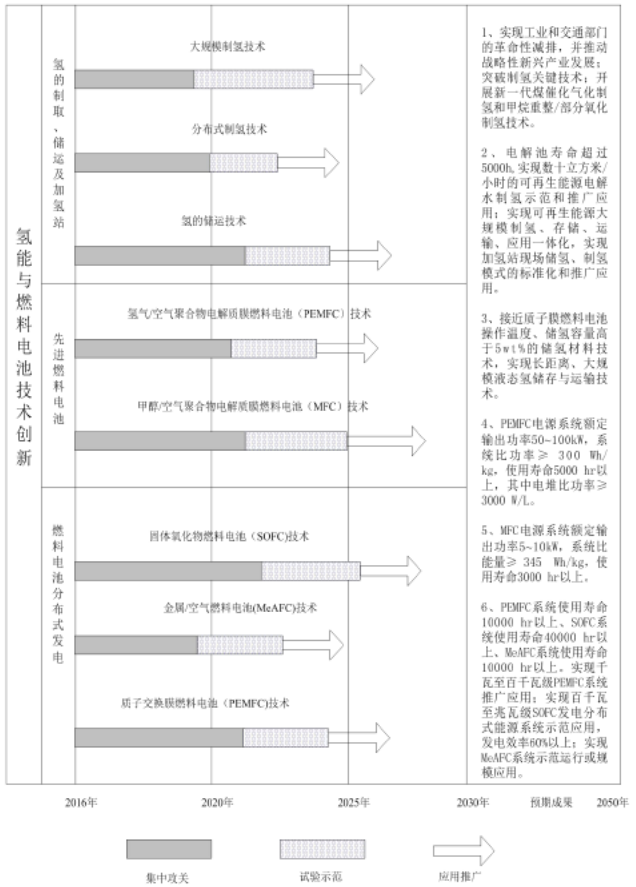
Country Update China (2016.05-2016.10)

➢ Policy and Funding

- The Energy Technology Revolution Innovation Action Plan (2016- 2030) and the Energy Technology Revolution Innovation Roadmap were released by the National Development and Reform Commission (NDRC) and China's National Energy Administration (NEA). The hydrogen and fuel cell technology innovation is one of the 15 Key Tasks listed in the Action Plan.
- The State Council issued " Thirteen-Five " National Science and Technology Innovation Plan (2016-2020). Hydrogen and Fuel Cell technology was listed in the disruptive technologies for leading industry innovation.
- Ministry of Science and Technology (MOST) launched the “New energy vehicles” pilot projects of National Key R&D Program in July 2016. In which there were two projects on fuel cell R&D, and the government funding is 175 million RMB（approx. 26 million USD).

The hydrogen and fuel cell technology innovation roadmap



Country Update China (2016.05-2016.10)

➢ Demonstration and Deployment

- ➢ On Sept. 28, 2016 an initial 12 fuel cell buses were deployed in the District of Sanshui, in the City of Foshan, Guangdong Province. On Oct. 18, another 10 fuel cell buses were deployed in the City of Yunfu. An fuel cell assembling factory and fuel cell bus manufacturing plant were also established in the City of Yunfu.
- ➢ Ballard keeps moving forward in China market with strong local partners such as Synergy and Broad-Ocean. Synergy established a joint venture with Ballard, and Broad-Ocean made a $28.3 million strategic equity investment in Ballard, through which Broad-Ocean acquired a 9.9% ownership position in Ballard.
- ➢ In May 2016, Beiqi Foton Motor Co. received an order for 100 fuel cell buses from Shouqiev Co., an alternative energy vehicle leasing company in Beijing.
- ➢ In April 2016, Zhengzhou Yutong Bus Co., the biggest bus manufacture in China, also signed a letter of intent cooperation on 100 fuel cell bus with Beijing Sinohytec Co.

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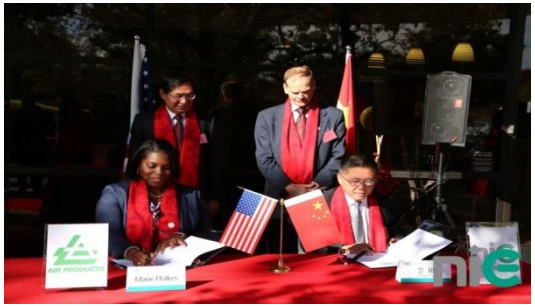
- On Aug. 31, the UNDP-GEF-MOST FCV Project Phase-III (2016-2020) was launched in Beijing. With the support of this project, more than 100 FCVs will be demonstrated running in five cities, including Beijing, Shanghai, Zhengzhou, Foshan and Yancheng.
- On Aug. 27, UNDP-China Hydrogen Economy Pilots in Rugao (2016-2020) was launched.
- The first 70MPa HRS in China was built in Dalian City. The 70MPa hydrogen dispenser, 87.5MPa hydrogen storage cylinder and 90MPa hydrogen diaphragm compressor were researched and developed with the support of national 863 project.
- Fuel cell power system was designed specifically for UAV application by many companies in China. Troowin Power System Technology Co. is one of the most famous developer. Troowin's fuel cell powered UAV has been used by Wuhan city public security bureau, which was reported by CCTV (China Central Television) in July 2016.

Country Update China (2016.05-2016.10)

➢ Latest News



- On October 13th, the National Institute of Clean-and-Low-Carbon Energy (NICE), which affiliated with Shenhua Group, signed a MOU with Air Products to potentially work together on hydrogen fueling projects in China.

- On October 14th, the world's first 2MW PEM fuel cell power plant was installed on site at Ynnovate Sanzheng (Yingkou) Fine Chemicals Co. Ltd in Yingkou, Liaoning province, China. This fuel cell power plant was delivered by AkzoNobel, MTSA and Nedstack, with support from the European Union's Fuel Cells and Hydrogen Joint Undertaking (FCH JU).

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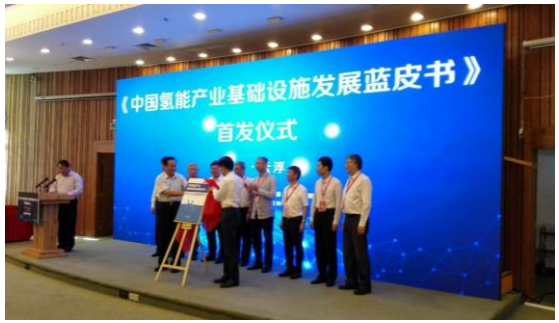
- On October 26th, Energy-saving and New Energy Vehicle Technology Roadmap was officially released, including the Fuel Cell Vehicle Technology Roadmap.

The Fuel Cell Vehicle Technology Roadmap

Country Update China (2016.05-2016.10)



HRS plan in China

- On October 28th, the Blue Book on China Hydrogen Industry Infrastructure Development（2016）was release by the National Standardization Technical Committee for Hydrogen Energy.

The Hydrogen Industry Infrastructure Developing Roadmap

	2016	2020	2030	2050
	State-of-the-art			
YIELD	180b RMB	300b RMB	1t RMB	4t RMB
INDUSTRY GOAL	H_2 production 70b m^3 H_2/y	72b m^3 H_2/y Complete Demo of industrial chain	100b m^3 H_2/y Increasing point in energy market	Become an important part in national energy
Energy-Saving Emission-Reduction	Take advantage of abandoned solar, wind and hydro energy Cut down use of coal, oil and NG; Clean use of coal			
MANUFACTURING GOAL	3 H_2 refueling stations	100 H_2 stations 200 MW FC power 10'000 FC vehicles 50 FC tram lines Demo of FC ships	>1000 H_2 stations 100 GW FC power 2M FC vehicles 3000km H_2 pipelines	Complete H_2 Grid 10 M FC vehicles Well-done H_2 infrastructure and distributed power
SUPPORT SYSTEM	Build support system which is benefit for development of hydrogen energy			
	Code & Standard Financial support	Testing and certification	Quality & Safety	Technical support Industrialize platform

Thank You

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