/ Growth Scenario Leading to 2030

Looking ahead to the social issues of the coming decade, we have established a growth scenario around three focal fields. By reinforcing Kawasaki's current mainstay businesses and realizing inter-business synergy, we are developing new businesses that will grow into future pillars.

Mass production business will bolster the



/ Innovative Business Models

In anticipation of the year 2030 the Group will continue to grow its existing businesses while pursuing innovations in its business models, in addition to responding to electrification and clean power and promoting hydrogen-related business, while facilitating the transition of businesses from selling products to selling IP and services.

By following this model, Kawasaki will aim at a



Trustworthy Solutions for the Future

The Kawasaki Group will make available in a timely manner innovative solutions that accommodate an ever-changing society in order to create a hopeful future. At the same time, the Group will surpass organizational boundaries and take on challenges to expand the horizons of its potential for further growth.

Pioneering the technology frontierwith our challenger DNA

Since our founding, we have always been challengers. Throughout a history studded with national and global firsts in many sectors, including shipbuilding, rolling stock, and aerospace, we have leveraged our cutting-edge technologies and fostered a DNA characterized by a spirit of pioneering the frontier that draws on our unique perspective.

We will continue to respond to the frontier of this new era's social challenges. based on that unique perspective, in order to create a hopeful future.



New Values

Providing innovative solutions to the problems facing the world

The world is now facing an array of problems, including environmental deterioration, energy challenges, expanding populations, graving societies, natural disasters, and pandemics. We are committed to providing new and meaningful value to a wide range of customers and society by concentrating the trusted technologies and knowledge that we have built in order to provide innovative solutions and to speedily accommodate social change.

gross Over Becoming a creative challenger that continues to grow by breaking barriers

To provide innovative solutions focused on social challenges, we will continue to be an open-minded, free-thinking, and creative team that goes beyond the boundaries of internal and external organizations and of product/service categories, leveraging our rich diversity. Moreover, we will keep growing as an organization and as individuals by expanding our potential, boldly taking on challenges in unfamiliar domains and learning from the experience.

/ Management Policv

Since November 2020, the Kawasaki Group has been implementing Group Vision 2030, a vision for the Group's future.

We will pursue ongoing growth by investing in growth businesses while transforming to meet evolving needs based on the three strategies of "Pursue Growth," "Profits," and "Stability / Synergy."



revenues of Kawasaki as a whole in the immediate term. After this, we will continue to stabilize and grow revenues from orders received, while increasing efforts to make new business, including hydrogen business, revenue pillars. By re-envisioning our business model in such ways, we aim to realize high earnings capacities and carve out a stable growth trajectory.



future point to fully transition its business models around the focal fields set out in the Group Vision 2030 of "A safe and secure remotely connected society," "Near-future mobility," and "Energy and environmental solutions." We will set our sights on realizing increasingly substantive solutions to societal challenges, and becoming a company which is highly rated by all stakeholders.

/ Five Measures for Achieving the Group Vision 2030

The spread of COVID-19 has resulted in major changes to opportunities around the world, and we place particular value on taking social issues as the starting point of business and collaborating with diverse partners to provide solutions to those issues. Moreover, it is people who drive business forward and solve issues. We are taking measures with a priority on

developing a shared awareness among and unifying the actions of the employees who drive our business in order to achieve our vision.

Amidst these major changes, we will carry out five measures (referred to as "SPEED") with the aim of identifying the social issues that people are confronting in real life and taking prompt action.

Social issue solution	 Remotely connected society Global environment Decreasing birthrates and aging populations Pandemics / disasters Global environment A safe and secure remotely connected society Near-future mobility Energy and environmental solutions 		
Partnership for new values	Open innovation: from selling products to selling IP and services		
Employee engagement	Personnel system reforms: increase highly effective employees and integrate various talents and diversity		
Ever changing	Reform the business portfolio and organizations with an awareness of market-in		
Digital transformation	Create next-generation business		

Partnership for new value Open innovation: from selling products to selling IP and services

Creating new value with new solutions in collaboration with partners

In today's highly-developed world where the pace of change increases on a daily basis, social issues are also becoming bigger and more complex. Our capabilities alone are insufficient to provide appropriate solutions to these trends, and collaboration with the national government and local governments, companies, and research institutions is essential. To reinforce

collaboration in areas related to the priority fields under the Group Vision 2030, we are putting particular emphasis on collaboration that goes beyond existing business Fields. By gathering the strengths and market knowledge of each party, we will provide new solutions to the challenges that people face today and in the future and meet the trust that has been placed in us.

Purpose	Collaborations
 Support healthcare with the <i>hinotori</i>[™] surgical robot system 	Joint venture with Sysmex Corporation Medicaroid Corporation
 Establish a joint venture to engage in the remote robot platform business Pursue a remote society in which all people can participate 	Joint venture with the Sony Group Remote Robotics Inc.
Build a hydrogen supply chain and achieve carbon neutrality	Seek commercialization in 2030 Technology Research Association HySTRA
 Link hydrogen transportation (supply side) and use (demand side) Supply hydrogen to hydrogen automobiles and other vehicles and generate new energy 	 Supply hydrogen to the Corolla with a hydrogen engine made by Toyota Motor Corporation Start joint research on hydrogen engines with motorcycle and automobile-related companies with the aim of using them on motorcycles and other vehicles

Transform the corporate culture through human resource strategies and tackle social issues

As society undergoes major changes, we believe that each employee must change his or her awareness and perspectives and repeatedly take on new, previously unseen challenges so that as a company we can provide solutions to difficult problems. To create such change, in 2021 we began shifting to a personnel system that focuses on the qualities, abilities, and direction of each employee's career.

We are also focused on our corporate culture. which is the accumulation and sum of individual awareness. By using engagement surveys to make

Reform of the Corporate Culture

Make visible and transform the corporate culture of taking on the challenges of future social issues

- Place at the center of the organization highly effective employees who exercise initiative and fully demonstrate their capabilities
- Each individual adopts a market-in perspective and takes action that goes beyond internal and external boundaries

Digital transformation Create next-generation business

Use Kawasaki DX to transform business styles and the processes that support them

In order to overcome various boundaries and rapidly provide social value from the perspective of market-in, we are making substantial changes to our business styles and the processes that support them. One aspect of these activities is Kawasaki Digital Transformation (DX).

For Kawasaki DX, we are taking action in three areas-DX from the perspective of customers, DX from



Employee engagement Personnel system reforms: increase highly effective employees and integrate various talents and diversity

visible the climate and culture that cannot be seen, we are able to gain an understanding of the characteristics of organizations and the values that employees prioritize, and we are working to shift to a corporate culture that enables employees to demonstrate their full potential.

We will use the synergy effects from the demonstration of abilities tailored to individual preferences and aptitudes with the transformation of our corporate culture to achieve solutions to the social issues that we are targeting.



the perspective of business, and DX from the perspective of employees-to create new customer value, shift our business model from the sale of goods to the sale of IP and services, enhance the agility of our business foundations, reform employee working styles, and achieve other innovations.

Group Vision 2030 | Energy and Environmental Solutions





Working toward the stable generation of clean energy

1. Realizing a hydrogen society in an early stage

/ Hydrogen Market to Reach ¥288 Trillion in 2050

The Japanese government seeks to achieve essentially zero CO₂ emissions by 2050 and has set targets for the introduction of 3 million tons of hydrogen, a source of clean energy, by 2030 and 20 million tons by 2050. Achieving low-cost and large-volume supplies of

hydrogen from overseas. It is said that the hydrogen in 2050, of which the hydrogen-related equipment, hydrogen power generation, and supply chain related markets that Kawasaki Heavy Industries is targeting



/ Reducing the Costs of Hydrogen Is the Key to Widespread Use

During the period up to 2030, costs will be reduced in each stage from hydrogen production to transportation by increasing the overall equipment scale to lower the cost to approximately JPY 30/Nm

At a scale using small carriers, the cost of hydrogen is approximately JPY 170/Nm³. This is approximately 10 times higher than LNG, making the widespread use of hydrogen difficult.



/ Seeking a Two-Trillion Yen Business in 2050

In comparison to a market scale of ¥12 trillion in 2050. Kawasaki anticipates sales revenue in excess of ¥100 billion in 2025. We anticipate supplying key parts and granting licenses to other companies, because their demand will exceed our production capacity in 2030. Subsequently, we believe that our business will grow to





/ Potential of Hydrogen in the Mobility Field

Kawasaki is continuing its efforts to use hydrogen engines in various means of transportation including ships, aircraft, and automobiles with the aim of

Development of marine hydrogen-fueled engines and MHFS (Marine Hydrogen Fuel System) project selected for NEDO Green Innovation Fund Support (October 2021)



Kawasaki and Airbus to study use of hydrogen in Japan (April 2022)

¥300 billion and eventually reach ¥500 billion in 2040. We plan to substantially increase the operating profit margin by pursuing innovations in business models and shifting from selling products to selling IP and services.

achieving zero emissions for mobility. We are steadily working towards practical application while cooperating with specialized partners in various fields.



vehicle equipped with a direct injection, hydrogen fuel motorcycle engine. (September 2022)

Working toward the stable generation of clean energy

2. Initiatives to achieve zero CO₂ emissions



Carbon neutrality targets

Focal Field 1

The Group aims to achieve carbon neutrality domestically by 2030 through the further advance of energy saving, the expanded use of renewable energies, and the expansion of waste-to-energy power generation, as well as independent initiatives focusing on hydrogen power generation.

In addition, we will extend our decarbonization solutions to society, business partners, and customers, thereby contributing to the early realization of carbon neutrality in the world.



Scope 1.2

Scope 1, 2 About 0.4 million tons annually

/ Toward the Realization of Independent Carbon Neutrality by 2030 through Initiatives Focusing On Hydrogen Power Generation

To reduce Scope 1 and 2 CO₂ emissions, the Kawasaki Group will first create zero-emissions plants in Japan, which accounts for three-quarters of the Group's total annual emissions of 400,000 tons, by combining power generation from waste, renewable energy, and other sources with a focus on in-house hydrogen-fueled power generation facilities, as described below. We will then expand implementation to overseas subsidiaries and promote the introduction of hydrogen energy to existing power generation facilities previously delivered to customers and other facilities.

The natural gas-fired gas turbine facilities previously delivered by the company that are currently



Zero-Emission Plant





in operation have a total capacity of about 1,000 MW. If we make proposals for the introduction of hydrogen energy and are able to transition these facilities to mixed hydrogen or exclusive hydrogen firing, it will be possible to shift to hydrogen energy without making substantial changes to existing facilities.

Hydrogen power generation is currently advancing from the verification stage to the commercial application stage, and one urban area that can serve as a model, we have already achieved supply of heat and electric power generated exclusively from hydrogen using gas turbines manufactured by Kawasaki Heavy Industries. (See P.3 for more details)



Waste-to-energy power generation 10% reduction CCUS•Other 20% reduction

Scope 3

/ Leading Society by Advancing Toward Zero-Carbon Ready

Scope 3 Net Zero can only be achieved when all parties in the value chain including trading partners and clients become Zero-Carbon Ready. The Company will implement the maximum possible measures concerning Scope 3 to become Zero-Carbon Ready by 2040. Specifically, for category (i), we will slash CO₂ emissions by suppliers of materials and parts by 80%, and for category (xi), we will develop a lineup of CO₂-free standard solutions in all businesses. Moreover, we will reduce CO₂ emissions by more than the Company's own Scope 3 emissions by working toward achieving a hydrogen-based society and engaging in the CCUS business, thereby contributing to the early achievement of carbon neutrality around the world.



Scope 3 Breakdown by Categories

Category (i) Companies supplying materials and parts About 2.4 million tons annually Scope 3

Support industrial initiatives with hydrogen and CCUS solutions to further accelerate reductions

It is anticipated that many industries and companies will tackle the reduction of CO₂ emissions through various measures, including the utilization of renewables and efficient energy use.

The Company will deepen its partnerships, including sharing emissions data with business partners, offering support for CO₂ reductions and striving for early achievement of zero emissions. This will be achieved by means not limited to in-company utilization by the Group of solutions such as hydrogen power, hydrogen fuel, and other alternative fuels, as well as CCUS, but also by providing these solutions to business partners that supply materials and parts.

Scope 3 Category (i) (CO₂ reductions scenarios)



Category (xi) Providing customer solutions Scope 3 About 20 million tons annually'

Provide CO₂-free solutions to all customers

The Group will actively further three major initiatives. The first will be the provision of CO₂-free fuels and electrical power to society, with a focus on its hydrogen business. The second will be to make a selection of choices for electrification and CO₂-free fuels available to customers utilizing our various solutions including mobility and robots. The third will be to undertake initiatives to provide carbon capture, utilization, and storage (CCUS) solutions to capture CO₂ emitted into the atmosphere, and

subsequently store underground or use this CO₂.

With these three pillars, the Group will make choices available to our customers of products and services (excluding defense and related; emergency products business) that contribute to the achievement of carbon neutrality by 2040, and promote global reductions in CO2.

* From fiscal 2021, the Group modified its calculation method to allow more accurate records of emissions levels for Scope3 category (xi). Previously, CO₂ emissions levels for products such as hydraulic machinery, manufactured as parts to be incorporated in finished products. were calculated by tallying the CO₂ emissions levels of the finished products such as construction machinery. However, from fiscal 2021, these calculations interval and interva will also take into account the degree of contributions and weight ratios for final products

Direction of Transitions by Business

Businesses	Shift to hydrogen	Electrification and green power grids	CCUS / alternative fuels
Aerospace Systems	\bigcirc	0	0
Rolling Stock	\bigcirc	\bigcirc	0
Precision Machinery	\bigcirc	0	0
Robot		\bigcirc	
Power Sports & Engine	0	0	0
Energy	\bigcirc	0	0
Marine machinery	\bigcirc	0	0
Plants	\bigcirc	\bigcirc	0
Ship & offshore structure	0	0	0

Decarbonization Solutions



A CO₂-recycling Society





Electrification and green power grids 2050 Adoption of smart technologies Demand management using DX High-efficiency operations via energy management systems CO₂ utilization Synthetic fuels Chemical products Direct air capture

Envisioned Scale of Business by Future Solution

^{*} Kawasaki Heavy Industries (non-consolidated), Kawasaki Motors. and Kawasaki Railcar Manufacturing

/ Disclosure in Line with the Recommendations of the Task Force on Climate-related Financial Disclosures

Under its Group Vision 2030, the Kawasaki Group will actively contribute to the realization of a society in which the average global temperature rise is held to 1.5°C above pre-industrial levels-the goal of the Paris Agreement-through its business, by advancing its hydrogen business, CCUS^{*1} and other efforts. At the same time, the Group is moving forward with measures, based on risk analysis, to address increasingly severe natural disasters, including business continuity planning (BCP), supply chain resilience and others. Here we report on climate change-related information based on TCFD recommendations.

*1 Carbon dioxide Capture, Utilization and Storage

Governance (Organizational governance of climate-related risks and rewards)

Kawasaki has established a Sustainability Committee, chaired by the President, to provide a system for discussion and reporting regarding its environmental management strategy, including climate change risks and opportunities; committee meetings are held at least twice a year. The Sustainability Committee regularly reports on its activities to the Board of Directors, which makes policy decisions regarding climate change-related initiatives and discusses other important matters.



and risks. We then identified those businesses that will be

significantly impacted by climate change. We conducted a

quantitative assessment (financial impact assessment) of

which faces the greatest impact, as well as a qualitative

assessment of the Aerospace Systems and Motorcycle &

Engine segments, which will see the next-largest impact.

Considering consistency with the Group Vision 2030, the

year 2030 was set as the target year, with the analysis

based on a scenario of 1.5°C and 4°C.

the Energy Solution and Marine Engineering segment,

Strategy (Actual and potential impact of climate-related risks and opportunities on business, strategy and financial planning)

In energy and environmental solutions, one of three focal fields defined in the Group Vision 2030, the Group is actively advancing business aimed at realizing a decarbonized society through the hydrogen business, CCUS and other efforts.

In the current scenario analysis, we looked at the Group in its entirety to perform a comprehensive assessment in terms of (i) an assessment by industry; (ii) CO₂ emissions; (iii) business size and future growth potential; and (iv) climate change-related opportunities

/ Risk Management (Methods for identifying, assessing and managing climate-related risks)

The identification and assessment of risks related to climate change are conducted by the Sustainability Committee. Risks are identified in accordance with TCFD categories, including transition risks, physical risks and

others, and are assessed based on the size of their impact. The most significant risks among these are reported to the Board of Directors, which then holds discussions regarding countermeasures.

Kawasaki Group CO₂ Emissions Reduction Targets

/ Indicators and Targets (Indicators and targets employed when assessing and managing climate-related risks and opportunities)

The Group has established CO₂ emissions reduction targets, as shown in the chart at right.

For domestic Scope 1 and 2, including Group companies, our goal is to achieve self-sustaining carbon neutrality by 2030 through initiatives centered primarily around hydrogen power generation. For Scope 3, targets have been established for main categories (i) and (xi).

Our goal is for zero CO₂ emissions across the Group as a whole by 2050, in line with the CO₂-free target set out in the Kawasaki Global Environmental Vision 2050.

Cawasaki aloop co2 Emissions reduction raigets			
Scope 1, 2	Scope 3		
2030 Net Zero Scope: Domestic Group companies	2040 Zero-Carbon Ready * Substantially reduce CO2 emissions by greater than 100% through promotion of the CCUS business (Category (i): 80% reduction (versus fiscal 2021) Category (xi): Promote CO2 reductions in the world) Scope: Kawasaki Heavy Industries, Kawasaki Motors, Kawasaki Railcar		
2050 Net Zero Scope: Entire Group (consolidated)			

Climate Change Scenario Analysis

1.5°C Scenario (As of 2030) If Group Vision 2030 Is Achieved

Business Segment		Energy Solution & Marine Engineering Segment	Aerospace Systems Segment	Motorcycle & Engine Segment		
ssumptions		Decarbonization of energy will progress rapidly worldwide, and energy conservation, energy conversion and the shift toward non-fossil fuels will advance in Japan as well. An international supply chain will be built for hydrogen and ammonia and power generation begins. Strategic placement of hydrogen stations advances				
		 With safety and a stable supply as first priorities, supply of low-carbon or decarbonized energy at reasonable prices will progress. Electricity demand will increase globally, but decline slightly in Japan. Energy security will become increasingly important. 	 Global air passenger traffic will increase as the middle class grows in emerging economies. The use of sustainable aviation fuel (SAF), such as biofuels, and hydrogen will be encouraged. 	 Rapid progress in electrification. The use of hydrogen and synthetic fuels will also advance. 		
	Hydrogen- related	 Demand will increase for liquefaction plants, liquefied hydrogen storage tanks, liquefied hydrogen carriers, hydrogen gas turbines, hydrogen gas engines and marine hydrogen engines. 	Efforts to develop hydrogen-powered aircraft will progress toward 2040.	 Demand will increase for hydrogen engine motorcycles and four-wheelers. 		
Oppo	CCUS	Demand will increase for CO2 recovery plants/equipment and use of CO2.	-	-		
ortunitie	Electrification	 Demand will increase for marine electric propulsion systems and marine fuel cell and storage batteries. 	Development of electric aircraft will advance.	New electric motorcycles (EV/HEV, etc.) will come to market and sales will increase.		
S	Alternative Fuels	• The use of biomass will increase.	Demand for sustainable aircraft fuel (SAF) will increase.	 Demand for e-fuel (carbon-neutral alternative fuels) compatible mobility will increase. 		
	Other	 Demand will increase for reduced GHG vessels, marine LPG/LNG engines and ammonia transport. 	Demand will increase for fuel efficient engines.	-		
isks		Due to delays in infrastructure development, etc. widespread adoption of hydrogen may fall behind our assumptions. Demand for LNG power generation facilities will gradually decline.	 R&D and capital investments in new types of aircraft and engines using next-generation technology will increase. 	 EV/HEV development costs will increase. Capital investments in solving battery issues (durability, output), e-fuel and use of hydrogen technology will increase. 		
inancial Impact 2030 net sales)		Hydrogen-related Products ¥300 billion	(Scheduled for future implementation)	(Scheduled for future implementation)		
Kawasaki's measures to address opp	Hydrogen- related	 We have promoted the Green Innovation Fund's commercialization demonstration projects to achieve greater scale at lower cost. We have actively promoted alliances with relevant companies to realize an international supply chain. 	 Kawasaki is also promoting R&D in hydrogen aircraft core technology. We are advancing studies of airport infrastructure, etc. utilizing the hydrogen supply chain. 	 Stimulate demand by encouraging the development of mobility and general-purpose engines utilizing hydrogen engines. 		
	CCUS	 Kawasaki has completed a demonstration of a CO2 recovery plant under NEDO' and Ministry of the environment projects based on the strength of our submarine technology, and are advancing efforts to scale up and strengthen cost competitiveness of the plant toward commercialization. We are investigating a wide range of possibilities for utilization of CO2, including synthetic fuels. New Energy and Industrial Technology Development Organization 	-	-		
	Electrification	 Expand sales of hybrid/electric propulsion systems. 	Advance development of elemental technologies related to electrification.	 Deploy EV/HEV in at least 10 models by 2025, and replace major models with EV/HEV by 2035. 		
ortunit	Alternative Fuels	• Expand sales of boilers compatible with a wide variety of biomass fuels.	Advance preparations for development of SAF-compatible engines.	 Promote development of e-fuel compatible mobility. 		
ties and risks	Other	 In addition to meeting immediate transport demand with ammonia carriers, provide hydrogen engines and hydrogen supply systems for coastal vessels, which are the primary target ship types for our marine LNG gas engines. Meet demand for LNG power generation from an energy security perspective, while also promoting a conversion to hydrogen gas turbines and hydrogen gas engines. 	 Promote R&D in composite materials and high-efficiency systems. To cope with rising research and equipment costs, promote R&D in low-cost production technology using robot technology and IOT. Also increase development efficiency through alliances with other companies. 	 With regards to development costs and capital investments, we will control costs by standardizing components and outsourcing, including through collaboration with other companies. 		

4°C Scenario (as of 2030) in the Absence of Progress with Group Vision 2030

Business Segment	Energy Solution & Marine Engineering Segment	Aerospace Systems Segment	Motorcycle & Engine Segment		
Assumptions	Many countries withdraw from the Paris Agreement, leaving nature to take its course. Japan also fails to implement policies to reduce greenhouse gas emissions. Typhoons, floods and other natural disasters chronically occur and intensify. Gradual progress in deployment of renewable energy. Reliance on coal and oil continues. Hydrogen and ammonia technology fails to progress and introduction does not move forward.				
Opportunities	 Demand for distributed power and emergency power generation facilities will increase as a means of reducing disaster damage. 	Demand for distributed power and emergency power generation facilities will increase as a means of reducing disaster damage. • Demand for disaster response helicopters and related systems will increase as a means of reducing disaster damage.			
	The frequent occurrence of natural disasters may increase damage to power generation and transmission equipment, and increase the occurrence of delays in parts procurement and delivery due to supply chain disruptions.				
Risks	 Lack of progress in adoption of hydrogen and CCUS may cause delays in return on investments and require reevaluation of business plans. 	-	 Temperature changes may reduce lawn growth and shrink the general-purpose engine market. 		
Financial Impact	 Loss of sales opportunities in hydrogen-related businesses. Delays in recovering investment. Maintenance and growth of business scale expected through continuation of and improvements to existing products. 	(Scheduled for future implementation)	(Scheduled for future implementation)		
Kawasaki's measures to address opportunities and risks	Promote deployment of distributed power sources, emergency power generation.	 Accelerate deployment of disaster response helicopters and related systems. 	 Consider repurposing technology acquired in lawn-related engines to enter markets outside of the lawn and garden segment. 		
	Strengthen business continuity planning (BCP), mainly at coastal plants, as a countermeasure against natural disasters. Work toward a more resilient supply chain.				

Note: EV: Electric Vehicle: HEV: Hybrid Electric Vehicle: GHG: Greenhouse Gas

Focal Field 2

New value creation using remote technology

Create a society that is affluent, safe, and secure for all with remote technology

Kawasaki's Solutions to Social Issues

- In industrial robots, we will use automation and remote technologies to offer solutions to labor issues ranging from worker shortages in developed countries to difficult and dangerous worksites.
- In the healthcare field, we will alleviate patient burden, the increasing burden on doctors, and regional healthcare disparities
- Reflecting work and lifestyle diversification, we will facilitate remote work environments that enable participationin society regardless of distance, lifestyle constraints, or health limitations as well as the use of overseas workers and skilled workers.
- We will use sophisticated and diverse transportation and energy equipment to prevent and alleviate damage from increasingly severe natural disasters and help ensure economic continuity and stability in daily life. Of these, here we introduce the following initiatives.

For Medical Professionals Dealing with Human Lives

* Medicaroid Intelligent Network

System

hinotori[™] Surgical Robot System

In 1968, Kawasaki was the first company in Japan to develop and manufacture robots, and it has remained at the forefront of Japan's robotics industry ever since. In 2013, we established Medicaroid Corporation, specializing in medical robots, as a joint venture with Sysmex Corporation. Medicaroid Corporation then developed the *hinotori*[™] surgical robot system, the first surgical robot produced in Japan.

As of October, 2022, the system has conducted a total of more than 600 urological operations Japan. On October 11, the system was approved for

expanded application in general surgery and gynecology. Going forward, we aim to offer proposals for streamlining operations using MINS*, a network platform for digitalizing operations, as well as a technology transfer service.

In addition, we participated in three remote operation projects, and aim to improve the technology by conducting demonstration testing, while also participating in a project to formulate guidelines aimed at practical application.



hinotori™ Surgical Robot System

Restoring Social Mobility

PCR Testing Service Amid the prolonged pandemic, restoring the movement of people and normal functioning of society will require the expansion of infectious disease testing. Using robots, Kawasaki now offers

high-accuracy processing. In fiscal 2021, using our experience in proposal-based product design for municipalities, airports and corporate





Narita International Airport PCR Lab. Intake desk at the Kansai International Airport PCR Lab

Offering New Value through Co-creation

Providing Platform Services with Remote Robots

In December 2021, Kawasaki established Remote Robotics Inc., a joint venture with Sony Group Corporation. The company is working to develop this new business with the purpose of realizing a remotely connected society in which every person can participate and proposing new work styles.

As labor shortages worsen with the decline in the working population, the spread of diverse work styles has been limited, and there are many people who want to work but cannot, or who are forced to work in so-called 3-K jobs (kitsui = difficult, kitanai = dirty, kiken = dangerous).

We will propose new ways of



Operating a robot from a remote site

automated PCR testing services that realize rapid, continuous, high-volume,

testing, we developed a system that enables us to suggest products quickly and appropriately in line with customer needs. Going forward, by expanding this testing service, we will prepare for a resurgence in COVID-19 infections while promoting its application to a variety of tests of diverse infectious diseases and in the medical field. We will thus contribute to both the safety and security of people's lives and to economic activity.



Tokyo Metropolitan Government project to offer free PCR and other tests



Tenkuhashi PCR Lah

working between people and robots by building a remote robot platform connecting remote workers and businesses. We will provide tools for designing a remote environment that allows for remote operation of on-site robot systems and services. This can also be used for job assignments, worker skill improvement, process management and improvement.

Use of the Industrial Metaverse

We are working with Microsoft on an industrial metaverse initiative. The goal is to achieve robot operation from remote locations through collaboration in the metaverse and the use of digital twins.



Focal Field 3

Transforming the movement of people and freight

Create a society where people and freight move safely, quickly, and efficiently using new forms of mobility

Kawasaki's Solutions to Social Issues

- We will provide new solutions based on Kawasaki's wealth of technologies necessary to the transportation chain, including those related to airplanes, helicopters, ships, rolling stocks, and motorcycles. These solutions will address the changing manner of mobility, including growth in e-commerce, sharing services, and demand for personal mobility.
- · Addressing the increasingly severe issues related to labor shortages and worsening working conditions caused by growing logistics volumes, we will offer new systems that combine transportation equipment with robotics and remote technologies.
- We will offer solutions leveraging new transportation systems that combine land and air transport to address such issues as time lost in transport due to higher traffic congestion because of economic development and disruptions caused by increasingly serious natural disasters.

Working Toward the Social Implementation of Near-Future Mobility

We will build strategic partnerships in logistics from fiscal 2022 with the aim of achieving social implementation in regional cities, commercial facilities, hospitals, etc.

In addition, we will also participate in moves towards deregulation and institutional development with regard to remote and autonomous mobility.

*



Super City Using Near-Future Mobility

in Logistics



The Kawasaki Group is a leading

*1 Vertical Take-Off and Landing aircraft

*2 Unmanned Ground Vehicle

manufacturer in the Japanese aerospace industry, with an extensive track record in the manufacture of helicopters for the defense and commercial sectors as well as wide-ranging knowledge about such topics as air traffic control. Drawing on this technological prowess and expertise,

Initiatives in Fiscal 2021

To solve the last-mile problem and other logistics issues, we conducted technical demonstration tests at the Fukushima Robot Test Filed of seamless unmanned cargo transport using an unmanned VTOL Aircraft in cooperation with a delivery robot. We also conducted a demonstration test aimed at realizing a logistics system without human intervention, utilizing a compact, low-speed delivery robot on public roads in Kinshicho and Nishi-Shinjuku in Tokyo, as well as a test of a multi-use UGV*2 at Kawasaki's Akashi Plant aimed at realizing unmanned transport of goods in in-plant logistics.

We have also commissioned by Ina City, Nagano Prefecture, for its Unmanned VTOL Cargo Transport Platform Development Project (Fiscal 2021-2025). A flight demonstration was



Unmanned VTOL Aircraft and delivery robots



Tokyo Governor Koike observing automated delivery robot

we are developing unmanned VTOL^{*1} Aircraft with the aim of revolutionizing the last mile problem in logistics.

In addition, we aim to revolutionize the last mile in transportation using delivery robots that combine our robotics technologies with the driving technologies of our off-road four-wheelers.



conducted at the Ina Ski Resort, at an elevation of 850 m with 60 kg of rice on board, as a plan for social implementation from transport of goods in mountainous areas.

In addition, demonstration tests of specimen delivery have been carried out at Fujita Health University to realize the "Smart Hospital" concept. We also participated in Tokyo's service project for 5G and other cutting-edge technology.

To develop the system, we participate in public-private councils and in the Robot Delivery Association. As we promote the commercialization of each type of mobility, going forward we aim to provide a new logistics system that integrates these technologies.



Unmanned VTOL Aircraft equipped with delivery robot



Multi-use UGV

/ Process for Identifying the Kawasaki Group's Material Issues

In 2018, Kawasaki identified material issues (materiality) by recognizing and summarizing the impact the Group's business activities have on society, in light of the diversifying expectations and demands of stakeholders and changes in the business environment.

Further, with the November 2020 announcement of Group Vision 2030, we reevaluated these material issues. As in 2018, we divided them into two broad categories: The "social and environmental value created through business," and the "foundation of our business activities." Initiatives conducted through our main business have been defined as the most material issues to be achieved by the Group over the long term, while other issues have been positioned as basic items for achieving the most material issues. Going forward, we will continue to regularly review our materiality in response to changes in the business environment and the expectations of society.

Process for Identifying Materiality

STEP	Process for Identifying
Step 1	Revision in line with the formulation of Group Vision 2030 In November 2020, we formulated our Group Vision 2030, considering a variety of social issues, the Company's strengths and our vision for 2030. We also established three focal fields, including a safe and secure remotely connected society, near-future mobility and energy and environmental solutions. In June 2021, upon discussion by the Sustainability Committee chaired by the President, these three focal fields were set out as the social and environmental value created through business.
Step 2	Reviewing the "foundation of our business activities" category In light of our business strategy under the Group Vision 2030 and recent changes globally around sustainability, we reviewed the "foundation of our business activities" category. In conducting that review, we identified and sorted issues—with input from outside advisors—based on survey items from ESG assessment organizations (DJSI, FTSE, MSCI, Sustainalytics), SASB, investor stewardship principles, GRI, Future-Fit, and client company requests (Self-Assessment Questionnaire). We then mapped the material issues into two tentative categories: "Importance to society and stakeholders," and "importance to the Company."
Step 3	 Interview outside experts and decide the material issues We then obtained the opinions of outside experts and reevaluated this mapping. After discussion by the Sustainability Committee based on those opinions and the revised mapping, further discussions were held by the Board of Directors which then determined the final material issues. Expert comments (excerpt) The Kawasaki Group has been hands-on in creating a business foundation to allow many companies to make the jump to 2030 and beyond. Because Kawasaki's own transition represents the creation of innovation for other companies, discussing that scenario in the context of value creation will make it easier to gain the understanding of investors. I would like the Company to make visible how the "foundation of our business activities" is connected to "social and environmental value created through our business, including a time line. In the wake of the COVID-19 pandemic, investors are keeping a close eye on issues of sustainable supply chains and human rights, so these two could be elevated a bit more under social and stakeholder expectations. The Company needs to list decarbonization and addressing TCFD among its "foundation of our business activities" issues. I think hydrogen can be considered over a somewhat longer period of time, as the technological innovations that will arise in the first half of 2030s will see the cost of hydrogen from renewable energy sources and the cost of hydrogen from fossil fuels reversed.
Step 4	Formulate the plan and conduct a review With the goal of complying with the management approach of the GRI standard, we will establish departments responsible and specific numeric targets for the key issues identified, and will advance activities toward achieving those targets through steady execution and follow-up. Progress will be reported to the Sustainability Committee as we strive for improvement.

Who we are Value creation story The foundation of our business activities Business portfolio / Financial and corporate info

Materiality Matrix of Items Identified

Priority Items in the Foundation of Our Business Activities Category

Items selected as important issues under the "foundation of our business activities" category have been categorized as follows, and priority items have been established under each issue: 1. Items of particular importance going forward (items that will have an ever-increasing impact on future finances); 2. Items that were emphasized in the past, but which will be steadily

: Scope of initiatives		Suppliers*	The Kawasaki Group	Our customers	
ms of particular	Energy and environmental solutions (value chain)	Decarbonization Improve resilience in response to climate change Effective use of resources			
orward (items	Business and human rights	Conduct human rights due diligence			
at will have an	Promoting active use	Human resource system reforms, human resource development		e development	
ver-increasing	of human resources		Diversity and inclusion		
npact on future		Co-creat	ion IP strategies for new business	creation	
finances)	Technical development / DX		Open innovation		
			Promote DX		
	Product liability / safety		Product liability/safety		
ems that were	Compliance	Compliance with the Sustainable Procurement Guidelines	Compliance with the Kawasaki Group Code of Conduct		
phasized in the			Anti-corruption measures		
dSL, DUL WIIICH	Occupational safety and health		Occupational safety and health		
inforced going			Strengthen product security		
forward	Information security		Strengthen information security		
			Strengthen cyber defenses		
			Privacy Policy		
Cor	porate governance	(mechanisms to be develo	pped as the foundation of	everything)	

* Because items to be addressed with regards to sustainable supply chain management are wide-ranging, priority items are shown in the Supplier column.

Arities Atting active use of In resources Iliance It liability/safety ational safety and	 Social and environmental value created through our business A safe and secure remotely connected society Near-future mobility Energy and environmental solutions Energy and environmental solutions (value chain)
rate governance nation security	
ical development / D)	<
ne Kawasaki Gro	DUD

Most important

reinforced going forward; and 3. Mechanisms to be developed as the foundation for everything.

Further, we clarified the scope of initiatives in 1. and 2. Based on a high-level view of the entire value chain, from planning and design and product use, and from the suppliers involved to the customer.

Group Vision 2030 | Goals and Results in the Three Focal Fields

Focal field and goal	Main actions	Social outcomes (results)	Targets / Key Performance Indicators(KPIs)	Specific measures	Achievements in Fiscal 2021
<section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><text><text><text></text></text></text></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	 Healthcare Infectious disease testing business Surgery support business Nursing care business Business in automated, autonomous, and remote technology support for manufacturing and service industries Offer new ways of working and living to realize a remotely connected society Provide a platform to match workers with businesses seeking labor using remote robots (joint venture business with Sony Group) Provide transportation, power generation, and other equimment at times of disactors 	 Infectious disease testing to prevent the spread of disease and speed up recovery in the movement of people, including air travel demand Reduce the burden on healthcare and nursing care workers Advanced treatment using surgical robot system Correct regional disparities Improve productivity and alleviate labor shortages Work style reforms Time flexibility Eliminate strenuous, dirty, and dangerous work Remote work that includes on-site operations Secure labor Provide opportunities for all people to participate in society Support for evacuees (improve quality of life) 	 Targets for 2030 Eliminate 5% of Japan's approximately 2,000,000-person shortage in healthcare and welfare workers (market estimated at over ¥1 trillion) Eliminate 5% of Japan's approximately 4,000,000-person shortage in manufacturing and service industry workers (market estimated at over ¥2 trillion) Eliminate 9 (a) Remote platform active users (b) Number of cases carried out with surgical robot system 	 Infectious disease testing system Joint PCR testing research with universities, PCR testing service at airports for departing passengers on international flights, expanding domestic use from monitoring to screening (social implementation) Demonstration of telesurgery performed at a distance of 30 km using surgical robot system (animal testing), world's first telesurgery demonstration using commercial 5G networks Adoption of nursing care robots in hospitals Market introduction of personal care products that use remotely connected technologies Development and implementation of robots for warehouses and stores Practical application of humanoid robots On-site work using remotely controlled robots at plants (proof of concept demonstration begun in fiscal 2021) 	 Number of tests handled by the PCR testing service: About 400,000 Surgical support robot systems Total systems deployed: 18; Total number of cases in urology: More than 180 Applied for expanded indication for use in gastrointestinal surgery and gynecology Participating in three telesurgery projects and currently conducting demonstration tests Established Remote Robotics Inc., a joint venture engaged in the remote robot platform business, with Sony Group Corporation
		Save more lives		Deriver standby generator sets	1
<section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	 Offer new equipment and systems, such as delivery robots and unmanned transport helicopters Offer automated, autonomous, and remote solutions for the logistics industry Reduce environmental burden and utilize advanced safety technology in transportation equipment Respond to mobility as a service (MaaS) Increase speed and efficiency of inter-city transport Promote optimization via integrated control of marine, land, and air transport Develop new personal mobility Take part in super city projects Coordinate with municipalities to realize advanced cities 	 Handle increasing logistics volumes and alleviate labor shortages Provide safe working conditions Realize a society that enables the environmentally friendly and safe movement of people and freight Realize seamless urban transportation increase the speed and efficiency of the movement of people and freight Alleviate traffic congestion and logistics delays Disaster-resilient community building Rapid transportation of emergency supplies, etc. 	 Targets for 2030 Fliminate 20% of Japan's approximately 200,000-person shortage in logistics workers Commercialize new mobility Delivery robots Unmanned VTOL aircraft (vertical take-off and landing aircraft) Autonomous four-wheelers Supply chain optimization services, etc. Autonomous marine transport (Marine Collaboration Project) Take part in super city projects Mumber of unmanned VTOL aircraft and total volume transported Number of delivery robot users and total volume transported 	 Logistics chain optimization Phase 1 Autonomous transportation and loading equipment (autonomy that extends to the last mile) Phase 2 Supply chains (create seamless connections: improve efficiency, including for reloading systems) Overseas expansion by 2030 New mobility Commercialize delivery robots and autonomous four-wheelers by 2025 Full-scale operation of VTOL and integrated transport service business by 2030 Realize super cities Coordinate with municipalities to take part in super city projects(total optimization of urban transportation, including the movement of people) Build overarching management systems for the movement of people and freight (local MaaS) Organically link these with other Group businesses. Build cooperative relationships with logistics companies and software companies 	 At Fukushima Robot Test Field, carried out technical demonstration tests of seamless unmanned cargo transport via unmanned VTOL aircraft in cooperation with a delivery robot On public roads in Kinshicho and Nishi-Shinjuku in Tokyo, conducted a demonstration test aimed at realizing a logistics system without human intervention, via a compact, low-speed delivery robot Conducted a demonstration test of a multi-use UGV aimed at realizing unmanned transport of goods in in-plant logistics at Kawasaki's Akashi Plant Commissioned by Ina City, Nagano Prefecture, for its Unmanned VTOL Cargo Transport Platform Development Project Conducted demonstration tests of specimen delivery, etc. at Fujita Health University toward realizing the "Smart Hospital" concept Participated in Tokyo's service project for 5G and other cutting-edge technology
Energy and environmental solutions	 Build a hydrogen supply chain High-volume, stable supply of hydrogen Expand the use of hydrogen Power generation systems, transportation equipment, etc. 	 Reduce the price of hydrogen energy Help address climate change by reducing CO₂ emissions Provide clean travel and transportation by land, sea, and air 	 Targets for 2030 Hydrogen Hydrogen supply from Kawasaki solutions: 225,000 t/year (when commercialized) CO2 reduction of 1.6 million tons (theoretical value) through hydrogen energy from Kawasaki solutions Existing products Manufacture of even more environmentally friendly products Reduction of CO2 emissions from products KPIS Hydrogen supplied by Kawasaki solutions (b) CO2 reductions from Kawasaki's hydrogen energy solutions Existing products (a) Hydrogen supplied by Kawasaki solutions (b) CO2 reductions from Kawasaki's hydrogen energy solutions Existing products (a) Reduction of CO2 emissions through product-based contributions (b) Number of registered products and net sales in Kawasaki Ecological Frontiers (formerly Green Products) 	 Form a hydrogen consortium Technological development Establish technologies for larger scale, leveraging NED0 subsidized projects and partnerships Increase transport volume (Two or more carriers in 2030; 80 or more carriers in 2050) Develop hydrogen-fueled rolling 	 Hydrogen Completed the world's first maritime transport of liquefied hydrogen, including its loading and unloading has been held in Kobe, Japan Began collaboration with Airbus for the utilization of hydrogen in Japan. Memorandum of understanding signed for joint study of the building of hydrogen supply chains at various stages, from the production of hydrogen to its transportation to airports and supply to aircraft Existing products (a) Reduction of CO₂ emissions through product-based contributions by business: 17.39 million t-CO₂
Working toward the stable generation of clean energy Quickly achieve a stably powered, carbon-neutral society at low cost	 Electrify products Transportation equipment and systems as well as components for construction machinery Alternative fuels Sustainable aviation fuel (SAF), biomass, etc. 	 Help address climate change by reducing CO₂ emissions 		 Mass production of hybrid and electric motorcycles and off-road four-wheelers Deliver hybrid and electric marine propulsions systems 	
9 metanom e consecuence e consecuence e e consecuence e consecuence 9 metanometan 9 metanometanometanometanometanometanometanometanometanometanometanometanometan	 CCUS Capture and use CO₂ in fields that cannot eliminate fossil fuels 	nat cannot		 Begin pilot-scale demonstration testing of energy-saving CO₂ separation and capture system (Kansai Electric Power Company) 	(b) Number of registered products and net sales in Kawasaki Ecological Frontiers (formerly Green Products): 68 products registered with net sales of ¥248.6 billion

Reduce environmental burden throughout the value chain

* Refer to pp. 27-30 for more on the promotion of carbon neutrality. For other initiatives, please refer to information regarding sustainability on the Company website