

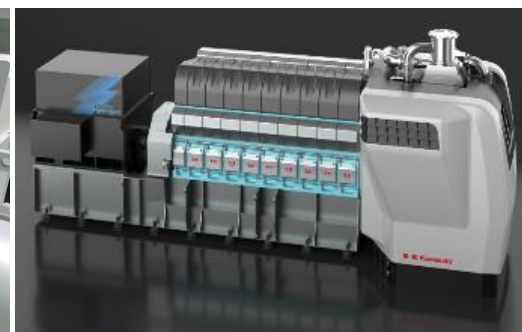
KHI's Hydrogen Initiative

Kawasaki Heavy Industries, Ltd.

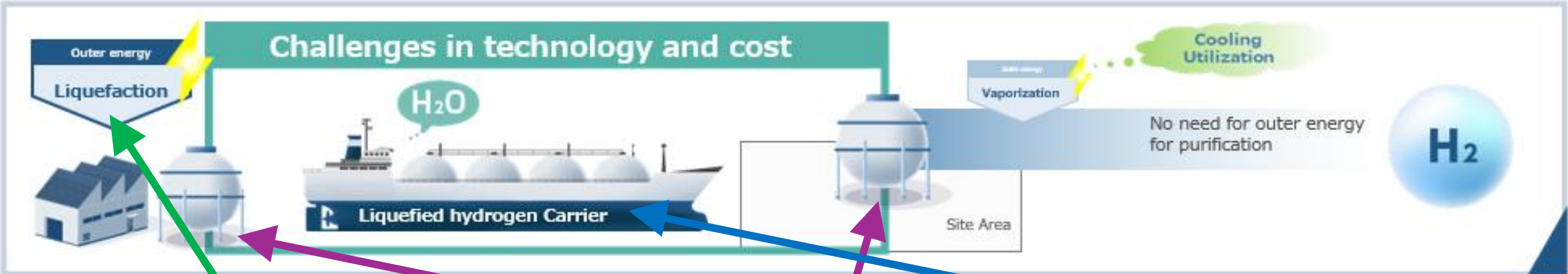
Kawasaki's Hydrogen Technology Overview



Realizing Hydrogen Technologies



Kawasaki's Challenge in LH₂ Supply Chain



Scaling up Products for Commercial Chain : Onshore Tank

Volume: 2,500m³/tank



- Volume: 50,000m³/tank
- Under development



- Volume : 200,000m³/tank
- Future project

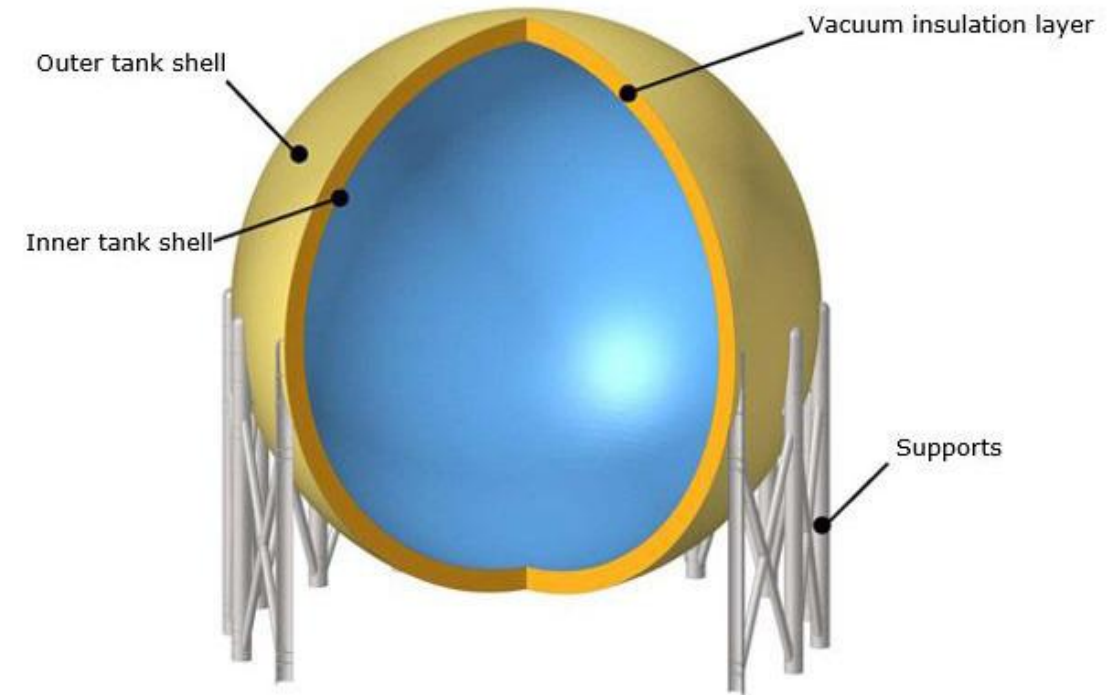


➤ Pilot Demonstration (2015-)

➤ Commercialization Demonstration (2021-2030)

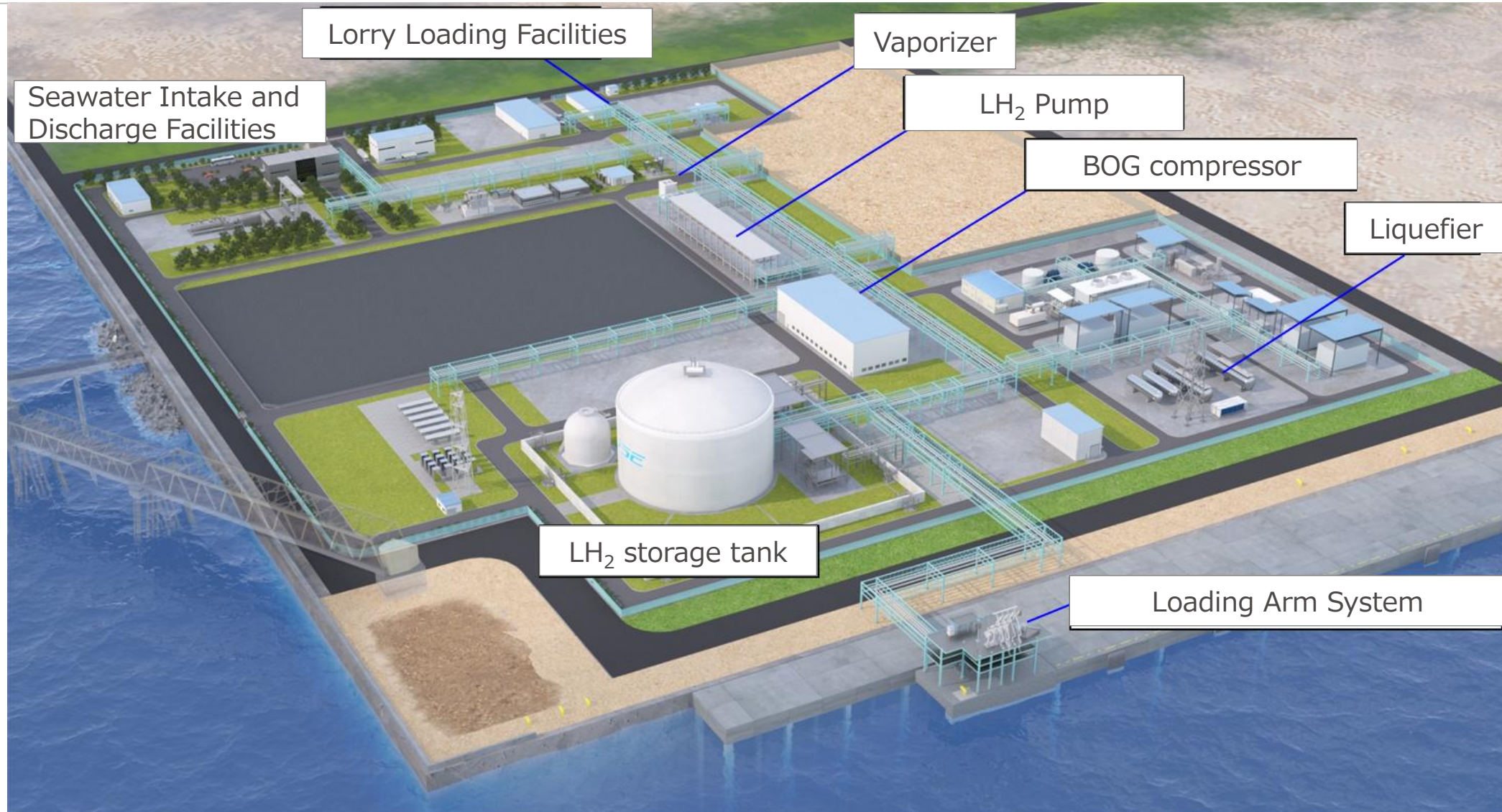
➤ Commercial Chain

Japan's largest liquefied hydrogen storage tank



BOR 0.06% / day

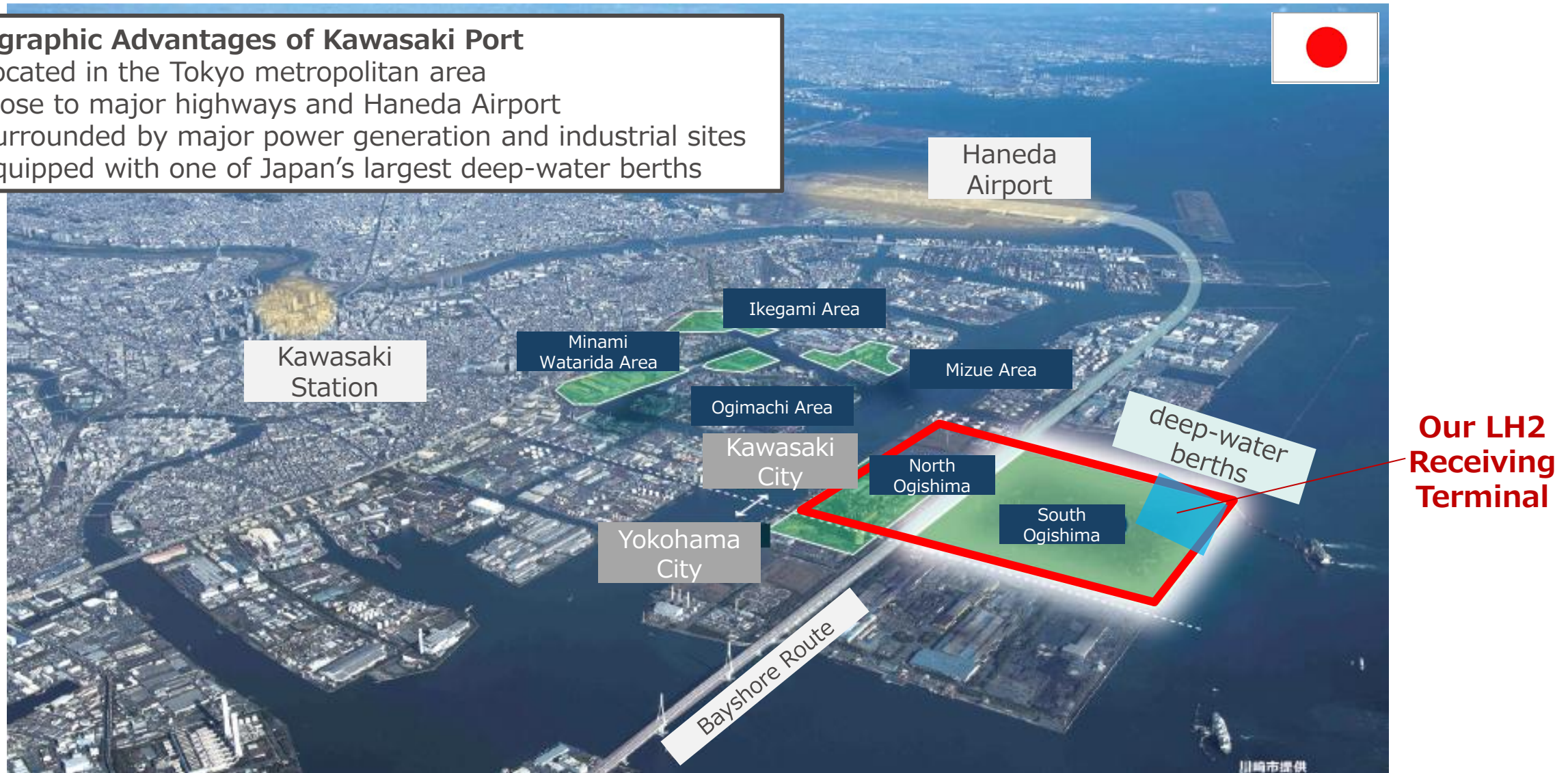
Nest step: Development of LH₂ Terminal



Location of liquefied hydrogen terminal

Geographic Advantages of Kawasaki Port

- Located in the Tokyo metropolitan area
- Close to major highways and Haneda Airport
- Surrounded by major power generation and industrial sites
- Equipped with one of Japan's largest deep-water berths



Scaling up Products for Commercial Chain : Ships

Small Scale

(LH₂: 1,250m³ / 75t)



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» Pilot Demonstration (2015-)

Medium Scale

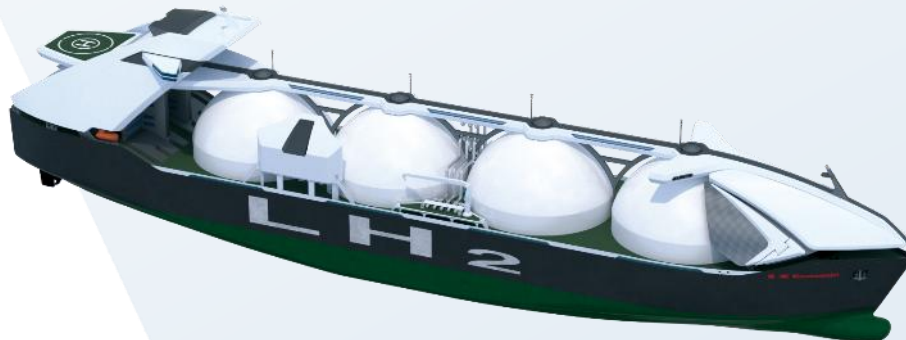
(LH₂: 40,000m³ / 2,400t)



» Commercialization Demonstration (2021-2030)

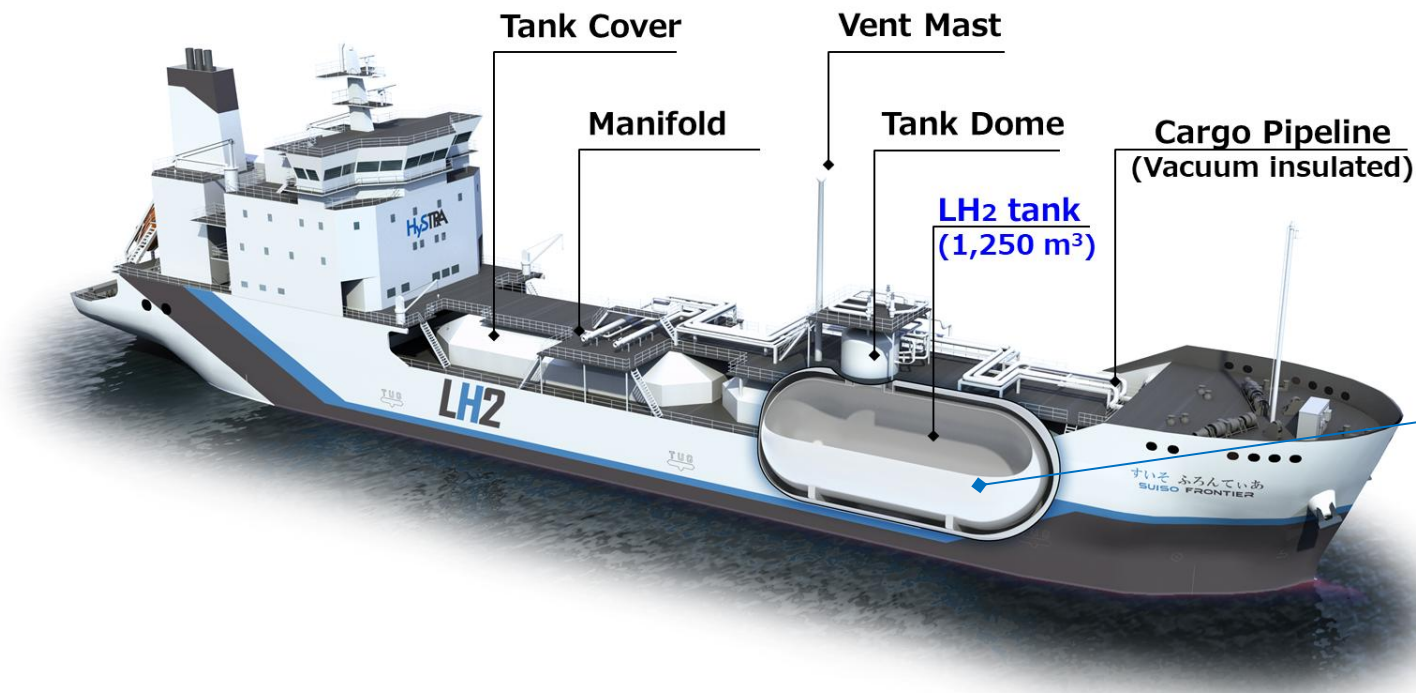
Large Scale

(LH₂: 160,000m³ / 9,600t)

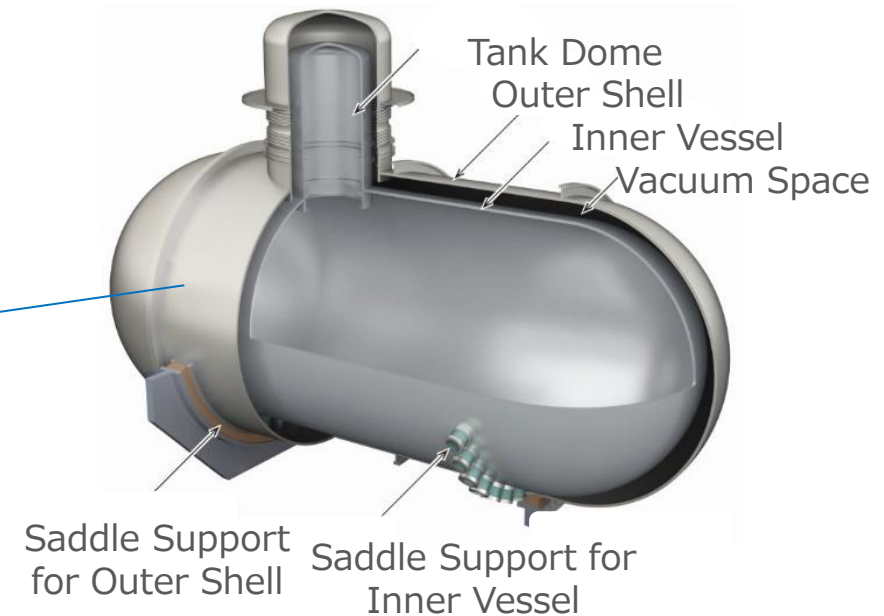


» Commercial Chain

World First LH₂ Carrier



Cargo Containment System
(1,250m³)



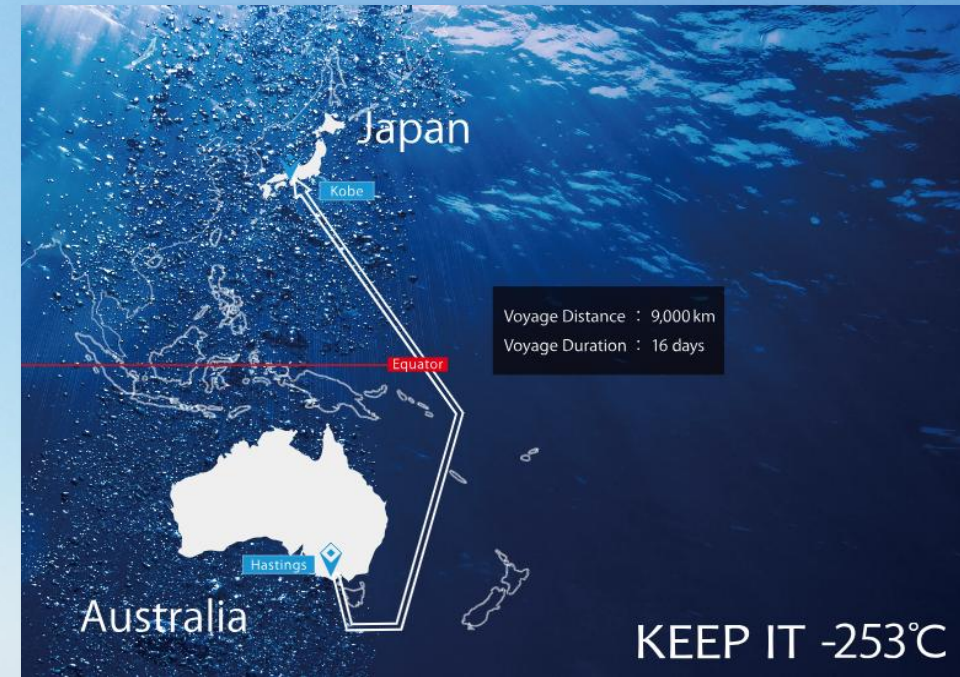
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Length	116 m	Speed	13 knot
Width	19 m	Draft	4.5 m
Max crew	25 person	Propulsion	Diesel electric

Vacuum Insulated Double Shell Structure

BOR 0.3% / day

Successful Completion of Pilot Demonstration in 2022



Next step: Development of Mid-size LH₂ carrier



40,000m³ liquefied hydrogen carrier

Items	Main Equipment Specifications
Principal Dimensions	Approx. 255m x 35m x 20m (length × breadth × depth)
Draft	8.5m
Speed	18.0 knots (33.3 km/h)
Tank Capacity	40,000m ³ (Number of tanks: 3)
Propulsion System	Electric propulsion vessel (motors driven by generators) - Diesel generators - Hydrogen-fueled dual-fuel diesel generators (capable of utilizing hydrogen BOG as fuel for ship propulsion)
Design/Construction	By KHI

