



上海期货交易所
SHANGHAI FUTURES EXCHANGE

上海国际能源交易中心
SHANGHAI INTERNATIONAL ENERGY EXCHANGE

2025

China's Oil Market in 2025

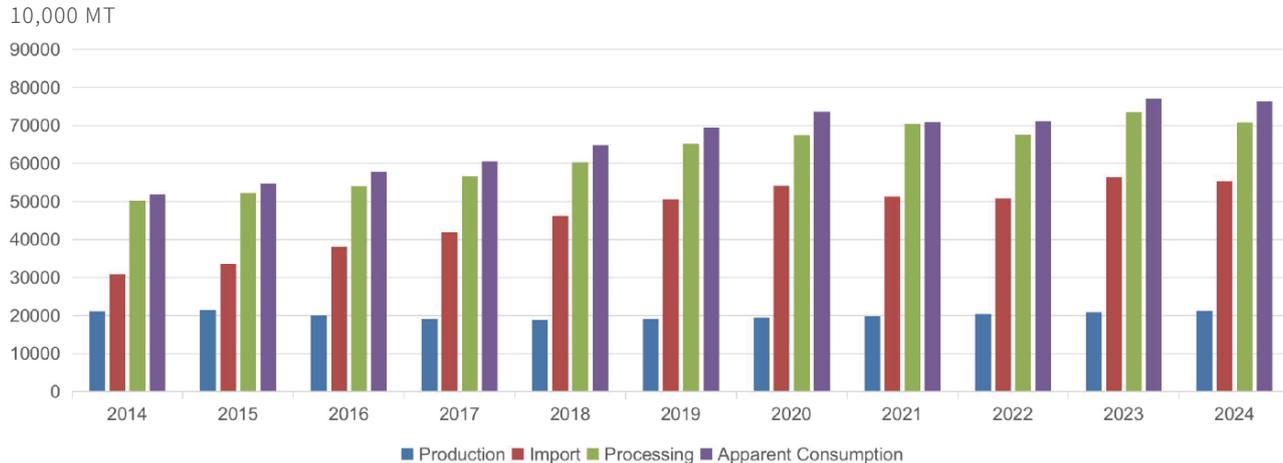
A Futures Perspective



Steady Market Growth 01

In 2024, crude oil production registered a moderate increase, while import and processing volumes recorded their first post-pandemic decline

Crude Oil Production, Import, Processing, and Consumption in China, 2014-2024



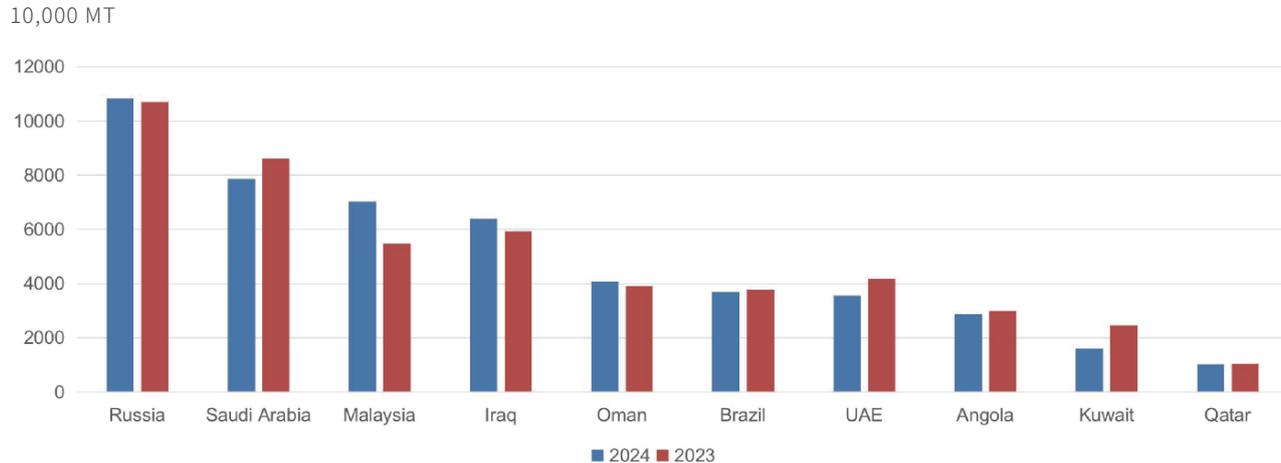
Source: National Bureau of Statistics (NBS); General Administration of Customs (China Customs); Wind

Production, import, processing, and apparent consumption in 2024 were 213m MT, 553m MT, 708m MT, and 764m MT.



Import from the Middle East fell slightly in 2024, in contrast with a sharp rise from non-OPEC countries

Top 10 Crude Oil Exporters to China

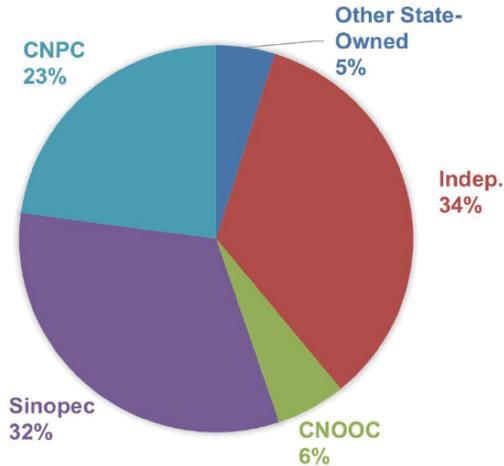


Source: GACC; Wind

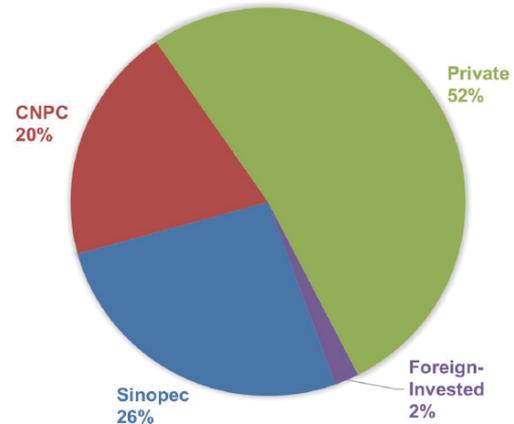
Among the top 10 exporters in 2024, Middle East countries accounted for 50% of the total volume with 245m MT.

Independent refineries represented over 1/3 of primary refining capacity in 2024
 Private gas stations accounted for over 1/2 of the market's total

Primary Processing Capacity of Domestic Refineries



Number of gas Stations

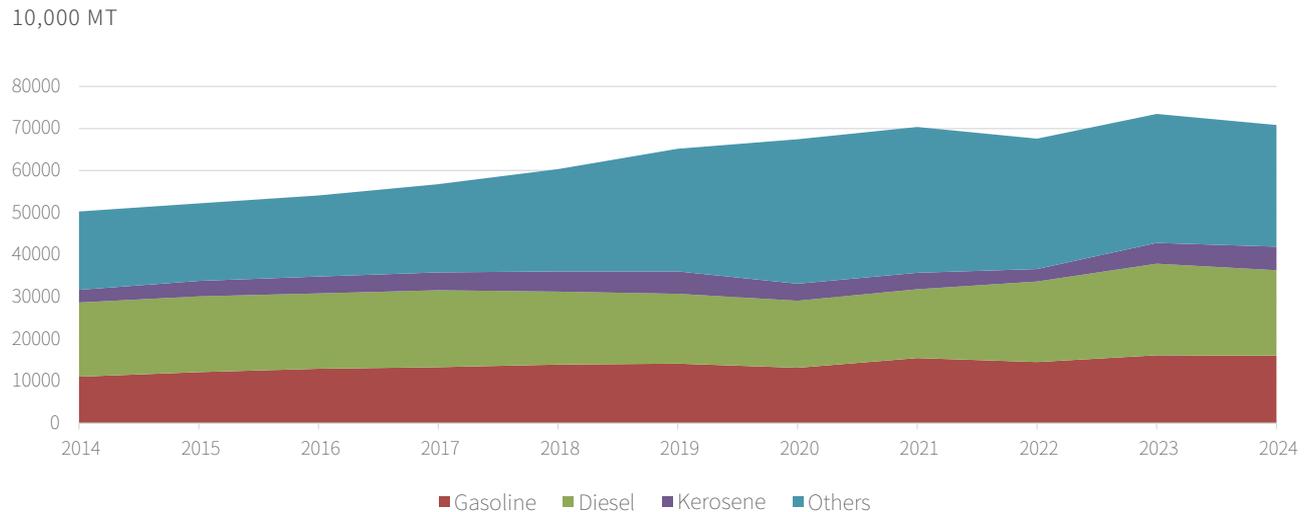


Source: Wind; INE

Domestic refineries have a primary processing capacity of 950m MT; China has 120,000 gas stations.

Gasoline gained share among crude oil outputs in 2024, with diesel and kerosene shares holding steady

Yield of Domestic Refined Oil Products, 2014-2024



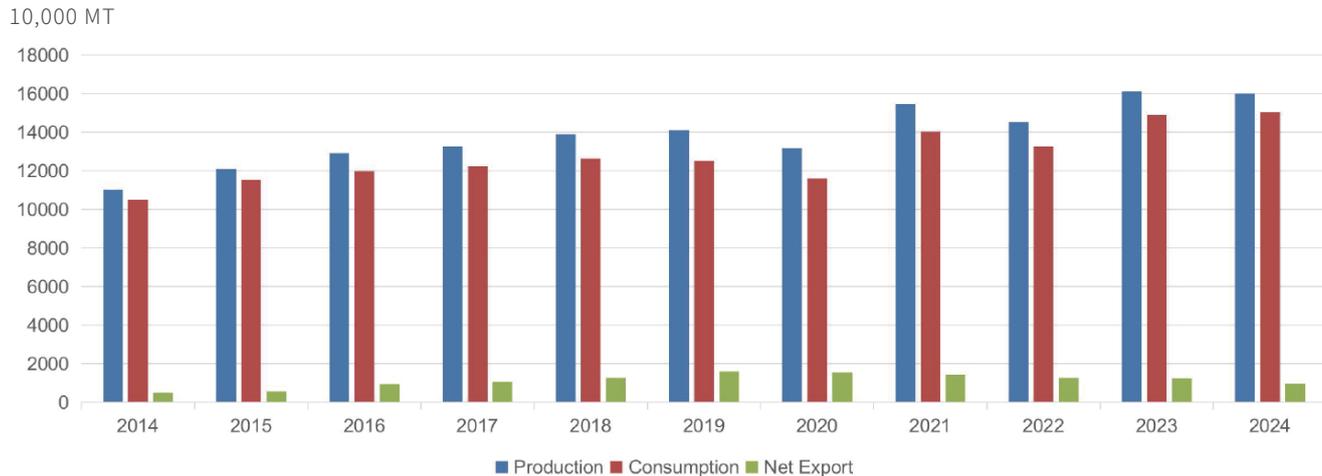
Source: NBS; Wind

Gasoline accounted for 23% of the refined oil products in 2024; diesel was at 29% and kerosene 8%.



Gasoline production experienced a modest decline in 2024, while consumption gradually plateaued

Gasoline Production, Consumption, and Net Export, 2014-2024



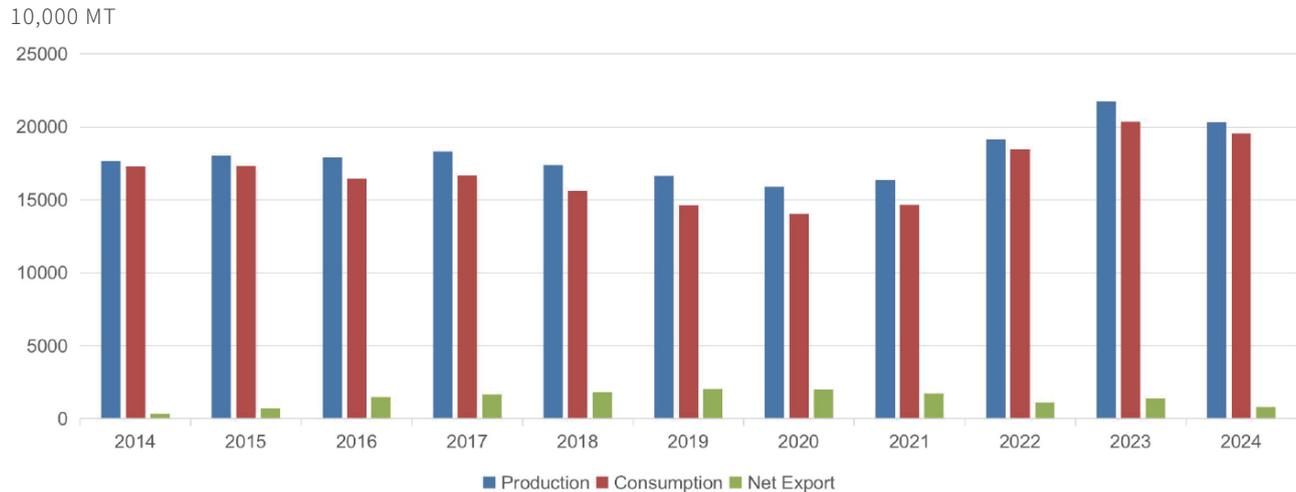
Source: NBS; GACC; Wind

In 2024, gasoline production was 160m MT, apparent consumption was 150m MT, and net export was 9.74m MT.



Diesel production and consumption fell notably in 2024

Diesel Production, Consumption, and Net Export, 2014-2024



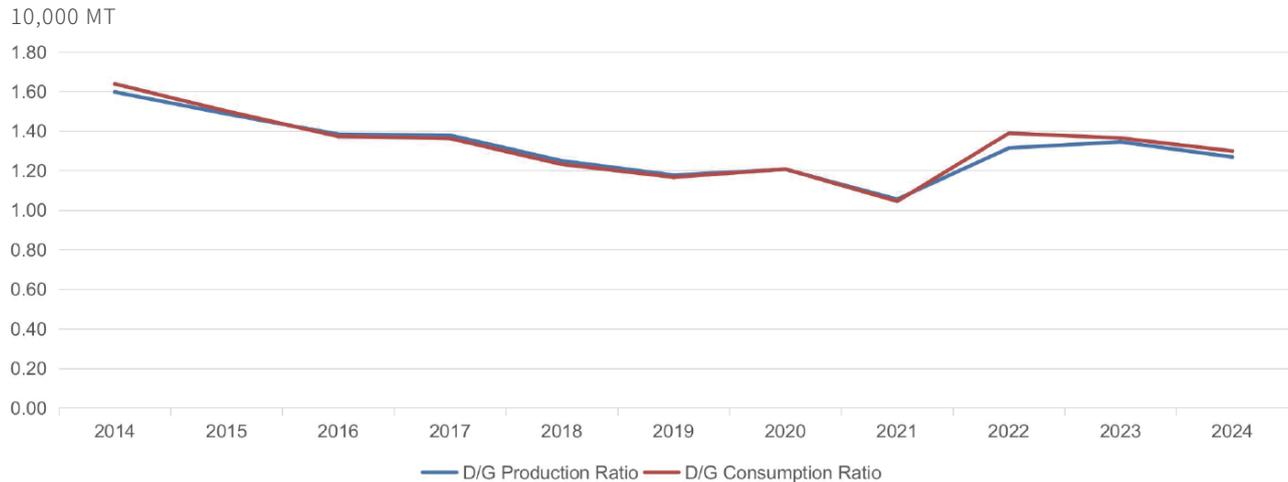
Source: NBS; GACC; Wind

In 2024, diesel production was 203m MT, apparent consumption was 196m MT, and net export was 8.00m MT.



Diesel-to-gasoline ratio remained largely stable in 2024, and rebounding slightly from the 2021 level

Diesel/Gasoline Ratio in Domestic Refined Oil Market



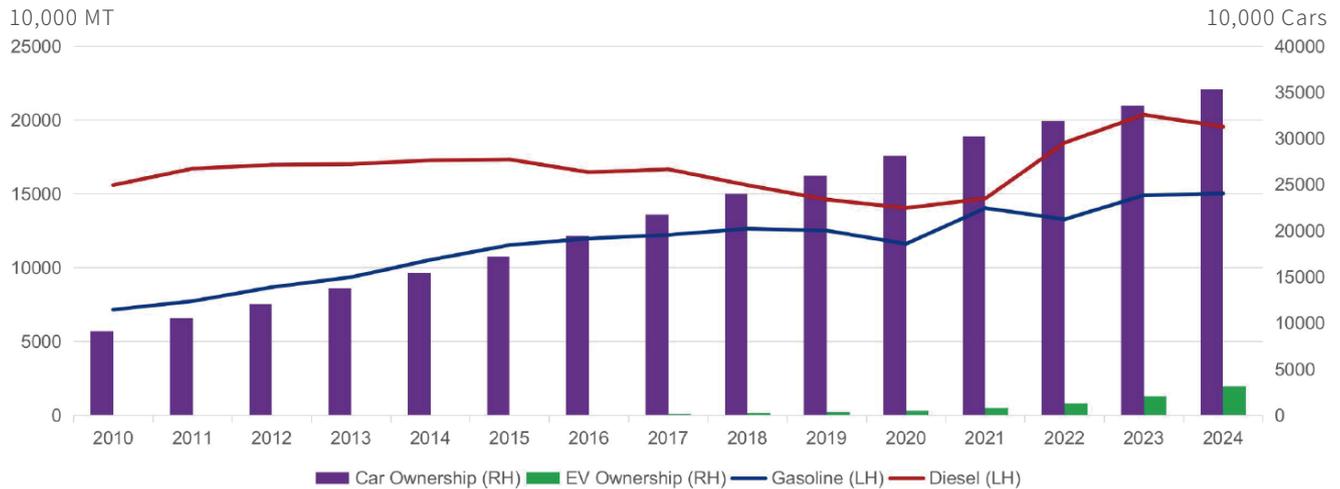
Source: NBS; GACC; Wind

In 2024, diesel-to-gasoline production ratio was 1.27; diesel-to-gasoline consumption ratio was 1.30.



In 2024, domestic car ownership registered steady growth, with new energy vehicles accounting for 9% of the total

Consumption of Refined Oil vs. Car Ownership



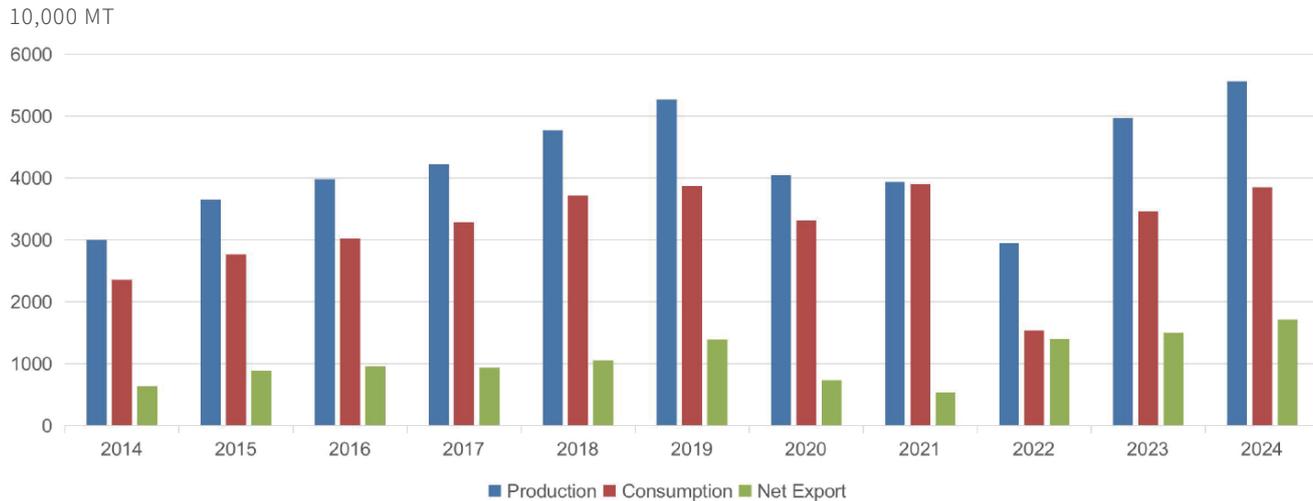
Source: NBS; Ministry of Public Security (MPS); Wind

In 2024, the domestic car ownership reached 353 million, including 31.40 million new energy vehicles.



Kerosene production and consumption continued to recover in 2024, with net export hitting a new record

Kerosene Production, Consumption, and Net Export, 2014-2024

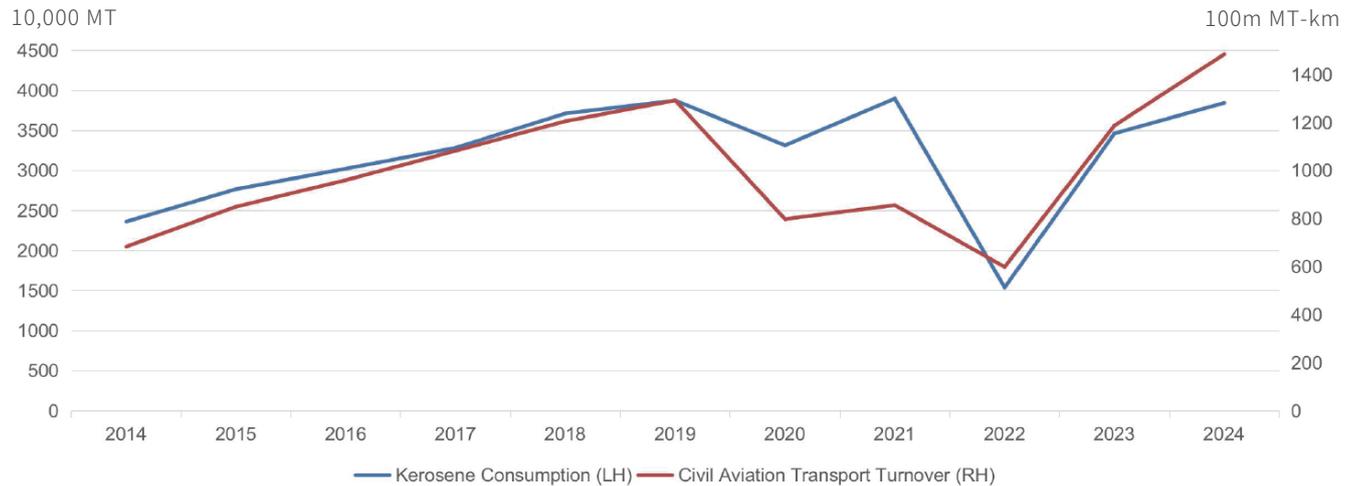


Source: NBS; China Customs; Wind

In 2024, kerosene production was 55.66m MT, apparent consumption was 38.48m MT, and net export was 17.18m MT.

China's 2024 air traffic exceeded 2019 levels to set a new record

Kerosene Consumption and Civil Aviation Transport Turnover, 2014-2024



Source: NBS; Civil Aviation Administration; Wind

In 2024, civil aviation transport turnover was 148.5 billion ton-kilometers.

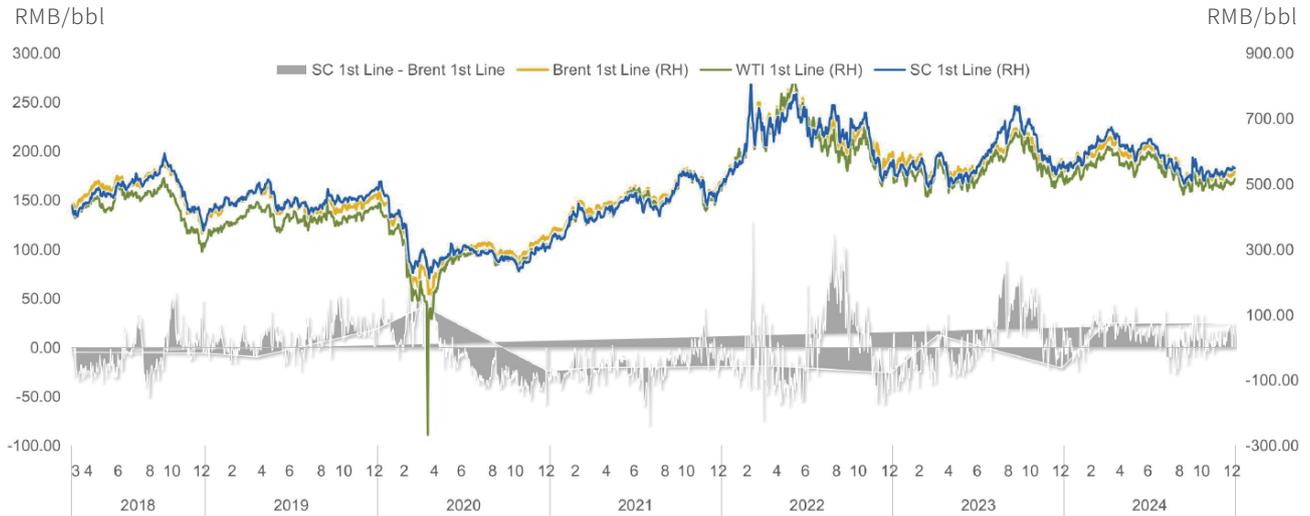


Widening Applications of SC Crude Oil Futures Prices

02

Shanghai crude oil futures (SC) prices strongly correlate with overseas prices and reflect changes in the regional spot market

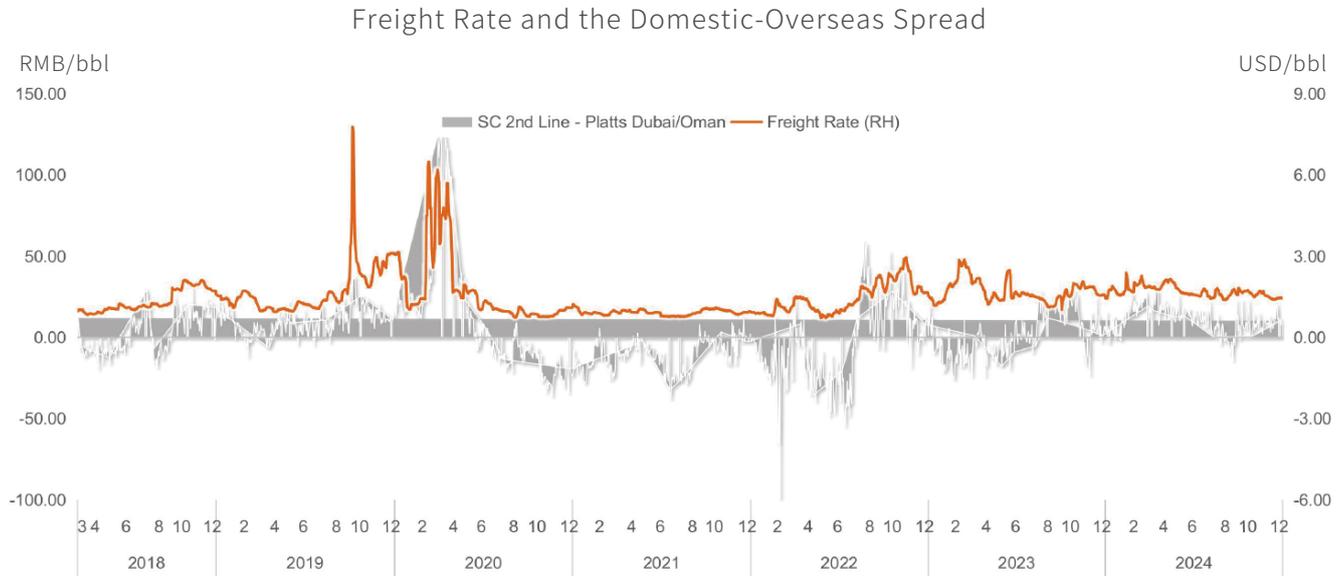
Domestic and Int'l Crude Oil Futures Prices and Spread



Source: Reuters; INE

In 2024, the SC-Brent and SC-WTI correlation coefficients were respectively 0.94 and 0.92.

SC prices mostly capture the change in the Middle East-Asia Pacific freight rate

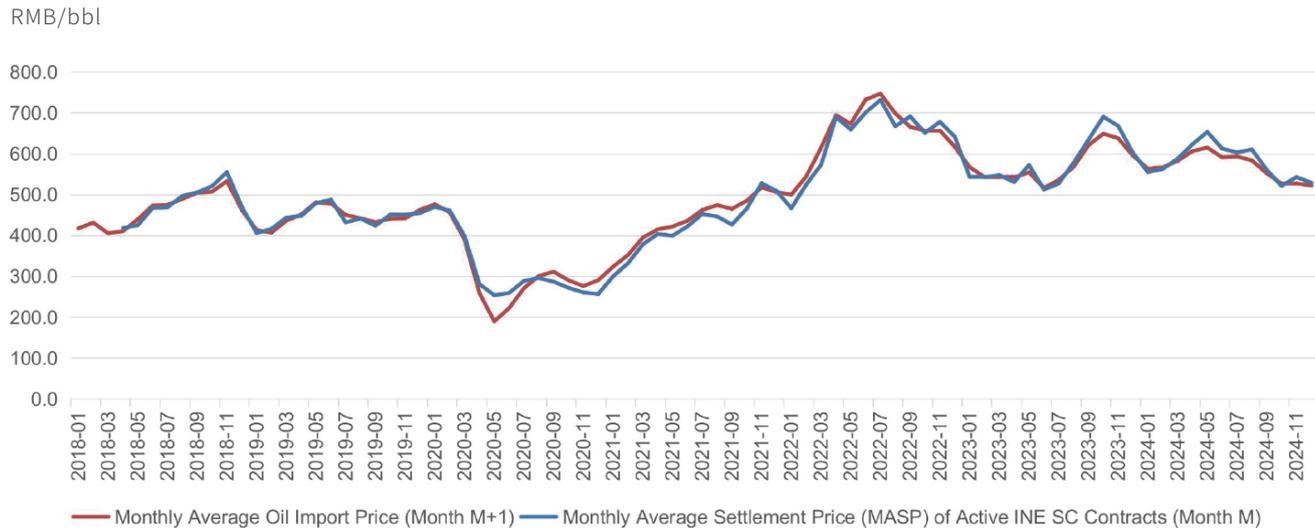


Source: Reuters; INE



Monthly average SC price closely reflects the average crude oil import price in China

SC Price and China's Average Oil Import Price



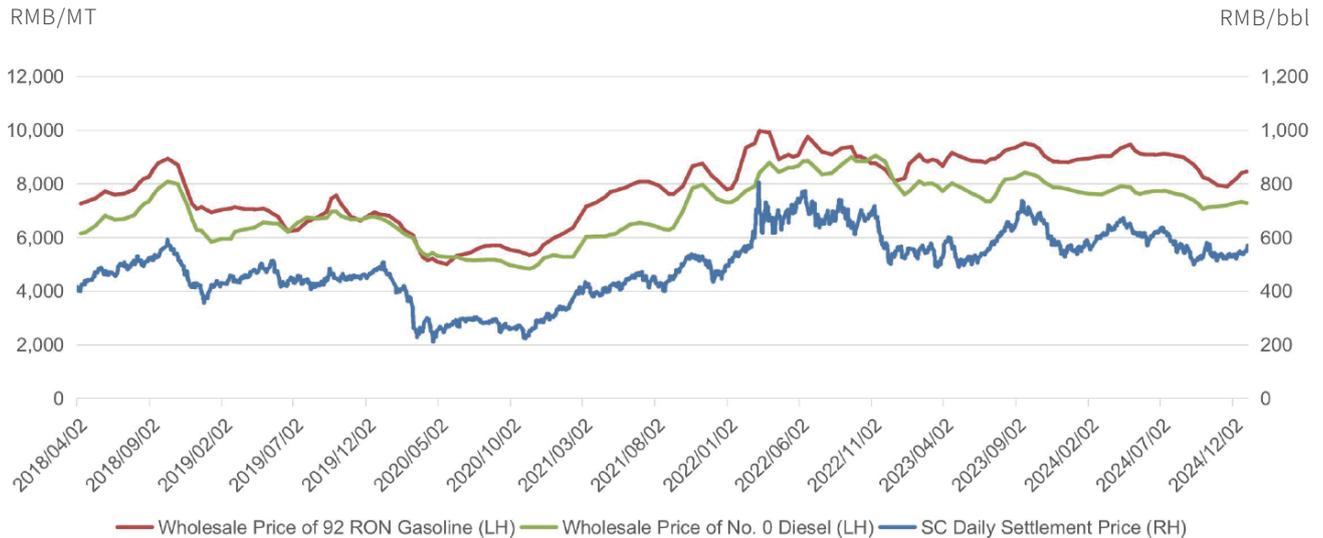
Source: China Customs; INE; Wind

In 2024, INE SC had a correlation coefficient of 0.97 with China's average crude oil import price.

Note: See this link (<https://www.ine.cn/reports/tradedata/monthlyandyearlydata/>) for how the Monthly Average Settlement Price of active SC contracts is calculated

High correlation between the daily SC price and the refined oil wholesale price in China

SC Price v. Wholesale Price of Refined Oils in China



Source: GACC; INE; Wind

In 2024, correlation coefficients between the SC price and the wholesale prices of gasoline and diesel was 0.82 and 0.86 respectively.



High correlation between the 10-day average SC price and the refined oil retail price in China

SC Price v. Retail Price of Refined Oil in China



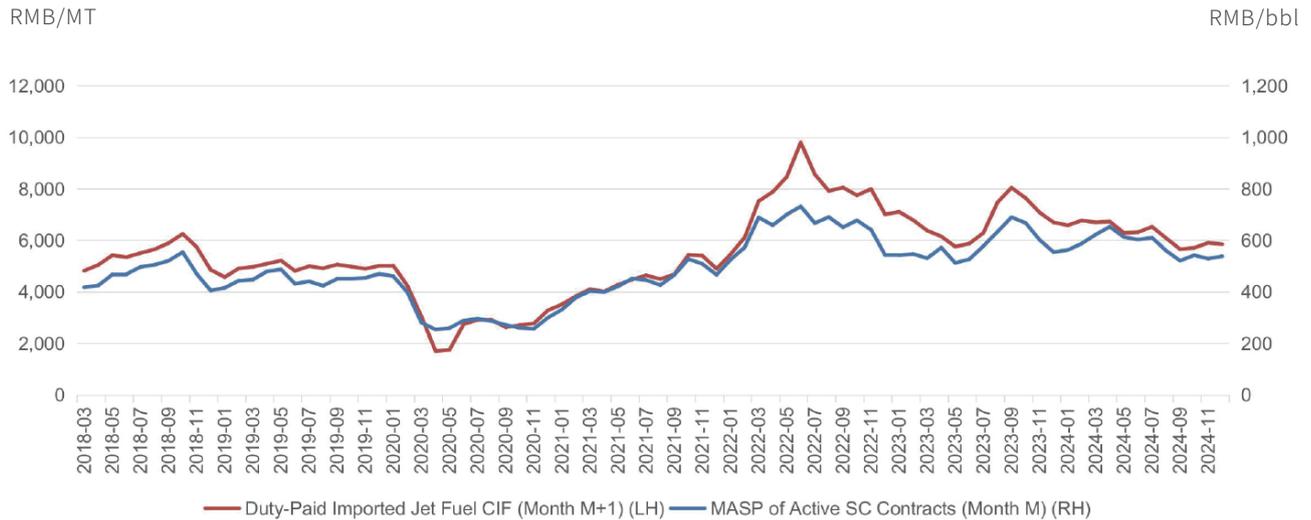
Source: China Customs; INE; Wind

In 2024, the correlation coefficients between the SC price and the retail prices of gasoline and diesel were both 0.98.



SC monthly average price is a good indicator of the domestic jet fuel price

SC Price vs. Duty-Paid Imported Jet Fuel CIF



Source: China Customs; INE; Wind

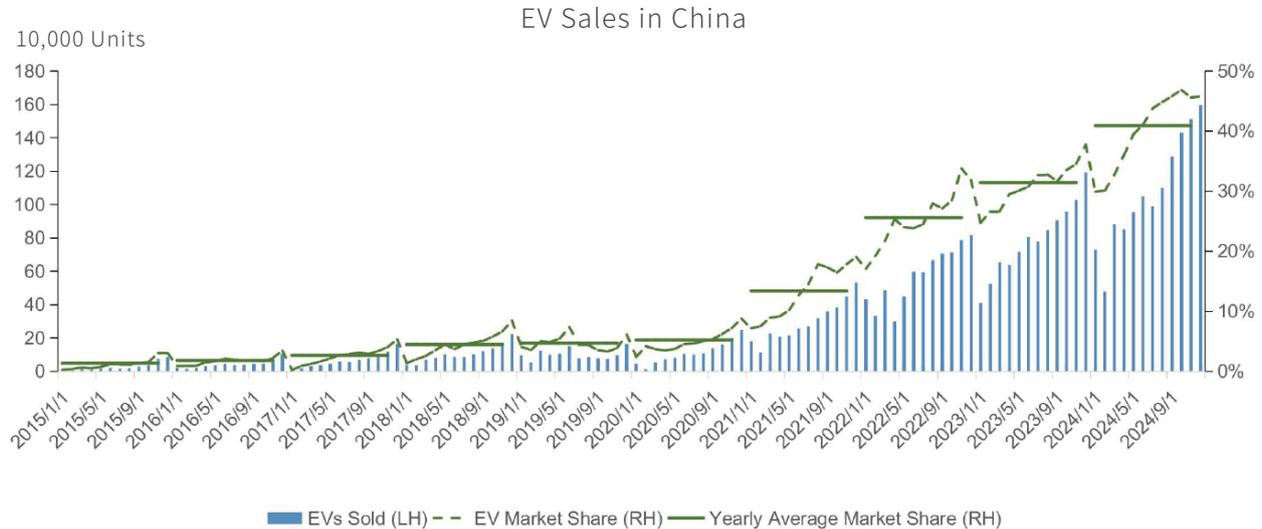
In 2024, the correlation coefficient between the SC price and the duty-paid CIF price of imported jet fuel was 0.82.

Note: See this link (<https://www.ine.cn/reports/tradedata/monthlyandyearlydata/>) for how the Monthly Average Settlement Price of active SC contracts is calculated



Facing A Challenge 03 Rapidly Growing EV Market

EV penetration maintained a high speed of growth in China in 2024

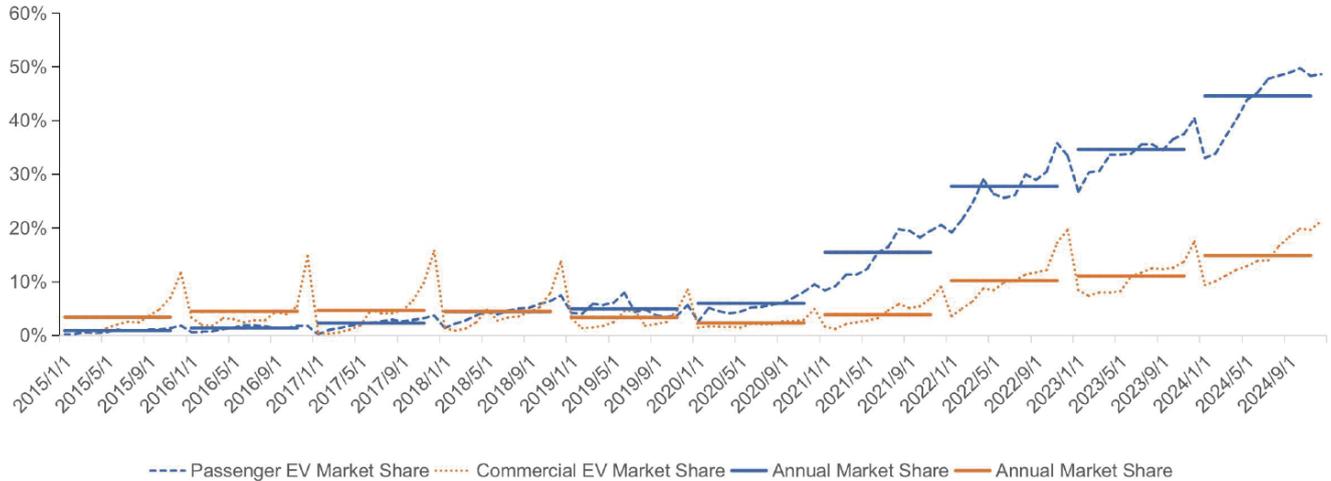


Source: China Association of Automobile Manufacturers (CAAM); Wind; INE

EV market share was 40.9% in 2024 and as high as 46.8% in a single month.

Passenger EVs enjoyed a higher market share in China than commercial EVs in 2024

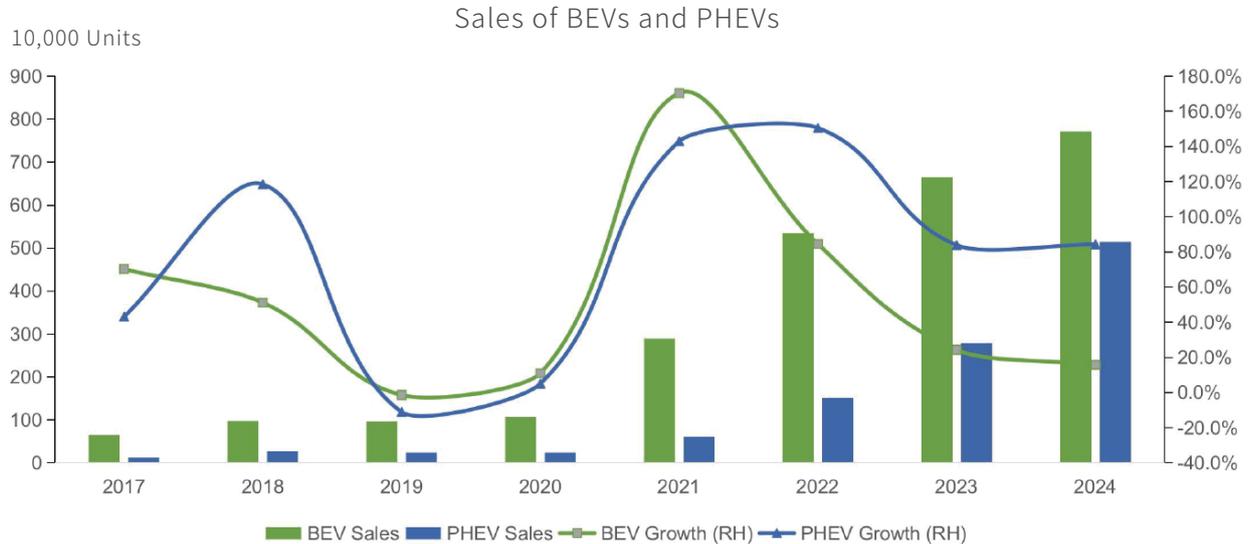
Sales of Passenger and Commercial EVs



Source: CAAM; Wind; INE

In 2024, passenger EV market share was 44.6%, compared with 14.9% for commercial EVs.

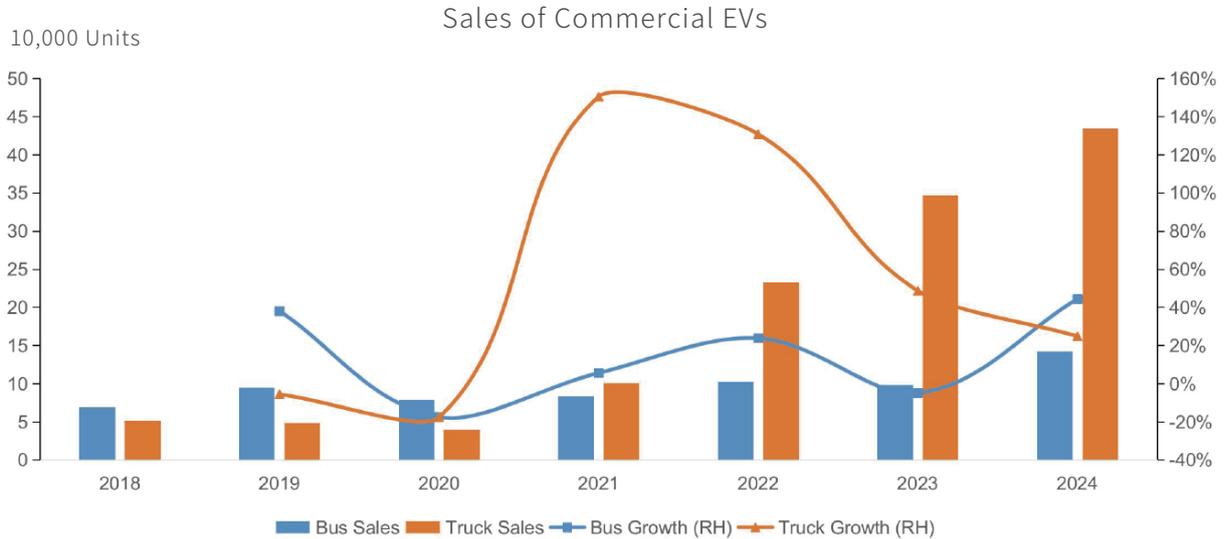
PHEVs grew faster than BEVs in China in 2024



Source: CAAM; Wind; INE

In 2024, PHEVs achieved sales growth of 84.3% YoY, compared with 15.9% for BEVs.

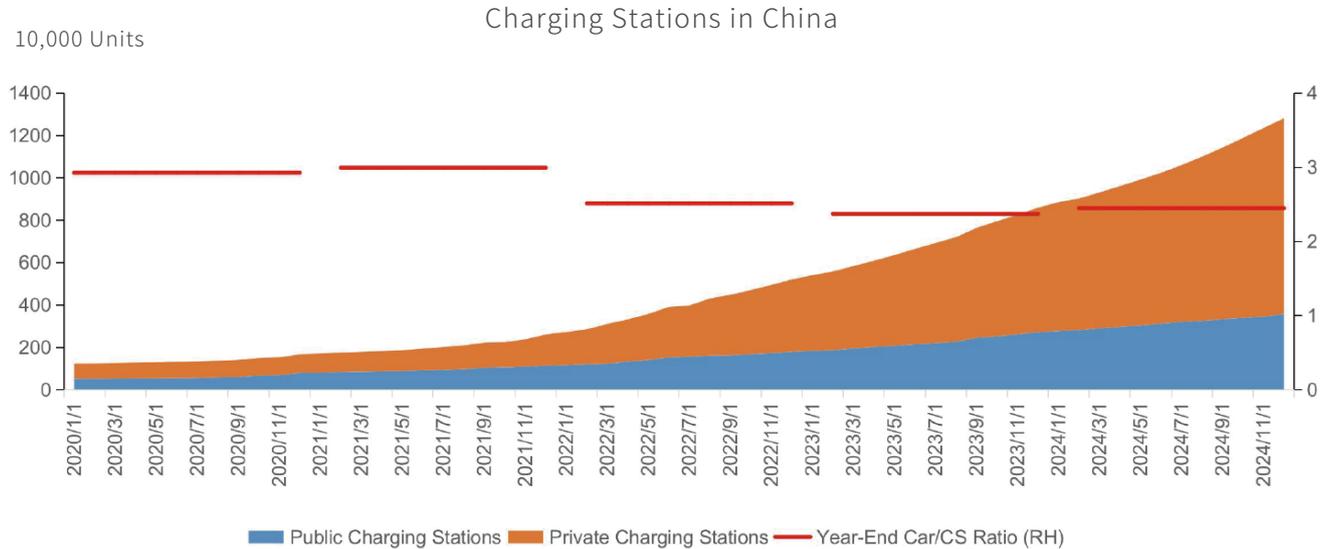
Among commercial EVs, bus sales surged in 2024



Source: CAAM; Wind; INE

Among commercial EVs, 430,000 electric trucks were sold in 2024, up 25.0% YoY; sale of buses surged 44.5% to 140,000 units.

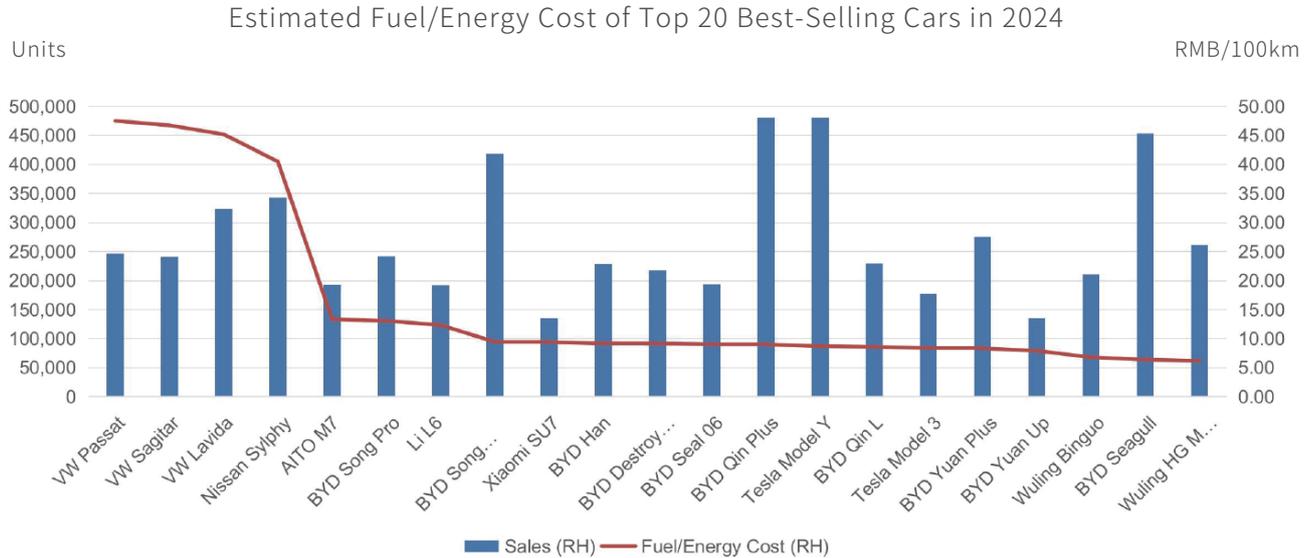
In 2024, charging stations increased as fast as EVs on the road



Source: MPS; Wind; INE

As of 2024, China had 3.58m public charging stations and 9.24m private ones, giving a car-to-charging station ratio of 2.45.

BEVs had 1/6 of the energy cost of fossil fuel cars in 2024



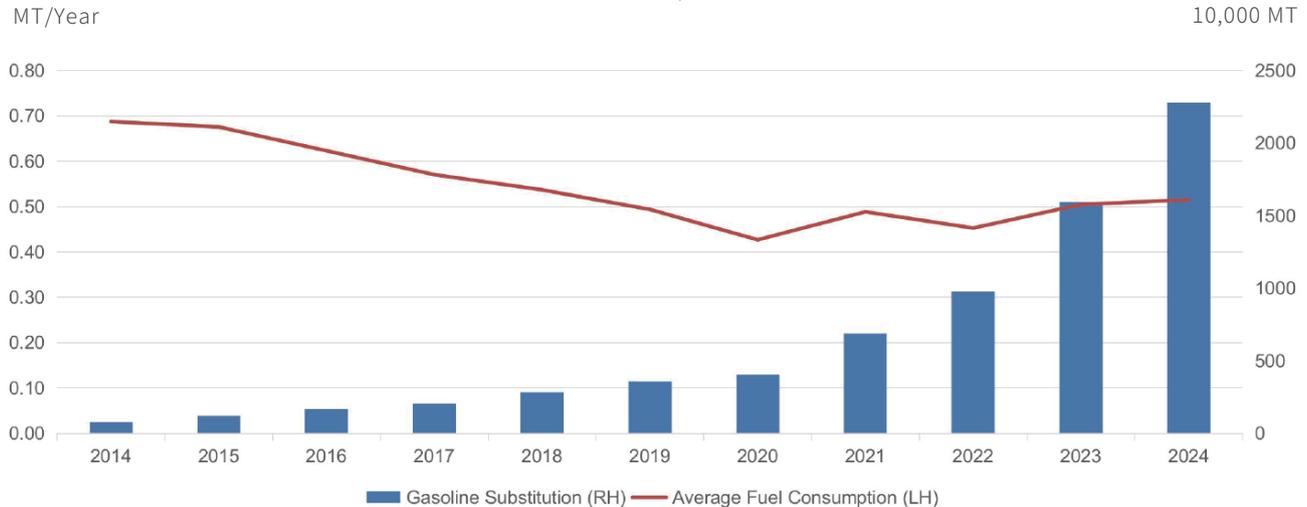
Source: Ministry of Information and Technology(MIIT); China Automobile Dealers Association; INE

Average fuel/energy cost was ¥45/100 km for fossil fuel cars, ¥11/100 km for PHEVs, and ¥8/100 km for BEVs.

Note: This estimation is based on the average Shanghai retail price for 92 RON gasoline (¥7.79/L) and the tier-2, peak-hour residential electricity price in Shanghai (¥0.667/kWh) in 2024.

Average fuel consumption rose just slightly in 2024 as gasoline was replaced by EV at a growing pace

Estimated Per-Vehicle Fuel Consumption and Gasoline Substitution

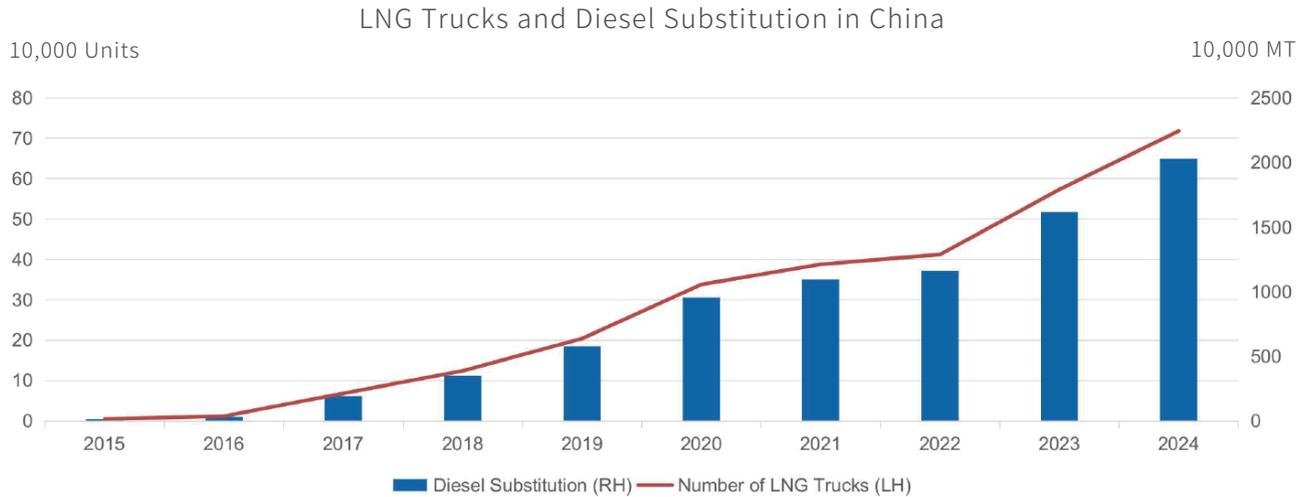


Source: MPS; NBS; CAAM; Wind; INE

In 2024, fuel consumption per gasoline car was 0.52 MT/year; gasoline substitution was approximately 22.79m MT.

Note: Per-car fuel consumption is estimated from total gas consumption and gasoline car ownership. Gasoline car market share and ownership are estimated from car ownership and historical sales figures. Number of ridehailing taxis in 2014-2019 is extrapolated from the 2020-2024 data from the Ministry of Transport based on an estimated CAGR. Gasoline substitution for ridehailing taxis is estimated as five times the level of an average gasoline car.

Diesel substitution for LNG trucks was picking up pace in 2024



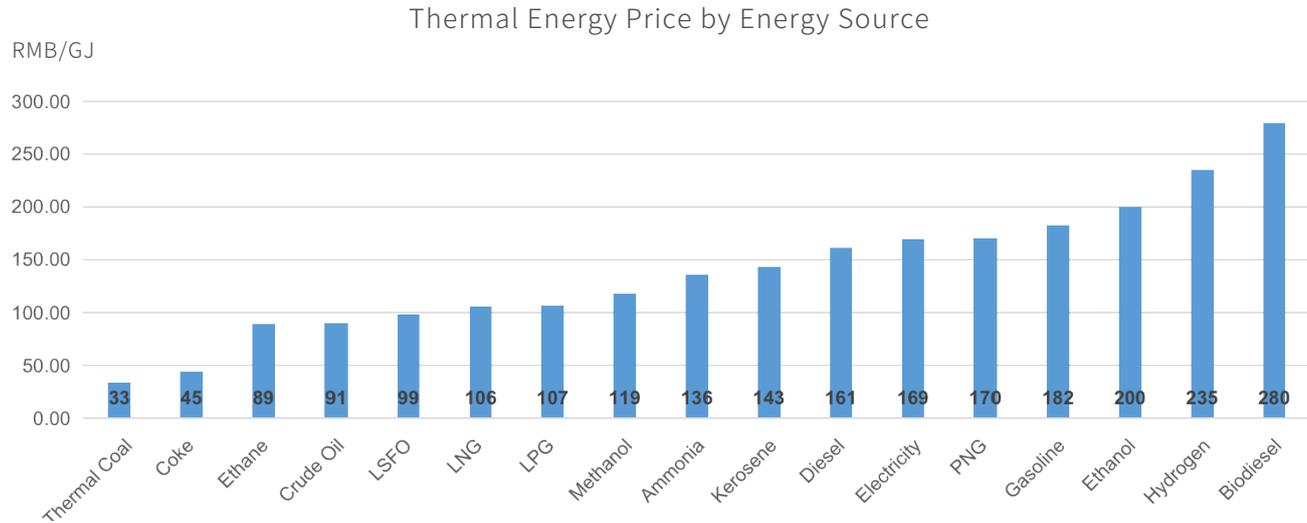
Source: CAAM; Wind; INE

In 2024, China had 720,000 LNG trucks; diesel substitution was around 20.28m MT.

Note: Number of LNG trucks is estimated from the sales numbers for natural gas semi-trailers and heavy trucks, with an average lifespan of 8 years. Diesel substitution is estimated from the fuel consumption per vehicle (33L/100km) and an annual average mileage of 100,000 km.



Fossil fuels were still more economical in 2024



Source: OilChem.net; Wind; INE

In 2024, thermal energy price was around ¥33/GJ for thermal coal, ¥106/GJ for LNG, ¥161/GJ for diesel, and ¥182/GJ for diesel.

Note: The price per unit amount of thermal energy is estimated from the original price of the various forms of energy as of December 31, 2024.



Conclusions and Outlook

China's oil market has maintained steady growth and crude oil will remain a critical source of energy in the near future

Shanghai's crude oil futures (SC) offers an effective price discovery function in the domestic crude oil and refined oil markets

China's EV market is taking off, leading to increasing substitution of refined oils

SC will contribute to a more robust domestic oil market and China's energy transition



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