

CIMC ENRIC

中集安瑞科控股有限公司 CIMC Enric Holdings Limited

(Stock code: 3899.HK)



English 2024.3.26

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Segment Performance and Orders
 Segment Business Highlights and Review
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H2 • RENEWABLE ENERGY

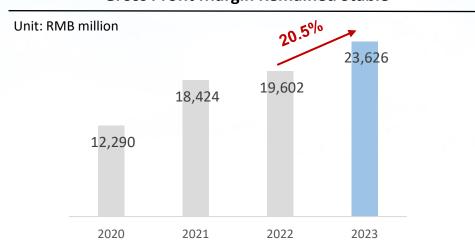
CONNECTING the world

fostering the future,

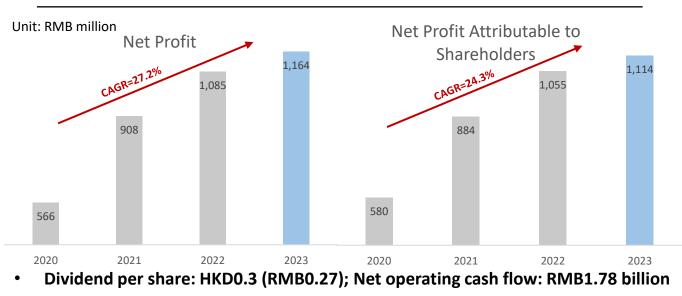


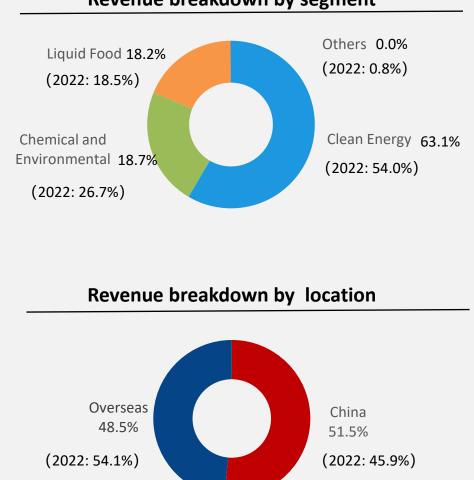
Income and Net Profit Reached a Historic High Dividend Payout Ratio Increased to 50%

Revenue increased significantly by 20.5% YoY, 2020-2023 CAGR=24.3%, **Gross Profit Margin Remained Stable**



Net Profit and Net Profit Attributable to Shareholders up 7.2% and 5.6% YoY



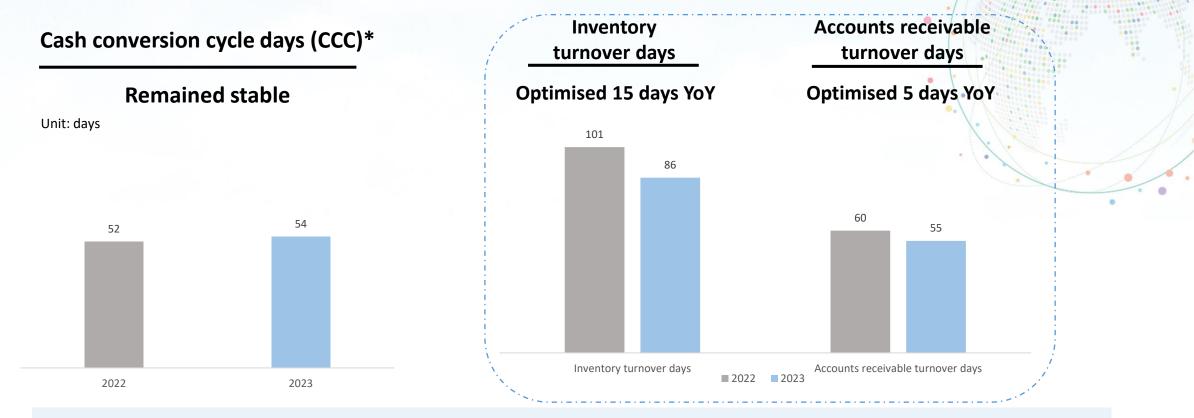


Revenue breakdown by segment

*All financial data is in RMB, except for dividend per share

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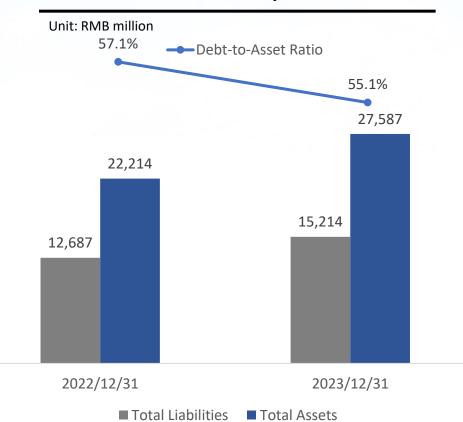
Significant Improvement in Cash Conversion Cycle and Inventory Turnover Days



- Overall CCC was 54 days, remained stable.
- Inventory turnover days and accounts receivable turnover days (A/R days) improved YoY.
- Inventory turnover days during the period was significantly optimised by 15 days YoY.

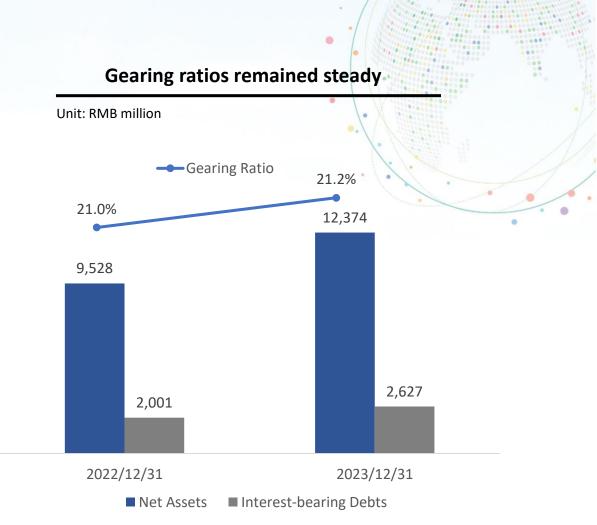
*Cash conversion cycle days (CCC) = Inventory turnover days + A/R days + Contract asset turnover days – Accounts payable turnover days – Contract liability turnover days

Long-term Stable Capital Structure



Debt-to-asset ratio optimised YoY

 Total liabilities of RMB15.21 billion included accounts payable, contractual liabilities, interest-bearing debts (convertible bonds + loans from financial institutions), etc. of which the total accounts payable and contractual liabilities amount to approximately RMB8.88 billion, with interest-bearing debts of approximately RMB2.63 billion



- Interest-bearing debts included zero-coupon convertible bonds of approximately RMB1.45 billion and loans from financial institutions of approximately RMB1.18 billion.
- Excluding the effect of convertible bonds, the gearing ratio for 2023 was merely 9.5%.
- Taking into account cash and cash equivalents, the net leverage ratio for the year 2023 was 0% (2022: 0%)
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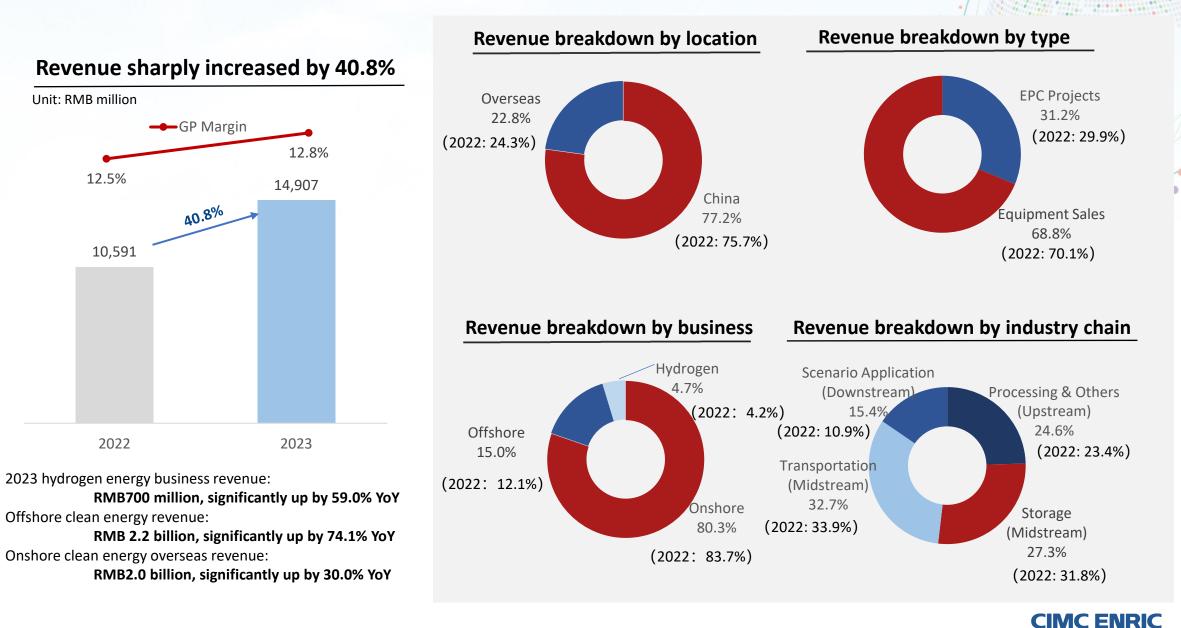
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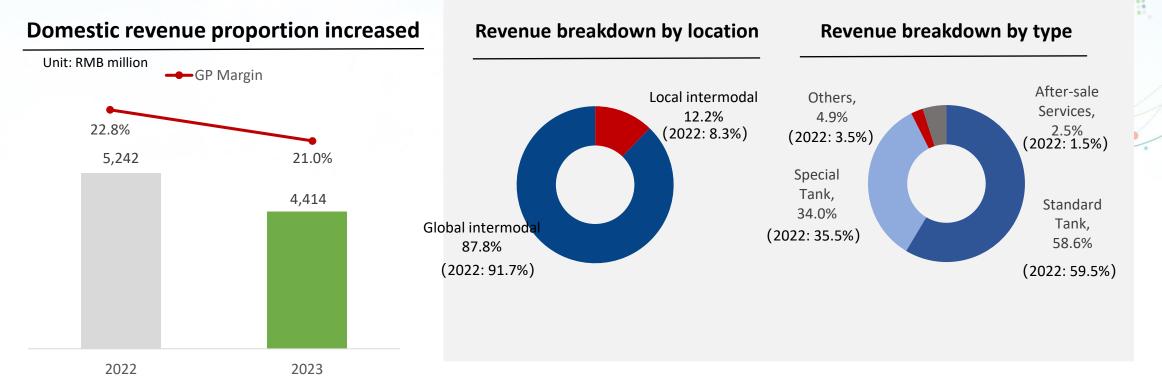


Clean Energy Segment Performance



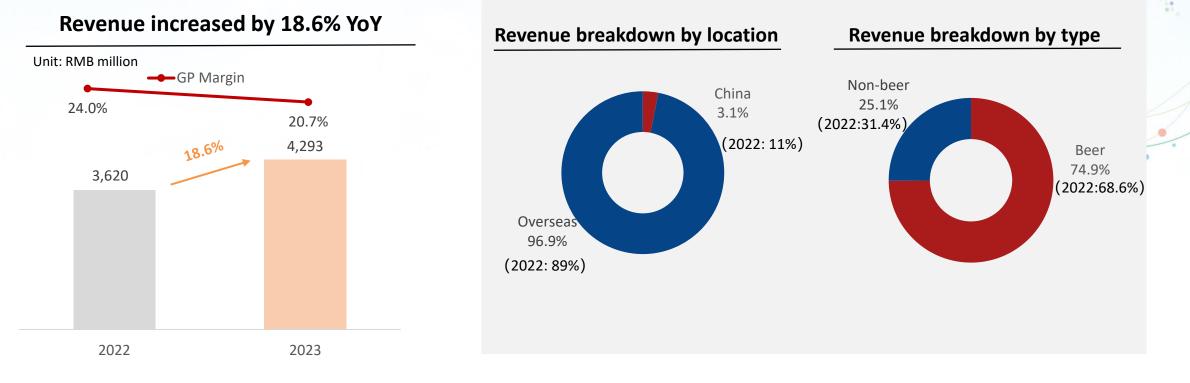
*All financial data for segments is in RMB

Chemical and Environmental Segment Performance



- CIMC Safeway Technologies was successfully listed on the ChiNext board of the A-share market, marking the beginning of a new chapter in the chemical environmental business;
- Tank container global market share has ranked first for multiple consecutive years;
- The medical equipment component business has achieved a breakthrough, with operating revenue reaching RMB200 million, up 20.3% YoY;
- The aftermarket business has experienced rapid development, achieving revenue of RMB100 million, up 39.2%;
- The regional market has shown strong growth, with mainland China's revenue reaching RMB500 million, up 24.3% increase;
- The first powder coating line with near-zero VOC emissions has been put into operation within the industry, achieving low VOC emissions at the source.

Liquid Food Segment Performance



- Newly signed and backlog orders both reached a historical high;
- Won several bids for whisky projects in China, assisting leading liquor companies in expanding into new markets;
- Actively expanded the biopharmaceutical business and was recognised as the Best Supplier of the Year by the International Society for Pharmaceutical Engineering

Newly Signed Orders for Clean Energy Increased Significantly

- In 2023, the recovery of domestic natural gas consumption and the return of LNG prices to normal levels, and new orders for clean energy totaled RMB18.57 billion, significantly up 64.9% YoY.
- With the upgrade of global green shipping and the high boom in the shipbuilding industry, new orders for offshore clean energy amounted to about RMB7.48 billion, greatly up by 174.6% YoY.

Newly Signed Orders for Clean Energy

Unit: RMB100 million

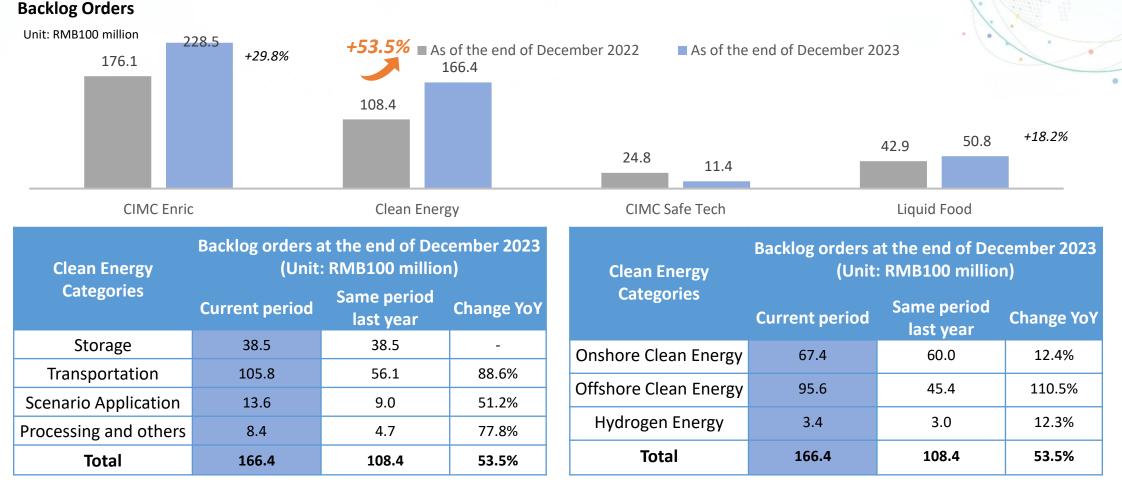


Newly signed orders: Cumulative value of all orders signed in 2023

• The change in ratios is consistent with 2023 Annual Results Announcement

Backlog Orders Recorded a New High

- As of the end of December 2023, backlog orders amounted to RMB22.85 billion, representing a YoY increase of 29.8%, and backlog orders for the clean energy business increased by 53.5%.
- Economic recovery, the rebound of the Chinese natural gas market, and favorable government policies have driven the sales of LNG onvehicle cylinders, LPG trailers and other storage and transportation equipment to improve.



• Backlog orders: Total orders value as of 31 December 2023.

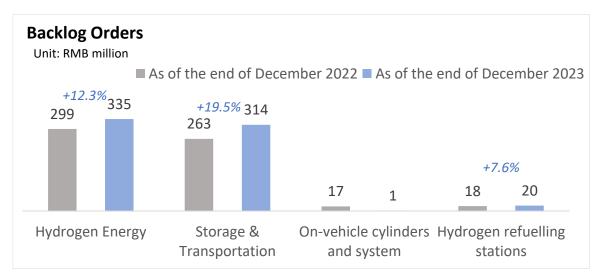
• The change in ratios is consistent with 2023 Annual Results Announcement.

Rapid Growth in Hydrogen Storage and Transportation Equipment

- Cumulative new orders for 2023 were RMB830 million, up by 36.7% YoY. As of the end of December 2023, hydrogen energy backlog orders were RMB340 million, up 12.3%;
- Newly signed orders for Hydrogen storage and transportation equipment achieved a significant increase.
- During the year, the first hydrogen refuelling station and the first hydrogen-powered bus in Hong Kong were officially put into operation.







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Clean Energy Revenue and Orders Soared to New Heights; Remarkable Growth in Overseas Market for Onshore Clean Energy and Record-Breaking Overseas Orders

Onshore Clean Energy

- Strong demands for application, storage and transportation equipment, with natural gas market rebounding and LNG prices maintaining a favorable oil-to-gas ratio; acquisition of multiple gas storage and peak-shaving projects; significant growth in orders and sales revenue for onvehicle LNG cylinders;
- Acquired the overseas LNG liquefaction plant project, achieving a record-high overseas revenue;
- Rapid replication for the upstream coke oven gas to hydrogen co-production LNG; projects with Angang Steel, Shougang Shuigang and Lingang Steel will continue to put into production in 2024-2025.



Offshore Clean Energy

- Booming clean energy vessel industry, receiving nearly 20 new and optional orders of key vessel types like liquified gas carries, clean energy powered vessels and bunkering vessels;
- The construction of the first MGC vessel, designed for the transportation and demand of liquid ammonia and liquid carbon dioxide, with the potential to become a key player in clean energy transportation.



Hydrogen Energy

- Won the first hydrogen storage spherical tank EPC project in Inner Mongolia, with delivery in the same year
- Core equipment such as liquid hydrogen tank container, commercial liquid hydrogen tanker, 45MPa hydrogen diaphragm compressor and 90MPa hydrogen gas liquid drive compressor rolled out of the production line;
- Delivered Hong Kong's first hydrogen refuelling station, the Type IV on-vehicle hydrogen cylinders and supply systems for the first hydrogen-powered double-deck bus, and the high-pressure hydrogen tube bundle trailer required for hydrogen transportation, which have been successfully put into operation.



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Highlights - Record-High Overseas Revenue and Orders for Onshore Clean Energy



Accelerating Expansion in Overseas Markets

Established overseas offices in the Americas, Europe, Africa, Southeast Asia, and other regions to enhance worldwide brand influence and service capabilities, while actively exploring the Middle East market.

Record-High Overseas Revenue

reaching a historical high, up 30% YoY.

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The overseas revenue from onshore clean energy business exceeded RMB2 billion in 2023,



Successfully promoted and constructed natural gas engineering projects and LPG spherical tank projects in Africa



Secured new orders for overseas LNG liquefaction plants, with overseas business revenue increasing by over 30%.

Signed a MOU for cooperation with Saudi Arabian enterprises, actively evaluating the layout of Middle Eastern markets

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Highlights - Increased Demand for Clean Energy Storage and transportation Equipment



Increased demand for gas storage and peak-shaving projects

- Awarded an EPC contract for a 29,000m³ natural gas peak-shaving storage station project;
- Joint bidding, awarded a number of projects such as Shenzhen Natural Gas Storage and Peak-shaving Storage Phase II Expansion EPC General Contracting Project.

On-vehicle LNG cylinder orders rose sharply

- Newly signed and delivered orders for on-vehicle LNG cylinders both achieved significant growth, with sales revenue amounting to ~RMB900 million, representing a 13-fold increase YoY and the cumulative newly signed orders amounting to nearly RMB1.3 billion, a 39-fold increase YoY.
- The new lighthouse production line was put into production 1Q2024, reaching a double-shift annual production capacity of 200,000 on-vehicle LNG cylinders.



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Highlights - Global Shipping Green Upgrading Strong Demand for Shipbuilding

Signed nearly 20 new vessels and optional vessel orders in 2023, with the total value of backlog orders reaching RMB9.56 billion



Expansion of new vessel type of MGC with A-type cargo tank

- Acquired four 40,000m³ LPG/liquid ammonia carriers (MGC vessels);
- Meeting the transportation demand for different liquefied gas cargoes such as LPG, liquid ammonia, and liquid carbon dioxide, etc.;
- Matching the specification and scale of liquid ammonia batch trading transportation, thus expected to be the backbone of zero-carbon energy transportation in the future.





- Acquired 2+2 1,450 TEU LNG dual-fuel container vessels;
- Acquired 4 clean energy river-sea direct dry bulk carriers for CSC Bulk Shipping, accelerating "Gasification of Yangtze River", with the first ship being the first to apply the LNG tank-swap solution in the offshore of the Yangtze River.



LNG marine fuel tank orders continued to grow



- The rapid growth of global green power ship orders has led to a great demand for LNG marine tanks, with orders for LNG fuel tanks nearly RMB2.0 billion in 2023, up 142% YoY;
- Able to provide customers with diversified and customised fuel tank solutions, including B-type tanks and C-type tanks, etc.

Leading in Equipment and Integrated Solutions for the Whole Hydrogen Industry Chain





Hydrogen Spherical Tanks

Won the first large-scale spherical tank hydrogen storage EPC project in Inner Mongolia

Awarded the hydrogen storage EPC project of Huadian Group's hydrogen production project in Damaoqi County, Baotou, and delivered in the same year



Liquid Hydrogen

Liquid hydrogen storage and transportation equipment continued to break through

- Launched 40-foot liquid hydrogen tank container;
- Launched China's first commercial liquid hydrogen tanker.





Hydrogen Refuelling Station

first hydrogen refuelling station

Kong's "hydrogen" energy

successfully launched

Two hydrogen compressors were

hydrogen refueling stations.

Completion and delivery of Hong Kong's

operational in 2023, along with Hong

bus, marking a new chapter in Hong

Launched the 90MPa/1000kg liquid-

driven compressor and the 45MPa diaphragm compressor, achieving 100% self-production of core equipment for

Kong's first Type IV hydrogen-powered

• The hydrogen refuelling station was



Type IV Cylinder

Type IV on-vehicle hydrogen supply systems

- Successful delivery of hydrogen Type IV on-vehicle hydrogen supply systems for overseas hydrogen projects
- Accelerated the construction of the production base of Type IV on-vehicle hydrogen cylinders and supply systems in Hebei, China. Expected to be completed in 1H2024



Focused on Leading the Way: Clean Energy Champion Product Map

Offshore clean energy

Onshore clean energy

Hydrogen



Upstream

(Production)

Offshore oil & gas treatment module



Wellhead gas recovery package



Liquefaction plant for natural gas, coal-bed methane and coke oven gas



Methanol reforming hydrogen production equipment



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Small and medium-sized liquefied gas carriers for LNG, LEG, liquid ammonia, and clean energy-powered LNG vessels



A ACAR CAD. 3.

Industrial gas cryogenic storage tank tank container



Spherical tank









LNG bunkering vessel







on-vehicle LNG cylinder Low-carbon energy station product (SL1500)



45MPa diaphragm compressor

90Mpa liquid-driven compressor



Skid-mounted hydrogen refuelling station

Type III on-vehicle hydrogen cylinders and supply systems



Designated as core champion products in clean energy











Hydrogen Stationary hydrogen

tank container

LNG tank

carrier

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tank carrier (ๆ



Hydrogen tube bundle trailer (20MPa, 30MPa)

LPG carrier

Industrial gas

Liquid ammonia

carrier

Continuous R&D and Technological Innovation



Continuous R&D and Technological Innovation

Completed the development of the first phosphine and hydrogen gas mixer manifold container in China, with leading product specifications , marking a breakthrough in domestic electronic gas storage and transportation equipment

Completed the R&D of the SL series distributed energy stations and application, delivered to clients, contributing to industrial energy conservation and effectively expanding the low-carbon integrated



Massive delivery of the largest-capacity CO2 semi-trailers in China, intended for carbon capture, utilization, and storage (CCUS) projects, contributing to the development of a carbon circular economy.

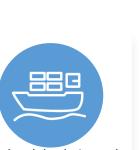
Breakthrough and innovation of cutting-edge onshore clean energy equipment

energy service business.



First project of MGC carriers for offshore clean energy





Completed the design and development of B-type cargo tanks for LNG carriers, constructed and delivered the largest one in China, providing customers with solutions for A-type, B-type and Ctype liquid cargo tanks.



Won the first project of A-type liquid cargo tank MGC, creating a full range of product series for small and mediumsized offshore liquefied gas carriers.



The methanol fuel supply system has been granted the Approval in Principle (AIP) certificate for methanol fuel supply systems by DNV, the Norwegian classification society.

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Continuous R&D and Technological Innovation

R&D in hydrogen energy leading the industry



Liquid hydrogen:

Completed the development of ASME standard liquid hydrogen storage tank, and successfully signed the first order; launched the first commercial liquid hydrogen tank truck in China

Storage and **Transportation:** Successfully

launched the first 30MPa hydrogen tube bundle container and the first cryogenic anhydrous ammonia transport carrier in China and achieved mass orders for both products.





Hydrogen

compressor: Successfully launched 90MPa 1000kg liquid-driven compressor and 45MPa diaphragm compressor, and achieved independent production and construction of all core equipment for hydrogen refuelling stations



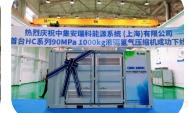
Standards:

Participated in the preparation of the national standard for Type IV cylinder, which was released and implemented; led in the completion of a number of group standards for hydrogen storage and transportation containers;



Hydrogen production: launched 1200Nm³/h alkaline electrolyser and skid mounting methanol-tohydrogen equipment;









Integrated Service Solution - End-to-End Integrated Services for Coke Oven Gas Hydrogen Production

Angang Steel project: converting industrial waste gas into hydrogen, expanding energy efficiency and emission reduction applications and creating end-to-end comprehensive service demonstrations

Internal Application of Angang Steel



Transportation: hydrogen fuel cell heavy truck, LNG heavy-duty trucks



Hydrogen metallurgy



Comprehensive applications in adjacent services



LNG: LNG heavy-duty trucks, industrial boilers, and residential gas utilization



Hydrogen: Glass products, biopharmaceuticals, pesticides, hydrogen refuelling stations, etc.

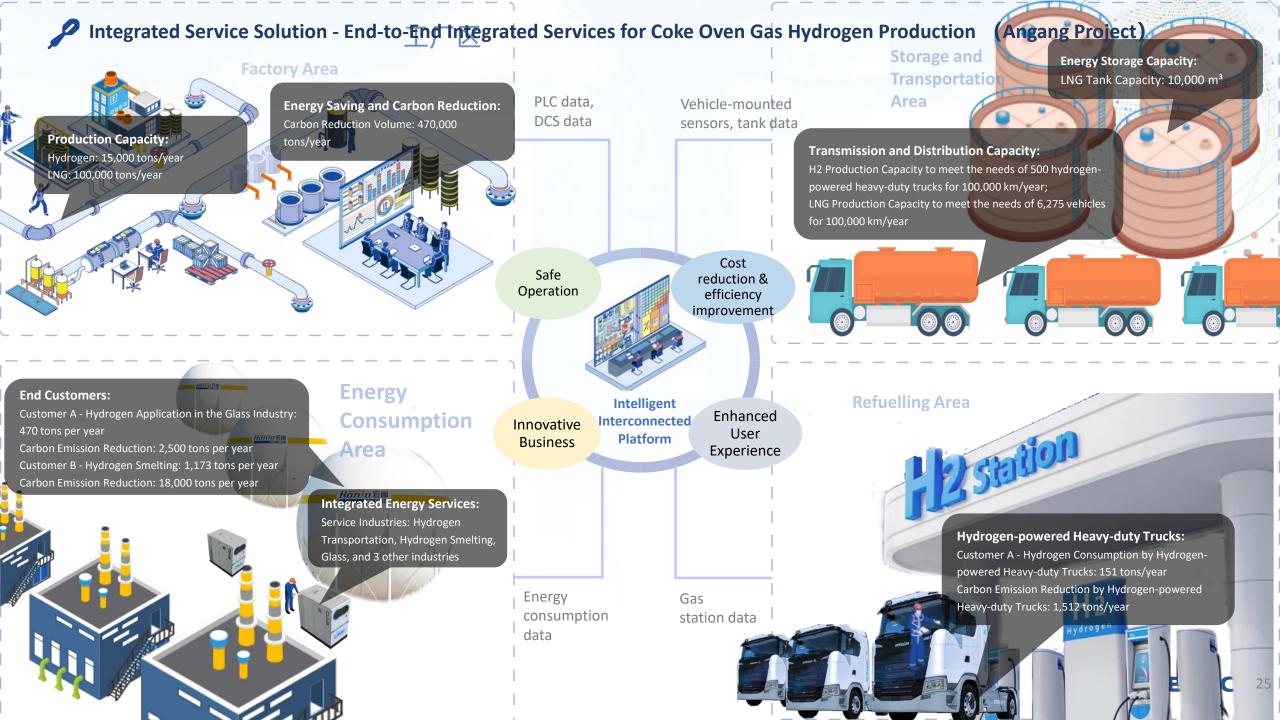
equipment storage tank 10,000 m³ 4 sets

equipment 1set

refrigerant storage equipment 4 sets















Chemical and Environmental

- CIMC Safe Tech (SZ.301559) was successfully listed on the ChiNext board of the A-share market;
- Electrolyte tank, high-end inner liner tank, refrigerant tank container market demand continued to rise;
- The first powder coating was put into use, reducing VOC emissions and leading the industry's sustainable development.







Top 1 in Global Market Share of Chemical Tank Containers for 18 Consecutive Years

CIMC Safe Tech (SZ.301559) successfully listed on the Shenzhen Stock Exchange

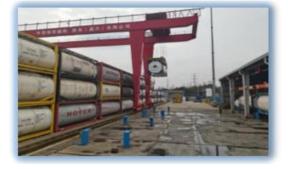
Long-term leading position in the global tank container market in terms of market share

- CIMC Safe Tech is a global chemical logistics equipment manufacturer and full life cycle service provider integrated with business of tank container design and development, manufacturing and sales with the world's largest manufacturing scale, most complete series of varieties and leading technology
- In response to the development of different emerging industries, it has continued to R&D new products, such as the semiconductor industry's new liner tank containers, customised tank containers to meet the needs of electrolyte precision temperature control of new energy lithium battery industry, medical nuclear magnetic equipment products



Continuously expanding after-sale service outlets to build full life cycle service capability

- Providing professional repair, cleaning, refurbishment and modification services for all tank containers in the market
- Establishing after-sale service outlets in the world's major chemical industry clusters and tank container logistics hubs, such as Netherlands, Jiangsu and Zhejiang
- Demand for tank container cleaning and maintenance in chemical industry clusters and the growth in tank container ownership are driving the growth of the aftersales service business







Daily tank maintenance cost: ~RMB5,200/year, tank ownership: ~802,000 units

Market space for tank container after-sales services: ~ RMB4.17 billion/year



R&D Innovation to Create Intelligent Production Lines, Products and Services

Intelligent Production Line Upgrading

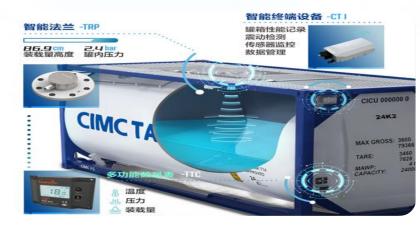


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Production line upgrading (powder coating project)

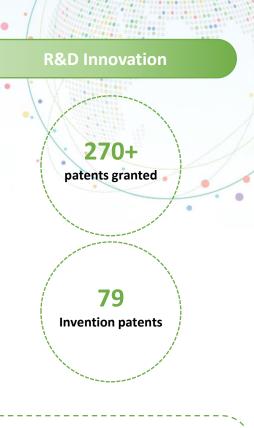
- The world's first powder coating line for the tank container industry, commissioned in the Q2 of 2023
- Greatly improving paint spraying efficiency of tank containers and reducing VOC emissions
- Leading the industry in green development

Intelligent Product R&D



Intelligent and technological tank container

- Providing customised tank container information services based on IoT technology
- **G** Key development direction:
- Intelligent sensing products: Digital display thermometer,
 intelligent flange, temperature sensor, pressure sensor and etc.
- Intelligent terminal: Digital operation platform for tank containers
- Electrical equipment: Solving customers' needs for electrical automation such as in-transit temperature management, automatic loading and unloading, and complete sets of equipment control.



"China Patent Excellence Awards" "Jiangsu Provincial Excellent Enterprise" "Jiangsu Provincial Green Development Leading Enterprise" "Jiangsu Province Green Factory"

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Liquid Food Segment

🔑 Highlights





Liquid Food

- Advancing the spin-off of CIMC Liquid Process Technology and planning for its listing on the Beijing Stock Exchange of A-share market;
- Successfully acquired the raw grain processing company Künzel Maschinenbau, continuously improving the front-end equipment and overall solution capabilities of the liquid food industry supply chain;
- Continued robust growth in brewery turnkey projects in Mexico, Thailand and other locations;
- Strengthened market presence in the liquor industry in China and expanded into new fields, including solid-state fermentation and biopharmaceuticals.







Projects of Liquid Food Segment Progressing Steadily

Overseas Projects Steadily Expanding

Strong demand for brewery turnkey projects in South America, and Southeast East Asia such as Mexico, Brazil, Thailand, Cambodia and other locations.





Acquisition of a reputable grain processing company

The successful acquisition of Künzel Maschinenbau, a well-established European grain processing company, has significantly bolstered the upstream business capabilities and solutions in the beer industry.



Expansion in biopharmaceuticals and other fields

Briggs provides leading pharmaceutical solutions with a strong presence in pressure vessels and reactor vessels for the pharmaceutical industry. Briggs awarded Best Supplier of the Year by the International Society for Pharmaceutical Engineering

Won bids for domestic whisky projects

Won several bids for whisky projects in China, assisting leading liquor companies in expanding into new markets



Advancing Front-end Solutions for Raw Material Processing



- Künzel, founded in 1922 and headquartered in Germany, is a leading medium-sized machinery manufacturing company specialising in the global beverage/brewing industry.
- Through this acquisition, completing the comprehensive frontend raw material processing solutions "from malt to mash," including equipment development, installation, retrofitting, and turnkey project services

Enhanced business capabilities





Turnkey Project

- Künzel constructs new production facilities in compliance with the highest safety standards and ATEX standards, providing a complete range of services.
- The company covers all project steps: from project planning and engineering design to providing spare parts and post-installation maintenance
- New plant construction and expansion/renovation projects can all be undertaken



Individual Components

- In addition, Künzel also sells individual components from the entire production line as standalone products
- All equipment is internally manufactured and complies with ATEX standards
- Demonstration Products:





Chain Conveyor







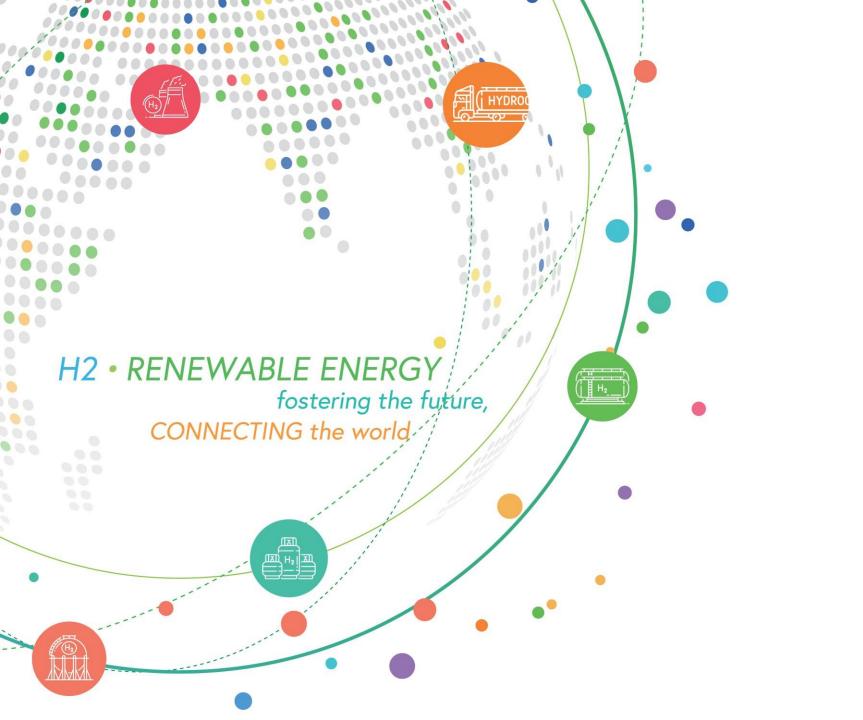
Rice/Barley/Corn Milling Machine Flat-panel Display

Spare Parts Installation and Other Services



- Künzel provides extensive services for globally installed equipment
- Services include spare parts supply, regular inspections, system overhauls, repairs, maintenance, and more





ESG Highlights

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Continuous Promotion of ESG Governance and Management Enhancement

Sustainable Development Strategy

Technological innovation, smart interconnection, quality-driven growth, and the establishment of comprehensive integrated services for clean energy

ESG Rating

MSCI ESG rating has been upgraded to



ESG Rating history

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Industry Outlook — Clean Energy



On-shore Clean Energy

- IEA believes the global demand on natural gas in 2024 would see a "strong growth" from 2023. As
 impacted by the China's financial situation and the price trend of natural gas in the domestic and
 overseas market, the demand for natural gas is expected to recover which will continue to drive
 the growth of LNG on-vehicle cylinders and other terminal applications.
- Global energy transformation leads to ample development opportunities. Further strengthening the market presence in Middle-east and other overseas market.



Off-shore Clean Energy

- Under the launch of new regulations by IMO, the requirement on emission reductions has become more stringent, which will further stimulate a strong growth in demand for clean alternative energy carriers
- Alternative fuels like LNG and green ammonia are becoming the development trend of sea-faring and shipping industry



Hydrogen Energy

• During the development in achieving dual-carbon goal, renewable energy such as hydrogen energy are poised for accelerated growth in scale and application. Green hydrogen, green ammonia and green methanol have achieving scale growth around the world.

Industry Outlook — Chemical and Environmental, Liquid Food



Chemical and Environmental

- Pursuing safer, more economical, eco-friendly and smarter green logistics has become a major development trend, the tank container market will continue to grow; Segmented products such as domestic road and rail tank containers, new energy tank containers, electrolyte refrigeration tank containers, and semiconductor inner line tank containers are expected to enter a period of growth. The development of domestic molten iron transportation is expected to promote the penetration rate of tank containers in the domestic market.
- Industrial parks development is a trend in China, facilitating the demand of after-sales services in industry parks;
- The demand for platinum-group and other rare and precious metals is foreseen to grow significantly and it will also promote the growth of environmental protection businesses.



Liquid Food

- The GDP growth in emerging countries, consumers' preferences on craft and premium beers and demand on beverages of lower calories are among the major factors which contributed to the long term growth of liquid food business segment;
- Tap into the opportunities of breweries upgrading in carbon neutrality transformation;
- The prospects of the solid-state brewing market are promising, with continued opportunities for technological upgrades and investments;
- Non-alcoholic beer, whiskey, and craft brewing have become major investment hotspots for various customers.



The Future Development Strategy of CIMC Enric

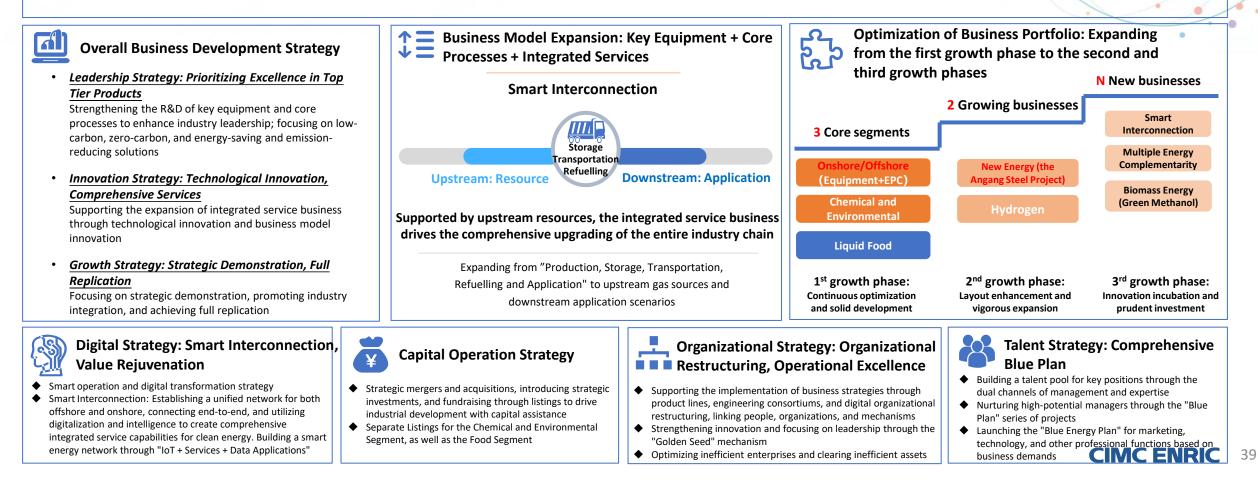
Overall Positioning and Strategic Objectives

Expanding from "equipment + engineering" to "comprehensive service provider"

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Creating a digitally-integrated and value-added industry format based on "key equipment + core processes + integrated services"

Becoming a technology-driven, low-carbon, and comprehensive service provider for intelligent new energy solutions



Technological Innovation, Integrated Services, Strategic Demonstration, Full Replication

Harnessing the advantages of key equipment and core processes to create comprehensive service application scenarios: focusing on strategic demonstration, promoting industry integration, and achieving value rejuvenation

Product Innovation

- Innovations in New Equipment: Liquid hydrogen tank, 45MPa hydrogen diaphragm compressor, 90MPa hydrogen gas liquid drive compressors
- Innovations in Mature Equipment: LPG trailer with pump, LNG tank replacement and refuelling
- Pioneering Innovations: Largest domestic type B cryogenic cargo tank, cryogenic anhydrous ammonia carrier

Strategic Demonstration

- Building benchmarks with the best equipment and processes
- Leveraging high-quality self-owned gas sources and supply leverage
- Expanding application scenarios
- Successful replication and industry integration

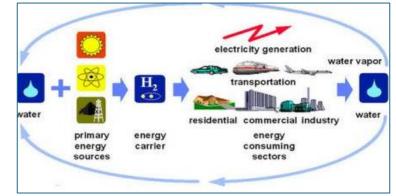
Integrated Comprehensive Service Provider for Low-Carbon Clean Energy

End-to-End Comprehensive Service Projects for Clean Energy

Obtaining high-quality upstream resources to develop premium terminals (such as vehicle and marine transportation, distributed integrated energy stations) and establish end-to-end integration of clean energy

- Implementing a project of hydrogen, ammonia and LNG coproduction from coke oven gas;
- Adopting a multimodal transportation approach for offshore LNG tank containers, following the "one-tank-to-the-end" business model.

Comprehensive Utilization Service Projects for Hydrogen and Green Electricity



Comprehensive Service Projects for Vehicle, Vessel and Carrier Oil-to-Gas Conversion



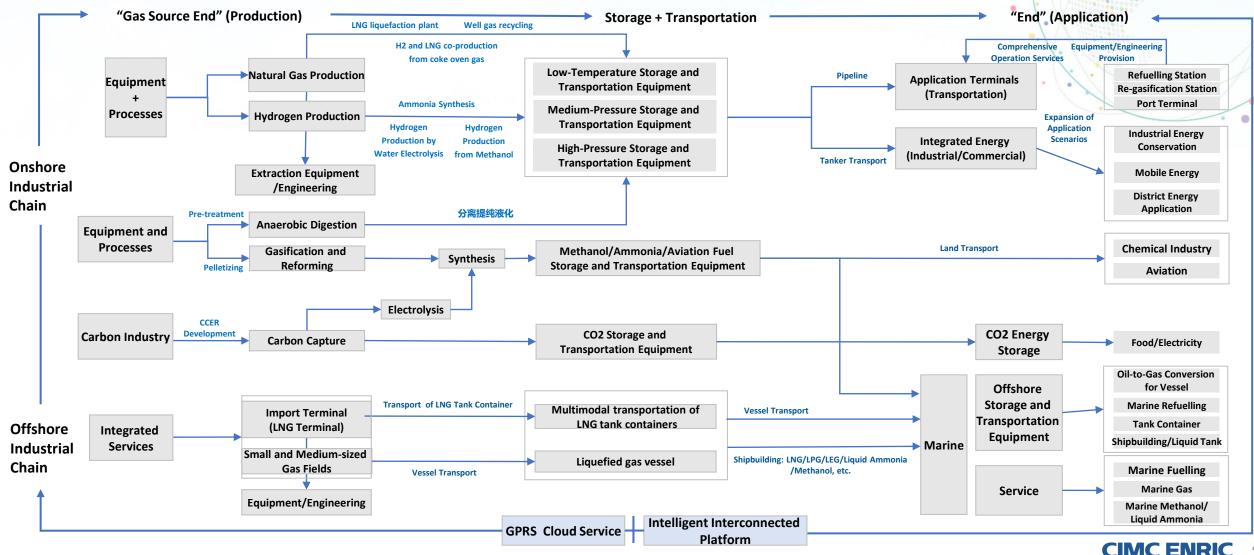
Comprehensive Utilization Service Projects for Distributed Energy



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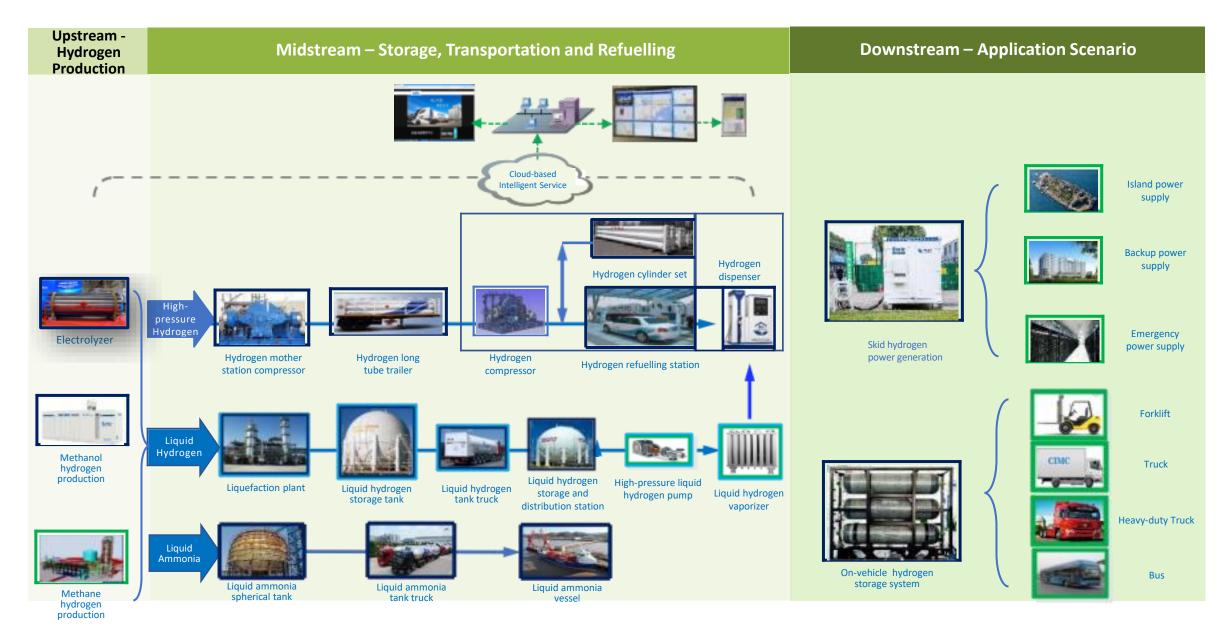
Panorama of Clean Energy Business

Panorama of Clean Energy Business: Key Equipment + Core Processes + Integrated Services



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Hydrogen Supply Chain Product Map



New Product - Fuelling Value Creation

High-end cryogenic tank container





- High-end low-temperature tank container technologies, such as liquid hydrogen tank containers, have reached international leading levels and can be sustainably supplied in large quantities;
- By 2050, hydrogen energy is projected to account for at least 10% of China's terminal energy system, with a hydrogen demand close to 60 million tons and an annual industrial chain output value of approximately RMB12 trillion. The liquid hydrogen industry chain is expected to contribute around 3/4 of this value, approximately RMB9 trillion.

Low carbon energy station





Energy Saving and Carbon Reduction with Diverse Application Scenarios

- Focusing on the comprehensive utilization of industrial combustible waste gases, such as lowconcentration gases, blast furnace exhaust gases, and ferroalloy exhaust gases. They are energysaving and environmentally friendly projects that turn waste into treasure;
- The SL1500 can generate up to 1,600 kW from natural gas and up to 1,200 kW from industrial exhaust gases, resulting in an average annual carbon reduction of over 8,000 tons per unit;
- These technologies can be widely applied in various scenarios, including industrial energy saving, building energy saving, and agricultural energy saving.

New Business Model - Rapid Replication of the Upstream Coke Oven Gas to Hydrogen Co-Production LNG Model

Confirmed production capacity: hydrogen - 50,000 tons; LNG - 400,000 tons Targeted production capacity by 2027: hydrogen - 200,000 tons; LNG - 1,000,000 tons

Two replications of hydrogen production projects in 2023

Commencing in 2024, the coke oven gas to hydrogen projects will be progressively operational, providing highpurity hydrogen gas and natural gas.

Enhanced upstream operational capabilities will enable the establishment of a comprehensive "end-to-end" business cycle encompassing hydrogen energy, natural gas, and other processes, spanning from production to application.

Angang Steel Project

- Location: Yingkou, Liaoning
- Annual production: 15,000 tons of hydrogen, 100,000 tons of LNG
- Planned start of production: June 2024



Shougang Shuigang Project

- ◆ Location: Liupanshui, Guizhou
- Annual production: 15,000 tons of hydrogen, 160,000 tons of LNG
- Planned start of production: 3Q2025



Linggang Steel Project

- Location: Chaoyang, Liaoning
- Annual production: 20,000 tons of hydrogen, 147,000 tons of LNG
- Planned start of production: 1Q2025



New Business Model - Steady Progress in Green Methanol Demonstration

	Marine Fuel	Liquefied Natural Gas (LNG)	Green Methanol	Green Ammonia	Green Hydrogen (Liquid)
Greenhouse Gas Emission	Fossil Fuel, High Carbon Emissions	Fossil Fuel, Methane Emissions	Emission Reduction Capacity of 95%	Zero Emission	Zero Emission
Liquid Storage Temperature	Ambient Temperature	-162°C	Ambient Temperature	-34°C	-253℃
Volumetric Energy Density (MJ/L)	33.3	23.4	15.8	12.7	8.5
Fuel Tank Capacity for Handymax Bulk Carrier for 1000 Nautical Miles	73m³	164m³ (2.3*MGO)	169m³ (2.3*MGO)	219m³ (3*MGO)	555m³ (7.6*MGO)
Applicable Scenario	Long and Short Voyages	Long and Short Voyages	Long and Short Voyages	Long and Short Voyages	Short Voyages
Outstanding Performance	Acceptable	To be impro	oved Data Source: Amer	ican Bureau of Shipping, C	hina Classification Society

Green Methanol Market Demand Expected to Rapidly Expand

- Currently, methanol as a marine fuel has more advantages over ammonia and hydrogen fuel in terms of technological maturity, economic viability, and infrastructure;
- The shipping industry has taken substantial steps towards adopting green methanol as an alternative fuel, with Maersk's first green methanol-powered vessel successfully sailing in 2023;
- It is estimated that by 2025, global demand for green methanol fuel in the shipping industry will reach 6.35 million tons per year.

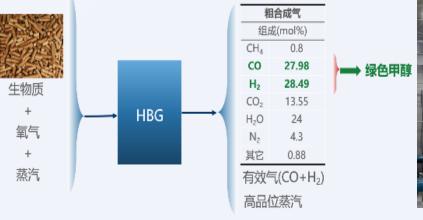
Establishing the Core Industrial Chain for Green Methanol Fuel to Support the Implementation of the Initial 50,000-ton Capacity Demonstration Project

Development of Biomass-to-Methanol Technology

- Producing lifecycle green methanol to meet green certification
- Key process: efficient biomass gasification technology
- Technological route: gasification pyrolysis + methanol synthesis
- Carbon dioxide compliance: 100% sourced from biomass
- Electricity compliance: green power
- Over 100 biomass feedstock tests have been conducted, along with pilot-scale verification, and the experimental results meet the technical requirements.

Expanding Raw Material Supply Channels - First Project Established in Guangdong

- Site investigations and condition screenings have been completed for 39 potential locations, resulting in the identification of one project site and three candidate sites.
- Over 1 million tons of biomass resources have been secured.
- The first project has been established in partnership with collaborators in Guangdong, with plans to rapidly replicate the model based on fuel ethanol plants.





Chemical Tank Containers - Domestic Market Penetration is Expected to Rise

Multiple factors drive future growth of domestic tank container industry

Chemical Park Policy Tightens

China has issued a number of policies on chemical parks, strict requirements for the transportation of hazardous chemicals, helping the development of the container industry

Chemical Companies to Invest in China



BASF and other international chemical giants have been optimistic about the future development of China's chemical industry, investing in the construction of bases in China

High-end Tank Container Demand Growing

EV tank data shows that global lithium-ion battery electrolyte solvent shipments reached 924,000 tons in 2022, up 73% YoY. Global electrolyte demand expected to reach 2.726 million tons in 2025. Semiconductor Industry Association (SIA) data shows the continuous growth in global semiconductor sales reached a record of USD573.5 billion in 2022 compared to 2021.

Safety and Environmental Protection Requirements

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Strengthening the regulation and management of chemical transportation tightening the control of dangerous goods safety operations Tank containers have a large market space due to their advantages of safety, economy, high efficiency and environmental protection.

46

Replacement Needs of Tank Trucks, Liquid Bags, etc.

Transportation modes of chemical logistics include tank container, liquid bag, tanker, IBC and other forms, and the proportion of tanks container with higher safety is only about 10%.

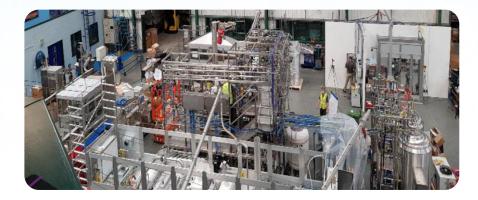
Compared with tanker transportation, the safety standard of tank container is higher, and it can also realise the safe and flexible logistics transportation mode of road, railroad and waterway. The penetration rate is expected to continue to increase. Compared to packaging methods such as drums and bags, it reduces solid waste recycling costs and better meets the environmental requirements of the chemical logistics industry, with the potential for continuous increase in penetration rate.

05

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Liquid food - Benefiting from Sustained Industry Growth



The Global F&B Processing Equipment Market Continues to Grow

According to Imarc Group data, the global food and beverage processing equipment market will be worth USD61.4 billion in 2023, with an expected compound annual growth rate of 4.7% during 2024-2032.

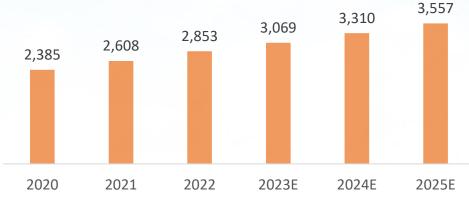


Beer Market Consumption Upgrades Explore Emerging Market Opportunities

- According to Statista report, the global beer market is expected to grow by 5.4% annually between 2023 and 2025; the Asia-Pacific region will experience the most significant growth
- Based on the continued growth in sales of mid-tohigh-end beer, the "2023 Craft Beer Industry Research Report" released by Zhuoding Consulting predicts that from 2022 to 2025 the domestic craft beer will have a CAGR as high as 17.0%.



Liquid Food - Actively Expanding into Sub-segments of Industry



Global pharmaceutical equipment market size (RMB100 million)
 *Source of information: China Insights Consultancy

Growing Demand in the Global Biopharmaceutical Market

According to Frost & Sullivan, the global biopharmaceutical market reached approximately USD363.8 billion in 2022;
 Looking forward, driven by continuous innovation and breakthroughs in biotechnology, as well as improved accessibility to biopharmaceuticals, the global biopharmaceutical market is projected to grow to USD580.9 billion in 2026 and USD783.2 billion in 2030.

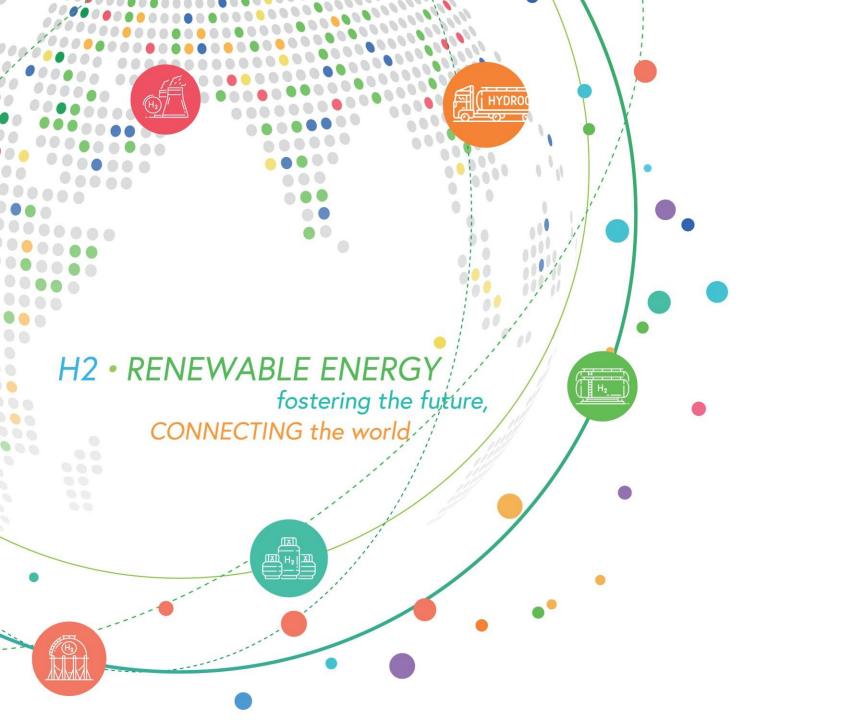


*Source of information: CHYXX

Rapid Growth in the Chinese Liquor Market

- According to Statista, it is projected that the global whiskey market will grow to USD107.8 billion by 2027, with a CAGR of 5.7% from 2022 to 2027;
- □ The emerging middle class and the "Z Generation" are becoming the dominant consumer groups for whiskey in China, and their demand is rapidly growing;
- According to a report by chyxx.com, the Chinese whiskey market is predicted to reach RMB22.2 billion by 2026, with a CAGR of 35.0% from 2022 to 2026.





Appendix

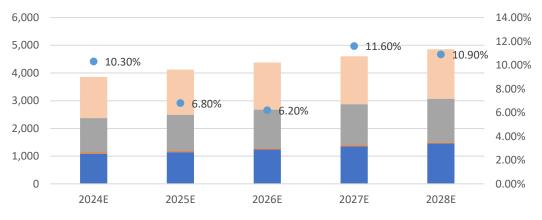


Domestic and Overseas Natural Gas Market Continues to Rebound

Domestic: Natural gas demand continues to grow

- · Global spot price back on track, future spot import prices will continue its descent.
- A large number of LNG emergency peak-shaving reserve projects are still under construction. Larger reserves are mainly concentrated in Shaanxi, Shanxi, Sichuan, Guizhou and other places. If the project construction progresses smoothly, it is expected that the new gas storage capacity will be more than 500,000 m³ in 2024;
- Less Better's report predicts that China's LNG consumption will maintain continued growth from 2023 to 2028, with a total consumption of 4,831 tons of LNG in 2028, an increase of 38.8% compared with 2023.

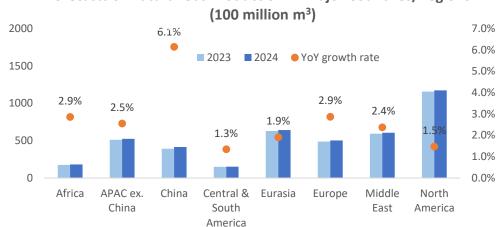
2024-2028 China's LNG Consumption Pattern Forecast (10 thousand tons)



■ Industrial fuel ■ Power generation ■ Urban gas ■ Vehicles & ships fuel ● Total demand growth

International: Opportunities in natural gas equipment and construction in Africa, the Middle East and other markets

- In the "2024 LNG" report, Shell foresees the global LNG demand will continue to grow after 2024 due the China industrial economic driven by the economic growth in South Asia and South East Asia and by 2024, the global LNG demand will be increased by 50%, reaching around 625-685 million tons.
- IEA believes the global natural gas demand in 2024 would see a "strong growth" from 2023, which mainly driven by the descending temperature and lower prices. The natural gas demand in 2024 may grow 2.5% and the market will become stronger (up 0.5%) compared to 2023.



Source: Gas Market Report, Q1-2024, released by IEA

Forecasts of Natural Gas Production in Major Countries/Regions

Thriving Clean Energy Alternative Fuel Ship Market

Tightening emission regulation in shipping industry

According to IMO regulations, effective from **1 January 2023**, ships must secure an **Energy Efficiency Existing Ship Index (EEXI) certification for energy efficiency and Carbon Intensity Indicator (CII)** and IMO also clearly set the critical time point of achieving net-zero emissions is "close to 2050".

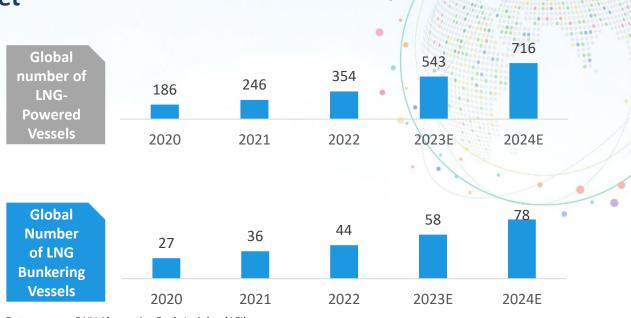
If it fails to obtain international energy efficiency compliance certificates for three consecutive years, the ship will have to be withdrawn from the shipping market. That is, ships currently rated D/E must enter a rectification period in 2026. As of the end of 2023, there are 25,000 ships rated D/E, and 18,000 ships need to be retrofitted.

Increasing New Ship Prices

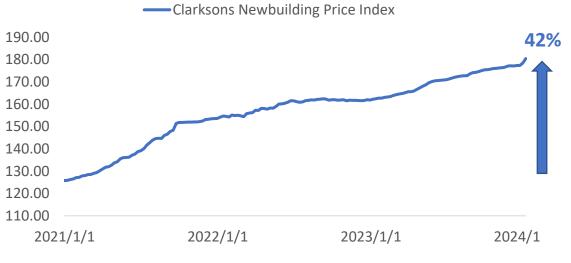
In 2023, the shipbuilding industry ushered in a long-term booming cycle, and the price of new ships also rose steadily.

As of the end of 2023, the Clarkson Newbuilding Price Index was 178.36 points, up 42% from the beginning of 2021, reaching the highest level since January 2009.

The Newbuilding Price Index for liquefied gas ships rose from 134.99 points at the beginning of 2021 to 198.07 points at the end of 2023, an increase of 47%, which is much higher than the average price index level of 155.6 points in the past five years.



Date source: DNV Alternative Fuels Insights (AFI)



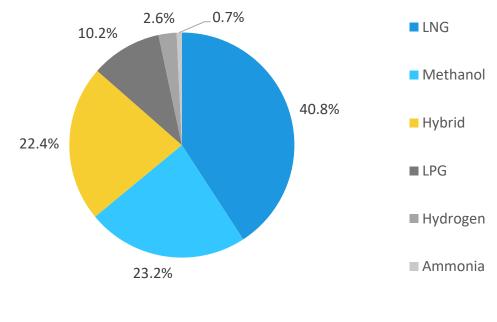
IMC ENRIC 51

Global Green Methanol Market Expected to Embrace Rapid Expansion

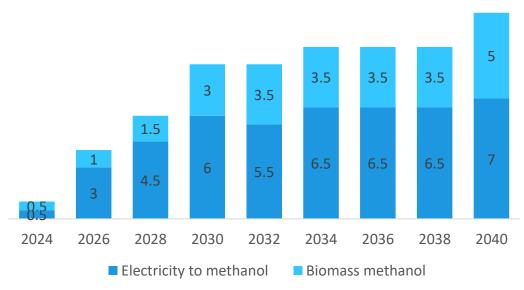
Clarksons' data shows the alternative fuel newbuild orders were 539 ships, in which the largest share was still LNG fueled, followed by methanol, and there were a total of 125 new orders of methanol dual fuel vessels. In recent three years, the growth of newbuild orders of methanol fueled vessels grew reached beyond 200%.

Many regions like the Middle East, Europe and North America have commenced green methanol production plan and related projects have been progressively implemented around the world. The International Renewable Energy Agency has predicted that green methanol supply is expected to reach 385 million tons by 2050.

2024-2040 Forecast Supply of Methanol Fuel to Global Shipping Industry



Unit: Million tons



Source: Statista

2023 Alternative Fueled Newbuild Order Proportion

Source: Complied by the Company based on Clarksons' data

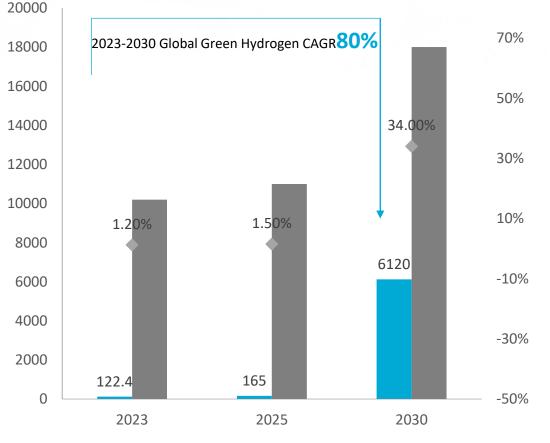
CIMC ENRIC 52

Enormous Demand in Hydrogen Storage and Transportation

Green Hydrogen Enters a Period of Rapid Development

2023 Global Major Events and Future Development Trend of Green Hydrogen

■ Green Hydrogen ■ Hydrogen ◆ Proportion of Green Hydrogen Consumption: 10,000 tons



In terms of subsidy policies, the global green hydrogen policy creates strong tailwinds. Global subsidies are mainly focusing on upstream hydrogen production area, while Chinese subsidies are more focusing on downstream hydrogen fuel cell field. From carbon tariff perspective, carbon tariffs promote the development of green hydrogen in global steel, cement, papermaking and other fields, stimulate the entire industrial sector to achieve low-carbon transition in the long run. The production cost of green hydrogen rose 30%-65% globally to US\$4.5-6.5/kg (RMB43-45/kg), however such cost will be reduced to US\$1.5-2.5/kg (RMB11-18/kg) in 2030 which will help to promote scale application of green hydrogen. The global construction of hydrogen pipelines accelerated in 2023 which promotes the long-term growth of global green hydrogen trade. Hydrogenbased energy will provide great potential for ship development on new fuel types such as liquid ammonia, liquid hydrogen, and liquid carbon dioxide. In 2023, the scale of newly installed electrolyzer capacity in the world will transition to the GW level, and from 2024 to 2025, the newly installed capacity of global electrolyzers will continue to maintain rapid growth.

Source of information :

Accelerating Domestic Hydrogen Energy Supporting Policy Launch

- In 2023, 28 domestic provinces, municipalities, and autonomous regions have issued provincial hydrogen energy industry development plans, and other provinces and municipalities that have not issued such plans have also promoted hydrogen energy demonstration projects.
- Since 2024, supporting policies related to hydrogen energy have been released frequently. The "2024 Government Work Report" proposed to "accelerate the development of cutting-edge emerging hydrogen energy, new materials, innovative drugs and other industries, and actively create new growth engines such as biomanufacturing, commercial aerospace, and low-altitude economy." This is the first time that the central government has pointed out in the national annual economic development plan that it will accelerate the development of the hydrogen energy industry.

MIIT, NDRC, etc.

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China Fuel Cell Congress

1 Dec

The "Co-Building China Hydrogen Expressway Action Initiative" was released, which aims to accelerate the construction of a hydrogen energy express network based on the five-city demonstration cluster in Beijing-Tianjin-Hebei, Shanghai, Guangdong, Zhengzhou and Hebei. Policy support for high-speed operating vehicles and high-speed hydrogen refuelling stations.



The "Action Outline for the Green Development of the Shipbuilding Industry (2024-2030)" was released to promote the R&D and pilot projects of methanol, hydrogen and other powered ships, and accelerate the R&D of new fuel types cargo ships such as liquid ammonia, liquid hydrogen and liquid carbon dioxide. 03

4 Feb "Notice of the Guidelines for the Construction of a Carbon-Neutral Standard System for Carbon Peaking in the Industrial Sector"

MIIT General Office

focuses on formulating biomass fuel substitution technologies, hydrogen metallurgy, hydrogen fuel substitution in furnaces, hydrogen energy calcination in glass melting furnaces, hydrogenburning gas turbines, and hydrogen fuel Internal combustion engines and other hydrogen energy alternatives

Seven Departments including MIIT

5 Feb

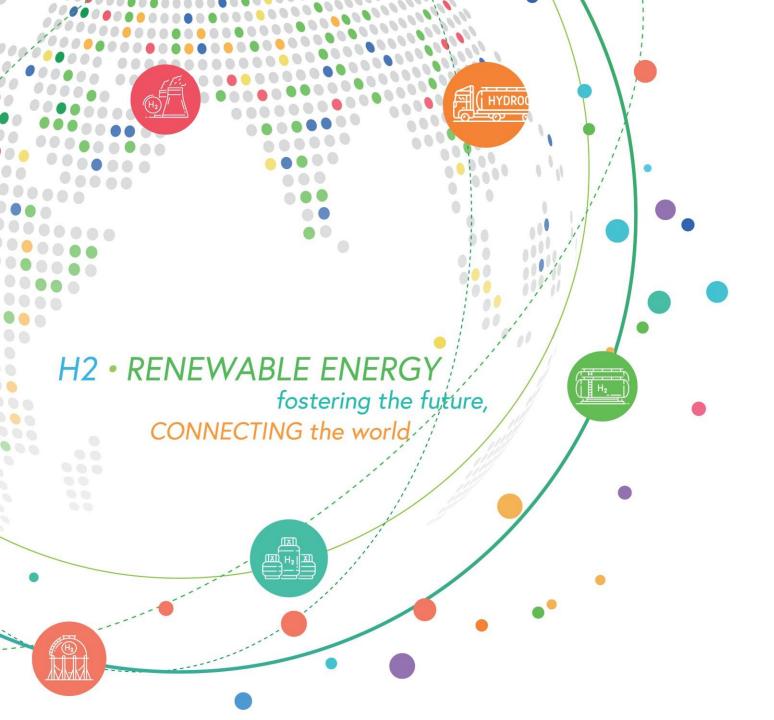
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"Guidelines for Promoting the Green **Development of Industrial Sector**" envisions the plan of green and lowcardon development for future industries which focusing on hydrogen energy, energy storage, biomanufacturing, carbon capture utilization and storage (CCUS). Around the demand for petrochemicals, steel, transportation, energy storage, power generation and others, build a full industrial chain technology and 05 equipment system for hydrogen energy production, storage, transmission and use.

National Energy Administration 7 Feb

"2024 Energy Industry Standards Plan Project Establishment Guide" Hydrogen energy is listed as a key project direction of the 2024 energy industry standard plan





Q&A

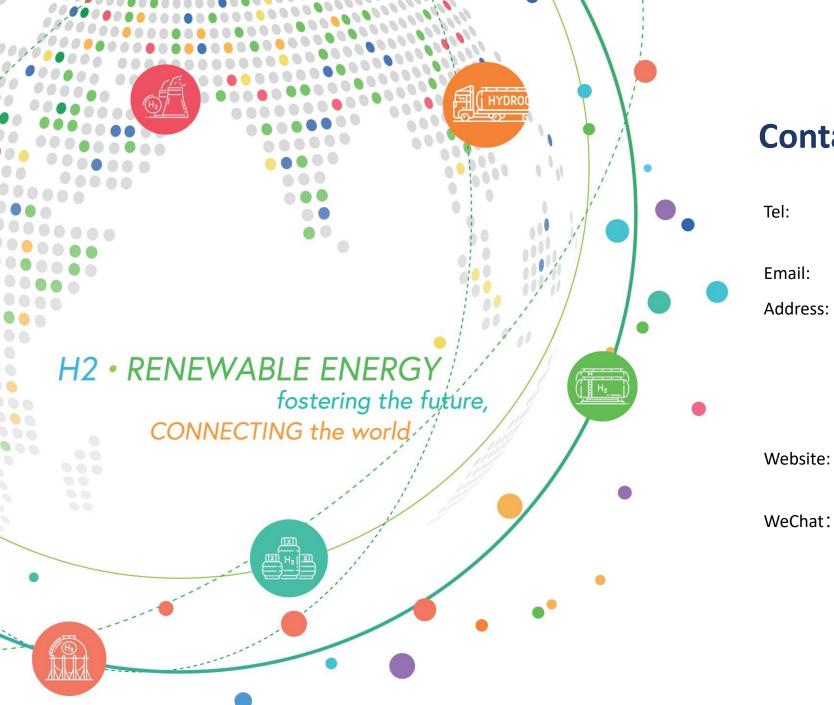




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Contact Us

	(86) 755 2680 2312 (86) 755 2680 2134
	ir@enric.com.hk
SS:	CIMC R&D Center, No.2 Gangwan Avenue, Shekou Industrial Zone, Shenzhen, Guangdong, The PRC
	Room 1902-3, 19/F, Bank of America Centre, 12 Harcourt Road, Central, Hong Kong
te:	https://en.enricgroup.com/

WeChat:



