Shanghai EV Demonstration Popularization and Data Analysis

——Sino-US EV Working team Conference • Seattle

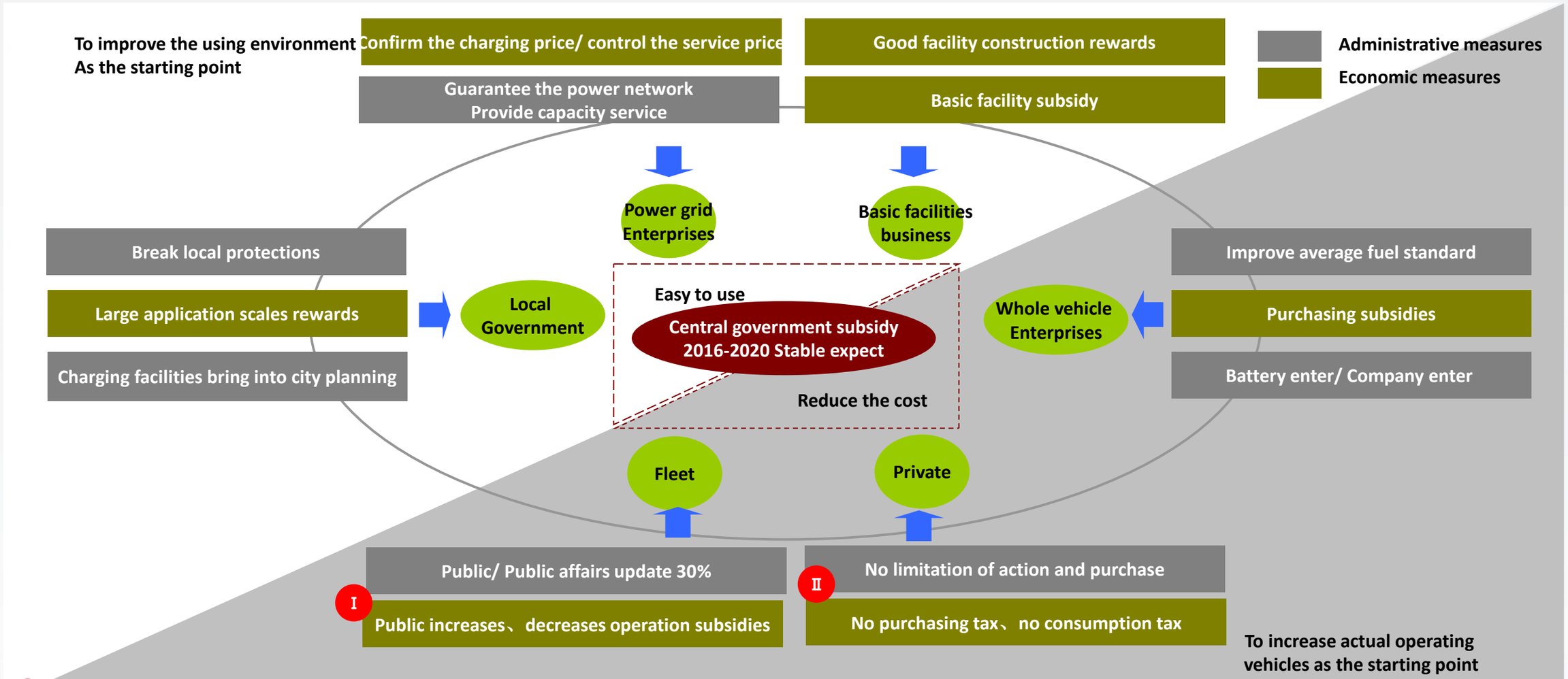
August 2014

Catalogue

- Introduction of China EV Demonstration Popularization
- Situation of Shanghai EV Demonstration Popularization
- EV Data Analysis Research Achievements

1、 Introduction of China EV Demonstration Popularization

China enlarges the using scale，facilitates the policy interpretation of the using environment



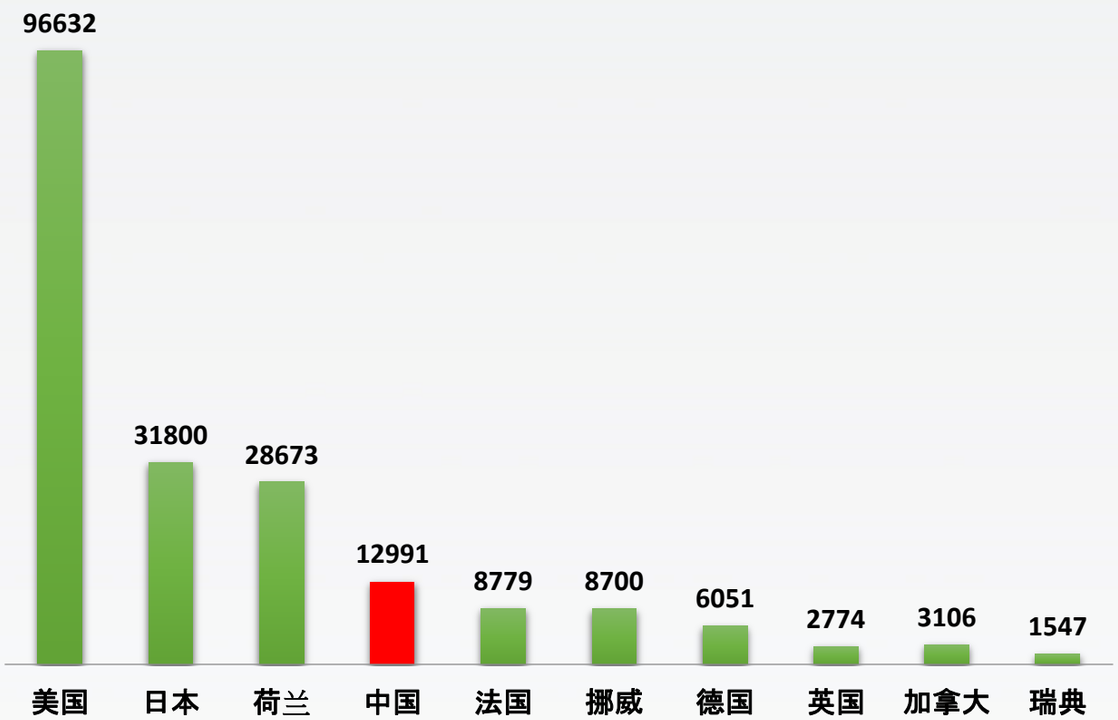
I Means the combination of increasing EV operation subsidy and reduce the subsidy of fuel transit operation

II Purchasing tax: 10% of the vehicle price, consumption tax: 1.0L, 1% of the vehicle price

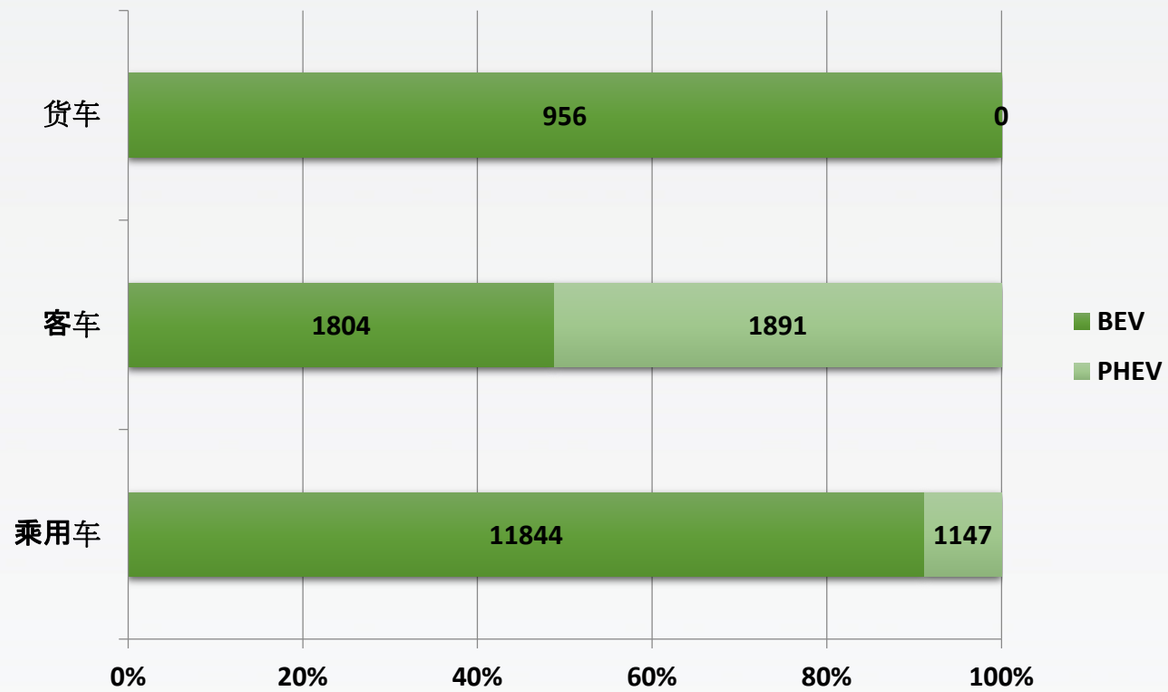
1、 Introduction of China EV Demonstration Popularization

China EV market situation

2013 World ten major countries passenger EV sales



2013 China EV sales amount is 17,642



Data Origin:
1、Data of China comes from China Automobile Industry Association
2、Data of France, Germany, Canada comes from their government websites
3、Data of other countries comes from IEA

Data Origin: China Automobile Industry Association

1、 Introduction of China EV Demonstration Popularization

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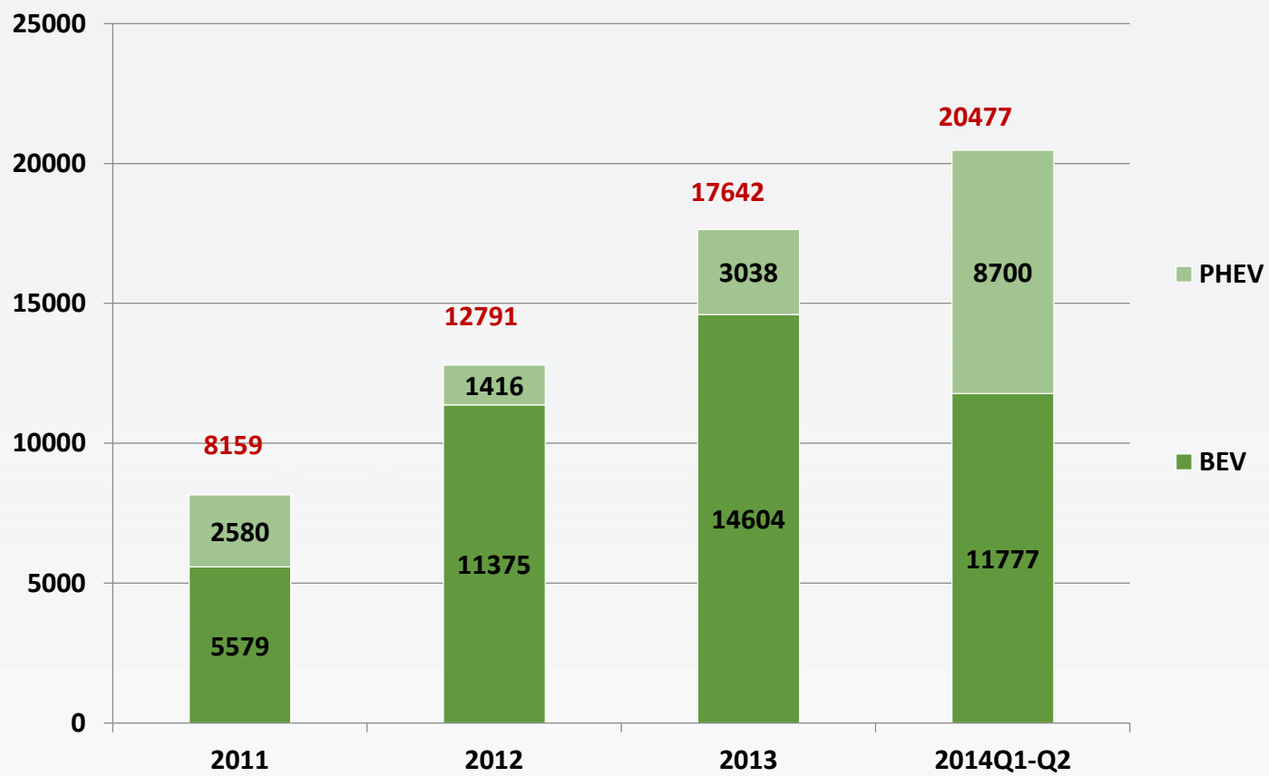
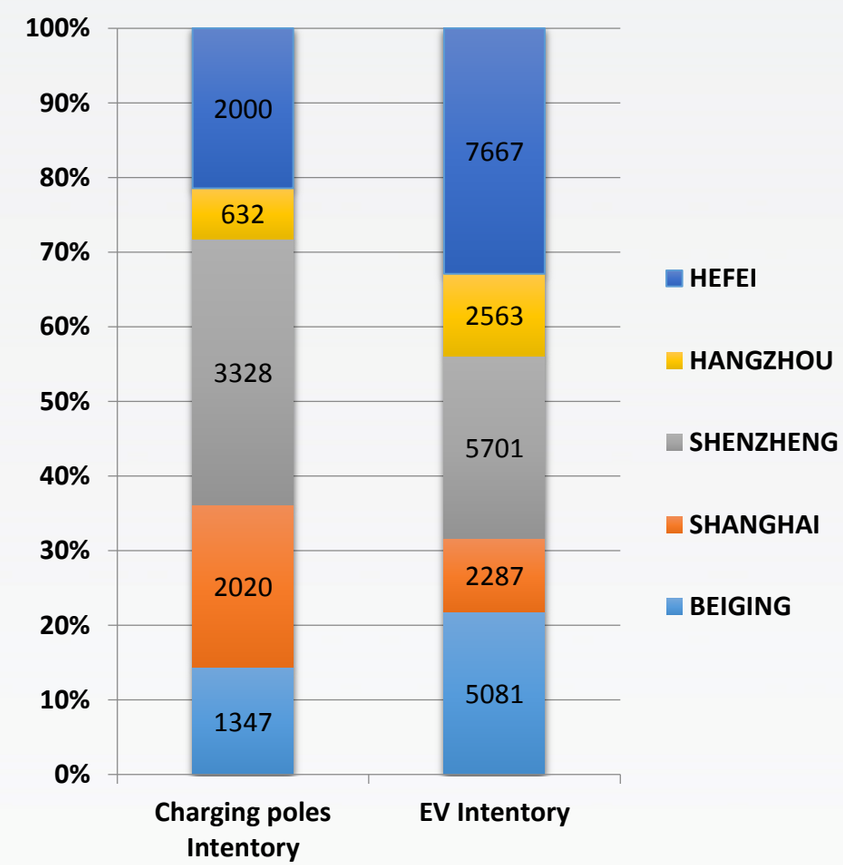
EVZONE SHANGHAI · CHINA

2011-2014 China EV Annual Sales trend



Data Origin: China Automobile Industry Association

5 Main Demonstration Cities EV/ Charging Piles Ownership Incomplete statistics in year 2013



Until the end of 2013, China has 59,069 EV.

Among them, Beijing, Shanghai, Shenzhen, Hangzhou, Hefei this five main cities have 23,229 EV in total, it is about 39% of the Country ownership

1、 EV Data is the EVZONE summary data. Shanghai has the whole year data, other cities have the data for the first 3 seasons of the year 2013; 2、 The data of the charging piles is from ZuoSi automobile research department 3、 The ownership data of Shanghai contains 196 hydrogen fuel vehicles and 230 sightseeing buses from the Shanghai world EXPO

2、Introduction of Shanghai EV Demonstration Popularization

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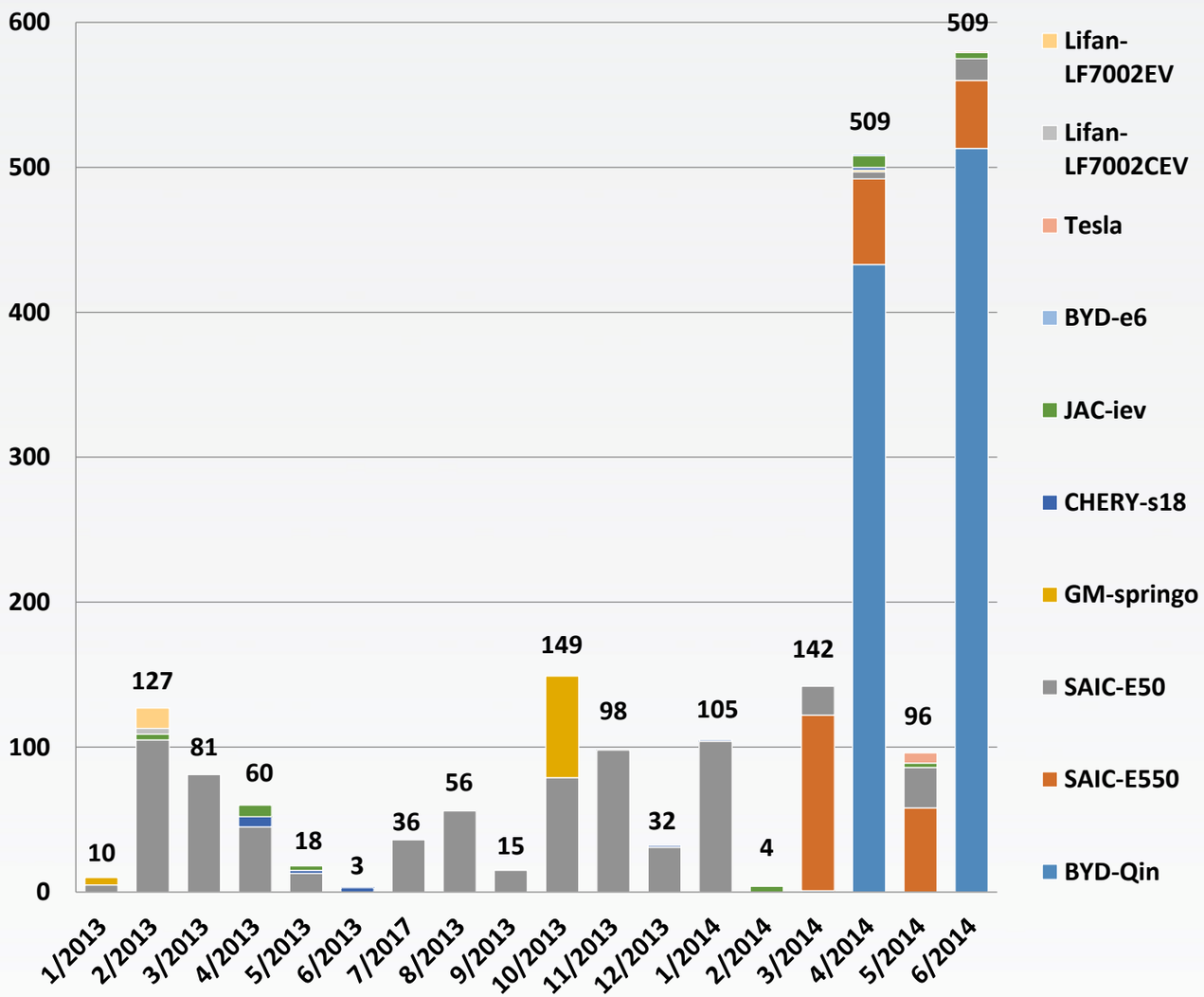
EVZONE SHANGHAI · CHINA

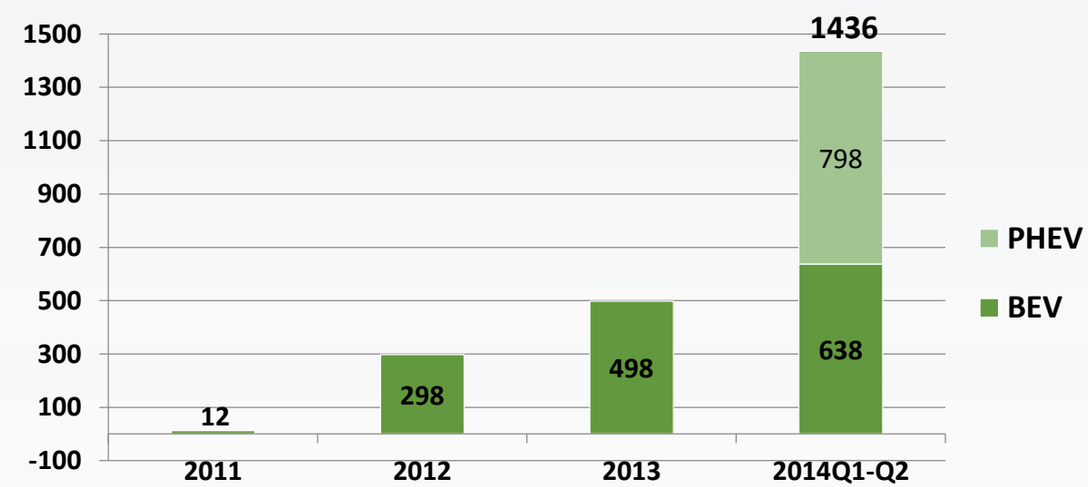
2013-2014 Shanghai EV monthly licensing conditions



2014 Shanghai Subsidy Policies of purchasing EV

EV Type	BEV			PHEV
Maximum Mileage	80≤R＜150	150≤R＜250	R≥250	R≥50
Central Subsidy	3.325	4.75	5.7	3.325
Shanghai Subsidy	4			3
Foreign Vehicle Subsidy	3,000 Free license plates			
EVZONE Subsidy	15,000 Using Subsidy（For consumers living and working in Jiading District）			
Other Promotions	Free Shanghai license plates, no Auto-purchase tax since September 1st, 2013 until the end of December 2017			

2011-2014 Shanghai Electric passenger vehicles market sales trend



EVZONE summary statistics, the first half of the year 2014 is the amount of the license plate registration

2、 Introduction of Shanghai EV Demonstration Popularization

Shanghai EV Public Data Collection and Monitor Research Center

◻ Character of the institution

A NGO established under the permission of Shanghai Municipal Commission of Economy and Information，formed by Shanghai International Automobile City Group.

◻ Main Function

1) Responsible for the collection of basic data of Shanghai new energy vehicles and the charging facilities

2) Research on consumer behavior analysis of EV

3) Research on the EV battery discard recycling system

◻ Annual report

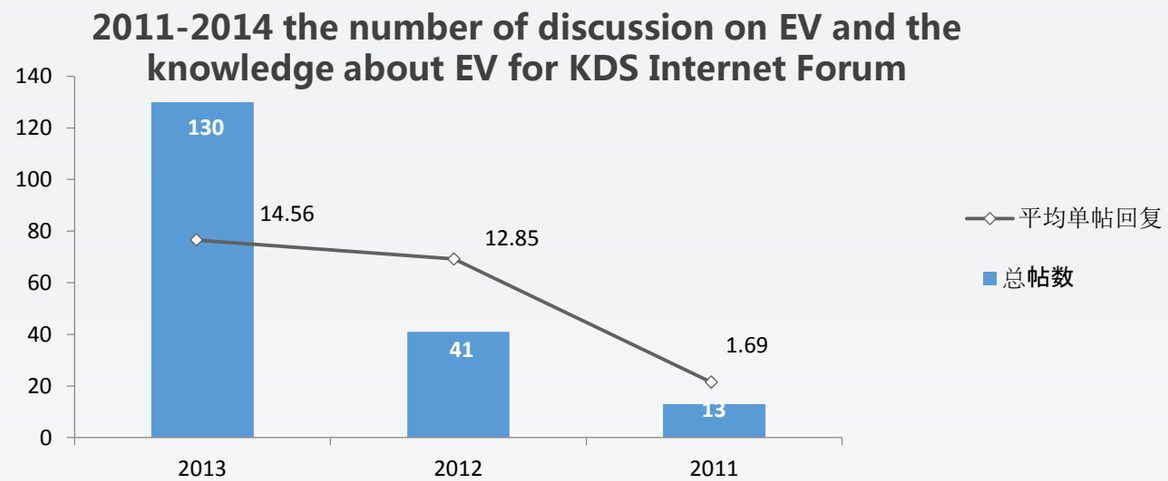
1) Shanghai New Energy Vehicle Industrial Development Report

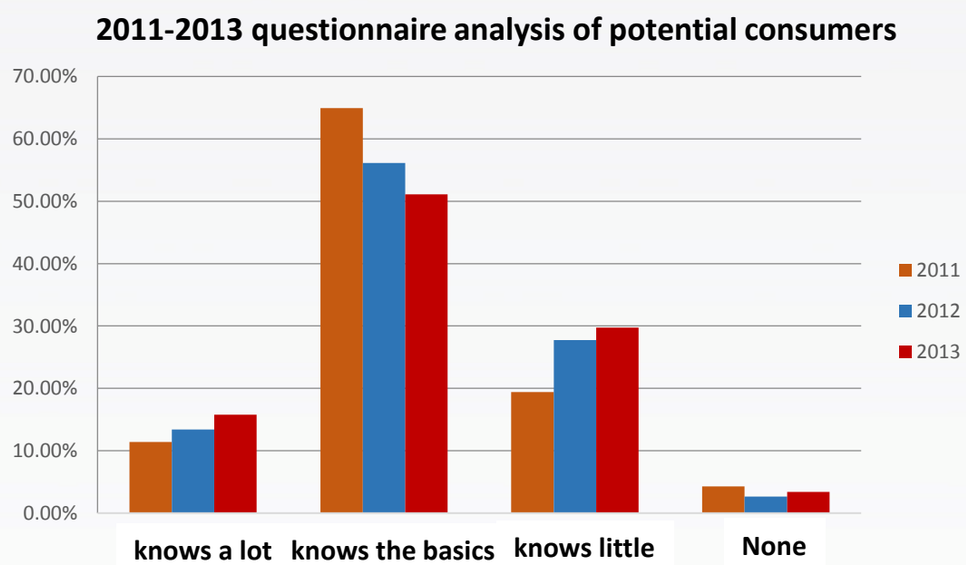
2) Research report of new energy vehicle consumption behavior analysis and market demand

3) Comparison research report of popularization application of domestic and foreign new energy vehicles

3、EV Data Analysis Research Achievements

Electric vehicles have began to enter people’s life; it is crucial to grow a future customer base.





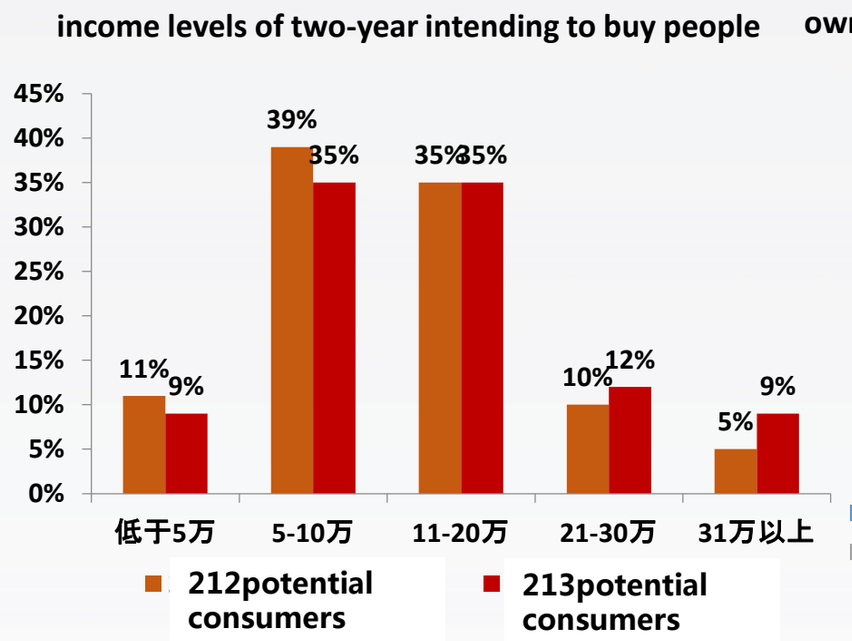
EV driving track distribution

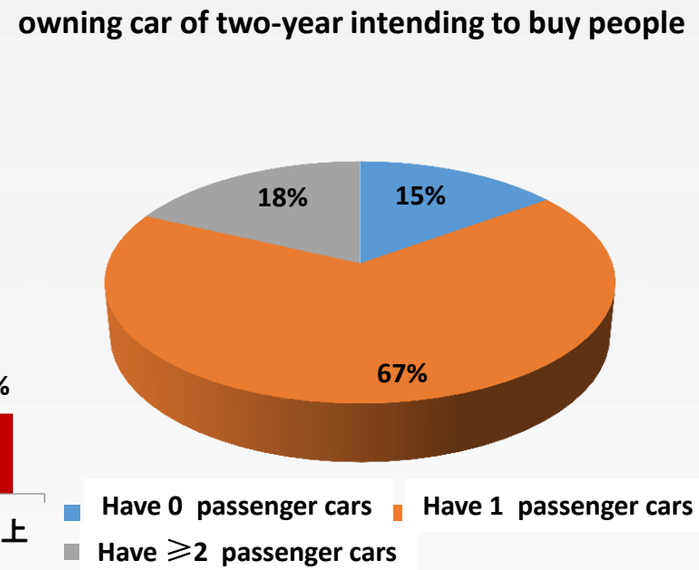
Data Origin ：EVZONE summary statistics

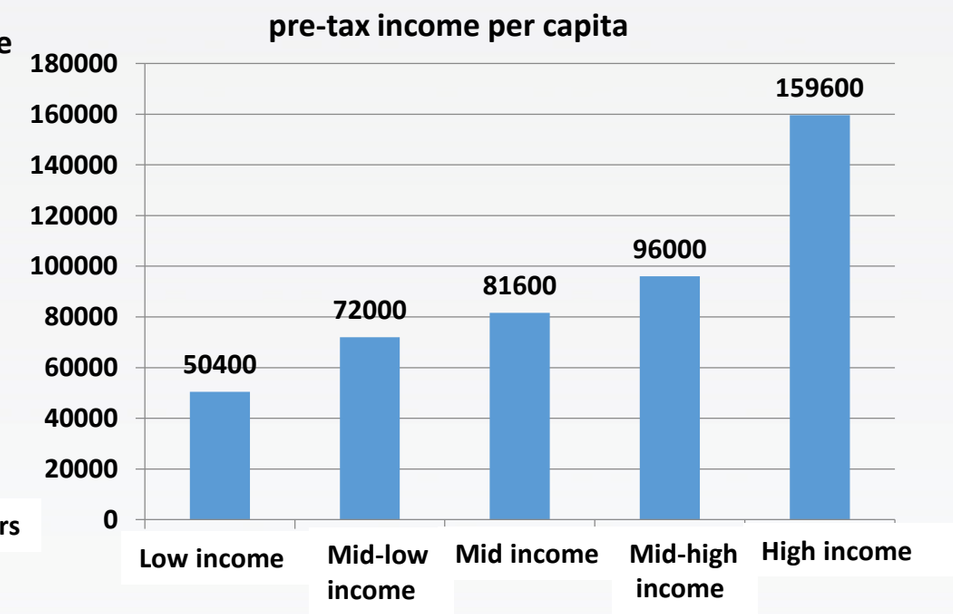
3、EV Data Analysis Research Achievements

Based on 2012-2013 EVZONE questionnaires, that the potential EV consumers have three statistics characteristic

1, From 31 to 40 years old, university degree or equivalent, personal salary belong to the high level in Shanghai(16W/year·person~20W/per person per year per-tax), single or married.
2, Families own at least 1 car, university degree or equivalent, have independent or half-independent house.
3, From 21 to 30 years old, junior college degree or equivalent, personal salary belong to the medium level～the medium or high level(8W/year·person~10W/per person per year per-tax), single or married.







Data Origin： EVZONE summary statistics

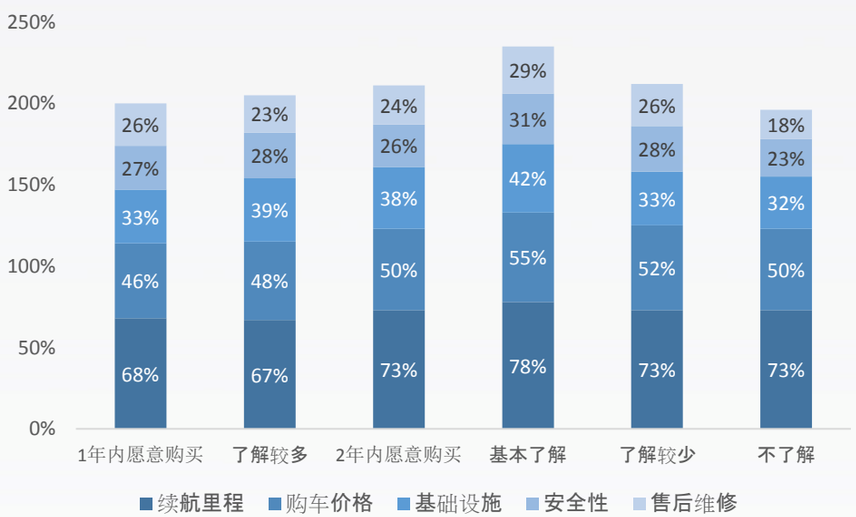
Data Origin : Based on Shanghai Municipal Statistics Bureau ‘s data of 2012 Per-capita disposable income for households .

3、EV Data Analysis Research Achievements

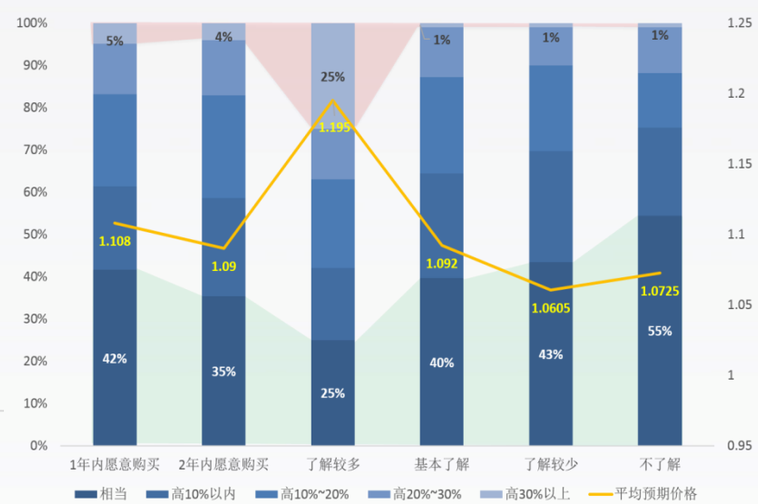
Different performances from different consumer sectors

1, From “don’t know” to “almost understand” stages, the proportion of different kinds of concerns from potential consumers’ increase gradually. While, from “almost understand” to “willing to purchase within one year” stages, the proportion of different kinds of concerns from potential consumers’ reduce gradually.
2, When potential consumers haven’t made the decision to purchase, the more they understand about electric vehicles, the more costs they would willing to pay. Once they made the decision to purchase, they still hope the prices of electric vehicles are not much higher compare to traditional vehicles at same type.
3,Most potential consumers are partial rational. Hence, the range requirements for EV are not high, the actual average daily distance is longer. The bigger radio of “numbers of range requirements”/“actual average daily distance” is, the more possible to be potential consumers. In this way, the economical efficiency of electric vehicles could be fully showed.

Changes of customers' concerns from consumers of different stages



Price perception from consumers of different stages

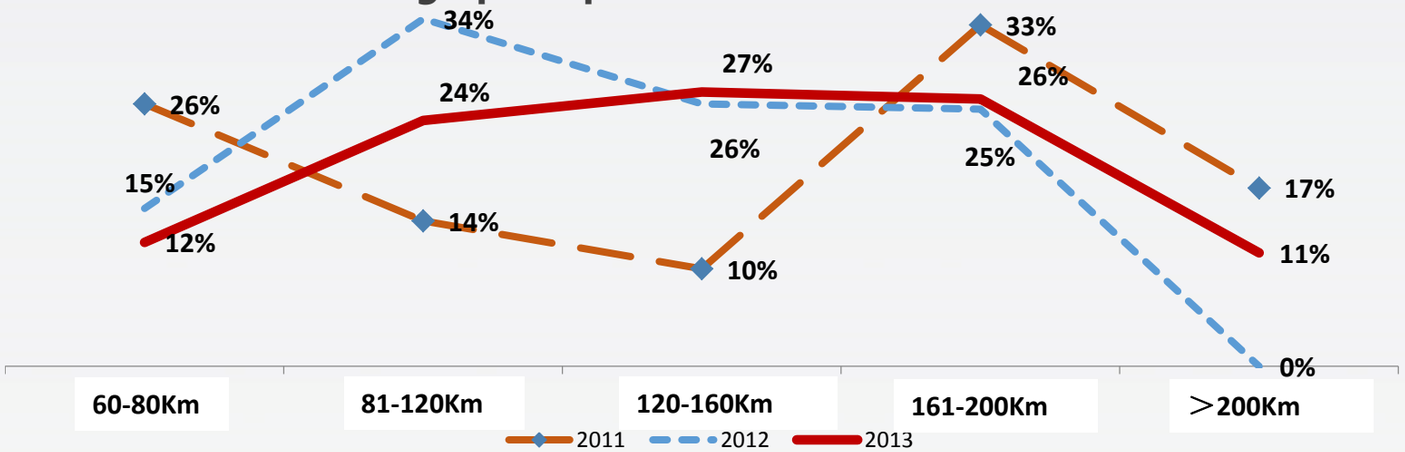


Rules for mileage from consumers of different stages

Lately research achievements of potential consumers 'cognition——

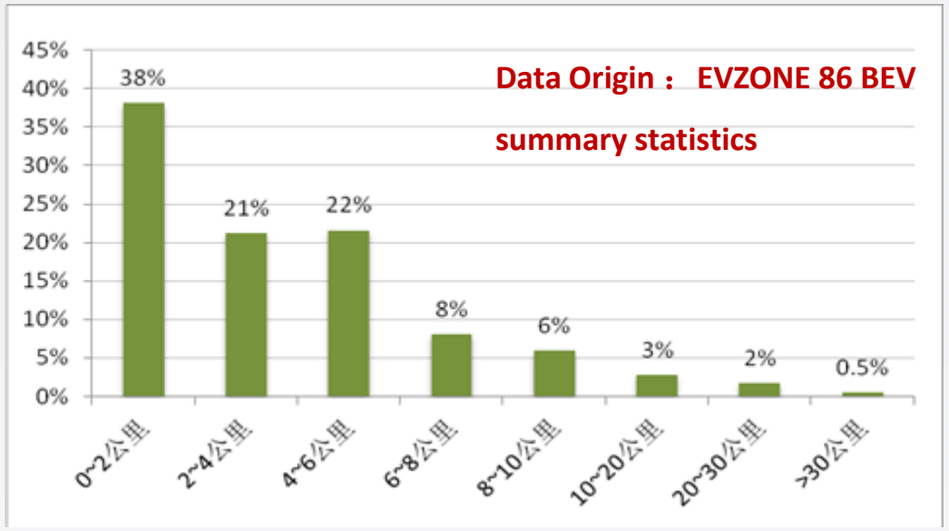
3、EV Data Analysis Research Achievements

Mileage perception from EV customers

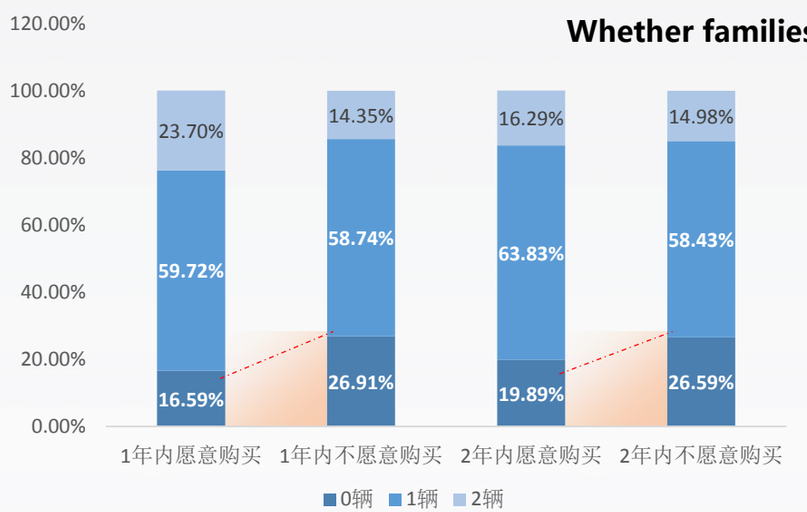


Data Origin： EVZONE summary statistics

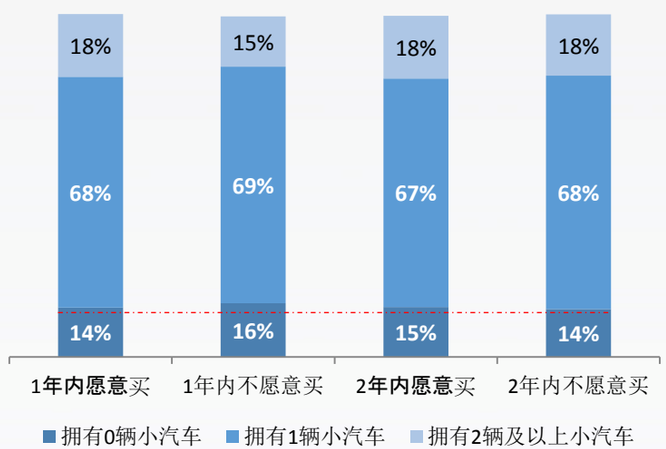
average range(km) driven per day of customers4.13



Whether families own a car &buying EV



2012



2013

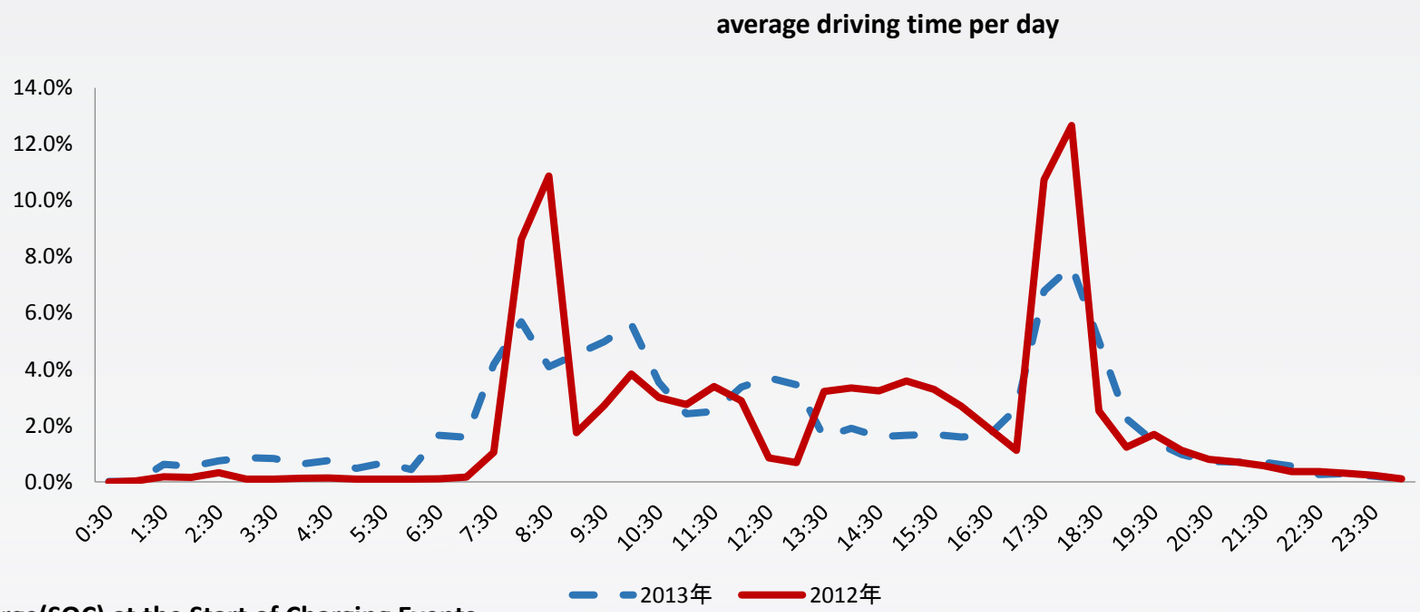
The changes on range requirements might caused by Roewe 550 and BYD Qin have entered market. These types of vehicles could partly replace the first car owned by families.

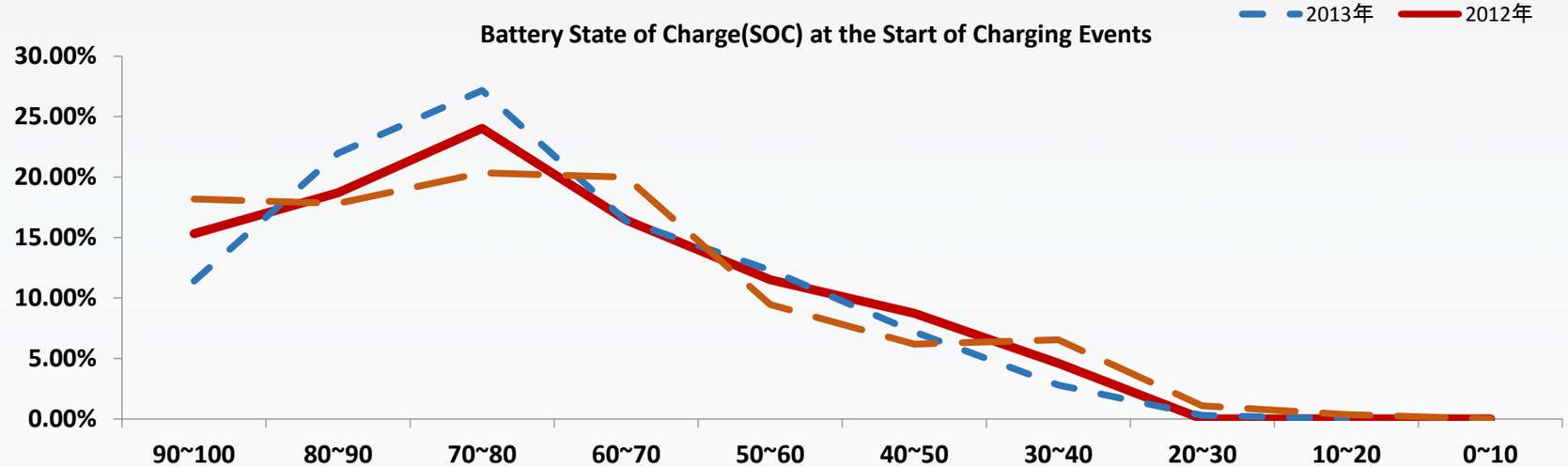
Based on the same data, the 2013 questionnaires shows that whether families already own a car has had no discernible effect on buying electric vehicles.

家中是否有车与购买的关系

3、EV Data Analysis Research Achievements

Compare to 2012 data, it shows that customers use electric vehicles not only during the morning and evening rush but also the midday. This indicates that customers have set up confidence of range. They can use the car repeatedly per day. But "battery protection" phenomenon is still existing, and tend to reach 70%.



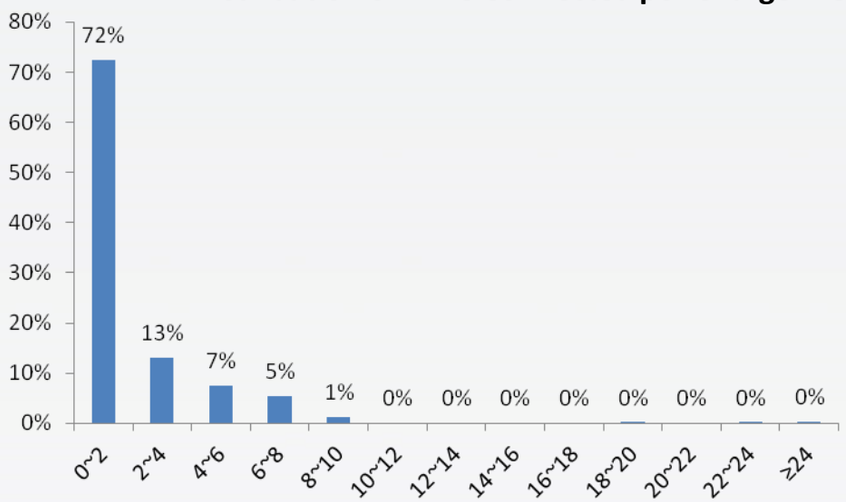


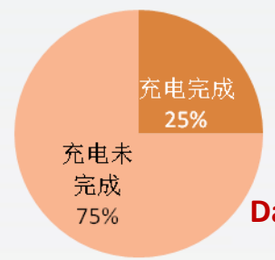
Data Origin： EVZONE 86 BEV summary statistics

3、EV Data Analysis Research Achievements

Time for consumers form Shanghai charge their vehicles is less than two hours for now.

Distribution of Time Connected per Charge Event





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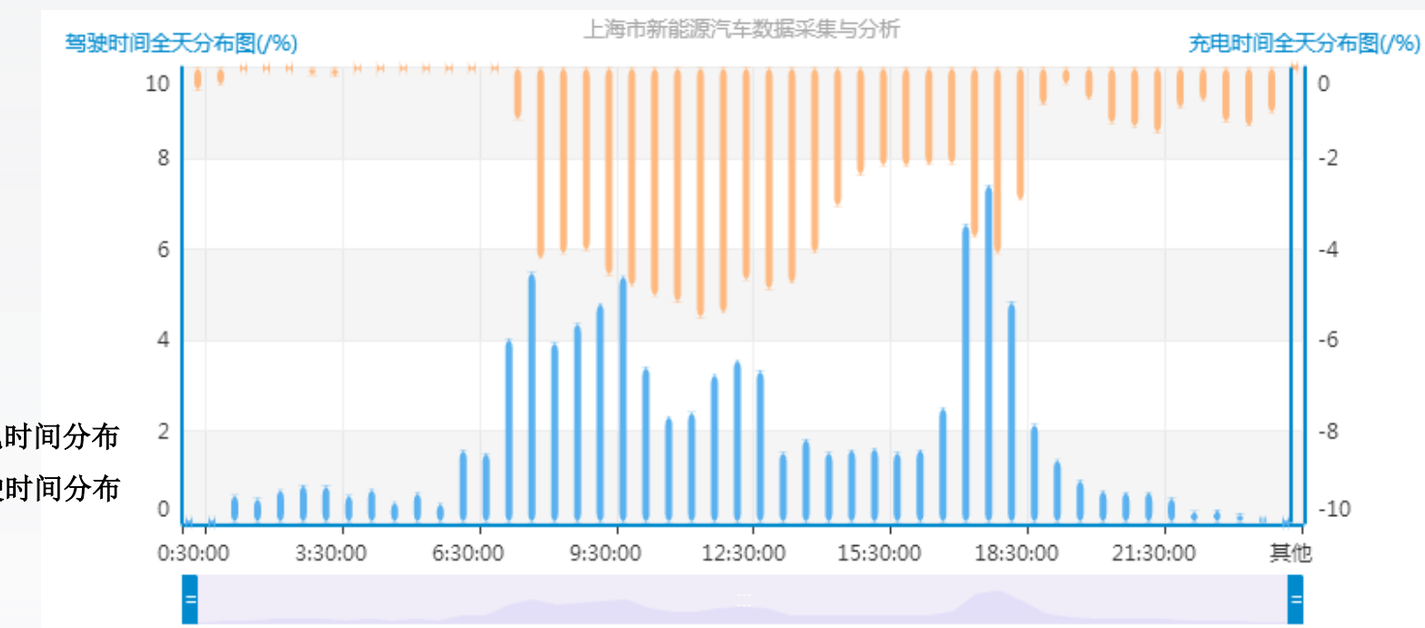


Based on the actual data from consumers, most consumers from Shanghai charge their vehicles less than 2 hours and over 75% consumers use their vehicles before they fully charged.

Compare driving hours to charging hours, almost it would be a charging peak time after a using peak time. However, the actual charging time could no t be too longer because of the using peal time at noon.

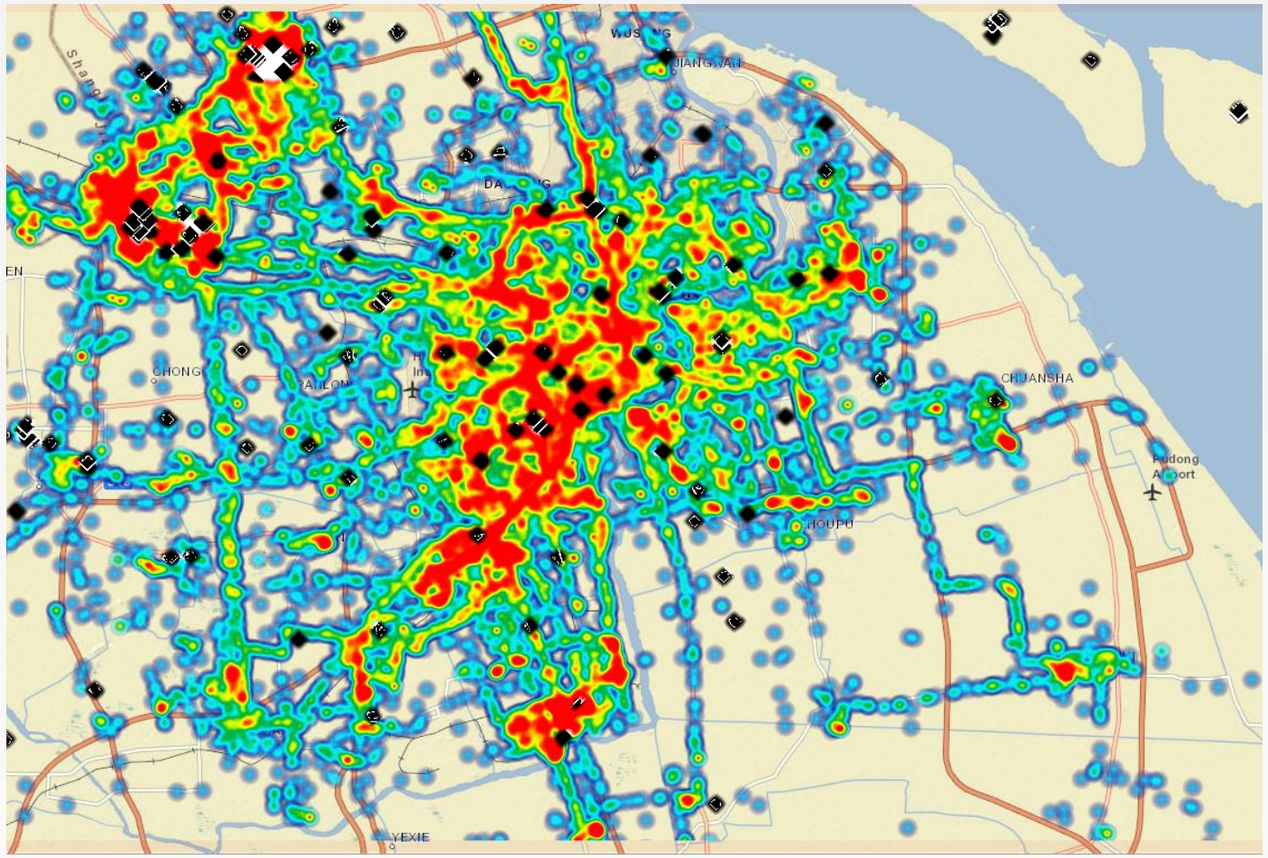
Analysis of Related Infrastructures

After comparing the hot spot maps of EV driving range to related infrastructures maps, it shows:

1. The infrastructure distribution for EV could almost match the EV driving range in Shanghai.

2. The number of charging points which are actually opened to the public is not much, the usage of charging points from EVZONE is probably 50%. So the numbers and spaces of public charging infrastructure still need to be planed and established reasonably.

EV Customers Actual use and charging facilities layout



The End