

Country Update of China

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Government Policy in 2013

- **National Action Plan on Air Pollution Control was released by the State Council in Sept. 2013**

..... at least 60% of the new and replacement purchases of vehicles for public transportation should be new energy vehicles in cities such as Beijing, Shanghai and Guangzhou.....



- **Government subsidies for new energy vehicles was renewed for three more years (2013-2015).**

Fuel-cell vehicles will qualify for rebates up to 500,000 Yuan (US\$81,000)



RD&D Programs for H2&FC in 2013

■ Innovation Project for Fuel Cell Vehicle

Budget: 130 million yuan (\$21 million), 2013-2015. Jointly supported by Ministry of Industry and Information Technology, Ministry of Science and Technology and the Ministry of Finance.

上汽燃料电池汽车发展规划



SAIC showed its new Roewe 750 FCV at an industry fair being held from 5 to 9 November in Shanghai.

SAIC plan to produce 80 FCVs by 2015. (source: SAIC)

RD&D Programs for H2&FC in 2013

- **Demonstration of Fuel Cell Sight-seeing Cars in Shenzhen.**

Budget: 25 million yuan (\$4 million), 2013-2014;

This project will see the operation of 30 FC Sight-seeing cars in OCT East Resort, a national ecological resort with three major theme parks. These FC Sight-seeing cars and H2 refueling station had been put into use to serve the Universiade 2011, but were left idle and in shutdown state in 2012.

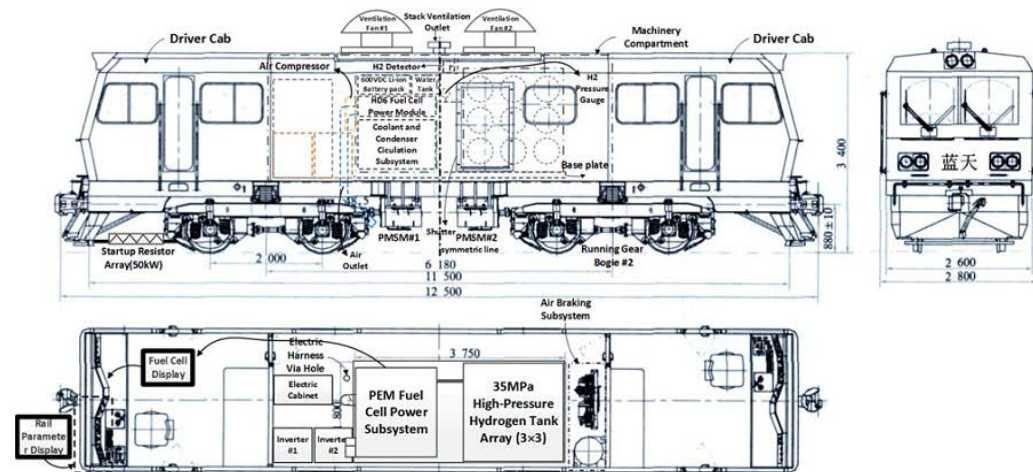


RD&D Programs for H2&FC in 2013

- Development of Fuel Cell / Supercapacitor Hybrid Low Floor Tram.**

Budget: 30 million yuan (\$4.8 million), 2013-2015;

An experiment prototype of a fuel-cell shunting locomotive was developed by Southwest Jiaotong University in Jan. 2013.



*System layout of the PEMFC locomotive.
(Source: Southwest Jiaotong University)*



RD&D Programs for H2&FC in 2013

- **Research and Demonstration of Hydrogen Production from Wind Power**
Budget: 20 million yuan (\$3.2 million);
- **Next Generation Fuel Cell Hybrid Electric Powertrain for Clean Transportation**
Budget: 8 million yuan (\$1.3 million);
- **Joint Research on Weldable Bipolar Plates for Fuel Cell and Liquid Flow Battery**
Budget: 3 million yuan (\$0.5 million);

Total annual budget (national level): 216 million yuan, approx 34.8m USD.

Commercialization Activities

- **The installation of Fuel-cell Backup Power keeps increasing.**
- **Foresight Energy Co Ltd.** had supplied 10 fuel-cell backup power systems for China Mobile base stations in 2012, and more than 60 units are planned to be delivered in 2013-2014.
- **Shanghai EverPower Technologies Ltd.** supplied 8 fuel-cell backup power systems to China Unicom in Jiangsu province in May 2013.
- **Pearl Hydrogen Technology Co Ltd.** also currently has several fuel-cell backup power systems in operation for all three main mobile phone network operator (China Mobile, China Unicom and China Telecom). The latest one was installed in Heilongjiang province in April 2013.



Source: Foresight

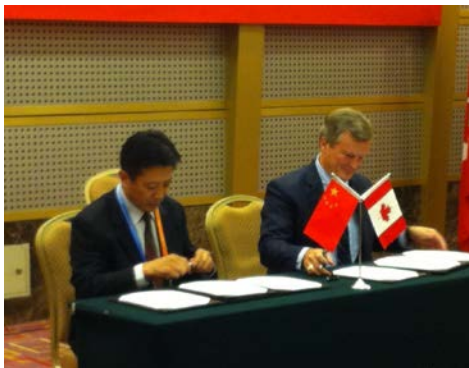


Source: Pearl Hydrogen

Commercialization Activities

- **Ballard** delivered a total of 50 fuel-cell backup power systems for deployment at 30 China Mobile telecommunication network sites. The installation and local technical support provided by **Beijing Azure Hydrogen Energy Science & Technology Corp**, Ballard's partner in China.

In March 2013, Azure acquired a 10% ownership position in Dantherm Power, Ballard's telecom backup power subsidiary. In July, Ballard agreed to provide 220 fuel cell systems to Azure. The agreement comprises 120 direct-hydrogen systems and 100 fueled by methanol and all will be delivered by year-end.



May 28, 2013, Beijing

Ballard signed non-binding MOU with Azure Hydrogen for Fuel Cell Bus development .



September 26, 2013, Shanghai

Azure and Ballard signed multi-year agreements for China fuel cell bus program.

Other Activities

- The 5th World Hydrogen Technologies Convention (**WHTC**) was successfully held in Shanghai, China, 25-28 September 2013.





Thank you