



# Motorization in China and Expanding Renewable Energy Car

中国のモータリゼーションの進行と将来の再生エネルギー車の普及

Shunxi Mike Liu

University of Tokyo

E-Leader Tokyo

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- §1.China's motorization current status
- §2.China automobile market & growing NEV market
- §3.Environmental & social problems caused by car
- §4.Importance of Eco-driving in China

# §1. China's Motorization Boom

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## §2.1 China Vehicle Population by 2017

- China had about 310 million motor vehicles in 2017, 5.1% increase compared to 2016
- Total car driver population is over 310 million

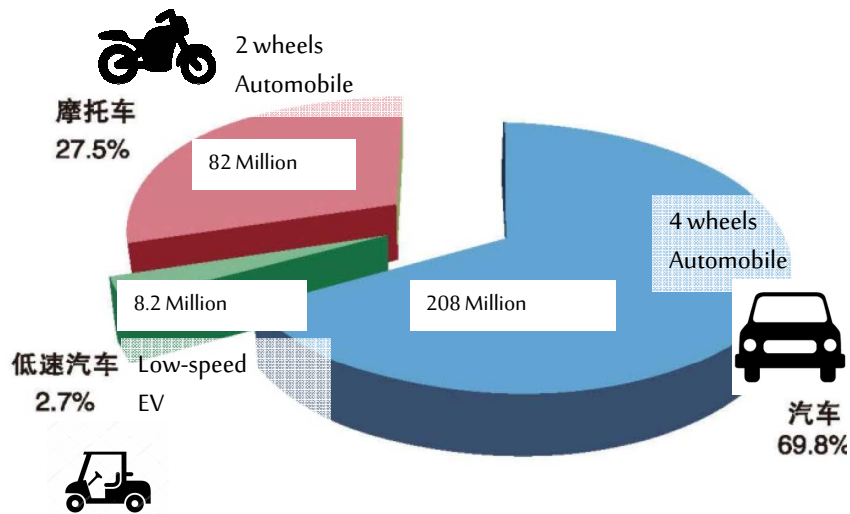
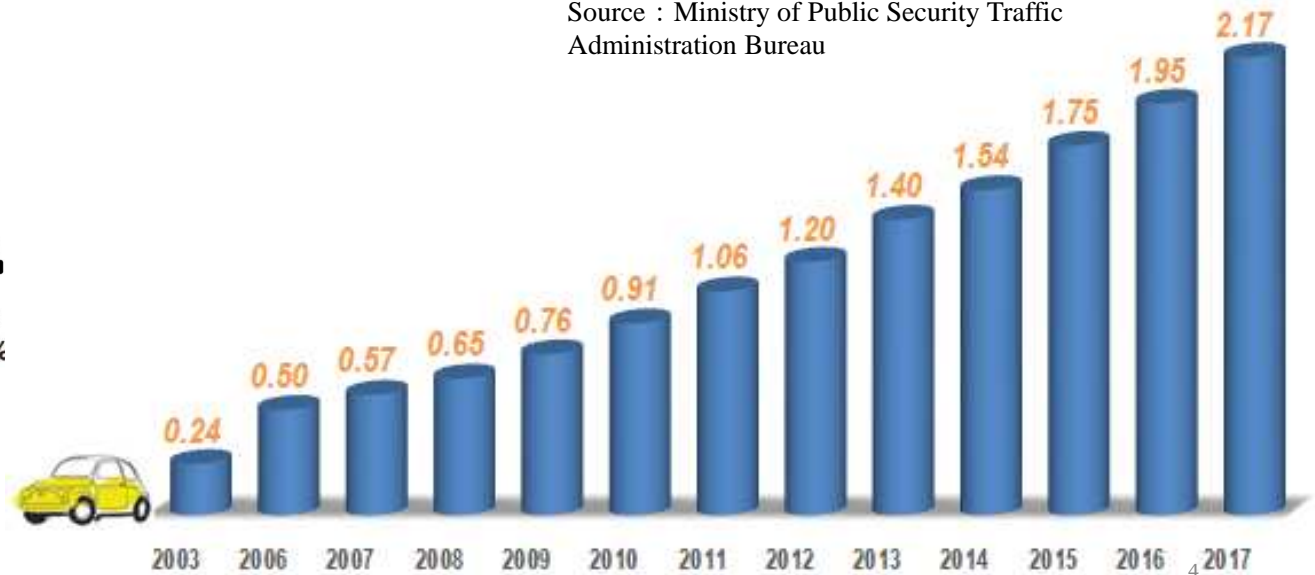


图1 2017年全国机动车保有量构成  
2017 National motor vehicle ownership by category

### China Car Ownership Statistic

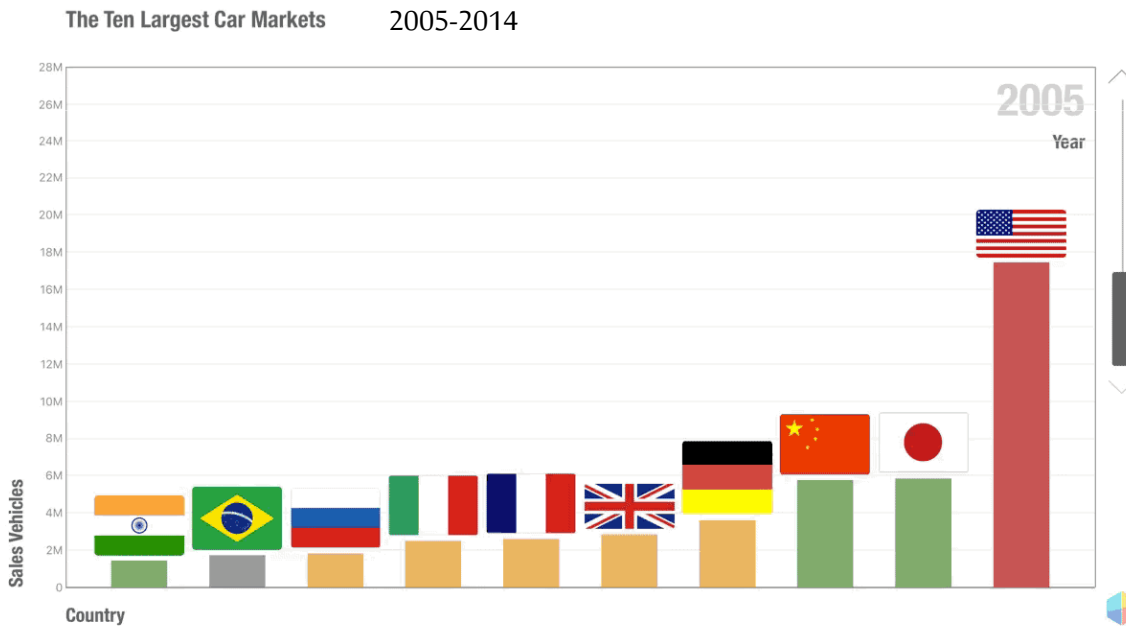
Unit: 100 million

Source : Ministry of Public Security Traffic Administration Bureau



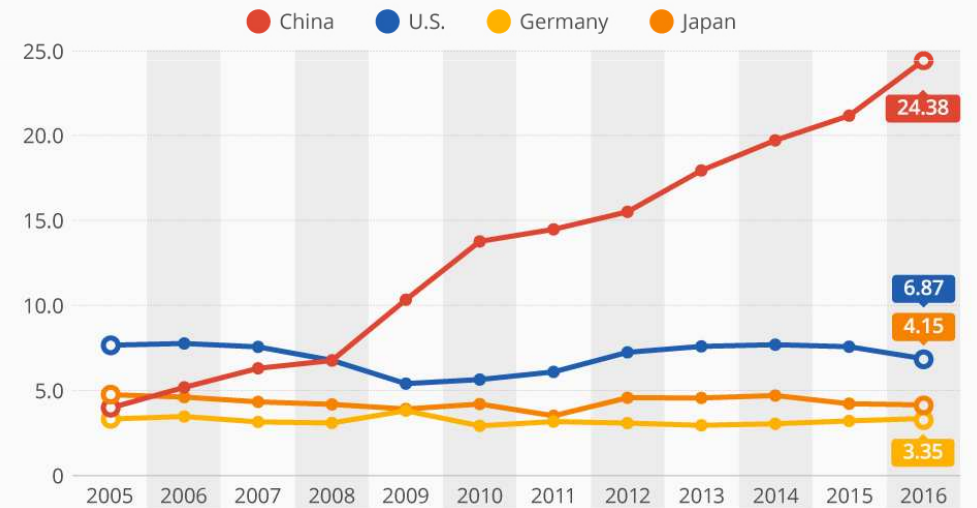
## §2.2 China became the largest global car market

- ◆ China became the largest car market in the world in 2009.
- ◆ China is estimated to surpass United States's total car number by 2020



### China's Hunger For Cars

Sales of passenger cars in selected countries worldwide (in million units)\*



\* no light trucks included  
Source: OICA

statista

## §2.3 Relative Low Car Density

### Automotive Statistics Relative Car Density 2017



per 1,000 people



United States Italy Japan Germany Spain South Korea  
Malaysia Mexico Thailand China Indonesia India

Source: [AutoBook Research](#)



- China is still middle-income developing country, the car ownership is disproportionated by income not population density.
- The ceiling of China's car ownership has potential to reach 650 million.

## §2.4 Growing New Energy Vehicle(NEV) market

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**“China New Energy Vehicle Mandate Policy”**  
finalized by **The Ministry of Industry and Information Technology** in September, 2017

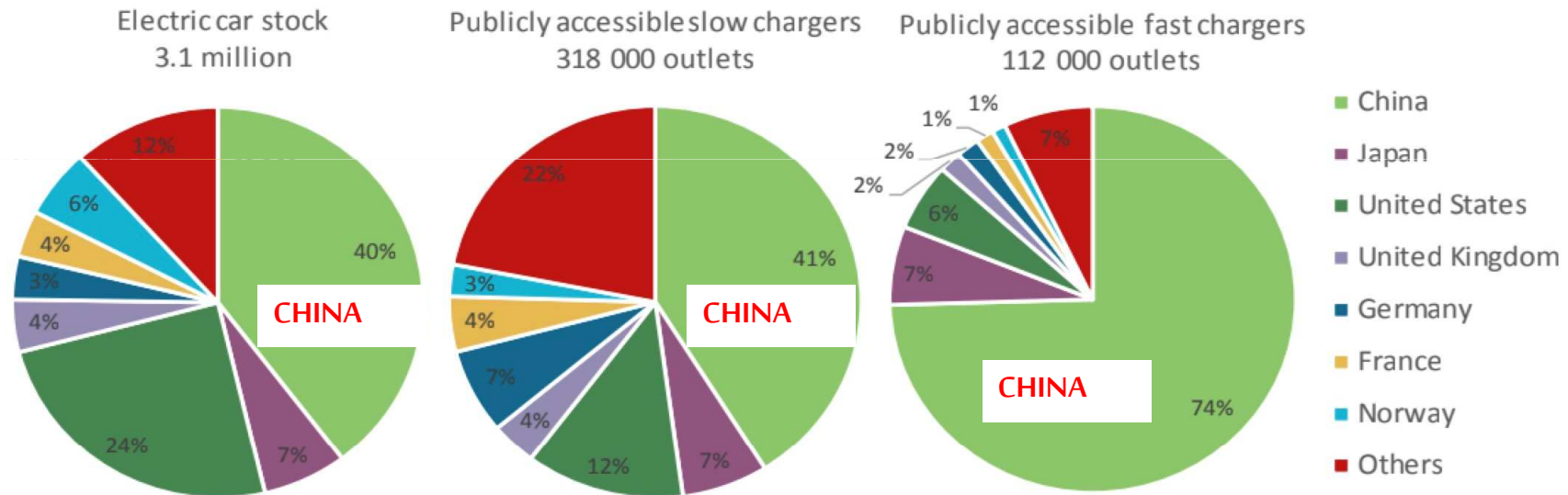
- Automakers will need to earn credits worth 10% of their production and imports of combustion engine cars in 2019 and 12% in 2022.
- Target: 35 million vehicle sales by 2025 and for new energy vehicles (NEVs) to make up at least a fifth of Chinese auto sales by 2025.

Policy Support:

1. Large subsidies, maximum total \$7278 (End in 2020)
2. Licensing and registration privileges
3. Government procurement, such as bus, taxi and logistics and etc.

## §2.5 China Leads EV sales globally

**Figure 3.2 • Electric car stock and publicly accessible charging outlets by type and country, 2017**



Sources: IEA analysis based on EVI country submissions, complemented by EAFO, 2018b.

**Key point:** China has approximately three-quarters of the world's publicly accessible fast chargers and a major part of the slow chargers.



# §3.1 Environmental & Social Problem

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Beijing Smog 2018

Transportation emission is the primary contributor for PM2.5 concentration, which cause air pollution, like smog. Millions people affected by the smog.



Great London Smog 1952

Industry coal burning and vehicle emission is the primary contributor for the smog. 6,000+ reported death.



Los Angeles Smog 1950s

Ozone is the primary source of the haze created when partially unburned exhaust from automobiles. 1300 people has shorten life due to the haze.

# §3.2 Air Pollution Contributor: Car Emission

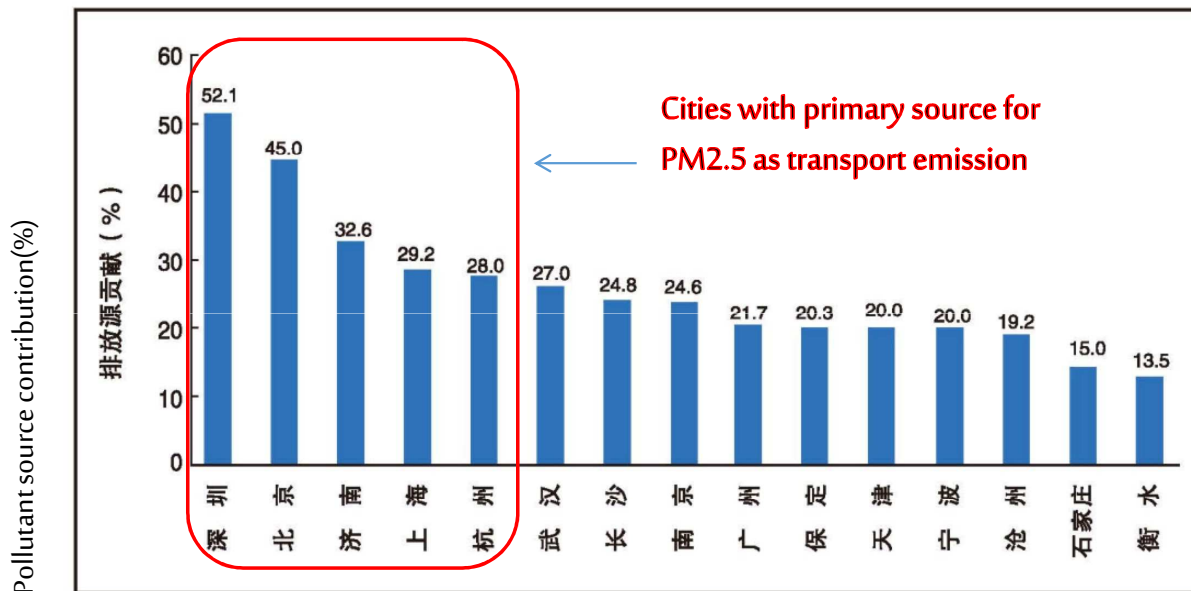


图13 各地本地排放源中移动源<sup>3)</sup>对细颗粒物浓度的贡献

PM2.5 contribution of transportation source by cities.

Source : "China Vehicle Environmental Management Annual Report 2018" Ministry of Ecology and Environment, China

In 2017, China's automobiles emitted around 436 million tonnes of pollutants, including:

- 333 million tonnes of carbon monoxide (CO),
- 57.4 million tonnes of nitrogen oxide (NOx),
- 40.7 million tonnes of hydrocarbon (HC) and
- 5 million tonnes of particulate matter (PM).

## §3.3 Social Problem: Traffic mortality

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- The 2030 Agenda for Sustainable Development has set an ambitious target of halving the global number of deaths and injuries from road traffic crashes by 2020.
- In 2016, China road mortality is estimated 60,000
- In 2017, US road mortality is 37,133
- In 2017, Japan's road mortality is record low of 3,694

<b>Road fatalities per 100 000 inhabitants Comparison between Japan,US &amp; China</b>				
country	Road fatalities per 100 000 inhabitants			
	1990	2000	2010	2015
Japan	11.8	8.2	4.6	3.8
US	17.9	14.9	10.7	10.9
China	5	8	18	18.8

police data      police data      health data

Data: <http://dx.doi.org/10.1787/888933580232>

<https://doi.org/10.1371/journal.pone.0153251>

# §4.Importance of Eco-driving

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Difficult in China now, but necessary in the future.  
Should start pilot test in cities and incorporate into policy.



Japan has a good environment for promoting Eco-driving.

譲る:Politely yield

Tips: Turn Hazard-light 3 times to say thanks after cut in lanes



## §4-1 Shenzhen: 100% Electric Bus

- All of the 16,359 bus gone electric.
- The 2017 data shows a total reduction of CO2 emissions of 1.353 million tons
- Electric taxi reached 13,000- World largest electric taxi operation scale.
- More than 30 Chinese cities have made plans to achieve 100% electrified public transit by 2020



## §4-2 New transport style: Ride-sharing, Car Sharing

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### Ride-sharing

- Reduce Taxi price
- Convenience:
  - Point A to Point B solution
  - save time for Parking lot search
- Reduce of drunk & drive
- Better Passenger experience-better car
- Driver: make money at spare time

### Car Sharing

- Short distance trip
- Different from ride-sharing & rental car
- No need for owning parking or mantainance
- Best match for New Energy Car



# Summary

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1. China's motorization boom has created positive influence in economy, transport, but negative influences in air quality and public health.
2. The car ownership is still predicted to increase.
3. Thus, we need more New Energy Vehicles and better Eco-driving behaviors, or alternative transportation to reduce CO2 emission and oil demand.

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Thank you for your listening!