

EVS DEVELOPMENT IN CHINESE CITIES AND THE DRIVERS



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ABOUT ERI

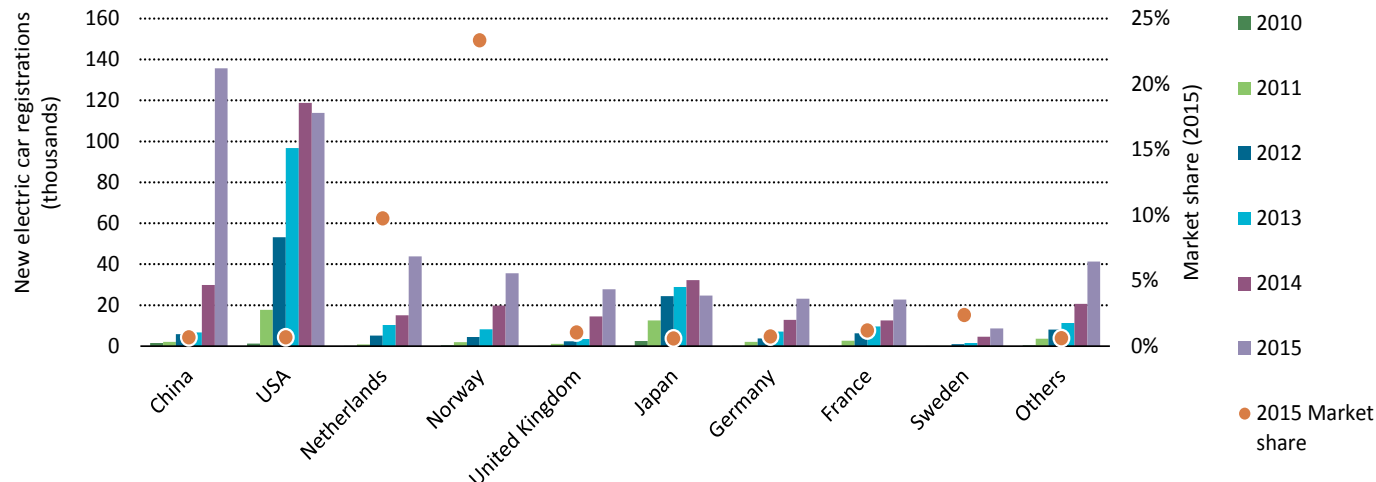


- Energy Research Institute is the national research organization conducting comprehensive studies on China's energy economic issues closely related with social and economic development.
- ERI now consists of more than **80** researchers in **6** research centers: energy supply, energy efficiency, climate change, low carbon development, renewable energy, international collaborations.
- Energy efficiency center devotes itself to the researches on theoretical methods of energy resource rational arrangement and utilization, significant energy conservation strategy and planning, policies and measures to promote and raise energy efficiency; assists the government departments to design and implement energy conservation social engineering, and projects; guides assessments and auditing for energy conservation projects; conducts policy researches, technical consulting and information dissemination for the energy conservation markets.

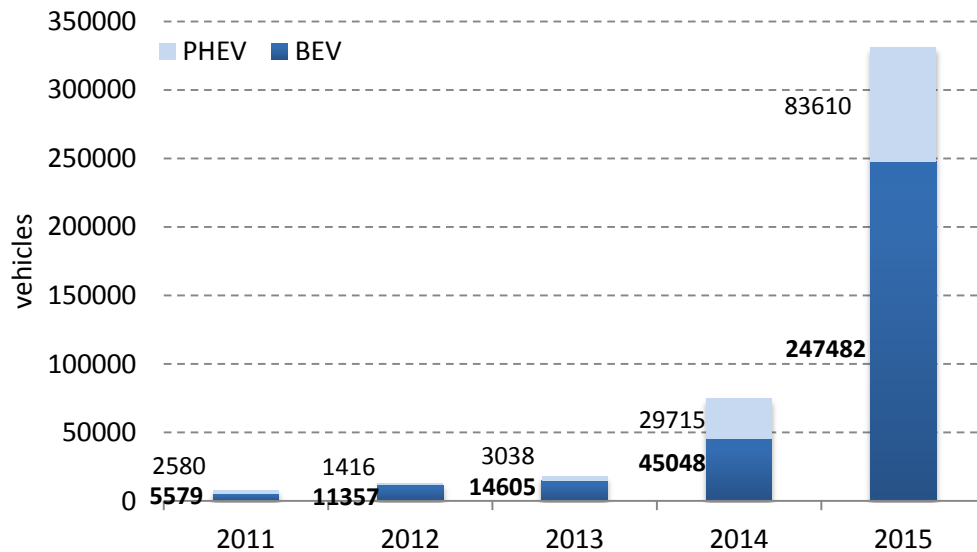
CHINA HAS THE LARGEST EV MARKET IN THE WORLD



Draft Figure: EV sales and market share in a selection of countries and regions, 2015



Source: IEA, 2016. Global EV outlook 2016. **Not finalized, please do not cite or circulate.**



- China became the largest EV market in the world in year 2015, but the market share of EVs is way smaller than those in Norway, Netherland, etc. Of all the 330 thousand EVs sold in China in 2015, BEVs take more than 70%.

CENTRAL POLICY SYSTEM FOR PROMOTING CHINA'S EVS



- In recent years, the Central Government has established the support policy system for EV industry development, technologies, finance and taxation, and administration, covering the whole industrial chain ranging from the R&D, promotion to industrialization.

Macro policy

- ✓ “Automotive industry adjustment and revitalization plan”: developing NEVs;
- ✓ NEV as the strategic emerging industry;
- ✓ Energy saving and NEV development plan: 2015 and 2020 goal;
- ✓ Foreign investor guideline (2014): encourage NEV key parts manufacture.

Finance, subsidy and taxation

- ✓ Fiscal Support for Promoting NEVs;
- ✓ Special funds allocated by the central government to support demonstration and promotion;
- ✓ BEV and FCEV exempt from consumption tax, vehicle and vessel tax, purchase tax;
- ✓ Award for charging infrastructure construction;
- ✓ Favorable electricity price for EVs.

Technical policy

- ✓ Special funds are provided for NEVs and parts technical upgrade and transformation;
- ✓ NEV industry innovation projects;
- ✓ NEV technical standards are formulated and improved;
- ✓ Guidance on Construction of Charging Infrastructure for EVs

Administration

- ✓ Admission administration of NEV manufacturers and products;
- ✓ Administrative regulations on newly built BEV passenger vehicle enterprises;
- ✓ Requirements on automotive power battery industry;
- ✓ Regulation on EV Power Battery Recycling and Reuse Technology.

EV PROMOTING POLICIES CHRONOLOGICALLY



State Council	Planning on adjustment and revival of automobile industry	Decision on Accelerating the Fostering and Development of Strategic Emerging Industries	12th FYP of Social and Economic Development Equipping and Management Method for Official Vehicles	Industrial Transistion Upgrade Plan		Guidance on Promotion of New Energy Vehicle Development	Guidance on Construction of Charging Infrastructure for EVs
Departments Jointly	Notice of Pilot Demonstration and Development of Energy saving and New Energy Vehicles Interim Subsidy Method on Demonstration and Development of Energy Saving and New Energy Vehicles	Subsidy on Private New Energy Vehicles Notice of Demonstration and Development of Energy saving and New Energy Vehicles in Public Service Areas	Guidance on Strategic Emerging Industries Globalized Notice of Pilot Demonstration and Development of Energy saving and New Energy Vehicles	Development Planning for Energy saving and New Energy Vehicles 2012-2020 Notice of Promoting Hybrid Public Bus Demonstration Technology Innovative Project of New Energy Vehicles	Fuel Consumption Evaluation Methods for Passenger Cars Promoting Hybrid Public Bus in non-pilot cities Notice of Demonstration and Development of New Energy Vehicles	Notice of Supporting Demonstration and Development of New Energy Vehicles in Shenyang Changchun Implementation measures of Purchasing New Energy Vehicles for governments and Public Institutions	Fiscal Support for Promoting New Energy Vehicles 2016-2020
NDRC						Notice of Electric Price for EVs.	
MIIT			12th FYP of Industry and technology Innovaion	Battery Electric Passenger cars-Specifications			
MOST			12th FYP of Science and Technology Development	12th FYP of Electric Vehicle Technology Development			
SAT				Vehicle and Vessel Tax Law of the People's Republic of China			
MOT						Implementation Guidance on Demonstration and Development of New Energy Vehicles	
	2009	2010	2011	2012	2013	2014	2015

Figure China's NEV promotion policies since 2009

SUBSIDY IS KEY FOR THE TREMENDOUS GROWTH



Table Purchase Subsidy for NEVs in different cities

City	BEV passenger cars	PHEV	FCEV passenger cars
Beijing	80≤R<150 : RMB 31,500 (4,420 EURO) 150≤R<250 : RMB 45,000(6,323 EURO) R≥250: RMB 54,000(7,587 EURO)	—	RMB180,000 (25,290 EURO)
Shanghai	RMB 40,000(5,620 EURO)	RMB 30,000(4,215 EURO)	RMB 200,000 (281,000 EURO)
Tianjin	80≤R<150 : RMB 31,500 150≤R<250 : RMB 45,000 R≥250: RMB 54,000	R≥50: RMB 31,500	—
Guangzhou	80≤R<150 : RMB 35,000(4,907 EURO) 150≤R<250 : RMB 50,000(7,010 EURO) R≥250: RMB 60,000(8,412 EURO)	R≥50: RMB35,000	RMB 200,000

Source: CATARC



- Beiqi EV200
- Range: 200 KM
- 230,000 RMB (€30,000)
- 140,000 RMB (€ 18,800)

WILLINGNESS TO BUY SURVEY



Willingness to buy

PHEV

9.7%

BEV

11.3%

ICE

78.9%

Top 3 Reasons for not buying

Lack of
Chargers 67.8%

Short range
50.7%

Quality problems
41.9% (fake range,
short timelife for
battery, safety)

Main Reasons for buying

Super
Cities
25.5%

No
constraints on
purchasing
and driving

Big
Cities
17.0%

Fuel
saving

Small
Cities
20.3%

Subsidy

Source: iResearch 2016.

VEHICLE PURCHASE RESTRICTIONS



Table NEV Plate policy and restrictions for traditional vehicle purchasing in different cities

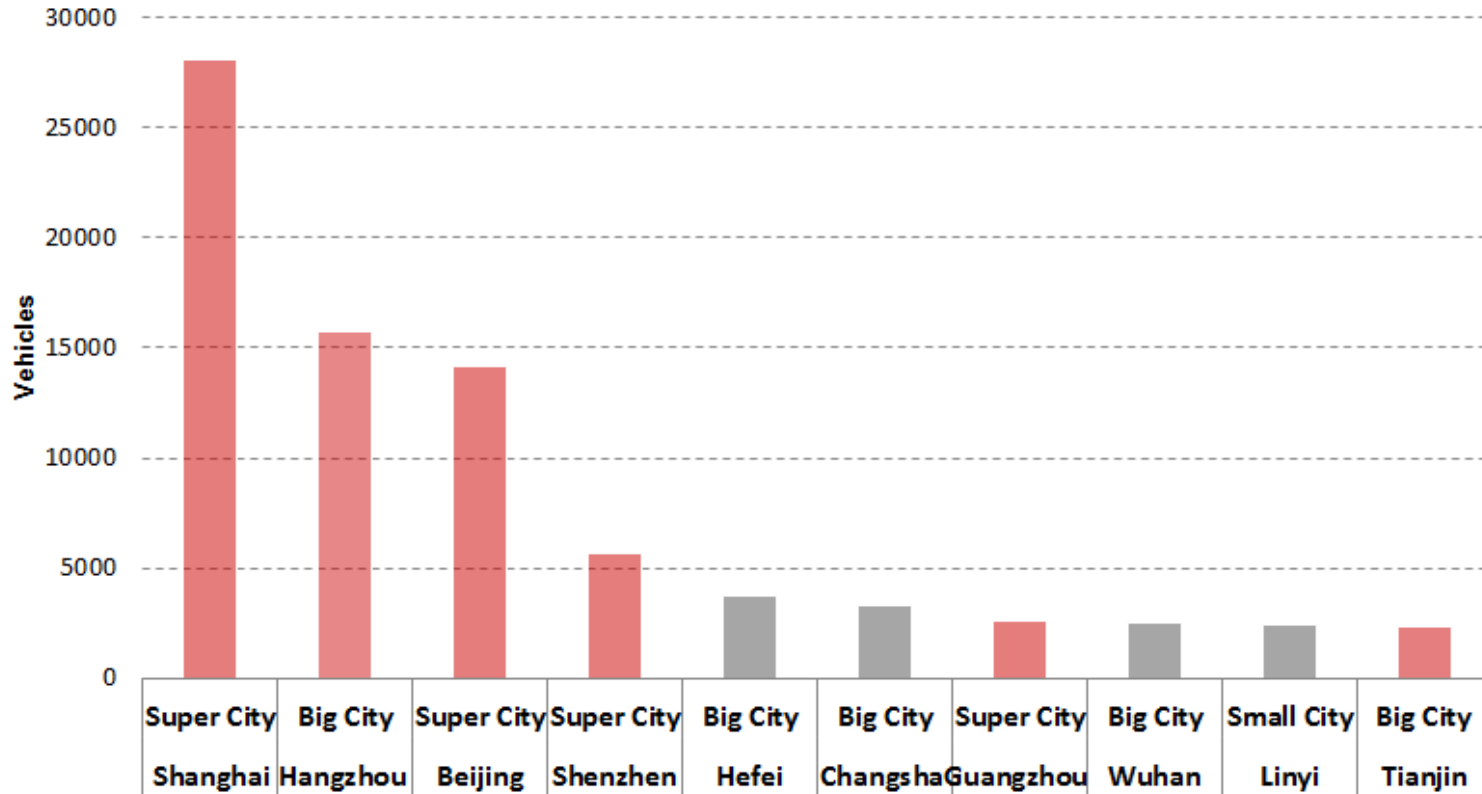
City	NEV plate	Issue date	Restrictions for traditional vehicle purchasing
Beijing	Obtain license plate directly	Jan. 2016	Dec. 2010
Shanghai	Obtain license plate directly (Quota)	May 2014	1994
Tianjin	Obtain license plate directly	Dec. 2014	Dec. 2013
Shenzhen	Lottery(20,000 quota)	Dec. 2014	late 2014
Hangzhou	Obtain license plate directly	April 2014	Mar. 2014
Guangzhou	Obtain license plate directly	April 2014	July 2012
Guiyang	Obtain license plate directly	Sep. 2015	July 2011

- The quota is way bigger than the actual sales of EVs annually, so it equals to obtain the license plate directly in Shenzhen. (Shenzhen 5.7 thousand EV stock in year 2015)
- The purchase restrictions have the biggest influence on consumers' choice on EVs.

CITIES RANKING IN EV FLEET



Figure China's top 10 cities with the biggest EV ownership



Source: ChinaEV100.

- Shanghai has the biggest EV fleet of 28 thousand vehicles, and then followed Hangzhou, Beijing, Shenzhen, etc. There is a great overlapping between the top cities with the biggest EV fleet and the ones which are now executing vehicle purchasing and driving restrictions.

VEHICLE DRIVING RESTRICTIONS



Table NEV driving restrictions in different cities

City	NEV traffic restriction	Traditional vehicle restriction	Policy
Beijing	N	Y	NEV free of traffic limitation
Shanghai	Y	Y	Priority in traffic pass and license issue
Tianjin	Y	Y	Restricted by tail number
Shenzhen	Y	Y	Restricted by tail number
Hangzhou	Y	Y	Restricted by tail number Research on favorable policies for license plate, annual examination, road toll and parking fee
Guangzhou	Y	Y	NEV free of traffic limitation
Guiyang	N	Y	NEV free of traffic limitation

Source: CATARC



Beijing

- The whole city is a parking lot!!!!

CASE STUDY



Shanghai

- Borrowing the experience of quota allocation policy from Singapore, Shanghai started the auction policy for the license plate for vehicles. Until recently, the auction price always reaches the alerting price set by the government (about €10,000 per plate). Therefore, the auction mechanism turns to be lottery then.
- For private vehicles, drivers can get the license plate for free but only with installation certification of chargers.
- Unlike cities like Beijing, the PHEVs are also in the list car models that covered by the above policies, which results in the hot sales of Qing by BYD in Shanghai.

CASE STUDY SHANGHAI



Table Different EV models in the list for purchasing and driving

Models	Original price 1000 Euro	Range KM	Central Subsidy 1000 Euro	Local Subsidy 1000 Euro	Final price
Beiqi E150 EV	29.8-31.2	150	6.1	5.4	18.4-19.7
BYD E6	41.9-44.6	300	7.3	5.4	29.2-31.9
BYD Qing	25.6-28.4	70	4.3	4.1	17.3-20.0
JAC iEV	22.9	200	6.1	5.4	11.5
Rongwei E50	31.7	120	4.3	5.4	22.1
Rongwei550PHEV	33.6-35.1	58	4.3	4.1	25.3-26.8
DENZA	49.9-53.9	300	7.3	5.4	37.2-41.2
RIICH M1-EV	22.9	120	4.3	5.4	13.3
CHEVY Springo	34.9	200	6.1	5.4	23.4
LF7002CEV	33.8	150	6.1	5.4	22.3
Venucia	36.2-38.1	175	6.1	5.4	24.7-26.6

Source: XCAR.com.cn

http://info.xcar.com.cn/201507/news_1825190_1.html

ISSUES ENCOUNTERED



- Subsidy
 - The subsidy policy has high supervision costs especially for the country like China.
 - Lots of vehicle manufacturers cheating to get the subsidy: low quality batteries, fraud labelled ranges, etc.
 - The subsidy for EVs would completed phased out in the year 2021, and let the market decide the penetration rate of EVs.
- Local protectionism
 - Only domestic EVs were on the list for subsidy and free plates;
 - Local produced EVs were protected against other EVs, only if the vehicle manufacturers permitted to open branch companies in that province.
 - The newly issued policy for new energy vehicles requires that at least 30% of EV models should be produced un-locally.
 - BMW i3, Tesla are now on the list of EV models enjoying the purchasing and driving preference currently.

CONCLUSION



- Chinese government are striving for promoting the EVs and making it as the strategic emerging industry.
- Besides subsidy, the purchasing and driving restrictions on conventional vehicles and preference on EVs actually plays great potential in improving EV penetration.
- There are still lots of problems in EV development in China including subsidy and local protectionism.
- Other policies like ZEV in California, carbon tax, pollution pricing are better experiences to learn from.



Thank you!

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