The development strategy of clean-energy vehicles in China

Professor Jianping Wu
Present for MOST, China
清华大学-剑桥大学-麻省理工学院 低碳能源大学联盟
未来交通研究中心
Tsinghua University-University of Cambridge-Massachusetts Institute of Technology
Low Carbon Alliance Future Transport Research Center
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1. The Current Situation

- Technical route: In the early of the century, China has studied the transportation energy policy with experts and industries to meet the challenge of energy crisis.

- Route Map

- Fossil oil

- Gas

- Electric Power

- Hydrogen Energy
In 10th Five-Year Plan:

- 880 million RMB for researches Electric Powered Vehicles
- and other innovative technologies.
During the 11th Five-Year Plan:

- 1.16 billion RMB for clean-energy and new energy automobiles research
- Hundreds of automobile companies, components suppliers and universities involved.
Technology Achievements

- **Patents**
  - 4,528 patents for electric vehicles
  - Covering: vehicle design, battery, driving motor, key materials and battery management.
Technological Achievements

Hybrid

Plug-in Hybrid

Electric Powered

Fuel cell
Technological Achievements

- **Battery:**
  - Nickel-metal battery
  - Lithium ion battery
  - Super capacitor battery
Technological Achievements

- Driving motor:
  - Permanent magnetic brushless motor,
  - AC asynchronous motor and
  - Switch reluctance motor
Technological Achievements

- Fuel cell:
  - Power density
  - Reliability
  - Lifetime
  - Low temperature performance
  - Environmental adaptation
25 cities have been supported by national finance to implement pilot demonstration.

- Beijing Olympic
- Shanghai Expo
- ......

Positive atmosphere for industrialization and innovative business model.
Development Strategy of Industrialization of electric vehicle

- **Pilot demonstration**
  - 8.8 billion RMB investment
  - 27,432 electric vehicles in 25 cities
    - 9,834 electric cars,
    - 2,513 electric buses,
    - 3,305 hybrid electric cars,
    - 10,495 hybrid electric buses,
    - 52 fuel cell vehicles
    - 174 charging stations
    - 8,107 charging piles.
International cooperation

July 2010, China and America launched Electric Vehicles Initiative (EVI),

Now, 15 countries have joined the EVI, (China, America, France, Germany, Britain, Denmark, Finland, Italy, New Zealand, Portugal, Spain, Sweden, Japan, India, South Africa and IEA).
Development Strategy of Industrialization of electric vehicle

- **International Pilot Study:**
  - Shanghai as the international pilot city
  - Jiading district as the international pilot zone (EVZONE)

- **International collaborative study**
  - Key technologies of electric vehicle in urban condition, (International Cooperation Project)
  - Validation and contrastive analysis of international electric vehicle technologies (863 Project)
Development Strategy of Industrialization of electric vehicle

- The Jiading Pilot Zone
  - 45 types of electric vehicles
  - 17 international automobile enterprises (e.g. GE, Volvo, ...)
  - 849 AC charging piles
  - 10 DC charging piles
  - 2 charging stations
  - 1 hydrogen refueling station
  - data collection and monitoring of 5,000 cars simultaneously
2. the latest policies and measures

- **Targets:**
  - By 2015, production and sales of 500,000 electric vehicles
  - By 2020:
    - production and sales of 2 million electric vehicles
    - fuel cell vehicle and vehicular hydrogen energy reach to the international advanced level
Policy and measures

- **Beijing**
  - **By 2013:**
    - 5,000 electric vehicles
  - **By 2015,**
    - 50,000 electric vehicles
  - **By 2020,**
    - at least 50% of newly increased private cars will be electric vehicles.
Policy and measures

- Innovation Capability Building
- China Industry Technology Innovation Strategic Alliance (CITISA) of electric vehicle founded
- Energy supplier - Automobile enterprise - Battery supplier alliance to support large-scale demonstration and promotion
Policy and measures

- Technological Innovation
  - Electric Vehicle
  - new commercial modes
  - energy supply systems
  - fuel cell
  - driving motor
3. Suggestions to International Cooperation

1. Increase the investment in R&D
2. support cross-industry technology development.
3. Offer purchase allowance and tax reduction
4. finance supports to developments of charging facilities and battery recycling systems
Suggestions

5. Researches on charging mode, commercial mode and standardization of PEV

6. Policies to stimulate the use of PEV
   - No license control
   - No plate number limitation
   - Permission to use bus lane, and
   - Parking priority
Suggestions

- The Shanghai (Jiading) pilot zone is open to the world for demonstration and exhibitions.
- Develop international R&D cooperated platform and strengthen cooperation between governments.
Welcome to “2013 International Forum on Electric Vehicle Pilot City and Industry Development”, 30th May to 31st May 2013, Shanghai
Thank you!