazards (2019)

**23.28 million USD**

(18)

National road vulnerability index ranking (2023)

**n.d.**

(20)

Share of road in total transport infrastructure in multihazard average annual loss to transport infrastructure (2023)

**89.3%**

(19)

Share of population in low elevated coastal zones (2018)

**0.0%**

(21)

## Pollution, Water and Land Management, Preserving Biodiversity, and Sustainable Materials

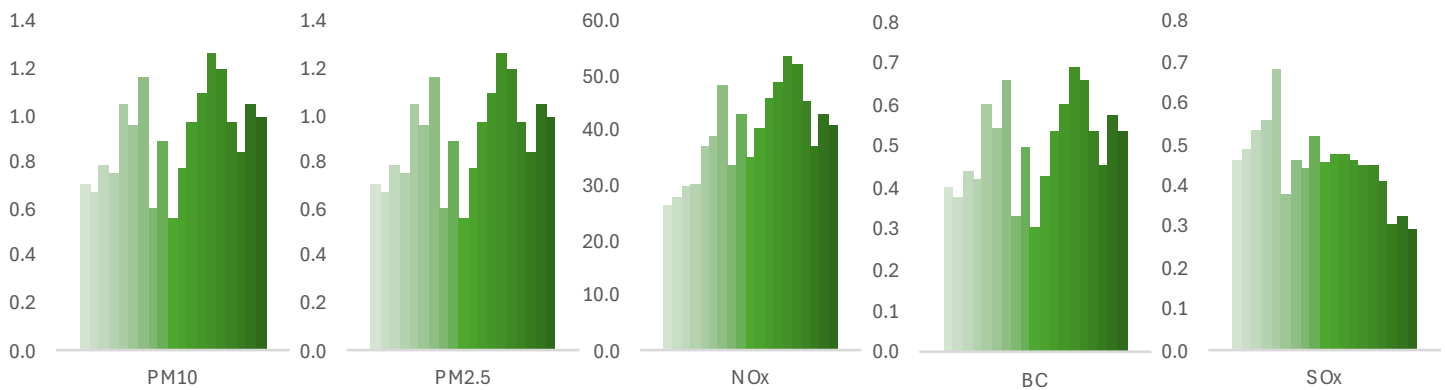
Paved roads (2023)

**67%**

(1)

Road transport air pollutant emissions, thousand tonnes (2000-2018)

(15)



*In 2022, road transport contributed 47.7%, re-suspended dust contributed 32.0% in transport PM10 emissions. In total, road transport contributed about 18.2% in total PM10 emissions in Azerbaijan.*

Deaths due to occupational exposure to diesel engine exhaust | 2000-2010

**218 deaths**

| 2011-2018

**293 deaths**

(22)

Terrestrial and marine protected areas (2022)

**5.5%**

(3)

(% of total territorial area)

Terrestrial protected areas

**10.2%**

(13)

(% of total land area)

Marine protected areas

**0.4%**

(3)

(% of territorial waters)

Share of biofuels in road transport energy consumption (2020)

**n.d.**

Domestic consumption per capita, tonnes (2024)

| Azerbaijan

**7.2 tonnes**

| Asia-Pacific

**13.8 tonnes**

(23)

Forest area (2021)

**13.8%**

(3)

(% of land area)

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

Developed with the support of:

## Policy Measures

Policy document	Year	Road-related measures
Transport Sector Development Strategy	2006	Vehicle inspection and maintenance, General transport asset management, Vehicle taxes, Reference to finance mechanisms within country, Request for financial support to develop transport
Second Biennial Update Report of the Republic of Azerbaijan	2018	Active transport infrastructure expansion, National speed law
State Program of Azerbaijan Republic on Road Safety for 2019-2023	2019	Active transport infrastructure expansion, Vehicle inspection and maintenance, Development of transport asset management plan/policy, Routine transport asset maintenance, National road safety strategy, National speed law, Passenger and freight load limits, Road-side checks on overloading
Global Status Report on Road Safety 2018	2018	Automated enforcement of speed limits, Design standards for sidewalks and bicycle paths, National speed law, Audits/ star rating for existing roads for road safety, Audits/ star rating required for new road infrastructure for road safety
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, Request for financial support to develop transport, National road safety strategy, Passenger and freight load limits, Audits/ star rating for existing roads for road safety, Audits/ star rating required for new road infrastructure for road safety
Socio-economic development strategy of the Republic of Azerbaijan for 2022-2026	2022	Road infrastructure expansion
International Energy Charter	2015	General infrastructure improvements
FOURTH NATIONAL COMMUNICATION	2021	Technical standards for road infrastructure, Vehicle taxes
Azerbaijan – 2020 Outlook for the future	2012	General transport asset management, Road infrastructure expansion
Updated Nationally Determined Contribution of the Republic of Azerbaijan	2023	Vehicle taxes
LAW OF THE AZERBAIJAN REPUBLIC of April 1, 2008 No. 556-IIIQ About road transport	2008	General infrastructure improvements, Vehicle inspection and maintenance
ORDER OF THE PRESIDENT OF THE AZERBAIJAN REPUBLIC of July 6, 2010 No. 1002 About approval of the State program on development of system of rail transport	2010	Reference to finance mechanisms within country
Road Safety Opportunities and Challenges: Low- and Middle-Income Country Profiles	2020	Vehicle inspection and maintenance, Implementation of horizontal deflections on roads, Implementation of vertical deflections on roads
LETTER OF THE MINISTRY OF TAXES OF THE AZERBAIJAN REPUBLIC of March 27, 2001 No. 08/08-25/549-1242 About VAT liability of transport services	2001	Reference to finance mechanisms within country
RESOLUTION OF THE CABINET OF MINISTERS OF THE AZERBAIJAN REPUBLIC of May 20, 2009 No. 82 About approval of the Procedure for test of compliance of the vehicle	2009	Vehicle inspection and maintenance

## Notes



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

<https://bit.ly/ATOpolicyrepository>

## References

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- (18) Koks, et al. (2019), <https://www.nature.com/articles/s41467-019-10442-3>
- (19) Coalition for Disaster Resilient Infrastructure (CDRI, 2023), <https://giri.unepgrid.ch/facts-figures/building-infrastructures>
- (20) Koks, et al. (2023), <https://iopscience.iop.org/article/10.1088/2634-4505/acd1aa>
- (21) Environmental Vulnerability Indicators (UN, 2018), <https://www.un.org/development/desa/dpad/least-developed-country-category/evi-indicators-ldc.html>
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- (23) Global Materials Flow Database (UNEP, 2023), <https://www.resourcepanel.org/global-material-flows-database>

## Disclaimer

This profile was developed by Asian Transport Outlook in support of TA-6756 Improving Infrastructure Sustainability Through Better Asset Management – Developing a Green Roads Toolkit and Guidance for ADB Projects. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

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