

New Energy and Industrial Technology Development Organization (NEDO)

Japan Suiso Energy, Ltd.

Iwatani Corporation

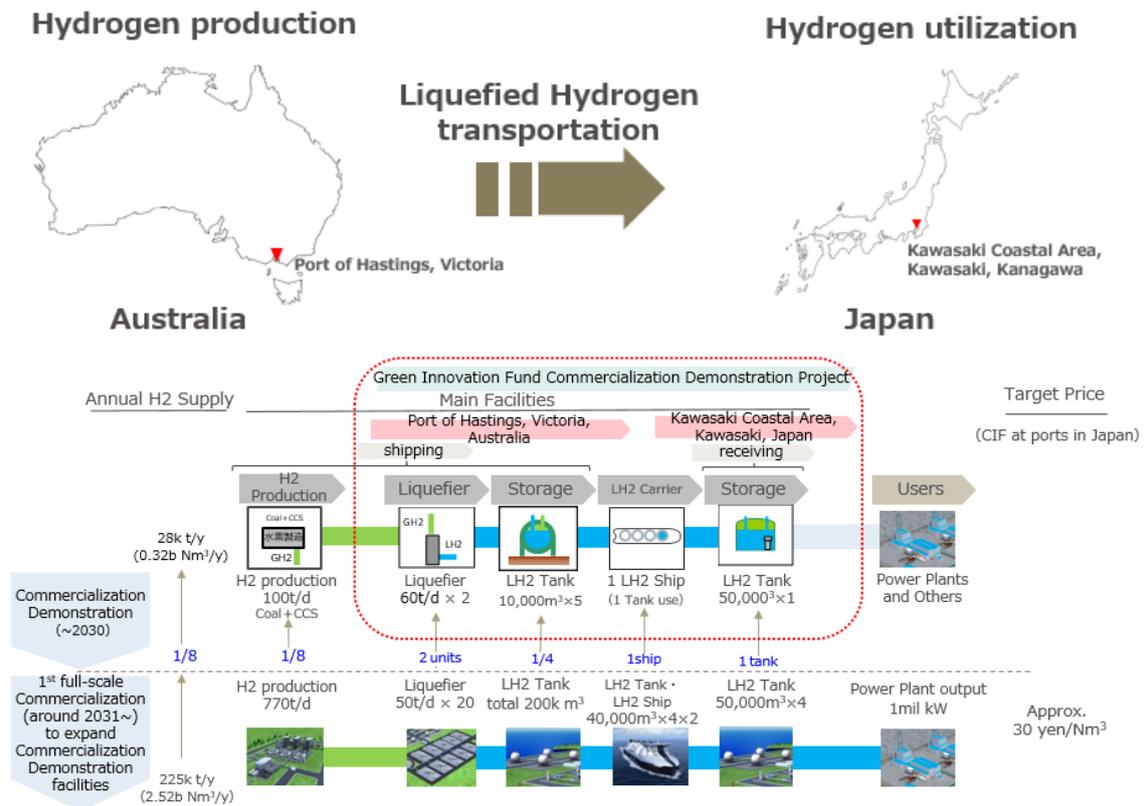
ENEOS Corporation

Kawasaki Heavy Industries, Ltd.

Liquefied Hydrogen Supply Chain Commercialization Demonstration Project selects sites for shipping and receiving liquefied clean hydrogen Aiming to achieve hydrogen supply cost of 30 JPY/Nm³ in 2030

March 8, 2023 — As part of the Green Innovation Fund Project "Large-scale Hydrogen Supply Chain Establishment", NEDO, Japan Suiso Energy (JSE), Iwatani Corporation (Iwatani) and ENEOS Corporation (ENEOS) are working to deliver a "Liquefied Hydrogen Supply Chain Commercialization Demonstration Project". Together they have undertaken feasibility studies of the project and selected sites: Port of Hastings, Victoria, Australia, for a hydrogen export site, and the Kawasaki Coastal Area (Kawasaki Ward, Kawasaki City, Kanagawa Prefecture), Japan, for a hydrogen receiving site.

The project is to establish marine transportation technologies of liquefied clean hydrogen, aiming to achieve the Japanese Government's objective of a hydrogen supply cost of 30 JPY/Nm³ in 2030 at the point of arrival in Japan. The project will collaborate with potential customers, industrial partners who will conduct hydrogen power generation demonstration projects, and local governments, and contribute to the establishment of a commercial scale international liquefied hydrogen supply chain. The goal is to achieve carbon neutrality for Japan by 2050.



Hydrogen directly contributes to the decarbonization of the electric power sector, and also maximizes the potential of zero-emission power sources such as renewable energy by converting surplus electricity to hydrogen for storage and use. Clean hydrogen is expected to become an indispensable secondary energy source for achieving carbon neutrality.

NEDO, JSE, Iwatani and ENEOS will work together on the **“Liquefied Hydrogen Supply Chain Commercialization Demonstration Project”**^{*1}, as part of the Green Innovation Fund^{*2} Project "Large-scale Hydrogen Supply Chain Establishment". The project will establish the world's first large-scale liquefaction and transportation technology for clean hydrogen on the scale of tens of thousands of tons per year. The integrated international liquefied hydrogen supply chain demonstration from upstream to downstream.

The project is currently at the stage of technical investigation for construction and operations, but the industrial Port of Hastings in Victoria, Australia, has been selected as the potential location for shipping hydrogen, given hydrogen extracted from coal in Victoria will be supplied in close proximity to that area, cost-effectively and stably, strengthening energy security^{*3}. The Kawasaki Coastal Area (Kawasaki Ward, Kawasaki City, Kanagawa Prefecture) has been selected as the potential location for receiving hydrogen, due to its location in the Keihin Industrial Complex, where hydrogen demand is expected to increase while also providing access to existing port infrastructure.

Additional large-scale liquefied hydrogen-related equipment, which is being developed as part of the "Development of Technologies for Realizing a Hydrogen Society / Development of large-scale hydrogen-energy utilization technology"^{*4} that NEDO is also supporting in cooperation with Kawasaki Heavy Industries, Ltd. and other partners, will be utilized.

NEDO's hydrogen-related projects and the technologies and know-how accumulated by each company in energy-related projects will be combined to establish transportation technologies that deliver hydrogen at a cost of 30 JPY/Nm³^{*5} by 2030 at the point of arrival in Japan.

In addition cooperation with potential customers, industrial partners who are conducting hydrogen power generation demonstrations, and local governments, we will contribute to the establishment of an international liquefied hydrogen supply chain on a commercial scale as we work together to realize carbon neutrality by 2050.

On 3rd March, with the presence of Mr. Yasutoshi Nishimura, Minister of Economy, Trade and Industry, Mr. Hiroaki Ishizuka, Chairman of NEDO, Ms. Jenny McAllister, Australian Assistant Minister for Climate Change and Energy, Mr. Justin Hayhurst, Australian Ambassador to Japan, and Mr. Tim Pallas, Treasurer of the Victorian State Government at the Asia Zero Emission Community (AZEC) Public-Private Investment Forum, a memorandum of understanding was signed by major Japanese companies with the aim to advance the

commercialization demonstration project under this Green Innovation Fund and to develop an international supply chain for liquefied hydrogen.



AZEC Public-Private Investment Forum

Notes:

*1: Liquefied Hydrogen Supply Chain Commercialization Demonstration Project

Project period: from Japanese Fiscal Year 2021 to 2030 (tentative schedule)

Refer to: <https://green-innovation.nedo.go.jp/en/project/hydrogen-supply-chain/>

*2: Green Innovation Fund Project

This is a 10-year government program that supports private sector companies to develop new technologies and the introduction of new systems and policies, and their corporate vision to achieve Japan's goal of "carbon neutral by 2050", sharing ambitious and specific goals in the public and private sectors.

Refer to: <https://green-innovation.nedo.go.jp/en/>

*3: Hydrogen production

Clean hydrogen will be produced through gasification of coal in Victoria, Australia, with Carbon Capture and Storage (CCS) adjacent to that area, cost-effectively and stably, contributing to an establishment of CO₂-free hydrogen supply chains.

*4: Development of Technologies for Realizing a Hydrogen Society / Development of large-scale hydrogen-energy utilization technology

Project period: Japanese Fiscal Year from 2014 to 2025.

Project overview: https://www.nedo.go.jp/activities/ZZJP_100096.html (Only in Japanese)

*5: Nm³ (Normal cubic meter)

Nm³ means a unit of mass for gases equal to the mass of 1 cubic meter at a pressure of 1 atmosphere and at a standard temperature 0 Degree Celsius to measure gas flow rate.

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