

China

China has witnessed significant growth in freight transport demand, with freight activity increasing by 38.6% from 2015 to 2023. On the other hand, passenger transport activity declined slightly by 0.75%. Rail dominates passenger transport at 49.4%, while waterways lead in freight (54%). Transport GHG emissions rose by 30.7% since 2015, but they are just contributing 7% to national emissions. China was the second-largest emitter of transport GHG emissions after the United States in 2023. Renewable energy, including biofuels and electricity, represented only 5.4% of China's total transport energy consumption. Beyond climate impacts, transport-induced air pollution caused 7.8 premature deaths per 100,000 people in China in 2019. Road traffic injury is another leading cause of death, claiming 17.4 lives per 100,000 people and accounting for 5.2% of China's GDP in 2021. In

2020, 53% of the Chinese population had convenient access to public transport. Moreover, a moderately high percentage (71.4%) of China's rural population lived within 2 kilometers of an all-season road in 2019. China has strong policies supporting electrification with 21.8 million electric cars, as of 2023, whereas the carbon intensity of its electricity remains high, at 583.61 gCO₂/kWh in 2023. Its long-term strategy and NDC reflect significant advancement on transport decarbonisation, yet adaptation measures are limited. The country upgrades their mobility through integrated, centralised urban land use planning, with cities implementing zero-emission zones and sustainable urban mobility solutions. China works extensively on high-speed rail expansion as well as rail freight transport.

Income group: Middle-income

Human Development Index (2023): 0.80

Population size (2023): 1 399.81 million +2.28% (2015 - 2023)

Urban population share (2023): 65.04% +19.48% (2015 - 2023)

GDP per capita (2023): 12 058.18 USD +51.79% (2015 - 2023)

Share of transport and storage jobs in workforce (2023) 7.5%

Share of women employed in transport and storage (2023) 20.4%



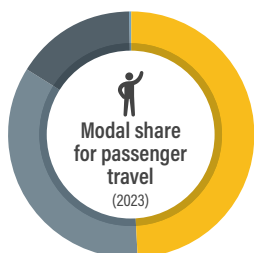
Transport Demand Trends

Passenger transport activity

2 983 220

million passenger-km in 2023

-0.75%
(2015 to 2023)



49.4% Railways
15.9% Highways
0.2% Waterways
34.6% Aviation

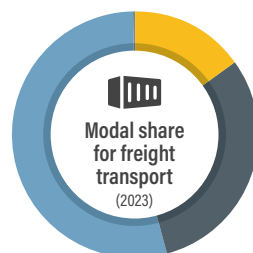
SDG 91

Freight transport activity

24 064 572

million ton-km in 2023

+38.6%
(2015 to 2023)



15.2% Railways
30.7% Highways
54.0% Waterways
0.12% Aviation

SDG 91

Transport energy consumption (2022)

13 397 962 TJ

+10.5%
(2015 to 2022)

Oil products

86.7% of total transport energy consumption

Per capita fossil fuel subsidies (2022)

243.5 USD per capita

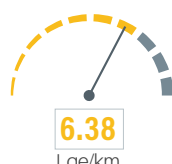
SDG 12

Fuel quality standards (2022)

<15 ppm ppm

Average light duty vehicle fuel consumption (2022)

6.38 Lge/km



Road traffic fatalities (2021), WHO estimates

SDG 3.6

18.6 deaths per 100,000 people

15.6 Regional
15.0 Global

Road traffic fatality cost as percentage of GDP (2021)

5.20%

Premature deaths linked to transport air pollution (2019)

SDG 11.6

7.81 deaths per 100,000 people

3.2 Regional
2.3 Global

Contribution of transport to air pollution (2019)

7.6%

Transport Emission Trends

Transport GHG emissions (2023)

1 110.2

million tonnes of CO₂ equivalent

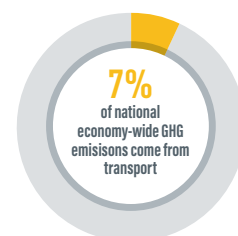
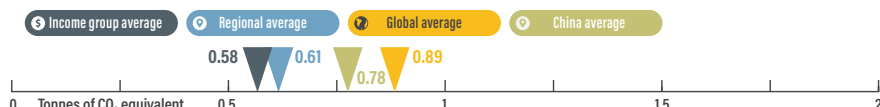
+30.7%
(2015 to 2023)
+15.8%
(2022 to 2023)

Per capita transport GHG emissions (2023)

0.78

tonnes of CO₂ equivalent per capita

PER CAPITA EMISSION COMPARISON



Transport is the fifth-largest GHG-emitting sector in the country in 2023.

Transport Decarbonisation Pathways

Transport strategy identifies climate change



Long-term strategy submitted to UNFCCC



NDC submitted:

1st and Updated NDC

NDC highlights transport for GHG mitigation



Transport mitigation targets in NDC



Other non-emission related transport targets in NDC



VNR highlights transport



2021 VNR with transport linkages to SDG 2, SDG 7, SDG 9, SDG 10, SDG 11 and SDG 13

Transport actions in VNRs

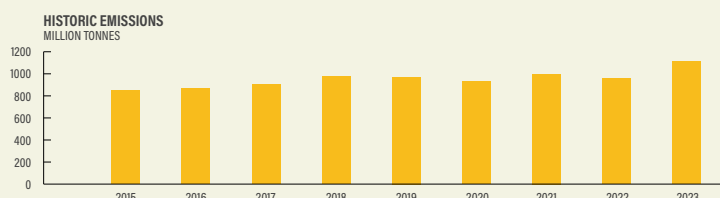
- ▶ Improved food supply chains
- ▶ Railway electrification
- ▶ Efficient, economical, intelligent, green, safe and reliable urban transport

Transport actions in NDC

Mitigation

- ▶ BRT | General transport labels
- ▶ EV charging infrastructure | Hydrogen
- ▶ Expansion of infrastructure | Intelligent transport systems
- ▶ Freight transport shifting to rail or inland waterways | Intermodality measures
- ▶ General active mobility | Public transit integration and expansion
- ▶ General alternative fuels | Support on-shore power and electric charging facilities in ports
- ▶ General economic instruments | Vehicle efficiency standards
- ▶ General e-mobility | Vehicle restrictions (import, age, access, sale, taxation)
- ▶ General freight efficiency improvements

Transport GHG emissions from 2015 to 2023



Policy Areas: Indicators and Targets

Integrated Transport Planning

National urban mobility framework (2024)	✓
Sustainable urban mobility plans (2024)	✓
Number of sustainable urban mobility plans (2024)	1 city
Low emission zones (2024)	41 cities

Adaptation and Resilience

ND-GAIN Index (2022)	60.18
Vulnerability score for infrastructure (2022)	0.17

Walking

Walkability Score (2024)	0.20
National walking strategies (2024)	✓ Walking and cycling combined

Target

- Improve urban transport facilities for cyclists and pedestrians, promote cycling

Cycling

Cycling infrastructure in capital (2024)	3 200 km
Percent near protected bikeways (2024)	4%
Bike sharing systems (2024)	502
National cycling strategies (2024)	✓ Walking and cycling combined

Target

- Improve urban transport facilities for cyclists and pedestrians, promote cycling

Public Transport

Bus rapid transit (2024)	672 km of total length in 20 cities
Bus rapid transit daily passenger volume (2024)	4 375 250 passengers per day
Urban rail (LRT, metro, tram) (2024)	11,000 km in 47 cities
Proportion of population that has convenient access to public transport (2020)	SDG 11.2 52.96%

Intercity Rail

Rail network (2021)	109 767 km
Rail travel activity (2021)	946 499 million passenger-km
Rail freight activity (2019)	3 018 200 million ton-km
High-speed rail (2022)	42 233 km
High-speed rail travel activity (2023)	922 633 million passenger-km
National plans for passenger and freight rail expansion (2024)	✓

Target

- 165,000 km rail network by end of 2025, of which 50,000 km will be high-speed
- By 2035, the railway network will be 200,000 km with 70,000 km high-speed

Road Transport

Total road vehicles in use per 1,000 people (2020)	223.1
Road vehicle fleet growth (from 2015 to 2020)	95.30%
Rural Access Index (2019)	SDG 9.1 71.4 RAI PST
Diesel prices (2022)	0.98 USD per litre
Gasoline prices (2022)	1.14 USD per litre

Aviation

Air passengers carried (2021)	440.3 million people
Air freight activity (2021)	20 961.2 million ton-km
Carbon-accredited airports (2023)	2 airports
of which carbon neutral:	1 airports

Shipping

Logistics Performance Index (2023)	3.7
Liner shipping connectivity index (Q4 2024)	171.2
Container port traffic (2020)	245 103 781.0 TEU

Transport Energy Sources

Biofuel blend overall mandate (2023)	—
Biofuel blend biodiesel mandate (2023)	—
Biofuel blend ethanol mandate (2023)	10.0%
Carbon intensity of electricity (2023)	583.61 gCO ₂ /kWh
Renewable energy (biofuels and electricity) share in transport (2022)	SDG 7.2.1 5.4% of total transport energy consumption
Biofuels (2022)	0.7% of total transport energy consumption
Electricity (2022)	4.7% of total transport energy consumption
Targeted renewable power share	50%

Vehicle Technologies

Emission standards for LDVs (2024)	Euro 4 and above
CO ₂ emissions performance for passenger cars (2024)	89 g CO ₂ /km in 2023
Targeted CO ₂ emissions performance (2024)	59 g CO ₂ /km by 2030
Regulatory environment ranking on used vehicles (2024)	—
Electric vehicles stock for passenger cars (2024)	23 million vehicles
Share of electric vehicles in car sales (2024)	48%
ICE phase-out targets	✗
Electric vehicles stock for vans (2024)	1.1 million
Electric vehicles stock for trucks (2024)	360 000 vehicles

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List of acronyms

GDP	Gross-domestic product
HDV	Heavy-duty vehicle
ICE	Internal combustion engine
kWh	Kilowatt-hour
LDV	Light-duty vehicle
LRT	Light-rail transit
NDC	Nationally determined contribution
PST	Primary, secondary or tertiary roads

TEU	Twenty-foot Equivalent Unit
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VNR	Voluntary national review of the Sustainable Development Goals
WLTP	Worldwide harmonised light vehicles test procedure

