January 6, 2026

Japan Suiso Energy, Ltd.

Kawasaki Heavy Industries, Ltd.

Contract Signed to Build World's Largest 40,000 m³ Liquefied Hydrogen Carrier
—Constructing a Commercial-Scale Liquefied Hydrogen Supply Chain—

Tokyo, January 6, 2026 - Kawasaki Heavy Industries, Ltd. (Representative Director, President, and CEO: Yasuhiko Hashimoto, Head Office: Minato-ku, Tokyo) and Japan Suiso Energy, Ltd. (JSE, Representative Director and President: Eiichi Harada, Head Office: Minato-ku, Tokyo) announced the signing of a contract to build the world's largest liquefied hydrogen carrier with a capacity of 40,000 m³.

The vessel will be built at Kawasaki's Sakaide Works (Sakaide City, Kagawa Prefecture). JSE is the project operator for the New Energy and Industrial Technology Development Organization (NEDO) Green Innovation Fund Project*1: Liquefied Hydrogen Supply Chain Commercialization Demonstration which plans to demonstrate by FY2030 the ship-to-base loading/unloading of liquefied hydrogen and perform trials under ocean-going conditions.

40,000 m³ liquefied hydrogen carrier (artist's impression)

In 2021, Kawasaki Heavy Industries constructed the world's first liquefied hydrogen carrier, the 1250 m³ capacity SUISO FRONTIER. In addition, it established "Hy touch Kobe", a liquefied hydrogen receiving demonstration terminal. In February 2022, as a member of HySTRA*2, Kawasaki Heavy Industries participated in the first ever successful pilot demonstration*3 of loading/unloading and transportation of liquefied hydrogen between Japan and Australia. Designed and built by Kawasaki Heavy Industries to respond to the global demand for hydrogen anticipated in the 2030's, the new vessel is a 40,000 m³ capacity liquefied hydrogen carrier that will provide the foundation for the future hydrogen supply chain.

Using this vessel and the Kawasaki LH_2 Terminal, a liquefied hydrogen base now under construction at Ogishima, Kawasaki City, JSE will demonstrate performance, safety, durability, reliability, economics, and other elements required for the commercialization of an global hydrogen supply chain and steadily proceed towards a hydrogen-based society.

The main features of the new vessel are as follows.

1) Equipped with cargo tanks for liquefied hydrogen with a total capacity of around 40,000 m^3. Uses a high-performance insulation system to reduce the generation of boil-off gas (BOG) caused by natural heat ingress from the outside, enabling large-scale transportation of cryogenic liquefied hydrogen.
2) The electric propulsion system features a hydrogen/oil-based dual-fuel generator engine[*4] in addition to a conventional oil-based generator engine. Furthermore, the installation of a hydrogen gas supply system with a compressor and a heat exchanger enables BOG generated from the liquefied hydrogen cargo tanks to be used as a propellant, reducing CO_2 emissions during liquid hydrogen transport.
3) Equipped with a cargo handling system capable of loading and unloading large volumes of liquefied hydrogen. Double-wall vacuum jacketed piping keeps the material at an extremely low temperature for efficient and safe transfer between the onshore facility and the liquefied hydrogen tanks on the vessel.
4) With a shape and draft that consider the low density of liquefied hydrogen, the vessel requires less power and has a high propulsion efficiency.
5) The hydrogen fuel system, fuel supply system, and cargo handling system for liquefied hydrogen and hydrogen gas are risk assessed, and suitable safety measures taken to ensure that the liquefied hydrogen poses no risk to the crew, environment, or structural integrity and soundness of the vessel.

By providing a stable supply of large volumes of hydrogen and supporting the decarbonization of electricity generation, mobility, and industry, the new vessel will help to realize a hydrogen-based society. Kawasaki and JSE will continue to cooperate with diverse businesses to construct a commercial-scale, international supply chain for liquefied hydrogen and realize a carbon neutral society by 2050.

Specifications

Overall length	Approx. 250.00	m
Molded breadth	35.00	m
Molded depth	20.00	m
Fully loaded draft in summer	8.50	m
Cargo tank capacity	Approx. 40,000	m^3
Propulsion system	Diesel/hydrogen-fueled electric propulsion	

Sea speed	Approx. 18.0 knots
Classification	Nippon Kaiji Kyokai (ClassNK)
Country of registration	Japan

※1 New Energy and Industrial Technology Development Organization (NEDO), Green Innovation Fund Project
https://green-innovation.nedo.go.jp/en/project/hydrogen-supply-chain/

※2 HySTRA :
CO_2-free Hydrogen Energy Supply-chain Technology Research Association. Founded by Iwatani Corporation, Kawasaki Heavy Industries, Ltd., Shell Japan Limited, and Electric Power Development Co., Ltd. (J-POWER) primarily to establish technologies and carry out demonstrations ranging from the production of hydrogen via the effective use of brown coal to the transportation, storage, and usage of such hydrogen, aimed at constructing and commercializing a CO_2-free hydrogen supply chain. Marubeni Corporation, ENEOS Corporation, and Kawasaki Kisen Kaisha, Ltd. ("K" LINE) also subsequently participated. Presently consists of Iwatani Corporation and Kawasaki Heavy Industries, Ltd.
https://www.hystra.or.jp/en/

※3 NEDO project: Demonstration Project for Establishment of Mass Hydrogen Marine Transportation Supply Chain Derived from Unused Brown Coal.
https://www.nedo.go.jp/content/100950550.pdf (*Japanese*)

※4 Hydrogen/oil-based dual-fueled engine developed in the NEDO subsidized project: Green Innovation Fund Project/Next-Generation Ship Development/Development of Hydrogen-Fueled Ships/Development of Marine Hydrogen Engine and MHFS.
https://green-innovation.nedo.go.jp/en/project/development-next-generation-vessels/

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