



Technology for People,  
the Earth, and the Future

# Contributing to the prosperous future of the earth and people with our spirit of challenge and human resources as the wellspring of value creation



The Hitachi Zosen Group's long history of over 140 years began on April 1, 1881, with the founding of Osaka Iron Works by the British entrepreneur Edward Hazlett Hunter. Recognizing the growth potential of Japan's shipping industry, Hunter set up the new company to engage in shipbuilding. At that time, most of Japan's major shipyards had started up thanks to the provision of government surplus land and other materials. In contrast, Osaka Iron Works was a shipyard established solely by an individual foreign entrepreneur. It was, therefore, a huge challenge.

Even today, when Hitachi Zosen has shifted its core business from shipbuilding to the environmental fields of energy and water, this spirit of challenge lives on. We advocate "strive boldly to achieve success" as one of our standards of business behavior, and each and every director and employee continues to face the challenges with the aim of turning our Company into a solution partner contributing to the realization of a sustainable, safe, and secure society.



**Our founder, Edward Hazlett Hunter (1843–1917)**

British entrepreneur; arrived in Japan in 1865; contributed to Japan's modernization through the development of industries, notably shipbuilding.

## Hit Value

### Corporate philosophy

**We create value useful to society with technology and sincerity to contribute to a prosperous future.**

#### Our management stance

##### Stakeholder satisfaction

- Enhancing employee satisfaction
- Enhancing customer satisfaction
- Enhancing shareholder satisfaction

##### Attitude toward work

- Thorough safety-first ethos
- Thorough implementation of compliance
- Pursuit of quality

#### Standards of business behavior

##### Strive boldly to achieve success

- Communicate with sincerity
- Learn widely, think deeply

## Editorial policy

Since fiscal 2018, the Hitachi Zosen Group has been issuing an integrated report to explain even more clearly to our shareholders, investors, and other stakeholders the measures we are taking to realize value creation in line with the Group's long-term vision. In the editing of this report, we have consulted the framework promoted by the International Integrated Reporting Council (IIRC). Please visit the Group's website for financial information, details of measures taken by the Group for environmental conservation and protection, and further information and numerical data regarding our other corporate activities.

### Scope of this report

This report covers the Hitachi Zosen Group, comprising Hitachi Zosen Corporation, consolidated subsidiaries, and affiliated companies accounted for by the equity method. Unless otherwise stated in notes, performance data is given on a consolidated basis.

### Disclaimer

This integrated report contains forward-looking statements, including business performance forecasts, that are based on information our Company has currently obtained and on certain assumptions it considers reasonable. Actual results may vary depending on various factors.



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### Our nickname—"Hitz"

In 2002, about 120 years after the founding, Hitachi Zosen divested its shipbuilding operations, finally disassociating itself from what had been its core business throughout its history. At that juncture, we decided not to change our corporate name, but we also adopted a nickname—"Hitz." Apart from being a portmanteau word combining the first elements of both "Hitachi" and "Zosen," this nickname also incorporates our determination to "hit" (as in "hit products") and "z" for "zenith," meaning the highest point, or peak, indicating that we aim to reach the peak of quality in our product manufacturing.



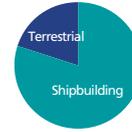
**Integrated Report**  
Presents an integrated overview of the Hitachi Zosen Group's value creation.



**Website**  
Offers a comprehensive look at our business activities, including information on IR, ESG, technology, products, and services.

# Creating new businesses leveraging technologies developed since the establishment of our Company

While maintaining our roots in shipbuilding technology, the Hitachi Zosen Group has transformed our portfolio by opening up new terrestrial businesses. Our goal is to create value for society by continuing to challenge social issues, which are forever changing with the times.



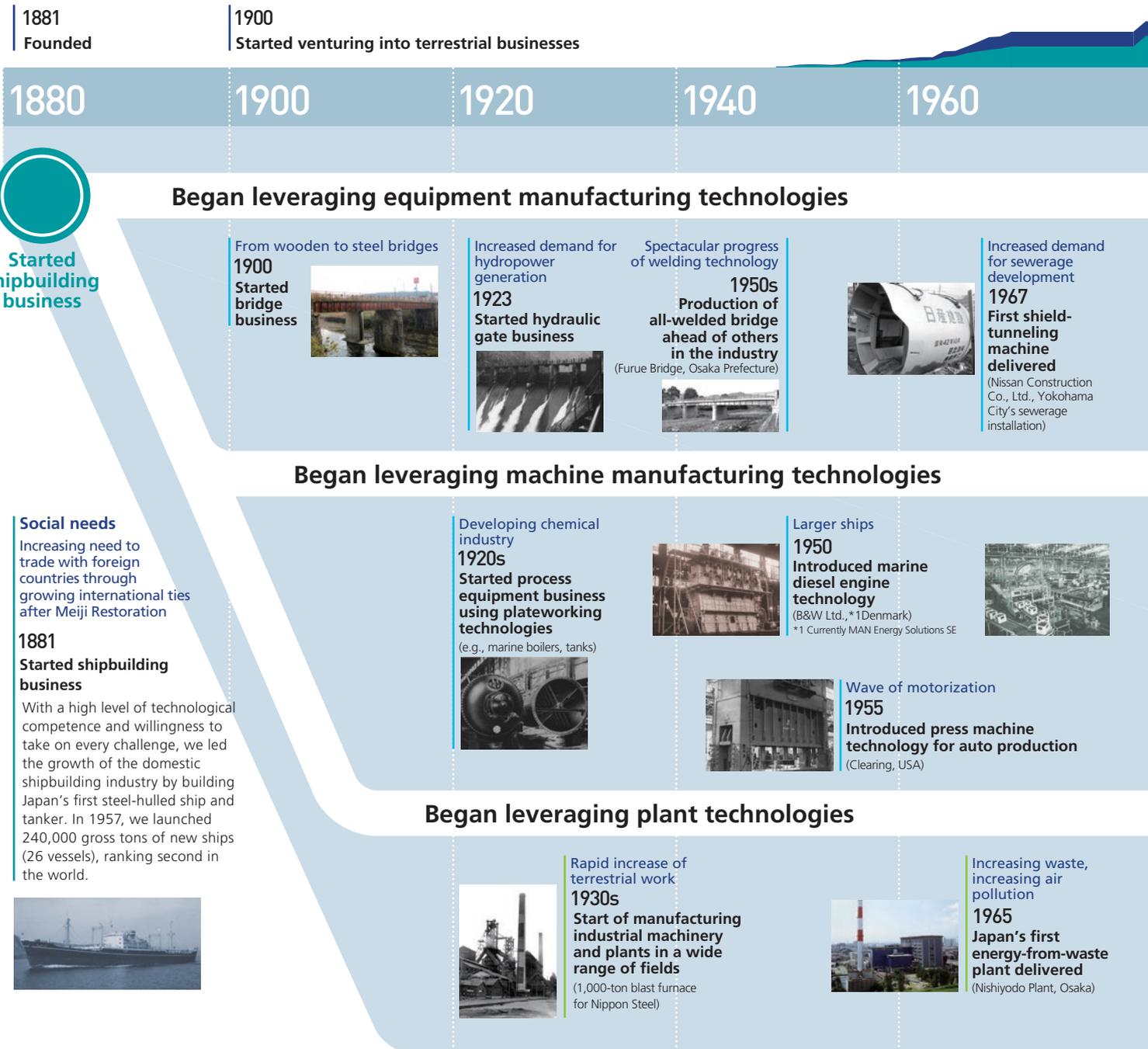
**1949**  
Listed on the Tokyo and Osaka Stock Exchanges  
¥5.6 bil.

**1960**  
Technological collaboration with Swiss company Von Roll Environmental Technology Ltd. (Currently Hitachi Zosen Inova)

## Changes in sales structure

■ Shipbuilding ■ Terrestrial

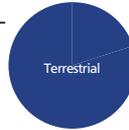
Note: The starting point for net sales is set at fiscal 1949, when our stock went public. Figures before fiscal 1976 are non-consolidated (Hitachi Zosen only).



2021  
Integrated shield tunneling machine business with Kawasaki Heavy Industries, Ltd.

2022  
Acquired German company Steinmüller

2017  
Launching the Long-term Vision—“Hitz 2030 Vision”  
Acquired Australian company Osmoflo



Present

2013  
Acquired US company NAC

2010  
Acquired Swiss company Inova (Currently Hitachi Zosen Inova)



1977  
Record-high net sales in shipbuilding  
¥358.5 bil.

1996  
Record high net sales  
¥635.2 bil.



2002  
Separated shipbuilding business  
¥395.2 bil.



Increased demand for high-accuracy location information  
1993  
First GPS-based control station delivered



Source: Geospatial Information Authority of Japan

Increased awareness of disaster prevention  
2013  
Started flap-gate type seawall against flood disaster business



Increased demand for renewable energy  
2019  
Started demonstrated operation of floating offshore wind power system



Machinery & Infrastructure

Period of growth for the beverage industry  
1971  
Delivery of Japan's first aluminum can beer canning machine  
(Large delivery of our product to the Nishinomiya Plant of Asahi Beer\*2)  
\*2 Currently Asahi Breweries, Ltd.

Increase of nuclear power plants  
1978  
First nuclear casks delivered  
(for power company)



Prevention of oceanic air pollution  
2017  
Delivery of first SCR system for marine engines  
(for a shipbuilding company)



2022  
Established the Carbon Neutral Solution Business Headquarters

Carbon Neutral Solution

Increased demand for water & power in Middle East  
1979  
First unit of desalination plant delivered  
(Saudi Saline Water Conversion Corporation)



Use of organic waste for energy  
2018  
Started in-house operations of the first Kompogas® plant in the United States  
(California)



Environment

Contributing to the creation of a sustainable, safe, and secure society

# We create value useful to society with technology and sincerity to contribute to a prosperous future



## Human capital

- Highly environmentally conscious personnel with a willingness to take on every challenge and a high level of technological competence (→P. 51)

Number of employees in group companies: 11,540

## Intellectual capital

- Core technologies of EFW and biogas plants, rich track record and know-how in large-scale plant EPC
- Technical development to respond to climate change (offshore wind power, power-to-gas) (→P. 35)
- Intra-Group cross-organizational research and development system (→P. 29)

Research and development expenses: ¥6.1 billion

## Social and relationship capital

- Business contributing to building a sustainable society (→P. 7-8, 21-22)
- Highly rated and trusted by markets in Japan and overseas (customers, business partners, regional communities) (→P. 9-10)
- Compliance system underlying corporate value (→P. 67)

## Financial capital

Shareholders' equity: ¥131.3 billion (Shareholders' equity ratio: 28.5%)

Interest-bearing debt: ¥91.9 billion

- Capital procurement using green bonds (→P. 50)

## Manufactured capital

- Production system focused on products individually designed and manufactured to accommodate diversified needs

Capital expenditures: ¥8 billion

Major manufacturing bases: 7 locations in Japan\*1

## Natural capital

Energy consumption: 4,885 TJ\*2

Water consumption: 1.04 million t\*3

\*1 Integrated bases in 8 locations to 7 in April 2021

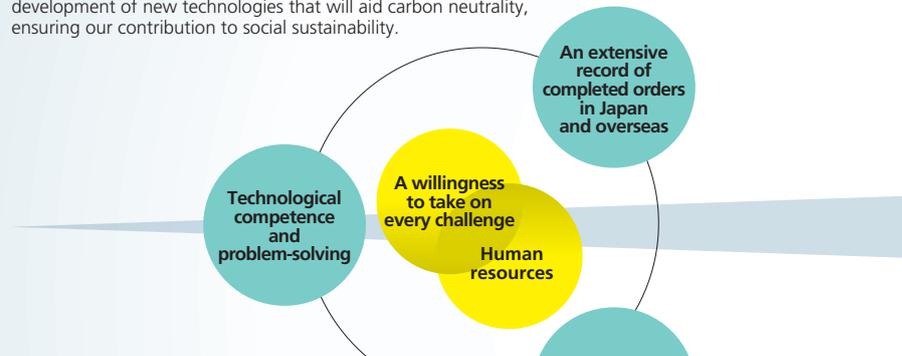
\*2 Hitachi Zosen non-consolidated and certain subsidiaries

\*3 Seven manufacturing bases in Japan, Head Office, and group companies in conformity with the principles of consolidated financial statements that engage in on-site business activities

## We aim to be a solution partner that contributes to the realization of a sustainable, safe, and secure society.



The Group has transformed its business from our original shipbuilding activities, and is now contributing to the creation of a sustainable, safe, and secure society through different businesses, including the engineering, procurement, and construction of environmental facilities. The Group's core technologies, our extensive delivery track record in Japan and overseas, and the trust of our customers are both strengths and assets. We will focus our efforts on further expansion of product maintenance and long-term management work, as well as the development of new technologies that will aid carbon neutrality, ensuring our contribution to social sustainability.



### Hitz 2030 Vision: long-term vision

1. We will promote dialogue with customers and markets and optimize the value supplied to customers by installing IoT and AI in all products and services
2. We will promote open innovation, alliances, and M&As to create new products and new businesses. We will select and concentrate businesses, shifting to the focusing of management resources on growing areas, so as to improve earnings and achieve sustained growth
3. We will improve our income margin by expanding operation and maintenance services in not only the environment business but other businesses as well

### Forward 22: medium-term management plan

1. Enhance the added value of products and services
2. Promote business selection and concentration and allocate resources to growth areas
3. Achieve workstyle reform by improving operational efficiency and productivity

Social sustainability & Corporate sustainability

## Helping to address social issues through our business activities



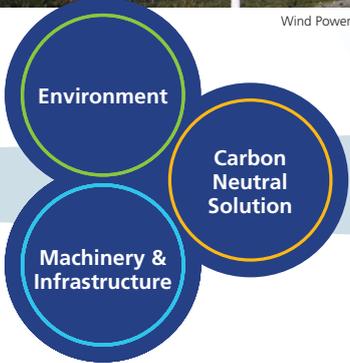
Products / Services **OUTPUT**



Energy-from-waste (EfW) plant



Wind Power



In April 2022, we established the Carbon Neutral Solution Business Headquarters. It will cooperate with other business segments and hubs in Japan and overseas to promote the development of technologies to reduce CO<sub>2</sub> and the creation of clean energy.

**Creating Value with Business Portfolio**(→P. 7)

**Expanding Value Provision**(→P. 9)

**Business Strategies**(→P. 31)

Values created **OUTCOME**

**Economic value**

Order intake	¥677.9 billion
Net sales	¥441.7 billion
Operating income	¥15.5 billion
Net income	¥7.8 billion
Free cash flow	¥27.8 billion
ROE	6.1%
Cash dividends	¥12

(Fiscal 2021)

**Social value**

- Sanitary treatment and volume reduction of waste
- Reduced greenhouse gas emissions
- Generation of renewable energy
- Enhanced social / industrial infrastructures
- Stable water supply
- Improved quality of life and safety
- Creation of human resources to lead the next generation



Contributing to the creation of a sustainable, safe, and secure society



Creating value to contribute to the SDGs

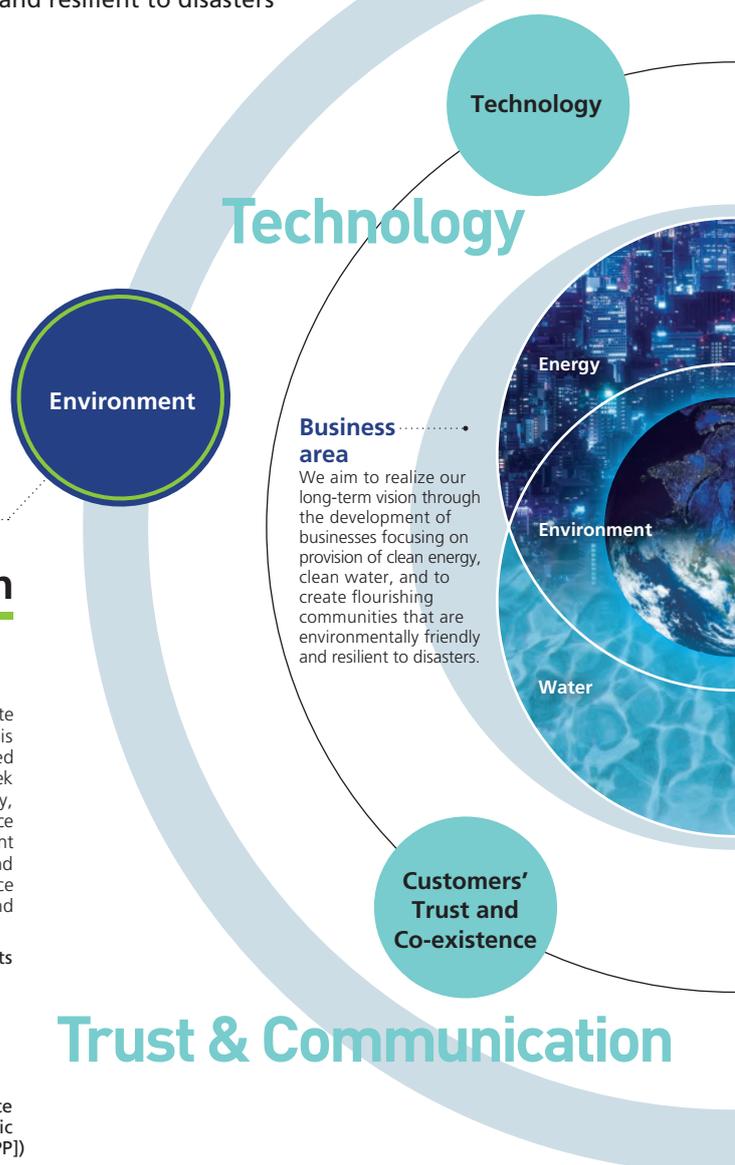
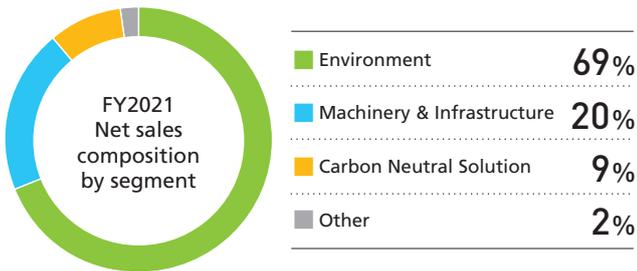
The orientation of the business policies and activities of the Hitachi Zosen Group is in line with the SDGs adopted at the United Nations Summit in 2015. We believe that through our products and services we can contribute to the construction of sustainable societies. As the target year 2030 for SDGs coincides with the period for the realization of the future vision set forth in our Group's long-term vision, the "Hitz 2030 Vision," we are committed to continue contributing by mobilizing the collective efforts of Hitachi Zosen Group.



# We develop businesses focusing on “provision of clean energy, clean water, and to create flourishing communities that are environmentally friendly and resilient to disasters”

To ensure that we can respond to global social issues, including the creation of a carbon-free society and the implementation of measures against climate change, the Group established the Carbon Neutral Solution Business Headquarters in 2022 to join our Machinery & Infrastructure Business Headquarters and our Environment Business Headquarters.

We are committed to our goals of supplying “clean energy” and “clean water” and to create flourishing communities that are environmentally friendly and resilient to disasters” with the aim of achieving a sustainable society.



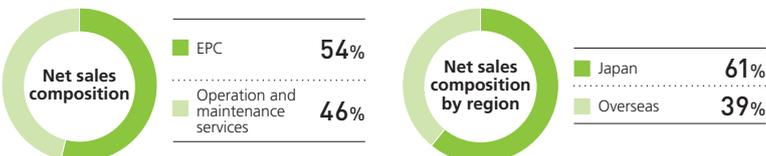
## Environment FY2021 Net sales ¥307.2 billion

### Responding to increasing waste-treatment and water demand due to global population growth

With a focus on the EPC (Engineering, Procurement, and Construction) of energy-from-waste plants and biogas plants, along with ensuring their operation and maintenance services, this segment builds various energy-related facilities, including biomass plants, and water-related facilities, such as sludge-recycling centers and desalination plants, in Japan and overseas. We seek to differentiate ourselves by enhancing additional value in terms of power generation efficiency, treatment capacity, and environmental performance. In the field of operation and maintenance services, we are working on 24/7 remote monitoring as well as optimal operation management and are promoting technologies and development for longer use or longer life of facilities and equipment. In waste treatment and recycling facilities, we have taken on after-sales service contracts for more than 130 facilities, more than 50 contracts for operational services, and more than 40 contracts for comprehensive operational services.

- Energy-from-waste plants
- Biomass plants
- Methane fermentation facilities (Biogas plants)
- Sludge recycling treatment plants

- Power generation plants
- Desalination plants
- Recycling facilities
- Water and sewage treatment plants
- AOM
- Long-term operation business (Private Finance Initiative [PFI] and Public Private Partnerships [PPP])
- Remote monitoring, operation support
- Independent power producers (IPPs)
- Power producer and supplier (PPS), etc.



## Trust & Communication

Machinery & Infrastructure

Machinery & Infrastructure

FY2021 Net sales **¥86.3 billion**

Contributing to a comfortable, safe, and secure society through our manufacturing excellence

In the machinery field, we are addressing the challenges confronting customers in various industries. Our efforts include streamlining manufacturing processes with various types of precision machinery, including press machines for automobiles and machinery for the semi-conductor, food, and medical sectors, and offering integrated support for everything from development to after-sale service. We are also active in the infrastructure field. In addition to building structures like bridges, hydraulic gates, and flap gates, we work on monitoring and extending the useful life of existing facilities. We have put together a wide-ranging product line that allows us to help create prosperous, disaster-resilient cities with our cutting-edge technology and development capabilities.



● Press machines for automobiles



● Vacuum device

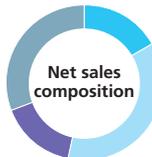


● Seabed system flap-gate seawall to safeguard against flood disasters

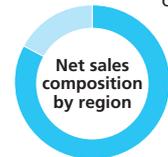


● Space sterilizer ACSTERIA

- Filter presses
- Various types of precision machinery (mainly for electronics, semiconductor, food, medical-related sectors)
- Various types of industrial equipment
- Deck machinery for ships
- Bridges
- Shield tunneling machines
- Hydraulic gates
- Steel stacks
- Marine civil engineering
- Disaster-prevention systems
- Maintenance technology, earthquake-resistant technologies
- GPS comprehensive oceanographic monitoring system
- GPS remote monitoring system
- Electric discharge impulse crushing system, etc.



Press machine	17%
Precision machinery	36%
Other machinery	16%
Infrastructure	31%



Japan	83%
Overseas	17%

Diversity & Globalization

Carbon Neutral Solution

FY2021 Net sales **¥39.9 billion**

Contributing to a carbon-free society through our CO<sub>2</sub>-reduction technology and clean energy

In April 2022, we established the Carbon Neutral Solution Business Headquarters to enable us to drive technological innovations to counter global warming and foster a carbon-free society. We also work to propel the conversion to clean fuels in marine diesel engines, ammonia production-plant equipment, LNG marine tanks, and other machinery, develop an array of products that can contribute to CO<sub>2</sub> reduction, including spent fuel casks, hydrogen generation systems, methanation equipment, and wind power, and leverage those efforts into contributing to the realization of a sustainable society.



● SCR systems for marine engines



● Process equipment

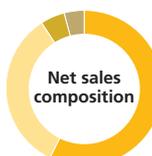
- Marine diesel engines
- Boilers
- NOx removal catalysts
- Spent fuel casks
- Hydrogen generation systems
- Methanation equipment
- Wind power, etc.



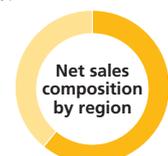
● Power to Gas (PtG)



● Wind power generation (NEDO Technology demonstration experiment of a next-generation floating offshore wind turbine system [barge type])



Engine	58%
Process equipment	33%
Electrolysis & PtG	5%
Wind power	4%



Japan	61%
Overseas	39%

Carbon Neutral Solution

# All over the world our technologies are facilitating affluent life and conservation of the global environment

The Hitachi Zosen Group is developing businesses all over the world to contribute to solving global social issues. We have a delivery record of 1,276 waste treatment facilities (including licensees), and 246 water treatment facilities\* (as of the end of March 2022).

\* Including desalination, treatment of brackish water, and mine drainage.

- Environment
- Machinery & Infrastructure
- Carbon Neutral Solution

## Europe

- Waste treatment facilities
- Methane fermentation facilities
- Press machines for automobiles
- Marine diesel engines
- Process equipment

Waste treatment facilities

**441**

Methane fermentation facilities

**84**

## Africa

- Waste treatment facilities
- Water treatment facilities
- Press machines for automobiles
- Marine diesel engines
- Process equipment

Waste treatment facilities

**3**

Water treatment facilities

**1**

## Middle East

- Waste treatment facilities
- Water treatment facilities
- Press machines for automobiles
- NOx removal system
- Marine diesel engines
- Process equipment

Waste treatment facilities

**3**

Water treatment facilities

**27**

Process equipment

**504**

## Asia

- Waste treatment facilities
- Water treatment facilities
- Chemical plants
- Press machines for automobiles
- Precision machinery
- Bridges and hydraulic gates
- NOx removal system
- Marine diesel engines
- Process equipment
- Spent fuel casks

Waste treatment facilities

**213**

Water treatment facilities

**7**

Press machines for automobiles

**752**

Marine diesel engines

**307**

Process equipment

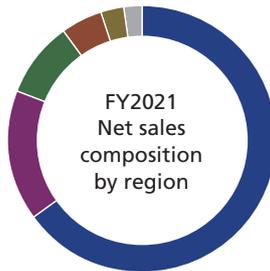
**493**



For a beautiful earth



For a comfortable life



Japan	65%	Asia	5%
Europe	16%	Middle East	3%
North America	9%	Other	2%

### Japan

Waste treatment facilities

**523**

Water treatment facilities

**25**

### Australia

- Waste treatment facilities
- Water treatment facilities
- Press machines for automobiles
- Marine diesel engines
- Process equipment

Waste treatment facilities

**3**

Water treatment facilities

**181**

### North America

- Waste treatment facilities
- Water treatment facilities
- Methane fermentation facilities
- Press machines for automobiles
- NOx removal system
- Marine diesel engines
- Process equipment
- Spent fuel casks

Waste treatment facilities

**89**

Methane fermentation facilities

**2**

Press machines for automobiles

**212**

Casks and canisters

**859**

### Latin America

- Waste treatment facilities
- Water treatment facilities
- Press machines for automobiles
- Marine diesel engines
- Process equipment

Waste treatment facilities

**1**

Water treatment facilities

**4**

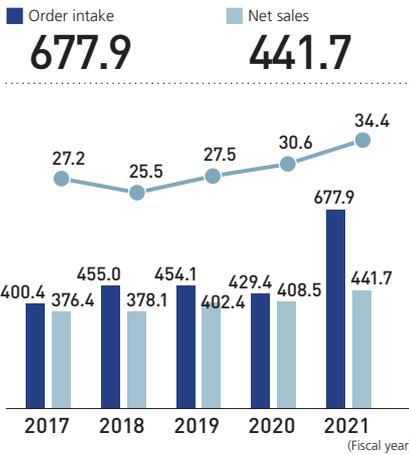


For a healthy life



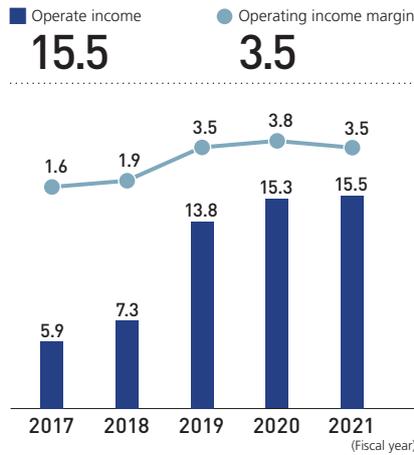
Financial Information

Order intake (¥ billion) / Net sales (¥ billion) / Overseas sales ratio (%)



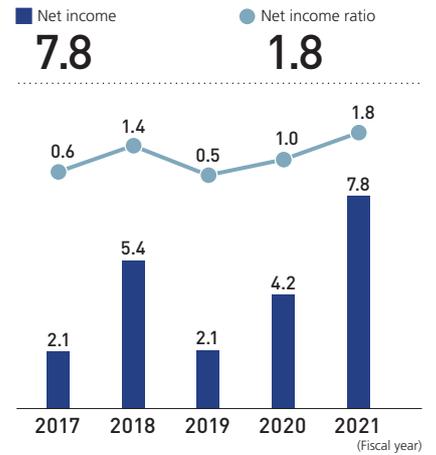
In fiscal 2021, large-scale projects and long-term O&M were received from overseas, such as from the UAE

Operate income (¥ billion) / Operating income margin (%)



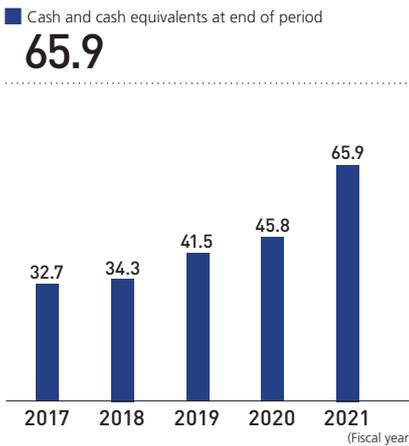
Operating income margin improved to 3% level owing to recovery of overseas business

Net income (¥ billion) / Net income ratio (%)



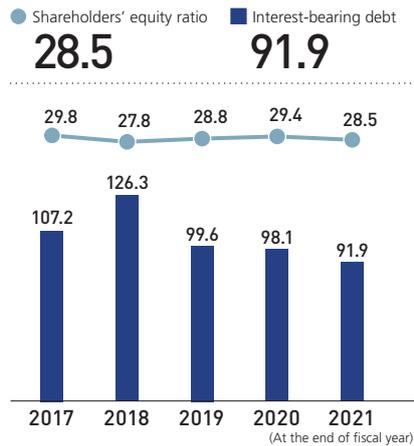
Net income for fiscal 2021 grew 86% to ¥7.8 billion

Cash and cash equivalents at end of period (¥ billion)



Maintained higher levels of cash and other assets in light of COVID-19 and uncertain market conditions

Shareholders' equity ratio (%) / Interest-bearing debt (¥ billion)



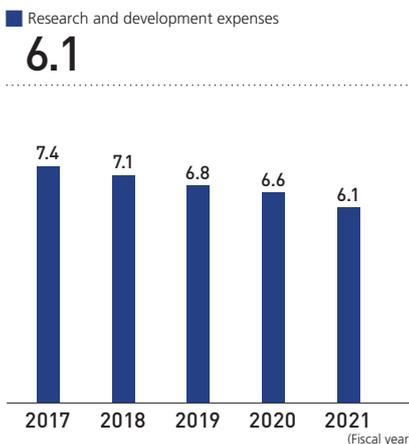
Shareholders' equity ratio at the end of fiscal 2021 declined slightly due to an increase in total assets, while interest-bearing debt declined for the third consecutive year

Return on equity and return on assets (%)

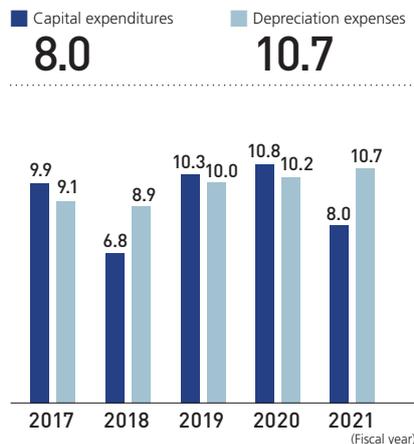


ROE in fiscal 2021 has exceeded 5% for the first time in five years, improving to 6.1%

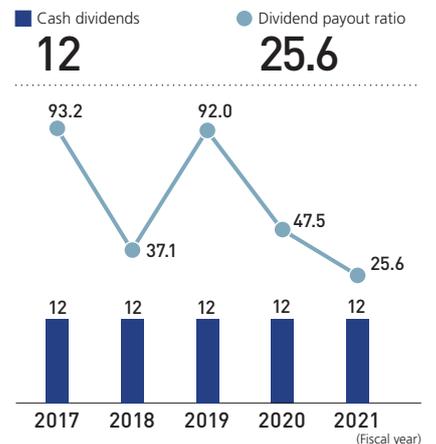
Research and development expenses (¥ billion)



Capital expenditures (¥ billion) / Depreciation expenses (¥ billion)



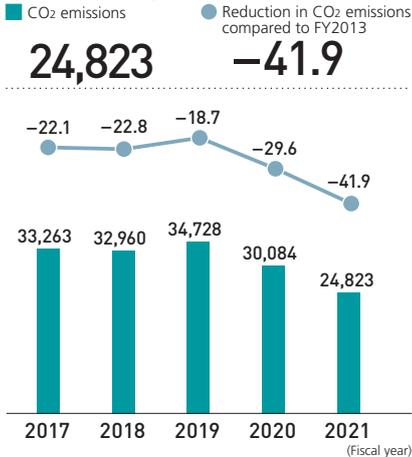
Cash dividends (yen) / Dividend payout ratio (%)



Maintained dividend of 12 yen (plan to increase dividend for FY2022)

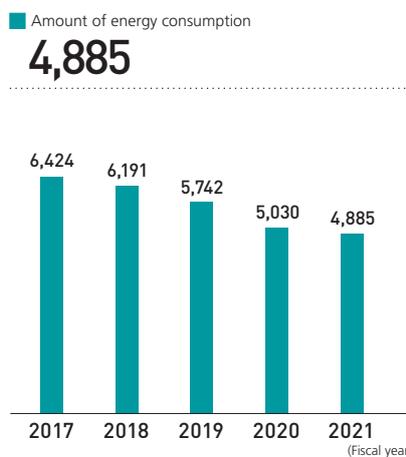
## Non-financial Information

### CO<sub>2</sub> emissions\*1,2 (tons) / Reduction in CO<sub>2</sub> emissions compared to FY2013\*1,2 (%)



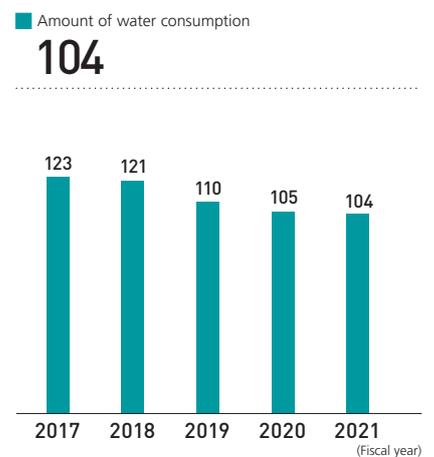
CO<sub>2</sub> emissions in fiscal 2021 were 42% lower than the base year of fiscal 2013, making significant progress toward the fiscal 2030 target of 50% reduction

### Amount of energy consumption\*1 (TJ)



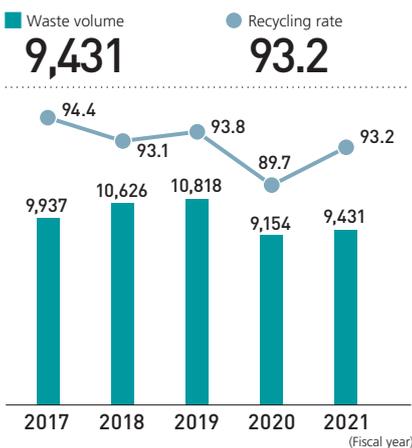
Energy consumption decreased in both fuel and electricity consumption

### Amount of water consumption\*3 (10 thousand tons)

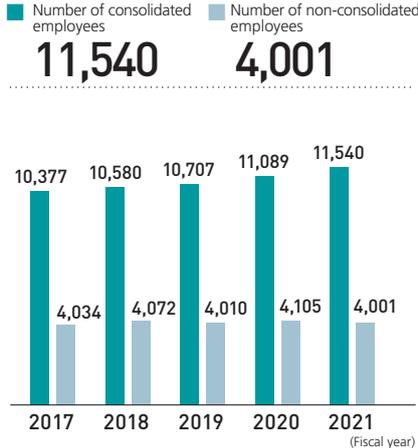


Promoted optimization of water use by updating facilities, reviewing operations, etc.

### Amount of waste reduced\*3 Waste volume (tons) / Recycling rate (%)

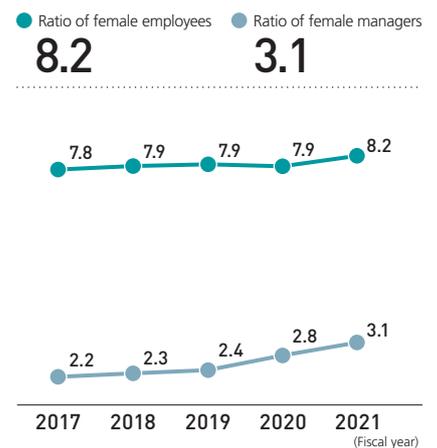


### Number of consolidated employees / Number of non-consolidated employees



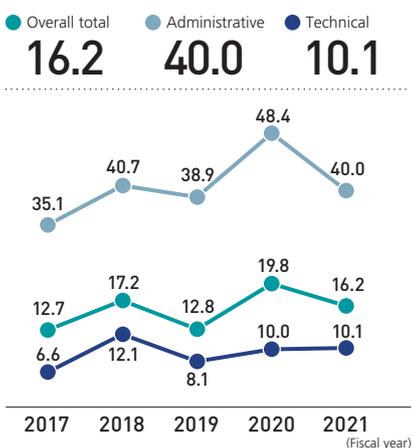
Number of non-consolidated employees decreased due to the company split of the shield machine business (integrated with Kawasaki Heavy Industries, Ltd.), etc.

### Ratio of female employees\*4 (%) / Ratio of female managers\*4 (%)

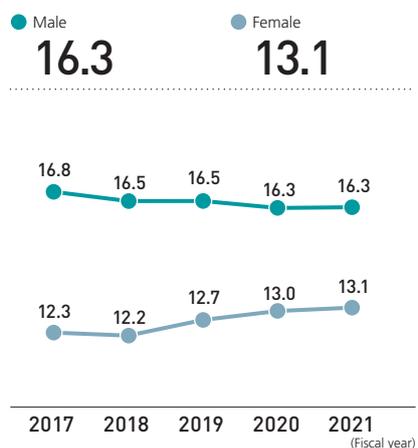


Steady progress toward goal of 4% female representation in managerial positions by FY2025

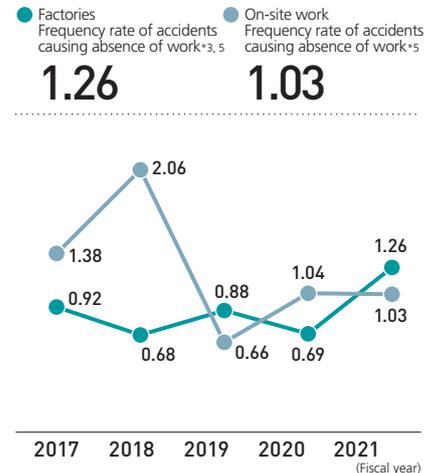
### Ratio of female hires to total new graduates\*4 Overall total (%) / Administrative (%) / Technical (%)



### Average number of years of continuous attendance\*4



### Frequency rate of accidents causing absence of work



Strive for further safety management, including thorough safety training

\*1 Hitachi Zosen non-consolidated and certain subsidiaries \*2 Calculated using FY2022 CO<sub>2</sub> emission factors released by Ministry of the Environment  
 \*3 Eight manufacturing bases in Japan, Head Office, and group companies in conformity with the principles of consolidated financial statements that engage in business activities  
 \*4 Hitachi Zosen non-consolidated \*5 (Number of fatalities and injuries due to industrial accidents requiring 1 day or more absence from work-cumulative hours worked) x 1,000,000  
 \*6 Domestic on-site work and partner companies that perform work on the site

In response to global issues,  
we will continue to innovate and contribute to the  
development of a sustainable society

Takashi Tanisho

Representative Director  
Chairman of the Board



## Continuing to advance in accordance with the needs of society

During its history of over 140 years, the Group has continued to grow while meeting the needs of society at the time. We have implemented several major reforms, including divesting our shipbuilding operations in 2002 and acquiring the Swiss company Inova in 2010; now, it is our environmental business that serves as our mainstay. Notably, we have become a leading company in the area of energy-from-waste (EfW) plants, trusted by many customers all over the world.

Now, based on our long-term vision, the Hitz 2030 Vision, we aim to be “A solution partner for a sustainable, safe, and secure society.” I believe that contributing to the creation of a sustainable, safe, and secure society through business will strengthen our own profitability and sustainability. Previously, our business focus was manufacturing and engineering, which occupy midstream positions in the value chain, but stopping at the manufacturing stage limits the value we can provide to customers. Thus, we are moving upstream and downstream—in other words, we are working to expand our business areas “from goods to services,” which will enable us to gain a rapid understanding of any customer issues and propose and pursue solutions. This includes expanding operation and maintenance services. Our environmental business in Japan has created a business model that incorporates long-term operations and maintenance after the construction of plants, and we are now extending this to overseas businesses and other products.

From a longer-term perspective, it is also necessary to develop the next pillar of profitability, so we can continue our sustainable growth. Carbon neutrality is currently a major global issue in terms of climate change; with respect to this, in addition to EfW, Hitachi Zosen has been engaged in a variety of energy-related businesses, including methane fermentation, wind power, and Power to Gas (PtG), from their early stages. In April 2022, we established the Carbon Neutral Solution Business Headquarters to ensure that our businesses related to carbon neutrality grow even faster.

Our many reforms have always been accomplished through the spirit of challenge that has been passed down since our founding, and we will continue to challenge ourselves with new reforms in the future.

## Taking on the challenge of further innovation founded on the capabilities of our human resources and trust

I am aware of the importance of ESG and sustainability initiatives, which will ensure that the Group can continue our sustainable growth while contributing to solutions for social issues in a time of great change. In particular, our main focus is human resources, as the wellspring of value creation. Challenges to contributing to social sustainability include the creation of new products and services and promoting globalization and digitalization, all of which stem from human resources.

It is because this is a time of great change that I want Hitachi Zosen’s employees to boldly take on new challenges without clinging to conventional thinking and customs. To accomplish this, I regularly tell our employees—engineers and administrative staff alike—to visit different operating sites and talk to diverse people, including customers and business partners. Operating sites are our teachers; from them, we not only learn a great deal—we come to understand our own issues and are even able to gain hints for solutions.

My role is to encourage every officer and employee, increasing their motivation to work and stimulating their growth. I am also proactively promoting open innovation and hiring external human resources, and in flexibly incorporating external resources. In fact, human resources hired from outside the Company are heavily engaged in promoting globalization and digitalization as executive officers.

It is my hope that we can carry on contributing to a sustainable society with our spirit of challenge, the very DNA of our Group, and human resources while continuing this positive cycle of personal growth leading to corporate growth.

### Takashi Tanisho

Representative Director  
Chairman of the Board



We will accelerate innovation from a medium- and long-term view by combining contributing to solving social issues with boosting profitability

**Sadao Mino**

Representative Director  
President &  
Chief Executive Officer



## To our stakeholders

### All directors and employees will join forces to contribute to a prosperous future.

The environment surrounding us is rapidly changing. In these circumstances, it is essential that all our directors and employees share the Company's reason for being and join forces to embody it in order for us to change flexibly and grow vigorously as a sustainable company. The Hitachi Zosen Group's reason for being is stated clearly, along with our management stance and standards of business behavior, in the Hitz Value, as our corporate philosophy: "We create value useful to society with technology and sincerity to contribute to a prosperous future." Based on this Hitz Value, the Group's mission is to contribute to solving various social issues to achieve a sustainable society through our business, and we must continue transformation for that purpose.

The orientation of the Hitachi Zosen Group's business is in line with the SDGs, and we believe we can implement CSV (creating shared value) management in which social contributions through business and company profit are compatible. In particular, our great strength is having products and technology that capture energy and resources involved in waste treatment. Working to the utmost to achieve the SDGs through business of a highly public nature will also lead to the Group's continuous growth and development. I would like to make the Hitachi Zosen Group a corporate group where all directors and employees can empathize with the Hitz Value, work with pride, and personally experience their own growth and social contributions.

I value three phrases: "Sincerity can move heaven," "Harmony among people," and "Be a technology-driven company." As upheld in the Hitz Value, I believe that acting in good faith; communicating with sincerity; and learning widely, thinking deeply based on technology will carve a path to contribute to a prosperous future.

We now stand at a significant turning point, with the response to climate change and the promotion of digital transformation (DX). Under the Hitz Value, I will take the lead and join forces with all our directors and employees to take on the challenge of new transformations. I hope to fulfill the expectations of our stakeholders as the Hitachi Zosen Group changes flexibly and grows vigorously.

## Fiscal 2021 review

### We achieved a peak-level order intake and three consecutive years with net sales of ¥400 billion.

In fiscal 2021, ended March 31, 2022, we exceeded our initial earnings targets for order intake, net sales, and operating income, achieving the ¥400 billion-level order intake and net sales that are also the targets of our medium-term plan for the third consecutive year. Of these, order intake was the highest ever, amounting to ¥677.9 billion. Receiving orders for major projects, including contracts for long-term operations, in Dubai (the UAE) and the United Kingdom has contributed greatly to this. In addition to the improvement of Group company Hitachi Zosen Inova's competitive advantage in Europe, we were acknowledged for our many construction achievements in Istanbul (Turkey) and Europe. In new markets, including the UAE, we participated in projects from the initial stage of investigating how to commercialize locally. In doing so, our proposals that included long-term services were accepted, concretizing the results of our efforts in new market development until now. The order backlog at the end of March 2022 surpassed ¥1 trillion, including approximately ¥480 billion in long-term operations in Japan and overseas. We will aim for stable and continuous performance growth going forward.

## Hitz Value

### Corporate philosophy

**We create value useful to society with technology and sincerity to contribute to a prosperous future.**

### Our management stance

#### Stakeholder satisfaction

- Enhancing employee satisfaction
- Enhancing customer satisfaction
- Enhancing shareholder satisfaction

#### Attitude toward work

- Thorough safety-first ethos
- Thorough implementation of compliance
- Pursuit of quality

### Standards of business behavior

#### Strive boldly to achieve success

#### Communicate with sincerity

#### Learn widely, think deeply



In addition, from a profit standpoint, net income and ROE also improved to ¥7.8 billion and 6.1%, respectively. Press machines for automobiles and process equipment, for which orders fell in fiscal 2020 due to the COVID-19 pandemic and the low price of crude oil, show recovery, and future performance is also expected to be steady. On the other hand, looking back on fiscal 2021, it is also true that many events occurred that could not initially have been foreseen. COVID-19 once again spread due to the emergence of the Omicron variant. I would again like to express my sympathies to those who were impacted by the pandemic. Nevertheless, under the circumstances, telecommuting, remote meetings, and remote supervision took root, creating the secondary effect of accelerating operational efficiency and the furtherance of workstyle reform. In addition, fiscal 2021 was a year of many changes, such as conflict between Russia and Ukraine, a sharp rise in the prices of raw materials including steel materials, and the drastic depreciation of the yen. We will keep a steady watch over changes in the market environment and take timely, appropriate measures against predicted risks, including escalation clauses regarding public projects and the confirmation of procurement costs by early orders. Especially in newly entered markets accompanying the expansion of overseas business, we will also concentrate more than ever before on strengthening risk management, such as by carefully selecting local partners with sufficient performance and using public trade insurance as necessary.

The forecast for fiscal 2022, the final year of the Forward 22 medium-term management plan, is ¥500 billion in order intake, ¥460 billion in net sales, and ¥20 billion in operating income. In addition, although the forecast for the operating income margin is 4.3%, we will continue striving toward the 5% operating income

margin that is the target of the medium-term management plan.

### Progress of the Forward 22 medium-term management plan

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#### Measures in line with the three basic policies are steadily showing results.

The Forward 22 medium-term management plan was formulated in 2020 with maximum priority given to boosting profitability. The plan has furthered various measures based on the three basic policies of enhancing the added value of products and services, business selection and concentration, and improving operational efficiency and productivity (workstyle reform). Each policy has shown progress and results at the end of the second year.

Regarding enhancing the added value of products and services, the Company has actively applied digital technology such as remote monitoring, AI, IoT, and big data. For example, demonstration studies aiming to automate waste treatment facilities demonstrated results such as the achievement of complete automatic operation for over two weeks without manual intervention and the accomplishment of stable operation for over one month without worsening of combustion.

We have also accelerated R&D to create new products and new business from the viewpoint of carbon neutrality. In fiscal 2021, we began full-scale operation of PtG SQUARE, the base of R&D and production for the power-to-gas (PtG) business, in November. We were also selected by the New Energy and Industrial Technology Development Organization (NEDO) for three projects of its Green Innovation Funding Program, including topics related to PtG and offshore wind power. My job is to firmly link efforts anticipating society's needs with the Hitachi Zosen Group's future profits.

As for business selection and concentration, we reconsidered our production bases, and integrated our shield tunneling machine business with Kawasaki Heavy Industries, consequent upon transforming our business from fiscal 2020 to fiscal 2021. Furthermore, we have not only conducted performance and quantitative assessments of each business and product since fiscal 2021 but also conducted an overall assessment that adds long-term assessment from the point of view of alignment with the Company's vision and sustainability. We will make progress in revising our business portfolio, brush up our business-improvement plans, and optimally distribute resources while continuously monitoring the circumstances of improvement and changes in the environment.

Regarding improving operational efficiency and productivity, in October 2021, we began operating IoT Secure Platform (EVOLIoT), a shared IoT foundation for the whole company that collects, stores, visualizes, and analyzes product data. We will create new products and services as well as new business models by combining digital technology with business, leading to improvement in customer satisfaction. In addition, we have furthered business transformation using a core system centered on SAP S/4HANA, our DX foundation. We realized visualization and predictive analysis of project status based on planned cost estimates, performance, and purchase data accumulated by the core system. Going forward, we will digitalize operational processes, implement digital transformation of management combining RPA (robotic process automation) and data-using technology, make operations more efficient, and improve productivity.

Finally, to develop the DX human resources who advance these efforts, we offered a DX leader training course to around 50 employees responsible for strategy planning in all departments and applicants to those positions in February 2022. The center of this training is design thinking, and the objective is to conceptualize products and services using digital technology from the customer's viewpoint to apply these ideas to business strategy. Our plan is to enhance the development of digital human resources in all departments and expand the number of DX human resources to a scope of 500 employees by fiscal 2025.

## Medium- and long-term prospects

### We newly established the Global Headquarters and the Carbon Neutral Solution Business Headquarters.

We have also restructured for continuous growth in the changing market environment. In promoting globalization, we have a target of stably generating 50% of the Group's profits from overseas business, and established the Global Headquarters in July 2021 to achieve that goal. We will uniformly manage overseas Group companies and bases, as well as work to expand synergy between Group companies and enhance risk management and governance abroad, mainly at the Global Headquarters.

Furthermore, to realize carbon neutrality in 2050, we established the Carbon Neutral Solution Business Headquarters, which integrated the Company's decarbonization-related business, in April 2022. At the same time, we founded the Carbon Neutral Business Promotion Office to integrate engineering for decarbonization projects at the Environment Business Headquarters and the Global Environment and Energy Research Center to accelerate relevant R&D at the R&D Headquarters, and we adjusted our structure for flexible promotion of decarbonization projects as a whole Group. Our efforts leading up to 2030, such as early societal implementation of innovations in the energy and resource-recycling fields are important in order to realize carbon neutrality by 2050. In addition to the creation and supply of clean energy through new technologies and products including wind power, water electrolysis, hydrogen production, and methanation, we would like to promote offering and commercializing products and services that contribute to the realization of a carbon-free society with our existing products, such as by switching to clean fuel for marine diesel engines and developing decarbonization related products for process equipment, and also to contribute to solving the significant social problem of global warming. We would like to make these the driving forces of the Group's sustainable development.

### Forward 22 targets and results

(FY)	2020 (Results)	2021 (Results)	2022 (Forecast)	2022 (Initial target of the medium-term plan)	2030 (Target)
Order intake (¥ billion)	429.4	677.9	500.0	¥400 billion level	Operating income margin 10%
Net sales (¥ billion)	408.5	441.7	460.0		
Operating income (¥ billion) (Operating income margin)	15.3 (3.8%)	15.5 (3.5%)	20.0 (4.3%)	5%	

**We will directly face future problems and risks to advance our efforts.**

In order to contribute to realizing a sustainable society, we must continue to offer solutions to solve issues while always understanding the world’s needs. In particular, we believe the key is the development of new business as well as new products and services in the fields of clean energy and resource recycling, the Hitachi Zosen Group’s strengths. To cite examples in the environmental business, we have received a commission from the Ministry of the Environment in Japan and implemented a demonstration project for a carbon cycle model that synthesizes methane through a reaction of carbon dioxide retrieved from waste treatment plants with hydrogen. In Switzerland, our Group company Hitachi Zosen Inova has worked on a project to produce hydrogen using clean electric power generated by waste treatment facilities. Through these advanced efforts, I would like to pursue new possibilities of waste treatment facilities as energy plants.

Furthermore, we are also actively conducting development of products that address the latest social issues. For example, amid the continuing COVID-19 pandemic, we have developed the space sterilizer ACSTERIA through application of the Company’s sterilization technology for food and medicine. The product is used in a variety of locations such as hospitals,

hotels, and offices. In addition, we have contributed to the realization of a sustainable society in the aspect of safe and secure living, for example completing a seabed-type Flap-Gate seawall in Minamiawaji City, Hyogo Prefecture, the second in Japan, in March 2022.

**Construction of a hydrogen production facility in Swiss waste treatment plant**

Construction site: Buchs, Aargau, Switzerland  
 Hydrogen off-taker: Messer Schweiz  
 Operation period: Scheduled from spring of 2023  
 Amount of hydrogen produced: Around 200 tons/year  
 (Equivalent to the amount for a hydrogen vehicle to travel around 20 million km)



The facility to be used for the project

**Our efforts to realize carbon neutrality  
 (Provision / commercialization of products and services to contribute to the realization of a carbon-free society)**

**Resource recycling (waste/water)**



Next-generation waste treatment / gasification

**Renewable energy**



Offshore wind power

**Next-generation fuels (synthetic fuels)**



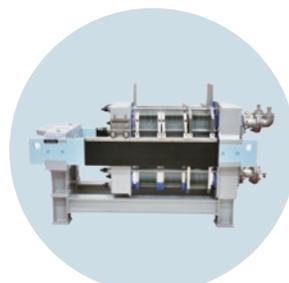
Conversion of CO<sub>2</sub> to fuel (methanation)  
 Bioliquid fuels (bioethanol), etc.

**Environmental measures**



Methane slip measures for marine diesel engines  
 CO<sub>2</sub> separation membranes, etc.

**Energy conversion**



Water electrolysis technology (hydrogen production)  
 Fuel cells (SOFC), etc.

## Efforts to sustainability

**We will achieve CSV management in which social contributions and company profit are compatible.**

We strongly recognize the importance of efforts to sustainability and see it as a crucial policy in our business activities. We founded our Sustainability Promotion Department in October 2021, in order to plan and implement Group strategy relating to sustainability in general. Furthermore, in fiscal 2022, we launched the Sustainability Promotion Committee, of which I am chairperson, to properly hold repeated discussions on what is sustainability for the Group from a medium- to long-term viewpoint and reach conclusions on basic policy, planning, and strategy.

Regarding climate change, after we expressed our support in March 2021 for the recommendations of the TCFD, we conducted a scenario analysis forecasting energy-from-waste, biogas, and wind power until 2050. We also created a product and development roadmap for carbon neutrality in order to make strategic progress in contributing to the reduction of carbon dioxide emissions from our products. We will contribute to building a sustainable society with products and services that introduce few fossil fuels and natural resources, taking carbon dioxide and resource recycling into consideration.

We have disclosed carbon dioxide emissions equivalent to Scopes 1 and 2 for our head offices, branch offices, and works regarding greenhouse gas emissions, formulating our targets for fiscal 2030 as 50% compared with fiscal 2013, and net zero in 2050. I would like to imagine a path that includes early curbing and recovery of carbon dioxide, in accordance with our product and development roadmap for carbon neutrality.

At present, we are imagining the state of the Hitachi Zosen Group in 2050, led by the Sustainability Promotion Department, and considering important issues to work on and necessary policies. Going forward, the Board of Directors would also like to further discussion of these points and include the results of their discussions in the next medium-term management plan, which will start next fiscal year.

In addition, developing human resources who create new value will be an important issue in offering solutions to resolve social issues. The Group has established human resource development as one of its most important management issues, with the idea that investing in people is the key to making a company sustainable. We are considering development plans by theme, such as global human resources, digital human resources, and next-generation management human resources, to promote human resource development in line with the Company's growth strategy. We are also making efforts



to work on measures necessary for the Group's sustainable growth, such as diversity and health management. We will also build healthy relationships with all employees and directors as well as continue to support their growth in order to link individual growth with company growth and improved corporate value.

Fiscal 2022 is the final year of the Forward 22 medium-term management plan. I will share the spirit of challenge inherited from our founder to strive our utmost as a whole Group, believing that carrying out the medium-term management plan's measures steadily and with a sense of speed, and doing so amid increasing uncertainty, is essential to boosting profitability.

**Sadao Mino**

Representative Director  
President & Chief Executive Officer

## Long-term vision: Hitz 2030 Vision

In 2017 the Hitachi Zosen Group established the Hitz 2030 Vision as a long-term vision outlining our desired image in the year 2030, which will mark the 150th anniversary of the Company's founding. The vision indicates the directions of our business in the years to come and promotes efforts toward their realization. While contributing to the achievement of a sustainable society through our business, the Hitachi Zosen Group aims to enhance its earning capacity. In addition, through the Hitz 2030 Vision, we are endeavoring to share our image of the future and further improve communication with our stakeholders.

### Desired image and core business areas

Such issues as climate change, sanitary waste treatment, water shortages, and natural disasters have become increasingly evident in recent years. In response to these social problems, the Hitachi Zosen Group believes that it is the mission of our Group, which aims to become a solution partner for a sustainable, safe, and secure society, to supply such solutions as clean energy, clean water, and creating flourishing communities that are environmentally friendly and resilient to disasters, the need for which is increasing worldwide. Furthermore, the business policies and activities of the Hitachi Zosen Group are in line with the Sustainable Development Goals (SDGs) adopted at the United Nations summit in 2015, and through our products and services we are contributing globally to the construction of a sustainable society.

In 2020, the Japanese government announced Japan's goal of achieving carbon neutrality by 2050, followed by an announcement of the Green Growth Strategy, which includes goals for 14 priority fields and a timeline extending to 2050.

Above and beyond its environmental business, the Hitachi Zosen Group is taking steps to decarbonize our existing products, adopt clean energy, and pursue the rapid social implementation of new products, such as offshore wind power, hydrogen generation systems (water electrolysis systems), and methanation technology which recovers and reuses carbon dioxide. We will continue to contribute to the realization of carbon neutrality through our technologies and products.

### Efforts toward realization of the Hitz 2030 Vision

Toward the realization of the Hitz 2030 Vision, the Hitachi Zosen Group recognizes the importance of tackling the solution of issues with all our might by means of dialogue with customers and markets. By understanding the problems of customers as quickly as possible and pursuing solutions, we can continue to supply products and services that are of true value to customers. And that outcome leads to both the solution of social problems and income for our Group. Efforts manifesting the Hitz Value, our management stance proclaiming that the enhancement of added value in a way that satisfies multiple stakeholders will in turn lead to the improvement of our Group's operating income margin, are the premise for the setting of long-term management goals.

#### Direction of business activities and progress to date

Regarding the direction of business activities with an eye to 2030, we will use the revenue base we have developed to create new products, new businesses, and new business models and expand operation and maintenance services across all our businesses. To realize these goals, we will endeavor to gain an understanding of actual needs through dialogue with customers

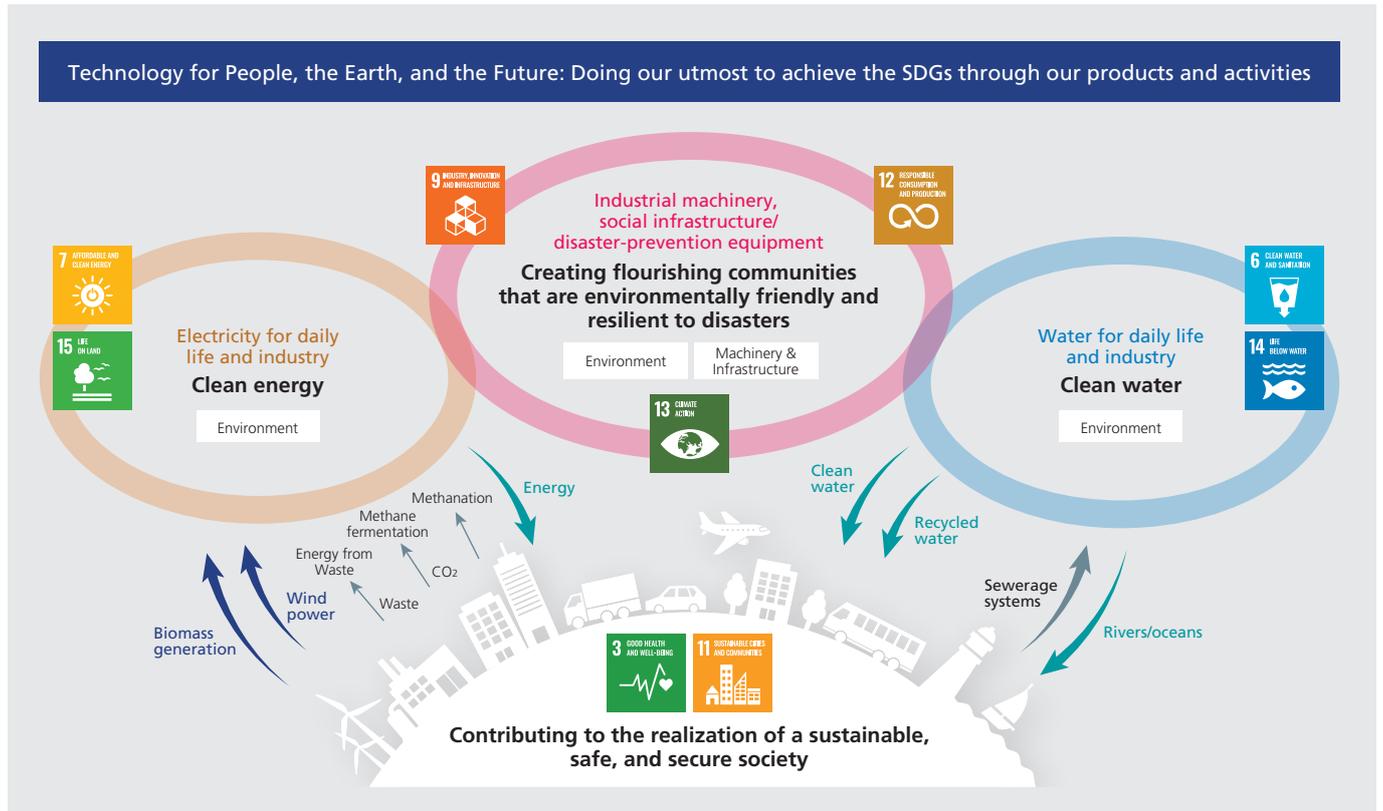
and the market and strive to improve supplied value through means such as digitalization. Furthermore, we will promote the creation of new businesses through open innovation and alliances with other companies.

Through these initiatives, we aim to raise our operating income margin to 10% by 2030. While our operating income margin stood at 3.5% in fiscal 2019, we expect it to rise to 4.3% in fiscal 2022, the last year of the current medium-term management plan.

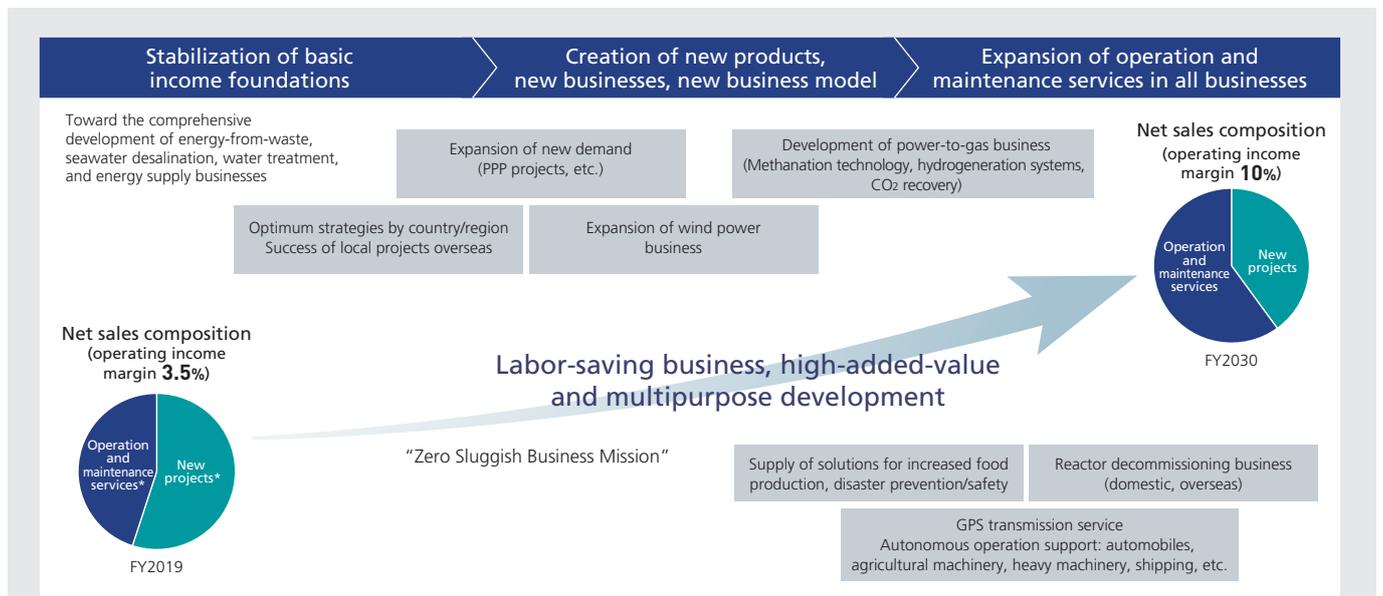
We are acting to secure stable profits through the expansion of our operation and maintenance services, which involves enhancing added value by leveraging the IoT and AI and providing outsourcing solutions for maintenance and management of facilities.

To accelerate these initiatives in Japan and overseas, we are also continuously optimizing our business portfolio through M&A in other countries, including the acquisition of Steinmüller Babcock Environment in February 2022, as well as a merger of the shield tunneling machine business with Kawasaki Heavy Industries, Ltd.

Hitz 2030 Vision—overall business policy



Hitz 2030 Vision—direction of business activities toward 2030



**Action plan**

- 1** We will promote dialogue with customers and markets and optimize the value supplied to customers by installing IoT and AI in all products and services.
- 2** We will promote open innovation, alliances, and M&As to create new products and new businesses. We will select and concentrate businesses, focusing of management resources on growing areas, so as to improve earnings and achieve sustained growth.
- 3** We will improve our income margin by expanding operation and maintenance services in not only the environment business but other businesses as well.

\*New projects: Projects to hand over new assets to customers in the fields of construction, manufacturing and sales.  
 Operation and maintenance services: Incidental projects after the handover of plants or products, such as maintenance, operation, management, and other services, and projects based on long-term contracts, such as power generation.

## Basic Policies

### Positioning the period as a results-oriented term to boost profitability and moving forward steadily and vigorously

The Hitachi Zosen Group aims to be a continuously growing and vigorous corporate group that contributes to the realization of a sustainable, safe, and secure society through business under the Hitz 2030 Vision, our long-term vision.

The three-year term starting in fiscal 2020 has been positioned as a period for boosting profitability to ensure that

results are achieved, and the new medium-term management plan was named Forward 22, signifying our determination to move forward toward fiscal 2022.

We will implement various measures in line with the basic policies of Forward 22 and steadily move forward.

**Basic policies of Forward 22** • Contribute to the realization of a sustainable, safe, and secure society through all our corporate activities  
• Boost our own profitability and aim to be a corporate group that can achieve sustainable growth

#### 1 Enhance the added value of products and services

- ① Utilize cutting-edge technologies
- ② Shift business locations and promote interaction with customers and markets
- ③ Maximize the Group's overall strength

#### 2 Promote business selection and concentration and allocate resources to growth areas

- ① Introduce the Hitz Goal Achievement Monitoring System
- ② Further promote portfolio management

#### 3 Achieve workstyle reform by improving operational efficiency and productivity

- ① Improve operational efficiency through changes in the Group management system
- ② Review the state of manufacturing businesses
- ③ Promote human resource development and workstyle reform

## Contributing to Sustainability

### Initiatives for clean energy

Our energy-from-waste (EfW) plant, which is our main product, conducts sanitary waste treatment and generates electricity at the same time, thereby contributing to the reduction of greenhouse gas emissions. In addition, we are developing such technologies as methane fermentation (biogas) using organic waste, onshore and offshore wind power, and methanation to convert hydrogen manufactured using surplus electricity from renewable energy and captured CO<sub>2</sub> into methane. Our aim is to contribute to greenhouse gas countermeasures by expanding the use of renewable energy.

### Clean water, environmental conservation, and building a resilient and prosperous community

In our water business, we are engaged in actively responding to the needs of public-private partnerships in Japan and are promoting the utilization of reverse osmosis membrane technology from Osmoflo (Australia), one of our overseas Group companies, for water and sewage treatment as well as the utilization of mobile equipment. Furthermore, we are promoting the marine SCR (selective catalytic reduction) system technology to clear NOx emission regulations for ships and land-based aquaculture technologies to ensure food safety, and we are also actively engaged in responding to the needs of social infrastructure, including the reinforcement and renovation of aging expressways, the installation of special shield tunneling machines for urban

areas, and the construction of flap-gate type seawalls to protect against flood disasters caused by tsunamis or storm surges.

### Contribution to CO<sub>2</sub> emission reduction

Clean energy facilities utilizing the technologies of the Hitachi Zosen Group, such as energy-from-waste, biomass, and wind power, contribute to the reduction of CO<sub>2</sub> emissions through our customers' business activities. As of the end of fiscal 2019, our products (including the products of licensees) had reduced CO<sub>2</sub>\* by 15 million tons per year worldwide, equivalent to about 2.3% of the new target for reducing greenhouse gas emissions announced by the Japanese government in April 2021. We aim to continue contributing to CO<sub>2</sub> reduction through our products, with the goals of cutting CO<sub>2</sub> emissions by 22 million tons per year by the end of fiscal 2022 and about 40 million tons per year by the end of fiscal 2030.

	End of FY2019	FY2022 (target)	FY2030 (target)	Cumulative total for FY2020–30
Amount of CO <sub>2</sub> reduction (including licensees)	15.18 million tons of CO <sub>2</sub> /year	22.06 million tons of CO <sub>2</sub> /year	About 40.00 million tons of CO <sub>2</sub> /year	About 320 million billion tons of CO <sub>2</sub>

\*Based on "The Method of Calculating Greenhouse-Gas Emissions and List of Emission Coefficients" issued by the Japanese Ministry of the Environment and, for the emission coefficients of other countries, on "Global Warming" issued by Japan's Agency for Natural Resources and Energy. These estimates of the amount of CO<sub>2</sub> reduction are based on the power generation capacity of working facilities (expected in 2022), excluding decommissioned facilities, and does not include heat utilization in the facilities. Targets for fiscal 2023 and thereafter were calculated proportionally based on the results up to fiscal 2019. Japan's target for reducing greenhouse gas emissions, which was used to estimate the Hitachi Zosen Group's contribution rate, is a reduction of 46% from the 2013 level of 1,408 million tons (CO<sub>2</sub> equivalent).

# State of Progress

## 1 Enhance the added value of products and services

We aim to extensively broaden the knowledge and expertise of the Hitz Advanced Information Technology Center and the Technology Development Headquarters on product life, condition monitoring, predictive maintenance, and autonomous operation to products and services other than EfW plants to

save human resources and labor as well as achieve added value.

We will continue working to enhance the added value of our products and services and develop products and services that foresee the new era in fiscal 2022.

Progress	Fiscal 2020	Fiscal 2021
Use of IoT/AI	<ul style="list-style-type: none"> <li>• Achieve two weeks' complete automated operation of EfW plants</li> <li>• Inspection system for food product plants using AI</li> <li>• AI ultrasonic phased array inspection system: Won a special award at the 2nd Deep Learning Business Utilization Awards</li> </ul>	<ul style="list-style-type: none"> <li>• Remote Supervisor (using smart glasses, etc.) Remote support for overseas construction work while unable to travel overseas due to spread of COVID-19 (for the Thai EfW plant, etc.)</li> <li>• Started a secure IoT platform operation Enhancing collection and utilization of company-wide data</li> </ul>
Business models for new products / new projects	<ul style="list-style-type: none"> <li>• Methanation demonstration project using CO<sub>2</sub> emitted from EfW plants</li> <li>• Joint R&amp;D for carbon capture and recycle overseas</li> </ul>	<ul style="list-style-type: none"> <li>• Established PtG SQUARE, facility for PtG technology development and demonstration</li> <li>• NEDO's Green Innovation Funding projects               <ul style="list-style-type: none"> <li>• Larger PEM-type electrolyzer (hydrogen)</li> <li>• Methane slip reduction technology for LNG fueled vessels</li> <li>• Lower cost offshore wind power</li> </ul> </li> </ul>
The Group's comprehensive strengths	<ul style="list-style-type: none"> <li>• Increased collaboration with Inova</li> <li>• Joint R&amp;D roadmap</li> <li>• Development of new business partners/suppliers in Asia, share their information</li> </ul>	<ul style="list-style-type: none"> <li>• Increased collaboration with group companies in overseas projects               <ul style="list-style-type: none"> <li>• UAE EfW plant (Inova),</li> <li>• Iraq water treatment facility (Osmoflo)</li> </ul> </li> <li>• Establishment of the Global Headquarters</li> </ul>

## 2 Promote business selection and concentration and allocate resources to growth areas

To increase the achievement rate of management plans and business plans, we have begun operation of the Hitz Goal Achievement Monitoring System using the key goal indicators (KGIs) in each business and the key success factors (KSFs) and key performance indicators (KPIs) to achieve them and are regularly reviewing business strategies and policies while carrying out PDCA. Furthermore, in order to promote business selection and concentration, we undertake quantitative and qualitative

appraisal of each business's conformity and profitability vis-a-vis our long-term vision. Regarding businesses that are judged to have problems in terms of profitability and growth potential, discussion of countermeasures is continued in the Management Strategy Committee and Board of Directors. The principal state of progress is as follows. We will also strategically redistribute management resources in fiscal 2022.

Progress	Fiscal 2020	Fiscal 2021
Sustainability	<ul style="list-style-type: none"> <li>• Expressed support for the TCFD recommendations</li> </ul>	<ul style="list-style-type: none"> <li>• Scenario analysis conducted</li> <li>• Establishment of the Sustainability Promotion Department, revision of internal systems</li> </ul>
Business portfolio management	<ul style="list-style-type: none"> <li>• Reconsideration of production bases due to business transformation Sold Kashiwa Works premises and transferred PtG business to Osaka</li> </ul>	<ul style="list-style-type: none"> <li>• Screening and discussion of implementation plans for business requiring profitability improvement/action</li> <li>• M&amp;A in Europe to diversify Inova's business (French boiler company, SBE)</li> <li>• Integration of shield tunneling machine business with Kawasaki Heavy Industries, to enhance international competitiveness</li> </ul>
The Hitz Goal Achievement Monitoring System	<ul style="list-style-type: none"> <li>• Systematic KSF and KPI monitoring by business</li> </ul>	<ul style="list-style-type: none"> <li>• Regular review of business strategies and department KSF/KPI while carrying out PDCA</li> <li>• Business assessment from a sustainability viewpoint</li> </ul>

### 3 Achieve workstyle reform by improving operational efficiency and productivity

Regarding human resource development, in addition to existing training programs, we are tackling the development of management and DX human resources and conducting strategic human resource assignment, including the selection of young management-track employees. Regarding workstyle reform, amid the increase of telecommuting from home, we are endeavoring to improve labor productivity by utilizing ICT and so on. By means

of the best practice award, we share good examples of workstyle reform throughout the Company. In addition, we are promoting initiatives to utilize ICT toward the improvement of productivity and shortening of long working hours in onsite work.

The principal state of progress is as follows. We will also proceed with workstyle reform by improving operational efficiency and productivity in fiscal 2022.

Progress	Fiscal 2020	Fiscal 2021
Human resource development	<ul style="list-style-type: none"> <li>• Global human resource development</li> <li>• In-house AI, ICT courses</li> <li>• Diversity promotion (women, foreigners)</li> </ul>	<ul style="list-style-type: none"> <li>• Next-generation management human resource development</li> <li>• DX leader training</li> </ul>
Workstyle reform	<ul style="list-style-type: none"> <li>• Support for telecommuting and web meetings</li> <li>• Support for male employees to take childcare leave</li> </ul>	<ul style="list-style-type: none"> <li>• Staff awareness survey (including engagement)</li> </ul>

#### Financial highlights

Operating results	2017	2018	2019	2020	2021	2022 prospects
Order intake (¥ billion)	400.4	455.0	454.1	429.4	677.9	500.0
Net sales (¥ billion)	376.4	378.1	402.4	408.5	441.7	460.0
Operating income (¥ billion)	5.9	7.3	13.8	15.3	15.5	20.0
Operating income margin (%)	1.6	1.9	3.5	3.8	3.5	4.3
Ordinary income (¥ billion)	3.3	6.7	9.4	11.7	11.7	16.0
Net income (¥ billion)	2.1	5.4	2.1	4.2	7.8	10.0

**2022 targets**  
(at the time of formulation of the medium-term plan)

Order intake and net sales:  
**¥400 billion level**

Operating income margin:  
**5%**

Financial position	2017	2018	2019	2020	2021	2022 prospects
Shareholders' equity (¥ billion)	116.9	119.5	118.0	126.4	131.3	139.0
Interest-bearing debt (¥ billion)	107.2	126.3	99.6	98.1	91.9	87.0
Net interest-bearing debt (¥ billion)	73.3	90.7	56.6	50.8	24.6	10.0

Financial indicators	2017	2018	2019	2020	2021	2022 prospects
Shareholders' equity ratio (%)	29.8	27.8	28.8	29.4	28.5	29.5
Net DE ratio (times)	0.62	0.76	0.48	0.40	0.18	0.07
Return on equity (%)	1.9	4.6	1.9	3.5	6.1	7.4

Scale of investment	2017	2018	2019	2020	2021	2022 prospects
Research and development expenses (¥ billion)	7.4	7.1	6.8	6.6	6.1	8.0
Capital investments (¥ billion)	9.9	6.8	10.3	10.8	8.0	10.0
Depreciation expenses (¥ billion)	9.1	8.9	10.0	10.2	10.7	10.0

## 140th Anniversary TOPICS

# Energized by Technology and Trust

## Technology for People, the Earth, and the Future

140 years have passed since the Company was founded by British businessman Edward Hazlett Hunter in 1881. Having inherited E. H. Hunter's "spirit of challenge", we will disseminate all the enthusiasm and endeavors of our predecessors and the technology we have developed to date in a visible form to ensure that the Company continues for the next 100 years. The Group will continue to satisfy the needs of global society, energized by technology and trust.

### ► Topics 1

In February 2022, the Hitz Plaza, a display space on the first floor of the Head Office, was reopened following renovations as part of our 140th anniversary project.

The Plaza uses diverse tools, including graphics, authentic documents, dioramas, and video, to introduce the history of the Group over time, from the past to the present day; where and how our products and services are used; and even our vision for the future.

We hope that visitors will gain a sense of the role of Group products and services in aiding clean energy, clean water, and the creation of flourishing communities that are environmentally friendly and resilient to disasters, and their contributions to the prosperous future of the Earth and people.



### ► Topics 2

In February 2021, a sapling Aiko Cherry Tree was planted at our Head Office to celebrate our 140th anniversary. The original Aiko Cherry Tree is a someiyoshino tree that still stands today in the Kobe Kitano Hunter Geihinkan residence where E. H. Hunter spent his later years with his wife, Aiko; it is said that he and Aiko planted it together, and that he called it the "Aiko" Cherry Tree because of his fondness for it.

The Aiko Cherry Tree has welcomed its second spring since its planting; the sapling, which was around 1 m tall, has now grown to reach over 2 m, and once again gave the Head Office beautiful blossoms this year.



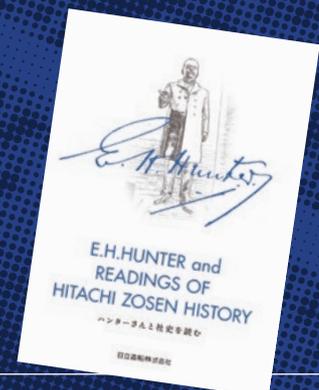
### ► Topics 3

"Looking back on the past means understanding how the present came to be. I hope that by exploring the Group's history, you will learn a variety of lessons that will become a driving force for future progress." In accordance with this wish for our employees, we have published a booklet that introduces the spirit of challenge and character of our founder E. H. Hunter, the originator of the Group, through diverse stories of his life.

These are being made available on our corporate website as the Hunter Essay series, so that everyone can read them.



▲ See the Hitachi Zosen Founder's Story here.



## Enhancing our financing capability: Actively investing in priority areas to achieve the long-term vision

### Further enhancing our ability to respond to risks amid rising uncertainty

Fiscal 2021 was a year that saw risks that were difficult to anticipate, such as the lengthening of the COVID-19 pandemic and escalating international tension. Still, the impact on the Hitachi Zosen Group’s finances was limited, and assimilated with an ordinary amount of business profit. I appreciate that the Company has established the stable profitability to absorb a certain level of fluctuations.

However, the year renewed the sense of crisis that we must hurry to further strengthen our financial resilience against risks brought about by significant fluctuations due to the uncertainty of the pandemic, geopolitical risks, and natural disasters. At the same time, we became still more aware of the social importance of the technology for the environment, energy, and social infrastructure preservation that is our strength—in other words, the potential for expanding business opportunities.

I recognize that the increase in demand for green energy due to global energy security and decarbonization, along with encouragement for a circular economy and maintenance of social infrastructure, are important opportunities for the Group’s business growth. I believe much more selective resource allocation will be necessary so as not to miss these opportunities.

To make progress in this area, the Group has determined clean energy and water as well as disaster-resilient social infrastructure as business domains for our long-term vision. Furthermore, we are evaluating conformity with this vision to select the businesses we should strengthen.

### Prioritizing investment for our vision

#### Screening low-profit businesses

##### Numerical indicators

- Operating income margin, etc.
- Conformity with the Group vision

##### Strategy and risk evaluation

- Degree of business target attainment
- Future prospects for business market position and attractiveness
- Potential business environment changes that could inhibit business development

#### Businesses are designated according to four categories of profitability

- ① Growing
  - Continuous improvement
- ② Core
  - Priority allocation of management resources
- ③ Low Profitability
  - The Management Strategy Committee and Board of Directors deliberate countermeasures
- ④ Requiring Action

Reorganize low-profit and unprofitable businesses and shift resources to growing business areas



Satoshi Kimura

Senior Managing Executive Officer  
General Manager of Corporate Planning Headquarters

### Improving our corporate credit rating by further improving our financial position

Improvement of our financial position is progressing well. Our shareholders’ equity as of March 2022 increased about 4% from the previous year. Adding ¥20 billion in subordinated loans that have the nature of capital to them, the Company’s risk buffer can be evaluated as more than ¥150 billion.

In addition, our net interest-bearing debt and debt-equity ratio have also improved significantly as a result of progress in improvement of cash flows. The Company has also secured a committed credit line of ¥30 billion and I believe we have secured a sufficient level of guaranteed liquidity in case of unforeseen circumstances. Going forward, we would like to further improve profitability and strengthen our balance sheets to achieve a stronger financial position, with a view to upgrading our corporate credit rating.

[More](#) P. 25 “Financial Highlights”

### Assessment of conformity with the Group vision (figure)

Industry field	Our business	Business A	Business B	Business C	.	.	.
Climate change mitigation/adaptation (contribution to SDG 13)	◎						
Clean energy (contribution to SDG 7)	○						
Environmental conservation (contribution to SDGs 14&15)	◎	○					
Clean water (contribution to SDGs 6&14)			○				
Creation of flourishing communities that are resilient to disasters (contribution to SDGs 9&11)	○			◎			
.							
.							
.							
Conformity with the Group vision (SX* score)	..	..	..	..	..	..	..

\* SX (sustainability transformation): Synchronizing social and corporate sustainability, as well as the management and business transformations needed to do so  
Reference: ITO Review 3.0 (ITO Review SX Edition); August 30, 2022; the Ministry of Economy, Trade and Industry

## Achieving our vision through business strategy and financial strategy

It goes without saying that achieving the vision the Group strives for requires financial strength. It is also necessary to guard against unpredictable risk events. One important issue for that purpose is improving fundraising ability by upgrading our corporate credit rating. To do that, we will always identify the potential risk assets on our balance sheets and work to reduce them, while at the same time maintaining the liquidity and shareholders' equity to cover them. In addition, we will separate non-core assets and businesses as part of promoting business portfolio management.

Regarding the issue of management considering cost of capital, the introduction of the SAP enterprise resource planning system will allow us to ascertain balance sheets by business to shift to business management using ROIC. We started trial operation in fiscal 2022 and would like to continue improvements and switch to full operation at an early stage.

Furthermore, the Company is actively investing in fields with high conformity with the Group's vision. For example, we curved out our shield tunneling machine business to the joint venture founded with Kawasaki Heavy Industries, Ltd. in October 2021. Overseas, the Group also acquired Schmack and Steinmüller Babcock Environment (Steinmüller) for the purpose of correcting a business balance that overemphasized EPC at Hitachi Zosen Inova and expanding its service business.

In particular, the acquisition of Steinmüller, which had the third largest share in Europe's energy-from-waste EPC industry, is of great strategic significance, in that Steinmüller has many reference projects to form the foundation for expanding the Group's service business. This acquisition sweepingly established the status Inova already held as the top player in the European market.

In addition, Schmack has a rich track record in Europe for biogas (methane fermentation) facilities, and the demand for biogas plants is expected to present extremely substantial business opportunities from the viewpoint of Europe's mounting energy crisis.

Strategic initiatives are also moving forward in energy from waste.

We have received orders for projects that contribute to long-term, stable profits, such as orders for EPC and long-term business operations in the Dubai project in the UAE, accompanying our participation in business development and

partial investment, as well as orders in the Westfield project in the United Kingdom for EPC and long-term business operations.

Japanese companies contributed significantly to the financial composition of the Dubai project, including ITOCHU Corporation participating in the project as investors in addition to the Hitachi Zosen Group, and the Japan Bank for International Cooperation (JBIC) as well as private Japanese banks offering project finances. The project won a Deal of the Year Award in the Middle East & Africa category at the Project Finance International (PFI) Awards 2021.

Our ability to accommodate business development projects, including for biogas plants, encompassing this type of financial composition will be important in the future. Therefore, we are working with Inova on organizational and personnel reinforcement.

## Continuing active dialogue with all our shareholders and investors

Until now, dividends have continued at ¥12 per share, but we are planning to increase dividends to ¥15 per share, equivalent to a dividend payout ratio of 25%, in the current period. Total shareholder return, including dividends and share prices, demonstrates good performance, at 148.7% in fiscal 2020 following a rise in share price and 127.1% in fiscal 2021. We see this as the result not only of an improvement in profitability but also of gaining a certain understanding in the market of the business direction for which the Company strives.

We would like to promote active dialogue with all our shareholders and investors even more in the future.

### Total shareholder return\*

Fiscal year	2017	2018	2019	2020	2021
Hitachi Zosen	87.9%	57.4%	60.6%	148.7%	127.1%
TOPIX	115.9%	110.0%	99.6%	141.5%	144.3%
TOPIX Machinery	118.3%	103.0%	91.5%	146.3%	140.8%

\* Represents the total return on investment to shareholders, combining capital gains and dividends.  
Calculated using a formula stipulated by Cabinet Office Ordinance.  
The investment profit margin includes dividends and share prices up to the end of fiscal 2021 for investments made using the closing price at the end of fiscal 2016.

### List of Inova's principal M&A achievements

Year	Company (activities)
2020	ESTI (maintenance, France)
2021	Completed acquisition of a joint venture (maintenance, United Kingdom)
2021	Schmack (biogas, Germany)
2022	Steinmüller (EPC/maintenance, Germany)

## Using also external resources to promote the creation of new products and businesses that help to build a carbon-free society

### Creating needs-based and market-based new products and businesses

The most important mission of the R&D Headquarters is to contribute to the creation of new customer value by continuously creating new products and businesses and enhancing the competitiveness of existing businesses. As a priority measure for achieving this, we are working to create needs-based and market-based new products and businesses. We are strengthening our marketing power by redefining and clarifying our marketing functions and tasks and building a structure that consecutively implements everything from the market and business research stage to actual business development.

Selecting and concentrating on development topics are important tasks that are essential for launching new products as soon as possible. The company conducts R&D on about 100 topics in a variety of fields every year. Twenty of those are positioned as key topics, and in fiscal 2022, we intend to invest over half of total development funds in them. In pursuing our R&D efforts, we will naturally strengthen our collaborations with other business headquarters, and we also plan to actively utilize external resources such as open innovation and alliances to accelerate the development of new products and businesses.

We are also increasing investments in human resources to respond to rapid changes in the business environment. In addition to increasing opportunities such as personnel exchanges with research organizations that allow research personnel to come into contact with the latest research, we are also focused on nurturing the planning and management personnel that will be essential for creating new businesses and managing technology.

#### R&D policy

**1 Continuously create new products and businesses**

→Promote market-based development topics (actively use Green Innovation funds) in response to national policies and social trends such as carbon neutrality.

**2 Accelerate development of products under development in order to launch them as soon as possible**

→Prioritize investment of resources (people, things, money) in promising development topics through selection and concentration.

**3 Brush up on core technologies and actively challenge the development of new technologies**

→Develop and pursue open innovation for core technologies that can enhance and maintain the competitiveness of existing businesses and new technologies that can open up new markets while also increasing patent applications.

**4 Strengthen problem-prevention functions**

→Reduce problems through the collection of problem data in a database system, the utilization of document analysis technology using AI and the provision of regular business unit support by senior research center personnel.

**5 Enhance investments in human resources**

→Strengthen and deepen areas of expertise / cultivate planning power for development and new businesses / increase management skills through technology management, activate rotations.



Tadashi Shibayama

Managing Director General Manager of R&D Headquarters

### Further accelerating carbon neutral initiatives

In September 2021, we formulated our technology and product roadmap for realizing carbon neutral in 2050. The roadmap outlined the Company's specific initiatives and business investment priorities for each carbon neutrality-related development topic until 2030, based on the market environment and the Company's technological advantages.

Links with governments and other companies will be important to the promotion of carbon neutral initiatives. To date, three of the Company's business projects, including one involving energy demand conversion and technology usage through large-scale P2G systems, have been selected by the New Energy and Industrial Technology Development Organization (NEDO) for its Green Innovation Funding Program. We will continue to offer more proposals.

We are also strengthening the R&D structure within the Group. In April 2022, in line with the establishment of the Carbon Neutral Solution Business Headquarters, we established the Global Environment and Energy Research Center within R&D Headquarters to work towards the expansion of businesses that will contribute to the building of a carbon-free society. We are also sharing development topics with Group company Hitachi Zosen Inova and holding more active meetings and personnel exchanges. Through mutual cooperation between various departments and related companies, we will work as a Group to promote R&D that contributes to the realization of carbon neutrality.

#### Initiatives for carbon neutrality in 2030

Key development investment areas	Products and technology
Resource recycling (waste, water)	Next-generation waste treatment and gasification
Renewable energy	Offshore wind power
Energy conversion	Water electrolysis technology (hydrogen production)/ fuel cells (SOFC)
Next-generation fuels (synthetic fuels)	CO <sub>2</sub> conversion to fuel (methanation) / bio-liquid fuels (bioethanol)
Environmental measures	Methane slip reduction measures for marine diesel engines / CO <sub>2</sub> separation membrane

## Increasing corporate value by promoting practical DX

### Formulating a DX strategy and accelerating digitization

Along with demands for decarbonization, initiatives where digital technology serves as the axis for business transformation are becoming increasingly important. Hitachi Zosen aims to become a company with digital technology as one of its strengths in addition to manufacturing and engineering technology. In December 2021, we formulated our approach towards promotion of future digital transformation (DX) as a company-wide strategy and began our DX in earnest. This company-wide DX strategy consists of three pillars: Business DX, which aims to improve customer value through the digital transformation of businesses, Corporate DX, which promotes production process innovation and employee workstyle reform, and DX Platform, which prepares the digital technology foundation for the DX above and aims to raise digital personnel.

DX has already begun to show results for certain products such as saving labor in operations at waste treatment facilities (Environment Business) and monitoring food production lines (Machinery & Infrastructure Business). As a result of these initiatives, we were recognized as a Digital Transformation Certified Company by the Ministry of Economy, Trade and Industry in April 2022.

Using the company-wide DX strategy as a basic policy, we will continue to apply digital technology to all our businesses and internal processes while transforming our businesses in order to solve the problems of society and our customers.

### EVOLIoT, IoT Secure Platform

We consider the data generated every day from our business activities, products and facilities to be sources of value. To easily collect, store, visualize and analyze the product and facility data, we developed EVOLIoT, an original IoT Secure Platform, which went into service in October 2021. We have already finished connecting several products to the platform, but our ultimate goal is to apply it to all connectible products and facilities. By combining EVOLIoT with the AI technology of the Technical Research Institute, it will be possible for us to understand and optimize our operating status and detect signs of malfunction.

Additionally, by integrating it with the 24-hour 365-day remote monitoring and operating support functions of the Hitz Advanced Information Technology Center (A.I/TEC), we hope to add greater value to our after-sales services and operating support. Using EVOLIoT as a hub, we can create networks between different products and connections to platforms outside Hitachi Zosen, further expanding the potential range of data applications.



Munenobu Hashizume

Managing Executive Officer  
General Manager of Information and Communication Technology Promotion Headquarters

### DX human resource development and DX promotion community

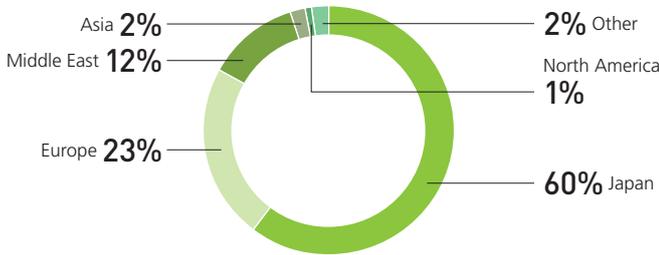
To promote DX, it is important for us to not only prepare the technological foundation but also develop the human resources that will use the valuable data and transform companies and businesses. Out of the elements of digital (D) and transformation (X), the power to transform is particularly essential, so we began DX Leader Training for business divisions this year. We aim to instill trainees with transformation skills with a focus on design thinking and endeavor to create innovative businesses that integrate our business strategy with digital technology.

Going forward, we will endeavor to train a wide range of DX human resources including management and the levels that support DX Leaders, with the aim of training 500 DX human resources by 2025. Furthermore, because we believe that training alone is insufficient, we have established a DX Promotion Community that cuts across all companies and unites DX Leaders with digital promotion departments. We will develop this community into the foundation for DX acceleration and use it as a place for sharing issues and considering technological feasibility.

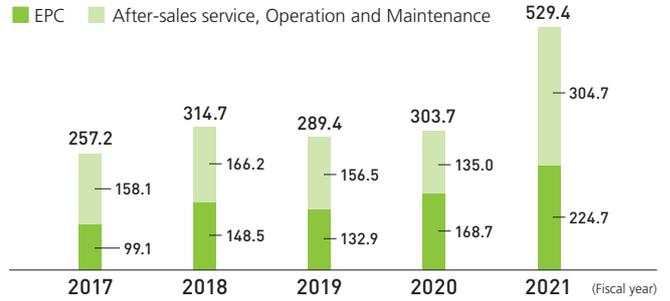
The Information and Communication Technology Promotion Headquarters will contribute to increasing corporate value through these activities.



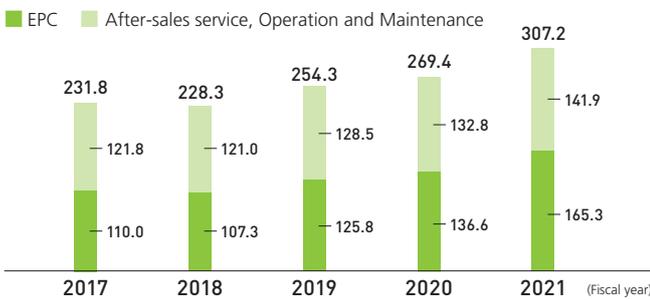
Sales by region



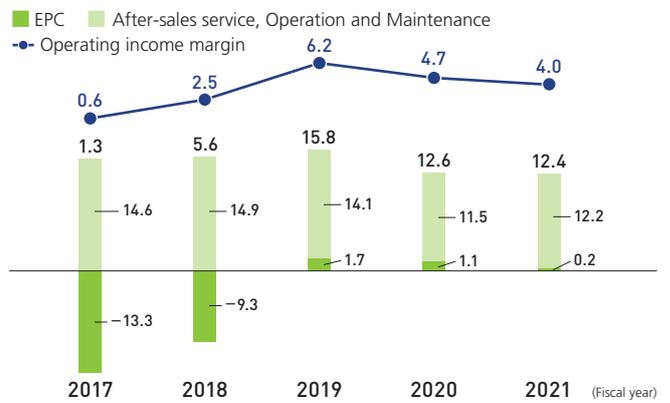
Order intake (Billions of yen)



Net sales (Billions of yen)



Operate income (Billions of yen) / Operating income margin (%)



Social issues and needs

- The growing world population is creating more waste, more demand for water, degrading water eco-systems, and increasing demand to decrease landfill
- Rising CO<sub>2</sub> emissions are accelerating global warming
- Intensifying competition from the influx of digital technology

Market characteristics / Our strengths / Strategies

Market characteristics

Energy-from-waste (EfW) plants

- Japan: Demand for waste treatment facilities is expected to remain flat centered on demand for upgrades (annual order intake: 3,000-5,000 t/day).
- Europe: The region began efforts to prevent and reduce waste emission and its effects early on, so EfW plants are widespread. The EU issued the Landfill Directive to reduce landfills from 1999 onwards. The EU is also planning to widely expand renewable gas production in order to diversify energy procurement.
- China: Although the number of new constructions is the largest in the world, it is difficult for foreign companies to be directly involved (the Hitachi Zosen Group grants licenses to local companies).
- New markets: Against a backdrop of increasing environmental awareness, an increase in waste and decreasing capacity at landfills, EfW began to be introduced in earnest from the late-2010s onwards and is expanding. (Middle East, Eastern Europe, Southeast Asia, Australia)

Water treatment facilities

- Providing water and wastewater services for emerging markets, apparent need for desalination in the Middle East and island countries.

Other risks and opportunities

- Increasing interest in investing in decarbonization.
- Concerns about drastic increases in costs such as steel material prices.

Our strengths

- Possession of core technology for EfW and capacity for business development, engineering, construction, O&M and business operation. A world-class delivery record and trustworthiness, expertise in the combustion of special fuels, i.e. waste, backed by experience, and maintenance service business foundations.
- Wide-ranging technology and construction and operating experience in renewable gas (methane fermentation) facilities.
- Ability to make proposals that integrate technologies possessed by other departments and Group companies such as CO<sub>2</sub> recovery and methanation.

Strategies

- Develop automation and remote supervision technologies using AI and ICT and offer them to our customers in Japan, where the population is expected to decline in the long term.
- Move upstream and downstream in the value chain through business development and expansion of operation and maintenance (O&M) services.
- Expand O&M services / Aim to make O&M services 25% of sales at Inova.
- Display synergy and accelerate globalization through closer collaboration with Group companies.
- Expand the water treatment business into markets in Southeast Asia, India and Europe from its original position in Japan, Australia and the Middle East.

## Concentrating the Group's resources in Japan and overseas to enhance our competitiveness in the global market

### Overview of fiscal 2021 and market outlook

#### Highest ever order intake and growth in overseas markets

In fiscal 2021, order intake and sales both exceeded the previous year's values by a wide margin, with order intake in particular breaking the record for the highest ever number of orders received. Orders for EPC\* and long-term services for large-scale EfW plants in Europe and the Middle East, including Dubai in the United Arab Emirates, contributed to this result. Furthermore, the growing spread of COVID-19 did not have as significant an impact as had been feared and construction work progressed favorably both in Japan and overseas, leading to an increase in revenue.

Turning our focus to the waste treatment facility market, which made up a large percentage of sales, stable demand can be expected in Japan centered on demand for upgrades, but the overseas market will be the main center for growth. Demand for new construction can be expected in Europe, particularly in the UK, for the time being, and in recent years the UAE, Turkey and Australia have begun to introduce EfW plants in earnest. Although waste emission reduction and recycling efforts are expected to progress in developing countries in the medium- to long-term, an increase in waste accompanying economic development and improvements in living standards has led to a growing need for sanitary waste treatment and landfill reduction in many emerging nations. In this market environment, the presence of the Hitachi Zosen Group is increasing more than ever, with Group company Hitachi Zosen Inova maintaining an over 50% share in new orders received in Europe and the Middle East, and we have entered a phase where overseas business will drive the Group's growth.

\* EPC: Engineering, Procurement, Construction

### Progress of the medium-term management plan and strategies going forward

#### Safe and secure facility management with AI and ICT

Enhancing the added value of products and services is one of the basic policies of Forward 22, our medium-term management plan.

The various environmental facilities the Company handles are indispensable infrastructure. However, new social issues are becoming apparent, such as operating personnel being unable to visit sites due to recent abnormal weather or the spread of infectious diseases. And in the future, securing operators may be difficult due to a population decline in Japan.

The solution to these problems is the EfW plant operation management system that uses AI and ICT being jointly developed with the Information and Communication Technology Promotion



Headquarters. With the cooperation of Clean Authority of TOKYO, we implemented fully autonomous operation for over two weeks several times in fiscal 2021. Apart from that, we have also been developing remote operation technology to support the operation of plants across Japan. This technology has now reached the implementation stage. Our customers highly appreciate these technologies, and we will work to ensure that the technology is usable not only in Japan but also at plants around the world delivered by our Group.

#### Promoting business as a unified Group —The HZI Collaboration Project Office begins operations

To achieve the Hitachi Zosen Group's vision on a global level, it is essential for the Group to promote its business as a unified whole. Although there have been opportunities for personnel exchanges and cooperative business in the past, to display our strength as a Group at an even higher level, we established the HZI Collaboration Project Office in April 2022. In the past, Inova and Hitachi Zosen ran their businesses in separate geographical areas but going forward, by using the resources and specialties of both parties effectively, we will be able to open up new markets, optimize procurement and share engineers and other personnel in the future, which will boost our competitiveness in the global market.

As one of the initiatives we are working on, we unified the standards of the grates which are a main component in EfW plants. Grates were previously engineered according to the type of waste in each region, but in recent years, there has been a homogenization of waste in Europe, America and Asia so we took the decision to standardize them. Using a unified standard for a main component not only saves costs but it also makes it possible for us to respond to various demands in the global market flexibly and in a timely manner. This will reduce the number of opportunity loss and allow us to aim to further increase opportunities for receiving orders.

Through the Project Office, we are steadily developing globally as a unified Group, firstly by supporting Inova, which is

seeing growth in order intake, and also by working together from the technological and business development stages on renewable gas and power-to-gas (PtG) businesses that are expected to grow rapidly in Europe in the near future.

**Contributing to decarbonization on a global scale —The Carbon Neutral Business Promotion Office begins operations**

In April 2022, we established the Carbon Neutral Solution Business Headquarters. Additionally, to implement the Group’s methanation technology and hydrogen generation systems in society as soon as possible, the Environment Business Headquarters, which has a wealth of experience and expertise in plant engineering, has established the Carbon Neutral Business Promotion Office to integrate the total strengths of all companies and accelerate initiatives.

In June 2022, we began a methanation demonstrated operation using carbon dioxide emitted from an EfW plant in Odawara city, the first such attempt in the world. The methanation plant the Company constructed for this demonstration is the largest in Japan as at the time of writing. Through the demonstrated operation, we will verify the carbon dioxide reduction effect and reveal any issues standing in the way of full-scale popularization. The Group will continue to use its expert engineering knowhow to contribute to the furtherance of decarbonization in other ways as well, such as by commercializing decarbonization-related products that have passed the development stage.

**More** P. 49 “Technology That Contributes to Environment”

**Contributing to the global environment with our technology**

In addition to treating waste hygienically, EfW plants also generate renewable energy using the waste heat from incineration. Demand for such plants is expected to grow not only in Europe and East Asia, where they are being implemented, but also in emerging nations in future as landfills face constraints with increasing populations and rising living standards. In the future, we will also be able to propose new carbon-free recycling models by combining them with methanation, so it is a field we have high hopes for going forward.

The Hitachi Zosen Group was also involved in renewable gas plants from an early stage. Demand is expected to grow in the EU and North America against a backdrop of growing environmental awareness and energy security issues prompted by international tensions. The Hitachi Zosen Group acquired a renewable gas company in Germany in 2021, building a structure where we can offer both dry and wet methane fermentation facilities in Japan and overseas.

Furthermore, the Group has been involved for many years in solutions related to water, which is indispensable for human life. Various needs are becoming apparent: the need for operation and upgrading of sludge recycling and treatment facilities and water and sewage treatment plants in Japan, for water and sewage infrastructure in emerging nations and developing countries, and for desalination in the Middle East and island countries. In the overseas market in particular, we are working with Group company Osmoflo, which operates a water business in Australia, to expand from our original targets of Australia and the Middle East to Southeast Asia, India and Europe as well.

By uniting as a Group to deliver the technology and services the world will need in future and the knowledge and technology concerning clean energy and clean water that we have cultivated over many years, we aim to become a solution partner for a sustainable, safe, and secure society.

**Hitachi Zosen Inova**

**Bruno-Frédéric Baudouin**

Chief Executive Officer & Member of the Supervisory Board

**About Hitachi Zosen Inova**

Established: 1933 Location: Zurich, Switzerland  
Possessing core energy-from-waste (EfW) and renewable gas technologies, Inova formed technical partnership with Hitachi Zosen in the 1960s. Joined the Hitachi Zosen Group in 2010.



The Hitachi Zosen Inova Group’s journey to become a vertically integrated greentech company developing waste management infrastructure is progressing steadily. Leveraging its strong technological and EPC capabilities, HZI is now actively supporting its customers across the entire value chain, from project development to long term service agreements.

## Expanding the business model

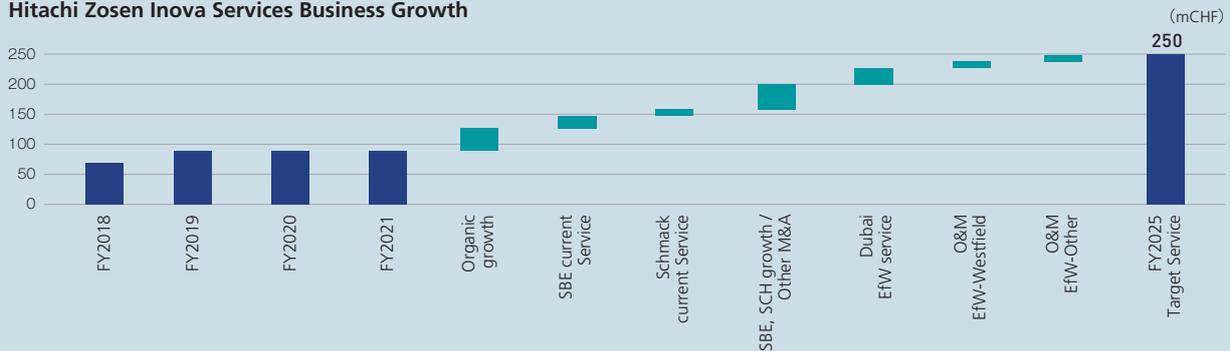
With an increased focus on developing advanced solutions enhancing circularity, decarbonization and supply security (electricity, renewable gases, including hydrogen), HZI is to transform traditional waste management plants into integrated resource recovery facilities.

In a booming renewable gas market, supported by long-term political tail winds, HZI is securing long term revenue generations

as gas producer as well as EPC provider.

Furthermore, with its acquisition of ESTI in 2019, Schmack Biogas in 2021 and Steinmüller Babcock Environment and 40% shares in the French company EST-Industries in 2022, HZI is further reinforcing its service and O&M business offering for EfW and RG plants. Underlying target is to double the corresponding recurrent revenue generation over the next three years.

### Hitachi Zosen Inova Services Business Growth



## Growing profitably and sustainably

HZI is intensely investing in attracting and maintaining talents along with its core values: We care. We deliver. We innovate; and outstanding achievements, e.g. in safety, on Dubai EfW project, the largest under construction worldwide, our employees reached 7 million hours without any lost time incident.

HZI is building up its local permanent presence in new markets: Middle East, Central Europe and Australia, progressively

becoming a true global player. HZI is taking a comprehensive approach to its competitiveness, that goes beyond pure technology and execution, and includes consideration of new business models.

HZI's ambition is to become the partner of choice of waste management infrastructure players across the lifecycle of their assets.

## Osmoflo

**Carmine Ciccocioppo**

CEO and Managing Director

### About Osmoflo

Established: 1991 Location: Adelaide, Australia  
Possessing desalination and water treatment technologies.  
Joined the Hitachi Zosen Group in 2017.



Osmoflo provides innovative, sustainable and value-based water solutions that contribute to a circular economy. The concept of circularity is fundamental to the future of our society and our planet. Our aim is that nothing should be wasted; that we harness as many of the residuals and resources from our treatment processes as possible.

### Delivering our water treatment technologies globally

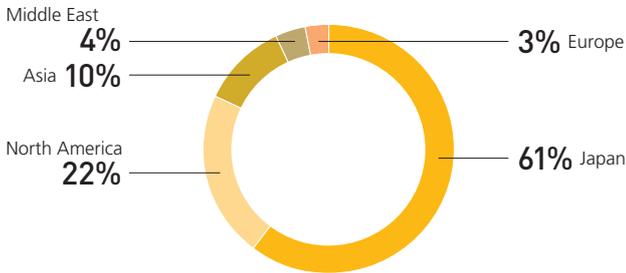
We use the latest technology and innovation to solve complex water treatment challenges for our clients across a wide range of industries including mining, municipal, oil and gas, power, food and beverage, electronics, general industrial and agribusiness.

And with our whole-of-life asset management approach, we provide ongoing operations and maintenance services to over 90 plants and facilities around the globe, including expert 24-7 monitoring and control by our Global Remote Operations Control Centre.

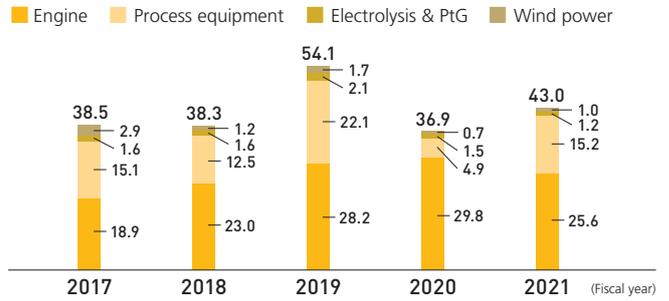
Furthermore, we have an extensive global fleet of more than 80 rental assets across three continents that are available for rapid deployment and immediate water supply which is important with growing unpredictability from climate change.

We are excited about the opportunities for growth in new industries and geographic regions including the rapidly growing green hydrogen sector, and further growth into Asia, Middle East and North America.

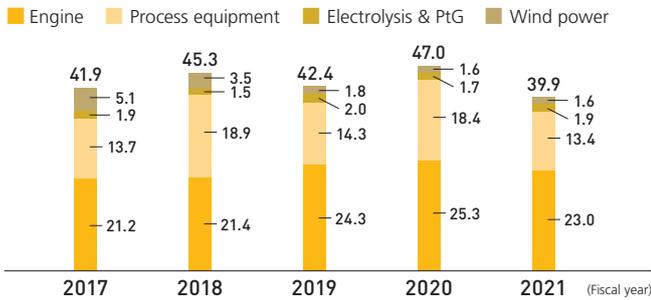
Sales by region



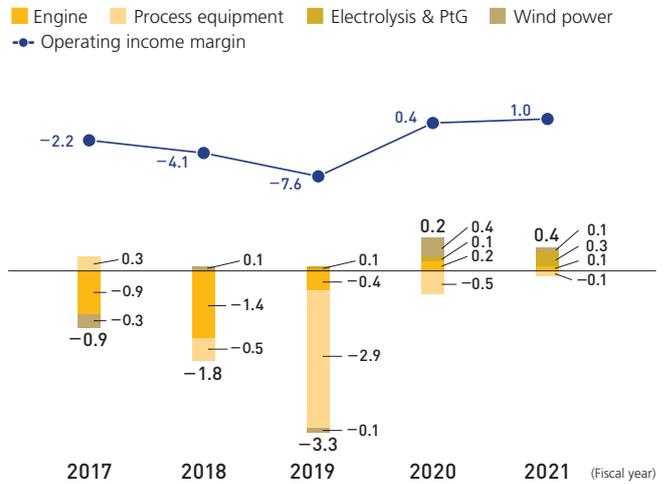
Order intake (Billions of yen)



Net sales (Billions of yen)



Operate income (Billions of yen) / Operating income margin (%)



Social issues and needs

- Reduce GHG emissions
- Comply with environmental regulations
- Create and supply clean energy

Market characteristics / Our strengths / Strategies

Market characteristics

Engine

- Although current order intake is steady, buoyed by the favorable new shipbuilding market, profitability is a challenge due to soaring raw material prices.
- New demand for ship exhaust gas regulation and fuel conversion.

Process equipment

- New demand for tanks for alternative fuels such as ammonia.
- Demand for casks and canisters for spent fuel and decommissioned reactors at nuclear power plants in North America, latent demand for the same in Japan.

Electrolysis & Power to Gas (PtG)

- As part of the Green Growth Strategy, the government of Japan has announced a target of injecting 90% synthetic methane into existing infrastructure by 2050.
- Increasing size and reducing costs will be issues to be resolved for implementation in society.

Wind power

- The government of Japan has announced and is actively pursuing a target of 10 million kW of offshore wind power introduction by 2030 and a maximum of 45 million kW by 2040 (total wind power generation installed in Japan by the end of 2021 was 4.581 million kW).

Our strengths

- Ability to share market information, technology and knowhow within the Group.
- Rich plant engineering experience.
- Marine diesel engines: SCR systems combined with NOx removal catalysts.
- Offshore wind power: Design and manufacturing technology for offshore structures and floating structures.
- Onshore wind power: Knowhow to implement integrated development, construction and operation.
- Methanation: High-efficiency reaction catalysts developed in-house/knowhow accumulated through demonstration operations/package proposals including hydrogen generation and separation and recovery of CO<sub>2</sub>.

Strategies

- Promote the development of carbon neutral technology on a Group-wide basis in collaboration with other departments such as the Environment Business.
- Increase added value for existing products such as marine diesel engines, SCR systems and process equipment through applying decarbonization-related technology.
- Respond to demand for casks and canisters in Japan as well.
- Focus on manufacturing foundations for offshore wind power.
- Comply with international standards through cooperation with Group companies in Europe and America.
- Actively use external resources through open innovation and alliances.

## Increasing profits by capitalizing on business development opportunities

### Establishment of the Carbon Neutral Solution Business Headquarters

#### Utilizing diverse knowledge by uniting the organizations of decarbonization-related businesses

In October 2020, the government of Japan declared its intention of cutting greenhouse gas emissions to net-zero by 2050 to the world. As of April 2021, 125 countries and one region in the world had announced their determination to be carbon-neutral by 2050, and great changes are under way in societies and economies in Japan and abroad.

Tackling the societal challenge of realizing a carbon-free society aligns with the Hitachi Zosen Group's policy of contributing to a sustainable, safe, and secure society. With the Japanese government's declaration of carbon neutrality by 2050, the goal the country is aiming for has been clearly indicated, and as a result our customers are becoming increasingly aware of the need to work towards carbon neutrality. With new opportunities for providing value, this has had an extremely significant impact not only on our environmental business, the Group's main business, but also on other businesses which have delivered machinery and equipment on a BtoB basis for many years.

In light of this situation, to apply the diverse knowledge it has accumulated to date, the Group consolidated the business organizations concerned with decarbonization and established the Carbon Neutral Solution Business Headquarters in April 2022. Centered on the Carbon Neutral Solution Business Headquarters, we intend to promote innovation in global warming countering technologies and capitalize on business opportunities to grow our businesses and increase profits.

### Overview of fiscal 2021 and future strategies

#### Marine Machinery & SCR Systems Business Unit

In fiscal 2021, we continued to receive a high volume of orders as we had in the previous year. In terms of revenue, our operating income base remained in the black due to the results of successful cost-cutting and increased sales of marine SCR systems (NOx removal equipment).

In the maritime and shipbuilding industry, there is a rapid movement towards carbon neutrality, and we expect to see a steady trend in fuel conversion away from heavy fuel oils to LNG and methanol, and in the future to ammonia and hydrogen.

In fiscal 2021, the development of an LNG fuel methane slip oxidation catalyst, which the Company proposed together with Yanmar Power Technology Co., Ltd. and Mitsui O.S.K. Lines, Ltd, was selected by the New Energy and Industrial Technology Development Organization (NEDO) for its Green Innovation Funding Program. With this and other efforts, we will regard the



conversion in marine fuels as a business opportunity and develop technology needed by our customers, continue to build production systems and strive to improve our business and earning structures.

#### Process Equipment Business Unit

In fiscal 2021 the sluggish order intake from the previous year recovered, and we were able to link it to increased sales from fiscal 2022 onwards.

We are beginning to see signs of business conversion in terms of carbon neutrality in this field as well. For example, for process equipment, demand for ammonia plant equipment is rising in anticipation of increased food production and future fuel production. And for radioactive waste equipment, we expect to see greater demand for containers (casks and canisters) used to transport and store spent fuel. For the latter, we will take measures to grow the business such as by cooperating with NAC International, a subsidiary in the USA.

#### Electrolysis & PtG Business Unit

Hitachi Zosen has strengths such as hydrogen generation systems based on our long-held seawater electrolysis technology, and methanation technology that synthesizes methane from carbon dioxide and hydrogen using catalytic reactions. At present we are continuing their development while using Green Innovation Fund and government subsidies to implement them in society.

We have already received requests for systems and the development of manufacturing processes that apply these technologies from a variety of industries, and we are making every effort to expand the business as a supplier of core technology that leads to future business. It is also our policy to cooperate with environmental departments and machinery and infrastructure departments within the Group and with Group companies overseas on the development, social implementation and business development of technologies related to carbon neutrality and to work to resolve the issues facing our customers, markets and society.

**Wind Power Business Unit**

At present, we are working with partner companies on an onshore wind farm and on commercializing offshore wind power in Aomori Prefecture. For offshore wind power, where major growth is expected, our future direction is to focus on contributions as a technology provider of base structures. In fiscal 2021, our development of a floating structure for offshore wind power was selected for the Green Innovation Funding Program (a joint proposal with Kajima Corporation).

The Carbon Neutral Solution Business Headquarters will cooperate with other business headquarters and Group companies and work together with development departments to commercialize and develop technology for new products. We will also actively consider alliances with external partner companies and the adoption of new technology from venture companies.

At the same time, however, it can be assumed that as the world shifts towards a carbon-free society, new rules and technological standards will be established, particularly in Europe

and the USA. For that reason, we will work closely with overseas Group companies such as Hitachi Zosen Inova in Europe, NAC in the USA and Osmoflo in Australia to ensure that we continue to strive towards being world-class in the fields we are involved in, even if it is a niche.

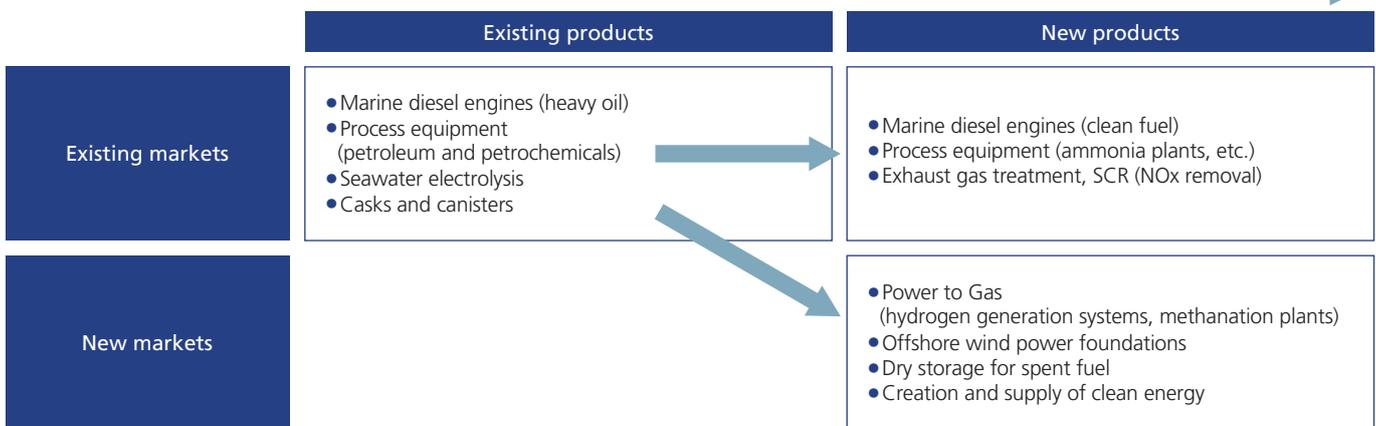
Through these efforts, we hope to help solve our customers' problems and achieve sustainability ourselves.

**Initiatives of the Carbon Neutral Solution Business Headquarters**

- ① Applying CO<sub>2</sub> reduction technology to existing products
- ② Developing, designing and manufacturing equipment and systems for CO<sub>2</sub> reduction technology, expanding the after-sales service business (CO<sub>2</sub> recovery, hydrogen production, methanation, fuel conversion)
- ③ Creating and supplying clean energy

**Technology development for new products**

**Decarbonization, clean energy**

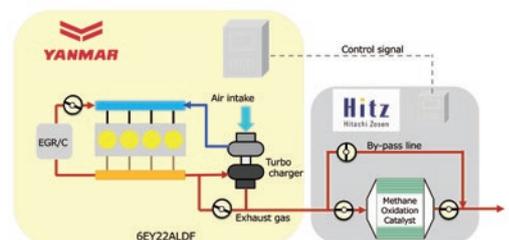


**TOPICS**

**Developing technology to reduce the impact of LNG-fueled ships on the environment**

Reductions in CO<sub>2</sub> emissions are progressing in the shipping industry by means of fuel conversion, and progress is also under way to introduce LNG-fueled ships with less impact on the environment. LNG fuel has a CO<sub>2</sub> reduction effect compared to heavy oil. However reducing methane slip (the phenomenon where some of the methane which forms the main component of the fuel is emitted into the atmosphere without being burned) is becoming an issue.

Hitachi Zosen is the only company in Japan that manufactures both catalysts and marine diesel engines, and as one of the programs in the New Energy and Industrial Technology Development Organization (NEDO) Green Innovation Funding Program, we will work together with Yanmar Power Technology and Mitsui O.S.K. Lines on catalysts and engine improvements in order to develop technology that reduces methane slip from LNG-fueled ships. From fiscal 2021 to 2026, we intend to develop technology that combines methane oxidation catalysts with improved engines and achieve methane slip reduction rates of 70% or more in actual ship demonstrations in order to further reduce the impact of LNG-fueled ships on the environment.



Methane slip reduction system (illustration)

# NAC International

**Kent S. Cole**

President and Chief Executive Officer



**About NAC International**

Established: 1968

Location: Norcross, Georgia, U.S.

Engaged in the business of design, transport, and consulting related to spent fuel transport and storage equipment.

Joined the Hitachi Zosen Group in 2013.

NAC’s core business is focused on primarily managing radioactive wastes generated in nuclear power plants during operation and at decommissioning. NAC’s main business lines aim to realize a sustainable society by supporting clean energy and environmental conservation through safe and secure management of radioactive wastes and consulting on all aspects of the nuclear fuel cycle.

## Contribution to safe and secure clean energy through our many years of experience and expertise

NAC has a vital role as environmental stewards in supporting clean carbon-free electricity generation from nuclear energy. A key enabler of nuclear energy success is the safe and secure management of nuclear wastes, assuring containment and isolation from the environment. On this effort, NAC is an

established supplier with more than 40 years of experience in the design and licensing of numerous systems and solutions to package, store, transport and dispose radioactive materials.

**Business opportunities for 2030**

**Consulting**

- Plant spent fuel stored
- Fuel performance and fabrication oversight
- Others

**Radioactive Waste Management**

- Spent fuel and HLW dry storage systems & services
- Solution in spent fuel packaging and transportation
- Others

**Future**

- Off-site used fuel stored (CISF)
- Spent fuel & HLW disposal



Nuclear fuel assemblies (Being inspected prior to use)



NAC-LWT transportation cask



Consolidated interim storage of spent fuel (the USA)

## NAC’s business growth story

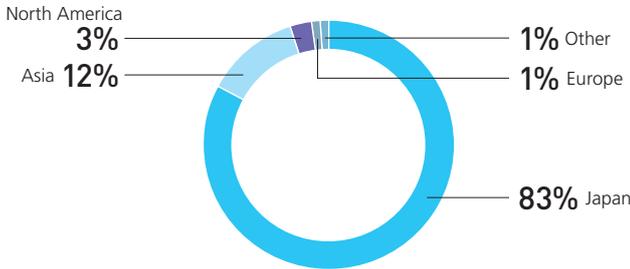
NAC’s growth plan will leverage its traditional core business capabilities supporting operational facilities into the facility decommissioning (D&D), consolidated interim storage (CIS), and disposal of spent fuel and high-level waste markets.

For new small modular and advanced reactor technologies currently under development, the industry must continue to demonstrate the safe handling, and management of wastes,

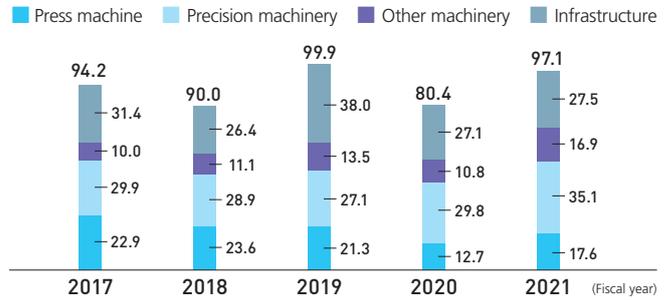
and provide assured disposal solutions for spent fuel. This is a key area aligned to NAC’s core capabilities.

The use of nuclear energy contributes to sustain the world’s energy demand. NAC aims to participate in that contribution, and through its own strategic initiatives, by 2030, to be the World No. 1 nuclear materials management, packaging and transportation logistics solution provider globally.

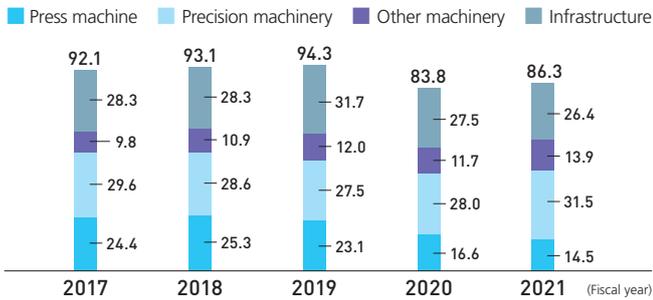
Sales by region



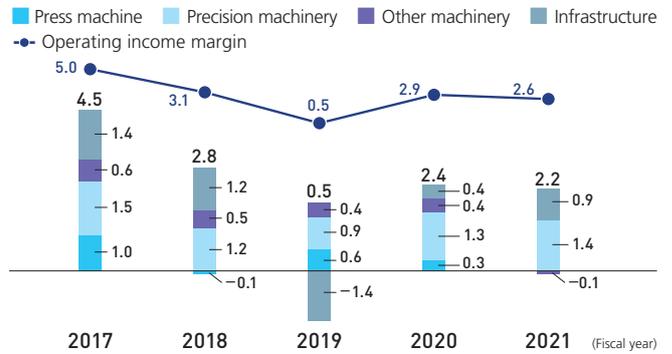
Order intake (Billions of yen)



Net sales (Billions of yen)



Operate income (Billions of yen) / Operating income margin (%)



Social issues and needs

- Apply digital technology to improve productivity and reduce lifecycle costs
- Strengthen the resilience of and upgrade aging domestic infrastructure
- Realize a sustainable society and prevent disasters and conserve the environment

Market characteristics / Our strengths / Strategies

Market characteristics

Press Machine

● Although there was moderate recovery in demand for large equipment for automobiles from the second half of fiscal 2021, uncertain global conditions and long waits for parts remain a concern.

Precision machinery

● As a result of global semiconductor shortages, semiconductor manufacturers reinforced their production capacity and results in the semiconductor device market in fiscal 2021 were the highest on record.

There is demand in China for capital investment as a result of an accelerating shift to domestic production.

● The FPD market is expanding, mainly centered on LCD televisions, but demand for manufacturing equipment has settled down.

Infrastructure

● Higher budgets for new bridge construction in line with the Fundamental Plan for National Resilience.

Although there is increased demand for maintenance work in Japan, there are concerns about drastic increases in costs such as steel material prices.

● For floodgates, redevelopment work for existing dams is being stimulated.

● The market for new steel stacks is shrinking with the trend towards decarbonization, but demolition work is expected to increase in future.

Our strengths

Press machine

● A product lineup that covers press factories as a whole. We also have a strong capacity to produce custom-made orders.

Precision machinery

● High quality, high durability and many achievements in delivery.

Infrastructure

● A high level of technological competence concerning reinforcement for earthquake resistance and rapid construction. Preventive maintenance, monitoring, diagnosis and other kinds of maintenance using AI and ICT.

● Ability to accept orders that use our strength as one of the few manufacturers with an ocean dock.

Strategies

Press machine

● Grow our service menu and after-sales service business. Promote operation data analysis, recovery support and preventive maintenance using AI and ICT.

Precision machinery

● Increase orders by increasing production of equipment for semiconductors, developing new products and enhancing product competitiveness.

Infrastructure

● Expand solution services such as maintenance work; secure and increase revenue by increasing productivity and cutting costs.

## Strengthening our revenue foundations by reforming business models and creating new businesses

### Overview of fiscal 2021

#### Sales and order intake both increased as we gradually recovered from the effects of COVID-19

Order intake began to show signs of recovery after being heavily impacted by the COVID-19 pandemic in fiscal 2020. Electronics and control systems, press machines for automobiles, precision machinery such as vacuum valves for semiconductors, and infrastructure performed strongly compared to the previous year.

In terms of revenue, we were able to keep the impact of COVID-19 relatively limited as lively demand for capital investment in the semiconductor industry led to favorable performance in precision machinery such as lapping plates for semiconductor wafer polishing equipment and vacuum valves. Overall, however, there was a clear variation in the performance of the businesses, and reviewing the state of our businesses will be an issue to tackle going forward.

### Progress of the medium-term management plan and strategies going forward

#### Boosting profitability by reviewing our business model and speedily creating customer value

Taking advantage of the more compact business section of the new Machinery & Infrastructure Business Headquarters following the reorganization in April 2022, we will cooperate among divisions, including Group companies, share information and develop synergy in order to create and speed up businesses and also create businesses that will serve as new pillars, facilitate the reforming of business models for existing businesses, all with the aim of developing into a business section full of promise and vitality.

To achieve the Hitachi Zosen Group's long-term Hitz 2030 Vision target of an operating income margin of 10%, we must develop a "standard machine + options (customization) + monitoring system" based on standard machines in addition to the present "individually designed and manufactured" model of production to order that existing businesses use. We must also create product concepts based on the needs of customers and society, match them with the technology seeds the company possesses, quickly commercialize and mass-produce them and provide products with high customer value. Although it is a highly challenging task, I believe our productivity and profitability will greatly improve if we are able to achieve it.



**Shinji Shimamura**

Managing Executive Officer  
General Manager of Machinery & Infrastructure Business Headquarters

### Initiatives of each division

#### Machinery division

We will further expand filter presses, which have the highest share in the Japanese market, lapping plates which have the top share worldwide and vacuum valves for semiconductor manufacturing equipment, which are performing robustly, and position them as the pillars of our revenue. We will also accelerate efforts to enter the new field of deposition equipment using roll-to-roll technology and to grow next-generation businesses such as the sterilization business using electron beam and deep-UV technology.

In addition to this, we will also enhance our businesses that integrate services with products such as expanding our menu of semiconductor manufacturing equipment, platforms built using GPS analytical technology, and GNSS correction data transmission and weather and crustal movement data transmission using location information and cloud recording services for railroad operators.

When it comes to press machines, in a field where capital investments are on the increase including for electric vehicles, we will differentiate ourselves through preventive maintenance and diagnosis systems using digital technology and also enhance upgrade, preservation and maintenance businesses for facilities.

#### Infrastructure division

The main policies of Japan's Fundamental Plan for National Resilience are measures for infrastructure aimed at countering earthquakes, tsunamis and deterioration, for which purpose a budget of approximately 15 trillion yen has been secured for the five years starting from fiscal 2021.

To contribute to the creation of flourishing cities that are resilient to disasters, Hitachi Zosen will expand its business position from extending the life of infrastructure through maintaining and preventing the deterioration of overpasses and floodgates, and from the construction of infrastructure, to incorporate remote inspection and diagnosis tasks that use ICT such as remote monitoring diagnostics.

At the same time, overseas in Southeast Asia where infrastructure construction is continuing, we will deploy businesses rooted in the local communities, centered on river management facilities such as floodgates that use our special technologies.

# Hitachi Zosen's ESG Issues

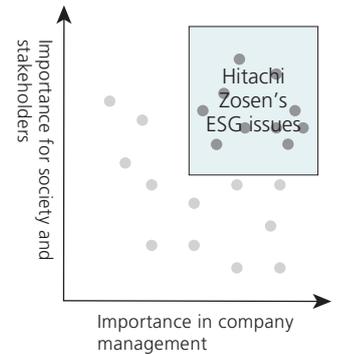
Of the risks and opportunities that could impact the sustainability of the Hitachi Zosen Group's business model and the implementation of our strategies, we have identified especially important issues as our ESG issues.

We will tackle the solution of these issues with the aim of achieving the sustained increase in corporate value and realizing a sustainable society.

## Setting ESG issues

In the process of compiling Forward 22, our medium-term management plan beginning in fiscal 2020, our Group studied and pigeonholed the risks and opportunities that might impact the sustainability of our business model and implementation of strategies from a medium- to long-term perspective. We evaluated the sorted issues in terms of two axes—their importance for society and stakeholders, bearing in mind our Group's understanding of social problems and the opinions of stakeholders, and their importance for our management. We then identified especially important issues as our ESG issues and arranged them in the two categories of "strengthening foundations to support the sustained increase in our corporate value" and "contributing toward sustainability through business."

We will steadily tackle the solution of these ESG issues in order to become a sustainable enterprise and to continue contributing toward the realization of sustainable societies globally.



## Our Group's ESG issues    Strengthening foundations to support the sustained increase in our corporate value

ESG issues		Risks (■) and opportunities (●)	Our Group's efforts
<ul style="list-style-type: none"> <li>Environmental preservation and protection</li> </ul>	E	<ul style="list-style-type: none"> <li>Increased environmental load, loss of trust, and damage to corporate value, resulting from CO<sub>2</sub> emissions and leakage of harmful substances</li> </ul>	<ul style="list-style-type: none"> <li>Climate change initiatives including endorsement of the TCFD</li> <li>Revisions to the Hitachi Zosen Environmental Conservation Promotion Plan and activities to reduce the environmental load (reduction of CO<sub>2</sub> emissions, and recycling and reduced volume of waste, etc.)</li> <li><a href="#">More</a> P. 44 "Environment"</li> <li>P. 45 "Disclosures Pursuant to the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)"</li> </ul>
<ul style="list-style-type: none"> <li>Creation of new products and new businesses</li> </ul>	S	<ul style="list-style-type: none"> <li>Contraction and disappearance of existing markets due to technological innovation</li> <li>Delay in launching new products and services on the market due to a stance of self-reliance</li> <li>Fast and low-cost development of new products and new businesses through the promotion of open innovation, alliances, and M&amp;A</li> </ul>	<ul style="list-style-type: none"> <li>Integration of IoT and AI into products and services and acceleration of productivity improvement</li> <li><a href="#">More</a> P. 30 "ICT"</li> <li>Shift business locations and promote interaction with customers and markets</li> <li>Maximize the Group's comprehensive strengths</li> <li>Strengthen business group activities</li> <li><a href="#">More</a> P. 29 "Research and development"</li> </ul>
<ul style="list-style-type: none"> <li>Supply chain</li> </ul>	S	<ul style="list-style-type: none"> <li>Loss of trust due to human rights infringements, abuse of superiority, environmental load, etc. in the supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of CSR procurement in the supply chain</li> <li>Implementation of questionnaires to business partners and feedback</li> <li><a href="#">More</a> P. 54 "Procurement"</li> </ul>
<ul style="list-style-type: none"> <li>Pandemics</li> <li>Large-scale natural disasters</li> <li>Terrorism</li> </ul>	S	<ul style="list-style-type: none"> <li>Sickness or disaster damage among directors, employees, and their families</li> <li>Malfunctioning of supply chain</li> <li>Occurrence of contract breaches, such as delivery delays, due to stagnation or suspension of work performance, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Prioritization of employees' and workers' safety</li> <li>In the case of impact on delivery, holding of consultations including application of force majeure clauses</li> <li>Regular review of business continuity plans (BCP)</li> <li><a href="#">More</a> P. 65 "Risk Management"</li> </ul>
<ul style="list-style-type: none"> <li>Development of human resources to create new value</li> </ul>	S	<ul style="list-style-type: none"> <li>Impact of intensified competition to acquire human resources on the recruitment and retention of outstanding human resources</li> <li>Declining quality of human resources due to changes in the business environment and outflow from the Company due to loss of opportunities to be active</li> <li>Acquisition of opportunities for company growth through recruitment and securing of human resources empathizing with the Hitz Value</li> <li>Human resource development respecting diversity and enhanced work efficiency and productivity improvement through the promotion of workstyle reform</li> </ul>	<ul style="list-style-type: none"> <li>Recruitment and securing of diverse human resources (diversity and inclusion promotion)</li> <li>Succession plan (management human resources development program)</li> <li>Appropriate assignment and strategic development (career formation support, development of global, DX, and management personnel)</li> <li>Retention of human resources (enhancement of employee engagement)</li> <li>Promotion of workstyle reform</li> <li>Sharing of founder's spirit</li> <li><a href="#">More</a> P. 51 "Human Resource Strategy"</li> </ul>
<ul style="list-style-type: none"> <li>Occupational health and safety</li> </ul>	S	<ul style="list-style-type: none"> <li>Impact on business if a workplace environment in which employees can work safely and healthily is not realized</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of health and safety management and healthcare management</li> <li><a href="#">More</a> P. 51, 53 "Promotion of Healthcare Management, Preventing Occupational Accidents"</li> </ul>
<ul style="list-style-type: none"> <li>Corporate governance</li> <li>Compliance</li> </ul>	G	<ul style="list-style-type: none"> <li>Impact on business if the corporate governance setup lacks effect</li> <li>Loss of trust and damage to corporate value through violation of laws and ordinances, such as antibrigbery and antimonopoly laws, and deviation from social norms</li> </ul>	<ul style="list-style-type: none"> <li>Analysis and evaluation of the effectiveness of the Board of Directors and promotion of improvements by rotating the PDCA cycle</li> <li>Response to corporate governance code</li> <li><a href="#">More</a> P. 57 "Corporate Governance"</li> <li>Regarding compliance, realization in Japan of a high level centering on public-sector demand and instillation overseas of a spirit of legal abidance among everyone concerned, including partners and suppliers</li> <li><a href="#">More</a> P. 67 "Compliance"</li> </ul>

Contributing toward sustainability through business [More](#) P. 43 “Contributing to Sustainability”

ESG issues	Risks (■) and opportunities (●)	Our Group's efforts ◆ Existing business ◆ Future business
<ul style="list-style-type: none"> <li>● Transition to clean energy</li> <li>● Reduction of CO<sub>2</sub> emissions</li> </ul>	<p><b>E·S</b></p> <ul style="list-style-type: none"> <li>● Need to curb CO<sub>2</sub> emissions from the use of fossil fuels</li> <li>● Expanded use of renewable energy</li> <li>● Shift in the West from waste incineration to waste recycling</li> </ul>	<p><b>Supply of clean energy</b></p> <ul style="list-style-type: none"> <li>◆ Further expansion of the energy business, including biomass</li> <li>◆ Expansion in energy conversion (biogas) of organic waste</li> <li>◆ Public-private partnership business in energy-from-waste (EfW) overseas</li> <li>◆ Promotion of offshore wind power, which is expected to become the mainstream renewable energy in Japan</li> <li>◆ CO<sub>2</sub> recovery and reuse</li> <li>◆ Conversion of surplus electricity generated from wind power, solar energy, etc. into hydrogen or methane</li> <li>◆ Studies on technologies for energy recovery from waste as alternatives to incineration</li> </ul>
<ul style="list-style-type: none"> <li>● Water shortage</li> </ul>	<p><b>E·S</b></p> <ul style="list-style-type: none"> <li>● Need for clean water</li> </ul>	<p><b>Supply of clean water</b></p> <ul style="list-style-type: none"> <li>◆ Active participation in public-private partnerships in response to requests from public organizations in Japan for public-private collaboration</li> <li>◆ Overseas business shift from selling facilities to selling water and response to emergency water demand through rental equipment</li> </ul>
<ul style="list-style-type: none"> <li>● Resource cycle</li> <li>● Environmental sanitary</li> </ul>	<p><b>E·S</b></p> <ul style="list-style-type: none"> <li>● Global upsurge needs for sanitary waste treatment and scaling back of landfilling and increased volume of waste generated in emerging countries</li> <li>● Increasing necessity and urgency for domestic disposal of waste plastic rather than its export</li> <li>● Need to curb air pollution caused by the increased amount of maritime transportation</li> <li>● Ensuring of safety in the transport and storage of spent nuclear fuel</li> </ul>	<p><b>Environmental preservation</b></p> <ul style="list-style-type: none"> <li>◆ Promotion of sanitary treatment, volume reduction, and energy conversion by EfW plant</li> <li>◆ Further expansion of the waste treatment business area and effective utilization as renewable energy (electricity, synthetic methane)</li> <li>◆ Promotion of recycling technology development to dispose of waste plastic domestically</li> <li>◆ Widespread promotion of our SCR (selective catalytic reduction) systems for marine engines as an environmental regulation countermeasure (compliant with the tier-III exhaust gas emission standard of the International Maritime Organization)</li> <li>◆ Proposals in Japan and overseas for metal casks and concrete casks, which have a proven track record in the dry storage of spent nuclear fuel</li> </ul>
<ul style="list-style-type: none"> <li>● Climate change</li> <li>● Natural disasters</li> <li>● Deterioration of infrastructure facilities</li> </ul>	<p><b>E·S</b></p> <ul style="list-style-type: none"> <li>● Spread of tsunamis, high-tide, and flooding countermeasures</li> <li>● Emergency water demand in disaster- or drought-hit regions</li> <li>● Expansion of measures to counter the aging of infrastructure</li> </ul>	<p><b>Building disaster-resilient communities</b></p> <ul style="list-style-type: none"> <li>◆ Promotion of flap-gate type seawalls against flood disaster in regions with a high disaster risk</li> <li>◆ Expanded sale of mobile water treatment equipment</li> <li>◆ In addition to life-prolonging work for bridges, expressways, floodgates, chimneys, and plants, expansion of business area to maintenance and remote monitoring</li> </ul>
<ul style="list-style-type: none"> <li>● Food problem</li> <li>● Low birthrate and aging in Japan</li> <li>● Urbanization of emerging countries</li> </ul>	<p><b>E·S</b></p> <ul style="list-style-type: none"> <li>● Need to break away from the normalization of poor catches and marine environmental issues</li> <li>● Supply of products and services (agriculture, food product industry, EfW plants) to enable society to adapt to the labor shortage caused by the low birthrate and aging</li> <li>● Approaching the limit in the new development of underground space for cities worldwide</li> <li>● Increasing need to ensure railway safety</li> </ul>	<p><b>Building prosperous communities</b></p> <ul style="list-style-type: none"> <li>◆ Promotion of land-based aquaculture system, which enables more safe, secure, and stable supplies compared to offshore cultivation</li> <li>◆ Contribution toward reducing the burden of farm work through the supply of automatic steering services for farm machinery utilizing satellite measurement data</li> <li>◆ In addition to the supply of recording equipment for food product production lines, deployment of further labor-saving services, such as food product identification utilizing AI</li> <li>◆ Promotion of labor saving in EfW and other plants through the improvement of autonomous operations and remote monitoring technologies</li> <li>◆ Active proposal of special shield tunneling machine suitable for excavatable underground space</li> <li>◆ In addition to devices to record driving conditions, for which we have a good track record, supply of in-vehicle crime-prevention services through the utilization of on-board cameras</li> </ul>

# Promoting Sustainability

## Aiming to achieve a sustainable, safe, and secure society

To promote strategies related to overall sustainability of the Hitachi Zosen Group, we launched the Sustainability Promotion Department, which is under the direct authority of the president, in October 2021. Under the supervision of the Board of Directors, the department is responsible for planning and formulating the Group’s policies related to sustainability and ESG and promoting climate change measures.

After organizing the issues that it should tackle, the Group is setting qualitative and quantitative targets. In addition to moving forward with reinforcing the business foundation that supports the sustainable increase in corporate value and businesses related to decarbonization, we will contribute to the realization of a sustainable, safe, and secure society through the Group’s business activities.

## Sustainability promotion project

The Group is moving forward with a project to formulate a Sustainable Vision, the vision for the Group in 2050. Members from the various business divisions and Group companies responsible for future management gather to debate the vision

and measures. Through this project, we will not only eliminate the Group’s environmental impact but also examine how the Group’s technology, products, and services contribute to a sustainable society with a view of 2050.

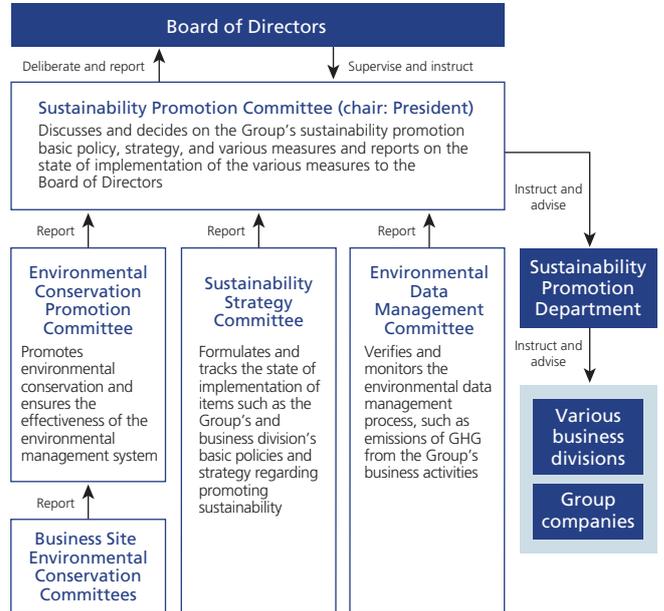
## Sustainability promotion structures

In March 2022, we set the Basic Rules for Sustainability Promotion and created promotion structures, including the Sustainability Promotion Committee and three subordinate committees. The Sustainability Promotion Committee coordinates the Environmental Conservation Promotion Committee, Sustainability Strategy Committee, and Environmental Data Management Committee, where promotion of sustainability throughout the Group is debated respectively. Details of discussions are reported to the Board of Directors through the Sustainability Promotion Committee.

### Sustainability Promotion Committee

Committee Chair	President
Members	General managers, business site heads, Group company presidents, etc.
Items discussed and reported	Various Group sustainability-related policies, strategies, important measures, etc.
Planned number of meetings	Plans for 5 meetings in FY2022
Subordinate committees	Environmental Conservation Promotion Committee, Sustainability Strategy Committee, Environmental Data Management Committee

### Sustainability promotion framework



## Initiatives by overseas subsidiaries

The Group is moving forward with preparations to create a sustainability promotion structure, including for overseas Group companies. We exchange opinions regarding environmental management and safety management with the subsidiary

Hitachi Zosen Inova, the core of the Group’s overseas businesses. Since fiscal 2021, we have shared environmental impact data and safety data, and are preparing to disclose that information.

# Environmental Management

## Setting policies for environmental activities and promoting environmental conservation activities

In addition to setting “Environmental conservation” in the Hitz Group Charter of Ethical Behavior, which summarizes the corporate ethics that each and every employee should adhere to, the Group formulated an action plan based on the Basic Environmental Conservation Policies and is implementing that action plan.

### Basic Environmental Conservation Policies

For the Group, actively working to tackle environmental problems is an essential condition for building relations of trust and coexistence with society, and recognizing our social responsibility as company, we work to promote environmental conservation.

### Behavior Guidelines

- ① Continuously improve the environmental management system and respond accurately to environmental risks.
- ② Actively promote the use of renewable energy, conservation of energy and resources, and recycling, and respond to the needs of a recycling-oriented society.
- ③ Actively work to undertake other environmental conservation activities when conducting business.

## Environmental conservation promotion-related medium-to long-term targets

Since formulating the Hitachi Zosen Environmental Protection Promotion Plan in 1993, Hitachi Zosen has worked to implement not only measures to protect the environment in regions where individual offices and works are located but also measures to protect the ozone layer, prevent global warming, recycle and reduce waste, and achieve other objectives.

The plan sets “environmental management,” “reduction in the environmental impact of business activities,” and “contributions to protection of the regional environment,” as themes for initiatives, and we are working to achieve medium- to long-term targets.

### Achievements under the Hitachi Zosen Environmental Protection Promotion Plan (Hitachi Zosen non-consolidated basis)

Measures		Results of activities through FY2021	Medium- to long-term targets
Environmental management	Build an environmental management system	<ul style="list-style-type: none"> <li>• Environmental audits continued to be conducted at each of works by the headquarter management department</li> <li>• ISO 14001 management systems were maintained*1</li> <li>• Audits conducted by business sites internal auditors</li> <li>• Audits conducted by a third party</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain and improve ISO 14001 management systems</li> <li>• Build management structures including onsite engineering work departments and Group companies, and expand and improve environmental audits</li> </ul>
	Promote CSR procurement	<ul style="list-style-type: none"> <li>• Ascertained the status of CSR procurement in supply chains and took measures to improve CSR</li> </ul>	<ul style="list-style-type: none"> <li>• Ascertain, assess, and reduce supply chain CO<sub>2</sub> emissions</li> </ul>
Reduce environmental impact of business activities	Reduce use of ozone-depleting substances	<ul style="list-style-type: none"> <li>• Ascertained the status of use of equipment that uses fluorocarbons</li> <li>• Systematically updated equipment to use green refrigerants</li> </ul>	<ul style="list-style-type: none"> <li>• Update all equipment to use green refrigerants</li> </ul>
	Reduce CO <sub>2</sub> emissions	Head offices, branch offices, works: 42% reduction compared to FY2013 Onsite engineering work: conduct sample data survey Supply chain: examine ways to ascertain emissions	Head offices, branch offices, works: Reduce by 50% compared to FY2013 by FY2030 Onsite engineering work: Work to set medium- to long-term targets is underway All company business sites: Effectively zero by FY2050
	Reduce industrial and municipal waste	13% reduction compared to FY2000	Reduce by 15% compared to FY2000 by FY2025
	Curb landfill waste (promote the 3Rs)	Head offices, branch offices, works landfill ratio of 2.7% and recycling rate of 93.2%	Zero emissions*2
Contribute to protection of the regional environment	Take action to protect the regional environment	<ul style="list-style-type: none"> <li>• Conducted regular cleanup activities in areas around business sites</li> <li>• Managed noise and vibration in areas around business sites</li> <li>• Established systems to prevent leaks of hazardous substances</li> <li>Maintained and managed facilities and conducted training on the prevention of leaks</li> </ul>	<ul style="list-style-type: none"> <li>• Establish communities with local society and work with governments and citizens to undertake environmental protection activities</li> </ul>

\*1 All works and main business divisions in Japan and 5 out of 7 Group companies in Japanese and overseas companies with a production base have obtained ISO 14001 certification.

\*2 Zero emissions: idea that the amount of waste disposed of in landfills is reduced to close to zero.

## Hitachi Zosen Group Environmental Conservation Promotion Plan

Reviewed the sustainability promotion system in fiscal 2021, we formulated the Group's FY2022 Environmental Conservation Promotion Plan. The following are the main initiatives.

### FY2022 Environmental Conservation Promotion Plan

Measures	Targets
Maintaining the environmental management system	Establish a Hitachi Zosen Group environmental management system centered on the Environmental Conservation Promotion Committee
Reducing CO <sub>2</sub> emissions	Reduce emissions 50% compared to FY2013 by FY2030 and achieve effectively zero emissions by FY2050
Limiting landfilling of waste from business activities	Achieve a landfill ratio of 3% or less and recycling rate of at least 90%
Implementing environmental pollutant measures, including for VOCs	Thoroughly manage environmental pollutants released during business activities (prevent pollution of the air, water, and soil), sounds, vibrations, and smells, and the quality and volume of water resources used for during business activities

## Response to TCFD

### Expression of support for TCFD recommendations

The Group expressed its support for recommendations by the Task Force on Climate-related Financial Disclosures (TCFD) in March 2021, and has analyzed its current conditions, identified and evaluated risks and opportunities related to climate change, and conducted a scenario analysis to ascertain the medium- to long-term impact of climate change on business. Furthermore,

we participate in the TCFD Consortium, a venue for discussing disclosure and the use of information (more than 550 Japanese companies are participating as of March 25, 2022). We will contribute by reducing CO<sub>2</sub> emissions from business activities in order to achieve the sustainable society that the Group is aiming for.

### Status of action and future response policies by Hitachi Zosen Group

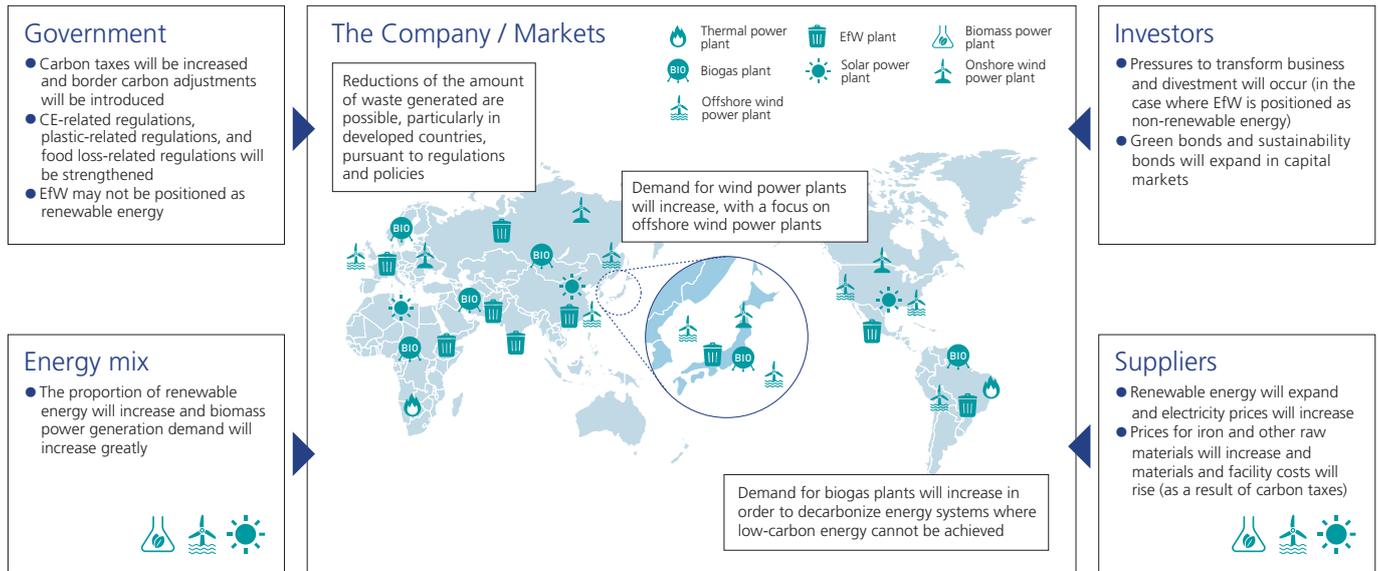
TCFD recommended disclosure items	Status of Hitachi Zosen initiatives and future response
Governance	<ul style="list-style-type: none"> <li>Establishing a Sustainability Promotion Committee that decides on and monitors such items as policies, strategy, and important measures related to the Group's promotion of sustainability, including response to climate change (established March 2022)</li> <li>Examining issues the Group should tackle premised on changes in the external environment based on the long-term view such as the results of the climate change scenario analysis and the society's transition to carbon neutrality</li> <li>Establishing an Environmental Data Management Committee to propose management methods and rules for environmental data, including greenhouse gas emissions, and track the state of environmental data management in order to respond to the climate change risk (established March 2022)</li> <li>Establishing an Environmental Conservation Promotion Committee to promote environmental conservation and ensure the effectiveness of the environment management system (established February 2022)</li> </ul>
Strategies	<ul style="list-style-type: none"> <li>Identify and evaluate short-term, medium-term, and long-term, climate change risks and opportunities from the present to 2050 and consider and reflect them in future business, strategic, and financial plans as appropriate</li> <li>Use 4°C, 2°C, and 1.5°C scenarios to conduct scenario analysis regarding three businesses that are susceptible to impacts from climate change in 2050 (energy-from-waste (EfW) business, biogas business, and wind power business)</li> <li>Examine the next medium-term management plan with a focus on sustainability</li> <li>Continue to make use of green finance to move forward with green projects, such as EfW business and wind power business</li> </ul>
Risk management	<ul style="list-style-type: none"> <li>Risk management functions work together to identify, evaluate, and manage climate change risks and opportunities that will have major impacts on business</li> <li>Going forward, we will create systems to monitor climate change risks and opportunities identified as a result of the scenario analysis including carbon taxes, regulatory trends, and the energy mix and implement specific countermeasures</li> </ul>
Indicators and targets	<ul style="list-style-type: none"> <li>Preparations to set CO<sub>2</sub> reduction targets, including long-term targets with an eye toward 2050</li> <li>Initiatives to expand disclosure, which currently is limited to CO<sub>2</sub> emissions for Hitachi Zosen Corporation only (scope 1 and 2), to consolidated subsidiaries and scope 3  <a href="#">More</a> <b>P. 47</b> "Environmental data"</li> <li>Setting the target of 50% reduction in CO<sub>2</sub> emissions for head offices, branch offices, and works by FY2030 (compared to FY2013)</li> <li>Setting the target of achieving effectively zero emissions in FY2050 through CO<sub>2</sub> control and capture technology</li> <li>Examination of measures to achieve zero emissions—that is, the idea that the amount of waste disposed of in landfills is reduced to close to zero—from a resource recycling perspective</li> </ul>

### Image of society in the future assuming a rise of about 2°C

In the 2°C scenario, policies are developed to spread the use of renewable energy and curb greenhouse gas emissions, and there are impacts from rising costs due to higher raw material prices and carbon taxes. On the other hand, as a result of the increase in the weight of renewable energy in the total energy mix, it is expected that demand for EfW plants as well as biogas plants and offshore wind power plants increases.

In particular, demand for waste treatment in developing countries is expected to grow. On the other hand, although it will be necessary to monitor regulations in each region as needed, we will move forward with R&D to generate technical innovations to achieve sustainable growth while keeping in mind the possibility that the amount of waste generated will fall in developed countries and that the growth of waste treatment demand will decline.

### Image of society in the future assuming a rise of about 2°C



### Summary of scenario analysis results

Item		Anticipated changes and worldview			Countermeasures	
		Overview (■ risks ● opportunities)		Scenario		
				4°C	2°C	1.5°C
Transition	Risks	Introduction of carbon taxes	■ Operation costs increase as a result of carbon pricing ■ If border carbon adjustments are introduced, costs associated with the import and export of materials and equipment may increase	High	High	<ul style="list-style-type: none"> <li>● Formulate and implement long-term strategies, targets, and measures to reduce CO<sub>2</sub> emissions (including Scope 3)</li> <li>● Prepare and implement carbon neutral products development roadmap</li> <li>● Introduce internal carbon pricing (ICP) and use it as an engine for companywide decarbonized management</li> </ul>
		Higher raw material costs	■ Procurement costs for energy-intensive materials and equipment rise (items that use iron, copper, cement, plastic, and other materials as raw materials)	Medium	Medium	<ul style="list-style-type: none"> <li>● Transfer increased costs for raw materials to sales prices</li> <li>● Shift to (materials and equipment that use) raw materials with low carbon impacts</li> <li>● Curtail use of (materials and equipment that use) raw materials with high carbon impacts</li> </ul>
	Risks & opportunities	Changes in policies, regulations, and energy mix	The ratio of renewable energy and demand for biomass power generation varies greatly depending on the scenario (EfW plants) ● Overseas markets expand substantially as a solution to the problems of increased waste generation and landfill in conjunction with economic growth in developing countries ■ Regulations relating to a circular economy, plastics, and food losses are strengthened and waste processing volumes decrease in order to curtail temperature increase ■ EfW is no longer treated as renewable energy in developed countries and demand for new equipment stagnates (Biogas and wind power plants) ● Markets expands greatly in low-carbon societies (particularly for offshore wind power)	High	Medium	<ul style="list-style-type: none"> <li>● Prepare strategic options for each scenario and adjust the business portfolio by taking into account changes in policies, regulations, and the energy mix</li> <li>● In addition to focusing on EPC, also focus on operation and maintenance (O&amp;M) so that we can respond to demand for extending plant lifespans</li> <li>● Build ecosystems by involving supply chain companies and prepare for opportunities for market expansion</li> <li>● Use open innovation and M&amp;A to advance technologies adapted to a circular economy</li> <li>● Leverage Company technologies and extensive delivery track record to contribute to solving the expected problem of increased waste generation in emerging countries</li> <li>● Conduct R&amp;D on methods of recovering energy from waste other than incineration</li> <li>● Promote green procurement by involving supply chain companies. Respond to the requirements of the Task Force on Nature-related Financial Disclosures (TNFD)</li> </ul>
Physical	Risks & opportunities	Intensification of natural disasters (flooding, lightning strikes, etc.)	■ Natural disasters, such as floods, typhoons, heavy rain, and lightning strikes, damage facilities, resulting in additional cost to restore facilities and lower revenues during outages in DBO projects ● Orders for repair work on damaged facilities increase	High		<ul style="list-style-type: none"> <li>● Adequately provide for annual countermeasure provisions based on past damage amounts</li> <li>● Implement business continuity plan measures including insurance to cover natural disaster damage</li> </ul>

# Environmental Data

## Material balance of business activities (FY2021)

The Hitachi Zosen Group is working to maintain and improve energy efficiency and reduce its environmental impact by ascertaining energy used throughout its business activities and the relationship between environmental impact data.

INPUT		OUTPUT	
<b>Energy</b>		<b>Greenhouse gases, etc.</b>	
• A heavy oil	2,077 KL	• CO <sub>2</sub>	24,900 t-CO <sub>2</sub>
• Gasoline	100 KL	• NOx	26.1 t
• Light oil	113 KL	• SOx	2.2 t
• Kerosine	51 KL	• PRTR substances	52.3 t
• Town gas	445,000 m <sup>3</sup>	• Wastewater	560,000 t-CO <sub>2</sub>
• Liquefied natural gas	78,715 t	• Transport CO <sub>2</sub>	2,600 t-CO <sub>2</sub>
• Purchased electric power	45,740,000 kWh		
• Solar power generation	2,205,000 kWh		
<b>Service water</b>		<b>Electric power selling</b>	
• Industrial water	920,000 t	• Net system energy demand	540,891,000 kWh
• Clean water	120,000 t	• CO <sub>2</sub>	206,000 t-CO <sub>2</sub>
<b>Materials</b>		<b>Industrial waste</b>	
• Steel materials	19,962 t	• Valuables	5,306 t
• Paint	207 t	• Waste	4,125 t
• Solvent	323 t	Recycled	3,479 t
• Other	533 t	Landfilled	248 t

Note: The above is the data from the head offices, branch offices, works, and the Group companies operating on their premises. Since fiscal 2022, we have been working to compile data on energy usage and CO<sub>2</sub> emissions in construction work and operation and maintenance services.

## Landfilling of waste

In fiscal 2020, the recycling rate decreased due to a temporary increase in waste volume caused by the construction of some new facilities and relocation, etc. In fiscal 2021, we were able to increase the recycling rate and reduce the amount of landfill waste by thoroughly implementing separated collection at each plant and selecting new disposal companies. We will strive to achieve zero emissions.\*

\* Zero emissions: the idea that the amount of waste disposed of in landfills is reduced to close to zero.

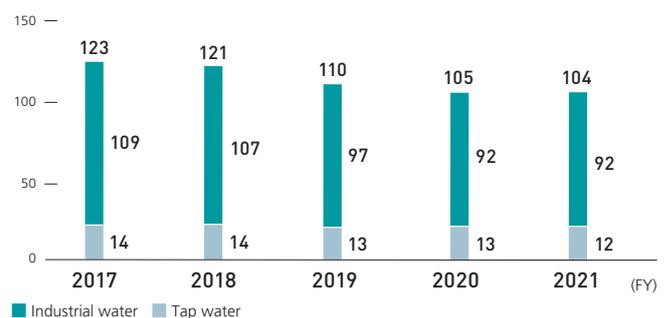
Changes in landfill amount (tons) and landfill ratio (%)



## Water usage

By revising operations that use water and updating facilities, such as water pipes, at our various works and business sites, we continue to reduce water use. We will strive to protect water resources by continuing to improve water use in all businesses.

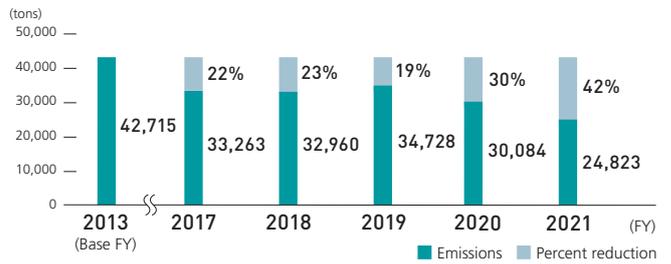
Changes in water usage (10,000 tons)



## Carbon dioxide (CO<sub>2</sub>) emissions

Excluding the temporary increase due to fluctuations in production, we have been able to maintain the downtrend in CO<sub>2</sub> emissions since fiscal 2014, and emissions fell to 24,823 tons in fiscal 2021. Therefore, we have reduced emissions 42% compared to fiscal 2013 and were able to make substantial progress toward the fiscal 2030 target of cutting emissions 50%. The reduction was primarily because we changed the energy used at our various business sites and updated facilities to energy-efficient equipment.

Changes in carbon dioxide emissions (Scope 1, Scope 2)



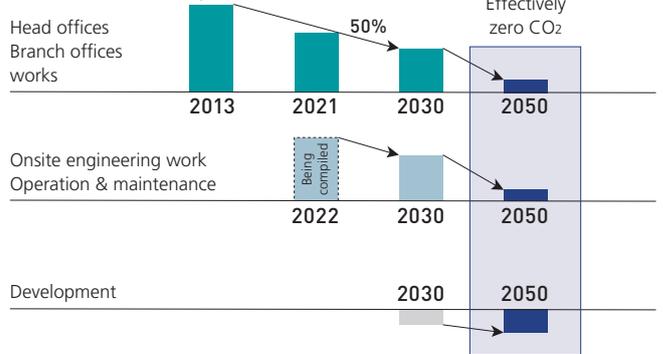
Note: Calculated using FY2022 CO<sub>2</sub> emission factors released by Ministry of the Environment.

## Initiatives aimed at “carbon neutrality by 2050”

In October 2021, we established the Sustainability Promotion Department, which is under the direct authority of the president, and in April 2022, we established the Carbon Neutral Solution Business Headquarters by reorganizing the Machinery & Infrastructure Business Headquarters.

Centered on the Sustainability Promotion Department, the whole Group, including overseas businesses, has united to move forward with initiatives to achieve carbon neutrality by 2050. We are aiming to achieve zero carbon emissions by 2050 by combining technology to curb and capture CO<sub>2</sub> through improvements to and development of production technology for decarbonization.

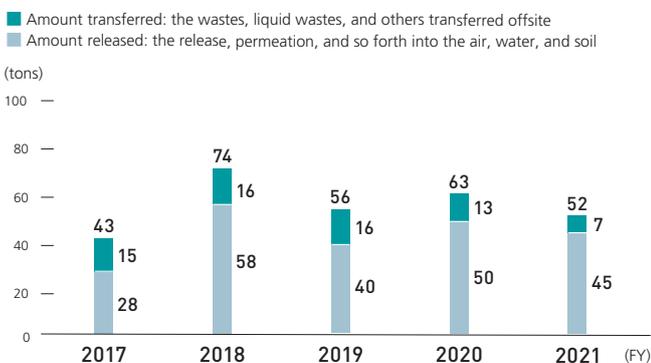
Future targets for the reduction of carbon dioxide emissions (figure)



## Management of chemical substances PRTR (Pollutant Release and Transfer Register) system

We ascertain the release and transfer of chemical substances in line with the PRTR system, and those results are reflected in improvements to working methods and introduction of facilities and equipment.

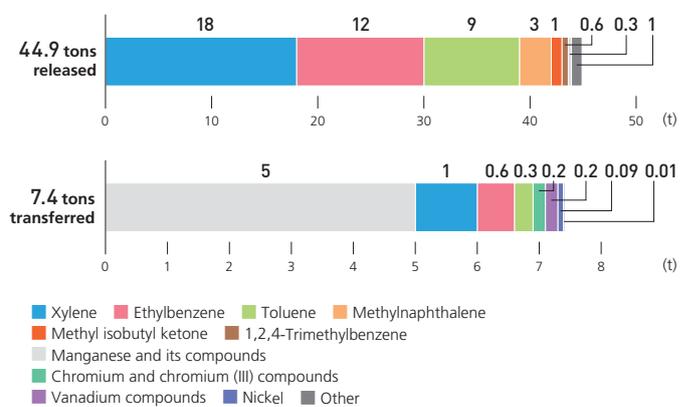
Amounts released and transferred (head offices, branch offices, works)



Note: PRTR system: an arrangement in which business operators ascertain and report the amounts of chemicals potentially hazardous to human health and ecosystems that are released into the environment (air, water, soil) as well as the amounts of those chemicals that are transferred offsite to government authorities whereby government authorities then compile and make public the emissions and transfer amounts based on the estimates used PRTR “Pollutant Release and Transfer Register”

Because we release and transfer chemical substances during the painting and welding processes, we are moving forward with systematic improvements to the business process.

Breakdown of the amounts of chemical substances released and transferred in FY2021 (total 52.3 t)



# Technology That Contributes to Environment

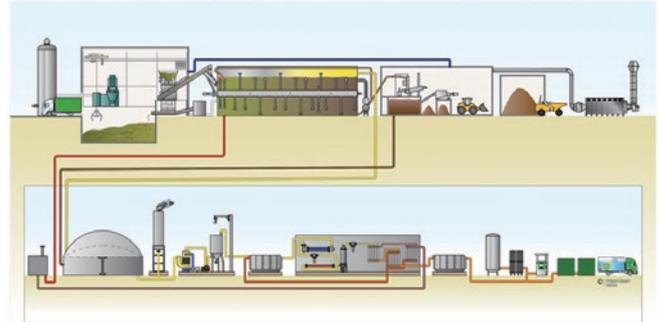
## Build-Own-Operate methane fermentation facilities—Supplying biofuel to local bus company (Sweden)

Having acquired the Kompogas® EPC business in 2014, Hitachi Zosen Inova (HZI) received its 100th order for Kompogas® facilities in July 2021, and thus boasts some of the strongest performance in Europe.

Kompogas® is a dry methane fermentation technology. Organic waste, such as food waste and plant waste, including branches and leaves, fed into the digester is digested by 55°C under anaerobic conditions and then turned into biogas with the help of microorganisms. Biogas can be used to generate electricity, and if upgraded to highly pure biomethane, it can be used for vehicle fuel and town gas.

Inova constructed a methane fermentation facility in the city of Jönköping, Sweden and now operates it as its own plant. Biomethane produced from organic waste collected from the local area is compressed into bio compressed natural gas (bio-CNG) and used as fuel for local city buses and waste trucks.

Furthermore, the residue created during the waste fermentation process can be used as compost for local farms and gardening companies.



Biogas plant (figure)



Jönköping plant

## Demonstration project of methanation by recycling CO<sub>2</sub> collected from waste treatment facility (Odawara City, Kanagawa Prefecture)

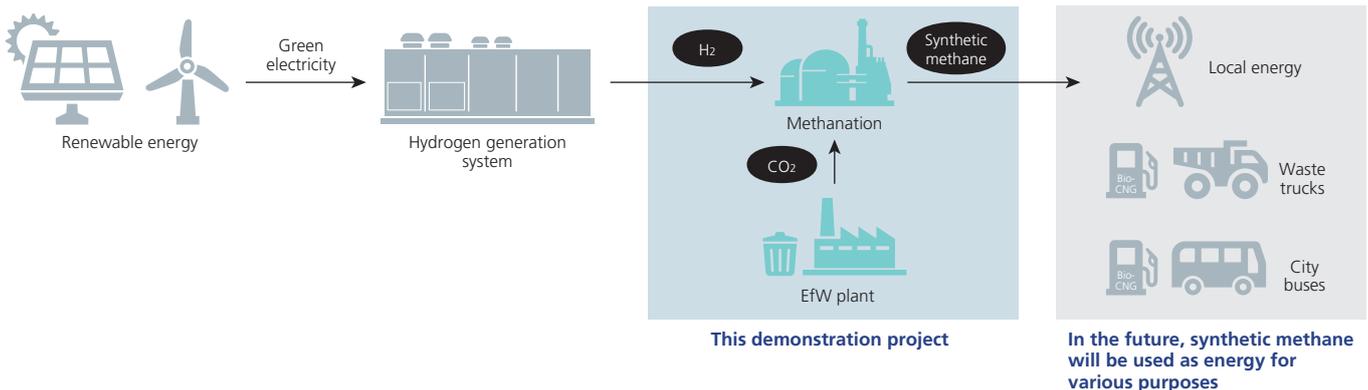
Methanation technology synthesizes methane from hydrogen and carbon dioxide, and this field is expected to see growth as society moves toward carbon neutrality.

Through this demonstration project to establish carbon recycling model by recycling CO<sub>2</sub> collected from waste treatment facility, which was commissioned by the Ministry of the Environment, we constructed the largest methanation facilities in Japan within the Odawara City Environmental Business Center and launched the demonstration project. Verification is currently moving forward with an eye toward commercialization of

methanation in Japan and overseas, and this would be the first time that CO<sub>2</sub> produced from waste incineration is used.

Since the 1990s, we have been conducting R&D on methanation technology and have experience delivering numerous facilities for demonstration. As a pioneer in the field of energy-from-waste (EfW), we aim to not only hygienically treat waste and reduce landfill volume but also recover energy from waste treatment and recycle CO<sub>2</sub> by creating a new carbon-cycle model for EfW plants.

### Future CO<sub>2</sub> Circulation (figure)



# Utilizing Green Finance

## Hitachi Zosen Green Bonds

On September 21, 2018, Hitachi Zosen became the first Japanese manufacturer to issue green bonds. The proceeds from the Hitachi Zosen Green Bonds have been used for the construction of EfW plants and procurement of construction and refurbishment materials, etc.

Furthermore, on October 28, 2021, the Company issued the second round of Hitachi Zosen Green Bonds, funds from which will be used for the wind power business.

### Hitachi Zosen Green Bonds issued in 2018

#### ① Overview of projects and status

##### 1. Kyoto City Nambu Clean Center

Client	Kyoto City
Project	Rebuilding and construction of Kyoto City Nambu Clean Center No. 2 Plant (provisional name)
Scope of business	Design and construction of waste treatment facility, administration office, and environmental learning facility (including dismantling of existing facility and construction of exterior and other ancillary facilities)
Description	Treatment capacity 500 t/day (250 t/day x 2 stoker-type incinerators), power output 14,000 kW Sorting and resource reuse facility: 180 t/6 hrs Biogas generation facility: 60 t/day (30 t/day x 2 lines)
Completion	September 30, 2019
Current status	Completed at the end of September 2019, currently in operation

##### 2. New EfW Plant for Kikuchi Environmental Preservation Association

Client	Kikuchi Environmental Preservation Association
Project	Construction and operation of new EfW plant
Contents	Design, construction, and operation for 20 years after completion of EfW plant
Description	Treatment capacity: 170 t/day (85 t/day x 2 lines) Power output: 2,800 kW
Completion	March 31, 2021
Current status	Completed on March 31, 2021, currently in operation

#### ② Impact reporting

The report on the reconstruction work at the Kyoto City Nambu Clean Center No. 2 Plant (provisional name) and construction and operation of new EfW plant (waste treatment facilities) can be found below.

Name of facilities	Power generation output performance (MWh/six months) *1	Annual GHG emissions saved (CO <sub>2</sub> reduction volume) (t-CO <sub>2</sub> /year) *2
Incineration facilities	46,205	16,218
Biogas facilities	1,951	685
Kyoto City Nambu Clean Center	48,156	16,903
New EfW Plant for Kikuchi Environmental Preservation Association	10,499	5,039
Total	58,655	21,942

\*1 Generated power (MWh): Operational result from April 2021 through September 2021 (six-month period)

\*2 CO<sub>2</sub> reduction (t-CO<sub>2</sub>): Generated power (MWh) X CO<sub>2</sub> emission coefficient (t-CO<sub>2</sub>/MWh)

We use emission coefficients to calculate reduction effects for CO<sub>2</sub> emissions. This emission coefficient reflects the adjustment of environmental values, etc. in the CO<sub>2</sub> emission coefficients of the Ministry of the Environment. Adjustments are carried out to reflect the introduction of the feed-in tariff system for renewable energy based on the Law Concerning the Promotion of the Measures to Cope with Global Warming.

Kyoto City Nambu Clean Center Adjusted emission coefficient of The Kansai Electric Power Co.,Inc. (0.351t-CO<sub>2</sub>/MWh, 2020)

New EfW plant for Kikuchi Environmental Preservation Association Adjusted emission coefficient of Kyushu Electric Power Co.,Inc. (0.480t-CO<sub>2</sub>/MWh, 2020)

### Hitachi Zosen Green Bonds issued in 2021

#### ① Overview of projects and status

Project	Mutsu Ogawara Onshore Wind Farm Project
Scope of business	Design and construction of onshore wind power facilities and operation of the facilities after construction
Description	Number of turbines: 4.3 MW class wind power generator x 15 Maximum output: 57,000 kW
Completion	In or after 2024
Current status	Waiting for construction order as Mutsu Ogawara Wind Power LLC. examines various issues.

#### ② Fund Allocation (as of March 31, 2022)

(Millions of yen)

Amount raised from green bonds	10,000
Investment in special purpose company	-660
Power generation facility construction costs	0
Unallocated portion	9,340

# Human Resource Strategy

## Creating a strong organization through the continued growth of individuals and the Company

Our Group respects the diversity of employees, increases corporate value by improving the capabilities of and engagement with employees by investing in human resources, and links this to sustainable growth.

Having defined the ideal form of the General Administration Headquarters related to human resources as “playing a driving role for the Company’s growth by fully displaying the abilities of officers and employees in the Hitachi Zosen Group and fulfilling the function of linking the Company and people, and people and people, to achieve the growth of both the Company and individual employees ” in Hitz 2030 Vision, our long-term vision, we are moving forward with priority measures in the medium-term management plan Forward 22.

Here I will focus my explanation on fostering management human resources and promoting strategic human resource assignments, promoting diversity and inclusion, increasing engagement (internal branding and staff awareness survey, and organizational culture reforms), and preventing occupational accidents. As for other important issues, we will move forward with initiatives related to workstyle reforms and healthcare management, particularly for human resource development for the various levels and fields.

We will continue to pass on the “spirit of challenge” of the founder Edward Hazlett Hunter and contribute to an affluent future for the world and people by reinforcing human capital.



**Toshifumi Makihata**

Executive Officer  
General Manager of  
the General  
Administration Headquarters

### Human resource strategy in the medium-term management plan Forward 22



### Career support

The Company is creating a human resource development system based on a career plan, a medium-term development plan, to achieve the ideal employee. We will implement reforms to shift from a system focused on young to middle-aged employees to one that is the same for all age groups and leads to greater motivation. In addition, for technical personnel, we are moving forward with passing on skills through education tailored to traits such as years of experience.

#### Employees who have completed career plan training

(FY2019–FY2021 cumulative, Hitachi Zosen non-consolidated)

For 3rd year and 10th year employees: 697

For managerial personnel: 95 For senior employees (in their 50s): 121

### Strengthening of management skills and fostering of midlevel managers

In addition to strengthening the skills of managerial personnel, such as those related to managing labor, mental health, and harassment prevention, we are moving forward with measures to lessen the burden on managerial personnel so that they can focus on management, such as career formation of subordinates.

(a total of 521 employees have taken labor management training for managerial personnel since fiscal 2019)

### Training global human resources (in cooperation with Global Headquarters)

To develop global human resources who can contribute to the expansion of overseas business, we are moving forward with an examination of measures so employees are conscious of career formation in the field of overseas operations, which has involved rebuilding the overseas training assignment program and other training programs and posting role models.

### Training DX human resources (in cooperation with Information and Communications Technology Promotion Headquarters)

In fiscal 2021, we launched DX human resource training. We plan to train 500 such employees by fiscal 2025. In the first year, we are offering DX leader training to 56 strategy planners in various department.

### Promoting workstyle reforms

In addition to each department setting a workstyle reform action plan and implementing various measures to improve operations and increase efficiency, we issue a collection of best practices, which summarizes good cases, and present best practices awards. One success of these initiatives is an increase in the number of days of annual paid leave used.

#### Average annual paid leave used (Hitachi Zosen non-consolidated)

FY2019: 15.2 days

FY2020: 16.0 days

FY2021: 16.2 days

### Promoting healthcare management

We promote and reinforce healthcare management so that employees can be physically and mentally healthy and make the most of the capabilities they possess, and for the second consecutive year, we were designated a Health & Productivity Management Outstanding Organization a program run by the Ministry of Economy, Trade and Industry. Furthermore, we will work to conduct surveys and implement measures that employees can easily participate in, such as health-related events.

### Fostering management human resources and promoting strategic human resource assignments

While our Company has offered training to managerial personnel, including level-specific training and training assignments to outside entities, we have been strengthening systematic management resource training by launching a new training program in fiscal 2022.

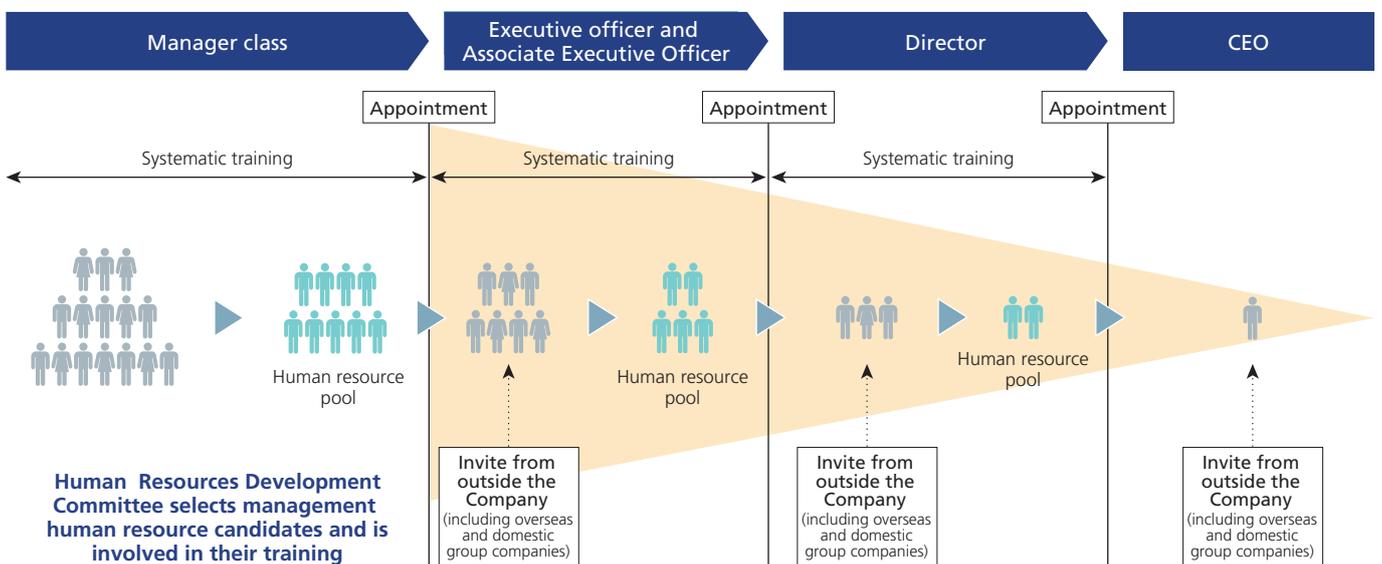
With this program, we systematically move through the cycle of discovering, training, and evaluating human resources who will become future director candidates, including CEO candidates. In fiscal 2022, we will select candidates from manager class employees through assessments and other activities. After that, they will undergo 2–3 years of training based on an individual training plan and then become part of the pool of candidates for associate executive officer and executive officer,

positions immediately below director, and then be promoted.

Furthermore, we will establish a Human Resources Development Committee as a body responsible for training management human resources. In addition to selecting and training management human resource candidates and managing the human resource pool, the committee will be involved in other development activities, such as undertaking appropriate training, including for director candidates until the human resource pool based on this program is secured.

While steadily moving forward with these initiatives, we will promote other activities, including building a talent management plan and operating the succession plan to promote strategic human resource assignments.

#### Training and appointment through CEO



### Promoting diversity and inclusion

To strengthen the Group’s comprehensive strengths and create new value, we are moving forward with creating a work environment in which Group employees respect diverse values and take the lead in activities.

In 2015, the Company launched the Diversity Promotion Office and implemented such measures as creating various types of programs, including childcare leave and shorter working hours, so that female employees can work with peace of mind for many years and holding seminars and informal meetings to create an environment in which non-Japanese employees can work without concerns or worries. These initiatives have been highly praised, and we were selected as a Diversity Management Selection 100 by Ministry of Economy, Trade and Industry for fiscal 2018.

Recently, we have set all male employees taking childcare

leave and related leave as a KPI. We are working to create a work environment in which it is easy for male employees to participate in childcare. This includes actively communicating our 100% Childcare Leave by Men Declaration, and creating a system in which employees can use 3 days of paid childcare leave and up to 60 days of accumulated annual paid leave when taking childcare leave.

**More P. 70** "Evaluations by Outside Organizations"

It is important to eliminate unconscious biases regarding nationality, sex, age, and other traits in order to realize diversity and inclusion (D&I). We are promoting D&I to create an organizational culture that is tolerant of diversity and workplace that offers strong psychological safety and where no one is excluded, people’s opinions are listened to, and diverse people can actively participate.

#### Targets for promoting active participation of women

- Target ❶ 50% of new graduate hires for administrative jobs and 10% for technical jobs are women
- Target ❷ At least 4% of management positions are held by women by FY2025
- Target ❸ Within departments that offer remote work from home, at least 50% of members use the system at least twice a month

## Improving engagement

### Internal branding

Many of the reforms that our Group has implemented until now have been based on the spirit of challenge passed down since the founding of the Company. In addition to clarifying how the Group should be, we are working to undertake internal branding that awakens the spirit of challenge so that executives and employees can possess pride and continue to take on the challenge of new reforms.

Particularly in fiscal 2021, the 140th anniversary of the

founding of the Company, we undertook initiatives to communicate and reconfirm the Group's value and reason for being by looking back at the successes and spirit of the founder and growth of the business until now.

[More](#) P. 26 "140th Anniversary TOPICS"

We will foster empathy among Group executives and employees and strengthen our initiatives so that daily operations embody our corporate philosophy and reason for our Group's existence.

### Strengthening internal communication

Diversification of human resources in the Group is progressing as the number of domestic and overseas Group companies and employees grows due to the business expansion.

We are working to foster empathy and spread Hitz Value (corporate philosophy, management stance, and standards of business behavior) and management policies by reinforcing communication through an in-house English newsletter for overseas Group companies and non-Japanese employees and video content that can be viewed anywhere. In addition, we are introducing a wide range of initiatives to strengthen internal

communication, such as creating a digital archive of video-based proposed improvements and past recorded videos to awaken the spirit of challenge among young employees.



In-house English newsletter

### Staff awareness survey and organizational culture reforms

Since fiscal 2009, the Company has conducted a staff awareness survey every other year to measure employee engagement and satisfaction from various perspectives and link that to creating a workplace that offers job satisfaction.

Compared to the results for the previous survey (FY2019), there was a dramatic improvement in items related to employee's ease of work, including the percentage of employees who are satisfied with their work-life balance rising to 72.9% from 64.3%, which is because of initiatives to create various systems, including work from home.

On the other hand, more efforts are needed to improve the organizational culture, such as inclusion, unconscious bias, and psychological safety, which are linked to employee job satisfaction. In particular, respect for diverse values is indispensable for the spirit of challenge, which we stress, and

the percentage of employees who feel our Company has an atmosphere in which different opinions and behavior are tolerated rose slightly to 52.2% from 48.0%.

Taking into consideration these results, we will strengthen the sharing of information and company-wide activities that are not bound by organization barriers and foster an organizational climate that encourages employees to realize their full potential. In addition, we will further promote company-wide educational activities and aim to reform employees' awareness and change their behavior through activities such as training focused on priority issues that the survey results bring to light.

We will continue to conduct the staff awareness survey and link that to the measurement of the impact that previous initiatives have had and the introduction of new actions for further improvements.

### Preventing occupational accidents

The Company is reducing the risk of dangers by promoting such initiatives as safety management activities that incorporate information and communication technology (ICT) and AI technology, particularly for safety management that focuses on the actual place, source, and facts of a problem, and the provision of information to prevent accidents.

In addition to behavior surveys and hazard experience facilities so that each employee is aware of safe behavior, and safety education to increase sensitivity to hazards using a Virtual Reality (VR) education system, we have established a status reporting system to quickly ascertain and promptly respond to damage

because of the large number of natural disasters in recent years.

We will continue to work to create safe, pleasant workplaces that employees can work in with peace of mind through these safety management activities.



Safety education using VR system

# Procurement

## Contributing to the creation of a sustainable society throughout the supply chain

The mission of the Procurement Headquarters is to have the best quality items delivered at the best time for the best price, but in recent years, it has also grown extremely important to also promote sustainability throughout the supply chain.

As a solution partner for a sustainable, safe, and secure society, the Hitachi Zosen Group has stipulated the Hitz Value, Hitz SDGs Promotion Policy, and Environmental Basic Policy, and develops business to supply products and services that are friendly to the global and local environment. Furthermore, we conduct activities that always take into consideration environment, society, and governance (ESG) at all EPC (engineering, procurement, and construction) stages.

At the engineering stage, we reduce the amount of materials used and employ highly efficient, energy-saving equipment. At the construction stage, we make efforts to efficiently utilize construction materials and reduce waste. Furthermore, at the procurement stage, besides technical aspects, we have set a Basic Procurement Principles to promote fair and impartial transactions, compliance with laws, and promote environmental protection. By cooperating with suppliers, we aim to enhance sustainability throughout the entire supply chain.



**Koichi Kaibuchi**

Executive Officer  
General Manager of  
Procurement Headquarters

## Promoting sustainable procurement—initiatives with business partners

Since fiscal 2018, we have surveyed the state of business partners' awareness of and initiatives related to several themes, particularly environmental protection. We have used the Self-Assessment Questionnaire (SAQ) created by the United Nations Global Compact since fiscal 2019 and have broadened the themes to include not only environmental protection but also human rights, labor, fair business activities, and other themes.

We evaluate the results of the questionnaire by scoring the answers, provide feedback, and request improvements, which are used to further promote business partners' sustainability activities. As a result, the average score for fiscal 2021 rose about 10%. In fiscal 2021, we also worked to improve the effectiveness of the actual survey by broadening the scope to include main overseas business partners.

In this way, we undertake close communication with business partners through the cycle of survey, evaluation, feedback provision, improvement request, and reevaluation. This raises the consciousness of not only business partners but also the Company regarding accelerating the promotion of sustainable procurement, and we would like to actively undertake initiatives throughout the supply chain.

Furthermore, we expressed our support for recommendations by the Task Force on Climate-related Financial Disclosure (TCFD) in March 2021 and are moving forward with our response to climate change. We will work to improve the sustainability of the Company and society through procurement operations by undertaking initiatives throughout the supply chain.

### Basic Procurement Principles

#### Fair and impartial transactions

We provide our business partners with equitable market entry opportunities regardless of nationality, company size, or transaction record. For individual transactions, comprehensive consideration is given to economic rationality such as quality, technology, price, delivery lead time, certainty, and safety, as well as the stability of the business base. We select business partners fairly.

#### Mutual growth based on trust relationship

We aim to establish relationships of trust with our business partners and promote mutual growth through fair transactions.

#### Promotion of development procurement

With our business partners, we are promoting development procurement in order to reduce costs spirally.

#### Compliance with laws

We comply with social norms and relevant laws and regulations based on our compliance management philosophy.

#### Protection of confidential information

Confidential business and technical information obtained through purchase transactions will be strictly managed and will not be disclosed to external parties without the consent of the business partner.

#### Promotion of environmental protection

We will fulfill our corporate responsibility to protect the environment via making purchases in cooperation with our business partners.

# Quality Assurance

## Approach toward and framework for quality assurance

“Always pursuing quality” is included in Hitz Value, which summarizes the Hitachi Zosen Group’s corporate philosophy, management stance, and standards of business behavior, as one element of our management stance. “Always pursuing quality” is truly “technology and sincerity.” By continuing to keep the promises that we have made to customers and delivering high-quality products, we have won customers’ deep trust and a strong presence in the market, that are assets for the Company.

As awareness of the environment grows throughout the world and carbon neutrality initiatives move forward, our Group is accelerating its efforts to extend the environmental business, further our global expansion, and promote our carbon neutral solution business. We will develop more new technologies and products and introduce more existing products into new markets in the future. In these business environments, it is even more important to limit troubles.

Having positioned reducing defect costs as a priority issue, the Quality Assurance Department plays a central role in not only setting annual targets and promoting initiatives but also reviewing system design and conducting educational activities.

In addition, we are working to raise awareness among all officers and employees by sharing awareness of quality and holding discussions on initiatives at regular meetings of top management.



**Toshiyuki Shiraki**

Managing Director  
Responsible for Quality  
Assurance Department

### Integrated management of past cases, and data use in the order decision-making process

To prevent troubles, it is necessary to create related mechanisms. It is possible to prevent many troubles by referring to past troubles, but at Hitachi Zosen, business departments and business units used to independently manage this information, and also relied on the experience of seasoned engineers and technicians to prevent troubles from time to time.

At the current time, we are working to (1) improve the accessibility to trouble cases and (2) make use of digital technology in decision-making processes, such as deciding whether to accept an order, by digitalizing this information. Specifically, we are moving forward with standardizing data and building a system that transforms a trouble management system (trouble information database) that some business units are already operating into a company-wide platform. We will launch full operation of the system in fiscal 2023.

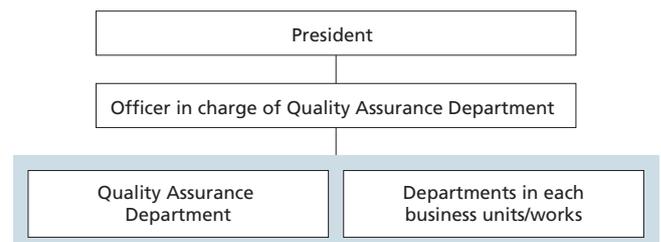
Building this system will make it possible even for young employees with limited experience to easily access information and also to timely obtain and analyze information on past troubles with similar products.

For the various process before and after receiving orders, we will build business processes that incorporate elements such as reviews of information obtained from this system and risk analysis and examination of countermeasures based on those revenues. This will lead to the prevention of troubles.

### Further reinforcing organization strengths and business processes

On the other hand, sometimes it is difficult to make improvements to and update existing products by simply making use of past data. In such cases, it is necessary to have technicians and engineers who know the products well and can implement countermeasures by predicting problems that could occur. Therefore, we are moving forward with redeveloping a company-wide technician and engineer map for each product. Using this map will not only make it easy to pass on skills and techniques but also undertake discussions across the organization. This is expected to make it possible to more thoroughly “always pursue quality” and raise the level of the whole organization. Everyone, from top management to employees working on the frontlines, must possess a stronger desire to eliminate defects and greater awareness of building quality into products. We will not simply maintain the current state but continually work to more thoroughly “always pursue quality.”

#### Quality assurance structures



## Quality policy

Hitachi Zosen's corporate philosophy is "We create value useful to society with technology and sincerity to contribute to a prosperous future." We have also set "Enhancing employee satisfaction," "Enhancing customer satisfaction," "Enhancing shareholder satisfaction," "Through safety-first ethos," "Thorough implementation of compliance," and "Pursuit of quality" as our management stance.

As part of management activities to realize this corporate philosophy and implement the management stance, we constructed an ISO 9001 management system and are working to undertake business activities based on the following quality policy.

- ① Try to improve quality of and customer satisfaction with our company products, service, and business activity
- ② Observe statutory and regulatory requirements, agreements and the other requirements that the organization has agreed to, and also our company's self-imposed controls.
- ③ Set the year's quality objective (action plan), and put it into action
- ④ Review regularly, make continuing improvements and maintain operations of Quality Management Systems effectively and appropriately.

## Main quality assurance activity initiatives

### Building quality management system and training human resources

- (1) All business divisions and main subsidiaries have acquired and maintain ISO 9001 Quality Management System certification. In addition, they maintain the effectiveness and appropriateness of system operation by conducting regular reviews and making improvements.
- (2) We hold ISO 9001 internal auditor workshops taught by instructors from independent certification organizations, which one hundred employees complete each year.

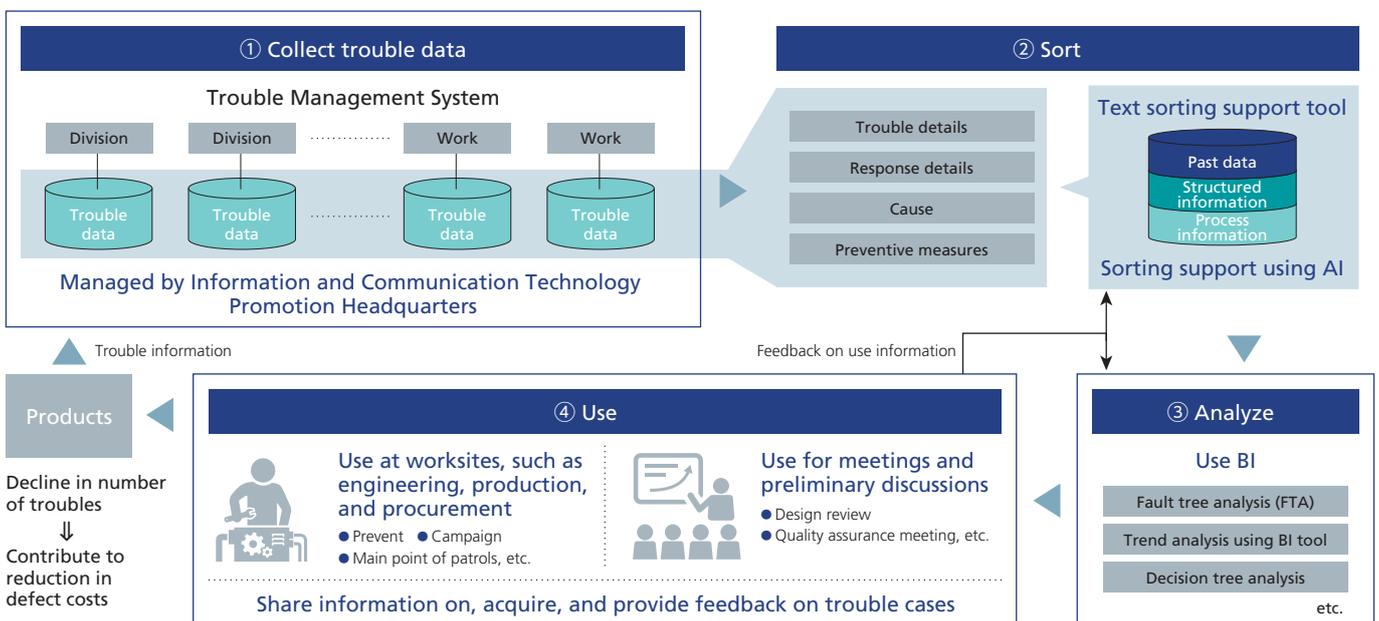
### Strengthening technical foundation and passing on technology from veterans to young employees

- (1) Through collaboration between R&D divisions and business divisions, we are expanding activities related to the Project to Strengthen Our Technological Foundations and Eradicate Troubles, which incorporates the idea of "hardship now, pleasure later."
- (2) We have established the Technical Skill Succession Committee (design, onsite engineering work, etc.) to promote the passing on of know-how possessed by seasoned employees to the next generation, as well as the standardization of work processes.
- (3) We share cases to prevent troubles throughout the Company by holding meetings to report trouble prevention cases.

### Using trouble data and introducing various tools

- (1) By managing the trouble information using a common company-wide platform trouble information database and efficiently referring to and timely sharing information on past troubles, we are working to prevent similar problems.
- (2) We will further improve the quality of the information in the databases by analyzing the information using BI technology, adding tools depending on the distinguishing features of the business department or business unit, and expanding the system.

### Use of trouble data



# Corporate Governance

## Basic approach toward corporate governance

Recognizing that sincerely responding to the expectations of stakeholders, particularly shareholders, customers, business partners, regional communities, and employees, and ensuring the soundness, transparency, and efficiency of management

based on the corporate philosophy is indispensable for sustainable growth and the medium- to long-term increase in corporate value, we are working to enhance corporate governance as one of the important management issues.

## Board of Directors

The Board of Directors consist of nine directors, including three independent outside directors. We believe that this is an optimal configuration that provides the diversity necessary for the Board to fulfill its roles and responsibilities and is appropriately sized in consideration of the Company’s business operations and other factors. In addition to making decisions on matters prescribed by laws, basic management policies and strategies, and other important matters, the Board supervises business execution. A system of executive officers is introduced, and directors can delegate some of their business execution functions to executive officers to enhance the supervisory functions of the Board and ensure the rapid execution of business.

Furthermore, by establishing a Management Strategy Committee, we have created a framework to ensure that discussion and decision-making on basic policies and important measures concerning business management and business operations are conducted in a timely and accurate manner. Matters of particular importance are discussed by the Management Strategy Committee and then thoroughly discussed by the Board of Directors before a decision on whether or not to go ahead is reached.

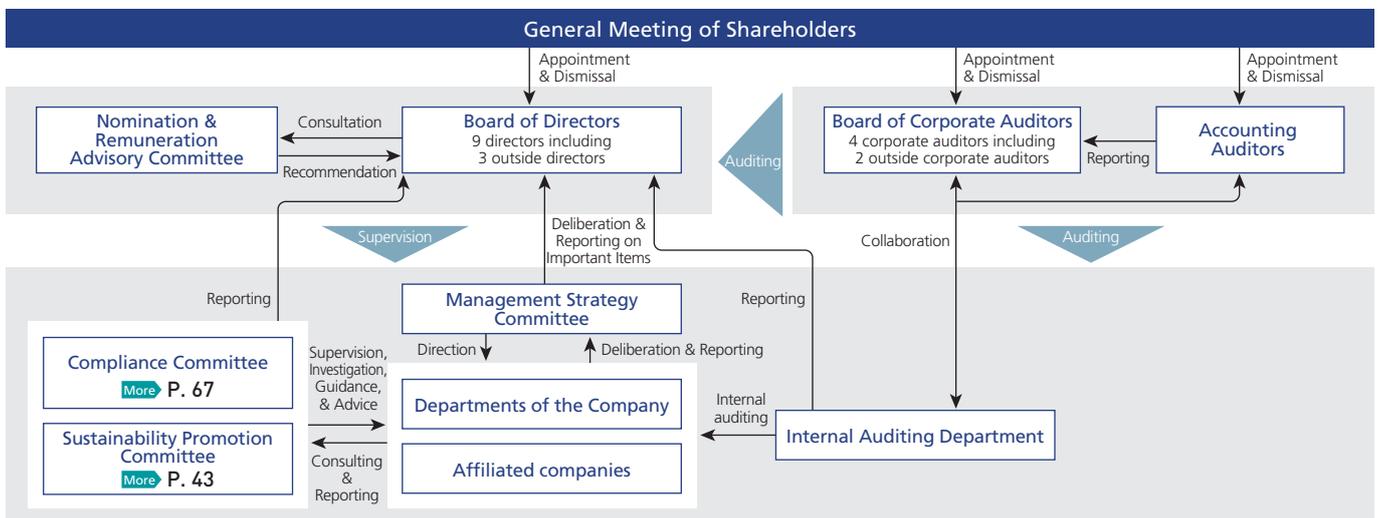
[More](#) P. 63 “Message from Outside Directors”

## Board of Corporate Auditors

The Company employs an audit and supervisory system. The corporate auditors also hold meetings of the Board of Corporate Auditors to gather input on audits. In addition, corporate auditors monitor and verify the internal control system and its operating status and, where necessary, give advice, make recommendations to directors and executive officers, and take other required measures.

Furthermore, the four corporate auditors including two outside corporate auditors attend meetings of the Board of Directors, and the two full-time corporate auditors also attend important internal meetings, including Management Strategy Committee meetings, to give their input from a neutral perspective and audit business execution by directors and executive officers.

## Corporate governance organization



## Evaluation of the effectiveness of the Board of Directors

Objective of Board Evaluation	Since fiscal 2016 the Company has implemented an annual evaluation of the effectiveness of the Board of Directors. The evaluation seeks to identify and actively improve functional and operational issues with the Board of Directors, with the aim of enhancing corporate governance and increasing corporate value.	
Procedures of evaluating effectiveness	All directors and corporate auditors complete a questionnaire. The following are the specific evaluation procedures. <ul style="list-style-type: none"> <li>•Details for conducting evaluation of effectiveness by the Board of Directors (evaluation procedures, questions, etc.) are decided.</li> <li>•All directors and corporate auditors complete the questionnaire.</li> <li>•Outside directors, outside corporate auditors, and the secretariat of the Board of Directors exchange opinions based on the analysis results.</li> <li>•The Board of Directors discuss current issues and points that should be improved taking into consideration the analysis results and opinions of outside directors and outside corporate auditors and then decide on the results of the evaluation for fiscal 2021 and future efforts.</li> </ul>	
Questionnaire items	There are multiple questions for each of the following categories, and questions take the form of either an evaluation on a five-point scale or free response. The questions are decided on taking into consideration the issues the Company faces and changes in the external environment. (1) Board of Directors' roles and responsibilities, (2) vitalization of discussions, (3) Board of Directors composition and system, (4) optimizing the conduct of meetings, and (5) role of the Nomination & Remuneration Advisory Committee	
Summary of evaluation results	It was confirmed that overall the Board of Directors functions effectively although there is a need for improvements to how meetings are conducted in order to enhance the supervisory function of the Board of Directors. These include securing sufficient discussion time, providing material to stimulate active discussion, and how explanations are made on issues such as sustainability, selection and concentration of business through business portfolio management, human resource strategy, including management human resources, which are all company-wide issues.	
Efforts regarding issues thus far and future efforts	The state of efforts regarding issues thus far and future efforts are as given below. We will promote improvements to further increase the effectiveness of the Board of Directors.	
	<b>(1) Expanding discussions on important themes at Board of Directors meetings</b>	
	Issues thus far	Ensuring sufficient time for discussions on important topics by the Board of Directors, and method for effectively conducting discussions, etc.
	FY2021 efforts	We secured time for discussions on sustainability, business portfolio management, development strategy, digital transformation (DX), diversity, and other important themes, and held those discussions. Furthermore, to supervise important overseas subsidiaries and effectively conduct discussions, the CEO of subsidiaries attended Board of Directors meetings, and there was an exchange of opinions and discussions. As for sustainability, the Board of Directors discussed the scenario analysis based on TCFD recommendations, with which the Company expressed its support in March 2021. Furthermore, the functions related to responding to climate change and promoting sustainability were previously divided among several divisions, but in October 2021, the Sustainability Promotion Department was newly established, and it was confirmed that under the supervision of the Board of Directors, there is even greater promotion of sustainability as an important corporate issue.
	FY2021 issues	Need for further discussion of the long-term vision, HR strategy (including management HR), and similar important themes.
	FY2022 action plan	In fiscal 2022, the long-term vision, next medium-term management plan, human resource strategy, business portfolio analysis, state of management of important subsidiaries, and other important themes will be included in the annual operational plan, and efforts will be made to ensure sufficient discussion time from the proposal stage to the final approval stage.
	<b>(2) Reinforcing governance framework</b>	
	Issues thus far	Creating the optimal governance framework, including system of corporate officers (executive officers, etc.) and composition of the Board of Directors.
	FY2021 efforts	The composition of the Board of Directors was changed in June 2021 to consist of nine directors, including three outside directors, and in December 2021, an outside director was appointed the chair of the Nomination & Remuneration Advisory Committee, both of which further increased the independence and objectivity of the bodies.
	FY2021 issues	It was pointed out that there should be quicker discussions on issues such as succession plan, requirements for appointing directors and executive officers, and changes to the officer compensation plan.
	FY2022 action plan	Work to strengthen Nomination & Remuneration Advisory Committee function, continue to examine the above issues, and reinforce the governance framework.
	<b>(3) Continuing to hold informal board meetings (optional meetings of directors, corporate auditors, and general managers of business divisions)</b>	
	Issues thus far	Selecting theme for medium- to long-term basic issues and creating a meeting in which all attendees can undertake frank and free discussions.
	FY2021 efforts	Held informal board meetings twice in fiscal 2021 and deepened discussions on the following themes: branding, business portfolio analysis, Forward 22 review, and clean energy management strategy.
	FY2021 issues	While the evaluation indicated that discussions were more lively, there is room to make improvements to preparing advance materials, selecting special attendees, and other items.
	FY2022 action plan	Discussions should be expanded, particularly those related to creating a long-term vision and the next medium-term management plan, while improving selection of themes and material content.
<b>(4) Enhancing the support system for outside directors</b>		
	We have created a support system that offers various services, including communicating various types of information, such as advance explanations of proposals for Board of Directors and other meetings. We will continue to enhance the quality and volume of advance explanations to outside directors. In particular, for important, urgent themes, we will vitalize Board of Directors discussions by increasing opportunities and time for explanations so that outside directors can fully understand the topics.	

## Nomination & Remuneration Advisory Committee

In 2018, the Nomination & Remuneration Advisory Committee, a voluntary advisory body, was designed to secure procedural objectivity, transparency, and accountability in nominating candidates for directors and corporate auditors, appointing and removing the president and representative director, and discussing important matters concerning remuneration for directors. After discussing these matters, the Nomination & Remuneration Advisory Committee reports its findings to the Board of Directors, which further discusses the matter and makes a decision.

## Policy and procedures for appointing senior management team and director candidates

Senior management team members must possess a mindset, skills, and ability to act appropriate for leading the Group and implementing the corporate philosophy. When appointing and removing senior management team members, the Nomination & Remuneration Advisory Committee discusses the issue, and then the Board of Directors conducts further discussions and decides on the issue.

Director and corporate auditor candidates must possess not only outstanding character and insight but also the knowledge, experience, and skills to appropriately execute the duties required of their position. Outside director and outside corporate auditor

The committee consists of seven members—three independent outside directors, one of whom heads the committee, two independent outside corporate auditors, Chairman of the Board, and President and CEO. The five outside officers provide input and advice that helps to secure transparency, suitability, and objectivity with respect to personnel decisions for directors and remuneration.

candidates must possess abundant experience, expertise, and broad insight related to corporate management and meet the Company's independence criteria.

As for the successor development plan, the policy was decided on by the Board of Directors in February 2020 after consulting with the Nomination & Remuneration Advisory Committee. At the current time, we are moving forward with fostering CEO candidates based on this plan. The Nomination & Remuneration Advisory Committee receives regular reports on the state of development, and we will steadily move forward with training while receiving advice from the committee.

## Skill matrix

Taking into consideration various factors, including the motto appearing in the corporate philosophy "a company built on a foundation of advance technology," and the management strategy goals of expanding both overseas business and service businesses that employ ICT and other technologies, we have identified

knowledge, experience, and skills that the overall Board of Directors should possess, which consist of nine skills. These were decided on by the Board of Directors following discussions by the Nomination & Remuneration Advisory Committee. They will be revised as necessary to match changes in the management environment.

## Compensation for officers

Compensation for directors comprises fixed remuneration and performance-linked bonuses and is decided for individual directors within the total amount of remuneration approved by a resolution of the General Meeting of Shareholders. Fixed remuneration is based on each officer's position. Performance-linked bonuses are based on corporate earnings each fiscal year, using the profit attributable to shareholders of Hitachi Zosen in each fiscal year as an indicator of performance in order to further motivate directors to improve corporate earnings. So as to ensure their independence, compensation for outside directors consists only of fixed remuneration.

In determining the compensation for the senior management team and directors, the Nomination & Remuneration Advisory Committee reports to the Board of Directors regarding the remuneration provisions and compensation levels, which are discussed by the Board before a decision is made. The Nomination & Remuneration Advisory Committee regularly reviews the

remuneration provisions and compensation levels to ensure that the compensation provides a healthy incentive for directors.

Retirement bonuses for officers have been abolished.

### Composition of officer remuneration

Directors	Fixed remuneration	Performance-linked bonuses
Outside directors	Fixed remuneration	Upper limit on remuneration: Up to 550 million yen a year (fixed remuneration and performance-linked bonuses combined)
Corporate auditors	Fixed remuneration	

### Total amount of compensation, etc. by officer position, total amount by type of compensation, etc., and number of officers concerned (FY2021)

Officer position (No. of persons)	Total amount of compensation, etc.	Total amount by type of compensation, etc.	
		Fixed remuneration	Performance-linked bonuses
Directors (8persons*1.2)	289	249	39
Corporate auditors (3 persons*1.2)	61	61	—
Outside officers (6 persons*2)	51	51	—

\*1 Excluding outside directors and outside corporate auditors

\*2 Including two directors and one corporate auditor who retired in June 2021

## Qualities and skills in the Board of Directors

## ■ Directors and corporate auditors

Position (July 1, 2022)	Corporate Management	Sales, Marketing, Innovation	R&D	Estimate, Engineering, Manufacturing, Procurement	Finance and Accounting	Development of Human Resources Diversity	Legal Affairs and Risk Management	ICT, Digital	Global Experience
Representative Director Chairman of the Board Takashi Tanisho	○	○	○	○				○	○
Representative Director President & Chief Executive Officer Sadao Mino	○	○	○	○					
Managing Director Toshiyuki Shiraki		○	○	○					○
Managing Director Tatsuji Kamaya					○		○		○
Managing Director Tadashi Shibayama		○	○	○					○
Managing Director Michi Kuwahara	○				○	○	○		○
Outside Director Kazuko Takamatsu	○	○				○		○	
Outside Director Richard R. Lury							○		○
Outside Director Tetsuya Shoji	○	○				○		○	○
Full-time Corporate Auditor Masayuki Morikata		○			○		○		
Full-time Corporate Auditor Kazuhiya Yamamoto		○	○	○					
Outside Corporate Auditor Yoshihiro Doi	○	○						○	○
Outside Corporate Auditor Hirofumi Yasuhara	○				○				○

## ■ Executive officers

Position (July 1, 2022)	Corporate Management	Sales, Marketing, Innovation	R&D	Estimate, Engineering, Manufacturing, Procurement	Finance and Accounting	Development of Human Resources Diversity	Legal Affairs and Risk Management	ICT, Digital	Global Experience
Senior Managing Executive Officer Satoshi Kimura	○			○					
Senior Managing Executive Officer Hitoshi Kogi		○							
Senior Managing Executive Officer Yuichi Okura	○	○			○		○		○
Managing Executive Officer Mitsutoshi Tsukasaki	○			○					○
Managing Executive Officer Tomonori Kawatsu		○			○		○		○
Managing Executive Officer Munenobu Hashizume	○							○	
Managing Executive Officer Shinji Shimamura	○		○	○				○	○
Executive Officer Jitsuhiro Yamaguchi	○			○					○
Executive Officer Takashi Ibe		○							○
Executive Officer Tetsuro Iwashita					○		○		
Executive Officer Toshihiko Yasuda			○	○					
Executive Officer Eiji Ishikawa		○					○		
Executive Officer Toshiki Nakamura					○				
Executive Officer Akira Kamaya				○					
Executive Officer Toshifumi Makihata						○			
Executive Officer Hiroshi Miyazaki					○		○		
Executive Officer Koichi Hinami			○	○					
Executive Officer Koichi Kaibuchi				○					○
Executive Officer Takashi Fujita		○	○	○					

# Directors



**Takashi Tanisho**  
Representative Director,  
Chairman of the Board

Apr. 1973 Joined the Company  
Jun. 2010 Director, the Company  
Apr. 2012 Managing Director, the Company  
Apr. 2013 Representative Director, President and Chief Operating Officer, the Company  
Apr. 2016 Representative Director, President and Chief Executive Officer, the Company  
Apr. 2017 Representative Director, Chairman of the Board and President, the Company  
Apr. 2020 Representative Director, Chairman of the Board and Chief Executive Officer, the Company  
Apr. 2022 Representative Director and Chairman of the Board, the Company (current position)



**Tatsuji Kamaya**  
Managing Director

Apr. 1984 Joined the Company  
Apr. 2014 Executive Officer, the Company  
Apr. 2017 General Manager of Corporate Planning Headquarters, and Responsible for General Administration Headquarters and Procurement Headquarters, the Company  
Jun. 2017 Director, the Company  
Aug. 2017 General Manager of Corporate Planning Headquarters, and General Manager of SR99 Project Team, Corporate Planning Headquarters, and Responsible for General Administration Headquarters and Procurement Headquarters, the Company  
Apr. 2018 Managing Director, the Company (current position)  
Apr. 2019 General Manager of Corporate Planning Headquarters, and General Manager of General Administration Headquarters, and General Manager of SR99 Project Team, Corporate Planning Headquarters, and Responsible for Production Engineering Dept., the Company  
Apr. 2020 General Manager of Corporate Planning Headquarters, and General Manager of General Administration Headquarters, and General Manager of SR99 Project Team, Corporate Planning Headquarters, the Company  
Jul. 2020 General Manager of Machinery Business Headquarters, and General Manager of SR99 Project Team, Corporate Planning Headquarters, and Responsible for Infrastructure Business Headquarters, the Company  
Apr. 2021 General Manager of Machinery & Infrastructure Business Headquarters, the Company  
Jun. 2021 General Manager of Machinery & Infrastructure Business Headquarters, and Responsible for Production Engineering Dept., the Company  
Apr. 2022 General Manager of Carbon Neutral Solution Business Headquarters, and Responsible for Machinery & Infrastructure Business Headquarters, and Production Engineering Dept., the Company (current position)



**Sadao Mino**  
Representative Director,  
President and  
Chief Executive Officer

Apr. 1982 Joined the Company  
Apr. 2015 General Manager of Environment Business Headquarters, and Responsible for Architect Supervision Dept. and Quality Assurance Dept., the Company  
Jun. 2015 Managing Director, the Company  
Apr. 2017 Representative Director, Executive Vice-President, the Company  
Apr. 2017 President's Assistant (Responsible for Production Engineering Dept., Wind Power Business Promotion Office and Functional Materials Business Promotion Office), the Company  
Apr. 2018 President's Assistant (Responsible for Sales and Production Engineering Dept.), the Company  
Apr. 2019 President's Assistant (Responsible for Sales and Procurement Headquarters), the Company  
Oct. 2019 President's Assistant (Responsible for Sales, Procurement Headquarters, and Yumeshima Area Development Promotion Dept.), the Company  
Apr. 2020 Representative Director, President and Chief Operating Officer, the Company  
Apr. 2022 Representative Director, President and Chief Executive Officer, the Company (current position)



**Tadashi Shibayama**  
Managing Director

Apr. 1982 Joined the Company  
Apr. 2012 Executive Officer, the Company  
Apr. 2017 General Manager of Machinery Business Headquarters, the Company  
Jun. 2017 Director, the Company  
Apr. 2019 General Manager of Machinery Business Headquarters, and Responsible for Infrastructure Business Headquarters, the Company  
Jun. 2019 Managing Director, the Company (current position)  
Apr. 2020 General Manager of Machinery Business Headquarters, and Responsible for Sales, Overseas Business, Infrastructure Business Headquarters and Yumeshima Area Development Promotion Dept., the Company  
Jul. 2020 Responsible for Sales, Overseas Business, General Administration Headquarters, Corporate Planning Headquarters and Yumeshima Area Development Promotion Dept., the Company  
Jun. 2021 General Manager of R&D Headquarters, and Responsible for Overseas Business and Information and Communication Technology Promotion Headquarters, the Company  
Jul. 2021 General Manager of R&D Headquarters, and Responsible for Information, and Communication Technology Promotion Headquarters and Global Headquarters, the Company (current position)



**Toshiyuki Shiraki**  
Managing Director

Apr. 1984 Joined the Company  
Jun. 2016 Managing Director, the Company (current position)  
Apr. 2017 General Manager of Business Planning & Technology Development Headquarters, and Responsible for Information and Communication Technology Promotion Headquarters, Architect Supervision Dept. and Quality Assurance Dept., the Company  
Apr. 2019 General Manager of Environment Business Headquarters, the Company  
Apr. 2020 General Manager of Environment Business Headquarters and Responsible for Procurement Headquarters, the Company  
Apr. 2021 Responsible for Environment Business Headquarters and Procurement Headquarters, the Company  
Jun. 2021 Responsible for Environment Business Headquarters, Procurement Headquarters, and Architect Supervision Dept., the Company  
Apr. 2022 Responsible for Environment Business Headquarters, Quality Assurance Dept., and Architect Supervision Dept., the Company (current position)



**Michi Kuwahara**  
Managing Director

Apr. 1986 Joined the Company  
Apr. 2015 General Manager of Corporate Planning Dept., the Company  
Jan. 2018 General Manager of Corporate Planning Dept., the Company and Chairman of the Supervisory Board of Hitachi Zosen Inova AG  
Apr. 2018 Executive Officer, the Company  
Apr. 2018 Assistant to General Manager of Environment Business Headquarters, the Company and Chairman of the Supervisory Board of Hitachi Zosen Inova AG  
Jul. 2020 General Manager of General Administration Headquarters, and Corporate Planning Headquarters, the Company  
Apr. 2021 General Manager of Corporate Planning Headquarters, the Company  
Jun. 2021 Director, the Company  
Jun. 2021 General Manager of Corporate Planning Headquarters, and Responsible for General Administration Headquarters, Quality Assurance Dept., and Yumeshima Area Development Promotion Dept., the Company  
Oct. 2021 General Manager of Corporate Planning Headquarters, and Responsible for General Administration Headquarters, Sustainability Promotion Dept., Quality Assurance Dept., and Yumeshima Area Development Promotion Dept., the Company  
Apr. 2022 Managing Director, the Company (current position)  
Apr. 2022 General Manager of Environment Business Headquarters and Responsible for Procurement Headquarters, the Company (current position)

## Corporate Auditors



**Kazuko Takamatsu**  
Outside Director

Apr. 1974 Joined Sony Corporation  
Apr. 2003 Representative Director, Sony Digital Network Applications, Inc.  
Oct. 2008 VP in charge of Environment, Sony Corporation  
Apr. 2012 Advisor, YAMAGATA INTECH Corporation  
Apr. 2013 Executive Director and Secretariat, Japan Institute for Women's Empowerment & Diversity Management  
May 2015 Outside Director, Dexerials Corporation (retired in June 2019)  
Jun. 2015 Outside Director, the Company (current position)  
Apr. 2020 Executive Director, Japan Institute for Women's Empowerment & Diversity Management (retired in June 2020)  
Jun. 2020 Outside Director, The Kansai Electric Power Co., Inc. (Member of the Nomination Committee) (current position)



**Masayuki Morikata**  
Full-time Corporate Auditor

Apr. 1974 Joined the Company  
Jun. 2010 Director, the Company  
Apr. 2012 Managing Director, the Company  
Apr. 2014 Responsible for Corporate Planning Dept., Accounting Dept., Subsidiary Administration Dept., and Overseas Business Administration Dept., the Company  
Jun. 2015 General Manager of General Administration Headquarters and General Manager of Corporate Planning Headquarters, the Company  
Apr. 2016 General Manager of General Administration Headquarters and General Manager of Corporate Planning Headquarters, and responsible for Procurement Headquarters, the Company  
Jun. 2017 Corporate Adviser, the Company  
Jun. 2018 Full-time Corporate Auditor, the Company (current position)



**Richard R. Lury**  
Outside Director

May 1974 Admitted to the bar of the State of New York  
Sep. 1989 Partner, Kelley Drye & Warren LLP (retired in January 2015)  
Jun. 2003 Admitted to the bar of the State of New Jersey  
Mar. 2013 Outside Director, Sanken North America, Inc. (currently, Allegro MicroSystems, Inc.) (current position)  
Jun. 2014 Outside Director, Sanken Electric Co., Ltd. (retired June 2022)  
Jun. 2016 Outside Director, the Company (current position)



**Kazuhisa Yamamoto**  
Full-time Corporate Auditor

Apr. 1982 Joined the Company  
Apr. 2014 Executive Officer, the Company  
Apr. 2017 General Manager of Environment Business Headquarters, the Company  
Jun. 2017 Director, the Company  
Apr. 2019 General Manager of Business Planning & Technology Development Headquarters, and Responsible for Information and Communication Technology Promotion Headquarters, Architect Supervision Dept. and Quality Assurance Dept., the Company  
Jun. 2019 Managing Director, the Company  
Apr. 2020 General Manager of Business Planning & Technology Development Headquarters, and Responsible for Information and Communication Technology Promotion Headquarters, Production Engineering Dept., Architect Supervision Dept. and Quality Assurance Dept., the Company  
Apr. 2021 General Manager of R&D Headquarters and Responsible for Information and Communication Technology Promotion Headquarters, Production Engineering Dept., Architect Supervision Dept., and Quality Assurance Dept., the Company  
Jun. 2021 Full-time Corporate Auditor, the Company (current position)



**Tetsuya Shoji**  
Outside Director

Apr. 1977 Joined Nippon Telegraph and Telephone Public Corporation  
Jun. 2006 Senior Vice President and General Manager of Personnel Dept., Nippon Telegraph and Telephone West Corporation  
Jun. 2009 Senior Vice President and Head of General Affairs Dept., Nippon Telegraph and Telephone Corporation  
Jun. 2012 Senior Executive Vice President, Representative Member of the Board, NTT Communications Corporation  
Jun. 2015 President & CEO, Representative Member of the Board, NTT Communications Corporation  
Jun. 2020 Corporate Advisor, NTT Communications Corporation (current position)  
Dec. 2020 Outside Director, circlace Inc. (current position)  
Mar. 2021 Outside Director, Sapporo Holdings Limited (current position)  
Jun. 2021 Outside Director, the Company (current position)  
Jun. 2021 Outside Director, Mitsubishi Logistics Corporation (current position)  
Mar. 2022 Outside Director, Japan Tobacco Inc. (current position)



**Yoshihiro Doi**  
Outside Corporate Auditor

Apr. 1979 Joined The Kansai Electric Power Co., Inc.  
Jun. 2006 Executive Officer, The Kansai Electric Power Co., Inc.  
Jun. 2009 Managing Director, The Kansai Electric Power Co., Inc.  
Jun. 2013 Director and Managing Executive Officer, The Kansai Electric Power Co., Inc.  
Jun. 2016 Director and Executive Vice President, The Kansai Electric Power Co., Inc. (retired in March 2020)  
Jun. 2017 Outside Corporate Auditor, the Company (current position)  
Apr. 2020 Director and President, Kansai Transmission and Distribution, Inc. (current position)



**Hirofumi Yasuhara**  
Outside Corporate Auditor

Apr. 1979 Joined Matsushita Electric Industrial Co., Ltd. (currently Panasonic Holdings Corporation)  
Sep. 1996 Director and CFO, America Matsushita Battery Industrial Co., Ltd (currently Panasonic Energy Corporation of North America)  
Jun. 2008 Director and Executive Officer, PanaHome Corporation (currently Panasonic Homes Co., Ltd.)  
Jun. 2012 Representative Director, PanaHome Corporation  
Jun. 2015 Senior Audit & Supervisory Board Member, Panasonic Holdings Corporation (Retired in June 2019)  
Jun. 2019 Outside Corporate Auditor, Santen Pharmaceutical Co., Ltd. (current position)  
Mar. 2020 Outside Corporate Auditor, Sumitomo Rubber Industries, Ltd.(current position)  
Jun. 2020 Outside Corporate Auditor, the Company (current position)

## Messages from Outside Directors

### Expectations of greater cooperation between and integration of businesses and activities, centered on the Sustainability Promotion Committee

Because fiscal 2021 was the middle year of the medium-term management plan and business has been relatively stable, there was rather little discussion of the medium and long term, but it was possible to carefully discuss individual topics. I feel that discussions by the Board of Directors have grown more lively, and the effectiveness of the board has increased year by year. I recognize that even among the directors, the role expected of me is to promote diversity. Therefore, if I have doubts about something, even something that is treated as common sense within the Company, I do not hesitate to point that out. As for promoting diversity and sustainability, I also try to provide advice regarding such issues as plans, measures, and concrete operating methods based on my experience.

In fiscal 2021, we developed sustainability promotion structures, including establishing a Sustainability Promotion Committee, which is supervised by the Board of Directors. In 2022, we are starting to formulate plans for the overall system. Many of the Company's businesses are suited for SDGs, but each business is independent, and I feel that there is insufficient cooperation regarding some aspects. I expect that integrating the various businesses and activities, centered on the Sustainability Promotion Committee, and making it possible to conduct management with an overall view will be a major turning point. At the same time, it is important to link this to greater social value provided by Hitachi Zosen by communicating the integrated image to people outside the Company. We will carefully follow how things progress and other points.

Furthermore, one-third of directors are outside directors now, and in order to strengthen the Board of Director's management supervision function, I think it is important to continue to streamline Board of Director's functions, such as revising matters that the Board of Directors should vote on and matters that should be reported.



**Kazuko Takamatsu**  
Outside Director

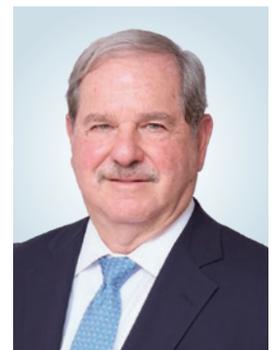
### Quickly deliberating and deciding on strategically important items

I think that the primary role of the Board of Directors is to supervise and instruct management so that they work to realize sustainable growth of the Company by achieving financial and non-financial targets in line with the expectations of stakeholders, and to formulate, implement, and revise strategic plans.

Therefore, I have suggested to Hitachi Zosen's management that they try to accelerate decision making, need to appropriately evaluate risks and benefits and then take on challenges even if there are risks, and expand support to management of overseas subsidiaries. In addition, taking into consideration my experience as an attorney in the U.S. and director of listed companies, I suggested that they refer to successful cases of corporate governance at overseas companies.

I feel that there has been an improvement in the quality of discussions at Board of Directors meetings, with directors, both outside and inside directors, and auditors freely asking questions and giving opinions. Specifically, it is extremely significant that the CEOs of major overseas subsidiaries attend board meetings, making it possible to confirm the state of management through director dialogue. In addition, there is effective communication regarding important matters that require the approval of the Board of Directors. Because of this, I think that we should have regular meetings with the presidents of domestic subsidiaries.

The major issue for fiscal 2022 is how to achieve operating income targets at a time of concerns about inflation, the weak yen, and disruptions in the supply chain. The Board of Directors needs to ensure more time to discuss and examine strategically important matters and simultaneously more quickly implement items agreed to by management and the Board of Directors. Furthermore, we are stressing further reinforcement of the system of performance-linked remuneration for officers. I will maintain a focus on these issues so that the Company can continue to meet the expectations of stakeholders and the market regarding growth and profitability.



**Richard R. Lury**  
Outside Director

## Thoroughly adopting the spirit of “forward, farther, and outward” Proposal to link to evolution and reforms with an eye toward medium- to long-term growth

Hitachi Zosen’s Board of Directors is composed of diverse members, including female and non-Japanese outside directors, and it is my opinion that it functions well as active efforts are made to share information before meetings and hold frank and open exchanges of opinion. Every year, there is an appropriate evaluation of the effectiveness of the board, and based on the results, improvements are continually made to the operation of the board.

Looking back at Board of Directors meetings in fiscal 2021, I feel that there were rather few discussions from a long-term perspective, which is an issue for fiscal 2022 and after. Furthermore, regarding judgments about important matters and major policies, I think that properly sharing necessary information before details are set and expanding and reinforcing informal communication, including offsite exchanges of opinions, would be effective for further reinforcing the examination and discussion of these matters.

I will make even stronger recommendations that the high quality and technical capabilities that Hitachi Zosen has acquired over the years should not simply be maintained as they are but continually refined through the spirit of “forward, farther, and outward,” and that they should be linked to evolution and innovations.

It has also been decided that I will serve as the chair of the Nomination & Remuneration Advisory Committee starting in 2022. In regard to officer remuneration, I presume that it is necessary to review how it is calculated and examine new metrics. As chair, I am aware that it is necessary to introduce a mechanism for evaluations of medium- to long-term initiatives and further deepen the sharing of information with shareholders in order to achieve and maintain sustainable growth. Acts such as clearly specifying non-financial metrics that indicate the intent of management, and I am open to this as a way to gain the understanding of stakeholders in terms of SDGs, too. In addition, I plan to have the committee discuss and examine succession plans and so on in detail.



**Tetsuya Shoji**  
Outside Director

### Information on outside directors and outside corporate auditors

The Company gives due respect to the input and advice provided from independent and neutral perspectives by the outside directors and outside corporate auditors, who bring extensive corporate management experience and broad knowledge to the Company and strives to ensure managerial monitoring and supervisory functions.

Position	Years of service	FY2021 Attendance	Reasons for appointment
Kazuko Takamatsu (independent) Outside Director	7	Board of Directors meetings 14/14	Ms. Takamatsu has extensive experience and wide-ranging insight into corporate management and diversity-focused management. Her experience encompasses working for many years at global companies, as well as service as the representative director of a software development company and as the executive director and head of Secretariat of the Japan Institute for Women’s Empowerment & Diversity Management. Ms. Takamatsu has provided appropriate opinions and advice as Outside Director from an independent standpoint to the Company, which is promoting stronger corporate governance, globalization of business, and diversity management. Therefore, the Company anticipates that Ms. Takamatsu will continue to fulfill these roles.
Richard R. Lury (independent) Outside Director	6	Board of Directors meetings 14/14	Mr. Lury served as a partner of a major law firm in the United States for many years and has extensive experience and expertise in international corporate legal matters. Mr. Lury has provided appropriate opinions and advice as Outside Director from an independent standpoint to the Company, which is promoting stronger corporate governance and globalization of business. Therefore, the Company anticipates that Mr. Lury will continue to fulfill these roles.
Tetsuya Shoji (independent) Outside Director	1	Board of Directors meetings 11/11	Mr. Shoji served as a representative director and in other positions of a major telecommunications carrier and has extensive experience and wide-ranging knowledge relating to corporate management. Mr. Shoji has provided appropriate opinions and advice as Outside Director from an independent standpoint to the Company, which is promoting stronger corporate governance, globalization of business, and digital transformation (DX), and has fulfilled the role of strengthening supervisory functions regarding business execution through involvement in decisions on executive appointments and director’s remuneration as chair of the Nomination & Remuneration Advisory Committee since January 2022. Therefore, the Company anticipates that Mr. Shoji will continue to fulfill these roles.
Yoshihiro Doi (independent) Outside Corporate Auditor	5	Board of Corporate Auditors meetings 8/8	Mr. Doi served as a representative director and in other positions of a major power utility, and has extensive experience and broad knowledge of corporate management. Mr. Doi has provided appropriate opinions and advice regarding such matters as the Company’s management and business execution as Outside Corporate Auditor. Therefore, the Company anticipates that Mr. Doi will continue to contribute to efforts to strengthen the Company’s corporate governance and audit system.
Hirofumi Yasuhara (independent) Outside Corporate Auditor	2	Board of Corporate Auditors meetings 8/8	Mr. Yasuhara served as a full-time auditor at a world-class electrical machinery and equipment maker, representative director and officer responsible for accounting of an affiliate of that company, and has a wealth of experience and wide-ranging knowledge of corporate management, auditing operations, finance, and accounting. Mr. Yasuhara has provided appropriate opinions and advice regarding such matters as the Company’s management and business execution as Outside Corporate Auditor. Therefore, the Company anticipates that Mr. Yasuhara will continue to contribute to efforts to strengthen the Company’s corporate governance and audit system.

Notes: 1. In addition to the above-stated number of Board of Directors meetings held, there were two occasions of a written resolution, which is deemed to be a resolution of the Board of Directors under the provisions of Article 370 of the Companies Act and Article 25 of the Company’s Articles of Incorporation.  
2. Attendance at the Board of Directors meetings by Director Tetsuya Shoji counts only the meetings held after his assuming the office of Directors on June 22, 2021.

# Risk Management

In the Hitachi Zosen Group, risks related to compliance, the environment, safety, disasters, and information security, as well as other potential operational risks, are continually assessed and monitored by Company divisions responsible for each type of risk. These divisions also carry out related training and guidance programs. Risks with the potential to materially affect the financial standing of the Company or any member company of the Hitachi Zosen Group are reported to the Company's Board of Directors.

To enable a quick and appropriate response when a major risk materializes, the Company has set up systems in advance, including rules related to methods of communication and response, as well as management systems. The Company's internal audit division audits the effectiveness and adequacy of risk management at group companies, and regularly reports its findings to the Company's Board of Directors.

## Major operational risks recognized and managed by the Company

Type of risk	Potential impact	Our response
<b>Risks potentially arising during normal business activities</b>		
Violations of law	Risks occur from ignorance of laws, regulations, and socially accepted norms as well as from a lack of willingness to comply them. Since public works account for a certain percentage of sales volume of the Group, the Group could be penalized by fines, damages, suspension of nominations, or loss of social credibility in the unlikely event of bid rigging or any other violation of the Antimonopoly Act, which could lead to losses that would materially affect their financial and operating results.	The Hitachi Zosen Group upholds compliance as its basic business policy, and considers strict compliance to be one of its critical management tasks. Accordingly, the Group continually carries out a wide range of measures relating to the promotion of compliance management. For the prevention of Antimonopoly Act violations, we revised our "Antimonopoly Act Compliance Guidebook (for officers and employees)" in the previous fiscal year while continuously implementing internal education programs to ensure legal compliance. <a href="#">More</a> P. 67 "Compliance"
Environmental pollution	The natural and human environments of the communities in which our business operations are located may be severely affected by the release of pollutants or noise.	Having formulated the Hitachi Zosen Environmental Protection Promotion Plan in 1993 the Hitachi Zosen Group has implemented not only measures to protect the environment in regions where its business offices and works are located but also measures to protect the ozone layer, prevent global warming, recycle and reduce waste, and protect the environment in other ways. In 2021, we expressed our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and conducted scenario analysis on our major businesses. We also enhanced our system for more systematically evaluating and managing climate change risks and opportunities. In addition to setting a new environmental protection plan, we are working to achieve various objectives related to the environmental management system, CO <sub>2</sub> emissions reductions, emissions from business activities, and measures to combat pollutants. <a href="#">More</a> P. 44 "Environmental management"
Accidents and disasters	As engineering and manufacturing are the business activities of the Hitachi Zosen Group, we face the risks of causing personal injuries to a third party as well as industrial accidents involving workers, directly or indirectly, due to a lack of safety measures, unsafe practices, incorrect operations, or equipment failures.	Under the basic policy of "Safety first and a compassionate, pleasant workplace for everyone," we continuously monitor the conditions of our workplaces in order to implement appropriate measures to ensure that safety comes first in our business operations. Furthermore, we promote various events and measures to protect the mental health of our employees in order to maintain their health and prevent the occurrence of diseases. <a href="#">More</a> P. 51 "Promoting of healthcare management" and P. 53 "Preventing occupational accidents"
Information security incidents	Risks relating to information security include tampering with corporate websites, destroying or altering data, information leaks, denial-of-service attacks (DoS attacks) due to virus infections, unauthorized access, or account hijacking.	We have ensured that our information assets are secure through the establishment of the Hitz Information Security Policy. We carry out regular training of officers and employees in order to prevent leakage of information from within. For attacks from outside our organizations, we are implementing various preventive measures for each of our network, servers, and clients and conducting multi-layered defense. We implemented an assessment of threats from outside the organization and are furthering an understanding of cybersecurity risks and measures to deal with outcomes. We are also consolidating our Computer Security Incident Response Team (CSIRT) infrastructure and tackling appropriate post-incident responses.
<b>Risks that cannot be managed by conventional systems</b>		
Natural disasters and terrorism	Human casualties and property damage due to earthquakes, typhoons, or pandemics may adversely affect the business performance and financial conditions of the Hitachi Zosen Group.	In order to minimize human casualties and property damage during a disaster, we have a business continuity plan (BCP) in place, and carry out inspections and training to respond to such a disaster. We also maintain emergency communication systems. In addition, we are working to commercialize both remote monitoring and operation support technology and unattended operation technology.

## Risk management of individual projects

At the Hitachi Zosen Group, we primarily undertake build-to-order manufacturing, such as energy-from-waste plants, our main business, and stress managing risks by project. This is because if actual costs exceed estimated costs for any of various reasons, including items being left out of estimates, price hikes, process

delays, or technical troubles, this could have a material impact on the Group's performance, financial condition, and cash flows due to a deterioration in profit.

### Decision-making and risk management process when accepting an order

All relevant departments in charge of estimation and proposals identify and evaluate the risks associated with technologies, estimation, delivery dates, and contracts, and incorporate suitable measures when accepting orders for individual projects. By doing so, thorough risk management through the Risk Examination Committee is ensured at the time of accepting an order. The aim is to achieve results that exceed initial projected profit by successfully completing the project as planned. Special departments for risk management of projects participate in the Risk Examination Committee, and discussions are held about the following points together with each business division. In accordance with the company's sales regulations, the Decision-making Committee, Management Strategy Committee, general manager of each department, or similar party is consulted.

- ① Identify and evaluate all risks related to envisioned technology, delivery, business, and customer credit
- ② Examine risk avoidance measures
- ③ Envision residual risks after implementing risk avoidance measures and propose to decision-maker whether the risk is bearable

In this way, we strive to ensure risk aversion through advance identification of any challenges in project execution after an order has been accepted. In addition, we are continuously revising the

risk categories for consideration. For example, we add potential pre-order risks for new products and new technologies as well as products without long-term track records as targets for consideration, applying lessons learned through previous difficulties.

### Risk management process until the acceptance of an order



### Risk management of individual projects after accepting an order

As part of the risk management of individual projects after accepting an order, we implement the following initiatives related to profitability management of major large-scale projects of all group companies and affiliated companies.

- ① Each business division holds monthly follow-up meetings and conducts continuous monitoring of the progress status and profitability forecasts of important projects. Proposals for improvement, advice, and support are made by the participants, who include General Managers, Senior Executive Managers, Project Department Head, Design Department Head, and representatives from the

- ② Procurement Division, Quality Assurance Division, and Risk Management Division
- ③ Follow-up and reports on countermeasure implementation conditions and profitability status, expansion to other projects
- ④ Reports on 3-5 important matters every month to the Top Management Review Committee chaired by the President
- ⑤ Meetings for completed projects are held to report project results and share useful information across divisions about the project's good points, matters to reflect on, issues, lessons learned, and so on, including the situation prior to accepting the order, so as to help strengthen profitability and prevent problems in ongoing and future projects we receive orders for

### Risk management of individual projects of overseas group companies

For decision-making regarding orders by major overseas group companies such as Hitachi Zosen Inova, NAC International, and Osmoflo, delegation of authority is conducted based on certain financial and specific conditions, but for large-scale projects and those that require attention to risks, the approval of the Hitachi Zosen management is mandatory. In particular for projects with high risks, the final decision is made after they are reported to the Management Strategy Committee.

In addition, in order to gain an understanding of the progress

status, profitability status, risk, and opportunities for projects in a timely manner, and to take appropriate measures, Inova established a dedicated department in 2018, and implemented a more transparent internal reporting style and a complete revision to an analysis-centered structure based on objective numerical data, thereby strengthening risk management of individual projects.

As a result, it has eliminated declining profits in large-scale projects and improved the profitability, with increased trust in the market facilitating a further expansion of orders.

# Compliance

## Basic approach toward compliance

The Hitachi Zosen Group actively implements compliance as one of its critical management tasks in order to conduct management that adheres to laws and corporate ethics and to fulfil its social responsibility as a corporation. In addition to raising compliance awareness among officers and employees and implementing

thorough compliance in daily business execution, the Group is moving forward with efforts to create an environment in which all employees can openly focus all their energy on their work with peace of mind, to increase society's trust in the Group, and to raise its corporate value.

## Compliance initiatives

### Hitachi Group Charter of Ethical Behavior

We provide guidance so that all the Group's officers and employees can act in a conscientious and responsible manner that conforms with corporate ethics. This has involved formulating the Hitachi Group Charter of Ethical Behavior as the most basic guidelines for all Group officers and employees to

implement compliance, and issuing wallet-sized reminder cards annually to all officers and employees, including those overseas for conducting self-checks of behavior.

For details refer to the following website.

<https://www.hitachizosen.co.jp/english/ir/policy/governance.html>

## Compliance Committee and Marketing Compliance Committee

### Compliance Committee

Established as a Group-wide organization to promote compliance management, the Compliance Committee implements various measures to encourage adherence to and raise awareness of laws and corporate ethics. It is chaired by the President and comprised of general managers, business site heads, headquarter

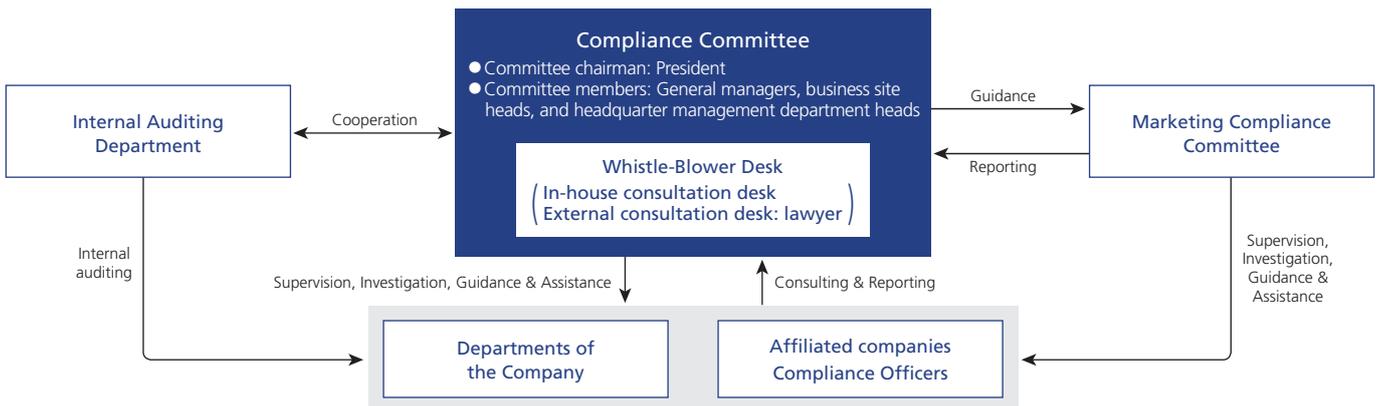
management department heads, and outside attorneys. The committee meets once a year to report on activities during the year and discuss and decide on items such as future activity plans. The state of Compliance Committee activities is reported to and supervised by the Board of Directors.

### Marketing Compliance Committee

The Marketing Compliance Committee operates as a body to provide guidance and supervision for promoting not only adherence to laws and corporate ethics in marketing activities but also proper order-taking activities. By conducting monthly monitoring of marketing departments (checks of physical items related to estimates, bids, and orders; interviews of department heads and the department responsible for creating the estimate, etc.), the committee verifies whether there were improper or

illegal activities in the order receiving process and provides supervision and guidance. Furthermore, its meetings, which are held twice a year, provide opportunities to more thoroughly inform people about and reconfirm the importance of compliance by sharing information on such issues as measures that should be implemented throughout the Group and guidance on improvements at other departments.

## Compliance organization



## Education and training

Through seminars for each employment level, including new recruit seminars and new managerial personnel seminars, we foster compliance awareness by providing for compliance training courses. Since 2004, we have also conducted compliance training through e-learning once a year for all officers and employees so that they can learn about the Hitz Group Charter of Ethical Behavior and act with a correct understanding of adherence to competition-related laws, such as the Antimonopoly Act, bribery and harassment prevention, and other issues.

### Compliance training

(participants)

	FY2017	FY2018	FY2019	FY2020	FY2021
New recruit training	172	150	119	118	115
New managerial personnel training	196	204	205	244	222
e-learning	5,176	5,471	6,197	6,383	6,082
Compliance seminar	527	430	481	335	560

(Some also include affiliated companies)

## Whistle-blower system Hitz Helpline

The Company has established consultation desks for officers and employees (including temporary employees and seconded employees) of the Company and its affiliated companies and employees of business partners to consult with or report if they detect a compliance violation or suspect one has occurred. Users can choose either the in-house consultation desk or external consultation desk (lawyer), and consultations and reports can be anonymous. After a consultation or report, the Compliance

Committee investigates the related facts; if necessary, the investigation may be outsourced to an independent expert or entity. After the facts of the report are determined, the Compliance Committee examines and implements necessary measures and responses. If it is determined that a compliance violation occurred, corrective measures are implemented, and severe disciplinary measures taken.

# Intellectual Property

The source of the Hitachi Zosen Group's revenue is its engineering and manufacturing technologies, and the Group recognizes that investing in, using, and protecting rights related to intellectual property are important issues in the management strategy. Having set strengthening market competitiveness by building and maintaining intellectual property rights based on its business and development strategies as its basic policy, the Group works to identify and create inventions and to apply for and acquire patents appropriate for the business model.

Specifically, the Group is strengthening various activities including promoting the acquisition of patents overseas to respond to its global business expansion and acquisition of intellectual property rights to increase the value added of products and services through the use of AI and IoT. Furthermore, the Group undertakes ethical intellectual property activities for fair competition by using the intellectual property rights acquired by the Group to a fair extent and respecting the rights of others.

## Intellectual property management system

Each unit of our Business Headquarters and R&D Headquarters has a member in charge of promoting intellectual property activities. These members intensively coordinate such activities as discovering patent possibilities and facilitating patent applications in collaboration with the Intellectual Property Department.

## Strategic patent applications

Using technology and patent maps to assess and analyze our patent portfolio as well as those of other companies, we ensure optimal patent applications and acquisitions that suit our business model.

## Intellectual property education

We strive to nurture an intellectual property-oriented corporate culture by holding seminars on intellectual property for each employment level, conducting e-learning programs tailored to different job responsibilities, and providing information on intellectual property in our internal newsletters. In addition, we hold intellectual property seminars that focus on AI and IoT and are moving forward with the introduction of ICT throughout the Group.

## Invention award system

We have established awards for the application and registration of patents and their practical applications. We encourage inventions by rewarding inventors for the value of their inventions.

[More](#) P. 69 "Record of patent applications, acquisitions, and possession"

## Financial

	(Fiscal year ended March)	2017	2018	2019	2020	2021
<b>Operating results</b>						
Order intake (¥ million)		400,461	455,051	454,121	429,421	677,949
Net sales (¥ million)		376,437	378,140	402,450	408,592	441,797
Overseas sales ratio (%)		27.2	25.5	27.5	30.6	34.4
Operating income (¥ million)		5,907	7,358	13,891	15,396	15,541
Operating income margin (%)		1.6	1.9	3.5	3.8	3.5
Ordinary income (¥ million)		3,365	6,720	9,429	11,792	11,783
Profit attributable to shareholders of Hitachi Zosen (¥ million)		2,171	5,445	2,197	4,258	7,899
Research and development expenses (¥ million)		7,411	7,162	6,897	6,664	6,136
Capital investments (¥ million)		9,973	6,896	10,302	10,831	8,057
Depreciation expenses (¥ million)		9,115	8,940	10,090	10,241	10,663
<b>Cash flows</b>						
Cash flows from operating activities (¥ million)		-3,373	-5,428	32,808	22,680	26,858
Cash flows from investing activities (¥ million)		-10,725	-7,574	6,179	-13,847	943
Cash flows from financing activities (¥ million)		-4,018	14,982	-31,364	-5,271	-8,759
Cash and cash equivalents at end of year (¥ million)		32,743	34,394	41,595	45,812	65,956
<b>Financial position</b> (Fiscal year end)						
Total assets (¥ million)		391,860	429,040	409,531	429,336	461,161
Shareholders' equity (¥ million)		116,894	119,479	118,003	126,330	131,299
Interest-bearing debt (¥ million)		107,249	126,343	99,588	98,149	91,880
<b>Financial indicators</b>						
Return on equity (%)		1.9	4.6	1.9	3.5	6.1
Return on assets (Ordinary income/Average total assets) (%)		0.9	1.6	2.2	2.8	2.6
Shareholders' equity ratio (%)		29.8	27.8	28.8	29.4	28.5
<b>Per share data</b>						
Net income (yen)		12.88	32.31	13.04	25.26	46.87
Net assets (yen)		693.53	708.89	700.15	749.58	779.08
Cash dividends (yen)		12.00	12.00	12.00	12.00	12.00
Dividend payout ratio (%)		93.2	37.1	92.0	47.5	25.6

## Intellectual property

### Record of patent applications, acquisitions, and possession (Hitachi Zosen non-consolidated)

		FY2017	FY2018	FY2019	FY2020	FY2021
No. of patent applications	Japan	116	112	138	51	72
	Overseas	117	118	112	67	85
No. of patent acquisitions	Japan	85	71	82	84	93
	Overseas	52	76	113	118	60
No. of patents held	Japan	856	803	756	742	744
	Overseas	325	386	480	551	506

### Number of design rights and trademark rights held (Hitachi Zosen non-consolidated)

		FY2017	FY2018	FY2019	FY2020	FY2021
No. of design rights	Japan	85	85	99	103	100
	Overseas	38	45	45	45	46
No. of trademark rights	Japan	174	177	171	171	170
	Overseas	34	37	49	50	51

## Sustainability Evaluation

### FTSE Blossom Japan Sector Relative Index

The index reflects the performance of Japanese corporations that excel at their response to ESG issues.



**FTSE Blossom  
Japan Sector  
Relative Index**

### S&P/JPX Carbon Efficient Index

The index's constituent companies are selected from TOPIX constituents and their weight is decided by looking at the state of environmental information disclosure and level of carbon efficiency.



### Digital Transformation Certified Company (Ministry of Economy, Trade and Industry)

Received the certification because various elements were highly rated, including the fact that its medium-term management plan and initiatives, such as business strategy to promote DX, meet the certification standards set by the Ministry of Economy, Trade and Industry, and it appropriately discloses information to stakeholders.



### 2022 Certified Health & Productivity Management Outstanding Organizations (Ministry of Economy, Trade and Industry)

Certified as a company conducting outstanding health and productivity management based on its efforts adapted to local health issues and health promotion initiatives recommended by the Nippon Kenko Kaigi.



### "Kurumin" Certification (Ministry of Health, Labour and Welfare) (2013, 2015, and 2019)

Certified three times because of evaluation as a company that supports childcare based on the Act on Advancement of Measures to Support Raising Next-Generation Children.



### MSCI Japan ESG Select Leaders Index

The index's constituent companies are selected because of their outstanding ESG evaluation.

**2022 CONSTITUENT MSCI JAPAN  
ESG SELECT LEADERS INDEX**

THE INCLUSION OF Hitachi Zosen Corporation IN ANY MSCI INDEX, AND THE USE OF MSCI LOGOS, TRADEMARKS, SERVICE MARKS OR INDEX NAMES HEREIN, DO NOT CONSTITUTE A SPONSORSHIP, ENDORSEMENT OR PROMOTION OF Hitachi Zosen Corporation BY MSCI OR ANY OF ITS AFFILIATES.  
THE MSCI INDEXES ARE THE EXCLUSIVE PROPERTY OF MSCI, MSCI AND THE MSCI INDEX NAMES AND LOGOS ARE TRADEMARKS OR SERVICE MARKS OF MSCI OR ITS AFFILIATES.

### Highest Rating in DBJ (Development Bank of Japan) Environmentally Rated Loan Program (12 consecutive years)

Received the highest rating for twelve consecutive years based on its evaluation as a "company with excellent advanced environmental initiatives."



### New Diversity Management Selection 100 Winner (Ministry of Economy, Trade and Industry) (2019)

Selected as one of the New Diversity Management Selection 100 because such initiatives as promoting the recruitment of women and non-Japanese and creating a workplace in which diverse employees can play an active role were highly rated.



### ERUBOSHI (second stage) Certification (Ministry of Health, Labour and Welfare)

Certified as an outstanding corporation in terms of factors such as state of women's active participation based on Act on the Promotion of Female Participation and Career Advancement in the Workplace.



## Initiatives for Sustainability

### Task Force on Climate-related Financial Disclosures (TCFD)

In March 2021, expressed support for TCFD recommendation that companies disclose the impact that climate change has on their business activities.



### 100% Childcare Leave by Men Declaration

Has expressed support for "100% Childcare Leave by Men Declaration," which aims to achieve the goal of all male employees using their leave, since April 2022.



### United Nations Global Compact

Signed in August 2022, and takes part in the world's largest sustainability initiative by the United Nations, corporations, and bodies to create a sound global society.



## Stock data

Number of shares authorized:	400,000,000
Number of shares issued:	170,214,843 (including 1,683,577 treasury shares)
Number of shareholders:	80,783

## Distribution of shareholdings

Financial institutions	37.7%
Securities firms	4.3%
Other domestic corporations	2.2%
Non-residents	24.8%
Individuals, etc.	31.0%



## Major shareholders (Top 10 shareholders)

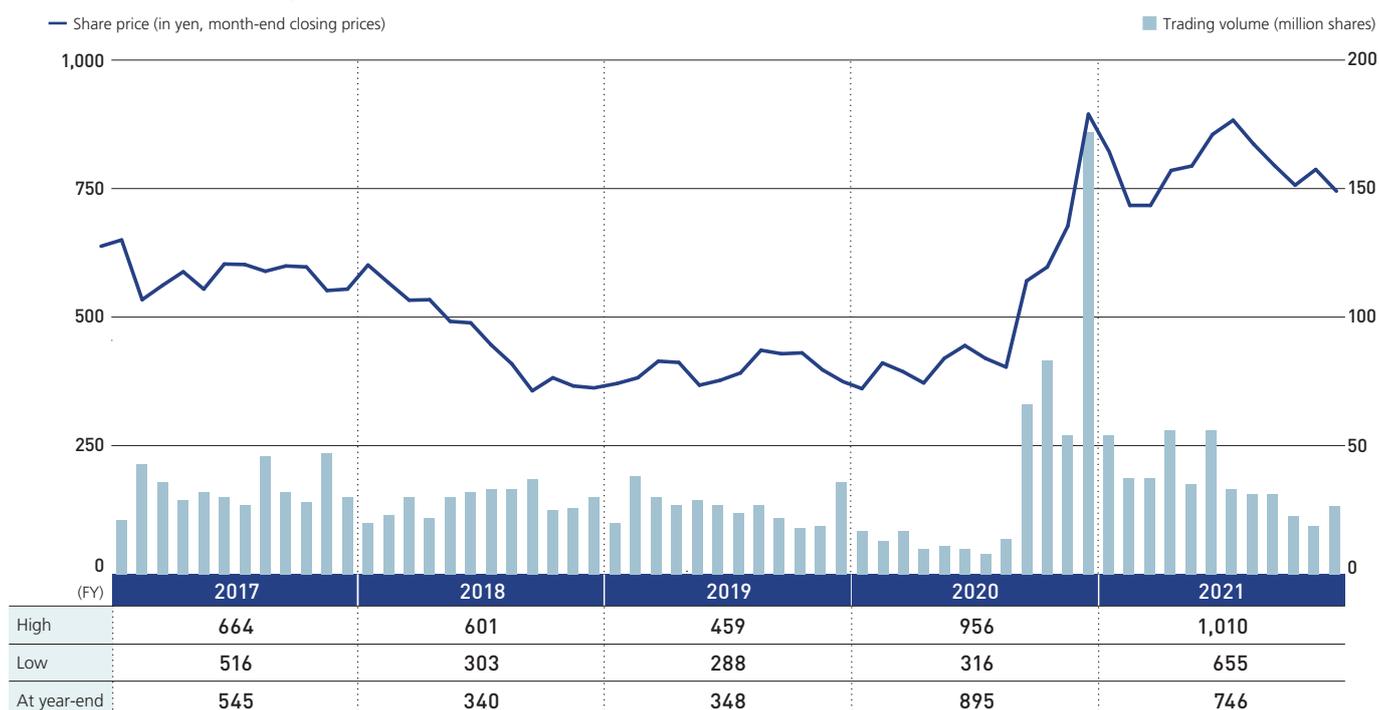
Name of shareholder	Number of shares held (Thousands of shares)	Shareholding ratio (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	32,860	19.5
Custody Bank of Japan, Ltd. (Trust Account)	13,300	7.9
MUFG Bank, Ltd.	5,291	3.1
STATE STREET BANK AND TRUST COMPANY 505019	4,342	2.6
Hitachi Zosen Employee Shareholding Association	2,653	1.6
STATE STREET BANK WEST CLIENT-TREATY 505234	2,391	1.4
Sompo Japan Insurance Inc.	2,358	1.4
STATE STREET BANK AND TRUST COMPANY 505001	2,248	1.3
JP MORGAN CHASE BANK 385781	2,115	1.3
JPMorgan Securities Japan Co., Ltd.	1,831	1.1

Note: The holding ratio does not include treasury stock (1,683,577 shares).

## Shareholder information

Business year	April 1 to March 31
Annual General Meeting of Shareholders	Late June
Final date for voting right registration	March 31
Dividend record date (term-end)	March 31
Dividend record date (interim)	September 30
Public notices	Via Company's website <a href="https://www.hitachizosen.co.jp/ir/publication.html">https://www.hitachizosen.co.jp/ir/publication.html</a> (Japanese)
Share trading unit	100 shares
Shareholder registry administrator and special account custodian	Mitsubishi UFJ Trust and Banking Corporation 4-5, Marunouchi 1-chome, Chiyoda-ku, Tokyo
Stock listing	Tokyo Stock Exchange

## Share price and trading volume



## Corporate data

<b>Date of founding</b>	April 1, 1881
<b>Date of establishment</b>	May 29, 1934
<b>Representative</b>	Sadao Mino President and Chief Executive Officer
<b>Capital*</b>	45,442,365,005 yen
<b>Number of employees*</b>	11,540 (consolidated) / 4,001 (non-consolidated)
<b>Business</b>	Design, construction and manufacture of energy-from-waste plants, desalination plants, water and sewage treatment plants, marine diesel engines, press machines, process equipment, precision machinery, bridges, hydraulic gates, and equipment for use in disaster prevention/mitigation
<b>Number of Group companies*</b>	139 (120 consolidated subsidiaries and 19 affiliates)

\* As of March 31, 2022

## Publication of the Integrated Report 2022

The Hitachi Zosen Group celebrated the 140th anniversary of our founding in 2021.

Touting our long-term vision Hitz 2030 Vision of becoming a “solution partner that contributes to the realization of a sustainable, safe, and secure society,” we are moving forward with strengthening our profitability while using all our capabilities to solve the problems of customers and the market through the technical capabilities, experience delivering products and services, and connections with customers and society we have acquired over the years. Our Group’s business policies and business-based activities contribute to achieving SDGs, and we would like to continue to help realize a sustainable society by marshaling all the capabilities of our Group.

In our Group’s integrated reports, we have explained the orientation of our businesses until now from a SDG, ESG, and climate change perspective while referring to the framework developed by the International Integrated Reporting Council (IIRC). In preparing the 2022 report, in addition to the above information, we tried to include more extensive information on how the Company is creating value, the business environment the Company operates in, and our initiatives. It is our hope that this report will enable our shareholders, investors, and numerous other stakeholders to deepen their understanding of the Hitachi Zosen Group.

We welcome your candid opinions because we would like to continue to have an active dialogue with all stakeholders to increase corporate value. We also hope for your continued kind support for our Group.

### Satoshi Kimura

Senior Managing Executive Officer  
General Manager of Corporate Planning Headquarters





## Hitachi Zosen Corporation

<https://www.hitachizosen.co.jp/english/>

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Investor Relations Information

<https://www.hitachizosen.co.jp/english/ir/>

Corporate Information

<https://www.hitachizosen.co.jp/english/>



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Corporate Web Site "Sustainability"

<https://www.hitachizosen.co.jp/english/sustainability/>



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YouTube

Hitachi Zosen Group Channel

