



International Partnership  
for Hydrogen and Fuel Cells  
in the Economy

## *China* Update

40<sup>th</sup> IPHE Steering Committee Meeting

4 – 5 October 2023

Washington DC, United States

# Announcements / New Initiatives *China*

## • Policies/Initiatives

July 14th

**Guidance Catalogue for Industrial Structure Adjustment (2023 edition, draft for comments)**

**National Development and Reform Commission (NDRC)**

Encouraged hydrogen technologies:

- Efficient and economic **hydrogen production, hydrogen transport** and high-density **hydrogen storage** technology development, application and equipment manufacturing.
- **Hydrogen refueling station** and refueling station with automotive clean alternative fuel.
- New generation of **hydrogen fuel cell technology** R&D and application.
- Hydrogen production by renewable energy.
- Liquid, solid and gaseous hydrogen storage, pipeline trailer for hydrogen transport, pipeline hydrogen delivery, hydrogen refueling station.
- **Hydrogen-electricity coupling.**

# Announcements / New Initiatives *China*

- **Investments/Funding**

**August 17th**

**First trial of the liquidation and review of the subsidy funds for the promotion and application of new energy vehicles in 2022 and previous years**

**Ministry of Industry and Information Technology**

**3 automobile companies made subsidy declarations for the promotion and application of 159 fuel cell vehicles.**

**132 fuel cell vehicles passed the expert review.**

**Total amount of subsidy was RMB 52.8 million.**

# Announcements / New Initiatives *China*

## • New Research & Development

July 27th

**The third batch of First major technical equipment in fields of energy(projects)**

**National Energy Administration**

- (1) Megawatt pure **hydrogen gas turbine**
- (2) Megawatt power storage system with **PEM electrolyzer and PEMFC**
- (3) Megawatt **electrolysis stack with home made membrane**
- (4) 100 kW High current density **PEM electrolysis stack** with low Iridium loading
- (5) 2 tons/day **hydrogen liquefaction system** by helium expansion refrigeration
- (6) 70MPa high flow **diaphragm compressor** to be used on hydrogen refueling station
- (7) 200kW **solid oxide fuel cell power generation system**
- (8) 10kW **"ammonia-hydrogen" fuel cell** distributed power generation system
- (9) Portable **hydrogen quality analyzer**

# Announcements / New Initiatives *China*

- **Demonstration and/or Deployment Activities**

July 28th to August 8th

**The 31st Summer Universiade**

**Chengdu City**

80 hydrogen fuel cell buses coated with "panda" elements

9 hydrogen cold chain logistics vehicles



September 23rd to October 8th

**The 19th Asian Games**

**Wenzhou City**

2 hydrogen energy dedicated lines

10 hydrogen fuel cell buses



# Examples of Lessons Learned and Impact *China*

Program initiative, policy, regulation or mandate	Lessons Learned/Outcomes
Guidance Catalogue for Industrial Structure Adjustment (2023 edition, draft for comments)	Compared with the current version (2019), the entire industry chain of hydrogen energy has been included the industrial structure guidance directory.
Shanghai Programme for the Promotion and Application of Hydrogen Energy in the Field of Transportation (2023-2025)	<ul style="list-style-type: none"> <li>• Aiming at commercial demonstration and application;</li> <li>• Focusing on developing application scenarios such as heavy trucks, buses, cold chains, and non road mobile machinery;</li> <li>• By 2025, 10000 fuel cell vehicles, 70 HRSs.</li> </ul>
Implementation Rules for the Local Subsidy for the Demonstration and Application of Fuel Cell Vehicles in Shanghai	Clarifying the responsible departments, support areas, standards, and application processes for the subsidy of fuel cell vehicles.

# China – Profile October 2023

## Status of Deployments

- **Fuel cell vehicles:**  
~15000
- **HRSs:**  
~390
- **Hydrogen production form renewable energy:**  
Most projects are under construction  
**In 2022**
  - 722MW electrolyzer is produced
  - 42k tons green hydrogen produced

## Leading Government Initiatives

### Mid- and Long-Term Plan for the Development of Hydrogen Energy Industry (2021-2035)

#### Deployment Goals

2025	50,000 fuel cell vehicles A number of hydrogen refueling stations 100,000 - 200,000 tons/year Hydrogen production from renewable energy Carbon dioxide emission reduction of 1-2 million tons/year
2030	A relatively complete hydrogen energy industry technology innovation system Clean energy hydrogen production and supply system formed Support the realization of the carbon peaking goal
2035	A diversified application ecology of hydrogen energy formed The proportion of hydrogen production from renewable energy in terminal energy consumption increase significantly

## Goals or Focus Areas

- Hydrogen production
- Hydrogen transport
- Hydrogen storage
- Hydrogen application
- Equipment manufacturing

## Funding

5 fuel cell vehicle demonstration city cluster

# Thank you



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