

Viet Nam

Green Roads Profile

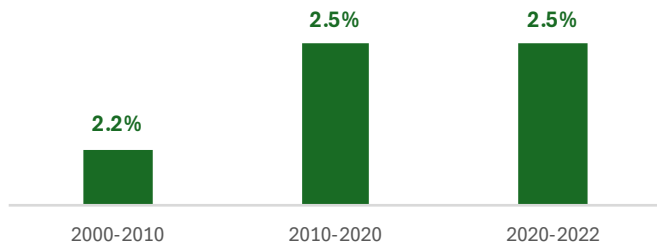
General

Road length (2022)
417,181 kilometers

Subregion
 (1) **South East Asia**

Income class
Low and lower middle income

Average annual growth rate of road length



Population (2024)
 (1) **99.5 million**

Land area
313 thousand sqkm (2,3)

Urban population
40%

Rural population
60% (2)

Gross domestic product (GDP PPP, 2022)
1.32 trillion USD

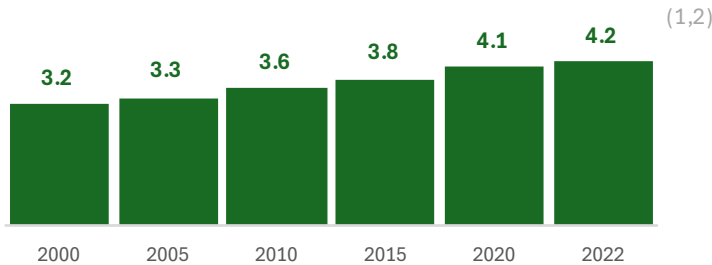
GDP per capita (PPP, 2022)
13,461 USD (2,3)

Viet Nam's road network is comprised of 6.9% motorways, highways, and primary roads and 93.1% secondary roads, local roads, and other roads

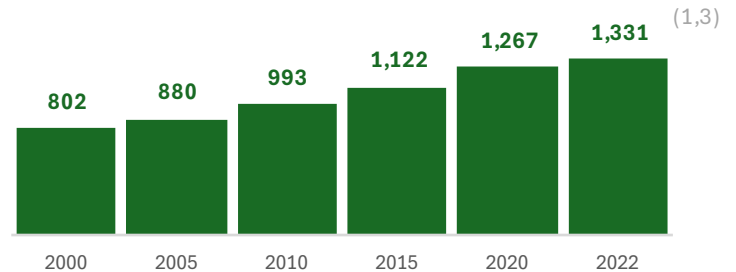
Road infrastructure availability (2022)
4.2 kilometers per thousand population

Road infrastructure density (2022)
 (1,2) **1,331 meters per square kilometer** (1,3)

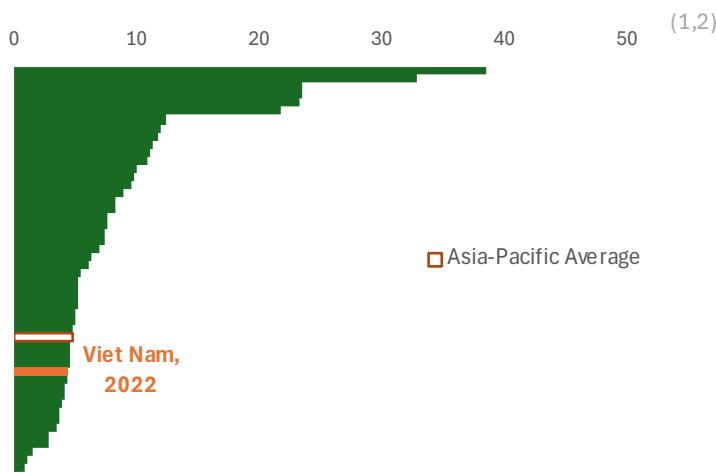
Road infrastructure availability trend, kilometers per thousand population



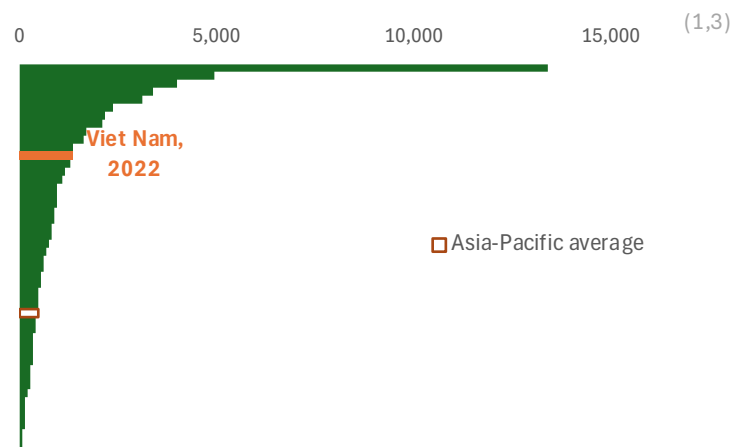
Road infrastructure density trend, meters per thousand population



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

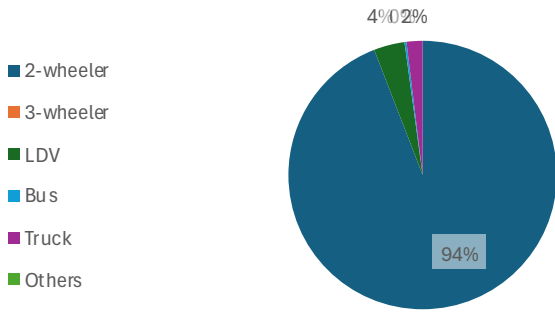


Road infrastructure density in Asia-Pacific, meters per square kilometer



Road vehicles (2022)
90.54 million vehicles

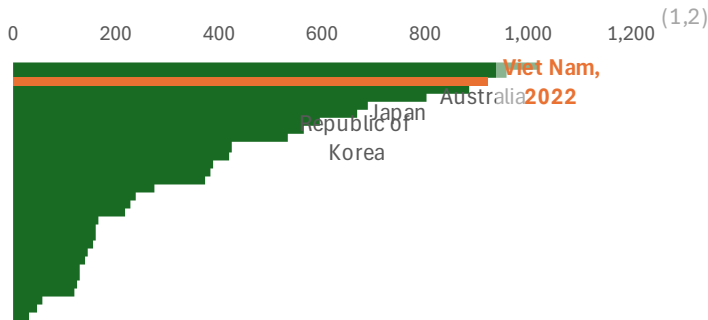
Share of vehicles by type



Motorization rate (2022)
922 vehicles per thousand population

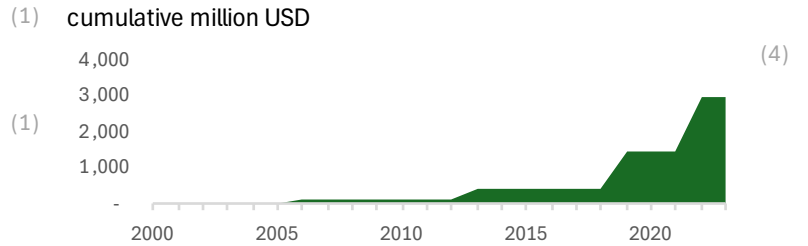
In 2000, Viet Nam had 168 vehicles per thousand population. By 2022, this has increased to 922 compared with Asia-Pacific average of 577 in 2022.

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

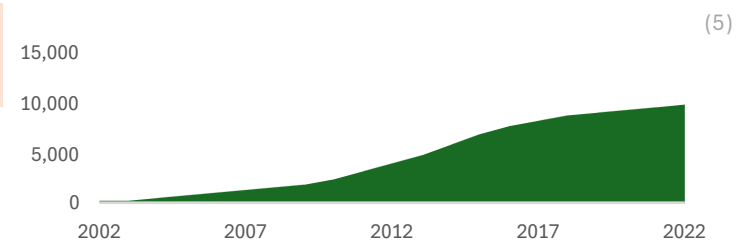
Public-private partnership investments in road sector, cumulative million USD



Share of road in total public-private partnership investments



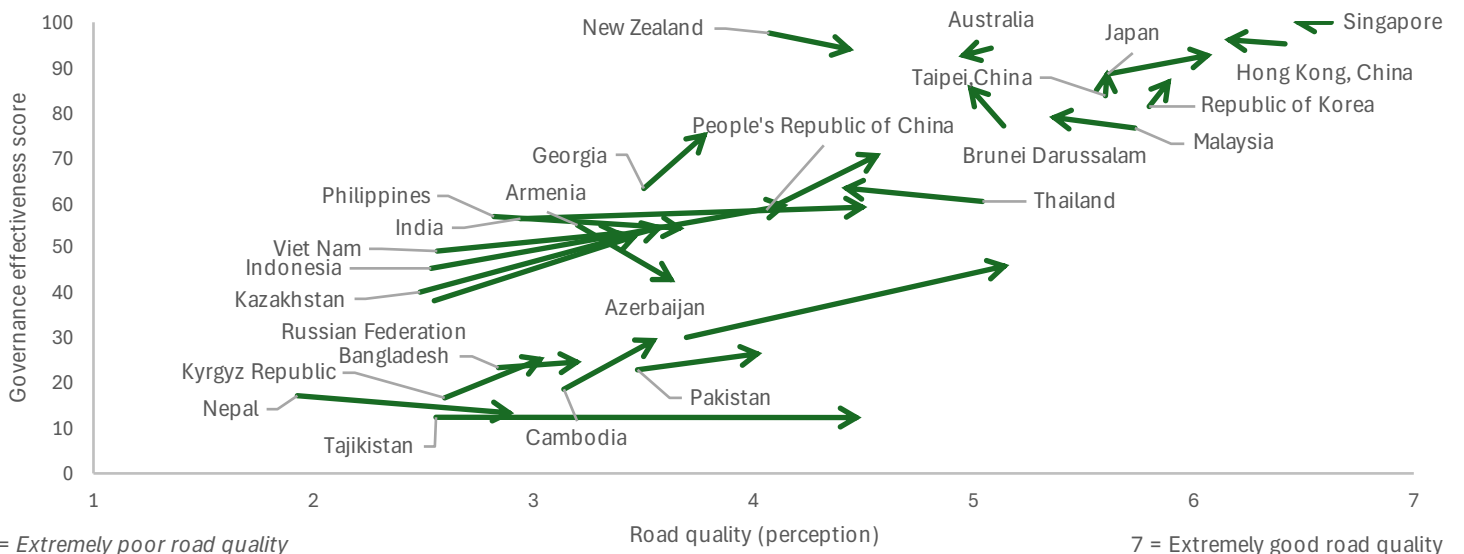
Official development assistance in road sector, cumulative million USD



Share of road in total official development assistance



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



1 = Extremely poor road quality

7 = Extremely good road quality

Developed with the support of:



Quality of Life and Fostering Inclusive Growth

Rural access index (2023)
91%

(6)

Based on 2015 estimates, only 82% of the population could reach the nearest city in 30 minutes, another 10% could reach in 1 hour, and another 7% could reach only after 3 hours.

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

(2,6)

Logistics performance index score (2023)

3.3/5

(10)

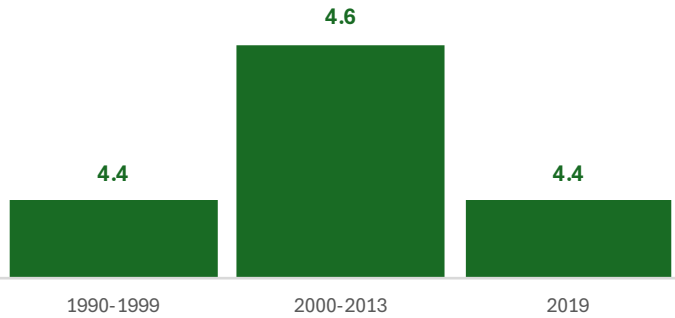
| Infrastructure score

(7)

3.2/5

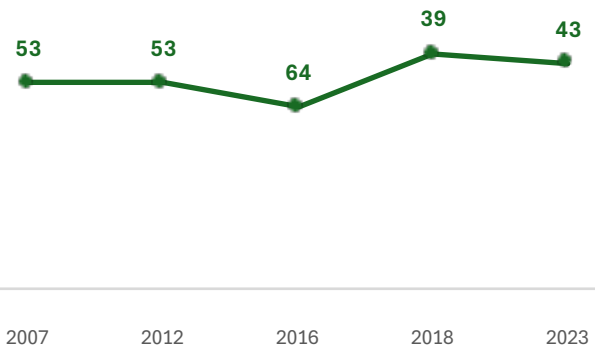
(10)

National street network disconnectedness index



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



Road crash fatalities (2019)
29.5 thousand deaths

(8)

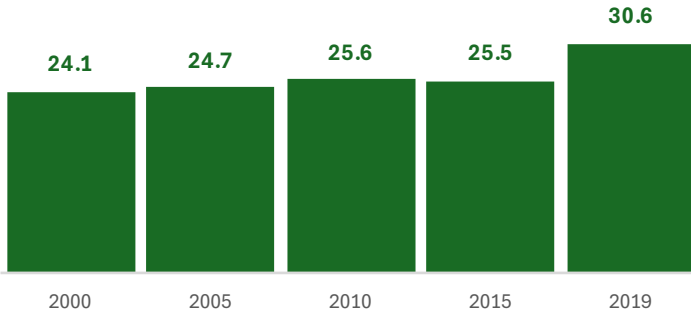
Road crash fatality rate per 100 thousand population

(2,8)

Percent of firms choosing transportation as their biggest obstacle - Manufacturing (2015)

8.1%

(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)

80.0%

(11)

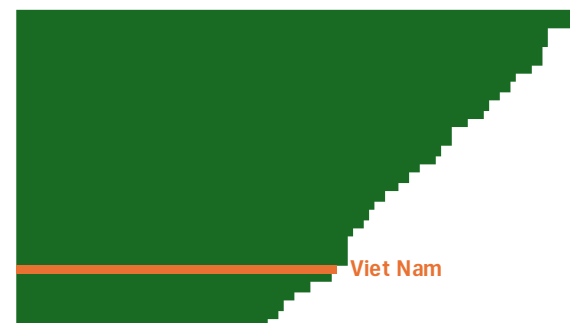
Level of fees and charges for less than full truck loads are considered

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

0 20 40 60 80 100 120 (9)

Mean speed (2022)
61 kilometers per hour

(9)

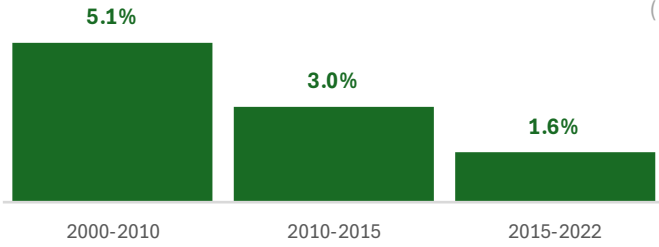


Employment in transport sector (2022)
2.21 million employees

Share of transport sector in total employment (2022)
 (12) **4.0%** (12)

Average annual growth rate of transport sector employment

Share of females in total transport sector employment (2022)
 (12) **13.5%** (12)



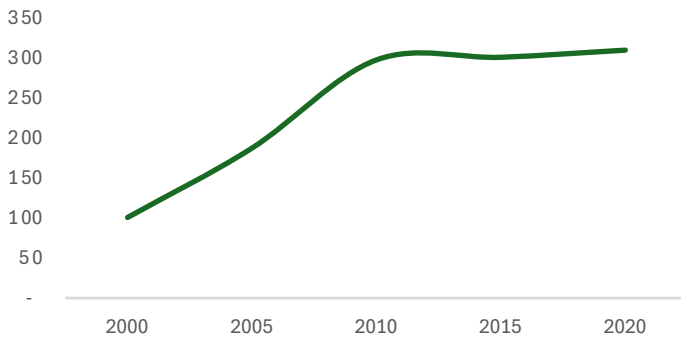
Decarbonization

Road transport energy consumption trend

Assuming 2000 value as base (100)

(13)

87% of Viet Nam's transport energy consumption is in the road sector.



Between 2000-2010, Viet Nam's road transport energy consumption grew 11.4% annually. Between 2010-2020, road transport energy consumption grew 0.4% 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)

409.8 gCO2 per kWh

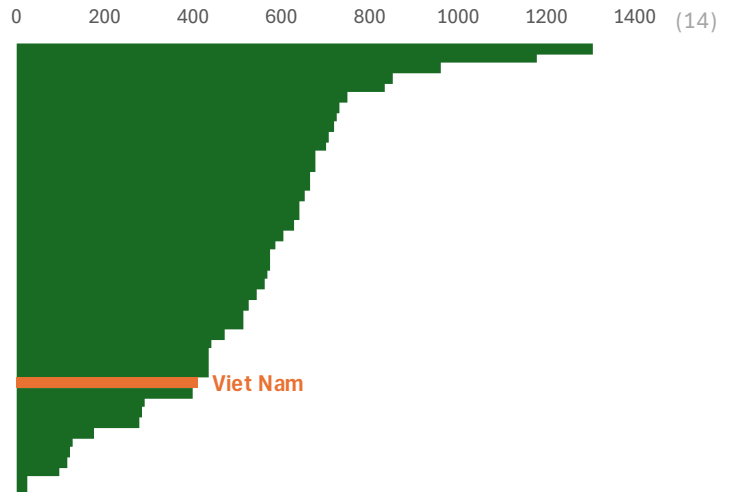
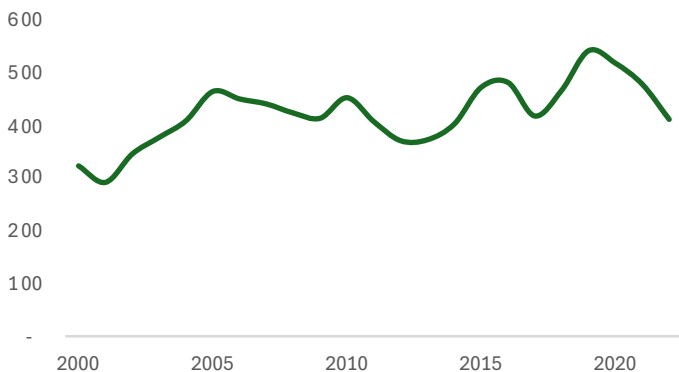
(14)

Grid emission factors in Asia-Pacific, gCO2 per kWh

(14)

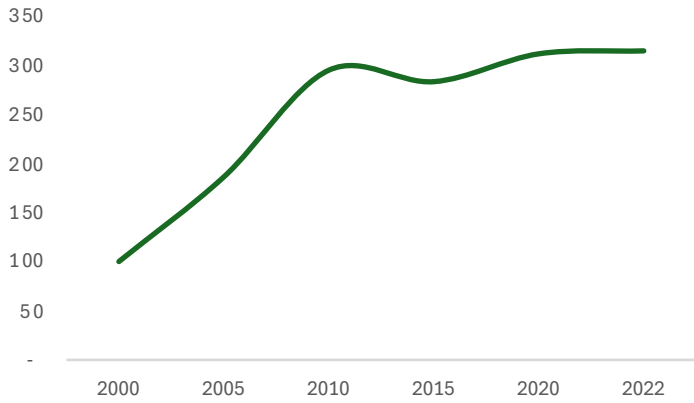
Grid emission factor trend, gCO2 per kWh

(14)



Road transport CO2 emissions trend

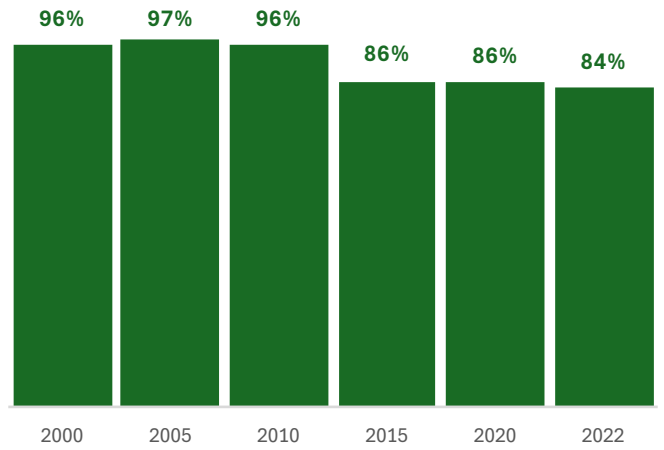
Assuming 2000 value as base (100)



Share of road transport in total transport CO2 emissions

(15)

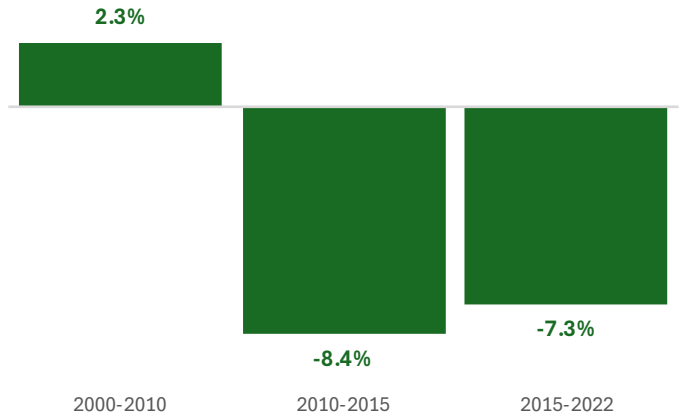
(15)



Between 2010-2019, Viet Nam's road transport fossil CO2 emissions was growing 2.5% annually. After the COVID-19 pandemic, road transport CO2 emissions was growing 0.5% annually.

Road transport CO2 emissions intensity with GDP trend

(3,15)



Transport fossil fuel subsidies, cumulative from 2010 to 2022

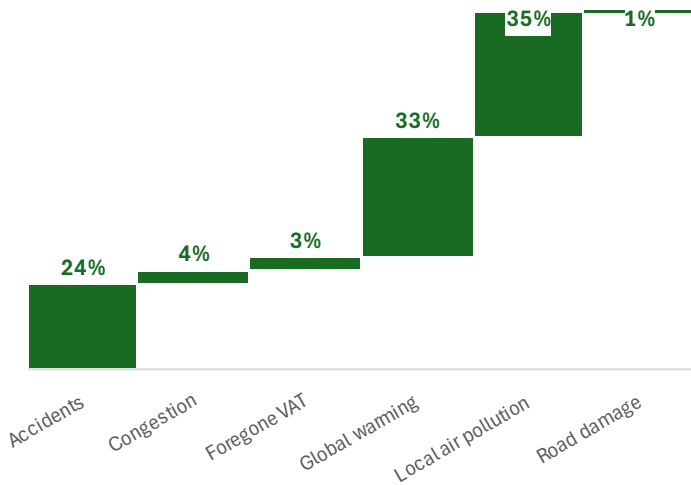
1 million USD

0.0% 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)

465.34 million USD

(18)

National road vulnerability index ranking (2023)

131st out of 208 countries

(20)

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

68.3%

(19)

Share of population in low elevated coastal zones (2018)

37.0%

(21)

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

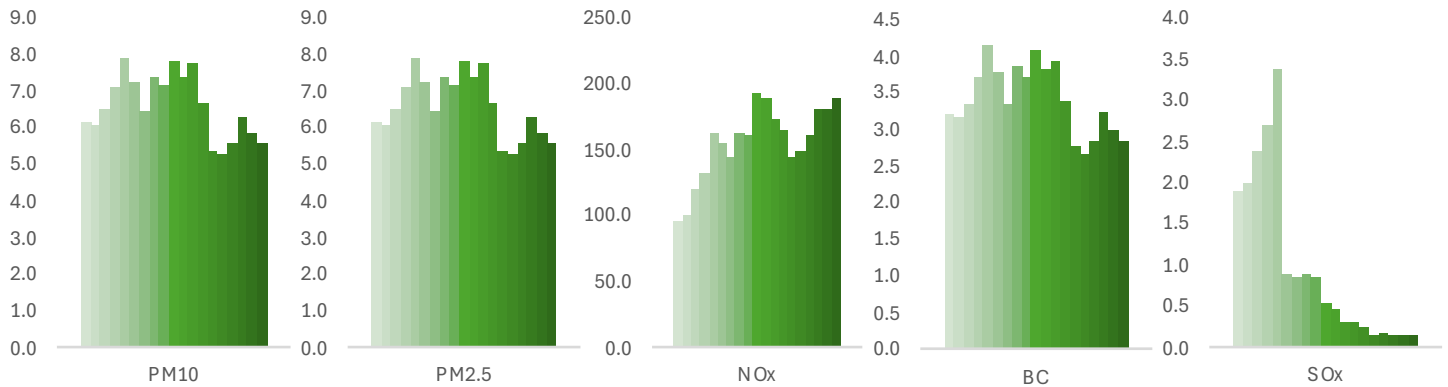
Paved roads (2018)

73%

(1)

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

(15)



In 2022, road transport contributed 51.8%, re-suspended dust contributed 39.1% in transport PM10 emissions. In total, road transport contributed about 2.2% in total PM10 emissions in Viet Nam.

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

2,350 deaths

| 2011-2018

3,471 deaths

(22)

Terrestrial and marine protected areas (2022)

2.9%

(3)

(% of total territorial area)

Terrestrial protected areas

7.6%

(13)

(% of total land area)

Marine protected areas

0.6%

(3)

(% of territorial waters)

Share of biofuels in road transport energy consumption (2020)

0.6%

Domestic consumption per capita, tonnes (2024)

| Viet Nam

14.2 tonnes

| Asia-Pacific

13.8 tonnes

(23)

Forest area (2021)

47.0%

(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
Approving the National Strategy for ensuring road traffic order and safety for the period 2021-2030 and a vision to 2045	2020	General infrastructure improvements, Vehicle inspection and maintenance, Technical standards for road infrastructure, General transport asset management, Road charging and tolls, General transport finance, Request for financial support to develop transport, National road safety strategy, Audits/ star rating for existing roads for road safety, Audits/ star rating required for new road infrastructure for road safety
Railway network planning for 2021-2030, vision to 2050	2021	Target - Transport activity, Technologies on transport asset management, Transport infrastructure resilience, General transport asset management, General transport finance, Reference to finance mechanisms within country, Request for financial support to develop transport, Adaptation transport laws, regulations and programmes
Transport Strategy 2020	2013	General infrastructure improvements, Vehicle inspection and maintenance, Technical standards for road infrastructure, General transport asset management, Investment required for specific projects, Investment volume for transport, Reference to finance mechanisms within country, Request for financial support to develop transport, Road infrastructure expansion, National road safety strategy
Approving the Action Program for Transition to Green Energy and Mitigation of Carbon Dioxide and Methane Emissions from Transportation	2022	General infrastructure improvements, General transport finance, Reference to finance mechanisms within country, Request for financial support to develop transport, Road infrastructure expansion
Global Status Report on Road Safety 2018	2018	Automated enforcement of speed limits, Design standards for sidewalks and bicycle paths, Upgrading high risk locations for road safety, National road safety strategy, National speed law, Audits/ star rating for existing roads for road safety, Audits/ star rating required for new road infrastructure for road safety
Decision 876/QD-TTg in 2022 approving the Action Program on green energy transformation, reducing carbon and methane emissions of the transport sector issued by the Prime Minister	2022	Request for financial support to develop transport, Road infrastructure expansion
Updated Nationally Determined Contribution - VNM	2020	General infrastructure improvements, Development of transport plan/ policy
Viet Nam NDC 2022 Update	2022	General infrastructure improvements, Road infrastructure expansion, Development of transport plan/ policy
Decision 13/2015/QD-TTg on mechanisms and policies to encourage the development of public passenger transport by bus issued by the Prime Minister	2015	Vehicle taxes, Request for financial support to develop transport
NATIONAL ACTION PLAN FOR THE IMPLEMENTATION OF THE 2030 SUSTAINABLE DEVELOPMENT AGENDA	2017	General infrastructure improvements, Climate-resilient design standards, Transport asset condition assessment, Technologies on transport asset management, General transport asset management, Development of transport plan/ policy, Road-side checks on overloading, General adaptation measures
National plan to adapt to climate change for the period of 2021-2030, with a vision to 2050	2020	Climate-resilient design standards, Transport infrastructure resilience, Development of transport adaptation/ emergency/ disaster plan/ policy
Road network planning for 2021-2030, vision to 2050	2021	General infrastructure improvements, Climate-resilient design standards, Technical standards for road infrastructure, Target - Transport activity, Technologies on transport asset management, General transport asset management, Road charging and tolls, General transport finance, Investment volume for transport, Measures to improve rural-urban connectivity, Road infrastructure expansion, Upgrading high risk locations for road safety, Development of road plan/ policy, General adaptation measures

Policy Measures

Policy document	Year	Road-related measures
Circular 48/2022/TT-BGTVT guiding the energy labeling for electric and hybrid electric cars, motorcycles and motorcycles issued by the Minister of Transport	2022	Vehicle inspection and maintenance
Decision 1168/QĐ-TTg in 2014 approving the development strategy of Vietnam's automobile industry to 2025, with a vision to 2035 issued by the Prime Minister	2014	Vehicle taxes, Investment required for specific projects, Reference to finance mechanisms within country
National Logistics Master Plan - VNM	2016	Reduction of transport/ logistics costs, General transport finance, Reference to finance mechanisms within country
Decision 896 QĐ TTg 2022 Approving the National Strategy-for Climate Change until 2050	2022	Road infrastructure expansion
Intended Nationally Determined Contribution of Viet Nam (2015)	2015	Vehicle inspection and maintenance, Fossil fuel subsidy elimination, General transport finance
RESOLUTION ON FIVE-YEAR SOCIO-ECONOMIC DEVELOPMENT PLAN DURING THE 2021 – 2025 PERIOD	2021	General infrastructure improvements
Road Safety Opportunities and Challenges: Low- and Middle-Income Country Profiles	2020	Vehicle inspection and maintenance, Implementation of vertical deflections on roads
One Strategic Plan 2017-2021	2017	Request for financial support to develop transport
Circular 31/2009/TT-BGTVT stipulating national technical regulations on emission of new manufactured, assembled and imported automobiles issued by the Ministry of Transport	2009	Vehicle inspection and maintenance
Circular 05/2020/TT-BGTVT amending Circular 03/2018/TT-BGTVT stipulating quality inspection of technical safety and environmental protection for imported cars (and motorcycles) subject to Decree 116/2017/ND-CP issued by the Minister of Transport	2020	Vehicle inspection and maintenance

Policy Targets

Policy document	Target year	Road-related targets
Approving the National Strategy for ensuring road traffic order and safety for the period 2021-2030 and a vision to 2045	2030	100% of newly built national highways and provincial roads (grade III or higher) and 75% of the total length of the national highway network being exploited reach the traffic safety level of 3 stars or more according to the standards of the Global road traffic safety assessment program.
Road network planning for 2021-2030, vision to 2050	2030	100% of district and commune roads will be of technical grade, meeting the transport demand in rural areas
Approving the National Strategy for ensuring road traffic order and safety for the period 2021-2030 and a vision to 2045	2030	The system of legal documents on traffic order and safety, the organization of the traffic safety management apparatus from the central to the local level must be completed with effective and efficient implementation. Develop and complete traffic safety manuals and handbooks on expressways, rural roads, etc. as applications on smart mobile device platform.
National Logistics Master Plan - VNM	2030	Logistics cost equal to of GDP = 13 (Baseline = 18; 2020)
Approving the National Strategy for ensuring road traffic order and safety for the period 2021-2030 and a vision to 2045	2030	100% of car owners use the electronic toll collection account for multi-purpose payment for road traffic services and pay fines for violations
Road network planning for 2021-2030, vision to 2050	2030	The expressway network is planned to be 41 routes, with a total length of about 9,014 km The national highway network consists of 172 routes, with a total length of about 29,795 km Transport: Cargo volume reached 11.8 million tons, accounting for about 0.27% market share; passenger transport volume reached 460 million passengers, accounting for about 4.40% of the market share (of which the national railway was 21.5 million passengers, accounting for a market share of about 1.87%). Cargo volume reached 7.35 billion tons.km, accounting for about 1.38% market share; passengers 13.8 billion passengers.km, accounting for a market share of about 3.55% (of which the national railway is 8.54 billion passengers.km, accounting for a market share of about 2.22%).
Road network planning for 2021-2030, vision to 2050	2030	In terms of transportation, the volume of goods transported reached about 2,764 million tons (62.80% of the market share); passengers reached about 9,430 million passengers (90.16% market share); volume of domestic goods circulation reached about 162.7 billion tons.km (30.48% market share); domestic passengers 283.6 billion passengers.km drifted about (72.83% market share). ensuring 100% of roads that are newly built, upgraded, renovated and being exploited are inspected and assessed in accordance with road safety regulations Newly built, upgraded and renovated roads are considered to include dedicated lanes for motorcycles, motorbikes, bicycles and ensure safety for vulnerable traffic participants.
Approving the National Strategy for ensuring road traffic order and safety for the period 2021-2030 and a vision to 2045	2030	100% of the provincial road system, 50 - 80% of the district road system is built and fully installed with works and equipment to ensure traffic safety build roadside stations to serve the essential needs of drivers, passengers and vehicles along highways, national highways and provincial highways, ensuring drivers do not have to drive over 04 hours to have a break as regulated. a) Review, adjust and supplement technical standards and regulations on roads and traffic infrastructure works in the direction of approaching and applying modern technologies in traffic organization; develop and issue friendly road design technical manuals.

Notes



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

<https://bit.ly/ATOpolicyrepository>

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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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