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Kawasaki's Challenge toward Carbon Neutrality
- Progress of International Liquefied Hydrogen Supply Chain Development-

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Kawasaki Heavy Industries

Kawasaki
Powering your potential

カワる、
サキへ。
Changing forward

Kawasaki: Leading Technologies from “Production” to “Storage”, “Transportation” and “Utilization” of Hydrogen

Hydrogen-related products of Kawasaki Group

Vision of Hydrogen Economy

De-carbonization

Energy Security

Economic Growth

H_2

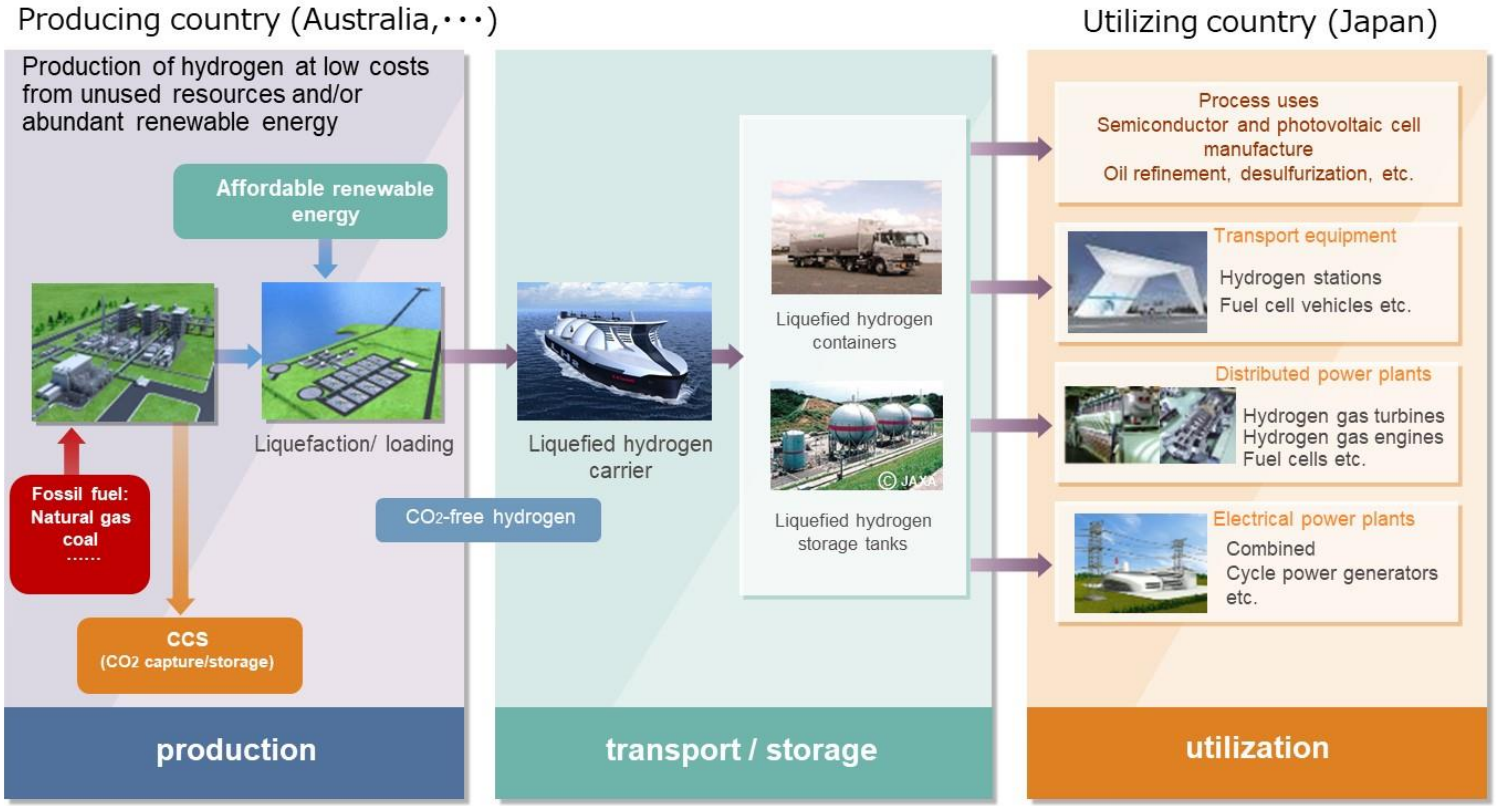
Hydrogen Targets set by Japanese Government
– Green Growth Strategy –

	Current	2030	2050
Consumption /Year*	2 million tons	3 million tons	20 million tons
Costs	100 JPY/Nm^3	30 JPY/Nm^3	20 JPY/Nm^3

* includes consumption of ammonia
Source： https://www.meti.go.jp/press/2020/12/20201225012/20201225012-2.pdf

Source：IEA The Future of Hydrogen

Concept of a Clean Hydrogen Supply Chain



Hydrogen Energy Supply Chain (HESC) Project: Successful at Pilot Scale

This project is supported by NEDO

Kawasaki will contribute to cost reduction by scaling-up facilities

Transport

Suiso Frontier: 1,250m³ @HySTRA

Storage

Storage Tank at Hy touch Kobe: 2,500m³

128 times

20 times

Transport

Large-scale Carrier : 160,000m³

Storage

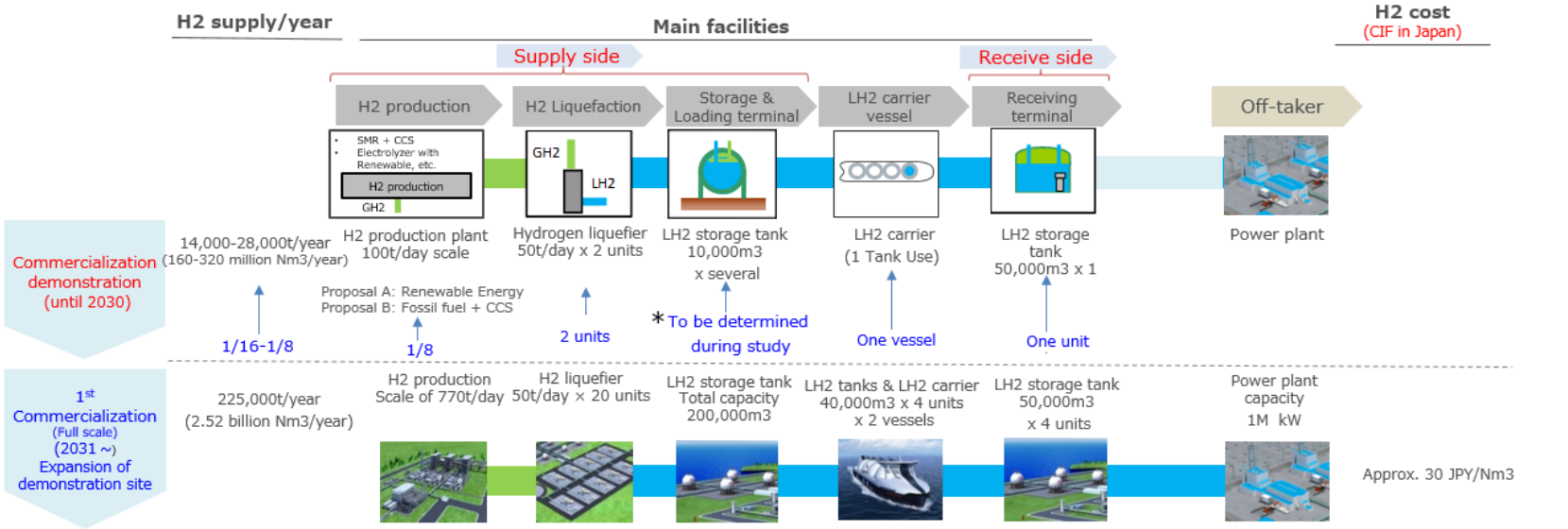
Large-scale Storage Tank: 50,000m³

Liquefied Hydrogen Supply Chain Commercialization Demonstration

Adopted by NEDO Green Innovation Fund in August 2021

Large-scale demonstration to transport tens of thousands of tons/year
to be conducted by Japan Suiso Energy※, ENEOS, and Iwatani Corporation

※100% subsidiary of Kawasaki

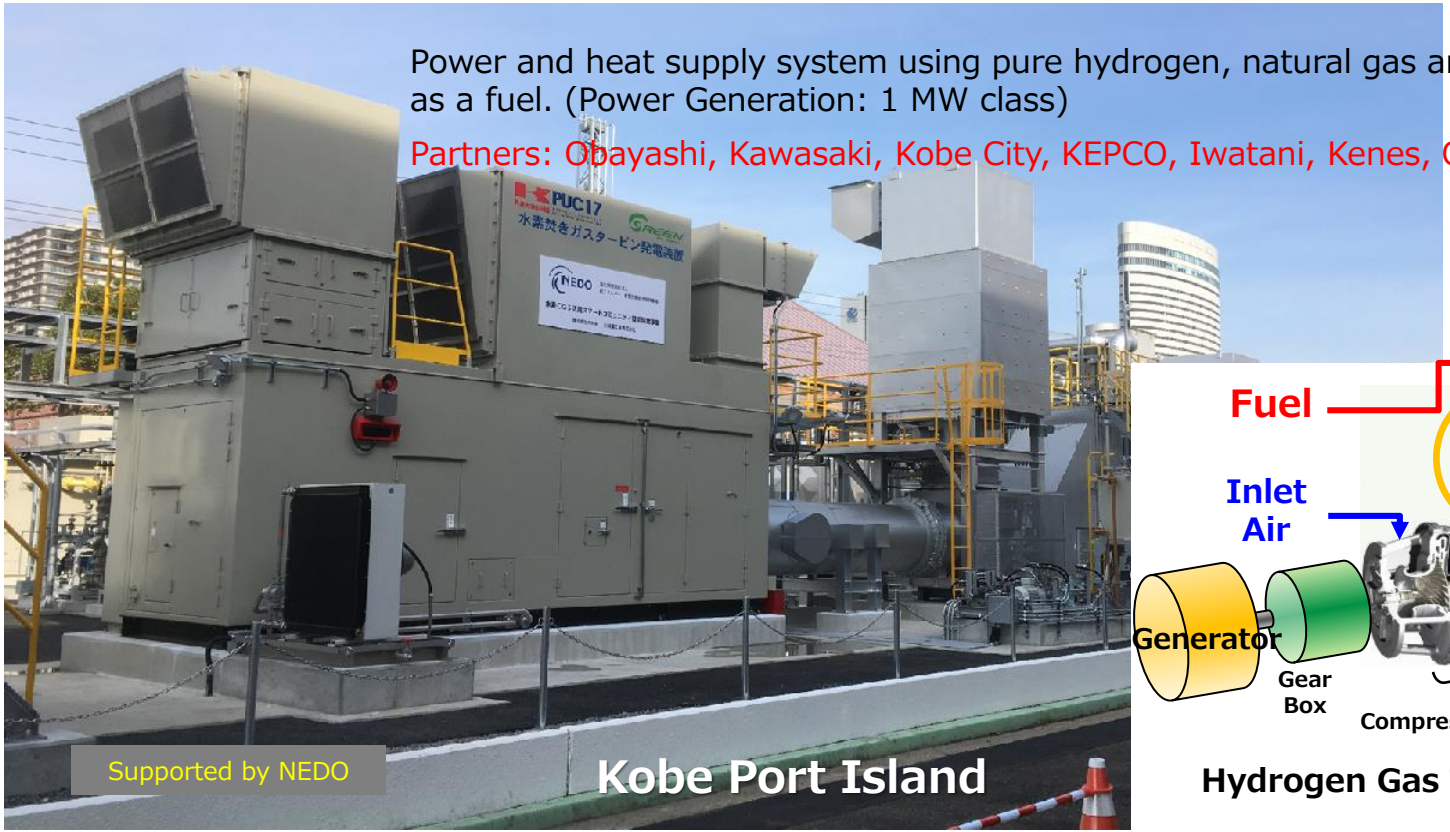


Source：https://www.nedo.go.jp/news/press/AA5_101471.html

Hydrogen Fueled Gas Turbine

Power and heat supply system using pure hydrogen, natural gas and mixture of these as a fuel. (Power Generation: 1 MW class)

Partners: Obayashi, Kawasaki, Kobe City, KEPCO, Iwatani, Kenes, Osaka University



Supported by NEDO

Kobe Port Island

Hydrogen Gas Turbine Unit

Further Development of Hydrogen-Related Products/Businesses

Liquefied Hydrogen
Supply Chain

Hydrogen Valves
For FCV

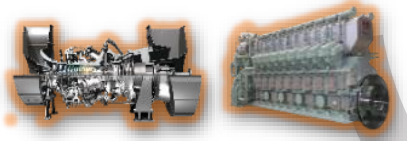
Precision Machinery & Robot Company

Fuel Cell Vehicles

Rolling Stock Company

Kawasaki Heavy Industries, Ltd.

Energy Solution & Marine Engineering Company



Hydrogen Power Generation and Ship Engine

Hydrogen Vehicles

Motorcycle & Engine Company

Hydrogen Liquefier

Hydrogen Aircraft Engines

Aerospace Systems Company