

# 2018 中国氢资源与氢能产业发展论坛

China Hydrogen Resources and Hydrogen Energy Forum 2018

9.18-19

大连

Dalian



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*English-Chinese Simultaneous Interpretation will be provided.*

## Background

Hydrogen energy industry is a huge industrial chain from hydrogen production, storage and transportation, to application. Hydrogen energy system not only is energy of hydrogen fuel cell vehicle transportation, but also plays important roles in large-scaled energy storage and green chemical raw materials. Hydrogen Council report released in Nov 2017 shows that, hydrogen will occupy about 20% of global total energy consumption in 2050, reduce 6Gt CO<sub>2</sub> emission every year and hydrogen energy industrial chain annual output value will reach USD 2.5 trillion.

In order to support scaled-development of hydrogen energy industry at present, coal to hydrogen, natural gas to hydrogen and water electrolysis to hydrogen, and industrial byproduct hydrogen, which do not generate additional carbon emission, need to be paid great attention. Using electricity from abandoned-wind and discarded-light in water electrolysis to hydrogen has both economic benefits and social value. In the long term, using renewable energy in large-scaled water electrolysis to hydrogen should be main H<sub>2</sub> source of hydrogen energy industry.

Hydrogen storage and transportation methods mainly include high pressure gas and liquefaction hydrogen, as well as metal hydride hydrogen storage and organic compound hydrogen storage. View from applications, at present, the most widely known application is hydrogen fuel cell vehicle (FCV). Industry generally believes that, there is a complementary relationship between FCV and electric vehicles (EV). As for commercial used vehicles, especially application of long-distanced transportation, FCV have more advantages. China has accumulated abundant experiences in construction and operation of hydrogen fueling stations. Under background of speeding up of development of FCV, it is estimated that China's number of FCV will reach 2M, while hydrogen fueling stations will reach 1000 in 2030.

According to data of IEA, in order to realize target of controlling global warming within 2°C, share of renewable energy needs to greatly increase from 23% in 2015 to 68% in 2050. More electricity come from intermittent source, and it needs to allocate large-scaled and long-term energy storage system to match demand and supply. Hydrogen energy system can finish this task well as it can realize flexibly mutual transformation of electric power and fuel.

Except transportation and energy storage, hydrogen will also make great contributions to reduction of carbon emission in industry. In 2017, Shell planned to install a 10MW PEM electrolyzer at European refineries, to provide oil refining with H<sub>2</sub> of zero carbon emission. In 2017, China's scientific research institutions made a series of progresses on CO<sub>2</sub> hydrogenation to methanol, gasoline and olefin etc. high value chemicals. Besides, hydrogen direct reduction iron technology demonstration project, developed by Chinese companies, will put into operation in the near future.

**China Hydrogen Resources and Hydrogen Energy Forum 2018** will be held in Dalian, Liaoning on Sep 18-19, 2018. The conference will discuss global and China hydrogen energy industrial chain prospects and investment opportunities, hydrogen production technologies and cost analysis, China's industrial byproduct hydrogen resources potential, hydrogen purification and impurities removal technologies, hydrogen storage and transportation modes, construction of FCV industry infrastructures, integration of hydrogen energy storage system and large-scaled renewable energy, hydrogen and CO<sub>2</sub> producing high value chemicals - methanol, olefins and BTX.

## Topics

- Global and China Hydrogen Energy Industrial Chain Prospects and Investment Opportunities
- Hydrogen Production Technologies and Cost Analysis – Water Electrolysis, Natural Gas SMR, Methanol Cracking and Coal Gasification
- PEM Water Electrolysis to Hydrogen Technologies and Applications
- China Industrial Byproduct Hydrogen Resources Potential – PDH, Ethane Cracking and Coke Oven Gas
- Hydrogen Purification and Impurities Removal Technologies
- Discussion on Hydrogen Storage and Transportation Modes
- Hydrogen Pipelines Construction and Operation Cost Analysis
- Integration of Hydrogen Energy Storage System and Large-scaled Renewable Energy
- Development Paths of Hydrogen Fuel Cell Vehicles
- Construction Experiences and Planning of FCV Hydrogen Infrastructures
- Hydrogen and CO<sub>2</sub> Producing High Value Chemicals – Methanol, Olefins and BTX
- Hydrogen Using in Direct Reduction Iron Technologies and Industrial Demonstrations

## Preliminary Agenda

<b>Sep.17, 2018</b>	<b>Monday</b>
17:00~20:00	Pre- conference Registration
<b>Sep.18, 2018</b>	<b>Tuesday</b>
08:30~12:30	Speech
12:30~14:00	Networking Lunch
14:00~18:30	Speech
18:30~20:00	Banquet
<b>Sep.19, 2018</b>	<b>Wednesday</b>
08:30~17:00	Industrial visiting

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