

2020

# Green Travel Development Report

## About Shared Bicycles





# Report Contents

In September 2019, the Central Committee of the Communist Party of China and the State Council issued the *Outline of Building a Powerful Transportation Country*, which proposed to build a safe, convenient, efficient, green and economic modern comprehensive transportation system.

To carry out the *Outline of Building a Powerful Transportation Country* and further improve the level of green travel, in July 2020, the Ministry of Transport and the National Development and Reform Commission jointly printed and issued the *Action Plan for Green Travel Creation*, which has proposed to make the level of green travel up to more than 70% in over 60% of creative cities by 2022.

The shared bicycle, as an important component of urban green transportation system, can effectively meet people's commuting needs of "the Last Kilometer" and "the Door to Door", and is a useful complement to the urban public transportation. Upon the rapid development, the shared bicycle industry is becoming more and more standardized, characterized with the superior travel structure, higher safety performance, more orderly management and stronger sustainability on the whole.

The Report has deeply discussed the development characteristics and management cases of shared bicycles in 2020, and aims to support the standardized management and the sound and sustainable development of industry.



# PART ONE

## 01 Superior travel structure





Efficient, convenient and low-cost, the shared bicycle has become an important means for urban travel

First-tier cities

Door-to-door travel



Average travel time: 1.25h  
Average travel cost: 5 yuan



Average travel time: 45min  
Average travel cost: 7 yuan



Average travel time: 40min  
Average travel cost: 40 yuan

Note: the average commuting distance is calculated at 15km

Third-tier cities

Door-to-door travel



Average travel time: 50min  
Average travel cost: 2 yuan



Average travel time: 30min  
Average travel cost: 4 yuan



Average travel time: 20min  
Average travel cost: 4 yuan



Average travel time: 30min  
Average travel cost: 30 yuan

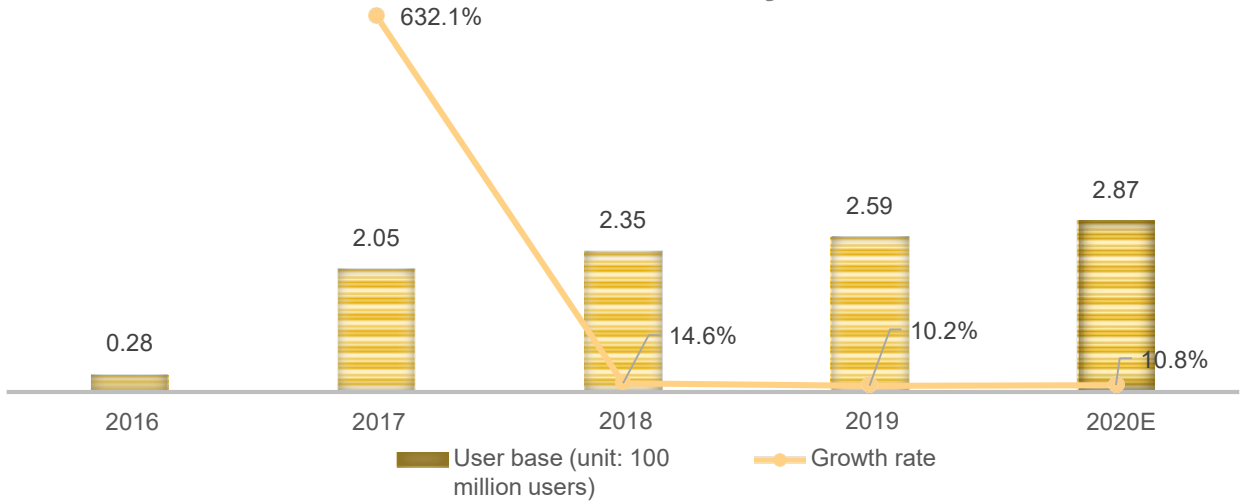
Note: the average commuting distance is calculated at 8km



# With the rise of penetration rate, the shared bicycle has an increasingly stable demand and market scale

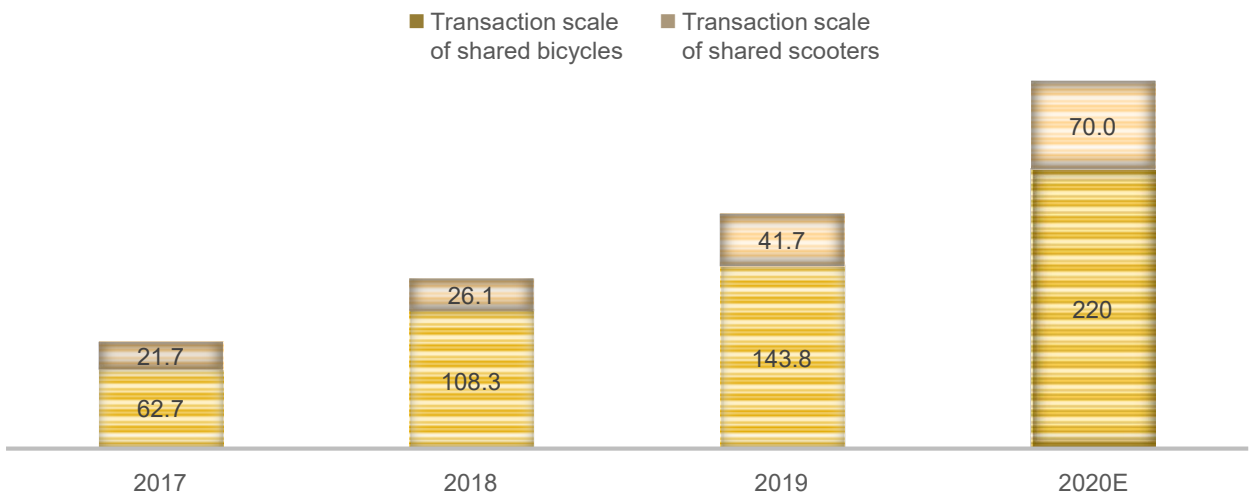
- Upon the intense competition and barbaric growth, the total input has been effectively controlled, and the user base has grown stably and orderly

### Growth of user base of shared bicycles from 2016 to 2020



- It is estimated that the transaction scale of shared bicycles is up to **22 billion** yuan in 2020, and that of shared scooters breaks through **7 billion** yuan

### Transaction scale of sharing bicycle market from 2017 to 2020 (100 million yuan)



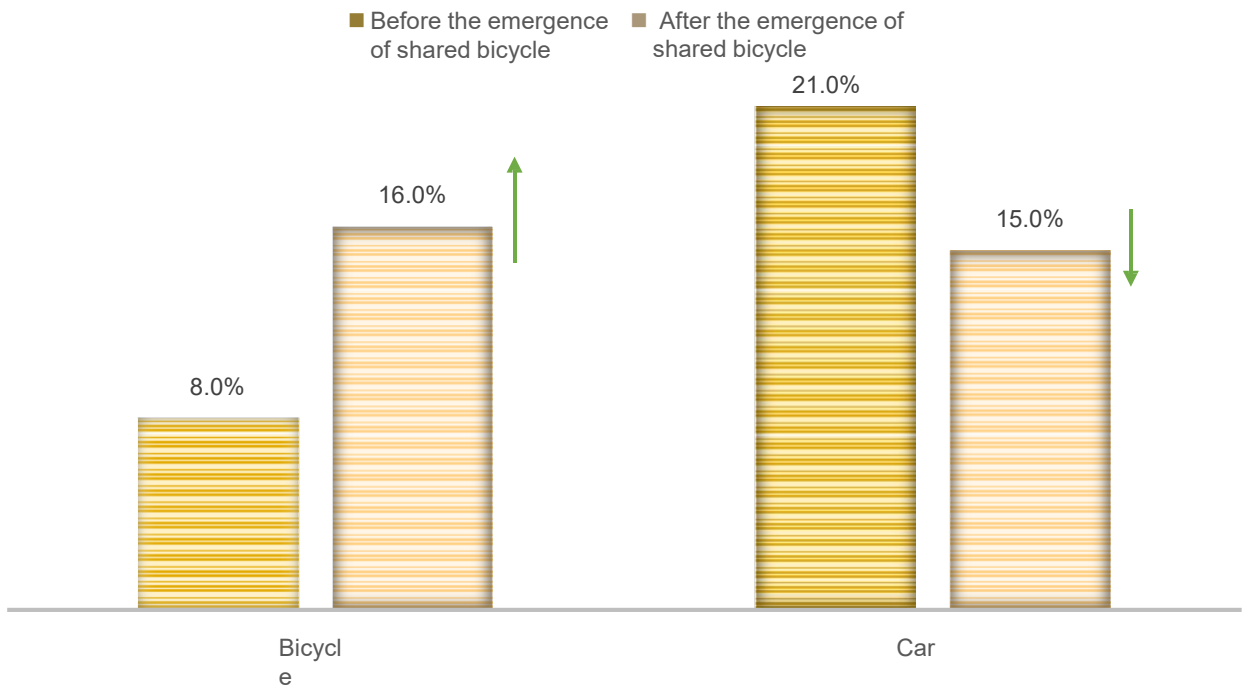
Source: State Information Center and other open research materials



# The shared bicycle helps superior travel structure, and supports alleviating the traffic congestion and haze

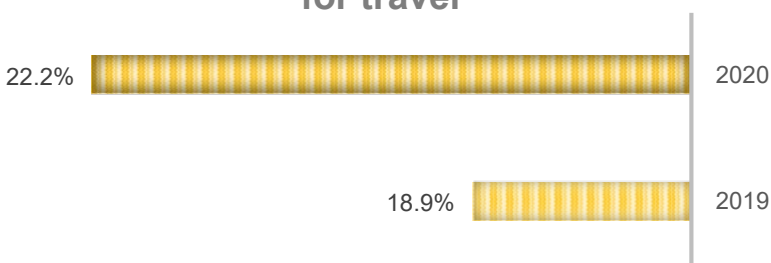
- The shared bicycle has changed people’s travel habits, reduced their demand for car during travel, and **improved the level of green travel as a whole**

Comparison of travel structure before and after the access of shared bicycle to market

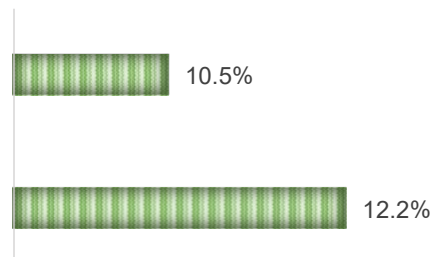


## Example of a third-tier city

Proportion of shared bicycles for travel



Proportion of cars for travel



**Level of green travel in this city:** it has increased from 62.1% in 2019 to 67.3% in 2020, up **5.2%**

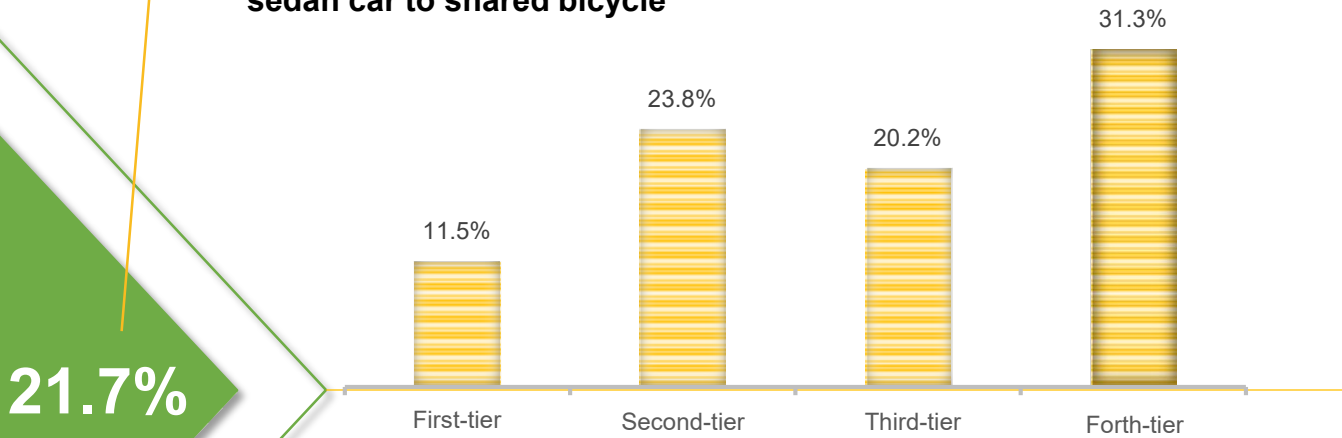
Source: user travel survey



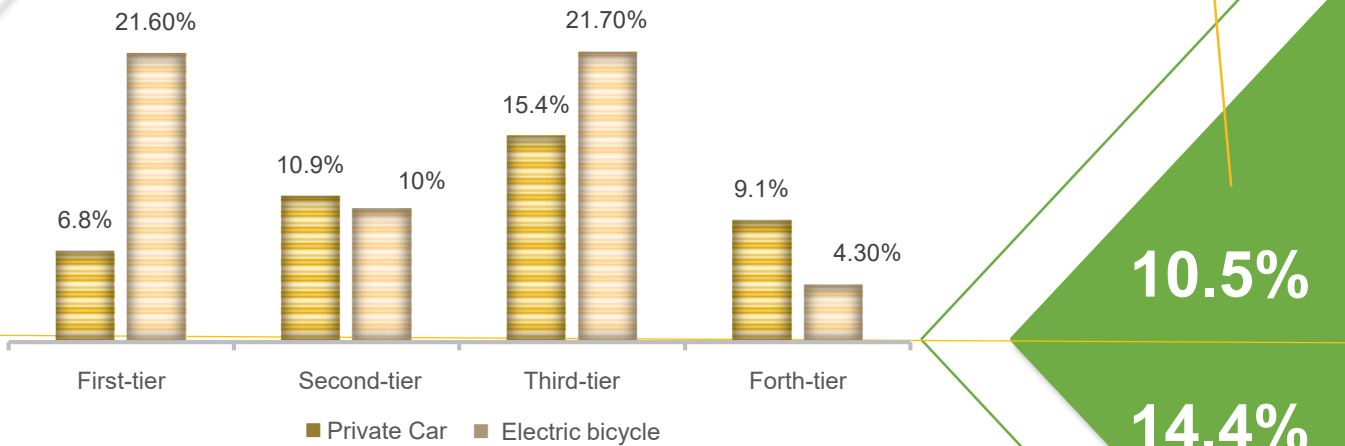
# The shared bicycle has effectively replaced car and out-of-limit electric bicycle for travel

- The shared bicycle has not only replaced some cars and private electric vehicles, but only restrained users' buying demand and helped lower non-rational travel demand, so as to improve the travel safety

**Travel transformation from sedan car to shared bicycle**



**Abandonment of buying sedan car because of shared bicycle**



With shared bicycles used, the users' demand for buying vehicles has been effectively restrained, and the out-of-limit electric bicycles can be less circulated in the market

**Abandonment of buying electric bicycle because of shared bicycle**





# In the outbreak of pandemic, the shared bicycles effectively solved the problem of travel difficulties of residents

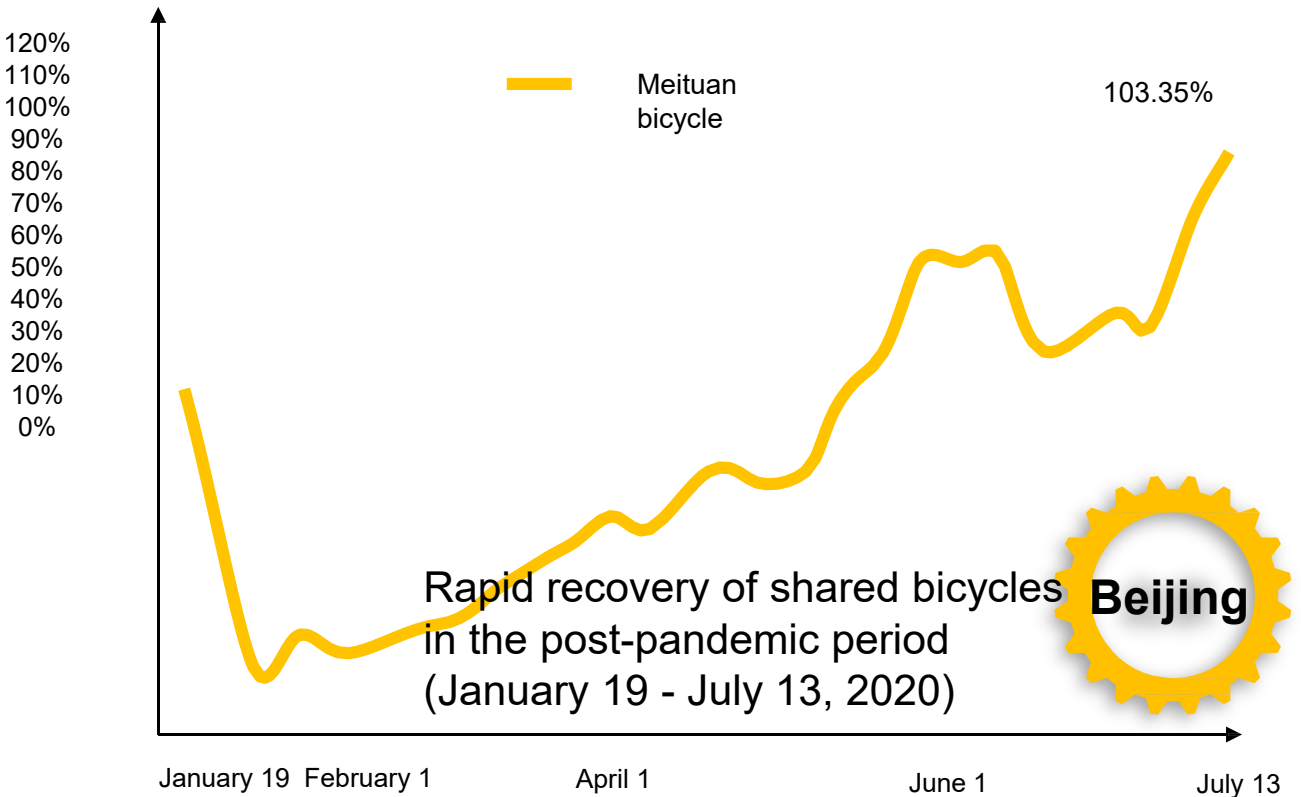


The shared bicycles contributed to the green travel by more than half during the period of fight against pandemic (January 23 - March 12, 2020)



Source: Wuhan Riding Report in the Battle War against Pandemic

Year-on-year basis



Source: Report on Riding Characteristics of Shared Bicycles in Beijing During the Outbreak of Pandemic



# PART TWO

## 02 Higher safety performance





# The shared scooters are superior to the private electric bicycles in terms of safety



65.2% of respondents consider that shared scooters is safer

## Vehicle body safety



Meet new national standards Pass the quality system certification

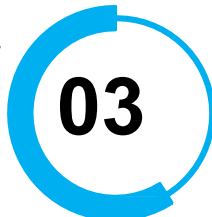
## Charging safety



Unified charging mode Charging by professionals



## Riding safety

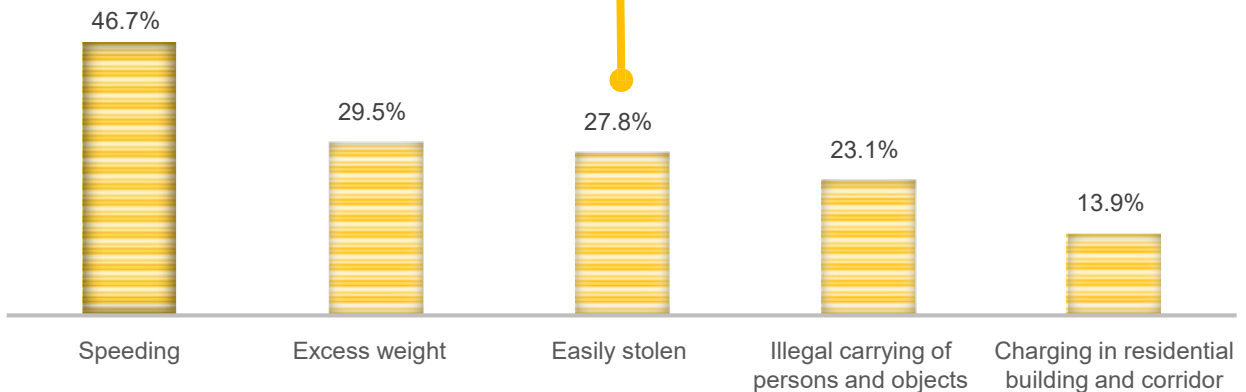


Without back seat and with helmet Strict registration management

## Parking safety



Rely on intelligent system Electronic fence management



Main reasons why users think private electric bicycles are unsafe



# The input and management up to standard can improve the vehicle safety factor greatly

Vehicles up to standard

- The *Technical Specification for Safety of Electric Bicycles* was issued
- *General Specifications for Electric Motorcycles and Electric Mopeds*
- *Opinions on Strengthening the Supervision of Implementation of National Standards for Electric Bicycles*

The “new national standards” was carried out, and the shared scooters platform has input the vehicles up to standard pursuant to these “new national standards”

Industry level

Higher threshold of access to industry  
Improved industrial concentration, accelerated market differentiation and presentation of the Matthew effect

Promote the implementation of new national standards and 3C certification

Enterprise level

Product name	Product category	Maximum speed	Vehicle mass	Maximum voltage	Maximum power	Pedal function	3C certification
Electric bicycle	Non-Motor Vehicle	≤25km/h	≤55kg	48V	≤400w	Mandatory	3C compulsory certification

## Prepare the standardized charging management system

Standardize the charging

## Build the private charging platform

- The charging mode prevails, and it is to build the private charging platform, unify service standards, and strengthen the management of operation and maintenance personnel.
- The power is charged uniformly by the operation platform, with a higher safety factor and lower safety risk during self-charging of users.

义务消防队员职责	消防安全教育培训制度
<ol style="list-style-type: none"> <li>1.熟悉本单位火灾与应急疏散预案和本人在义务消防队中的职责分工。</li> <li>2.参加消防业务培训及灭火和应急疏散演练，了解消防知识，掌握灭火与疏散技能，会使用灭火器及消防设施。</li> <li>3.做好本岗位日常防火安全工作，宣传消防安全常识，督促他人共同遵守，开展群众性自救自救工作。</li> <li>4.发生火灾时须立即赶赴现场，服从现场指挥，积极参加扑救火灾、人员疏散、救助伤员、保护现场等工作。</li> </ol>	<ol style="list-style-type: none"> <li>1.所有员工必须进行岗前消防培训，培训结束后应考试，成绩不合格的或未进行消防安全教育、培训的员工不得上岗。</li> <li>2.每半年组织一次对从业人员的集中消防培训，平时管理人员要对从业人员开展不定期培训。</li> <li>3.消防培训应包括下列内容：               <ol style="list-style-type: none"> <li>1) 有关消防法规、消防安全管理制度、保证消防安全的操作规程等；</li> <li>2) 本单位、本岗位的火灾危险性和防火措施；</li> <li>3) 建筑消防设施、灭火器材的性能、使用方法和操作规范；</li> <li>4) 报火警、扑救初起火灾、应急疏散和自救逃生的知识、技能；</li> <li>5) 本辖区的安全疏散路线，引导人员疏散的程序和方法等；</li> <li>6) 灭火和应急疏散预案的内容、操作程序。</li> </ol> </li> </ol>



# Improve the riding safety comprehensively by standardizing the user registration and use



## Order management



Improve the safety by license management, traffic regulation and standardized parking



## Speed limit

The maximum speed meets new national standard of less than 25km/h



## User management



Standardize the user registration, make the user reputation assessment, and carry out the user reward and punishment mechanism



## Set reminder function

Arrange non-parking area and non-traffic area; give warnings of illegal parking and speeding



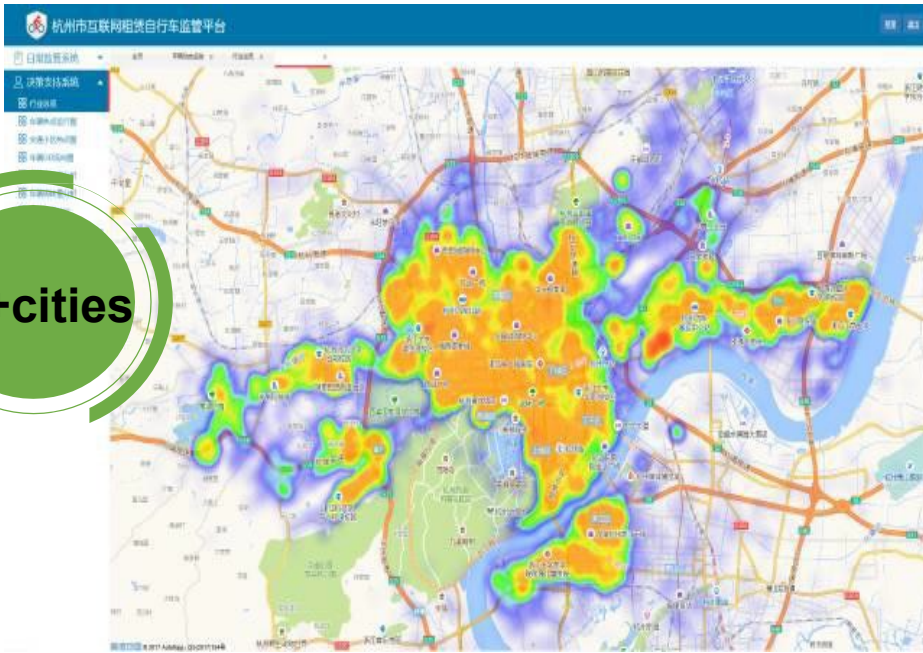




# Implement the supervision platform and electronic fence to improve parking safety comprehensively

## [Establish the supervision platform]

30+ cities



## [Various technical patents]

Method, parking management equipment and system used to determine that objects are in the target area



Beidou high-precision separate lock

Electronic fence with Bluetooth beacon made by precise positioning process

# PART THREE

## 03 More orderly management





# Building the green travel system is good for development of shared bicycles

**National policies: support the development of shared bicycles**

Twelve departments and units such as the Ministry of Transport issued the *Green Travel Action Plan (2019 -2022)*

**September 2019**

**October 2019**

The National Development and Reform Commission printed and issued the *Overall Plan for Green Life Creation*

The Ministry of Transport and the National Development and Reform Commission printed and issued the *Action Plan for Green Travel Creation*

**July 2020**

**July 2020**

Thirteen departments such as the National Development and Reform Commission and the Ministry of Transport printed and issued the *Opinions on Supporting New Business Modes and Models to Activate the Consumer Market in a Healthy Way and Further Drive the Employment*

In 2020, China undertook at the Climate Ambition Summit that:

China is to lower carbon dioxide emissions per unit of GDP by over 65pct from 2005 level by 2030

As a low-carbon and environment-friendly travel mode, shared bicycle are in line with the concepts of green travel, energy saving and environmental protection. In the future, there will be more cities “supporting” the policies on shared bicycle, so as to achieve healthy and sustainable development of the industry under standardized management





## Upon adjusted dynamically, the policies on shared scooters are continuously positive

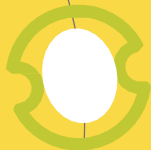
★ In August 2017, ten ministries and commissions issued the *Guiding Opinions on Encouraging and Standardizing the Development of Internet Rental Bicycles*, which has proposed that “the Internet rental electric bicycles are not encouraged to develop”. Based on the principle of territorial management, all regions prepared the policies and measures in line with their local conditions to actively guide the orderly and standardized, healthy and sustainable development of the industry

★ On April 15, 2019, the State Administration for Market Regulation and the Standardization Administration promulgated the *Safety Technical Specification for Electric Bicycle* (GB17761-2018), and this Specification was officially carried out

### Important milestones in the development of electric bicycles



In 2020, under the influence of COVID-19, to solve the problem of residents' travel and traffic congestion, some cities “supported” the policies on shared scooters and standardized their development



**70+cities: standardized management policies issued**



**500+towns and counties: already input for operation**



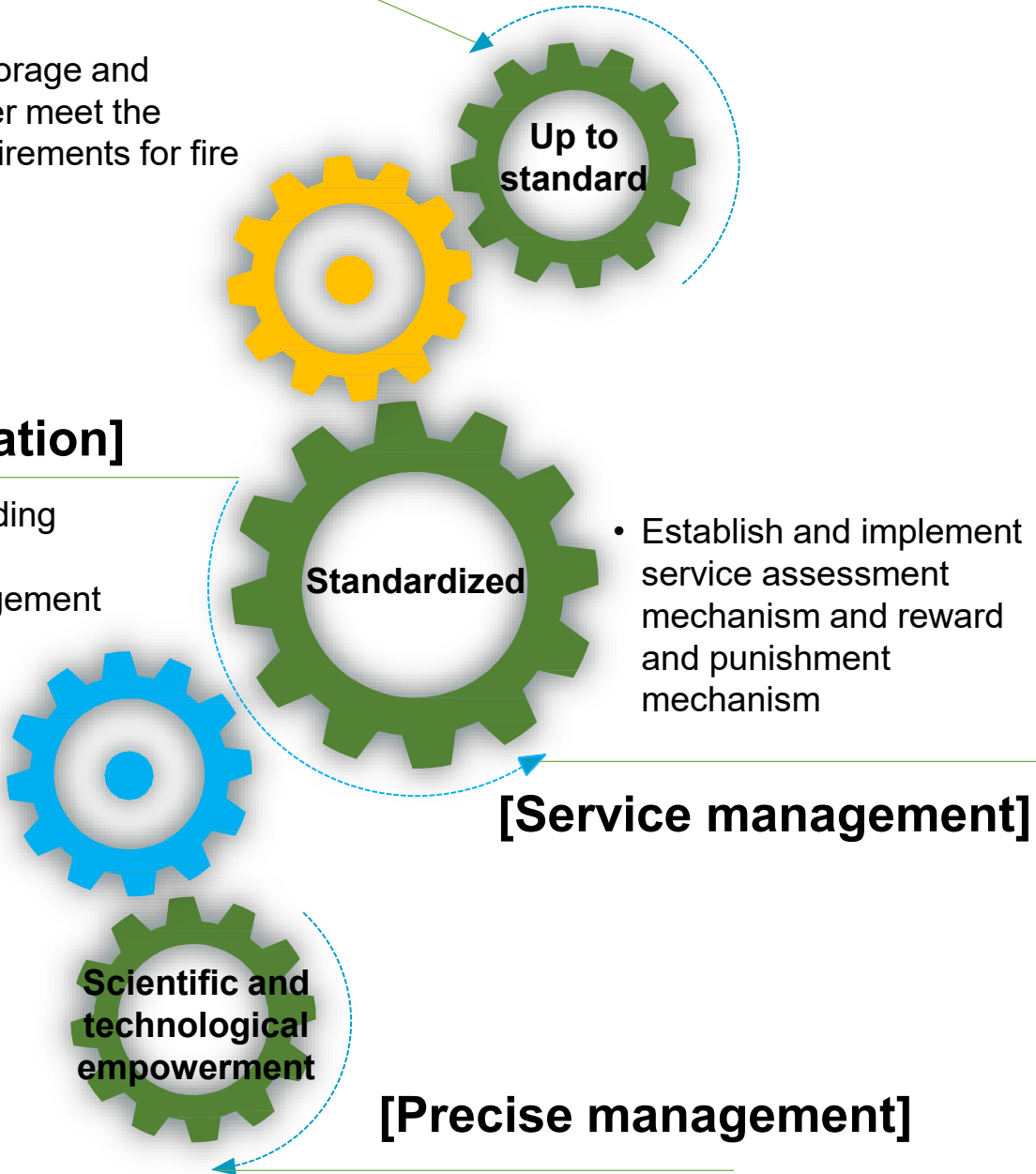
# Whole-process attainment, standardized management and precise management under technology empowerment

## [Source management]

- Vehicles: meet new national standards
- The battery storage and vehicle transfer meet the technical requirements for fire safety

## [Administration]

- Specify the leading departments
- Improve management measures



- Establish the data information management platform to accurately monitor, position, make a statistics and find vehicles and operation and maintenance personnel in a real time
- Follow the intelligent management modes such as non-parking technology, arrange an electronic fence in non-parking area, and guide citizens to park in a standardized manner



## Typical Case: Kunming City

### - Attitude change and intensified assessment

In 2017, the shared scooters started to be input

In 2018, the *Detailed Implementing Rules for the Management and Operation Service of Shared Bicycles in Kunming (Trial)* was promulgated

In 2019, the *Detailed Implementing Rules for the Management and Operation Service of Shared Bicycles in Kunming* was amended

- Abolish such provisions at “do not input electric bicycles and mopeds as shared bicycles for citizens to use”, and
- Require that “the shared electric bicycles and mopeds may be input, and the mopeds can be input at a certain proportion in pilot zones”
- For technical standards, it has been required to “meet relevant technical requirements of the *Technical Specifications for Safety of Electric Bicycles*”

The *Implementation Plan on Organization of Unified Maintenance and Management of Shared Bicycles in Key Sections and Key Areas (Trial)* was printed and issued

The Notice on Strengthening the Parking Management of Electric Bicycles was printed and issued

Kunming City Administration has established the assessment and announcement system, hired a third-party assessment institution to check and assess the operation service management of shared scooters in the whole city, and the assessment score would be reported publicly every month, while the last one falling behind others for four consecutive months would be “de-listed”.

**Dual-wheel  
driving of  
“system +  
technology”  
New  
management  
model**



## Typical Case 2: Ningbo City

- From no development for the time being to signing of management agreement



### [August 2018 - April 2019]

As required for building of a civilized city, in August 2018, the *Announcement on Implementing the Special Renovation of Internet Rental Bicycles* was issued, which has decided not to develop Internet rental electric bicycles for the time being

### [May 2019 - now]

- In May 2019, the *Opinions of the General Office of Ningbo Municipal People's Government on Standardizing the Development of Internet Rental Bicycles in Ningbo* were issued
- In July 2019, the *Ningbo Regulations on Non-motor Vehicle Management* and the *Notice on Further Strengthening the Internet Rental Bicycles Input and Operation Management* were issued
- In June 2020, the *Agreement on Parking Management of Internet Rental Non-motor Vehicles (Including Electric Bicycles)* was signed with shared bicycle enterprises to assign the main responsibilities of enterprises, and then, the shared scooters can be formally managed





# Typical Case 3: Xiangyang City

## - Government leadership and standardized operation



### [December 2018]

The *Notice of the Municipal People’s Government Office on Printing and Issuing the Interim Measures for the Administration of Internet Rental Bicycles in Xiangyang City* has proposed that:

- It is necessary to establish the joint meeting system for collaborative supervision, which consists of the Deputy Mayor in charge of the Municipal People’s Government as the Convener and members of the municipal urban management department, public security bureau, transportation and other relevant departments, urban people’s governments and development zone management committee
- The Internet rental bicycles should have warning signs and identifications “No Riding for Minors under 16”

### [August 2020]

Five departments printed and issued the *Notice on Standardizing the Management of Internet Rental Bicycles*, which has proposed that:

- Without approval, the Internet rental bicycles are not allowed to be input in urban areas; the Internet rental bicycles should meet national standards in terms of product quality
- The Internet rental electric bicycles input should be registered and licensed legally



# PART FOUR

## 04 Stronger sustainability

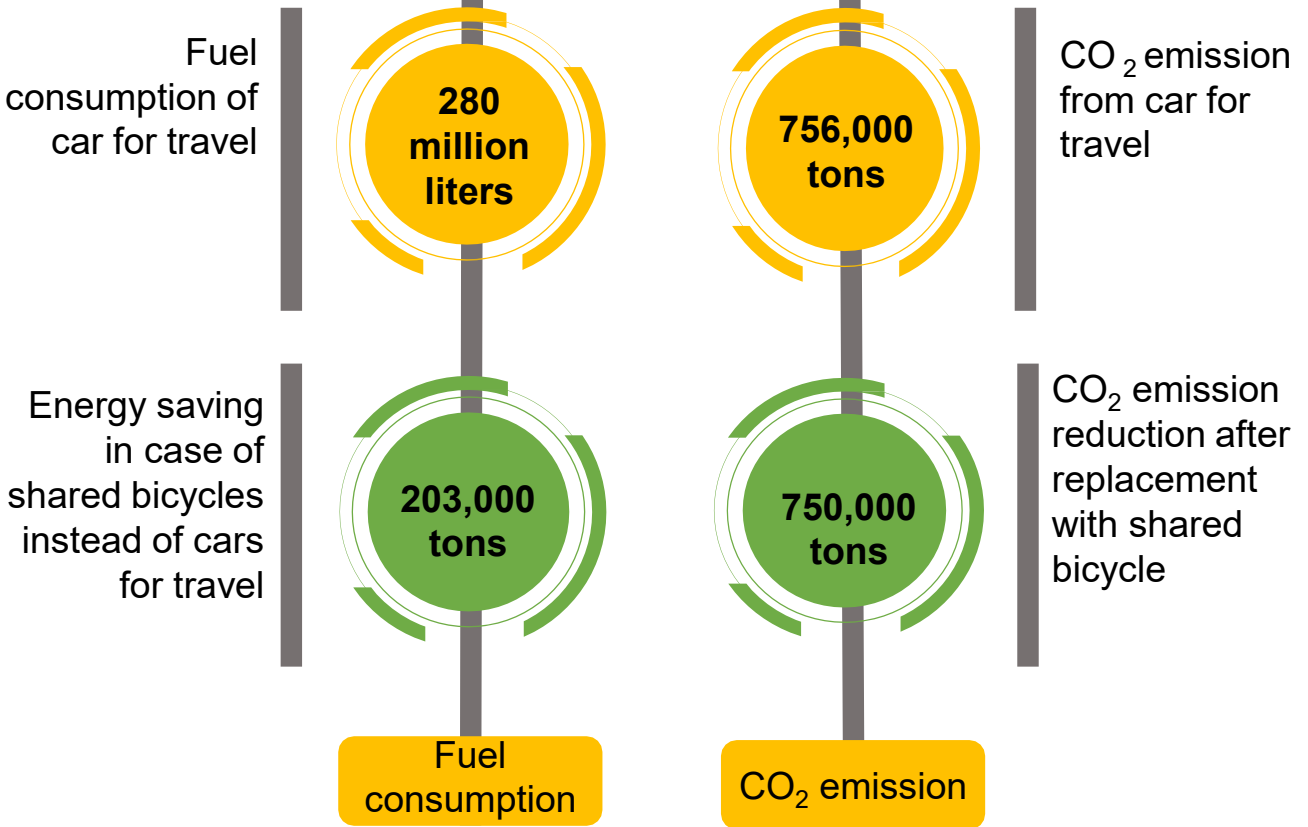




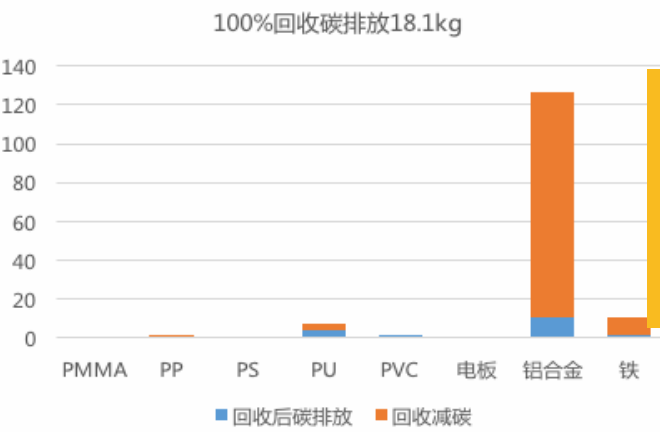


# The daily emission reduction by the shared bicycle is equivalent to 750 million trees planted

The numbers of daily orders of shared scooters and shared bicycles are calculated at 10 million yuan respectively, and the total daily mileage is 40,000,000km



Note: the average riding distance of shared bicycle is calculated at 1.5km, and that of shared scooter is calculated at 2.5km, while the fuel consumption of car per 100km is calculated at 7L/100km. The CO<sub>2</sub> emission per liter of gasoline is 2.7KG, and the CO<sub>2</sub> emission per kilowatt hour of electricity consumed by charging is 0.785KG.



Calculated at recovery equivalent:  
The carbon neutrality can be achieved after the bicycle is ridden for 390km

Subject to the baseline emission factor 0.0463kgCO<sub>2</sub>/PKM





# Realize the green, low carbon and environmental protection in the whole life cycle



Car



Taxi



The carbon dioxide emission of cars is:

- 25.58 times that of buses
- 12 times that of electric bicycles
- 8.3 times that of rail transit
- 3 times that of taxis



Rail transit



Electric bicycle



Routine bus system



Walking Bicycle



Note: ratio of carbon dioxide emission in each travel mode measured in kg/person/km

**Tire component regeneration**

——“Riding Shared Bicycle Exchanged for Ball Park”



**Battery management and recycling**

——“Whole-life-cycle management”

- Intelligent battery management system
- Imported powered lithium battery cell
- Light weight and recycling
- Real-time battery performance reporting

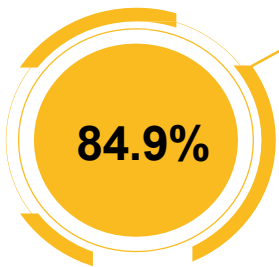
# PART FIVE

## 05 Future development trend

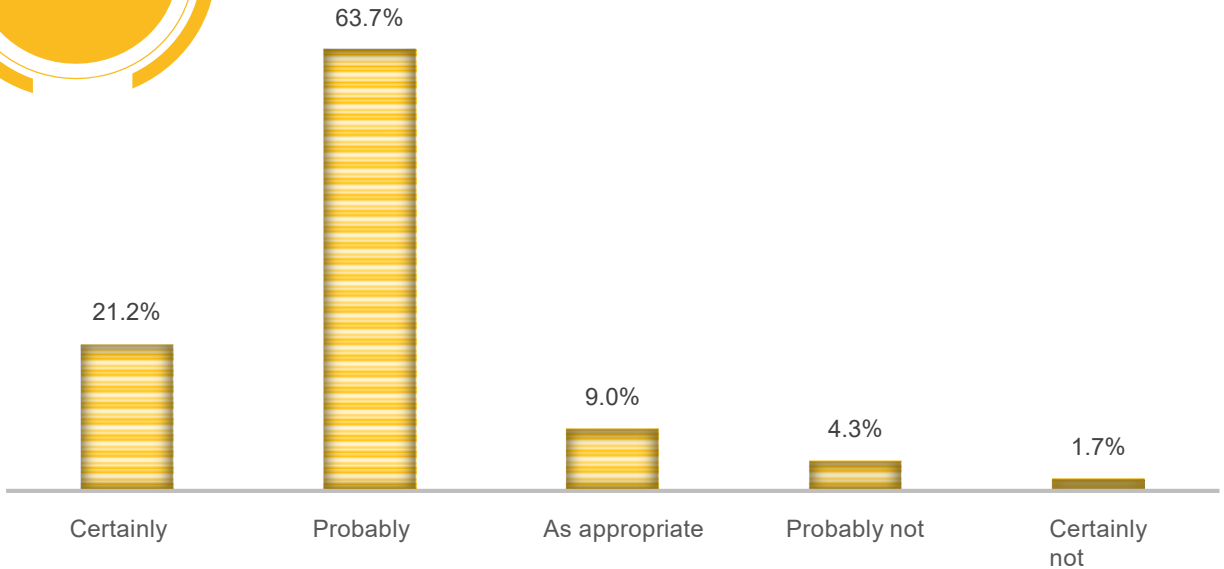




# The travel demand of shared scooters has not been fully met

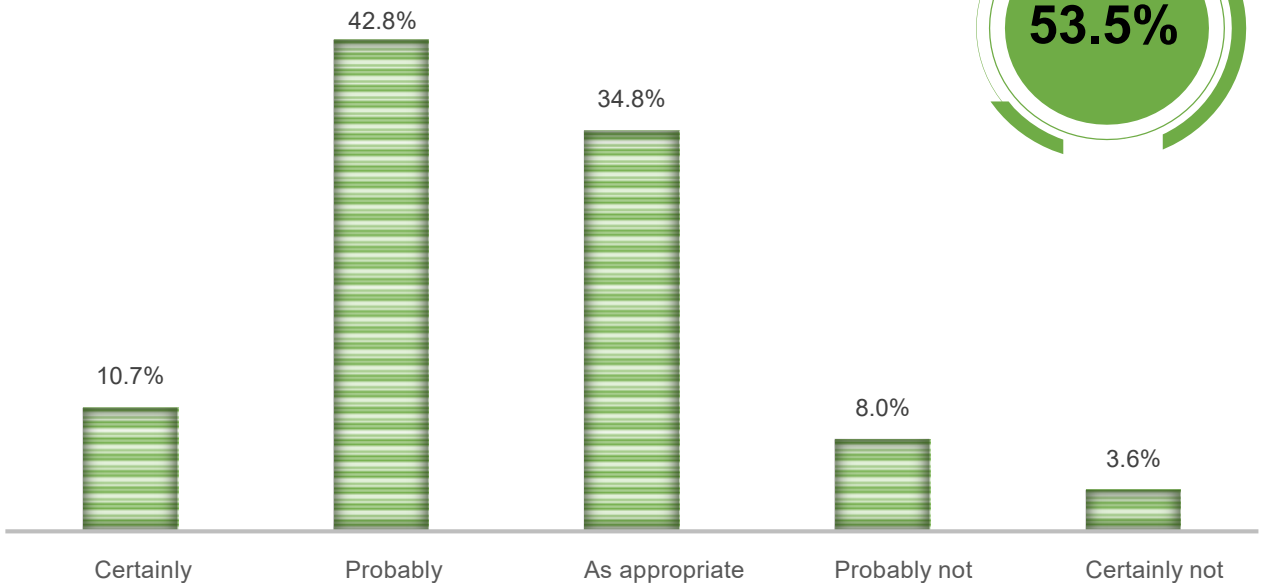
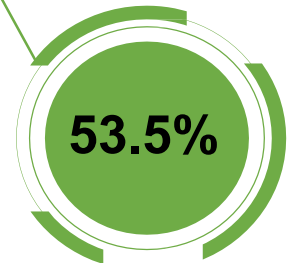


Overall, more than 80% of respondents choose shared scooters for travel



In the next year, would you consider mainly using shared scooters for travel?

More than half of respondents would consider abandoning riding/driving motorcycles/cars and choosing shared scooters for travel



In the next year, would you consider mainly using shared scooters instead of motorcycles/cars for travel?



# The shared bicycle applications are diversified, with industrial growth points derived

First-tier to second-tier cities: it has become an important transfer and feeder service tool for the last 1-3km of travel

Third-tier to fifth-tier cities: “door-to-door” travel; it is an important means for residents to commute



Interact with the life service platform, integrate the life service with travel service, and achieve the industry integration

Realize the industrial chain of bicycle/scooter production suppliers, operation platforms, charging suppliers, technology suppliers, etc., archive the industrial upgrading, and help the industrial growth



Based on the smart city and smart transportation construction, as well as scientific and technological innovation and combined with the information platform technology, big data, parking and other technologies, the industrial technology upgrading and industrial value addition can be achieved



The industry develops in a more open, standardized and legalized trend

## Development trend of shared bicycles

- The five development concepts of innovation, coordination, green, openness and sharing proposed by the central government can be met
- After the outbreak of pandemic, more and more cities have operated shared bicycles



- Build the supervision platform
- Strengthen the safety management
- Popularize the electronic fence
- Promote the technical innovation

- Promote the industry governance system and governance capability modernization
- Improve the policies, regulations and standards,
- Legally carry out the supervision and assessment



**Help construct a powerful transportation country**

# Conclusions

The shared bicycle helps cities alleviate the traffic congestion and haze, reflecting five development concepts of innovation, coordination, green, openness and sharing and aiming to facilitate the green travel and sustainable development. To promote the construction of a powerful transportation country and green travel system, we will continuously concern the industrial development!

