Sustainable Urban Transport Development in China

Ministry of Transportation

Zeng Jia
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1 Background
Sustainable Urban Transport Development in China

1 | Background

The 18th National Congress of the CPC stressed that China will highlight the development of "Ecological Civilization": emphasizing the concept of Ecological Civilization that respects, conforms to and protects nature; integrating the development of ecological civilization into every aspect of economic, political, cultural, and social development; and striving to build a beautiful China and achieving sustained development of the Chinese nation.
Energy consumption per unit of GDP and carbon dioxide emissions per unit of GDP should be decreased by 16% and 17% respectively by the end of 2015.

Transport plays an significant role in realizing the national target of energy saving and emission reduction.
Sustainable Urban Transport Development in China

1 | Background

China MOT's "Four Transport"

- Integrated transport
- Smart transport
- Green transport
- Safe transport
2 Current Status and Issues
China's Public Transport Today

China is enjoying a rapid growth of both urbanization and motorization. Each day, China handles 2.1 billion passenger trips, equivalent to the nation's road passenger volume over 4 days — the scale is the world's first.

In Beijing and Shanghai, 120 million people use subway systems daily, equivalent to national rail passenger volume over 3 days.

Public transport has become the basic need for most people's daily lives, with a trip share reaching 20-40% for the lower-income groups and 60% for the general public.
<table>
<thead>
<tr>
<th>Indicators</th>
<th>Value (2013)</th>
<th>Increasing rate to 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Transport Volume of PT (Billion Person Times)</td>
<td>128.3</td>
<td>2.7 times</td>
</tr>
<tr>
<td>Public Autobus (Thousand Units)</td>
<td>509</td>
<td>63%</td>
</tr>
<tr>
<td>BRT Routes (km)</td>
<td>2753</td>
<td>166 times</td>
</tr>
<tr>
<td>Rail Transit Routes (km)</td>
<td>2050</td>
<td>5.6 times</td>
</tr>
</tbody>
</table>
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2 Current Status and Issues

Air pollution

Congestion

Energy shortage

Safety
2 Current Status and Issues
Sustainable Urban Transport Development in China

2 Current Status and Issues

Sep, 21  BEIJING
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2 Current Status and Issues

Beijing

Shanghai

Guangzhou

Guiyang

Lanzhou

Yibin
Current Status and Issues

Environment Pollution – Emissions

By 2011, there were 208 million motor vehicles in China, emitting 46.08 million ton of CO, HC, NOx and PM in all.

Motor vehicles' contribution to urban PM2.5 emissions
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2

Current Status and Issues

The cost of the congestion problem is high
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Current Status and Issues

China’s urbanization level:
- 10.6% in 1949
- 19.4% in 1980,
- 26.2% in 1990,
- 45.7% in 2008,
- 51.3% in 2011 and
- 2020: 57% or even larger

Country | Britain | France | Germany | USA | Former U.S.S.R | Japan | China
---|---|---|---|---|---|---|---
Period | 120 Years | 100 Years | 80 Years | 40 Years | 30 Years | 30 Years | 22 Years
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2 Current Status and Issues

The current pattern of private car development and traveling mode in China.

Year 2012:
Private cars = 53.08 million
Growth rate = 22.8% from 2011.
Private car ownership/1,000 persons = 39%

Year 2020:
Private cars => 80 million
Growth rate => 23
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2 Current Status and Issues

机动化 Motorization

图 1-5 1995-2001 年全国私人汽车拥有量及其增长率变化图
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Current Status and Issues

The ratio of bicycle declines 1.9% annually;
the ratio of car increases 1.1-1.2% annually,
the ratio of public transport increases 0.5-1.1% annually.

Transport mode split from 1986 to 2010 in Beijing
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Current Status and Issues

Public transport service capacity lags behind economic growth and increasing demand for transport of the society.

- Low speed & poor punctuality
- Poor comfort
- Inconvenience in transfer
- Low coverage

Overall, the ratio of PT is below 20%, and service quality needs to be improved.
3 Policies and Gaps
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Policies and Gaps

Characteristics of Chinese cities: large population, high population density, tensions in land resources and energy supply.

Chinese cities must choose an intensive, efficient transport development mode, and take integrated measures from two aspects, namely, "supply" and "demand", to respond to the growing pressure from urban traffic congestion.
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Policy 1: Institutional Reform

Institutional reform at all levels for the integration of urban transport development
Policies and Gaps

(Issued by the State Council No.[2012]64)

Objective: Transforming the pattern of transport development to take public transport as public good

Policy to accelerate PT development
1. Strengthening planning control
2. Speeding up infrastructure construction
3. Enhancing jointed transport & land development
4. Increasing government investment
5. Exploring more financing approaches
6. Ensuring road right priority
7. Encouraging ITS

Establishing a sustainable development mechanism
1. Improving subsidy mechanism
2. Setting up the technical standardization system
3. Implementing integrated transport administration
4. Setting up safety administration regulation
5. Regulating decision-making procedures
6. Setting up performance-evaluation system
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### Policy 3: National Transit Metropolis Program

Promoting the pilot program of The National Transit Metropolis

- Initiating action plan of the national transit metropolis, 30 pilot cities form 2012 to 2017.
- Field surveys in typical candidate cities such as Harbin, Shijiazhuang, Wuhan, Changsha, etc.
- Ratio of PT: above 45%
- PT stop coverage in downtown areas: within 500m, 90%
- Bus speed: an annual growth rate of 2%
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Policy 3: National Transit Metropolis Program

**Objectives of “Transit Metropolis” project**

**Stronger insurance**
- Transit as main body
- 45~50% share
- Urban transit network intensity 3 km/ km²
- 17 or more buses/ 10,000 persons

**Better service**
- Bus operation speed: 20 km or faster
- Bus/ trolleybus punctuality: 10% higher than 2010
- Station 300 meter coverage 90%, downtown area full coverage of 500, transfer time 5 minutes
- Accident rate 10% lower than 2010
- New energy bus over 8%

**Better facility**
- Admission rate not lower than 90%
- City built area of more than 3 Lane one-way road or one-way two lane trunk road, gradually set up special lanes, the initial formation of network
- Intelligent transport management center and comprehensive transport hub built

**Regulated Management**
- Large scale, compact transit industry
- IC card use over 80%
- Mature fiscal support and subsidy
- Improve transit accepting and withdrawing system
- Regulated service quality evaluation
- Transit staff income not lower than average local staff income
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Policies and Gaps

Policy 4: National public transport planning

Establish multiple urban public transport system

- Public transport development was included in "the 12th Five-year Plan for National Economy and Social Development", issued by the State Council.
- To implement development strategies taking public transport as a priority, and increase the ratio of public transport
- To plan rail transit network in a scientific way, and push forward the construction of rail transit network in an orderly way
- To actively develop BRT system, and improve the density and coverage of transport network
- To guide private car use, and advocate non-motor transport
- To integrate urban public transport and rural transport development
Policies and Gaps

Policy 4: Establish multiple urban public transport system

Urban Metro system

1471 km in operation by 2010, 1800 km in operation by 2015.
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3 Policies and Gaps

Policy 4: Establish multiple urban public transport system

BRT development plan
Policy 4: Establish multiple urban public transport system

BRT development plan

Beijing

Guangzhou

Hangzhou

Zhenzhou

Changzhou

Chengdu
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3 | Policies and Gaps

Policy 4: Establish multiple urban public transport system

Implementing policies prioritizing bus transit, i.e. setting up bus lanes in large and medium-sized city such as Beijing, Shanghai, Guangzhou, Hangzhou, Chengdu, etc.
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3 Policies and Gaps

Policy 5: Public Involvement: PT Week & Car free day

- Beijing: “3510” = Walking (3km), Cycling (5km), PT (10km)
- Shanghai: Car-free Day for 200,000 people
- Shenyang: Free PT tickets
- Qingdao: School bus for green commuting
- Jinan: Adding more PT for the public
Conclusion

China is now focusing on improving the Public Transport service so as to resolve urban transport problems. China is committed to building a modern urban green traffic system which will attract bankers, government officials and cleaners and other sectors of social groups, who will be willing to take subway, bus rapid transit or various types of buses, as well as safe, environment-friendly and comfortable modes such as walking and cycling. International experience and practice are important to China.
Thanks

ZENG Jia

Principal Staff Member, Transport Department

Ministry of Transport, P.R.China

Add: 11 Jianguomennei Avenue, Beijing, 100736, P.R.China

Tel: 86-10-65292795   Fax: 86-10-65292764   Email: 184853506@qq.com