

Saudi Arabia

Saudi Arabia's transport sector is highly dependent on fossil fuels, with 100% of its transport energy coming from petroleum products. Thus, the carbon intensity of the country's electricity remains very high, at 696.3 gCO₂/kWh in 2023. Passenger travel is dominated by private vehicles, accounting for 87.8% of trips in Riyadh. Transport emissions have slightly declined since 2015 (-0.9%) but remain high at 4.49 tonnes per capita, far exceeding global and regional averages. Regarding air pollution, transport contributed 5.2% to the national air pollutant emissions in 2019, causing 2.62 premature deaths per 100,000 people in Saudi Arabia. Saudi

Arabia was the country with the second-highest number of road traffic fatalities in Asia, with 18.5 deaths per 100,000 people. Road traffic fatalities accounted for a high share of 9.3% of Saudi Arabia's GDP in 2021. In 2020, only 29.81% of Saudi Arabia's population had convenient access to public transport. The country is prioritising rail expansion and smart transport solutions, while policies supporting public transport and vehicle electrification remain limited. Overarching frameworks towards sustainable, low-carbon transport were not identified for Saudi Arabia.

Income group: High-income

Human Development Index (2023): 0.90

Population size (2023): 30.46 million **+11.47%** (2015 - 2023)

Urban population share (2023): 93.85% **+17.51%** (2015 - 2023)

GDP per capita (2023): 23 613.55 USD **+4%** (2015 - 2023)

Share of transport and storage jobs in workforce (2023) **3.7%**

Share of women employed in transport and storage (2023) **5.6%**

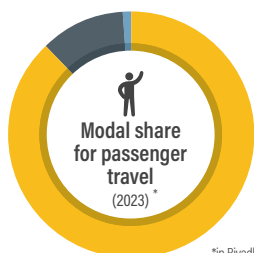
Transport Demand Trends

Passenger transport activity

134.65

million passenger-km of rail transport in 2018

-54.7%
(2010 to 2018)



87.8% Cars
11.3% Walking
0.9% Motorcycles

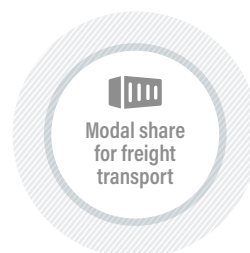
SDG 91

Freight transport activity

1 852.47

million ton-km of rail transport in 2010

+55.4%
(2005 to 2010)



SDG 91

Transport energy consumption (2022)

1 924 557 TJ

-6.3%
(2015 to 2022)

Oil products

100%

of total transport energy consumption

Per capita fossil fuel subsidies (2022)

2 875.1 USD per capita

SDG 12

Fuel quality standards (2022)

15-50 ppm

Average light duty vehicle fuel consumption (2022)



Road traffic fatalities (2021), WHO estimates

SDG 3.6

18.5 deaths per 100,000 people

15.6 Regional
15.0 Global

Road traffic fatality cost as percentage of GDP (2021)

9.3%

Premature deaths linked to transport air pollution (2019)

SDG 11.6

2.6 deaths per 100,000 people

3.2 Regional
2.3 Global

Contribution of transport to air pollution (2019)

5.2%

Transport Emission Trends

Transport GHG emissions (2023)

147.6

million tonnes of CO₂ equivalent

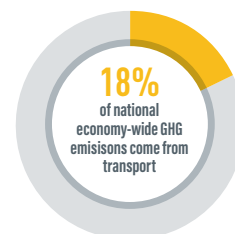
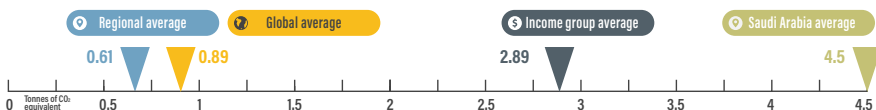


Per capita transport GHG emissions (2023)

4.5

tonnes of CO₂ equivalent per capita

PER CAPITA EMISSION COMPARISON



Transport is the **second-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 ☒

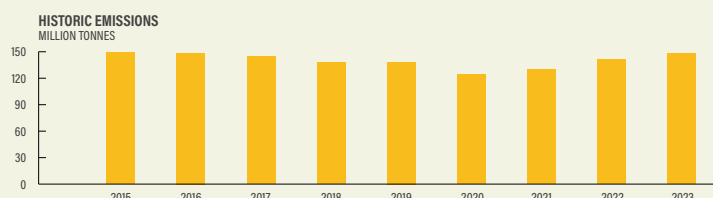
Transport mitigation targets in NDC ☐

Other non-emission related transport targets in NDC ☐

VNR highlights transport ☒

2023 VNR with transport linkages to SDG 7, SDG 9, SDG 10, SDG 11, SDG 13 and SDG 17

Transport GHG emissions from 2015 to 2023



Transport actions in VNRs

- ▶ Hydrogen in transport
- ▶ Public transport improvements and expansion
- ▶ Women empowerment in transport
- ▶ Bike lanes
- ▶ Smart transport
- ▶ Climate-adaptive transportation strategies

Transport actions in NDC

Mitigation

- ▶ Public transport integration and expansion
- ▶ Vehicle efficiency standards

Adaptation

Policy Areas: Indicators and Targets

Integrated Transport Planning

National urban mobility framework (2024)	✓
Sustainable urban mobility plans (2024)	—
Number of sustainable urban mobility plans (2022)	—
Low emission zones (2022)	—

Adaptation and Resilience

ND-GAIN Index (2022)	5756
Vulnerability score for infrastructure (2022)	0.27

Walking

Walkability Score (2024)	0.14
National walking strategies (2024)	✗

Cycling

Cycling infrastructure in capital (2022)	220 km of cycle lanes in planning
Percent near protected bikeways (2024)	0%
Bike sharing systems (2024)	4
National cycling strategies (2024)	✗

Public Transport

Bus rapid transit (2024)	—
Bus rapid transit daily passenger volume (2024)	—
Urban rail (LRT, metro, tram) (2024)	194 km in 2 cities
Proportion of population that has convenient access to public transport (2020)	29.81% SDG 11.2

Intercity Rail

Rail network (2018)	2939 km
Rail travel activity (2018)	134.65 million passenger-km
Rail freight activity (2010)	1852.472 million ton-km
High-speed rail	—
High-speed rail travel activity	—
National plans for passenger and freight rail expansion (2024)	✓

Target

- Grow rail network to 8,000 km
- Increase local content in rail operations to 60% by 2025
- Create over 3,000 jobs in the local market

Road Transport

Total road vehicles in use per 1,000 people (2020)	—
Road vehicle fleet growth (from 2015 to 2020)	—
Rural Access Index (2019)	— SDG 9.1
Diesel prices (2022)	0.14 USD per litre
Gasoline prices (2022)	0.53 USD per litre

Aviation

Air passengers carried (2021)	29.4 million people
Air freight activity (2021)	678.6 million ton-km
Carbon-accredited airports (2023)	3 airports
of which carbon neutral:	1 airport

Shipping

Logistics Performance Index (2023)	3.4
Liner shipping connectivity index (Q4 2024)	69.5
Container port traffic (2020)	9394100.0 TEU

Transport Energy Sources

Biofuel blend overall mandate (2023)	—
Biofuel blend biodiesel mandate (2023)	—
Biofuel blend ethanol mandate (2023)	—
Carbon intensity of electricity (2023)	696.31 gCO ₂ /kWh
Renewable energy (biofuels and electricity) share in transport (2022)	0.0% of total transport energy consumption SDG 7.2.1
Biofuels (2022)	—
Electricity (2022)	—
Targeted renewable power share	50%

Vehicle Technologies

Emission standards for LDVs (2024)	Below Euro 3
CO ₂ emissions performance for passenger cars (2024)	—
Targeted CO ₂ emissions performance (2024)	No target set
Regulatory environment ranking on used vehicles (2024)	Good
Electric vehicles stock for passenger cars (2024)	—
Share of electric vehicles in car sales (2024)	—
ICE phase-out targets	✗
Electric vehicles stock for vans (2024)	—
Electric vehicles stock for trucks (2024)	—

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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

