

# Initiatives of Kawasaki Heavy Industries Toward Building a Large-Scale Hydrogen Supply Chain

**Kawasaki Heavy Industries, Ltd.**

**February 13, 2026**



# One Kawasaki Land. Sea. Air. Worldwide



# History of Kawasaki Heavy Industries, Ltd.



Founder Shozo Kawasaki opens Kawasaki Tsukiji Shipyard (Tokyo), the first step in modern shipbuilding

1878



Manufactured Eitai Bridge in Tokyo

1926



Started producing motorcycles in the United States

1975



Delivery of Japan's first LNG carrier

1981



Completed construction of North America's only dedicated factory for integrated rail vehicle manufacturing

2001

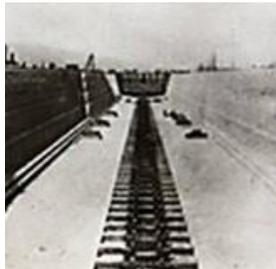


The world's first liquefied hydrogen carrier "Suiso Frontier" is launched

2019

1902

INUI dock (Kobe Factory No. 1 dock) completed



1941

Production of "Hien" fighter starts



1976

Development of gas turbine power generation equipment PU20



1996

Excavation completed using shield excavator for Tokyo Bay Aqua Line



2004

First export of vehicles for Taiwan High Speed Rail



# Introducing Kawasaki Heavy Industries, Ltd.



Motorcycle & Engine  
**28.6%**



Precision Machinery & Robot  
**11.3%**



Ship & Offshore Structure  
**4.3%**

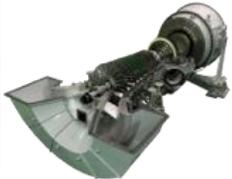
Others  
**4.2%**



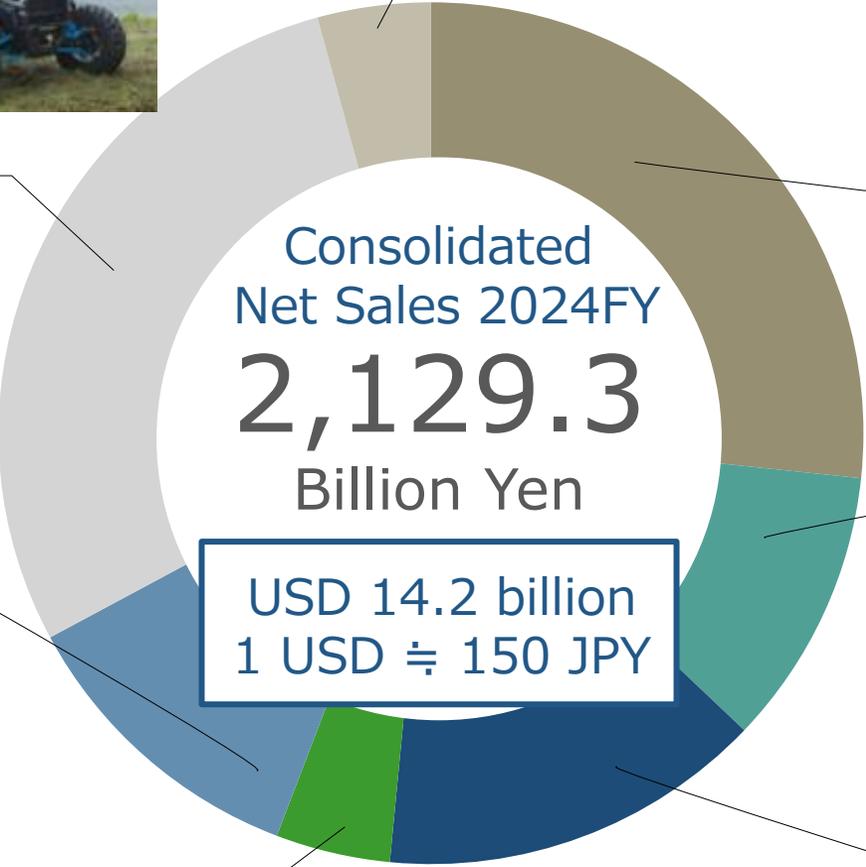
Aerospace Systems  
**26.7%**



Rolling Stock  
**10.4%**



Energy System & Plant Engineering  
**14.4%**



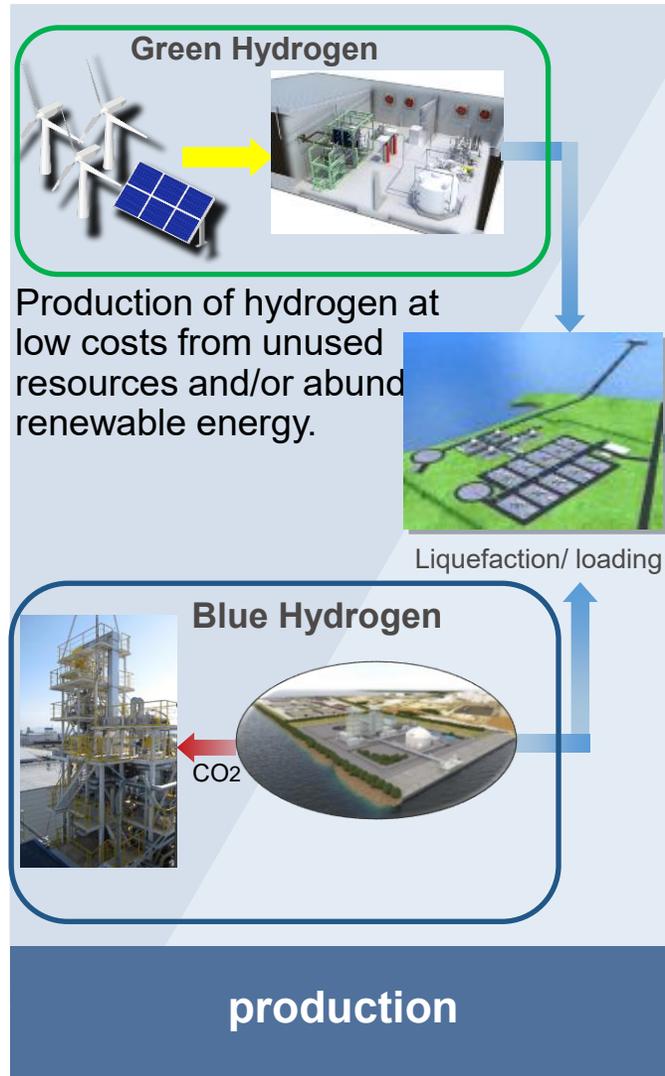
Number of Employees: appx. 40,000

# Today's Explanation

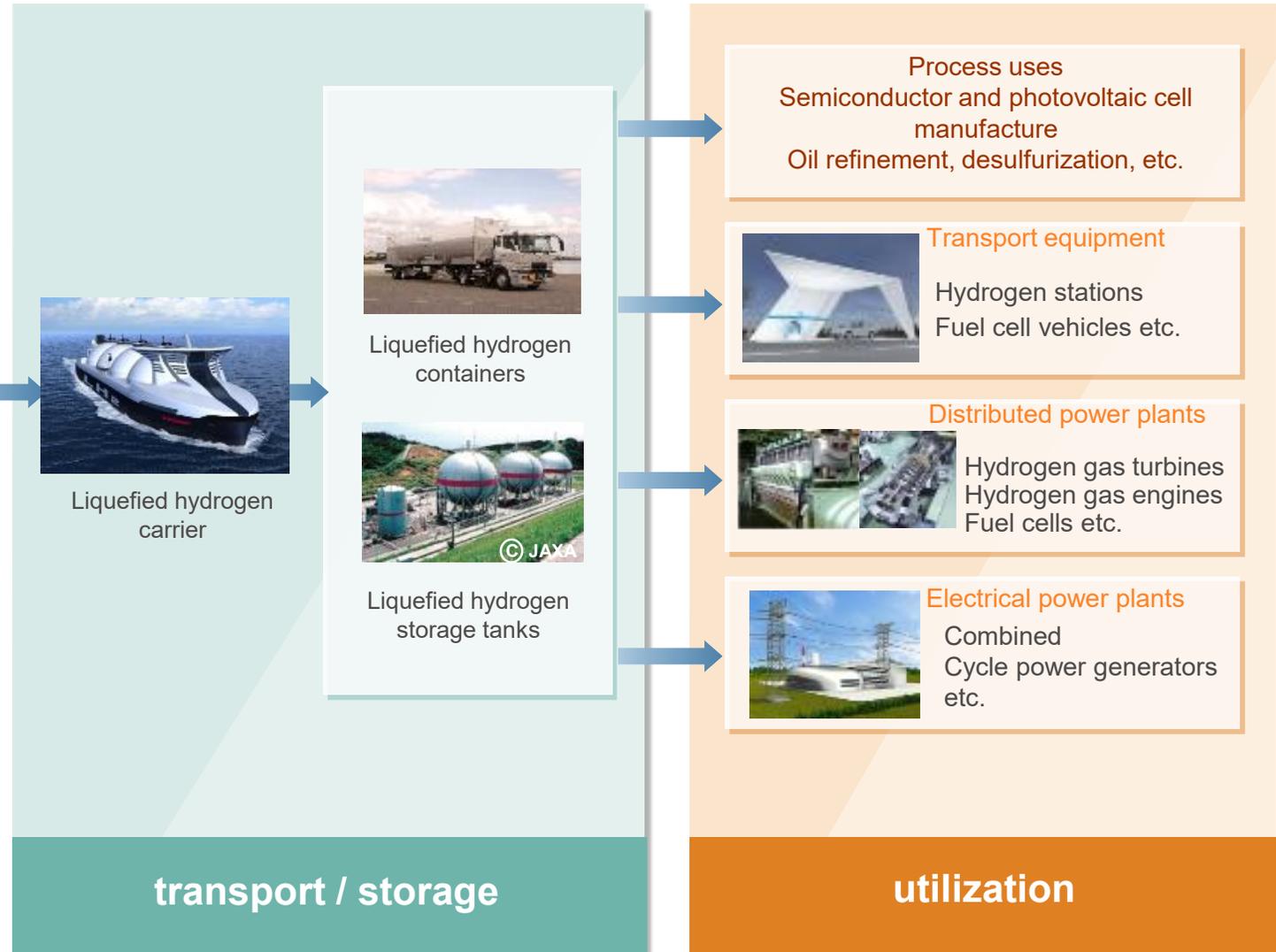
- 1. Concept of Hydrogen Supply Chain**
- 2. Initiatives to Demonstrate Commercialization**
- 3. Introduction of Hydrogen Products**

# Concept of CO<sub>2</sub>-Free Liquefied Hydrogen Supply Chain

## Hydrogen Producing Country



## Hydrogen Utilizing Country



# Today's Explanation

1. **Concept of Hydrogen Supply Chain**
2. **Initiatives to Demonstrate Commercialization**
3. **Introduction of Hydrogen Products**



# Successful Completion of Pilot Demonstration in 2022



# Result of Pilot Project Demonstration Phases

Both BORs have achieved **the same level of performance as LNG carriers and storage tanks**

\*BOR (Boil off Rate) : Ratio of liquid evaporated per day by external heat

“Suiso Frontier” BOR 0.3%/day

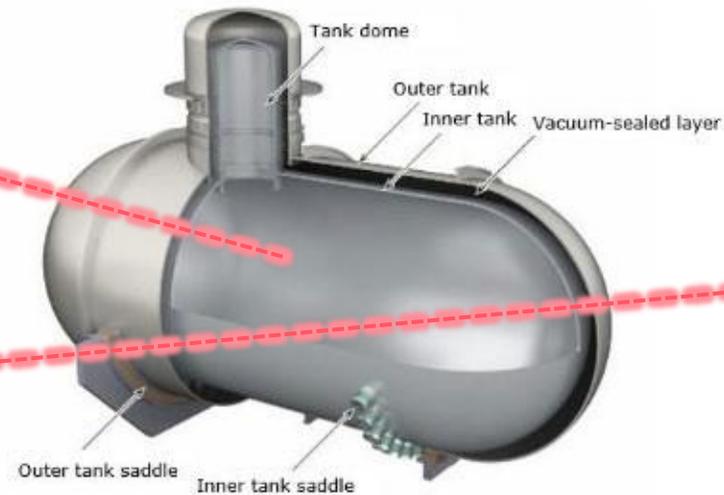
“Hy touch Kobe” BOR 0.06%/day



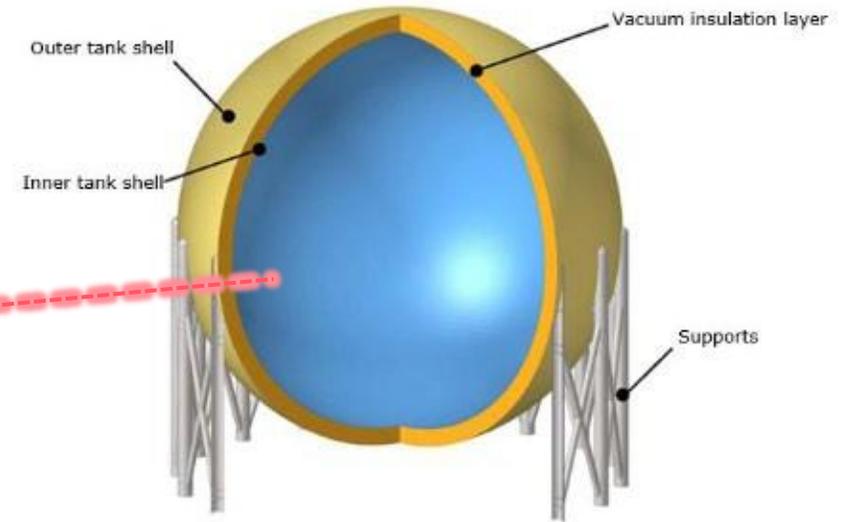
Suiso Frontier



Hy touch Kobe



Tank used on the *SUISO FRONTIER*



Tank used at Hy touch Kobe

CG-rendered images of the double-shell vacuum-insulation structure

# Progress of commercial scale equipment development

2021

Pilot Demonstration



1 250m<sup>3</sup>

Proven for 40 years

Spherical tank: 2,500 m<sup>3</sup>



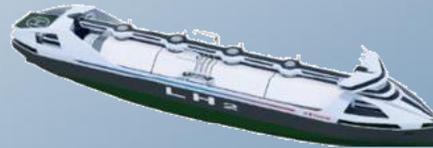
**Demonstrated the feasibility of hydrogen production and long-distance maritime transport**

(About 1/100 of the commercial level)

\*Equivalent to about 5,000 households' power consumption

-2030

Commercialization Demonstration



advantageous for scale-up

40,000 m<sup>3</sup> Cylindrical tank: 50,000 m<sup>3</sup>



**Scale up equipment size to assess the viability of commercialization.**

(One step away from commercialization)

From 2031

Commercialization



160,000 m<sup>3</sup> x 2 carriers



Cylindrical tank: 50,000 m<sup>3</sup> x 4 (plan)



**Profitable business model, which is economically self-sustaining**

\*Equivalent to approx. 400,000 households' power consumption

\*cost of shipboard delivery

# Groundbreaking Ceremony

Liquefied Hydrogen Supply Chain Commercialization Demonstration Project



# Groundbreaking Ceremony

## Principal Participants

Norihiko Fukuda  
Mayor of Kawasaki City



Yasuhiko Hashimoto  
CEO, KHI



Takuro Komori  
Parliamentary Vice-Minister of  
Economy, Trade and Industry



Yoshihide Suga  
Former Prime  
Minister

Yuko Obuchi  
Chairperson, Hydrogen  
Society Promotion  
Parliamentary League



Tamotsu Saito  
President, New Energy and  
Industrial Technology  
Development Organization



Eiichi Harada  
Representative  
Director, President,  
Japan Hydrogen  
Energy Co., Ltd.



祝  
川崎LH<sub>2</sub>ターミナル起工

ン基金 液化水素サプライチェーン、活用...

# World's Largest Liquid Hydrogen Carrier Contract Signed

The vessel, with a 40,000 m<sup>3</sup> capacity, is scheduled for delivery by 2030 under Japan's hydrogen supply chain project.



Item	Specification
Overall Length	Approx. 250.00 m
Breadth (Moulded)	35.00 m
Depth (Moulded)	20.00 m
Summer Loaded Draft	8.50 m
Cargo Tank Capacity	Approx. 40,000 m <sup>3</sup>
Propulsion System	Diesel Generator / Hydrogen Power & Electric Propulsion
Service Speed	Approx. 18.0 knots
Classification	Nippon Kaiji Kyokai (NK)

# Fabrication of Large Liquefied H<sub>2</sub> Storage Tank Launched

## - Toward the Establishment of Liquefied Hydrogen Supply Chain

[Fabrication of Large Liquefied Hydrogen Storage Tank Launched - Toward the Establishment of Liquefied Hydrogen Supply Chain - | Kawasaki Heavy Industries, Ltd.](#)



Conceptual drawing for a liquefied hydrogen storage tank (computer generated image)

### Specifications of the above-ground flat-bottom cylindrical liquefied hydrogen storage tank

Tank type	Flat-bottom cylindrical vertical storage tank
Heat insulation system	Non-vacuum heat insulation system
BOR*4	0.26 wt%/day (Development goal)
Dimensions of storage tank	Outer tank diameter: Approx. 60 m, Height: Approx. 45 m
Storage capacity for liquefied hydrogen	50,000 m <sup>3</sup> (Approx. 3,550 tons)

# Today's Explanation

1. **Concept of Hydrogen Supply Chain**
2. **Initiatives to Demonstrate Commercialization**
3. **Introduction of Hydrogen Products**

# Kawasaki Hydrogen Products

Kawasaki Heavy Industries contributes to decarbonization as **the only company in the world** that has the technology for the entire hydrogen supply chain **to produce, transport, store, and utilize hydrogen.**



H2 Gas Engine



H2 Gas Turbine



Fertilizer plant  
(H2 large production)



Water electrolysis  
system



Liquefier plant



Liquefied H2 Loading Arm



H2 Boiler system



High Pressure H2  
Gas Valve



Fuel Cell Train



H2 Motorcycle

## Utilization

Realization of Products  
with  
Corporate Technology  
Synergy

## Storage



Liquefied H2 Carrier

## Transport



Large LPG/NH3 Carrier



Liquefied H2 Container



H2-based public  
transport system



H2 engine-powered  
four-legged robot



High-pressure H2  
gas compressor



H2 gas centrifugal  
compressor



H2 Engine  
(Marin Propulsion)



Liquefied H2 Tanks



Liquefied H2 tank  
container for railway  
transport



Compressed H2 Trailer

# Hydrogen Gas Turbine

	Diffusion / Micro-Mix	Diffusion Combustor	Micro-Mix Combustor
Type H2 Firing	<p>  <b>PUC17 (1.8MW)</b>                      100% H2/NG Firing                      (2018)                 </p>	<p> <b>PUC300 (34MW)</b>                      0~50% H2 Co-firing                      (2021)                 </p>	<p> <b>GPB300 (34MW)</b>                      0~100% H2 Co-firing                      (2026)                 </p>
Project Overview	<ul style="list-style-type: none"> <li>✓ Co-generation system (CGS) with 1 MW class</li> <li>✓ World's first 100% H<sub>2</sub> firing</li> </ul>   <p>@H2CGS Demonstration Facility, Port Island, Kobe</p>	<ul style="list-style-type: none"> <li>✓ Co-firing by-product hydrogen and natural gas.</li> <li>✓ Kerosene can also be used as a backup.</li> </ul>   <p>@Seibu Oil</p>	<ul style="list-style-type: none"> <li>✓ Aim at Operation with flexible ratio between 100% hydrogen and 100% natural gas</li> </ul>   <p>@RWE Generation SE</p>

# Hydrogen Gas Engine(1)

## For power generation

### H2 Co-Firing Engine



- Actual demonstration test in FY2024
- 30 vol.% H2 co-firing
- Market in 2025

## For marine Proparsion

### H2 Dual Fuel Engine



- Op. Mode : H2 Mode and Diesel
-  Mode Green Innovation Fund Project  
「Next Generation Ship Development」
- Actual demonstration test by 2030

# Hydrogen Gas Engine(2)

Core technology development for hydrogen aircraft

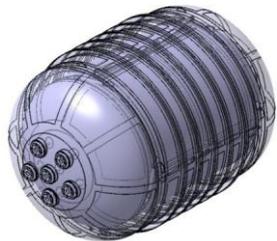
Joint Research with Airbus to Build Airport-Based Hydrogen Supply Chain



GI Fund Project "Core technology development for hydrogen aircraft"



Hydrogen 100% Aircraft Engine  
(Oct, 2024)



liquefied hydrogen fuel storage tank



hydrogen combustor for aircraft engines



Exploring hydrogen supply chain from production to airport delivery and aircraft refueling.

(Apr, 2024)

# Hydrogen Gas Engine(3)

- Same mechanism as gasoline engine
- Aiming for carbon neutrality **by leveraging Japan's and global industrial strengths.**



2024 Dakar Rally  
Saudi Arabia in Jan. 2024



Cooperation between "transport (supply side)"

- Providing hydrogen for Toyota's hydrogen engine Corolla -



World's First Public  
Demonstration  
Run of a Hydrogen  
Engine Motorcycle

Suzuka Circuit  
in July 2024

# Four-legged hydrogen robot "CORLEO"

## "CORLEO" was exhibited at the World Expo-

- Assumed to be realized in 2050.
- A new type of off-road personal mobility with four legs that offers excellent running performance, stability, and fun to operate.
- A motorcycle swingarm mechanism allows the rear legs to move up and down independently of the front legs. This absorbs shocks when moving, while allowing the rider to maintain a posture that makes it easy to always check the terrain ahead.
- The rider operates the scooter by shifting their center of gravity, just like riding a horse. The scooter is supported by the drone, so even beginners can ride safely.
- The hydrogen is stored in hydrogen canisters inserted into the rear landing gear, and electricity is generated by a hydrogen engine mounted in the front landing gear.



Kawasaki, working as one for the good of the planet  
“Global Kawasaki”



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