The Transport Contribution to CO2 in China

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- The Full Name:
  Tsinghua University- University of Cambridge -Massachusetts Institute of Technology Low Carbon Alliance Future Transport Research Centre (TCMFTC)

- The Target:
  A world-class interdisciplinary “Future Transport” research and exchange center
TCMFTC

- **Research**: Chinese Government, EU, UK-China, USA-UK-China,
- **University**: Cambridge, MIT, UCL, Southampton, ...
- **City**: Beijing, London, New York, Hangzhou, ...
- **Company**: IBM, SIMENS, NISSAN, CERC, ...
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1 Transport Contribution to CO2 Emissions

2 Government Efforts
§ 1.1 Transport and CO2

The total residents travel

Split of trip modes

Energy consumption per unit

Energy structure
§ 1. 2 Motor vehicle ownership

Unit: 100 million

Motor vehicle ownership in China

Source: Traffic Management Bureau of Ministry of Public Security of China
§ 1.2 Motor vehicle ownership

Source: Beijing Traffic Management Bureau

Unit: 10 thousands
§ 1.3 The Total CO2 Emissions in China

The total CO2 emissions in China

8 billion tons

§ 1.3 Transport Contribution to CO2

From 1994 to 2007

- CO2 emissions from transport sector in China grew by 160%.
- The total emissions increasing of China's energy activities (118%).

Source: Caibo Feng, “CO2 emissions from transport research in China”.
§ 1.3 Transport Contribution to CO2

The proportion of CO2 emissions from the various transport sectors in China (2007)
§ 1.3 Transport Contribution to CO2

Prediction of carbon emissions from motor vehicles

- CO2 emissions of the automotive industry in western countries is about **25% of the total emissions**.
- CO2 emissions of China's automobile industry around **8% -10% of the total emissions**.
- **2008-2030**, transport sector emissions is predicted increase by **3.5%** every year.

Source: The research report on the carbon emissions of automotive industry
§ 1.4 Motor Vehicle Contribution to CO2

- In 2008:
  - Transport CO2 emissions 450 million tons
  - Road transport 330 million tons,
  - with an increase of 440.8% compared with 1990.

Source: Caibo Feng "low-carbon policies and actions in the transportation field of China"
§ 1.4 Motor Vehicle Contribution to CO2

Road transport carbon emissions in Beijing

(25 million tons)

Source: Xie Feifei "urban transport carbon emissions influential Factors and low carbon transport development research"
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1 Transport Contribution to CO2 Emissions

2 Government Efforts
§ 2 Government Efforts

Motor vehicle CO₂ emissions

Low Carbon Transport Policy
2. 1 Measures on fuel

Alternative fuel policy （2001）

To promote the use of fuel ethanol, government enact "denatured fuel ethanol GB18350-2001" and "ethanol gasoline GB18351-2001".

Fuel tax policy （2009）

Gasoline consumption tax was increased from 0.2 to 1 yuan per liter. Diesel consumption tax increased from 0.1 to 0.8 yuan per liter.
2.2 Measures on vehicles

Motor vehicle in different tax rate

Since 2006: Different tax rate for different size of vehicles

Motor vehicle restriction policy

Shanghai: vehicle license auction

Beijing: Motor vehicle lottery system, Tail restrictions.
2.2 Measures on vehicles

Clean energy, new energy vehicle promotion

- Policies to speed up production of new energy vehicles since 2005.
- By May 2010: 20 new energy vehicle demonstration pilot cities
- From June 2010: Subsidize the private purchase of new energy vehicles
2.3 Promotion of public transport

- Low bus fare in Beijing
- Bus (lane) priority
- BRT (by 2008, 20 BRT lines in China)
- By the end of 2008, 10 cities building BRT
- By the end of 2008, urban rail transit mileage 775.6 kilometers, and 1800 km under construction
2.4 Other measures

Provide information of public transport system, reduce unnecessary delays due to lack of information.

Actively promote TOD mode, making urban public transport network layout coordinated with the urban land use.
2.5 Efforts on Electric Vehicle

- International cooperation

- July 2010, China and America launched Electric Vehicles Initiative (EVI),

- 15 countries have joined the EVI, (China, America, France, Germany, Britain, Denmark, Finland, Italy, New Zealand, Portugal, Spain, Sweden, Japan, India, South Africa and IEA).
2.5 Efforts on Electric Vehicle

- The Shanghai Jiading Pilot Zone
  - 45 types of electric vehicles
  - 17 international automobile enterprises (e.g. GE, Volvo, …)
  - 849 AC charging piles
  - 10 DC charging piles
  - 2 charging stations
  - 1 hydrogen refueling station
  - Data collection and monitoring of 5,000 cars simultaneously
2.5 Efforts on Electric Vehicle

➢ Targets:

➢ By 2015, production and sales of 500,000 electric vehicles

➢ By 2020:

➢ production and sales of 2 million electric vehicles

➢ fuel cell vehicle and vehicular hydrogen energy reach to the international advanced level
2.5 Efforts on Electric Vehicle

- **Beijing**
  - By 2013:
    - 5,000 electric vehicles
  - By 2015,
    - 50,000 electric vehicles
  - By 2020,
    - at least 50% of newly increased private cars will be electric vehicles.
Thank you!