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CIMC ENRIC-3899.HK

A Leading Provider of Key Equipment and Solutions in Hydrogen Energy

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1 Hydrogen Energy: The Present Era

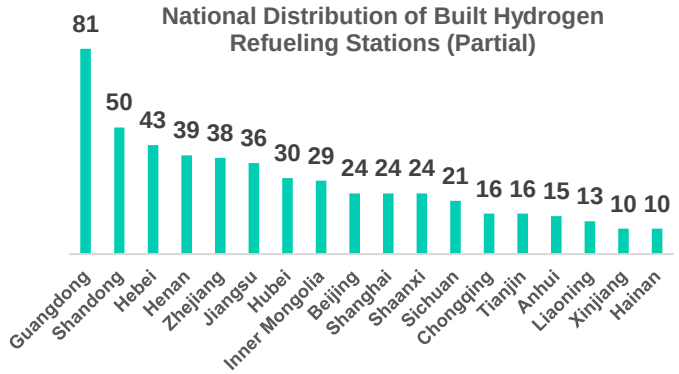
Review of 2025 Industry Landscape

Recent Policies

- On November 27, 2025, NDRC spokesperson Li Chao stated at a press conference that power system flexibility is critical to a new-type power system, with energy storage and **hydrogen** as key enablers. Going forward, priorities will include balancing the supply and demand of green hydrogen, ammonia, and methanol, promoting their large-scale application in key sectors, accelerating infrastructure for production, transportation and storage to lower system operating costs, and supporting the orderly development of various new energy storage and **hydrogen** technologies.

- Mid-Jan 2026 - Five ministries—the Ministry of Industry and Information Technology, the National Development and Reform Commission, the Ministry of Ecology and Environment, the State-owned Assets Supervision and Administration Commission, and the NEA—jointly issued the Guiding Opinions on Promoting Zero-Carbon Factory Construction. In zero-carbon factory construction, **hydrogen** energy is positioned as an important clean, low-carbon fuel. The document encourages factories to actively develop **integrated projects such as green hydrogen, ammonia, and methanol**, and to promote the application of **clean, low-carbon hydrogen from industrial by-products and renewable energy sources** as one of the key pathways for achieving source-level carbon reduction.

Item	Long-Term Hydrogen Industry Development Plan (2021–2035) 14th Five-Year Plan Development Targets	Industry Data (As of end of 2025)
Hydrogen Fuel Cell Vehicle on operation	Approx. 50,000 vehicles	Cumulative deployment: 37,000 vehicles
Hydrogen Refueling Stations (Built)	Deploy and construct a cluster of hydrogen refueling stations	Cumulative built: 579 stations*
Renewable Hydrogen Production Capacity	Achieve renewable hydrogen production of 100–200 kt/year	Capacity reached: 261.2 kt/year* Production volume: No data



*Data source: Trend Bank

Macro Outlook: Major hydrogen/ammonia/methanol projects led by central and state-owned enterprises, along with the promotion of fuel cell vehicles in demonstration city clusters, have become the two core engines driving the sustainable development of the industry.

- **Jan–Dec 2025 - A total of 10,782 fuel cell vehicles were sold domestically, up 51.2% YoY.** The domestic fuel cell vehicle market **exceeded the 10,000-unit annual threshold for the first time.**
- In 2025, **the country's current green hydrogen production capacity reached approximately 261.2 kt/year,** an increase of 140% compared to the total capacity in 2024.

2 Overview of CIMC ENRIC's Hydrogen Business

Introduction to CIMC Hydrogen Business Division

CIMC Hydrogen Technology Co., Ltd. (CIMC Hydrogen) a subsidiary of the Hong Kong-listed company CIMC ENRIC (3899.HK), serves as the core entity and key platform for implementing the hydrogen energy strategy of both CIMC Group and CIMC ENRIC. Strategically focused on three key areas—Transportation, Hydrogen Power, and Hydrogen Gas.

Establishing an Integrated Business Chain of Production, Storage, Transportation, Refueling, Application and Intelligent Hydrogen Energy

Through years of development, CIMC Hydrogen has established 2 wholly-owned subsidiaries, 2 joint ventures, and 4 business divisions. It operates six internationally advanced equipment manufacturing bases located in Shijiazhuang, Langfang, Nantong, Zhangjiagang, and Jingmen. The company has built a comprehensive layout covering the entire hydrogen industry chain—from production, storage, transportation, and refueling to application—and has expanded into hydrogen-related sectors such as green hydrogen, ammonia, and methanol. Its business network is centered on key domestic regions, while also extending to more than ten countries such as South Korea, Japan, Denmark, Switzerland, and the United States, providing customers with integrated hydrogen energy utilisation solutions that are green, convenient and cost-effective.

Langfang Integrated Business Division

Shijiazhuang Hydrogen Energy High-pressure Gas Hydrogen Division

CIMC-Hexagon Hydrogen Energy Technologies(Hebei) Co., Ltd.
CIMC-Hexagon Hydrogen Energy Development (Hebei) Co., Ltd.

Zhangjiagang Liquid Hydrogen Business Division

Qidong Offshore Hydrogen Energy Business Division

CIMC Hydrogen Energy Technology (Nantong) Co., Ltd.

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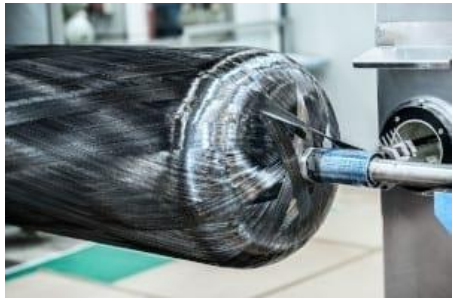
6 Major Flagship Products

- Hydrogen Production Equipment
- Spherical Tank Hydrogen Storage Equipment
- High-Pressure Gaseous Hydrogen Storage & Transport Equipment
- Liquid Hydrogen Storage & Transport Equipment
- Hydrogen Refueling Stations & Core Equipment
- Hydrogen Storage Cylinders & On-Vehicle Hydrogen Supply Systems

4 Major Solutions

- Hydrogen Production System Solutions
- Offshore Hydrogen Energy Solutions
- Distributed Hydrogen-Power-Energy Storage Solutions
- Green Factory Solutions



Business Highlights (Production, Transportation, Storage)

Integrated Hydrogen-Ammonia-Methanol Projects

In 2025, 15 hydrogen spherical tanks and large-scale hydrogen-ammonia pressure regulation units were delivered to "Qing Hydrogen No. 1".

Hydrogen-Ammonia Transportation Solutions

The integrated 16MPa medium-to-high pressure hydrogen storage and transportation solution provides a new option for green ammonia scenarios.

Medium-to-High Pressure Hydrogen Storage Vessels

The medium-to-high pressure hydrogen storage vessels have been applied in Baowu Steel Group's high-grade green silicon steel production line.

BOP Hydrogen Production Systems

BOP systems achieved model-wide breakthroughs and EU certification, and won contracts for China's largest 4000m³ separation and 8000m³ purification units, strengthening ENRIC's position in hydrogen production.

Anhydrous Ammonia Carrier

Introduced 51.51m³ and 51.2m³ stainless steel anhydrous ammonia carrier, providing strong support for the safe and efficient transportation of anhydrous ammonia.

Liquid Hydrogen Spherical Tanks

The liquid hydrogen demonstration project in Fuyang, Anhui, was completed, passed self-evaluation organized by the High-Tech Research and Development Center of the National Natural Science Foundation of China.

Business Highlights (Application)

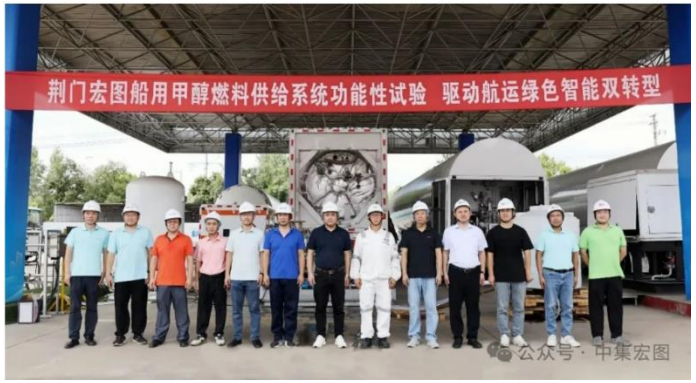
Type IV Hydrogen Cylinder MEGC

China's first 20-foot Type IV hydrogen cylinder MEGC successfully launched (working pressure: 38 MPa). A 40-foot standard container can carry over 1 ton of hydrogen.

Hydrogen-Powered Charging Piles for Vehicles

Delivered for the North Point Towngas hydrogen power generation project in Hong Kong, marking China's first demonstration project using hydrogen power generation to supply charging piles for vehicles.

Marine Methanol Supply Skid



Marine methanol supply skid obtained CCS certification, driving the green and intelligent dual transformation of shipping.

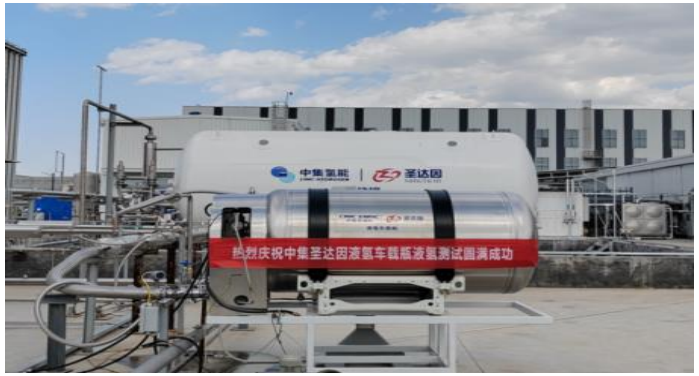
Aerospace Cylinders

Lightweight liners for aerospace products passed rigorous testing by aerospace customers.

Type IV High-Pressure Hydrogen Cylinders

In 2025, CIMC-HEXAGON Type IV high-pressure hydrogen cylinders obtained TPED certification and were delivered to European customers.

Liquid Hydrogen On-Vehicle Cylinders



Liquid Hydrogen On-Vehicle cylinders completed cryogenic hydrogen testing and were successfully included in Jiangsu Province's 2025 "Three-Firsts, Two-New" recognized technology products list.

Supporting 10+ Large-Scale Hydrogen Production Projects

Baotou Huadian
Integrated Hydrogen Production, Storage, Transportation, and Refueling Demonstration Project

Participated in creating Inner Mongolia's first "Wind-Solar-Hydrogen-Storage-Vehicle" industrial ecosystem project.

CIMC ENRIC supplied 6 hydrogen spherical tanks with a capacity of 1500m³ each.

China Energy Engineering Group Co., Ltd (Energy China)
Songyuan Hydrogen Energy Industrial Park Green Hydrogen-Ammonia-Methanol Integrated Demonstration Project

Participated in the world's largest integrated green hydrogen-ammonia-methanol project. Upon completion of Phase I, the project will achieve an annual production capacity of 45,000 tons of green hydrogen, 200,000 tons of green ammonia, and green methanol. Originally planned in three phases, the project is expected to produce 110,000 tons of green hydrogen, 600,000 tons of green synthetic ammonia, and 60,000 tons of green methanol annually once fully completed.

CIMC ENRIC supplied 14 hydrogen spherical tanks with a capacity of 2000m³ each and 1 tank of 1500m³, receiving a commendation letter from the client.

China Tianying Inc. (CNTY)
Liaoyuan Wind-Solar-Storage-Hydrogen-Ammonia-Methanol Integrated Project

CIMC ENRIC supplied 12 hydrogen spherical tanks with a capacity of 2000m³ each and 2 tanks of 400m³ each. In December 2025, secured an order for post-processing equipment for electrolyzers, with ongoing delivery.

Coke Oven Gas Integrated Utilization Project Replication, Scaling Up Blue Hydrogen Production

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Leveraging key equipment and core processes to complete integrated solution project construction → Providing operation services for the production and sales of clean energy such as LNG and hydrogen → Promoting "end-to-end" closed-loop and large-scale application of clean energy in surrounding areas.

Annual Capacity: 15,000 tons of hydrogen

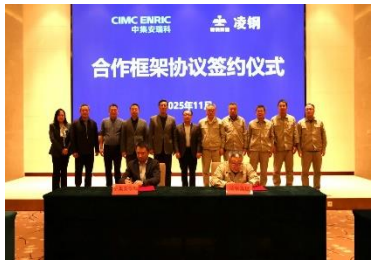
2024.09
Angang CIMC (Yingkou)

Annual Capacity: 20,000 tons of hydrogen (60,000 tons of synthetic ammonia)

2025.07
Linggang Steel Phase I Project

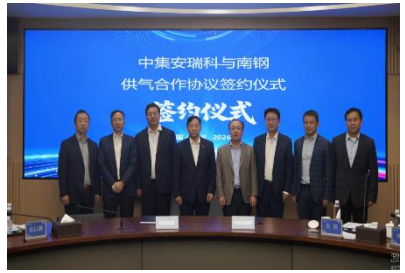
Annual Capacity: 15,000 tons of hydrogen

2026（E）
Shougang Shuigang Project



Total: 100,000 tons of LNG, hydrogen, and blue ammonia

2026（E）
Linggang Steel Phase II Project



Annual Capacity: 100,000 tons of methanol

2027（E）
Indonesia Tsingshan Project

Key equipment and core processes in the fields of hydrogen, ammonia, and methanol production, storage, transportation, refueling, and application—such as synthetic ammonia process units, hydrogen refueling stations, and liquid ammonia spherical tanks—are predominantly supplied by core member enterprises of CIMC ENRIC.

2027 Plan: Develop COG integrated utilization projects with a combined annual hydrogen production capacity of 200,000 tons (planned capacity).

Green Methanol Projects Hold Broad Application Prospects

- In 2025, CIMC ENRIC have signed strategic cooperation agreements with key partners including Wah Kwong Maritime Transport, China Marine Bunker Supply Company, Sinopec Marine Fuel, Hong Kong Transport and Logistics Bureau, Sinopec Hong Kong, China Merchants Energy Shipping, and Datang Hainan to jointly promote the application of green methanol**. We have also achieved the first green methanol bunkering in the Greater Bay Area.**
- **Key Equipment:** We hold leading domestic market shares in equipment businesses such as methanol storage tanks and methanol transport vehicles.
- **Core Process:** We possess the capability to build methanol bunkering vessels, as well as the process design and EPC capability for green hydrogen-ammonia-methanol projects (including gasifiers).
- **Integrated Services:** Our first green methanol project, located in Zhanjiang, Guangdong, with an annual capacity of 50,000 tons, was officially put into operation in 2025 Q4.

Zhanjiang, Guangdong, China

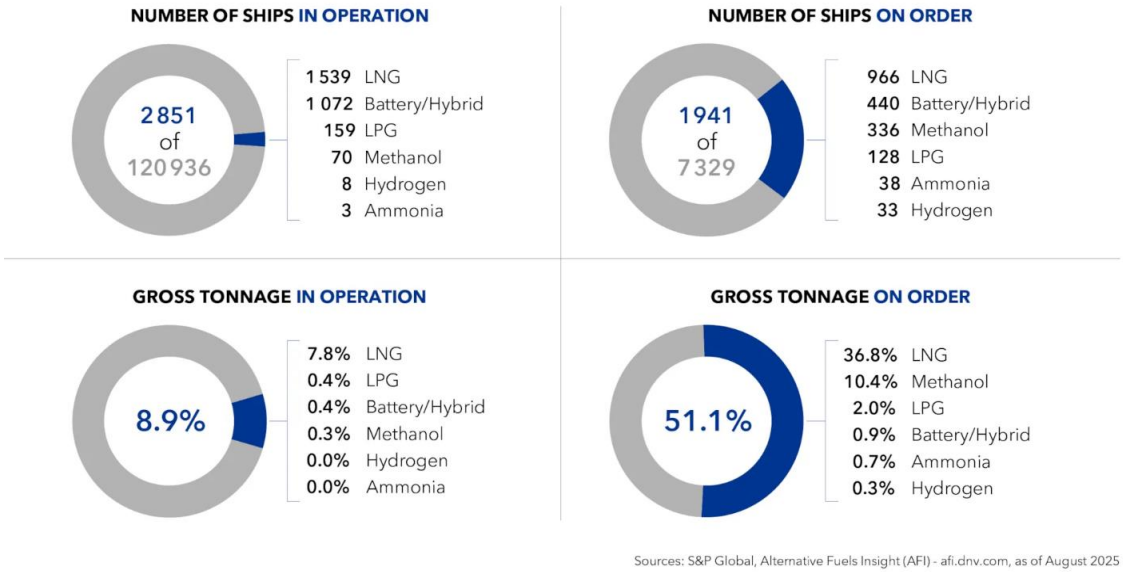
The 50,000-ton green methanol project was officially put into operation in 2025 Q4.

Comparison of Four Alternative Marine Fuels (per 100 MJ)

Fuel	LNG	Green Methanol	Green Ammonia	Biodiesel
Cost (RMB)	8.7	19.8	31.3	17.2
Carbon Emissions (kg)	7.66	2.8	3.2	1.5
Technology and Infrastructure Maturity	★★★★★	★★★★	★	★★★★★

Green methanol shows significant advantages in feedstock sustainability, life-cycle emissions, infrastructure compatibility, and long-term costs, making it more suitable as a mainstream alternative fuel in the future.

Alternative fuel technology uptake in the world fleet in the number of ships (upper) and gross tonnage (lower)

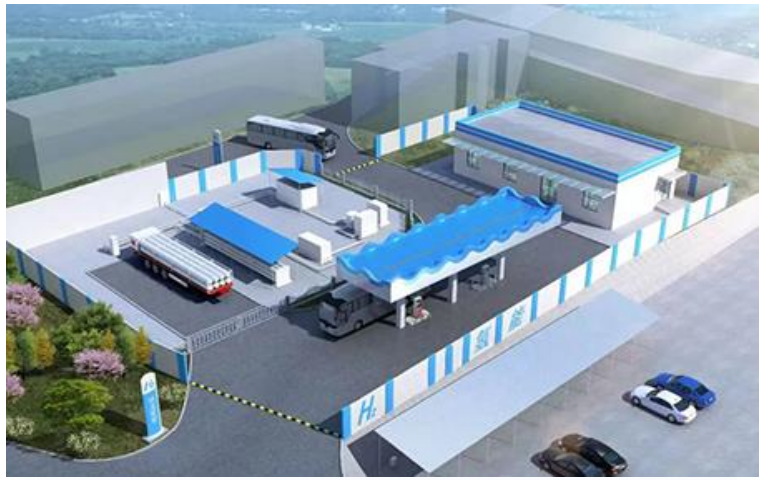


Sources: S&P Global, Alternative Fuels Insight (AFI) - afi.dnv.com, as of August 2025

- According to DNV data, by the end of August 2025, **there were 70 methanol-fueled vessels in operation globally, with 336 on order.** A surge in methanol-fueled vessel deliveries is expected in 2026-2027.
- Industry forecasts suggest that global annual methanol demand for in-service vessels may **exceed 2 million** tons in 2025, and could reach **6.93 million tons per year** after ordered vessels are put into operation.

	Green Methanol Production Capacity (10,000 tons/year)	Marine Green Methanol Demand (10,000 tons/year))
2025(E)	72 (compiled from public data)	100–200 (compiled from public data)
2030(E)	<1,000 (Data source: DNV)	1,350 (Lloyd's Register, China Classification Society)

Demonstration Projects



Hong Kong
Headquarters Building Hydrogen Power Project

Co-developed and jointly applied with The Hong Kong and China Gas Company Limited for a Hong Kong government project to build the city's first demonstration project at its headquarters building, with plans to promote it across Hong Kong.

Delivery and acceptance were completed in December 2025. As the first demonstration project compliant with the Hong Kong Code of Practice for Fixed Hydrogen Fuel Cell Power Systems, it has been included in the first batch of hydrogen projects connected to the digital platform of the Electrical and Mechanical Services Department.

CRRC Changchun Railway Vehicles
In-plant 35 & 70 MPa Hydrogen Refueling Station Project

CIMC Enric provided an "EPC"-mode research project covering project design, equipment supply, and equipment installation, to build a 35 & 70 MPa hydrogen refueling station within the plant to meet rail transit hydrogenation needs.

Hong Kong Science Park
Pipeline Gas Hydrogen Extraction and Application Demonstration Project

The "Hong Kong Science Park Cogeneration and Hydrogen Fuel Cell Charging Pile" project consists of three core components: pipeline gas PSA purification unit, CHP cogeneration unit, and hydrogen fuel cell power generation unit.
In May, the project was approved by the Hong Kong government as a hydrogen energy demonstration project. CIMC Enric signed the technical agreement and order on October 20. The project is scheduled for completion in the third quarter of 2026 and will produce 12 kilograms of hydrogen per day to supply multiple electric vehicle charging stations. It will serve as Hong Kong's first commercial demonstration project for hydrogen power generation.

3 Future Prospects

Hydrogen Industry Status and Outlook

Status: 2025 Hydrogen Industry Data

Sources: Ministry of Industry and Information Technology, China Hydrogen Alliance, China Petroleum and Chemical Industry Federation， Trend Bank

Hydrogen Projects (Cumulative in Operation)
China
2025 +91.7 kt/year
261.2 kt/year

Hydrogen Electrolyzers (Tendered/Awarded)
China
YoY +403MW
2107MW

Hydrogen Refueling Stations (Cumulative in Operation)
China
2025+21 units
460 units

Outlook: 2026 Hydrogen Industry Projections

Hydrogen Projects (Cumulative in Operation)
China
+167.2 kt/year
500 kt/year

Hydrogen Electrolyzers (Tendered/Awarded)
China
+893MW
3000MW

Hydrogen Refueling Stations (Cumulative in Operation)
China
+50 units
510 units

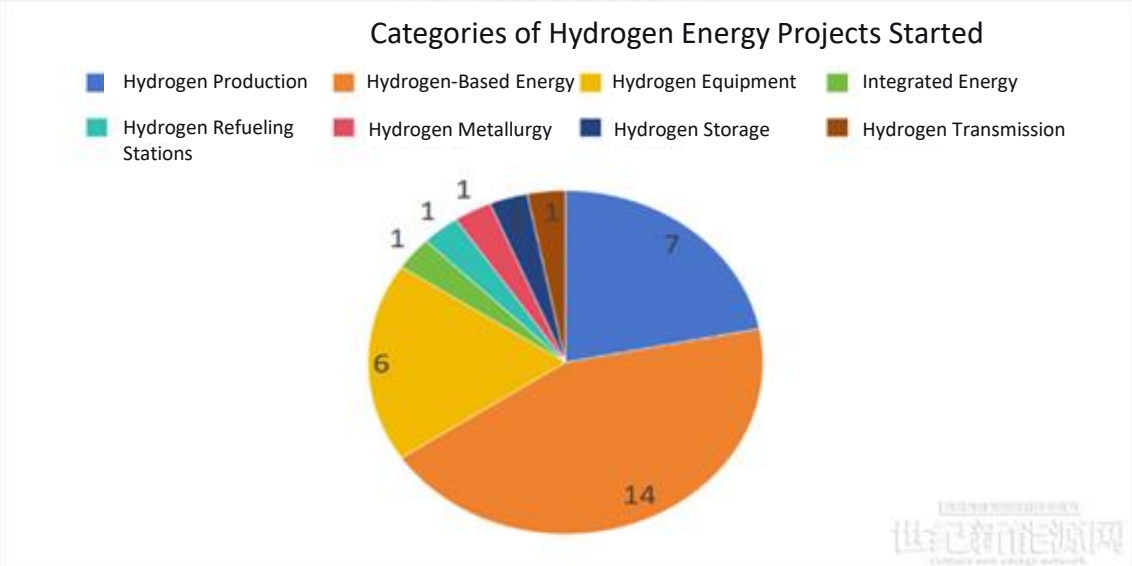
Viewpoint 1: Operating hydrogen projects in China are mainly concentrated in the northern regions, with notable increases in Hebei and Jilin.

- Projects initiated during the peak of the hydrogen boom in 2023 have gradually come into operation by 2025, adding 90,000 tons of new production capacity.

Timeline Comparison of Hydrogen Project Start-up and Operation
(Compiled by Hydrogen Observer – May have omissions, for reference only)

Start-up Time	Operation Time	Project Name
Nov 2023	Jan 17, 2025	Duolun Datang 150 MW Wind-Solar Hydrogen Production Integration Demonstration Project
Sep 2023	Mar 1, 2025	Sinopec Guangzhou Petrochemical Hydrogen Fuel Cell Supply Center Expansion and Upgrade
Sep 2023	Mar 28, 2025	Shanghai Hydrogen Security Base Phase I Project – Hydrogen Filling Center
2025	Mar 31, 2025	Photolytic Water-Splitting Hydrogen Production & Refueling Project
Nov 2023	May 1, 2025	Xianggang Messer Zhuzhou Hydrogen Production Project
Jan 2023	Jul 8, 2025	Envision Chifeng 1.52 Million Ton Green Hydrogen-Ammonia Project
Mar 2024	Jul 14, 2025	Shanghai Electric Taonan Wind-Power Coupled Biomass Green Methanol Integration Project (First Phase 320,000 Tons)
May 2023	Jul 26, 2025	Daan Wind-Solar Green Hydrogen & Synthetic Ammonia Integration Demonstration Project
Sep 2023	Dec 16, 2025	"Qing Hydrogen No.1" Songyuan Project
Jan 2025	Dec 29, 2025	Shanghai First 100,000-ton Level Green Methanol Project

Viewpoint 2: The number of hydrogen-based energy projects launched in 2025 increased significantly (over 30 projects started or filed).



Green Ammonia Industry Status and Outlook

2025 Green Ammonia Industry Data

Sources: Ministry of Industry and Information Technology, China Hydrogen Alliance, China Petroleum and Chemical Industry Federation

Green Ammonia Capacity (Cumulative Commissioned)

China

+700 kt/year

1 million tons/year

Green Ammonia Capacity (Planned)

China

16.8 million tons/year

2026 Green Ammonia Industry Data Outlook

Sources: Ministry of Industry and Information Technology, China Hydrogen Alliance, China Petroleum and Chemical Industry Federation

Green Ammonia Capacity (Cumulative Commissioned)

China

+780 kt/year

1.78 million tons/year

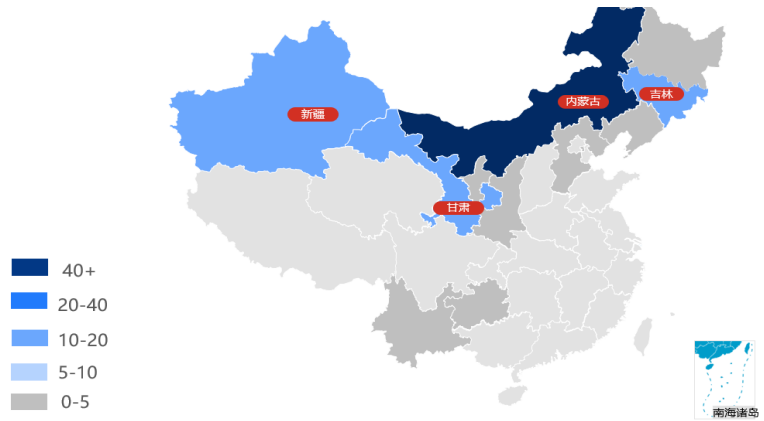
Green Ammonia Capacity (Planned)

China

21.4 million tons/year

Viewpoint 1: New green ammonia projects in China are mainly concentrated in North China and Northeast China.

Green Ammonia Project Layout Map



- **New Green Ammonia Projects Started in 2025:** China added 22 new green ammonia projects in 2025, including 10 in Inner Mongolia, 6 in Xinjiang, 2 in Gansu, and 1 each in Heilongjiang, Jilin, Sichuan, and Yunnan. Total capacity exceeds 4.5 million tons/year.

Viewpoint 2: Future overseas green ammonia projects are trending toward larger-scale capacity.

List of Commissioned Overseas Green Ammonia Projects

Commissioning Date	Country	Project Name	Developer	Annual Capacity (10,000 tons)
2023	USA	Donaldsonville Green Ammonia Project, Louisiana	Thyssenkrupp, CF	2
2023	Brazil	Camaçari Green Hydrogen Plant, Bahia	Unigel	6
2024	Australia	Yam Pibara Green Ammonia Project Phase II	Yara, ENGIE	17
2025	Saudi Arabia	NEOM Green Ammonia Project	Air Products, ACWA Power, NEOM	23.4
			Total	**48.4**

Green Methanol Industry Current Status and Outlook

2025 Green Methanol Industry Data

Sources: Ministry of Industry and Information Technology, China Hydrogen Alliance, China Petroleum and Chemical Industry Federation

Green Methanol Capacity (Cumulative Commissioned)

China

580 kt/year

820 kt/year

Green Methanol Capacity (Planned)

China

10.87 million tons/year

2026 Green Methanol Industry Data Outlook

Sources: Ministry of Industry and Information Technology, China Hydrogen Alliance, China Petroleum and Chemical Industry Federation

Green Methanol Capacity (Cumulative Commissioned)

China

+780 kt/year

1.6 million tons/year

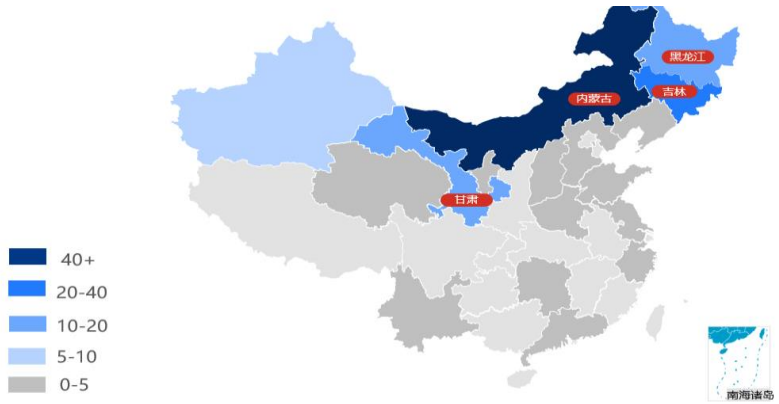
Green Methanol Capacity (Planned)

China

30.12 million tons/year

Viewpoint 1: China's planned green methanol projects are mainly distributed in North and Northeast China

Green Methanol Project Layout Map



Viewpoint 2: Overseas, only 5 green methanol projects with an annual capacity above 10,000 tons have been commissioned, with a total capacity of 420,000 tons

Commissioning Date	Country	Project Name	Developer	Annual Capacity (10,000 tons)
2016	USA	OCI Biomethanol	OCI	20
2018	Germany	Ludwigshafen Biomethanol	BASF	1.65
2020	USA	Methanex Biomethanol Geismer Facility	Methanex	11
2023	Norway	Tjeldbergodden Biogas-to-Methanol Plant	Equinor	4.75
2025.5	Denmark	Kassø Facility — World's First Power-to-Methanol Plant	European Energy	4.2
			Total	**42**

Future Development Trends of Hydrogen Energy

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Original text on the 15th Five-Year Plan for Infrastructure Construction

Extracts from NDRC articles:

Outlines plans to boost new energy supply, reduce reliance on fossil fuels, and build a modern, secure power system. It emphasizes expanding renewable energy use, promoting local development in resource-rich regions, and enhancing inter-regional grid connectivity. Key priorities include advancing green hydrogen, ammonia, and methanol applications, developing nuclear and fusion energy, and integrating computing power hubs with clean energy bases. The policy also promotes zero-carbon and green power parks, flexible DC transmission, smart grids, long-term energy storage, and cleaner, more efficient coal power retrofits.

---December 25, 2025, NDRC published an article entitled "Accelerating the Construction of a Modern Infrastructure System[1] ".

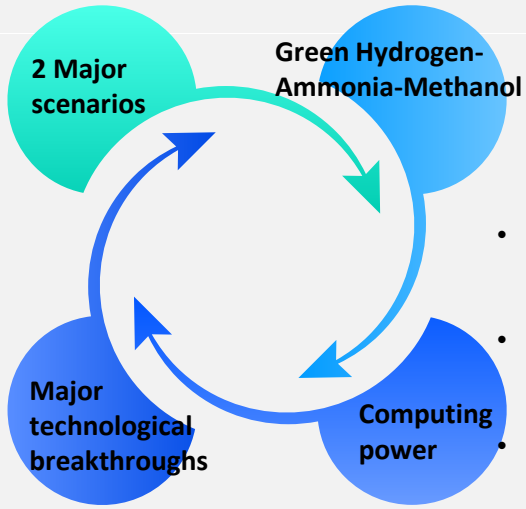
Interpretation

Application scenarios and expansion

Hydrogen energy is not a simple replacement for traditional energy sources, but rather a "connector" and "converter" in the new infrastructure system, promoting deep integration of energy, transportation, information, and industrial systems. Industrial decarbonization and green marine fuel will become the main deployment for the large-scale application of green hydrogen.

"Grey Hydrogen Substitution" and "Green Marine Fuel" as breakthrough point for application

Long-term energy storage, Green electricity to produce hydrogen, ammonia, and methanol, and nuclear fusion



National "Green "Hydrogen- Ammonia-Methanol" have been elevated to a national level. In the future, integrated energy bases combining "electricity + hydrogen + chemicals." will be formed in Solar and wind farms.

- **Computing Power Linkage**: Pair western data centers' green power demand with green hydrogen production to create a "Computing + Energy" synergy.
- **Zero-Carbon Parks**: Build park-level eco-systems combining solar, electrolyzer, hydrogen storage, and fuel cell cogeneration.
- **Transport Integration**: Establish hydrogen and ammonia refueling stations across highways, rail freight hubs, and ports.

Hydrogen Energy Trends

Trend 1： China's hydrogen policy focus will shift to large-scale commercialization, emphasizing operational applications. Pilot programs in hydrogen city clusters will receive subsidies, especially for renewable hydrogen used in ammonia and methanol production, chemical feedstock substitution, and hydrogen metallurgy.

Trend 2： Vertical integration across the hydrogen supply chain will accelerate, with central and local state-owned enterprises and major energy firms leading integrated "Wind-Solar-Hydrogen-Storage-Ammonia-Methanol" projects. SMEs will concentrate on niche segments such as equipment manufacturing, system integration, and testing services.

Trend 3： Standards and market mechanisms will advance in tandem, including systems for green hydrogen certification, carbon footprint tracking, and green certificate trading. A "Green Hydrogen Quota System" may be introduced and linked to the national carbon market to strengthen market-driven incentives.

Appendix

Hydrogen Production Equipment

Water Electrolysis Hydrogen Production Post-Treatment System (BoP)

In 2024, CIMC Hydrogen successfully delivered its independently developed 2000 Nm³/h alkaline water electrolysis hydrogen production equipment with wide-range adjustable separation and purification capabilities. This product boasts a 100% high-efficiency hydrogen processing capacity with no hydrogen loss during the process; it also allows for flexible wide-range adjustment of hydrogen production from 10% to 110%, making it suitable for various hydrogen production scenarios, especially large-scale renewable energy hydrogen production.

In 2025, several models of this product successfully obtained EU certification and were sold overseas.

Product Advantages:

- EU certified
- Flexible wide-range adjustment
- Customizable assembly
- High safety
- Non-destructive design

Product Features:

- Work pressure： 1.6MPa
- Design pressure： 2.0MPa
- Hydrogen processing capacity： 10~4000Nm³/h
- Adjustable range： 30%~110% (lower bound can reach 10%)
- Hydrogen product purity： >99.999%
- Dew point： ≤-65℃
- Structural style: Skid-mounted

Hydrogen Production Equipment

Methanol to Hydrogen System

CIMC Hydrogen has independently developed methanol solution preparation control programs, solution transportation and reformer linkage control programs with a robust process flow. It has a high primary methanol conversion rate, a large catalyst hydrogen load, good reaction selectivity, flexible and adjustable process adaptability to changing operating conditions, and interlocked adjustment of hydrogen production and hydrogen refueling station storage, which saves the overall station operating cost.

Product Features:

- Hydrogen production capacity: 100~500 Nm^3/h
- Hydrogen outlet purity: ≥99.99%
- Outlet pressure: 1.0~3.0 Mpa
- Total methanol conversion rate: ≥98%
- Water-to-methanol ratio: ≤1:2
- Reforming reaction temperature < 280℃
- Operating flexibility 30~100%
- Catalyst lifespan: > 3 years
- Methanol consumption: < 6.5 kg
- Pure water consumption: < 5.5 kg

Product Advantages:

Low cost | **Easy to operate** | **Compact structure** | **Reliable performance** | **Ease of maintenance**

Ammonia-Hydrogen Storage and Transportation Equipment

Inner Mongolia Baotou Huadian Hydrogen Storage Project

Product Advantages:

- **Hydrogen embrittlement resistance**
- **Fatigue resistant**
- **Safe and reliable**
- **Customizable**
- **Easy to operate**
- **Low operating and maintenance costs**

Medium and low-pressure hydrogen storage spherical tank

Medium and low pressure compressed hydrogen storage is currently the most practical form of physical hydrogen storage. To meet the need for large-capacity and safe storage, CIMC Hydrogen adopts large spherical tanks for medium and low-pressure hydrogen storage.

CMIC Hydrogen has completed over 30 hydrogen spherical tank projects—including Anyang Steel, Jingzhou Feilihua, Baotou Huadian, Zhejiang Yuanjin, Gansu Yumen, Hubei Daye, and China Energy Songyuan—which have all been operating smoothly. Over the past three years, these storage tanks have held more than 50% market share.

Product Features:

- Suitable for safe and efficient storage of large-capacity compressed hydrogen;
- Easy to scale up, with a single tank volume exceeding 10,000 cubic meters;
- Compact size, allowing for vertical expansion;
- Distributes stress evenly, saving significant amounts of steel and offering high economic efficiency;
- Requires on-site welding, demanding a high level of construction expertise.

Ammonia-Hydrogen Storage and Transportation Equipment

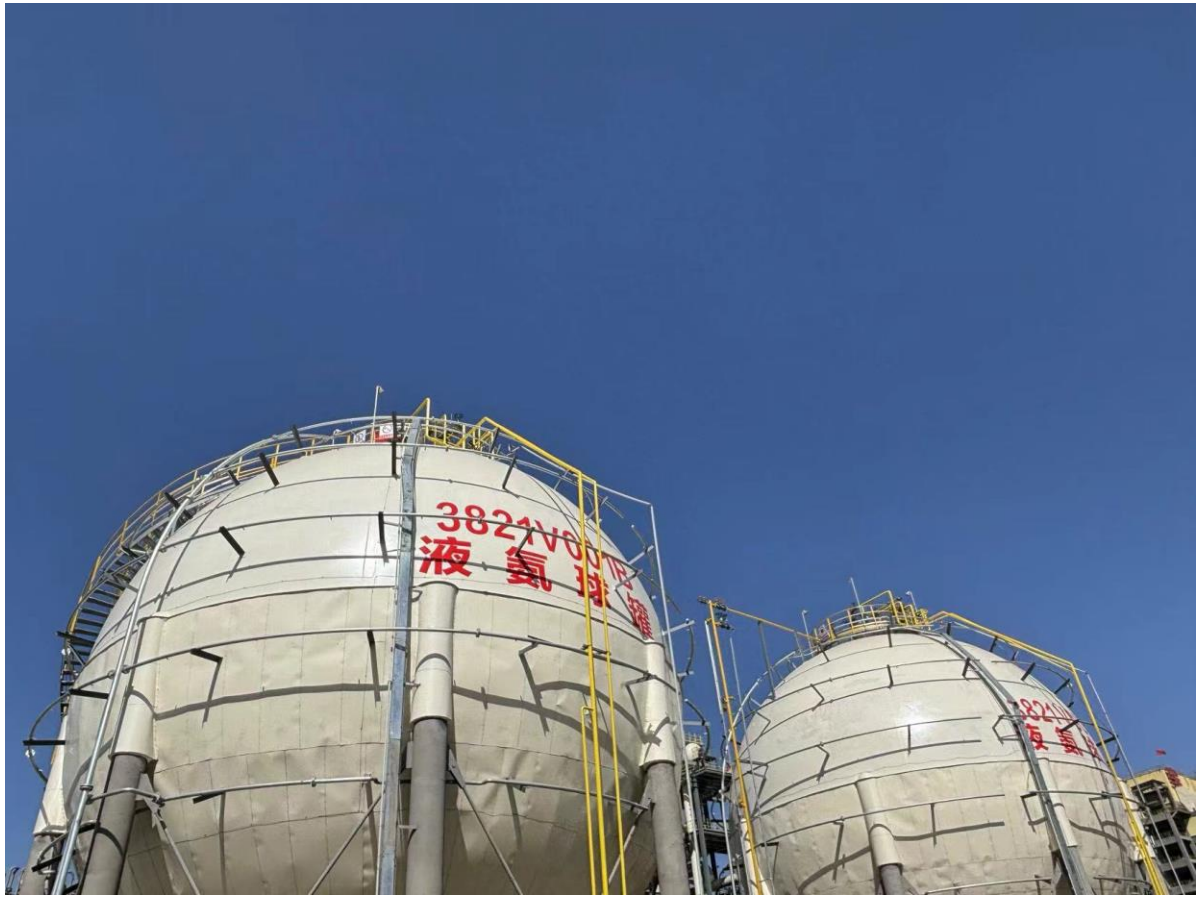
Full-Pressure Ammonia-Hydrogen Spherical Tank

Liquid ammonia hydrogen storage is a type of chemical liquid hydrogen storage technology. Hydrogen and nitrogen are synthesized into liquid ammonia under the action of a catalyst, which is then stored and transported in liquid ammonia form. Hydrogen can then be released by changing the conditions. This method not only offers high hydrogen storage efficiency and convenient transportation but also more economical.

CIMC Hydrogen Energy has completed the delivery of nearly 19 liquid ammonia spherical tanks, including 3 x 2000 m^3 tanks to Ningxia Baofeng Energy, 4 x 3000 m^3 tanks to Shengbang Technology, and 4 x 3000 m^3 tanks to Guizhou Meijin. It has also successfully won bids for 9 liquid ammonia spherical tanks from companies such as Hebei Chengxin and Zhejiang Juhua.

Product Features:

- Large storage capacity, a single tank can store 2300 tons of liquid ammonia;
- Diverse configurations, including semi-refrigerated and fully pressurized types;
- Multiple safety features, including full-coverage fire sprinkler system and dual escape routes;
- Small footprint, allowing for vertical expansion;
- Distributed stress, saving significant amounts of steel and offering high economic efficiency;
- Requires on-site welding, demanding a high level of construction expertise.



Ningxia Baofeng liquid ammonia spherical tank.

Product Advantages:

Corrosion resistant | **Safe and reliable** | **Customizable** | **Space-saving** | **Easy to operate** | **Low operating and maintenance costs**

Ammonia-Hydrogen Storage and Transportation Equipment

Large-capacity liquid ammonia tank trucks delivered in batches by the Ammonia Hydrogen Business Unit

Product Advantages:

- **Intelligent design**
- **Fatigue resistant**
- **Safe and reliable**
- **Customizable**
- **Highly efficient loading and unloading**
- **Low transportation costs**

Large-capacity lightweight medium-pressure liquid ammonia tanker equipment

CIMC Hydrogen has been engaged in the R&D and manufacturing of medium-pressure tank trucks for over 40 years. CIMC Hydrogen has led or participated in the drafting of 14 national and industry standards, and its products have won the "National Manufacturing Single Champion Product" award.

With the introduction of “Ammonia Energy" as a concept for hydrogen-based energy storage and low-carbon fuel, the number of hydrogen-ammonia combined demonstration projects has gradually increased globally. CMIC Hydrogen Ammonia truck orders have seen a significant year-on-year increase, achieving a record high of over 420 units in the first half of 2024. Furthermore, CMIC Hydrogen have established stable strategic partnerships with major liquid ammonia traders, resulting in a significant year-on-year increase in ammonia truck orders.

Products Features:

- Highly efficient equipment for transporting synthetic ammonia;
- Widely applicable and weather-resistant, suitable for nationwide liquid ammonia transportation;
- Equipped with a self-sinking safety valve for safety and reliability;
- Features over ten intelligent systems including liquid cargo monitoring, 360° panoramic view, and intelligent remote control;
- Utilizes analytical design methods, resulting in a high degree of lightweight design and a filling capacity of up to 26 tons.

High-Pressure Hydrogen Storage and Transportation Equipment

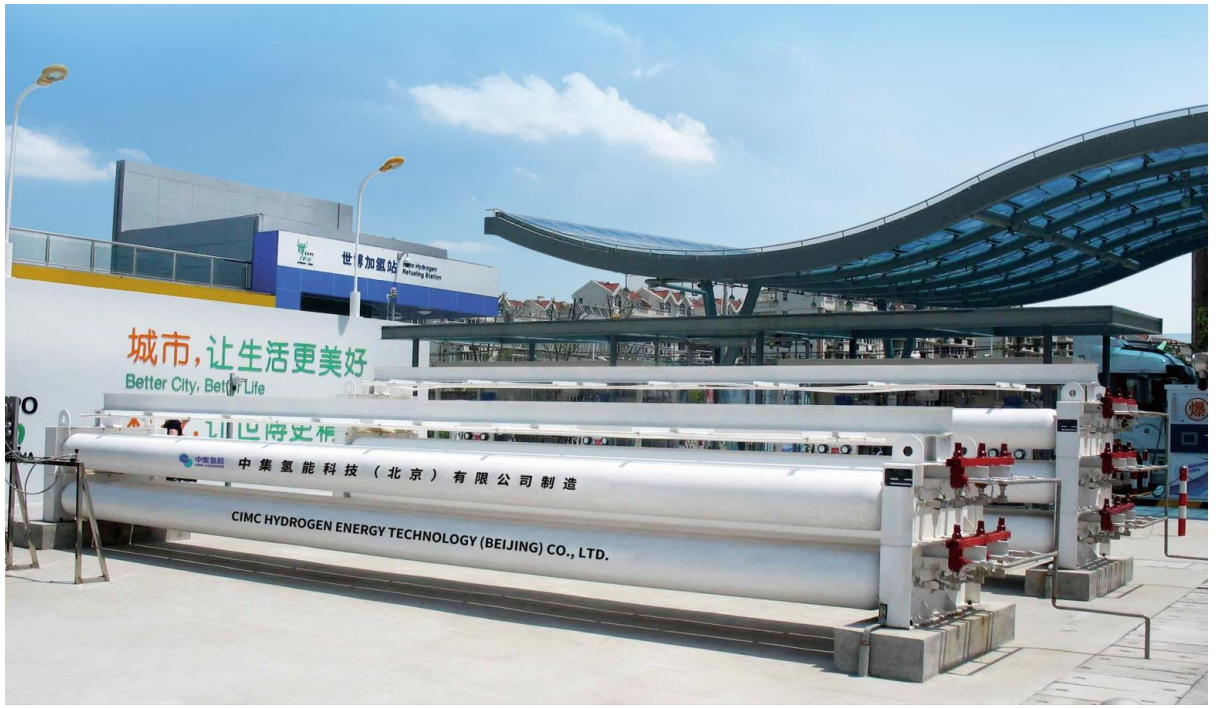
Station Hydrogen Storage Tank Groups

CIMC Hydrogen is a pioneer in the development of large-capacity seamless steel gas cylinders in China, backed by over 50 years of pressure vessel manufacturing expertise. The Company operates the world's largest and most advanced production base for large-capacity seamless steel cylinders and hydrogen storage and transportation equipment. It is the only enterprise in the industry with licensed capabilities for stress analysis. All cylinders are designed and manufactured through an integrated, validated process and hold ASME U, U2, and U3 certifications. CIMC Hydrogen also holds the highest number of international certifications in the industry.

The Company's High-Pressure Gaseous Hydrogen Division currently offers domestically designed hydrogen storage tank groups with working pressures of 22MPa, 27.6MPa, 50MPa, and 99MPa, and internationally designed versions up to 103MPa. Individual cylinder volumes range from 500L to 4,000L, and configurations can be tailored to specific customer requirements.

Product Features:

- Made of seamless steel with spin-formed monoblock construction;
- Flexible volume options and configurations to meet user needs;
- Uses mature and reliable quenching processes for improved performance consistency and microstructural stability;
- 20-year service life with low depreciation rates;
- Flexible cascade arrangement for efficient space utilization.



45MPa Hydrogen Storage Tank Groups at the hydrogen refueling station of the 2010 Shanghai World Expo

Product Advantages:

Hydrogen embrittlement resistant

Fatigue resistant

High safety and reliability

Fully Customizable

Space-saving design

High-Pressure Gaseous Hydrogen Storage and Transportation Equipment

Hydrogen tube trailer for the 2022 Beijing Winter Olympics

Hydrogen Tube Trailer

CIMC Hydrogen offers a full range of hydrogen tube trailer models featuring rigorous process design and manufacturing standards to ensure safety and reliability. Through continuous technological upgrades, the trailers now offer higher hydrogen loading capacity and improved discharge rates, significantly reducing energy loss and transportation costs—delivering more economical solutions for customers.

The Company's High-Pressure Gaseous Hydrogen Division currently supplies a variety of tube bundle container models, including: Type I seamless steel tube bundle containers (20MPa), Type II steel-lined fiber-wrapped tube bundle containers (20MPa/30MPa), Type III compressed hydrogen gas aluminumliner carbon fiber fully-wrapped cylinder container(52MPa). In Q1 2025, the company successfully delivered and commissioned China's first 30MPa hydrogen tube trailer.

Product Advantages:

- **Hydrogen embrittlement resistant**
- **Fatigue resistant**
- **Safe and reliable**
- **Customizable configurations**
- **High unloading efficiency**
- **Low transportation costs**

Product Features:

- Specially designed for hydrogen storage and transportation;
- Multiple cylinder configurations available: Type I and Type II options;
- Customizable to meet specific customer requirements;
- Suitable for scenarios within a transportation radius of 300km;
- Maximum working pressure up to 30MPa;
- Hydrogen payload of up to 627 kg.

High-Pressure Hydrogen Storage and Transportation Equipment

Large-Scale Hydrogen Storage and Supply Solutions (Hydrogen Ammonia, Green Methanol, Hydrogen Transmission, Mother Station)

Solution	Vertical standard gas storage unit	High-pressure seamless gas cylinder storage
Working Pressure (MPa)	10	20
Diameter (mm)	1400	715
Volume (m^3)	27.1	4.05
Fatigue Life (year)	≥20	20
Installation Method	Stackable	Stackable
Construction Period (months)	5	5

Product Features

1、 **Standardized production, short delivery cycle, and significant economic benefits**: Standard hydrogen storage units of 6MPa and 10MPa can be mass-produced with short construction periods, offering an investment advantage over hydrogen storage requirements of the same scale. ;

2、 **Compact size**: Compared to spherical tank products, medium and high-pressure gas storage units require less space and offer more flexible spatial layout;

3. **Long lasting design**: Standardized production ensures higher quality and superior safety performance compared to spherical tank products.

Liquid Hydrogen Storage and Transportation Equipment

In 2025, PRC first civilian liquid hydrogen industry chain demonstration project covering the entire process of liquid hydrogen production, storage, transportation, and application was successfully completed. CIMC leveraged its profound technical expertise in cryogenic equipment, focused on overcoming key technical challenges in the liquid hydrogen storage and transportation process. It successfully delivered commercial liquid hydrogen storage and transportation equipment, including a 400m³ liquid hydrogen spherical tank, a 40m³ liquid hydrogen tank truck, and a 20m³ liquid hydrogen storage tank. This contributed to the successful demonstration of China's first civilian liquid hydrogen full industry chain project and laid a solid foundation for the large-scale commercial application of hydrogen energy.

Liquid Hydrogen Storage Tank

Product Category: Stationary Pressure Vessels
Product Application: Liquid hydrogen storage, mainly used in hydrogen refueling stations, liquid hydrogen plants, and hydrogenation stations.
Product Volume Range: 5~500 m³
Product Pressure Range: ≤1.2MPa
Product Advantages: Compact size, easy installation, compact structure, stable operation, simple operation, and excellent thermal insulation.

Liquid Hydrogen Transport Semi-Trailer

Product Category: Mobile Pressure Vessel
Product Application: For liquid hydrogen transportation
Product Volume Range: 40m³
Pressure Range: ≤1.2MPa
Product Advantages: High hydrogen storage density, enabling direct storage and supply from liquid hydrogen plants to users, reducing evaporation losses during liquid hydrogen transfer, low storage and transportation costs, high safety, and suitable for medium- and long-distance transportation.

Liquid Hydrogen Tank Container

Product Category: Mobile Pressure Vessel
Product Application: For domestic and international transport and short-to-medium-term storage of liquid hydrogen
Product Volume Range: 40~50m³
Pressure Range: ≤1.2MPa
Product Advantages: High hydrogen storage density, high safety, flexible transportation methods, low storage and transportation costs, and supports sea-land combined transport.

Liquid Hydrogen Vehicle-Mounted Cylinder

Product Category: Class B
Product Application: Hydrogen supply for fuel cells and internal combustion engines
Product Volume: 500L~1350L
Pressure Range: ≤1.2MPa
Product Advantages: High efficiency, high integration, long operating range, lightweight, high safety performance, short refueling time

Liquid Hydrogen Spherical Tank

Product Category: Stationary Pressure Vessels
Product Application: Primarily used in liquid hydrogen plants
Product Volume Range: 300~2500 m³
Product Pressure Range: ≤1.2MPa
Product Advantages: Large liquid hydrogen storage capacity, high energy density, suitable for large-scale energy storage stations.

Hydrogen Refueling Station and Core Equipment

Stationary Hydrogen Refueling Stations

Leveraging years of experience in the design, manufacturing, and construction of refueling stations, CIMC Enric has developed Stationary hydrogen refueling stations in multiple cities including Guangzhou, Baoding, and Zhucheng. These stations are built in accordance with both domestic and international hydrogen refueling standards. In 2021, the Company successfully delivered Hebei Province's first integrated "Oil-Gas-Hydrogen" service station, supporting infrastructure development in the Xiong'an New Area.

CIMC Enric is one of the few companies in the industry with high in-house production capability for core hydrogen refueling station components. The Company independently develops, designs, and manufactures diaphragm compressors, liquid-driven compressors, hydrogen dispensers, and vent stacks, enabling it to offer end-to-end hydrogen station solutions, highly recognized by clients across the industry.

Diaphragm Compressor (Mother Station / On-site)

Liquid-driven Compressor

Hydrogen Dispenser

First Integrated "Oil-Gas-Hydrogen-Electricity" Service Station in Hebei's Xiong'an New Area

- Supporting Xiong'an's foundational infrastructure, equipped with 12 hydrogen storage tanks, 2 LNG tanks, 2 gasoline tanks, 2 diesel tanks;
- On-site facilities include 2 ×35MPa hydrogen dispensers, 3 LNG dispensers, 3 fuel dispensers;
- Refueling capacity: Hydrogen: 1,000 kg / 12 hours; Oil: 30 tonnes/ day; LNG: 24,000 Nm^3 / day;
- Capable of serving vehicles using oil, gas, or hydrogen energy simultaneously.

Key Advantages:

Real-time monitoring | **Enhanced Safety** | **More efficient** | **Cost effective** | **Intelligent operations**

Hydrogen Refueling Stations and Core Equipment

70MPa Skid-Mounted Fully Integrated Hydrogen Refueling Station

In January 2022, CIMC Hydrogen's Integrated Systems Division successfully delivered its self-developed 70MPa skid-mounted fully integrated hydrogen refueling station to the Wanquan Oil-Hydrogen-Electricity Integrated Service Station in Zhangjiakou, Hebei. This station set multiple domestic records in hydrogen refueling technology.

① China's First

Refueling system that meets SAE J2601 T40 protocol and equipped with infrared data communication.

② China's First

All-in-one integrated hydrogen unit combining discharge, compression, control, and AI-powered monitoring system..

③ China's First

Unit with integrated skid-mounted safety system and the first to feature a large-format integrated display panel.

④ China's First

Multi-source refueling system supporting both 20MPa and 30MPa hydrogen trailers.

⑤ China's First

Fully assembled explosion-proof skid-mounted hydrogen refueling unit.

⑥ China's First

Integrated explosion-proof skid-mounted water-cooling system.

This pioneering hydrogen refueling station was also successfully deployed during the 2022 Beijing Winter Olympics, supporting 70MPa hydrogen refueling applications.

Product Highlights：

- Compatible with 20MPa and 30MPa hydrogen trailer gas supply;
- Equipped with internal water cooling and cryogenic cooling unit;
- Complies with SAE J2601 standards with outlet temperatures between -33°C and -40°C;
- Operating pressure of 90MPa; refueling pressure ranges from 70–87.5MPa;
- AI-enabled smart monitoring system ensures standardized and safe operations;
- Infrared communication enhances vehicle hydrogen tank safety by transmitting pressure and temperature data.

Hydrogen Refueling Stations and Core Equipment

EFS-HYQ35-120-02 Compact Skid-mounted Hydrogen Refueling Unit

3rd Generation 35MPa Compact Skid-Mounted Hydrogen Refueling Station

Product Features:

- Designed for refueling hydrogen fuel cell vehicles;
- Utilizes standard cylinder bundles or long tube trailers as the hydrogen source;
- Maximum inlet pressure: 200 bar;
- Outlet pressure can be boosted up to 450 bar via liquid-driven booster;
- Refueling flow rate up to 10 kg/h;
- Inlet pressure range: 0~250 bar.

Key Advantages:

- Compact layout
- High level of Integration
- Easy Installation
- Easy Maintenance
- Rapid Deployment
- Plug and play functionality

China's first hydrogen-powered forklift
3rd Gen 35MPa Compact Skid-Mounted
Hydrogen Refueling Unit
Successfully landed in Foshan

Appendix: On-board Hydrogen Storage Cylinders and Hydrogen Supply Systems

Type III On-board Cylinders and Hydrogen Supply Systems

In 2017, CIMC ENRIC successfully developed 35MPa Type III fully-wrapped carbon fiber composite cylinders with aluminum liner, which have passed international type approval certification. The product specifications range from 55-450L, providing hydrogen storage capacity of 1.32-10.8Kg.

Currently, a total of 4,000 hydrogen supply systems have been supplied, enabling hydrogen fuel cell vehicles to achieve a maximum mileage of over 150,000 kilometers.

Product Features:

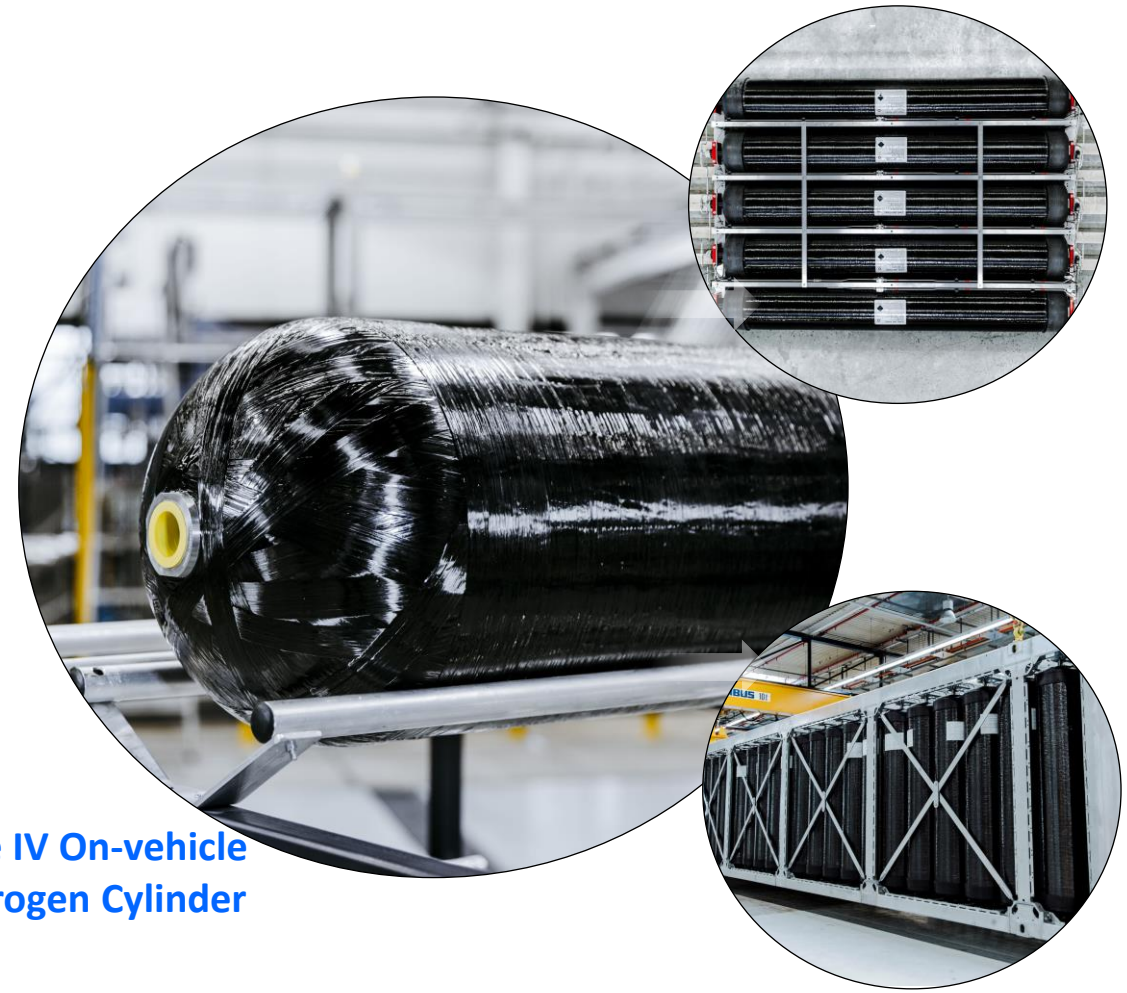
- Equipped with German Roth 5-axis dual-carriage, 3-position filament winding machines, and intelligent control systems, ensuring high production efficiency and process stability;
- Hydrogen density (hydrogen weight/cylinder weight ×100) reaches 5.6–6%;
- Hydrogen storage system frame complies with 8g crash impact test requirements and can be tailored for low-temperature operational environments;
- Proven durability with over 20,000 fatigue cycles, and burst pressure exceeding 120 MPa, far surpassing national standards.

Product Advantages:

Intelligent manufacturing | **High density** | **Cryogenic-resistant** | **Enhanced Safety** | **More efficient** | **Lifetime warranty**

On-vehicle Hydrogen Cylinder and Hydrogen Supply Systems

On-vehicle Hydrogen Supply System



Type IV On-vehicle Hydrogen Cylinder

MEGC Tube Bundle Container

Type IV On-vehicle Hydrogen Cylinder and Hydrogen Supply System

In 2021, we partnered with Hexagon Purus, a world-leading manufacturer of Type IV hydrogen storage cylinders and supply systems, to jointly establish Asia's largest Type IV cylinder production facility. This strategic collaboration aims to deliver safer, more efficient, and more cost-effective hydrogen fuel cell system solution to global customer.

Product Features:

- High-strength carbon fiber structure reduces impact, degradation, and fatigue;
- Lightweight design enhances vehicle performance, drivability, and fuel economy;
- Corrosion resistance and fatigue durability ensure long cycle life;
- All safety-critical performance indicators have passed rigorous testing

Product Advantages:

Corrosion Resistance | Fatigue Resistance | Lightweight | Enhanced Safety | High Efficiency | Cost Efficiency

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Thank You !

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