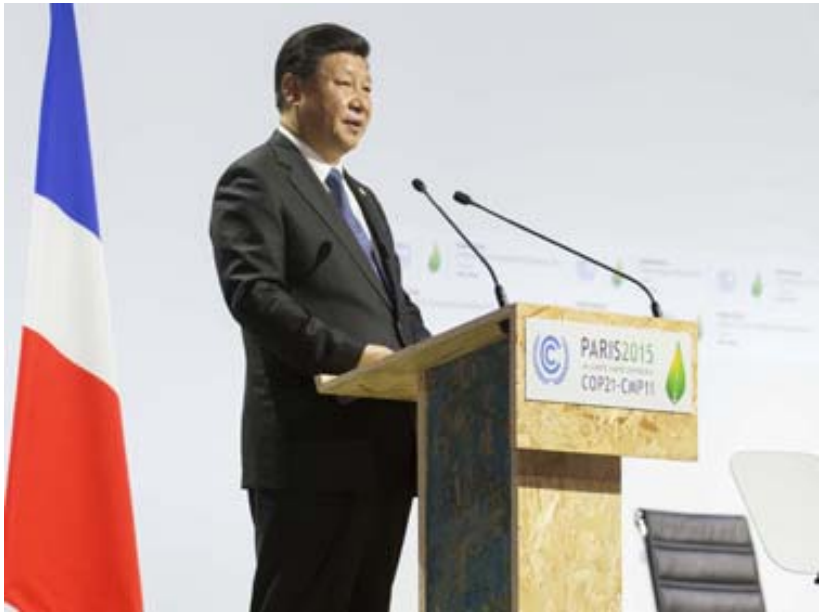
International Partnership for Hydrogen and Fuel Cells in the Economy

FCV and HRS development in *China*

IPHE National Assembly Forum
25 October 2019
Seoul, Republic of Korea

China made Commitments in the Paris Agreement



Nov. 30th, 2015

- By 2030, China's CO_2 emissions will reach peak, and strike to reach peak as soon as possible.
- By 2030, China's CO_2 emissions per unit of GDP will be 60-65% lower than in 2005.
- By 2030, the share of non-fossil energy in total energy should be raised to about 20%.
- By 2030, China's forest stock will increase by about 4.5 billion m^3 over 2005.

China Developing NEVs to reduce Transportation Emissions

Apr. 25th, 2017

中华人民共和国国家发展和改革委员会
National Development and Reform Commission

中华人民共和国工业和信息化部
Ministry of Industry and Information Technology

中华人民共和国科学技术部
Ministry of Science and Technology

"National Mid and Long-term Development Plan for Automotive Industry"

- By **2020**, the annual production/sales of new energy vehicles (**NEVs**) reach **2M units**.
- By **2025**, NEVs account for more than **20%** of total production/sales.
- Strengthen the R&D on fuel cell vehicles (FCVs).
- Gradually expand the pilot demonstration area of FCVs.

Hydrogen mentioned on National Level

Mar. 15th, 2019

全 国 人 民 代 表 大 会

The National People' Congress of the People's Republic of China

(13th, the Second Session)

Premier Minister LI Keqiang

"Report on the Work of the Government"

- The contents of "**Promoting the construction of facilities** for charging and **hydrogenation**" were added after review.

Hydrogen mentioned on National Level

Sep. 19th, 2019

- The Central Committee of the Communist Party of China (CPC)
- The State Council

"Outline of the Construction of a Strong Transportation Country"

The outline proposes scientifically layout and construct urban parking facilities, and strengthen the construction of facilities such as charging, hydrogen refueling, gas filling and bus stations.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中共中央 国务院印发《交通强国建设纲要》

2019-09-19 18:52 来源：新华社

新华社北京9月19日电 近日，中共中央、国务院印发了《交通强国建设纲要》，并发出通知，要求各地区各部门结合实际认真贯彻落实。

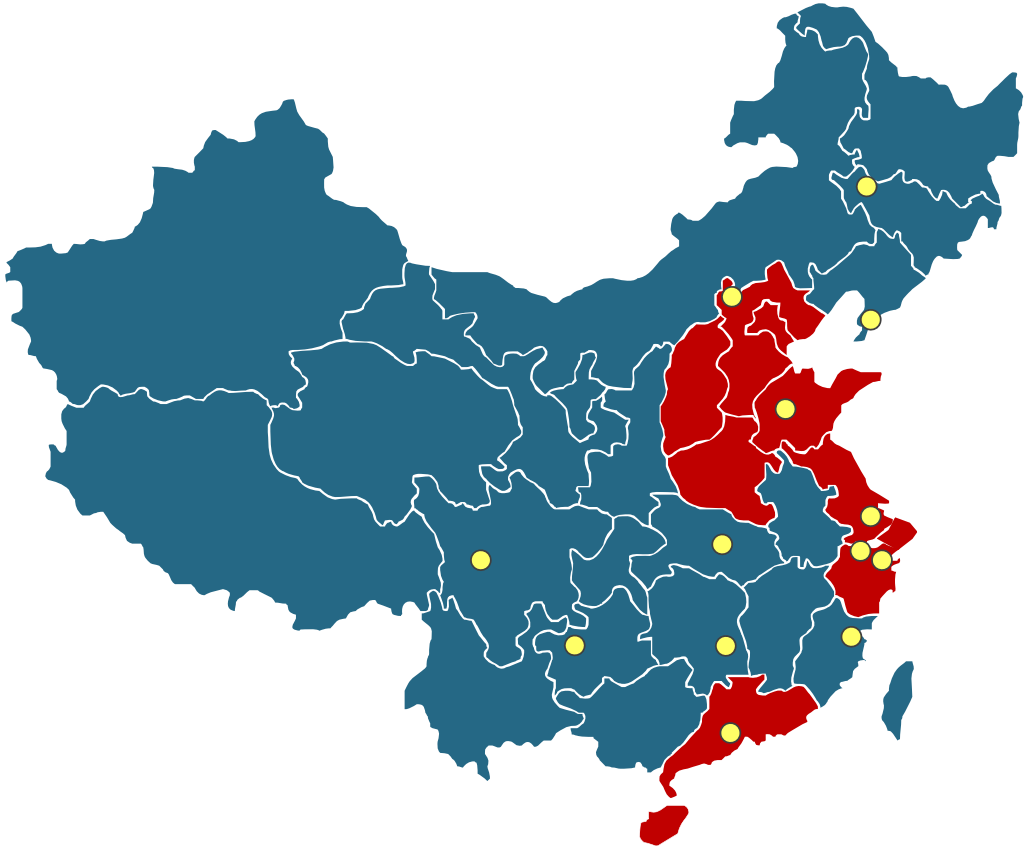
《交通强国建设纲要》全文如下。

建设交通强国是以习近平同志为核心的党中央立足国情、着眼全局、面向未来作出的重大战略决策，是建设现代化经济体系的先行领域，是全面建成社会主义现代化强国的重要支撑，是新时代做好交通工作的总抓手。为统筹推进交通强国建设，制定本纲要。

一、总体要求

（一）指导思想。以习近平新时代中国特色社会主义思想为指导，深入贯彻党的十九大精神，紧紧围绕统筹推进“五位一体”总体布局和协调推进“四个全面”战略布局，坚持稳中求进工作总基调，坚持新发展理念，坚持推动高质量发展，坚持以

Plans from Local Government



- **Shanghai**, Sep. 2017
- Wuhan, Jan. 2018
- Suzhou, Mar. 2018
- **Guangdong**, Jun. 2018
- **Henan**, Aug. 2018
- **Guangdong**, Sep. 2018
- **Tianjin**, Dalian, Oct. 2018
- Foshan, Nov. 2018
- Zhangjiagang, Dec. 2018

- **Shandong, Zhejiang**, Jan. 2019
- Jiashan, Changshu, Ningbo, Feb. 2019
- **Hainan**, Mar. 2019
- **Shanxi**, Fuzhou, Apr. 2019
- Baicheng, May 2019
- Zhangjiakou, Jun. 2019
- Jiaxing, Zhuzhou, Jul. 2019
- **Jiangsu, Hebei, Zhejiang**, Chengdu, Aug. 2019
- Jinan, Liupanshui, Sep. 2019

China's Subsidy Policies for HRS and FCV

National Subsidy Standard

Passenger Car

200K CNY
≈28K USD

Light Bus

300K CNY
≈42 USD

Light Truck

Medium and Large Bus

Medium and Heavy Truck

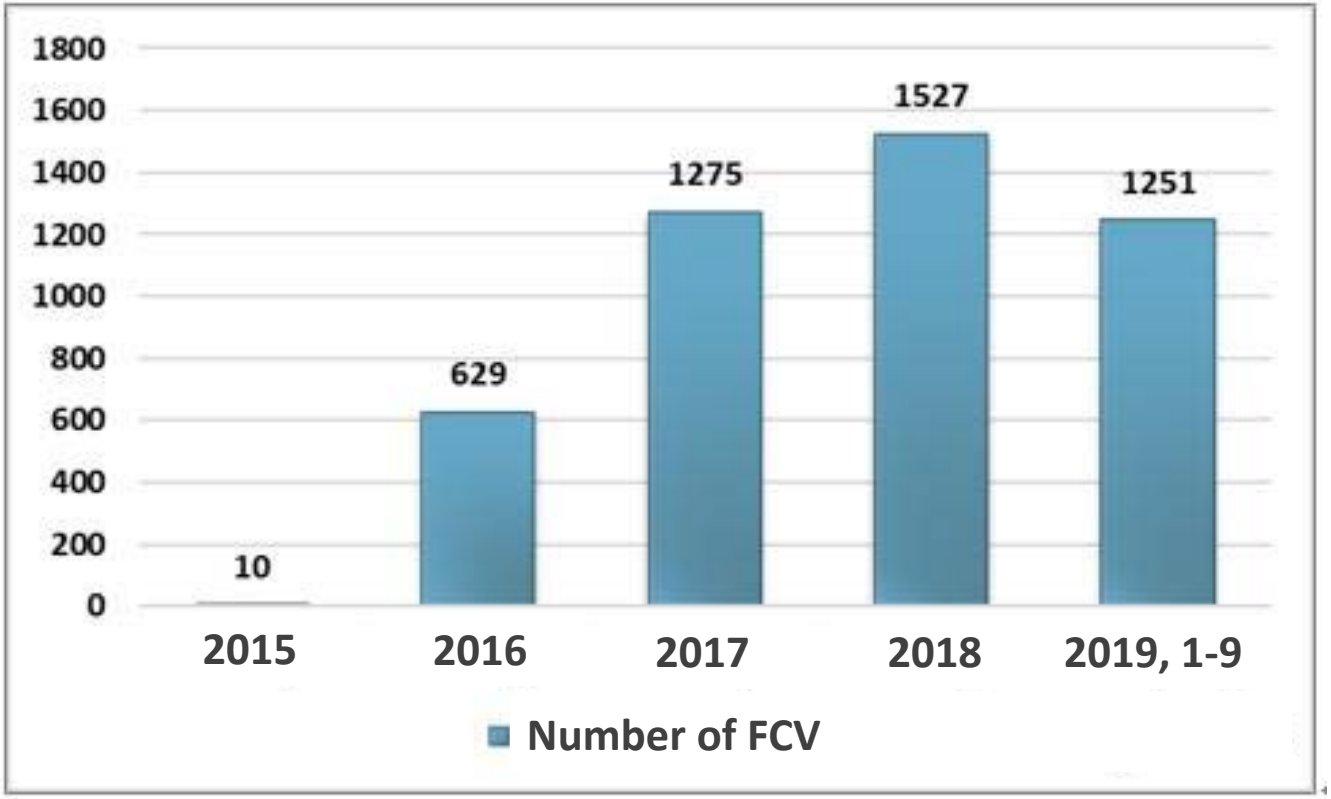
500K CNY
≈70K USD

Hydrogen Refueling Station

4M CNY
≈560K USD

- Subsidies for **BEVs** have **fallen rapidly** and will **disappear completely by 2020**.
- Subsidies for **FCVs** will be possibly **extended to 2025**.
- Ratio between central and local: **1/1 (before Jun. 2019), 1/0.8 (after Jun. 2019).**

Sales number of FCV in China



Source: China Association of Automobile Manufacturers

Announced Subsidy for FCV

Oct. 11th, 2019

中华人民共和国工业和信息化部
Ministry of Industry and Information Technology

"2017 New Energy Vehicle Promotion Application Subsidy Fund Clearing Review"

- **67M CNY (≈ 9.45M USD) will be granted to 114 fuel cell vans and 20 fuel cell light buses (500K CNY per vehicle). Local subsidy is equal to State subsidy.**
- **To get subsidy, the vehicle is required to drive > 20,000 km.**

FCV public transportation buses in China

- **Foshan**, Jun. 2016
- Yunfu, Jul. 2016
- Fushun, Apr. 2018
- Chengdu, Rugao, Jun. 2018
- **Zhangjiakou**, Jul. 2018
- Zhengzhou, Aug. 2018
- Shanghai, Sep. 2018
- Beijing, Oct. 2018
- Wuhan, Yancheng, Dec. 2018
- Datong, Apr. 2019
- Wuxi, Jul. 2019
- Weifang, Liaocheng, Zhangjiagang, Aug. 2019
- Jiashan, Oct. 2019

Current Distribution of HRS in China

H_2 Refueling Station (HRS)	Number	Location
70 MPa On-Site Production	1	Dalian
70 MPa Delivered	1	Suzhou (Changshu)
35 MPa On-Site Production	1	Beijing
35 MPa Delivered	Approx. 32	Shanghai, Zhengzhou, etc.

Cross-provincial Plan for HRS

May 24th

China Society of Automotive Engineers (SAE-China)

"Hydrogen Corridor Construction and Development Plan of Yangtze River Delta"

The construction of the hydrogen corridor will use industry leading cities like Shanghai as cores and first start 4 hydrogen highway demonstration lines.

- **G15: 4, Ningbo - Shanghai - Suzhou**
- **G42: 2, Shanghai - Suzhou**
- **G50: 2, Shanghai - Huzhou**
- **G60: 2, Shanghai – Jiaxing**
- **G40, S32/S21, S28, G1503, G2503, etc.**

Research Funding for HRS and FCV

中华人民共和国科学技术部
Ministry of Science and Technology

Program of National Key Research and Development Plan

Year	Program	Number	Total Funding (million CNY) (million USD)	Main fields
2016	New Energy Vehicles	2	174.58 (24.6)	PEMFC materials and stack
2017		5	216.67 (30.5)	PEMFC stack, engine, international collaboration
2018		6	485.69 (68.4)	PEMFC engine, FCV
2019	Renewable energy and hydrogen energy technology	9	154.61 (21.8)	Hydrogen production, storage, SOFC, PEMFC, water electrolysis

Thank you

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for Hydrogen and Fuel Cells
in the Economy