



The International Hydrogen Energy Centre, China

An important milestone on the road towards placing hydrogen at the heart of sustainable development

A WAY TO DECARBONIZE INDUSTRY

Hydrogen offers a way to decarbonize energy as well as diversify the economy and reduce global greenhouse gas emissions. Green hydrogen supports a paradigm shift towards more efficient energy storage, especially for renewable energy at industrial scale. While the technology is maturing, the policy and regulatory framework, safety codes and standards harmonization remain insufficient throughout the world. Partnerships between the public and private sector as well as academia will be crucial to further develop this important energy source.

UNIDO's GLOBAL PROGRAMME

The United Nations Industrial Development Organization (UNIDO) 'Global Programme for Green Hydrogen in Industry' aims to support developing countries and transition economies in the global uptake of green hydrogen and industry decarbonization. The Global Programme is in line with UNIDO's mandate of inclusive and sustainable industrial development, reflected in Sustainable Development Goal 9 (industry, innovation and infrastructure).

UNIDO's work on green hydrogen is currently supported by Austria, Germany and Italy as well as China through the International Hydrogen Energy Centre (IHEC). Its main focus is to promote the application of green hydrogen in industry, particularly the hard-to-abate industrial sectors.

STRATEGIC ROLE OF THE CENTRE

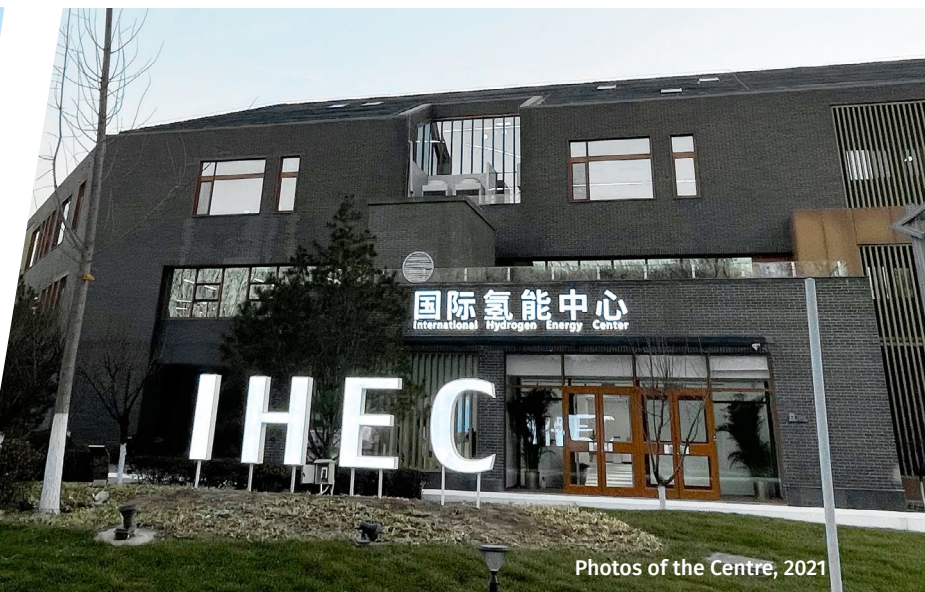
The IHEC in China was launched in July 2021 with the support of UNIDO and the Chinese government. Key partners are the Ministry of Commerce, represented by the China International Centre for Economic and Technical Exchanges (CICETE) and the Beijing Municipal Bureau of Economy and Information Technology (BEIT), the Beijing Tsinghua Industrial Development Research Institute (TIDRI), and the Beijing Yitong Hydrogen Energy and Fuel Cell Technology Innovation Research Institute.

The IHEC promotes hydrogen energy technology development and application and the development of a hydrogen energy economy roadmap, and enhances international hydrogen energy cooperation for achieving clean and renewable energy goals in line with the Sustainable Development Goals.

The IHEC is playing a strategic role in the development of the hydrogen energy industry, not only in China but also globally, by attracting international R&D funding and promoting South-South and regional cooperation, with the involvement of developing countries, such as in the Asia-Pacific region, Africa and Latin America, where UNIDO has a strong network of regional offices, centres and industrial projects. The IHEC is also working with different stakeholders, including governments, the private sector, small and medium-sized enterprises, R&D institutions and industry associations.

UNIDO and the Government of China understand the urgent need to promote hydrogen technology to make it more scalable, inclusive and affordable globally.

LIU Heng, UNIDO Project Coordinator



Photos of the Centre, 2021

in #IHEC

Aim of IHEC activities

A technology focus:

- Carry out research and development, global technology introduction and frontier technology verification in the key fields related to hydrogen production, storage, transport, refueling, fuel cell and energy storage, and establish a global hydrogen energy R&D network.

An industry focus:

- Scale up industrial applications, attract global leading enterprises and industrial chain partners to carry out global verification, and build a global hydrogen energy industrial centre.

An environmental focus:

- Find consensus on carbon neutrality to combat climate change, based on the multilateral cooperation network of UNIDO, thus creating a global industrial cooperation for ecology carbon neutrality.

DEMONSTRATION PROJECTS

The IHEC has set up three industrial demonstration parks, which aim to support national hydrogen economy and international hydrogen cooperation by 2026.

Hydrogen commercial vehicles

The IHEC and its partner Beijing Sinohytec developed the world's largest hydrogen commercial vehicle operating demonstration park in Zhangjiakou, China, where many of the Winter Olympics 2022 sporting events took place. More than 850 hydrogen fuel cell buses were used to transport athletes and officials during the Games. The buses operated over 3.2 million kilometres and consumed about 200 tons of hydrogen, saving some 2,000 tons of carbon.



Metallurgical & chemical industry

The world's first comprehensive demonstration project of green hydrogen production and its applications on metallurgical and chemical industry will be constructed in Baotou, Inner Mongolia, China. Construction has started in 2023 and will officially operate in 2025. The IHEC, together with the Shuimu Mingtuo Group and Hualu, initiated and led the development of this project.



Hydrogen logistic vehicles

A demonstration project for operating hydrogen fuel cell vehicles used in logistics and the world's largest hydrogen refuelling station will be built in Daxing, Beijing, China.



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