

China (Shanghai) International

EV Demonstration Zone

Introduction Of Data Collection & Analyze

Shanghai EV Demonstration Zone

2011.7.29

Demonstration Zone Introduction

Data Collection & Analysis Plan

Progress Status Introduction

Next Step

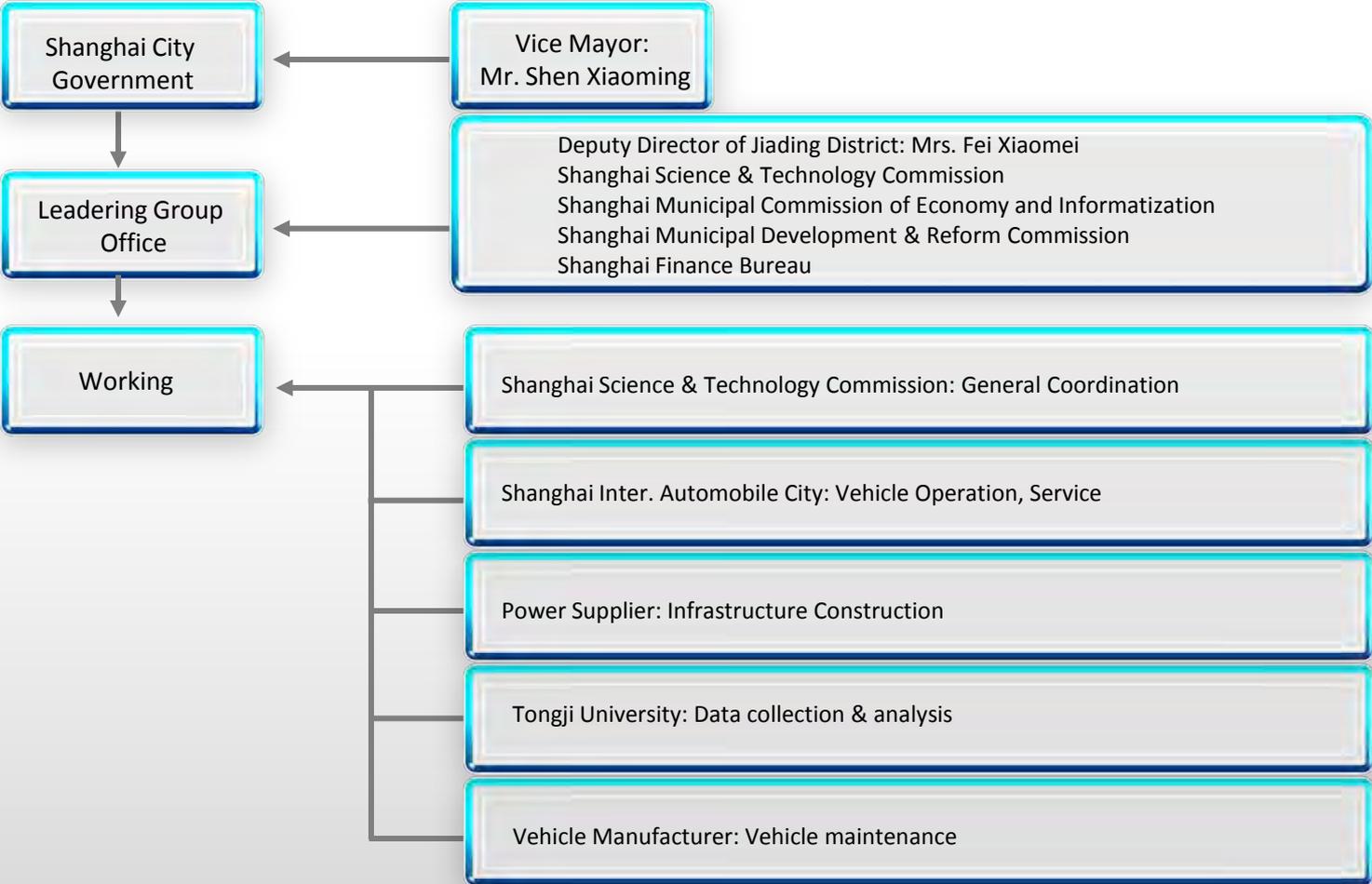
At the 1st Clean Energy Ministerial (CEM) held in Washington D.C on July 19th -20th of 2010, the Electric Vehicle Initiative (EVI) proposed by China, USA and other countries received very positive response from France, Germany, Japan, Spain, South Africa, Sweden, Portugal, Denmark and International Energy Agency (IEA). An important part of this initiative is to build electric vehicle international pilot cities.



In January 2011, Shanghai was selected as the electric vehicle international pilot city by the Chinese government and Jiading district of Shanghai as the electric vehicle international demonstration zone. Wan Gang, the minister of ministry of science and technology and Han Zheng, the Major of Shanghai uncover the plate in the 2011 International Forum on Electric Vehicle Polit City and Industrial Development in April.



Organization Chart





Jiading District—is located in the north west of Shanghai which was established as district in the South Song Dynasty which has more than 780 years of history. It is truly a famous historical cultural city in Jiangnan.

From the first car manufactured after 1949 to the present, Jiading has converged a huge amount of whole car manufacturer and components/part manufacturers.

Area— 464.2 Sq Km

Population—2300000



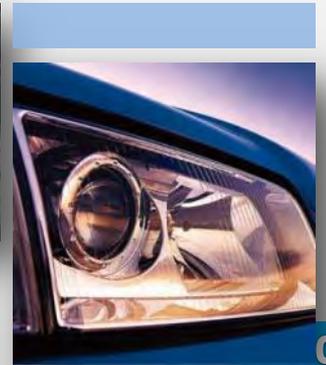
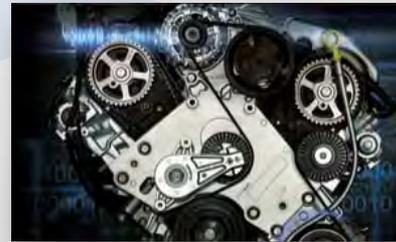
Warsaw—the capital and largest city of Poland.



Paris—the capital and largest city in France

Area— 516.9 Sq Km

Population— 2201578



Anting, shanghai international pilot city— area of 100 sq km.
The whole investment is over 67 billion, is willing to build an industry commanding height which cover the whole car manufacturer and part manufacturer, R&D, trade and exhibit, automobile culture and competition.

EV R&D



AUTO EDU



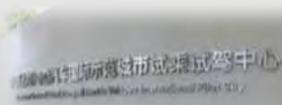
AUTO SERVICE



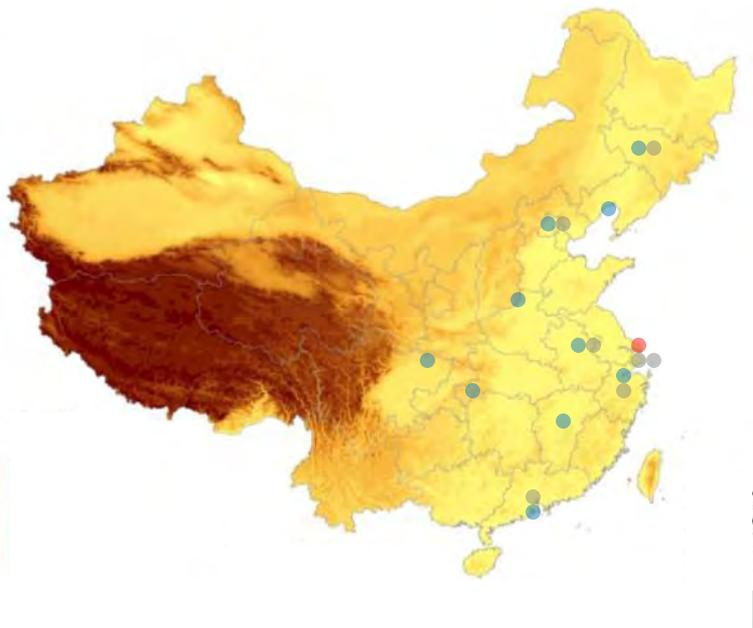
CULTURE



EV



China EV Demonstration Plan



10 City 1000 EV

- Shanghai
- Beijing
- Chongqing
- Changchun
- Dalian
- Hangzhou
- Jinan
- Wuhan
- Shenzheng
- Hefei.....

Private EV Incentive

- Shanghai
- Beijing
- Changchun
- Hangzhou
- Shenzheng
- Hefei

International Demonstration

- Shanghai

Three “EV”City



● **Shanghai-**
the only one
city in china
integrating EV
demonstration,
operation, sale
as a whole.

International Forum on EV Pilot City & Industrial Development

The International Forum on Electric Vehicle Pilot City and Industrial Development was held on Apr.22 in Shanghai

- ◆ Minister Wan Gang & Major Han Zheng uncovered the plate for Demonstration Zone
- ◆ Release the "Shanghai Declaration"
- ◆ Signed the letter of intent for partnership organization

EV Test Drive Center

On May.15, the first EV Test Drive Center was opened. On the same day, the official website was released



EV Incentive for Private

On Apr.6, the first 8 EV buyers hit the road



Demonstration City Partnership

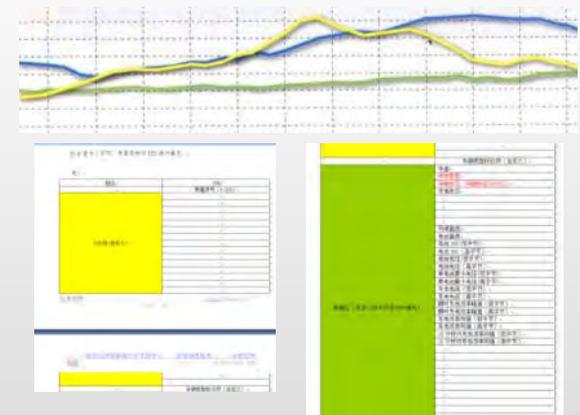
Included many international and national well-known car manufacturers, infrastructure constructors, energy suppliers and insurance companies.

Completed the first batch of AC Charging piles

Constructed 45 AC charging piles for the first batch of EV
Chose the location of the charging station

EV Data Collection

Started the EV data collection and communication



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Manual note & data real time collection

Data Resource

Questionnaire collection

Vehicle performance test



Remark : BYD will open the protocol in Sept.

Manual daily note Content

Shanghai International EV Demonstration Zone Working Daily Record

No	Date	Start time	Stop time	Before journey reading	After journey reading	Petrol level before journey	Petrol level after journey	weather
1								
2								
3								
4								
5								
6								

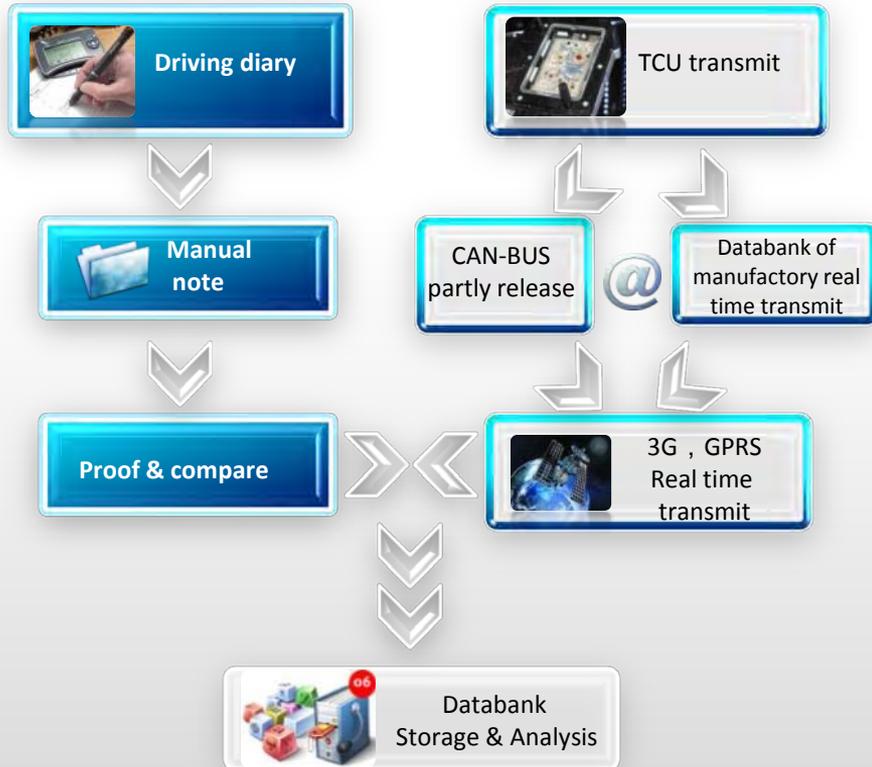
Shanghai International EV Demonstration Zone Vehicle Charging Record

No	Date	Person	Start time	Stop time	Remain electric power	Remain electric power	Where	Fast/S low charge	Other
1									
2									
3									
4									
5									
6									
7									
8									

Real time data collection content

序号	数据分类	变量	定义及说明	数据格式	采集途径
4	Vehicle Data 车辆信息	Vehicle ID 车辆ID	车辆的ID是指车辆ID	共有数据	人工输入
5		Date/Time Stamp 日期与时间数据	日期和时间数据统一	共有数据	GPS采集
6		Event type (key on / key off) 点火与熄火点数据	分别指启动电动车并	共有数据	CAN总线
7		Odometer 行驶里程数	指在一次点火与熄火	共有数据	CAN总线
8		GPS (longitude & latitude) GPS数据 经纬度	根据车载GPS数据	共有数据	GPS采集
9		液体燃料消耗量	指在一次点火与熄火	共有数据	CAN总线
10	一般性数据信息 (可共享) Ordinary Data (sharing)	Date/Time Stamp 时间与日期数据			GPS采集
11		Charging Event Info (Location, ID, Type, etc) 充电信息	充电事件发生的地	共有数据	人工输入
12		Battery state of charge 电池电量数据	指对驱动电机供电的	共有数据	CAN总线
13		Connect & Disconnect Times (plugged in & out) 充电桩插插时间		共有数据	CAN总线
14		Start & End Charge Times 充电起止时间	指车辆开始插充电桩	共有数据	CAN总线
15		Charging Voltage 充电电压	指车内电池处测得的	共有数据	CAN总线
16		Charging Electric Current 充电电流		共有数据	CAN总线
17		Total energy (KWh) per charging event 每次充电的总电量		共有数据	CAN总线
18		Environment Temperature 环境温度		我方	CAN总线
19		Battery Temperature 电池温度		我方	CAN总线
20				我方	CAN总线
21	Battery Ceiling Voltage 电池总电压 (拔插时) (plugged in & out)		我方	CAN总线	
22	Single Cell Min Voltage 单电池最小电压		我方	CAN总线	
23	Max & average Instantaneous Peak Power 最大与平均瞬间充电量		我方	CAN总线	
24	Rolling 15 Minute Average Peak Power 每十五分钟的平均峰值电量		我方	CAN总线	
26	Weather 驾驶天气情况			我方	

Data Collection Process

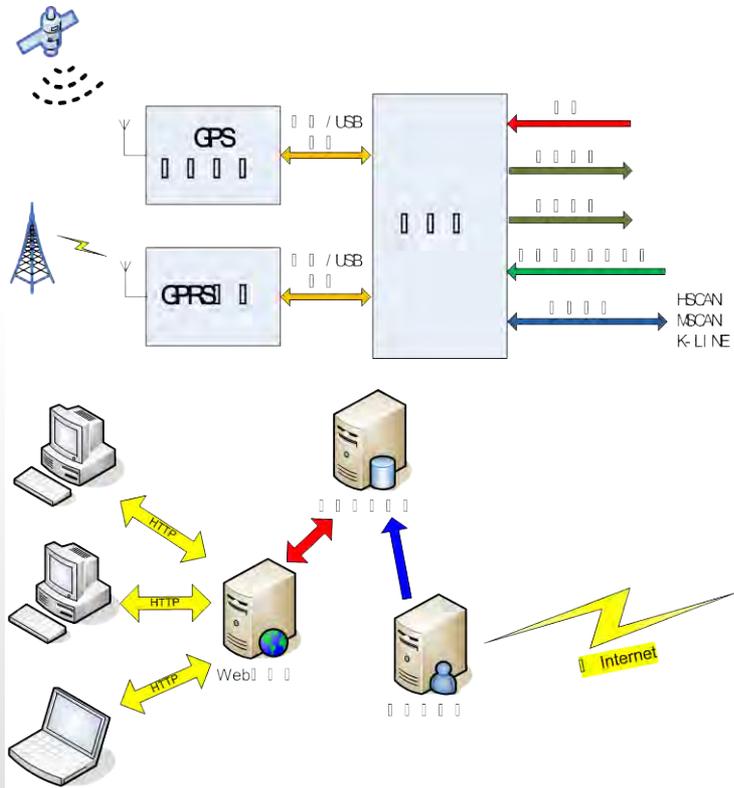


Collection definition

Real-time data collection is a process which involves downloading real time data of running status of vehicles and key parts through the vehicle data acquisition instruments, and then transferring data to a network data server through internet



Data Collecting System



Data Collection Process



Vehicle Performance Test

Vehicle performance testing refers to the vehicle performance testing in the drum test rig regularly (quarterly) to get the vehicle performance data



Testing Segment

Acceleration Time

Endurance
Mileage

Max. speed
Measurement

Normal Test

Energy
Consumption Test

Endurance Test

Charging Test

Isolation Test

Research Questionnaire Procedure



Questionnaire Sample

These 382 samples come from questionnaire of 4299 visitors ,Apr.21 – Jun.15

•Personal information



•Test-drive evaluation



•Cognition & purchase intention



•Service about test-drive & ride center



Demonstration Zone Introduction

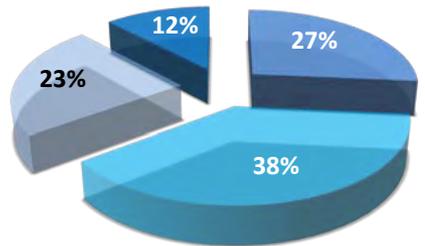
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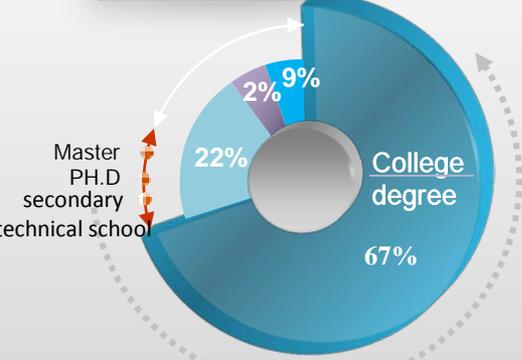
Family income analysis



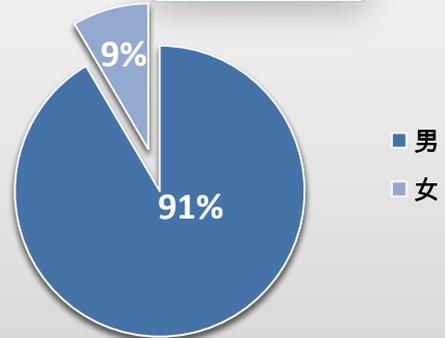
Age Preference



Academic background preference



Sex Preference

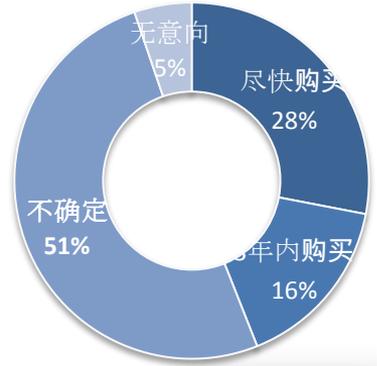
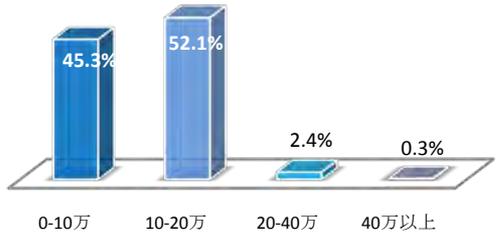


Target Crowd Orientation



- Employee
- Male: 20-40 years old
- Value environment protection & fashion
- Middle & High Level Education
- Initiative, willing to accept new things

Test Drive Consumers Requirement Analysis

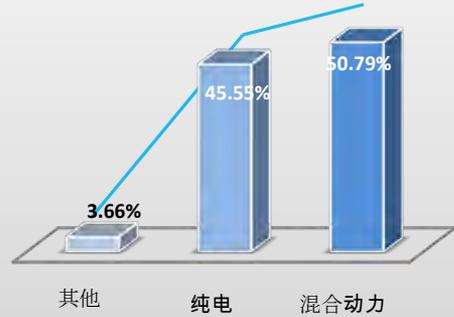
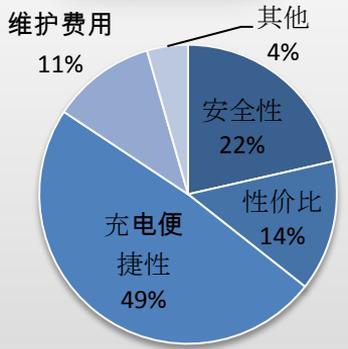


Price Reference

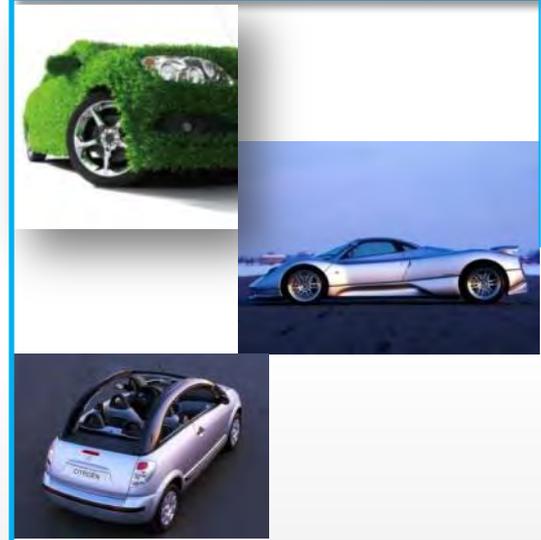
Purchasing Time

Attention Tendency

Types Choice



Requested Vehicle Analysis



- Environment Friendly & fashion
- Suitable for family
- Moderate price
- Safety and convenience for charging

General Status

Total driving distance: 2951
Total driving time : 95h. (till Jun.15)
Total energy consumption : 465.57 Kwh

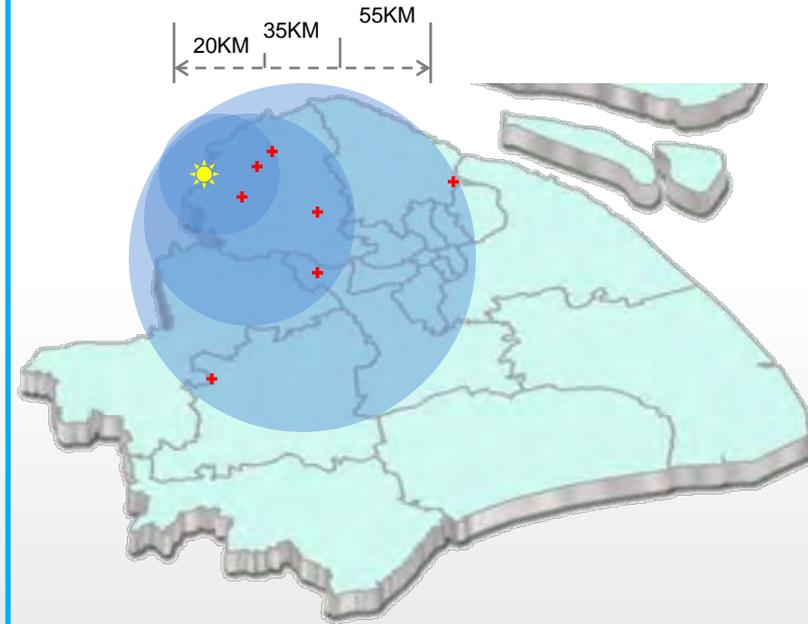
Average Status

Average distance of single drive : 32Km
Average energy consumption per km : 0.16 Kwh

Consumers

Consumer average daily distance : 51 km
28.6% users drive 63~72Km/day
28.6% users drive 42~61 Km/day
42.8% users drive 14~22 Km/day

Area Position Diagram



General Status

Total charging time : 193h

Average Status

Average single charging time : 6.2h

Consumers

Average remanent energy : 45.63%



Charging Habit



220V AC charging
93.55%



In-home charging
6.45%

Charging Facilities Construction Status



Till Jul.25, 45 charging piles installed

- ◆ Business Tower : 20
- ◆ Roadside : 5
- ◆ Test Drive Center : 20

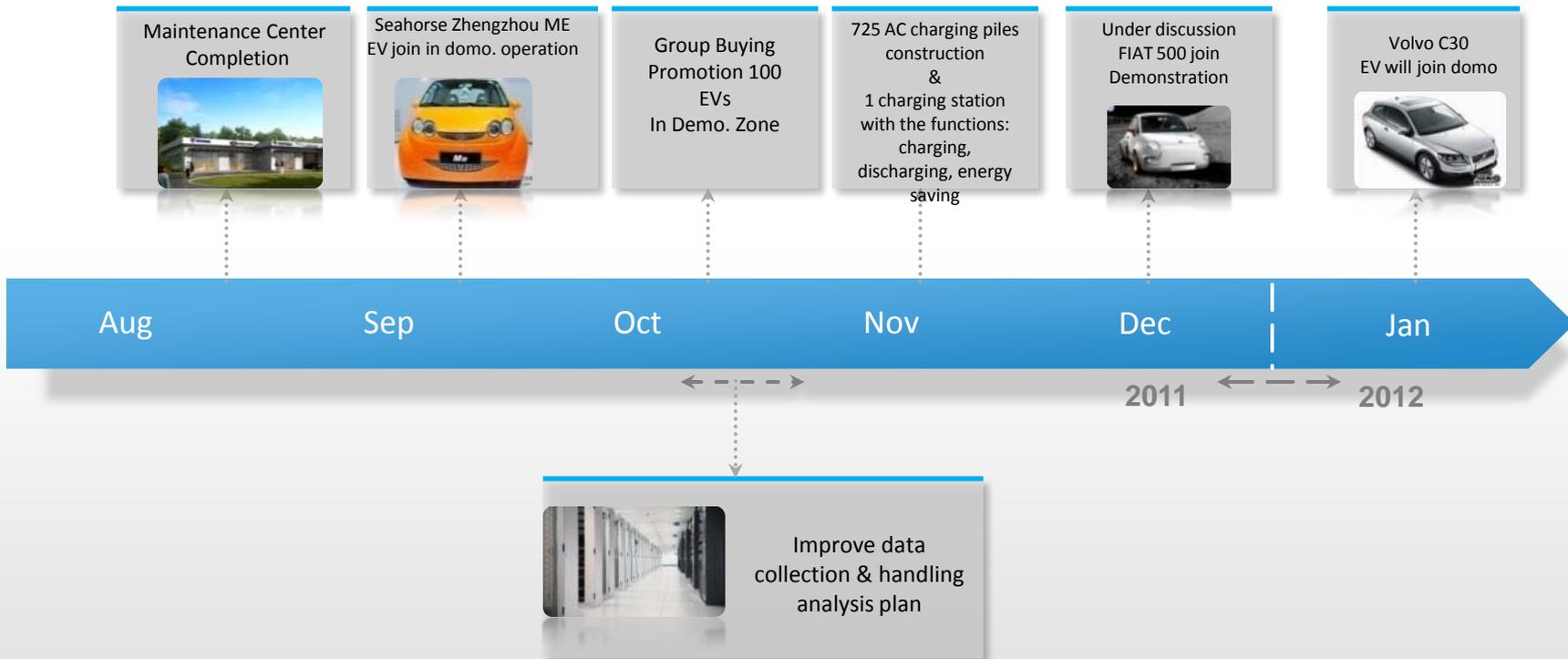


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- **Coordinate with GM & Nissan to introduce Volt & Leaf to demonstrate in Shanghai as soon as possible**

- **Start the communication of technology sharing report outline as soon as possible**

谢谢

Thank You

2011.7.29