

Kawasaki Heavy Industries, Ltd. | Overview

Kawasaki Heavy Industries, Ltd. Transition Bond

■ Corporate Profile

Industry	Heavy industry
Location	Japan
Business	Engaged in a variety of businesses including shipping, railway cars, aircraft, motorcycles, gas turbines, gas engines, industrial plants, hydraulic equipment, and robotics

■ Bond Outline

Issuer	Kawasaki Heavy Industries, Ltd.
Structuring Agent	Mizuho Securities Co., Ltd.
Evaluation Agency	Japan Credit Rating Agency, Ltd.
Issue Amount	Approx. 10 billion yen
Issue Date	October 2023 or thereafter

— Alignment with the Four Basic Guideline Elements* —

Element 1	<ul style="list-style-type: none"> Transition Strategy: aims to realize carbon neutrality for Scope 1&2 within the domestic Group companies in 2030 and the entire Group (consolidated) in 2050. Also for Scope 3, aims to achieve Group-wide carbon neutrality in 2050 by developing a full lineup of carbon-free solutions in all of its businesses by 2040. Governance: established the Sustainability Committee chaired by the President.
Element 2	<ul style="list-style-type: none"> Specified material issues (materiality) in 2018 based on the importance to society and stakeholders as well as to the Kawasaki Heavy Industries Group. Furthermore, in 2020, in response to the "Group Vision 2030", the Group reviewed the materiality and defined three focus areas; "A safe and secure remotely connected society," "Near-future mobility," and "Energy and environmental solutions."
Element 3	<ul style="list-style-type: none"> To achieve "Group Vision 2030" target of being Net Zero among domestic Group companies in 2030, required to reduce emissions at an average rate of 7.6% p.a. from the FY2021 group-wide emissions (including overseas companies), which meets the 1.5°C standard of SBT certification.
Element 4	<ul style="list-style-type: none"> Plan to invest 350 billion yen (FY2020-FY2030) to CN related businesses, including 50 billion to 100 MW hydrogen power generation business.

Candidates for Use of Proceeds and KPIs/SPTs

*Projects in bold: Use of Proceeds in the project G: Green, T: Transition, S: Social, B: Blue

Group Vision 2030	Use of Proceeds Category	Type	Key Projects
Safe and secure remotely connected society	Surgical support robots	S	hinotori™ surgical robot system
	Delivery robots and unmanned transport helicopters	S	Delivery robots and unmanned VTOL aircraft
Near-future mobility	Clean transport and storage of hydrogen	G·B	Liquefied hydrogen storage tanks, and carriers, hydrogen-gas-fuel vessels, etc.
	Use of clean hydrogen energy	G·T·B	Hydrogen gas turbines (mono-firing), hydrogen-fueled engines for ships, etc.
Energy and environmental solutions	Use of clean hydrogen energy (co-firing)	T	Hydrogen gas turbines (co-firing), etc.
	CCUS	G	Kawasaki CO ₂ Capture, etc.
	Use of gas energy	T	High efficiency gas turbines, etc.
	Transportation equipment (electric)	G	EV motorcycles and vehicles, etc.
	Transportation equipment (hybrid)	T(G)	Hybrid motorcycles and vehicles, etc.
	Waste treatment	G	Waste carbonization fuel system
	Construction and cement	T	Controller for construction, CK Mill, etc.
	Sewage treatment	G·B	Mega MAG Servo
	Other energy-saving products	G(T)	Cogeneration system, etc.
	KPI	SPT	

KPI 1: CO₂ emissions (Scope 1 and 2)

SPT 1: Net Zero* in domestic Group companies by 2030

KPI 2: Establishment of a hydrogen supply chain

SPT2-1: Construction of one large liquefied hydrogen carrier for commercial operation by FY2027

*Kawasaki Heavy Industries (non-consolidated) and 37 domestic consolidated subsidiaries

SPT 2-2: Transporting capability of 225,000 tons p.a. or more of liquefied hydrogen by FY2031

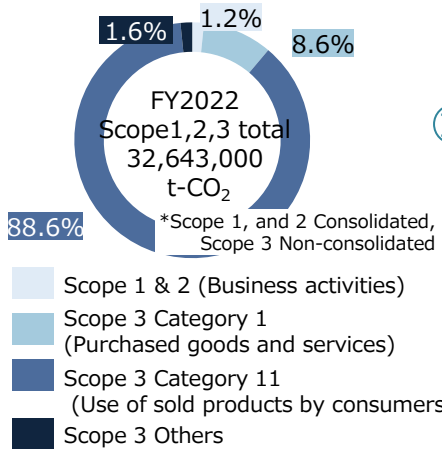
Kawasaki Heavy Industries, Ltd. | Overview

Transition Strategy and Governance (Element 1)

Carbon Neutrality-Related Targets

- 2030** • Scope 1 and 2 Net Zero in all domestic Group companies
- 2040** • Full lineup of carbon-free solutions in all businesses
- 2050** • Scope 3 Net Zero across the entire Group

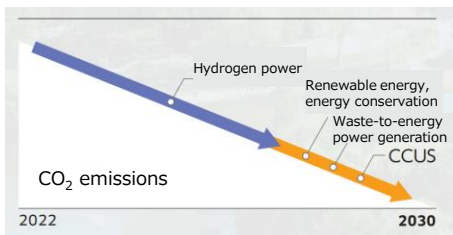
Breakdown of GHG emissions (FY2022) Transition strategy



- Aim to realize carbon neutrality for Scope 1&2 within the domestic Group companies in 2030, with some technologies in use, such as hydrogen power generation, saving energy, waste power generation, CCUS and so on.
- Contribute to realizing CN for the entire society by providing carbon-free solutions to parts suppliers and customers.

Scope 1, and 2

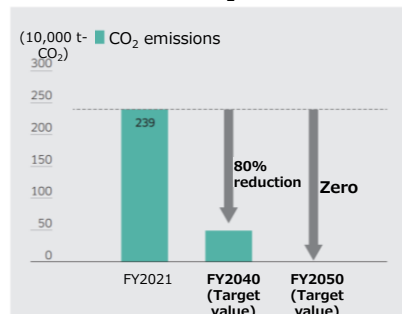
- In Japan, where its emissions account for 3/4 of the total CO₂ emissions of the Kawasaki Heavy Industries Group, realize the Group's own **"zero-emission plant"** by focusing on in-house hydrogen power generation.



Scope 3 Category 1

- Support customers in each industry with hydrogen & CCUS solutions.
- Deepen partnerships with customers, including sharing emissions data.

Scope 3 Category (i) (CO₂ reduction scenario)



Scope 3 Category 11

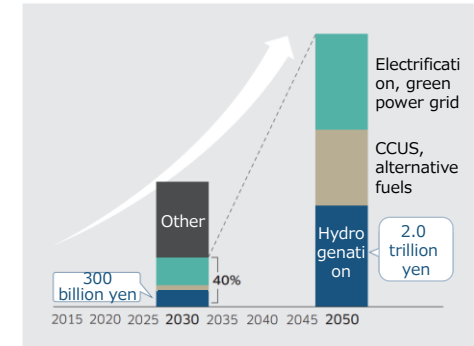
- Provide CO₂-free fuels and electric power to society from the Group, with a focus on its hydrogen business.
- Offer a set of choices for electrification and carbon-free fuels enabling customers to utilize solutions including mobility and robots free from emissions.
- Promote CCUS and DAC initiatives

With these three pillars, make choices available for customers to utilize products and services that contribute to achieving carbon neutrality by 2040. (Except for defense-related and emergency products)

Direction of Shift by Business

Business	Hydro generation	Electrification, green power grid	CCUS, alternative fuels
Aerospace systems	○	○	○
Vehicles	○	○	○
Precision machinery	○	○	○
Robotics		○	
Motorcycles & Engines	○	○	○
Energy	○	○	○
Marine machinery	○	○	○
Plants	○	○	○
Ship and offshore structure	○	○	○

Business Size Prospect by Future Solution



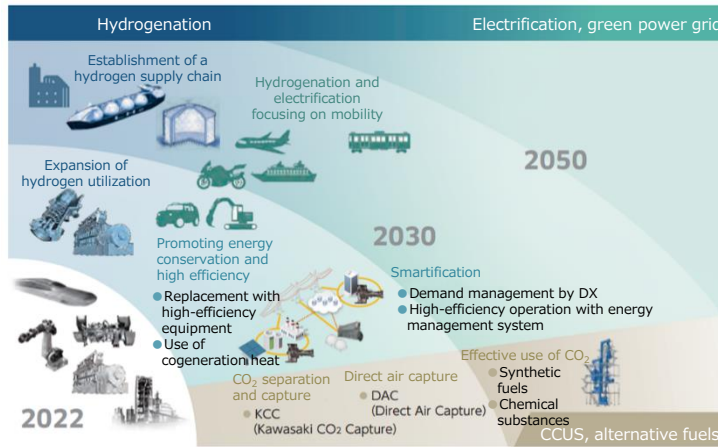
Key Points

- The plan outlines a path to achieving carbon neutrality by steps centered on realizing a hydrogen-based society (such as usage of hydrogen power generation, hydrogen power supply, hydrogen fuel supply, and carbon-free fuel transport) and some initiatives such as expanding renewable energy and promoting CCUS as well.
- The Group has set the Scope 1&2 target of achieving net zero in all domestic Group companies by 2030 through the expansion of hydrogen power, renewable energy, energy conservation, waste power generation, and CCUS. Furthermore, it has set the Scope 3 target of achieving net zero within the entire Group by 2050 by providing carbon-free solutions throughout the world.

Kawasaki Heavy Industries, Ltd. | Overview

Science-based Climate and Transition Strategies (including Targets and Achievement Process) (Element 3)

Decarbonization Solutions



* Sector-specific roadmap by METI and related ministries https://www.meti.go.jp/english/policy/energy_environment/transition_finance/index.html

Also, aligned with some other roadmaps such as IATA Net zero carbon 2050 resolution.

Aligned with the power sector roadmap*

- Its initiatives on **hydrogen mono-firing and co-firing**

Aligned with the gas sector roadmap

- Its initiatives on **hydrogen transport, etc.**
- Its initiative on **natural gas**

Aligned with the automobile sector roadmap

- Its initiative on **hydrogen stations**

Aligned with the cement sector roadmap

- Its initiatives on **energy-saving and high-efficiency equipment**

Aligned with the maritime sector roadmap

- Its initiative on **hydrogen fuel**
- Its initiative on **LNG**

Aligned with each sector roadmap

- Its initiative on **CCUS**

Key Points

- Initiatives to develop carbon-free solutions are aligned with the sector-specific roadmaps by METI and related ministries
- To achieve "Group Vision 2030" target of being Net Zero among domestic Group companies in 2030, required to reduce emissions at an average rate of 7.6% p.a. from the FY2021 group-wide emissions (including overseas companies), which meets the 1.5°C standard of SBT certification.

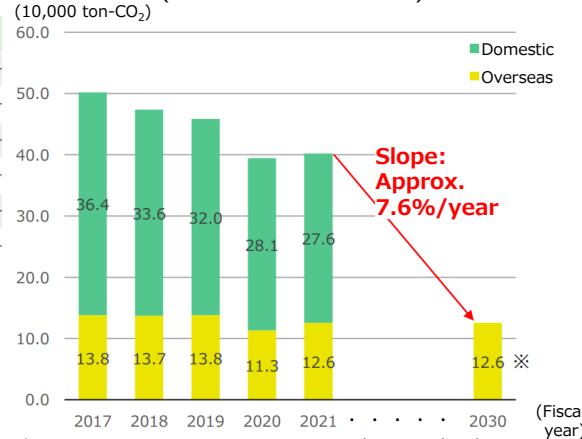
Path for Reducing CO₂ Emissions

Kawasaki Heavy Industries Group CO₂ Emissions by Region (Fiscal year)

Region	Unit	2017	2018	2019	2020	2021	2022
Japan	1,000 t	363.88	336.37	320.24	281.17	276.35	-
North America	1,000 t	79.29	80.43	76.2	50.92	64.55	-
Europe	1,000 t	2.12	2.18	2.03	2.06	3.03	-
South America	1,000 t	0.14	0.14	0.13	0.13	0.15	-
Asia Pacific	1,000 t	56.57	54.41	59.97	60.28	57.95	-
Total	1,000 t	502.00	473.53	458.57	394.56	402.03	-

*SPT 1 aims to achieve Net Zero in CO₂ emissions in Japan by 2030, which accounts for about 70% of all region, meaning that the target is to reduce CO₂ emissions in all regions by about 70% from the FY2021 level.

CO₂ Emissions from Production Activities (Domestic and Overseas)



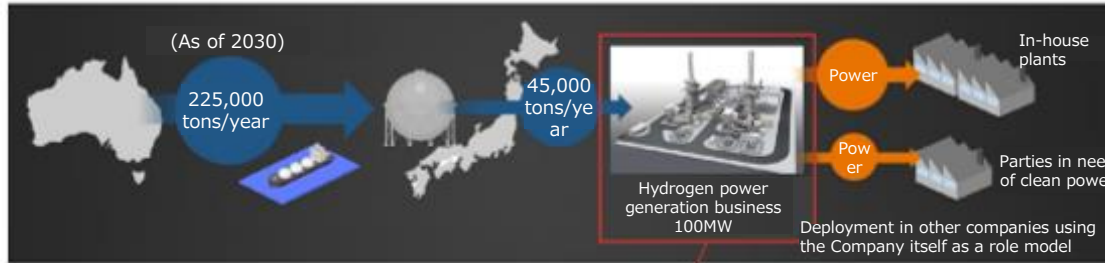
* Overseas emissions in FY2030 set at the same level as those in FY2021.

Kawasaki Heavy Industries, Ltd. | Overview

Transparency of Implementation (Element 4)

Investment Plan for Hydrogen Power Generation Business

- Plan to invest 350 billion yen (FY2020 - 30) to CN related businesses to achieve the goal of 600 billion yen in sales for CN related businesses in FY2030.

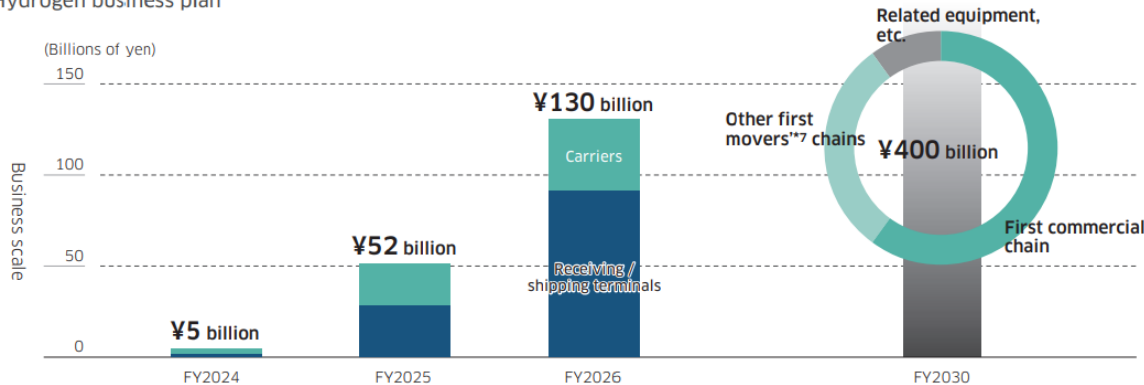


Plan to invest 50 billion yen to realize the world's first zero-emission plant.

- Anticipating a business scale in excess of 50 billion yen in FY 2025 and 130 billion yen in FY 2026 and supplying key parts and granting licenses to other companies by FY 2030, plan is to achieve a business scale (including other first mover chains) of 400 billion yen.
- Here are the three steps for the development of a liquefied hydrogen supply chain. (1) In the spring of 2022, we completed a pilot demonstration of the international transportation of liquefied hydrogen for the first time in the world. (2) Currently, we plan to develop commercial-scale equipment to verify the feasibility of commercialization by fiscal 2030, and then (3) start operation of a commercial supply chain.

Hydrogen Business Plan

Hydrogen business plan



*7 A first mover is a business that plans to start supplying hydrogen by around 2030.

Key Points

- Kawasaki Heavy Industries to invest 50 billion yen to 100 MW hydrogen power generation project to realize the world's first "zero-emission plant."
- Planning to achieve a business scale (including other first mover chains) of 400 billion yen in 2030, they are trying to develop a liquefied hydrogen supply chain.

Committee | Results

Kawasaki Heavy Industries, Ltd. Transition Finance

Results:

Approved for Climate Innovation Finance Promotion Grant Scheme

Main Opinions

Transition Strategy

- Kawasaki Heavy Industries has been taking a progressive approach to hydrogen and has set ambitious targets towards Net Zero. Hope to see continued efforts to achieve this.
- It is important to reduce the cost of transferring liquefied hydrogen, but increasing the size of tanks has high hurdles. The development of this technology will play a key role in the future of liquefied hydrogen in Japan and thus should be the focus.
- It is important to pursue multiple initiatives to hedge risks with other technologies, such as electrification, other than hydrogen, which is already well underway.

Other elements/Others

- Since Kawasaki Heavy Industries has an efficient method to capture CO₂ through CCU, hope that the use of captured CO₂ (CCUS) will expand the synthetic hydrocarbon fuel market.
- The capability to supply carbon-free hydrogen means a lot to attract customers and the market. It would be more preferable if Kawasaki Heavy Industries sets its policy on Emission Reduction or a target regarding the emissions associated with hydrogen.

This document focuses on the contribution of transition finance to the realization of Japan's 2050 carbon neutrality and the Paris Agreement, and does not cover any evaluation of the risks of transition finance as a financial instrument. Even in the model case of this project, it should be noted that credit risks and other risks (such as price fluctuation or liquidity risks in the case of bonds) exist as in ordinary financing.