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CHINA HYDROGEN ALLIANCE

Prospects and Projects for the Production and Use of Hydrogen in China

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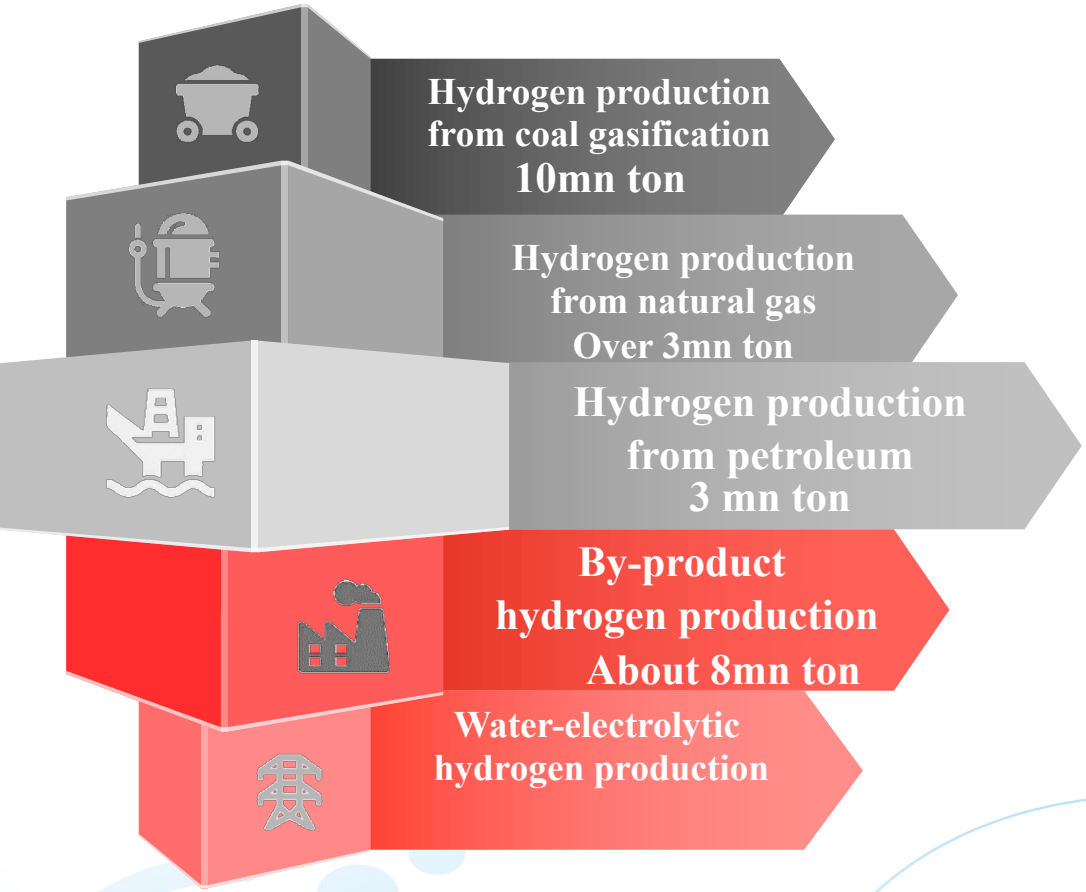
Feb., 2019 Paris

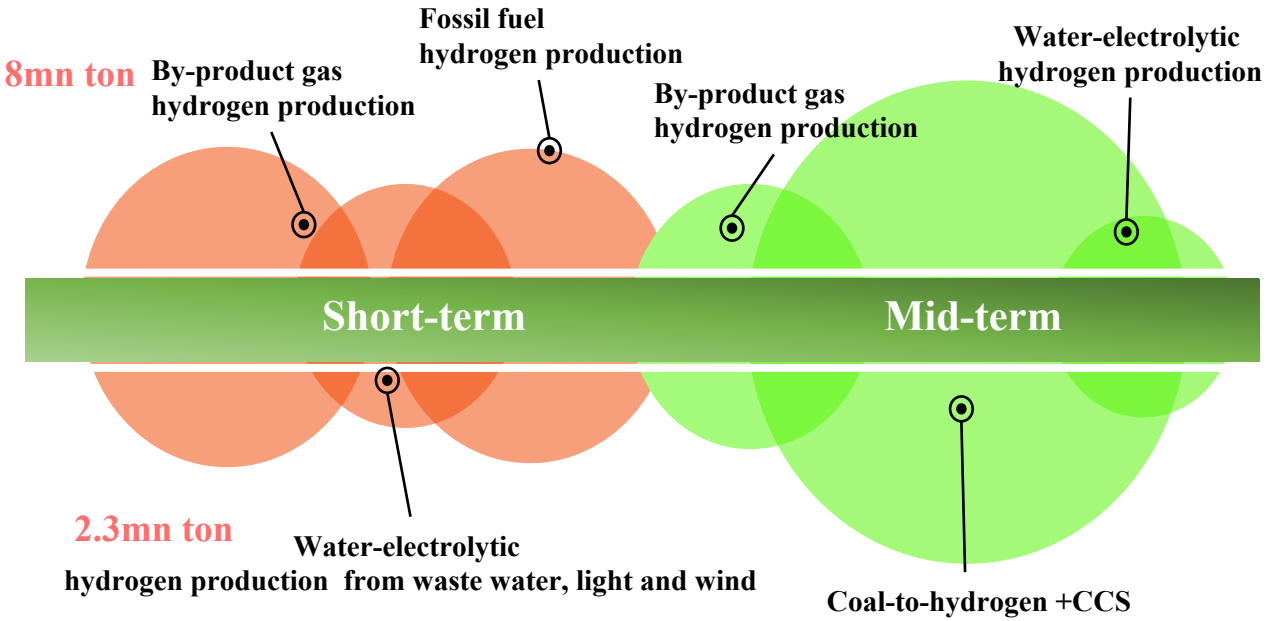
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Abundant Hydrogen Source & the Global Largest H_2 Production Market

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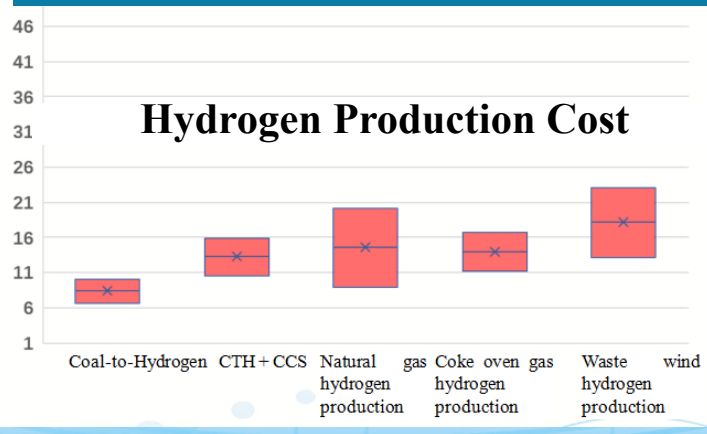
- China is the largest hydrogen-producing country with abundant hydrogen sources

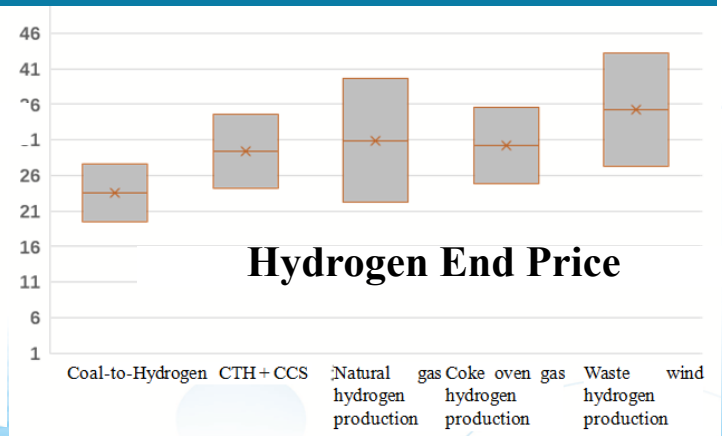




Future Potential for Hydrogen Production

Economic Viability

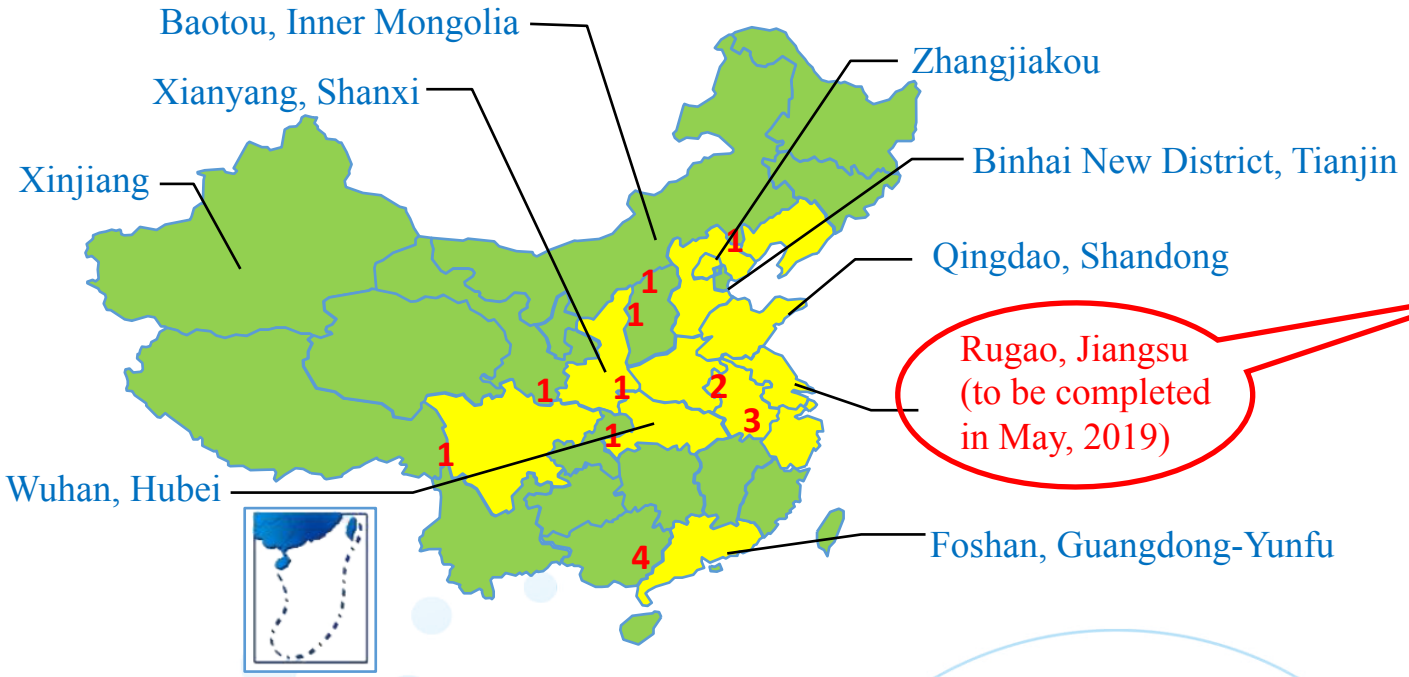




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China's Hydrogen Refueling Stations & the Demo in China Energy

- So far，15 hydrogen refueling stations are under operation, and 33 more were under construction.



Starting the transformation

2018-2020 Small scale commercialization

- 1000-5000 FCVs
- over 100 Hydrogen refueling stations

2020-2030 Large scale commercialization

- 1 million FCVs
- over 1000 Hydrogen refueling stations



China Energy: constructs China's first hydrogen refueling demonstration station that meets 35 Mpa/70 Mpa dual mode international standard.

- Hydrogenerator: 35MPa (1 set), 70Mpa (1 set)
- Total fixed hydrogen storage capacity: 900 kg (87Mpa, 100kg)
- Daily capacity of hydrogenation: 1000 kg
- Construction period of the project: to be completed in May, 2019.
- China’s first 7/24 commercial hydrogen refueling station with thorough administrative approval, which was developed on a market-oriented basis.

China Hydrogen Alliance & H_2 in China Energy

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- **China Hydrogen Alliance , National-level Hydrogen Industry Organization, established in February, 2018 in Beijing, chaired by China Energy.**



- Coordinating and promoting hydrogen-related ecological development
- *Releasing White Paper on China's Hydrogen Energy*
- Establishing an innovation platform for the hydrogen industry
- *Strengthening international cooperation*
- Building a hydrogen society in China

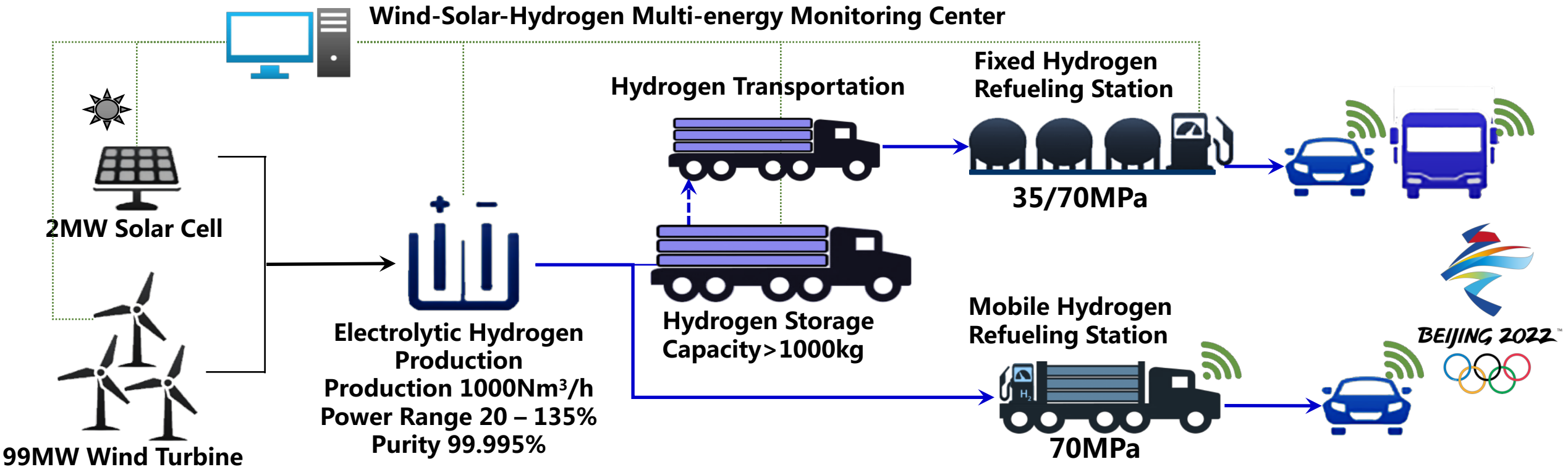


China Energy: H_2 Source Advantage in wide range sources, low cost, low foot print of carbon.

- With total installed capacity of wind power and solar cells over 35 GW, hydropower over 10 GW, holding a sound fundamental condition to produce hydrogen from renewable energy .
- With the capatity of Coal to H_2: over 4 million tons per year.
- Build up a 300 thousand tons CCS demonstration project, great beneficial to take down the capital cost of coal to hydrogen project.

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China Energy leads the demo and key Tec of wind-solar complementary hydrogen production in China



Wind-solar Complementary Power Generation → Hydrogen Production → Hydrogen Storage And Transportation → Hydrogen Utilization

- A 2MW solar cell、99MW Wind complementary hydrogen production system was constructed，with hydrogen production capacity of 1000Nm3/h，and total fixed hydrogen storage capacity >1000 kg.
- A fixed H2 refueling demonstration station (35 Mpa/70 Mpa) and a Mobile H2 refueling station (70 Mpa).
- To serve the Winter Olympics 2022，a wind-solar-hydrogen multi-energy monitoring center was constructed.
- Demonstration in wind-solar complementary production-storage-transportation-utilization.

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Thanks !

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