

# Midterm Plan 2024

(FY2022 through FY2024)

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**DOWA HOLDINGS CO.,LTD.**

May 13, 2022

# Review of Midterm Plan 2020 (FY2018 through FY2021) (1): Achievements

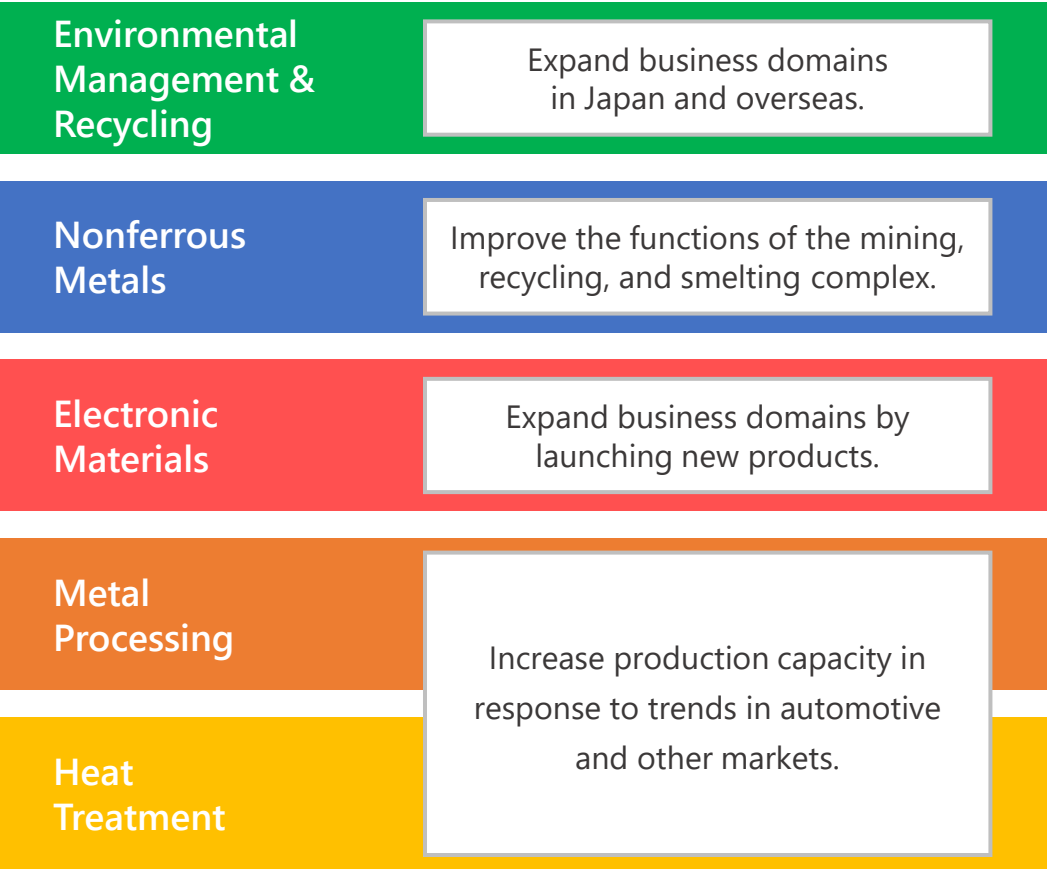
Backed by rising market prices of metals, initiatives set under the Midterm Plan 2020 were implemented and monetized steadily. This resulted in record profit in FY2021. With the achievement of the record profit, all management targets under the Midterm Plan 2020 were exceeded.

Policy	Segment	Expand businesses in growth markets	Increase competitiveness of existing businesses			
Achievements	Environmental Management & Recycling	<ul style="list-style-type: none"> <li>- Start of construction of the second landfill site and commencement of operation of an incinerator in Indonesia</li> <li>- Strengthening of the business of recycling used lithium-ion batteries</li> </ul>	<ul style="list-style-type: none"> <li>- Increase in used home appliance recycling and automobile recycling volumes</li> <li>- Construction and start of operation of a new landfill facility in Japan (Hanaoka)</li> </ul>			
	Nonferrous Metals	<ul style="list-style-type: none"> <li>- Establishment of an overseas base for sampling spent catalysts</li> </ul>	<ul style="list-style-type: none"> <li>- Start of operation of Los Gatos Zinc Mine (Mexico)</li> </ul>			
	Electronic Materials	<ul style="list-style-type: none"> <li>- Start of mass production of short-wavelength-infrared LEDs and photo diodes (PD) for wearable equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Expansion of sales and increase in orders for existing products and services</li> <li>- Upgrade of production and treatment facilities</li> <li>- Improved productivity</li> </ul>			
	Metal Processing	<ul style="list-style-type: none"> <li>- Enhanced production capacity and expansion of overseas processing bases of copper rolled products</li> </ul>				
	Heat Treatment	<ul style="list-style-type: none"> <li>- Expansion of heat treatment facilities in overseas areas where the treatment is demanded</li> </ul>				
Major Management Targets	Midterm Plan 2020		FY2018	FY2019	FY2020	FY2021
	Operating income	45.0 billion yen	18.6 billion yen	25.9 billion yen	37.4 billion yen	63.8 billion yen
	Ordinary income	50.0 billion yen	24.3 billion yen	28.9 billion yen	37.2 billion yen	76.0 billion yen
	ROE	12% or more	6.3%	7.2%	8.5%	17.6%

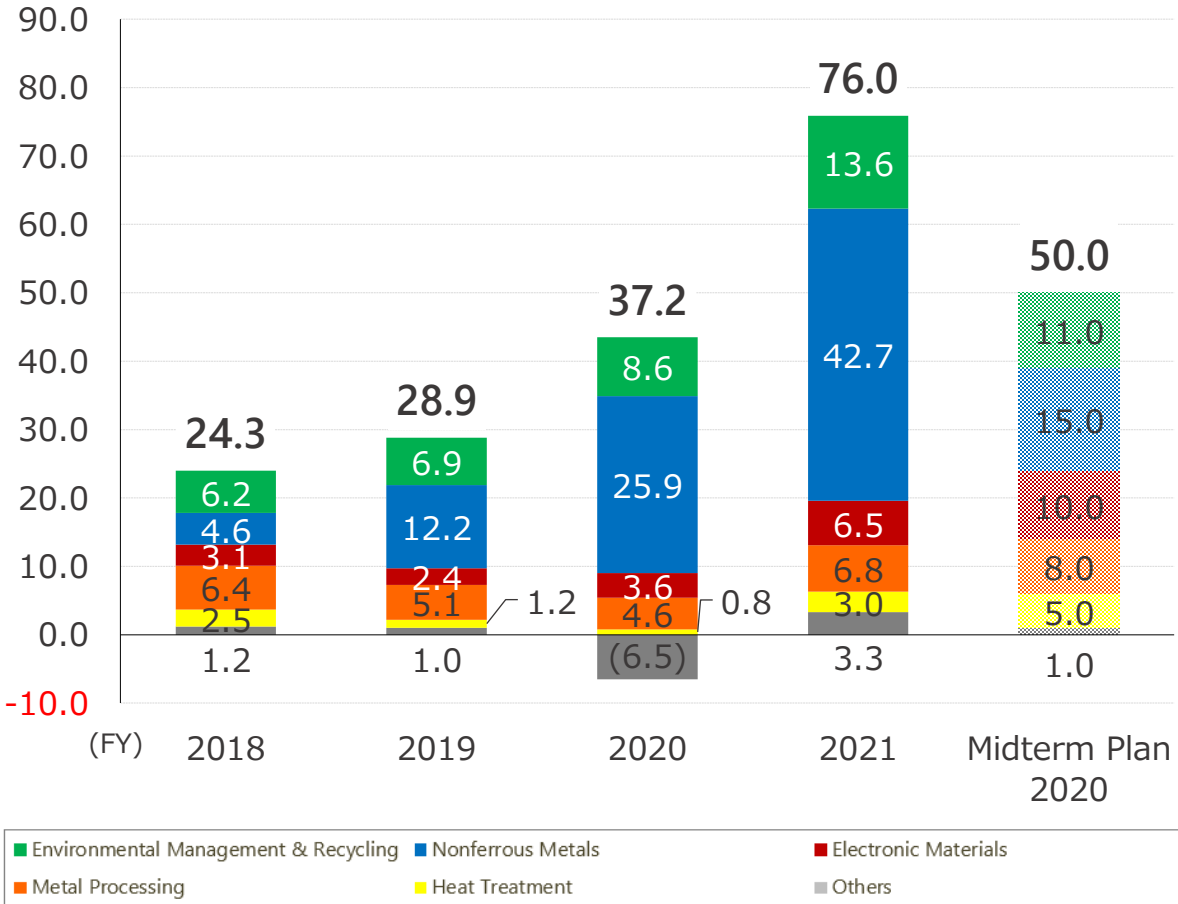
# Review of Midterm Plan 2020 (2): Views on business portfolio

It was reconfirmed that all of the businesses constituting our business portfolio have high earnings strength. The necessity to reorganize business portfolio will remain low for the time being, so efforts will continue to be focused on expansion of each business.

Management Policy in Midterm Plan 2020



Trends in Ordinary Income



## Review of Midterm Plan 2020 (3): Future tasks

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While some achievements were made in financial terms, efforts to strengthen our businesses must be continued because they are essential for adapting to the rapidly changing external environment. It is also important to continue meeting requests from stakeholders by enhancing measures to address sustainability issues towards enhancing the business base.

Increasing earning strength further by deepening the five core businesses  
(Enhancing products and services that lead to solutions to social issues)

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Enhancing measures to address sustainability issues

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# Midterm Plan 2024

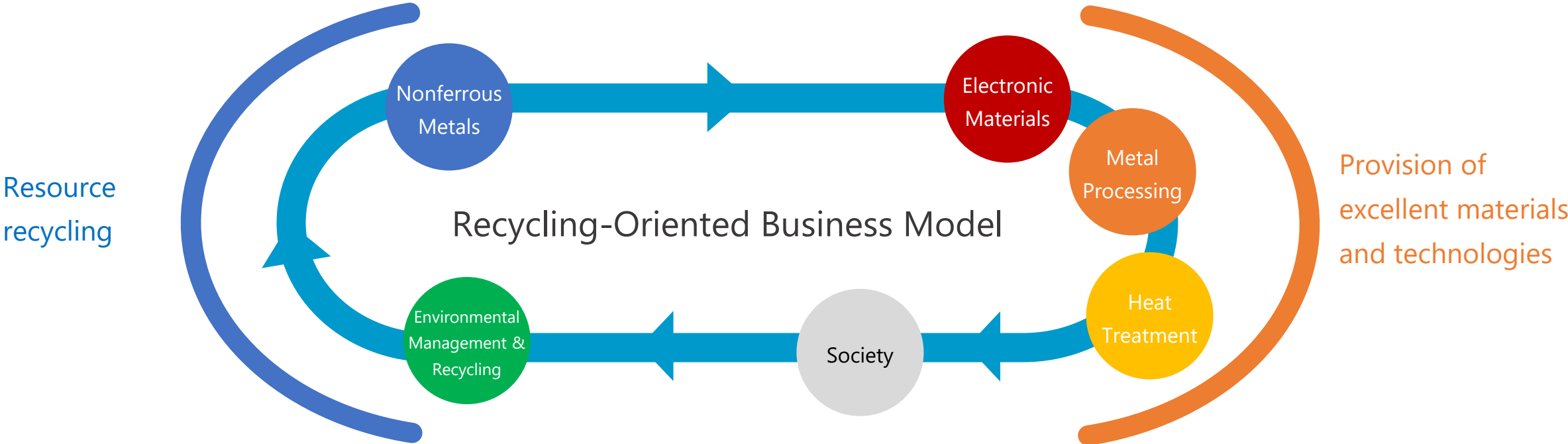
(FY2022–FY2024)

# Future Direction of the DOWA Group

To achieve the vision (our goal in 2030), the DOWA Group will drive initiatives to achieve an improvement in both its economic value and social value, thus improving its corporate value and contributing to building a sustainable society.

## Vision (our goal in 2030)

Contribute continuously to building a sustainable future through our core businesses, the promotion of **resource recycling**, and the **provision of excellent materials and technologies**.



# Business Environment in the Period Leading to 2030 (1): Resource Recycling and Waste Treatment

The pursuit of a resource-recycling society has been accelerated globally. Needs for recycling have increased further. At the same time, the value of recycling has also increased. While waste treatment demand is expected to grow in Southeast Asia, the shift from incineration to recycling is forecast to be accelerated in Japan.

	Opportunities	Risks
Resource recycling	<ul style="list-style-type: none"> <li>- Growth in needs for recycling reflecting initiatives to achieve SDGs and instill ESG management</li> <li>- Tightening of recycling-related regulations towards the formation of a resource-recycling society</li> <li>- Growth in demand for nonferrous metals associated with the shift to a low-carbon society</li> <li>- Increase in the value of recycled metals</li> </ul>	<ul style="list-style-type: none"> <li>- Decline in demand for waste incineration attributable to the spread of recycling</li> <li>- Intensification of competition for collection of recyclable waste and materials for recycling</li> <li>- Sophisticated and diversified social requirements on mining of natural resources</li> </ul>
Waste treatment	<ul style="list-style-type: none"> <li>- Expansion in the range of waste to treat resulting from tightening of environmental regulations in Japan</li> <li>- Increase in the volume of hazardous waste resulting from manufacturing of high-performance materials and products</li> <li>- Increase in the amount of waste generated resulting from population increases in Southeast Asia</li> </ul>	<ul style="list-style-type: none"> <li>- Decline in the demand for waste incineration resulting from the shift to a low-carbon society</li> <li>- Rise of incineration cost resulting from the introduction of carbon pricing (such as carbon tax)</li> <li>- Decrease in the amount of waste generated resulting from population decline in Japan</li> </ul>

# Business Environment in the Period Leading to 2030 (2): Provision of Excellent Materials and Technologies

Demand for materials and technologies for automobiles (xEVs) and renewable energy will increase further in response to megatrends, such as moves to achieve carbon neutrality. As in the previous midterm plan, the four markets including information and communication and healthcare are positioned as highly promising markets.



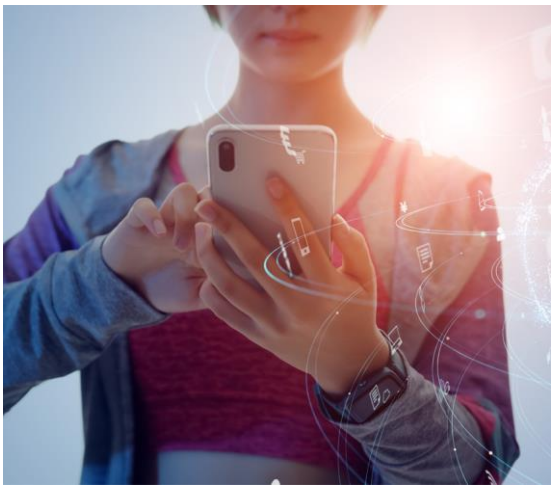
Automobiles



Information and communication



Environment and energy

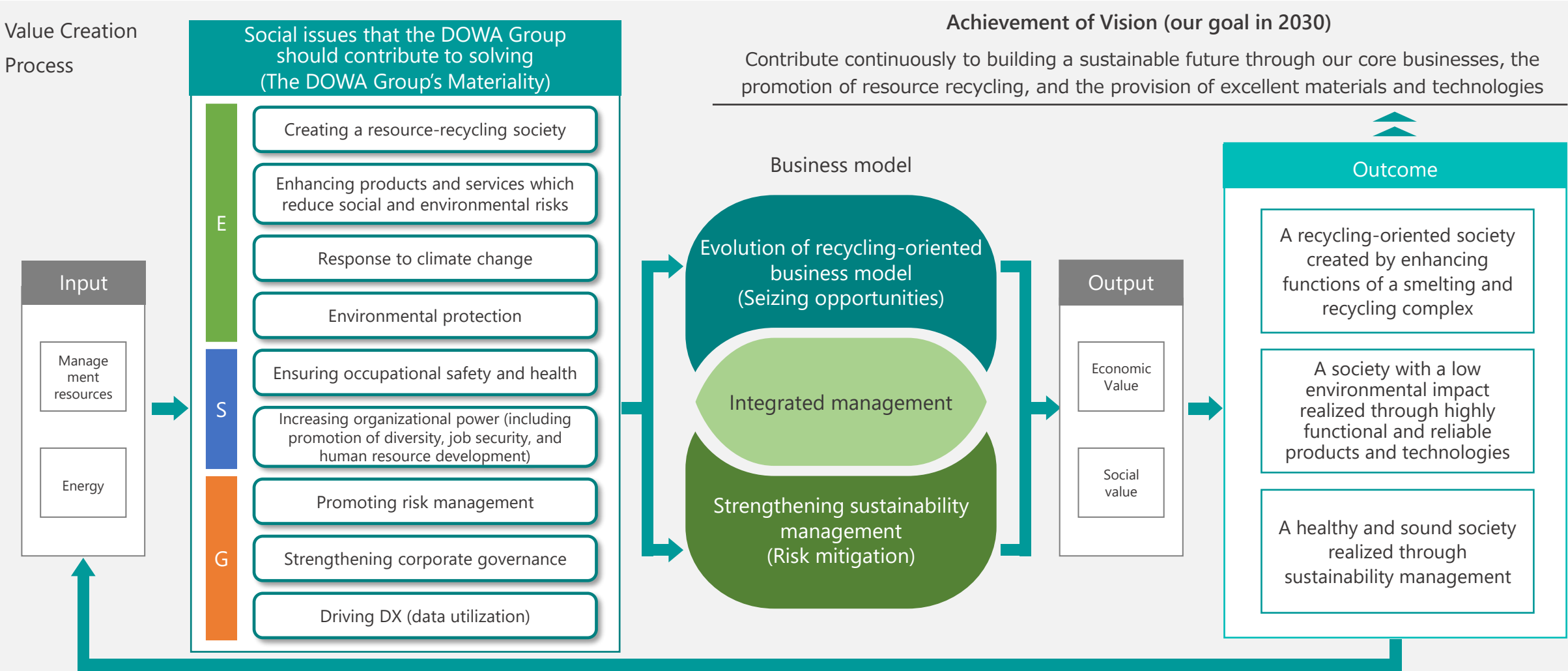


Healthcare



# Social Issues and the DOWA Group's Material Issues

Social issues that the DOWA Group should contribute to solving have been identified in light of the business environment, stakeholders' expectations and requests, etc. Those issues are positioned as the DOWA Group's Materiality, and initiatives will be taken to solve them.



# Basic Strategy for Solving the DOWA Group's Material Issues

Make it the basic strategy under the Midterm Plan 2024 to work on initiatives to acquire opportunities by evolving the recycling-oriented business model and reduce risks by strengthening sustainability management, so as to solve the DOWA Group's material issues.

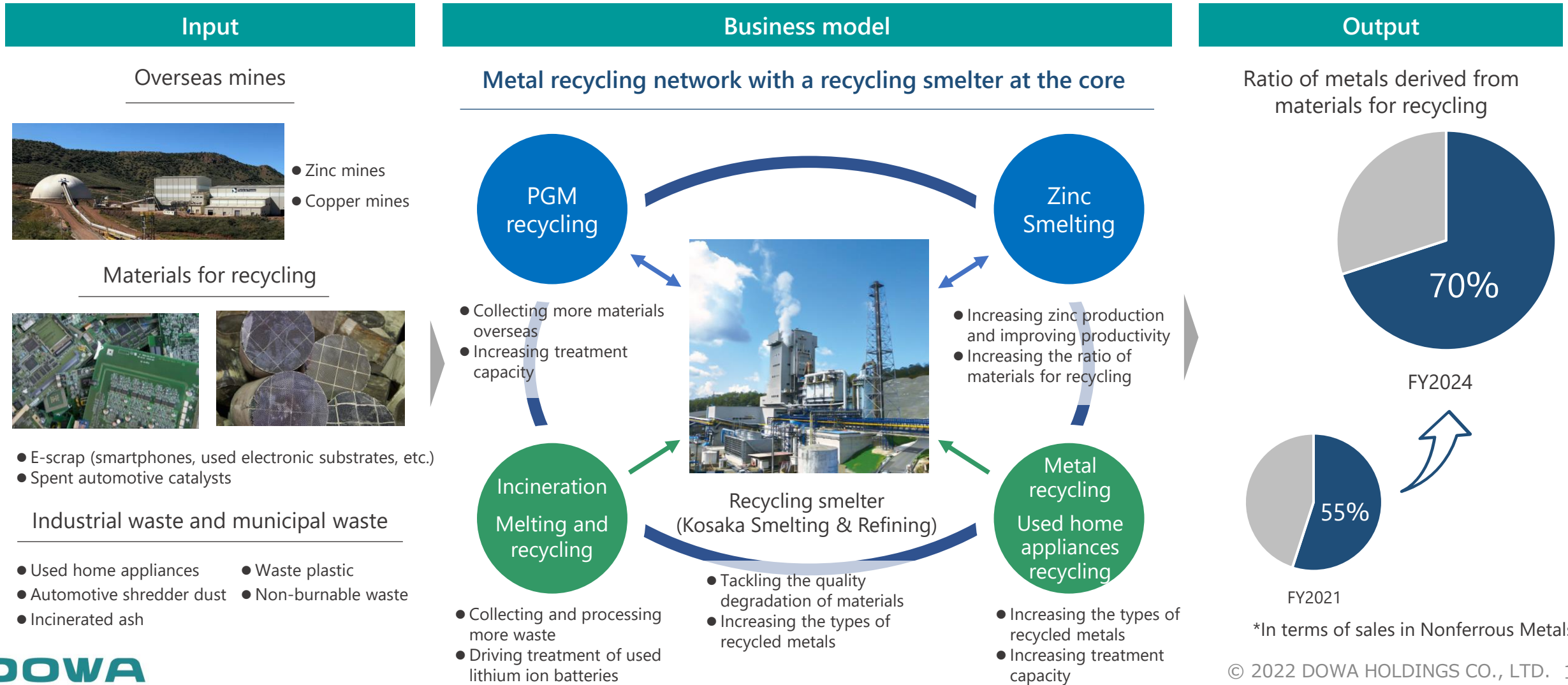




# Evolution of Recycling-oriented Business Model

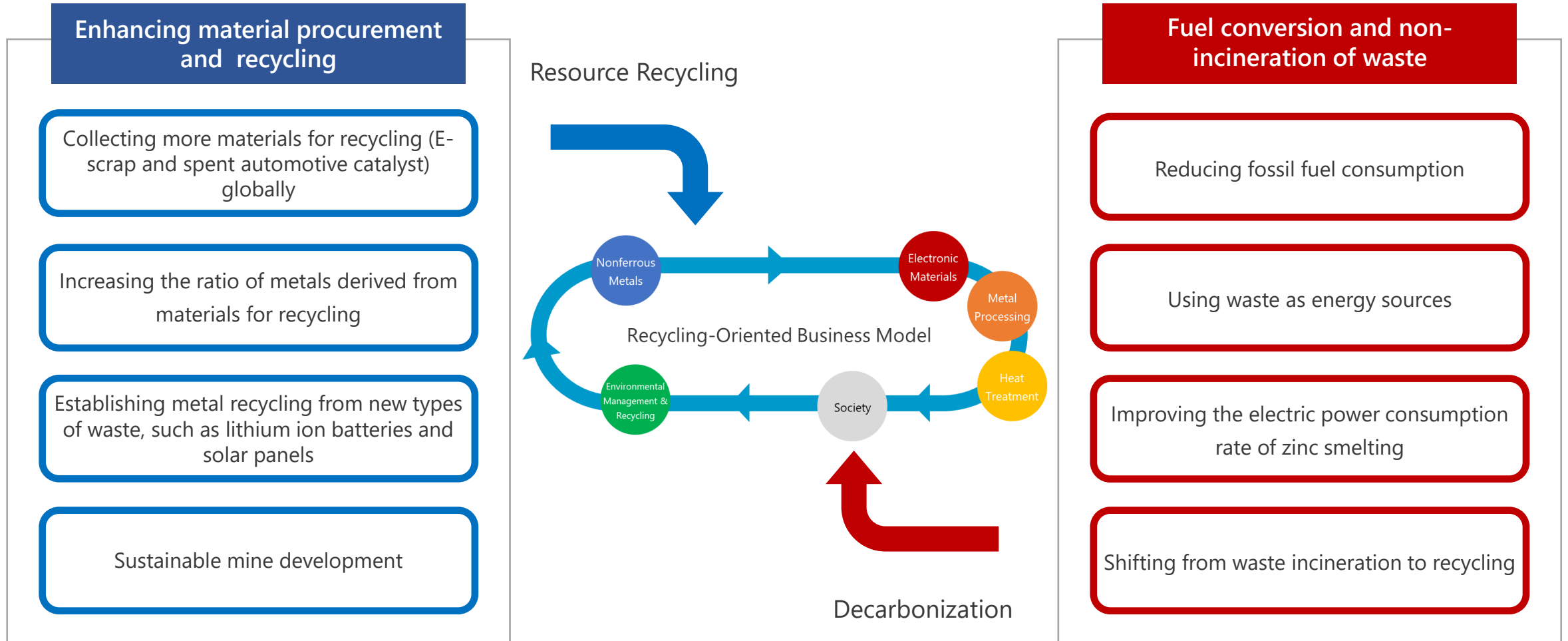
# Focus (1): Enhancing Metal Recycling

Focus efforts on enhancing metal recycling to increase the ratio of products derived from materials for recycling to the output (metals we produce). Further enhance global resource recycling, which is essential for realizing a circular economy and a carbon-neutral society.



## Focus (2): Achieving both Resource Recycling and Decarbonization (Long-term Initiatives)

Take initiatives such as reducing fossil fuel consumption and fuel conversion in addition to ensuring stable material procurement and enhancing recycling, so as to evolve the recycling-oriented business model into a sustainable, more competitive form that enables both resource recycling and decarbonization.



# Focus (3): Enhancing Products and Services Targeting Growth Markets

Focus efforts on developing and expanding sales of new products and services by identifying technology trends and needs in each market accurately. Make sure to tap into the growth potential of each market by making effective use of AI, IoT, and other digital technologies.



Automobiles

**Electrification**  
**Carbon neutrality**

- Launching and expanding sales of new high-performance copper alloy strips
- Developing and promoting sales of heat treatment facilities for realizing carbon neutrality



Information and communication

**Downsized, lower-profile components**  
**Terminals with advanced functions**

- Achieving higher performance and increasing the production of conductive atomized powder for MLCC
- Process optimization and mass production of solid electrolyte powder for all-solid-state batteries for consumer use



Environment and energy

**Growth in demand for renewable energy**

- Developing silver powder in line with the progress in the development of high-efficiency solar panels
- Establishing a system for mass-producing fuel cell materials



Healthcare

**Rising health consciousness**  
**Enhanced healthcare functions**

- Increasing production capacity of short-wavelength-infrared LEDs and photo diodes (PD) for wearable devices

## Focus (4): Reinforcing the Structure for Supporting the Development of New Businesses and Technologies

DOWA x Tohoku University Co-creation Research Center was established in April 2022.

Exceptional technological seeds at Tohoku University and technologies of DOWA will be integrated with the aim of creating cutting-edge technology that will contribute to offering resource recycling and excellent materials and technologies.



Glimpse of the Online Co-creation Research Center Grand Opening  
(Left: President Ohno, Tohoku University; Right: President Sekiguchi, DOWA)



The Engineering Laboratory Complex Building at the Graduate School of Engineering, Tohoku University, where the DOWA x Tohoku University Co-creation Research Center was established

Strengthen cooperation with the Graduate School of Environmental Studies, Tohoku University, and the Graduate School of International Resource Sciences, Akita University, with which DOWA has established endowed chairs, five universities with which DOWA has concluded framework agreement (Okayama University, Tohoku University, Akita University, Kumamoto University, and Gunma University), and universities and research institutions with which DOWA conducts joint research.

Drive introduction of new technologies, such as ones related to carbon neutrality and AI, MI, and IoT technologies that contribute to innovative development and efficient manufacturing.



# Strengthening Sustainability Management



# Focus (5): Building a Sustainability Promotion Structure

A framework for regularly discussing important sustainability issues and policies and measures to address such issues was built in April 2022. Important matters are reported to the Board of Directors so that the overall DOWA Group will address sustainability issues.

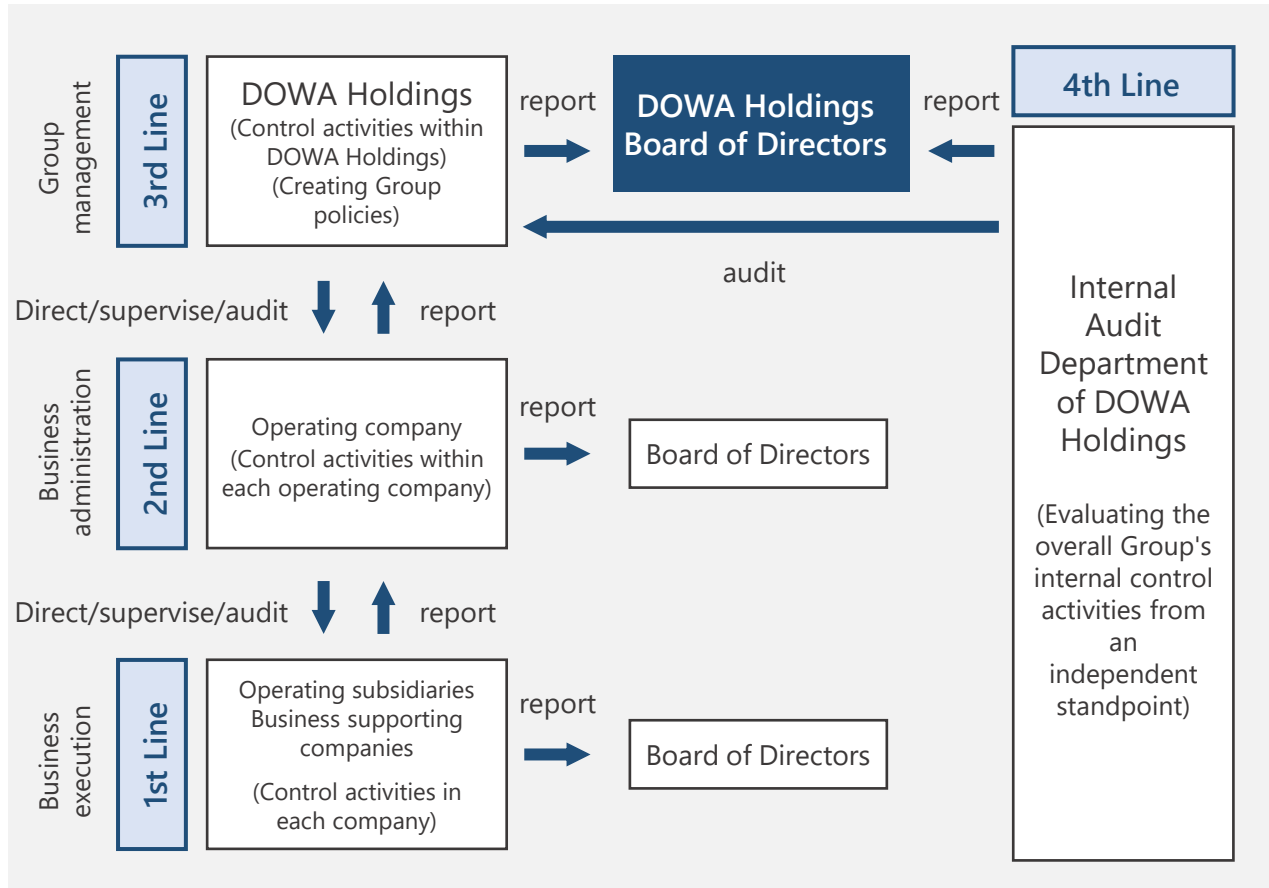


# Focus (6): Enhancing Risk Management Structure and Strengthening Corporate Governance

Enhance risk management system by building The Four Lines Model with DOWA Holdings' Board of Directors at the top.

Plan introduction of a restricted stock compensation plan and begin to disclose directors' skills matrix.

## Four Lines Model (internal control system)



## Introduction of a restricted stock compensation plan

Introduce a restricted stock compensation plan on condition that it will be approved at the Annual General Meeting of Shareholders to be held in June 2022.

Target	Directors (excluding outside directors) and executive officers
Transfer restriction period	Until the date of resignation

## Disclosure of the skills matrix for directors

Directors' skills matrix is planned to be disclosed in the notice of Annual General Meeting of Shareholders to be held in June 2022.

# Focus (7): Tackling Climate Change

Specific targets and measures for achieving the FY2030 GHG reduction targets are planned to be announced in the period of the Midterm Plan 2024. Information is planned to be disclosed in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in near future.

- August 2021 : Establishment of DOWA Group's Climate Change Policy and Long-Term Targets

## Climate Change Policy

DOWA Group positions the measures against climate change as an important management issue and will work to reduce greenhouse gas emissions. It will also contribute to the realization of a carbon-free society through various businesses, leading to continued growth of the group.

## Long-Term Targets

DOWA Group will aim to achieve carbon neutral status by 2050.

- February 2022 : Establishment of the FY2030 GHG Emissions Reduction Targets, Supports for the TCFD Recommendations

## FY2030 GHG Emissions Reduction Targets

Energy Sources	CO2 from electric power/fossil fuels used in manufacturing bases	At least 38% reduction (from the FY2013 level)
	CO2 from electric power/fossil fuels used in offices and other locations	At least 51% reduction (from the FY2013 level)
Non-Energy Sources	CO2 from waste	At least 15% reduction (from the FY2013 level)

\* The DOWA Group aims to reduce its Scope 1 and 2 GHG emissions in FY2030 compared with the FY2013 levels as a baseline. These targets include offsetting through the utilization of carbon credits.

# Focus (8): Enhancing Human Capital

Building an organization that continues growing is essential for achieving the Mission and Vision (our goal in 2030). Drive initiatives to enhance human capital with key initiatives of developing human resources who make changes happen and securing diverse human resources and workstyles.

## Human resource strategy under the Midterm Plan 2024

Achieving the Mission and Vision (our goal in 2030)

**Building an organization that continues growing**

### Developing human resources who make changes happen

- Developing core human resources (enhancing human resource development policies and systems)
- Developing globally competitive human resources
- Enhancing training programs and developing a culture of self-learning
- Developing resources for digital transformation (DX)

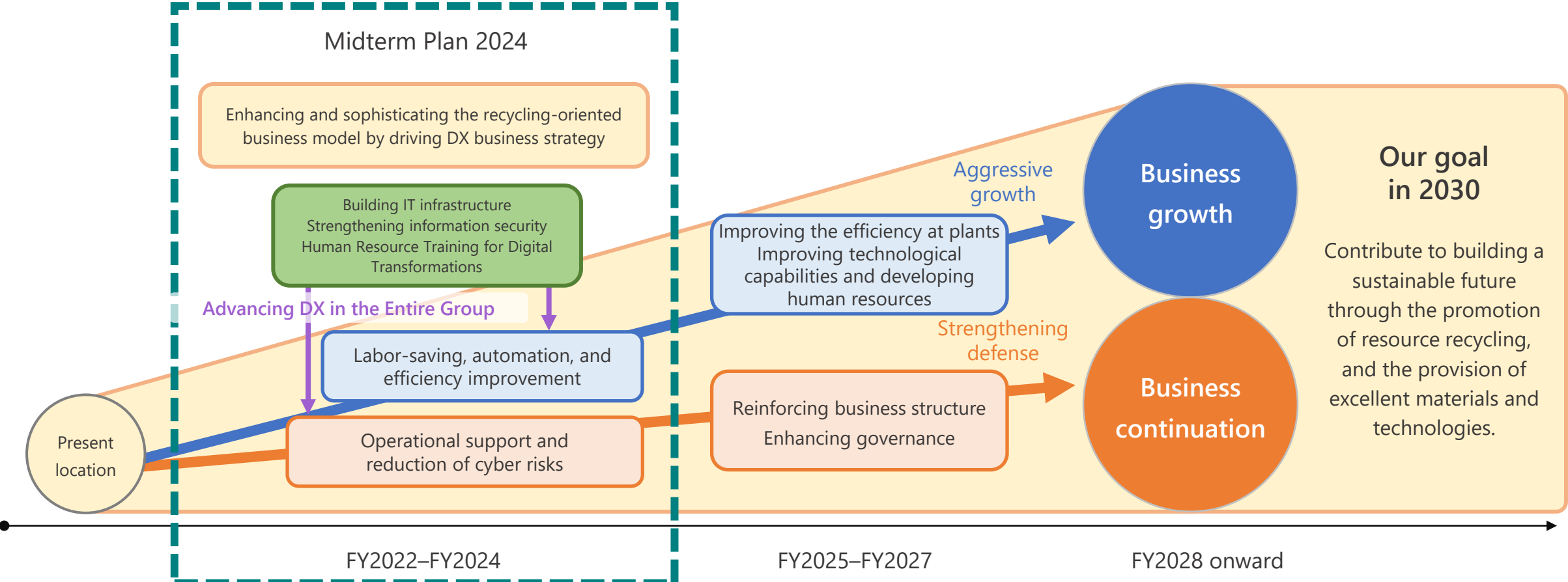
### Securing diverse human resources and workstyles

- Enhancing programs which enable employees to balance childcare/nursing care and work (introduction of flexible working hours, support for self-driven career development, etc.)
- Driving active participation of women (increasing the number of new graduates and retention rate)
- Building working environment that is essential for active participation of women, senior employees, foreigners, mid-career employees, and people with disabilities

# Focus (9): Driving Digital Transformation (DX)

## DX basic policy: Manufacturing transformation (DOWA Transformation)

The DOWA Group will accelerate and sophisticate data utilization with digital technologies to develop its adaptability to change, thus strengthening its main business of resource recycling and improving its ability to provide superior materials and technologies.



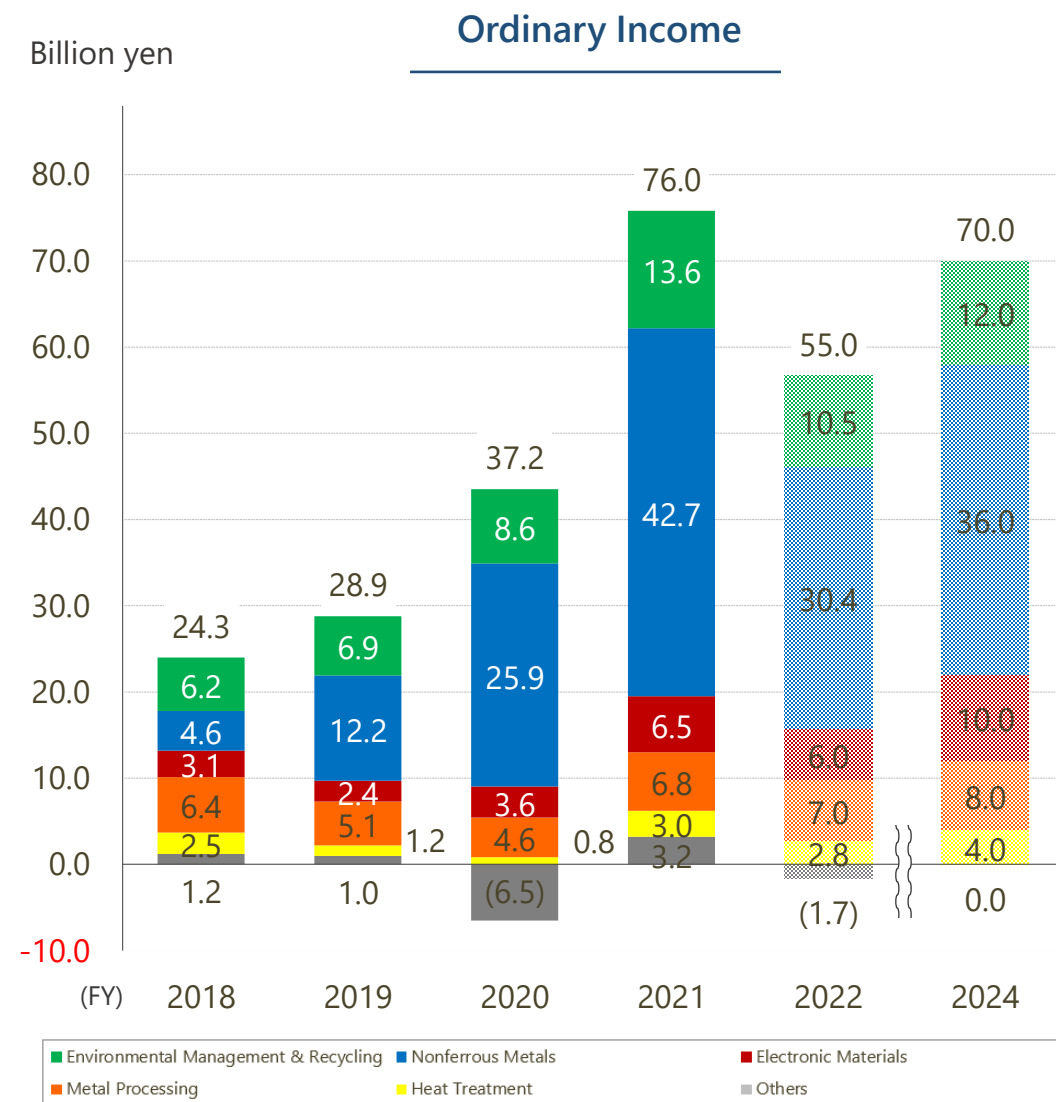


# Midterm Plan 2024 Management Targets

# Financial Targets

(FY)	Midterm Plan 2020 (results)				Midterm Plan 2024	
	2018	2019	2020	2021	2022	2024
Operating Income (billion yen)	18.6	25.9	37.4	63.8	50.0	<b>60.0</b>
Ordinary Income (billion yen)	24.3	28.9	37.2	76.0	55.0	<b>70.0</b>
ROA* (%)	5.1	5.8	6.7	12.1	—	<b>10 or more</b>
ROE (%)	6.3	7.2	8.5	17.6	—	<b>12 or more</b>
Assumptions	Forex (¥/\$)	110.9	108.7	106.1	112.4	<b>120.0</b>
	Copper (\$/t)	6,341	5,860	6,879	9,691	<b>10,000</b>
	Zinc (\$/t)	2,746	2,405	2,419	3,254	<b>3,800</b>

\* ROA (Return on Assets): Ordinary income divided by the average of total assets at the start and end of the year.



# Basic Policy on Capital Management

## Basic Policy on Capital Management

We aim to achieve sustainable growth and maximize our corporate value to achieve our Mission and Vision (our goal in 2030). To achieve these targets, we will implement capital measures with an appropriate balance between growth investments, maintenance of a sound financial foundation, and enhancement of shareholder returns while also paying attention to the business environment and future risks.

## Initiatives under the Midterm Plan 2024

Growth investments

We will be proactive in making investments in promising businesses and investments which improve the sustainability of the overall Group. Regarding growth investments, we will focus on projects which are expected to produce high investment effects, by considering capital cost and return on investment.

Maintaining a healthy financial foundation

We aim to maintain a sound financial foundation by fully considering the balance between shareholders' equity and interest-bearing debt, so as to continue growth investments and secure working capital.

An increase in shareholder returns

We provide returns to our shareholders by paying dividends, in principle, and will strive to ensure stable dividends and increase dividends in a stepwise manner.

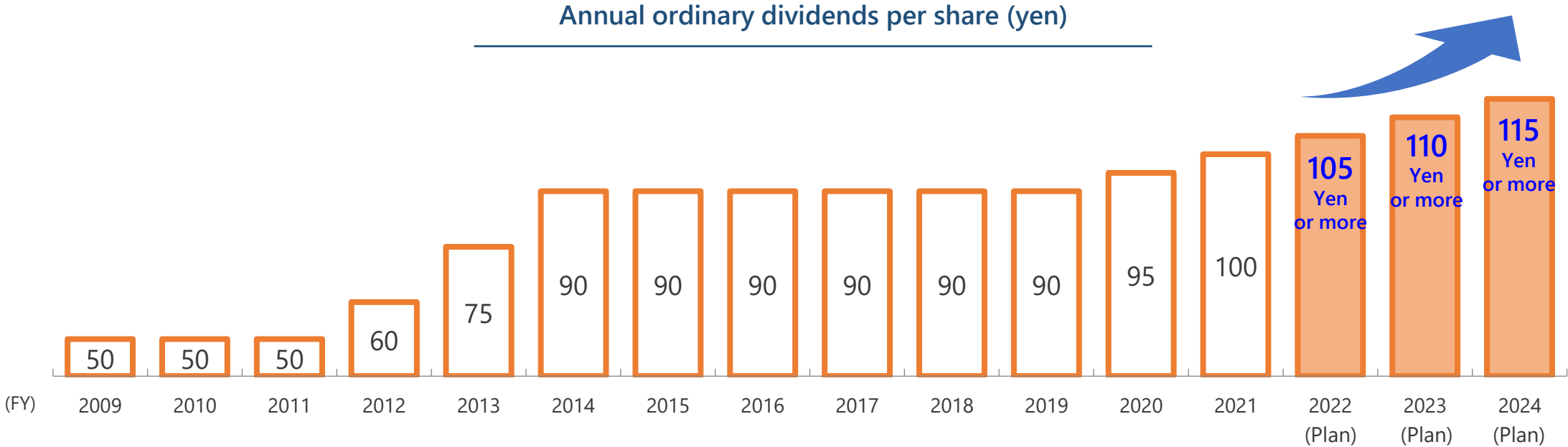


# Dividend Policy

DOWA regards the payment of dividends to shareholders as one of its top management priorities. The Company sets out a policy of increasing dividends as performance allows, while ensuring sufficient internal reserves for bolstering the corporate structure and expanding business in the future in line with the basic principle of maintaining stable dividends.

Our basic dividend policy for the period of the Midterm Plan 2024 (FY2022 through FY2024) is not to decrease the amount of ordinary dividends from the previous year's amount and to increase the amount of ordinary dividends in stages because ordinary income will increase in stages from 55.0 billion yen to 70.0 billion yen under the plan.

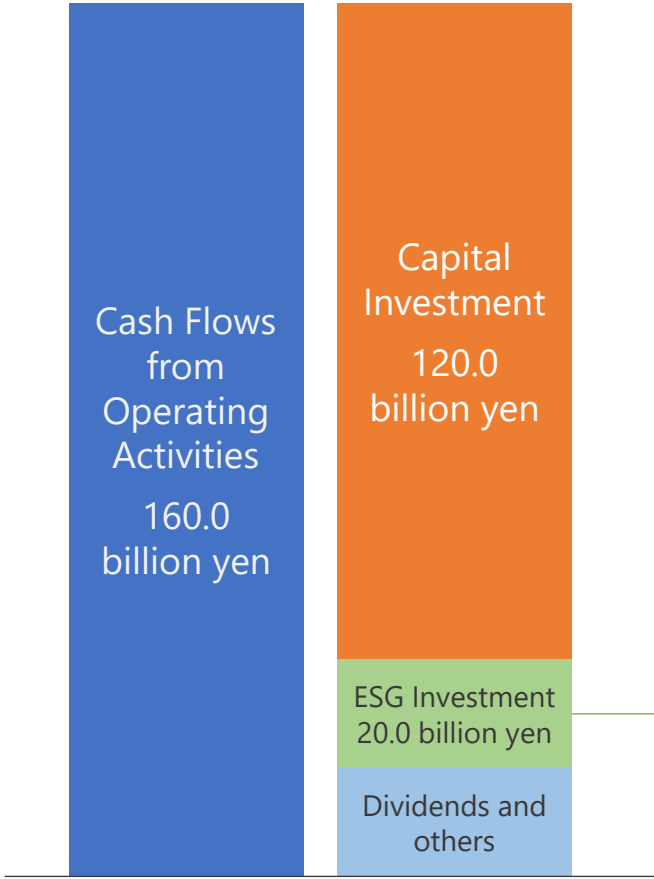
Moreover, we will aim to increase the amount of dividends further in consideration of financial results and cash flows in each fiscal year, future prospects, and other factors.



\*Figures for the annual ordinary dividends per share for FY2016 and before were corrected to those after the stock split.

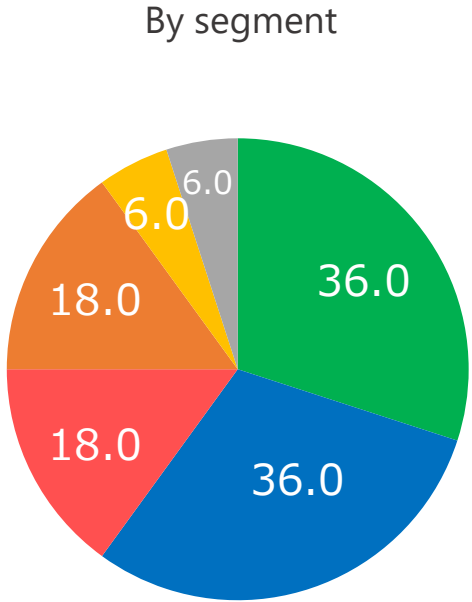
\*The total amount of annual dividends for FY2021 is 130 yen per share, with the amount of special dividends (30 yen) added to that of ordinary dividends (100 yen).

# Allocation of Funds (Cash Allocation)



Cash flows in the period of the Midterm Plan 2024

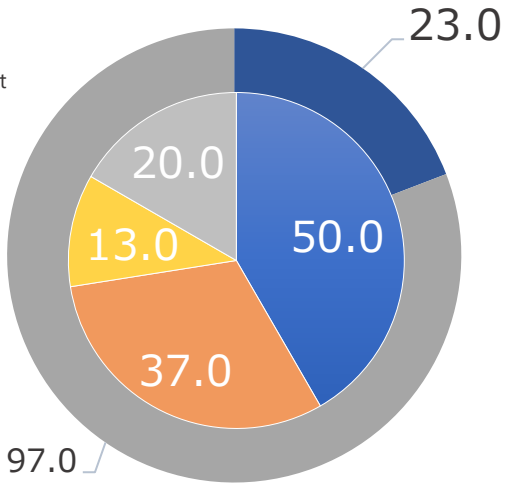
## Capital Investment (120.0 billion yen)



Billion yen

- Environmental Management & Recycling
- Nonferrous Metals
- Electronic Materials
- Metal Processing
- Heat Treatment
- Others

## By investment category



Billion yen

- Investment in growth
- Maintenance and replacement
- Investments related to environmental conservation and, health and safety
- Others
- ESG-related investments
- Others

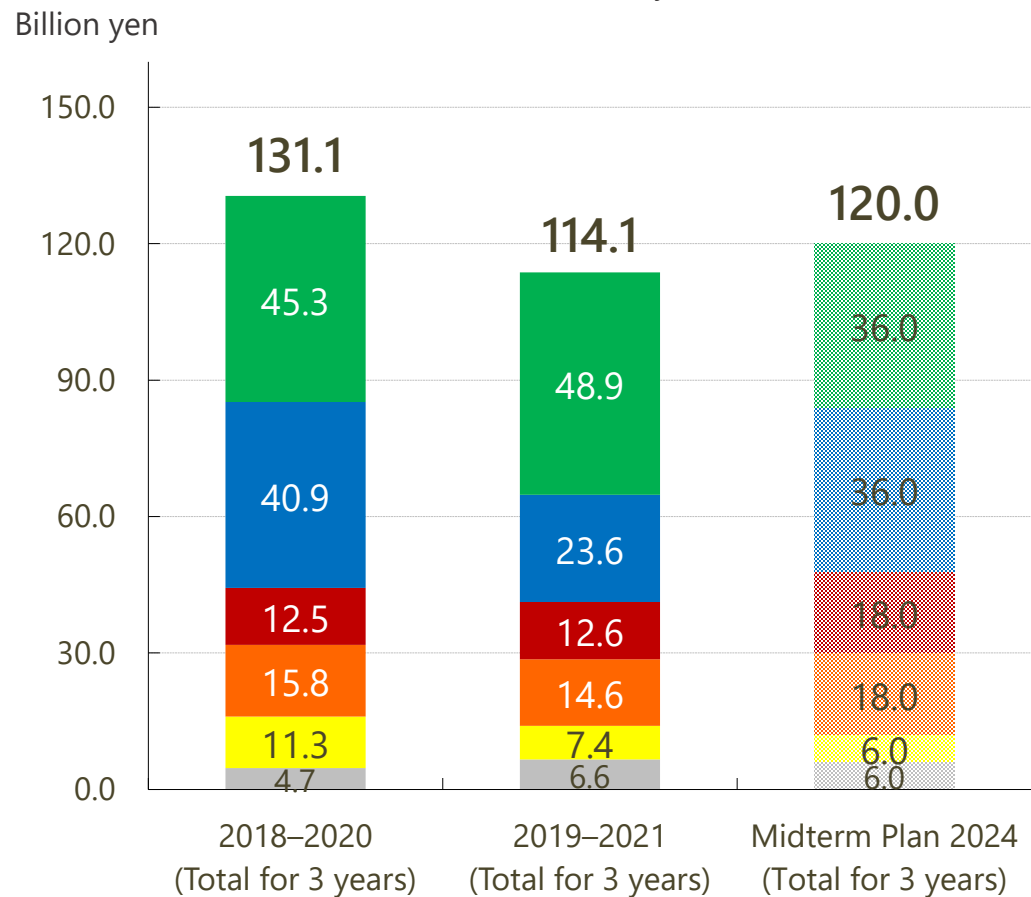
## ESG Investment (20.0 billion yen)

An investment fund of 120.0 billion yen has been secured because it is highly likely that ESG investment (investments for tackling climate change, building comfortable work environment, implementing DX, and other purposes), which is not included in investments (200 billion yen), will be generated additionally.

# (Ref.) Capital Investment, R&D

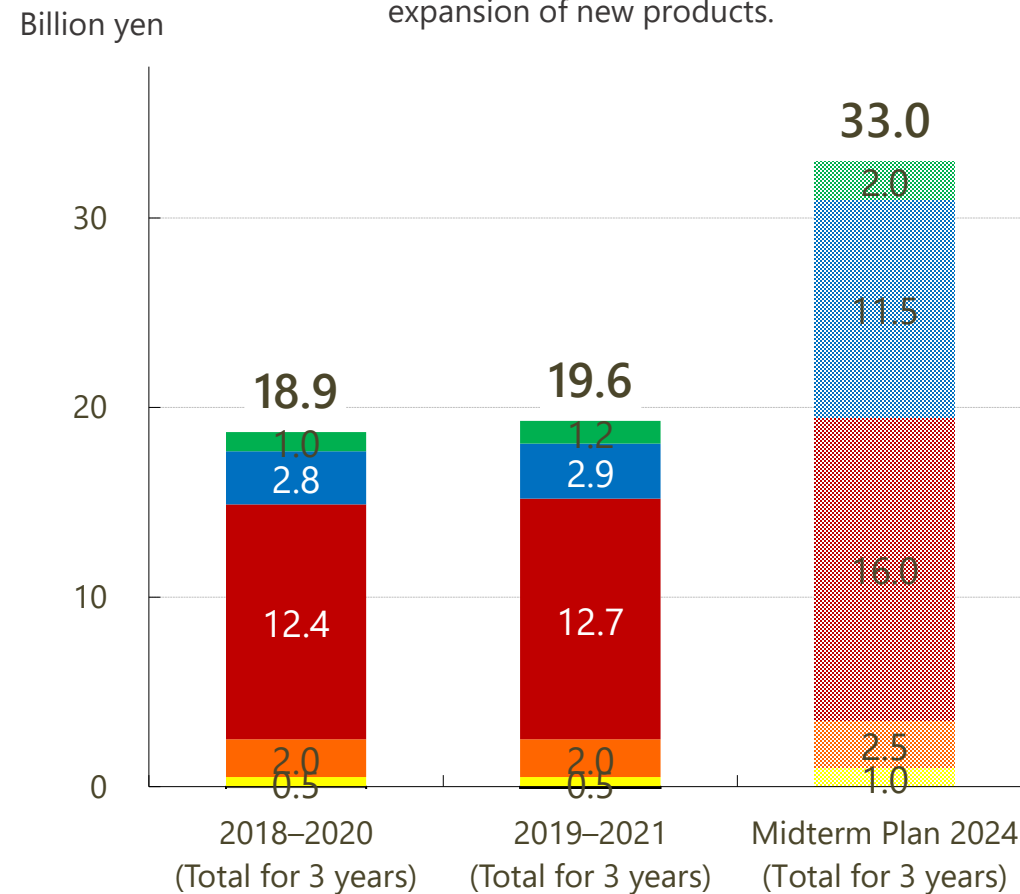
## Capital Investment

The total amount of investment increased slightly compared to the last three years.



## R&D

In Nonferrous Metals, cost of overseas mineral exploration increased.  
In Electronic Materials, cost of samples, etc. increased reflecting sales expansion of new products.



■ Environmental Management & Recycling 
 ■ Nonferrous Metals 
 ■ Electronic Materials 
 ■ Metal Processing 
 ■ Heat Treatment 
 ■ Others



# Midterm Plan 2024 Strategies in Each Business

# Environmental Management & Recycling (1) Outline of Midterm Plan 2024

## Business strategy

Contribute to building a safe, secure future by continuing to create solutions with high customer satisfaction as Asia's top runner in the environmental management field.

## Financial data

### Operating income

**11.0 billion yen**  
(FY2024)

### Ordinary income

**12.0 billion yen**  
(FY2024)

### Capital investment

**36.0 billion yen**  
(Total for 3 years)

### R&D

**2.0 billion yen**  
(Total for 3 years)

## Major initiatives

- Waste treatment: Expanding treatment of hazardous waste and driving the business of treating used lithium ion batteries
- Soil remediation: Expanding the dismantling, shredding, and sorting businesses and driving the expansion of landfill facilities (Green Fill Kosaka)
- Recycling: Increasing the collection of materials for recycling and enhancing the capacity of the used home appliance recycling business and waste plastic recycling business
- Southeast Asia: Enhancing treatment of hazardous waste and establishing a new treatment facility in East Java (Indonesia)



# Nonferrous Metals (1) Outline of Midterm Plan 2024

## Business strategies

Enhance resource recycling further and deliverer the full potential of resources.  
Building a sustainable Nonferrous Metals business model.

## Financial data

### Operating income

**30.0 billion yen**  
(FY2024)

### Ordinary income

**36.0 billion yen**  
(FY2024)

### Capital investment

**36.0 billion yen**  
(Total for 3 years)

### R&D

**11.5 billion yen**  
(Total for 3 years)

## Major initiatives

- Precious metals and copper smelting: Treating more materials for recycling by handling impurities and increasing the production volume and yield rate of tin
- Platinum group metals (PGM): Increasing spent catalysts collection by expanding overseas bases and increasing the treatment capacity of Nippon PGM
- Zinc: Establishing a structure for annual production of 220,000 tons at Akita Zinc
- Mine development: Increasing production at Los Gatos Mine (Mexico) and driving the Palmer Zinc and Copper Project (Alaska)



# Electronic Materials (1) Outline of Midterm Plan 2024

## Business strategies

Expand the business in growth markets such as energy, information and communication, automobiles, and healthcare.  
Provide unique products needed in society, such as ones for achieving carbon neutrality and ones for the healthcare market.

## Financial data

### Operating income

**7.5 billion yen**  
(FY2024)

### Ordinary income

**10.0 billion yen**  
(FY2024)

### Capital investment

**18.0 billion yen**  
(Total for 3 years)

### R&D

**16.0 billion yen**  
(Total for 3 years)

## Major initiatives

- Semiconductors: Increasing production capacity of short-wavelength-infrared LEDs and photo diodes (PD) for wearable devices
- Electronic materials: Developing silver powder in line with the progress in the development of high-efficiency solar panels and improving the performance and increasing the production of conductive atomized powder
- Advanced fine materials: Establishing a structure for the mass production of fuel cell materials
- New development: Process optimization and mass production of solid electrolyte powder for all-solid-state batteries for consumer use



# Metal Processing (1) Outline of Midterm Plan 2024

## Business strategies

Continue to invest aggressively in growth markets (applications and regions) to tap into new demand surely.  
Contribute to society by providing products and services which reduce environmental risks.

## Financial data

### Operating income

**7.5 billion yen**  
(FY2024)

### Ordinary income

**8.0 billion yen**  
(FY2024)

### Capital investment

**18.0 billion yen**  
(Total for 3 years)

### R&D

**2.5 billion yen**  
(Total for 3 years)

## Major initiatives

Copper rolled products: Increasing sales of high-value-added products, strengthening sales in growth markets, and expanding the Asia business

Launching and expanding sales of new high-performance copper alloy strips

Electroplating: Expanding sales of electroplated products for high-voltage terminals and increasing capacity by eliminating and consolidating production lines and increasing production at facilities in Japan

Metal-ceramic substrates: Expanding sales and increasing production capacity of metal-ceramic substrates for industrial machinery and railways





# Heat Treatment (1) Outline of Midterm Plan 2024

## Business strategies

Take the moves towards carbon neutrality as an opportunity and drive initiatives to reinforce sales, manufacturing, and development structures.

Achieve steady growth in growing markets (overseas and new markets).

## Financial data

### Operating income

**4.0 billion yen**  
(FY2024)

### Ordinary income

**4.0 billion yen**  
(FY2024)

### Capital investment

**6.0 billion yen**  
(Total for 3 years)

### R&D

**1.0 billion yen**  
(Total for 3 years)

## Major initiatives

Industrial furnaces:

Developing and expanding sales of heat treatment facilities which realize carbon neutrality (such as the cell-type vacuum carburizing furnace)

Developing and expanding sales of new equipment for applications other than automobiles

Heat treatment processing: Receiving orders for EV-related components, finding new customers, and winning orders from customers other than those in the automotive industry

Responding to demand for local procurement and winning new customers (related to EVs) in overseas countries



## (Appendix 1) Assumptions and Sensitivities

Sensitivity (Operating Income / FY2022)

Million yen

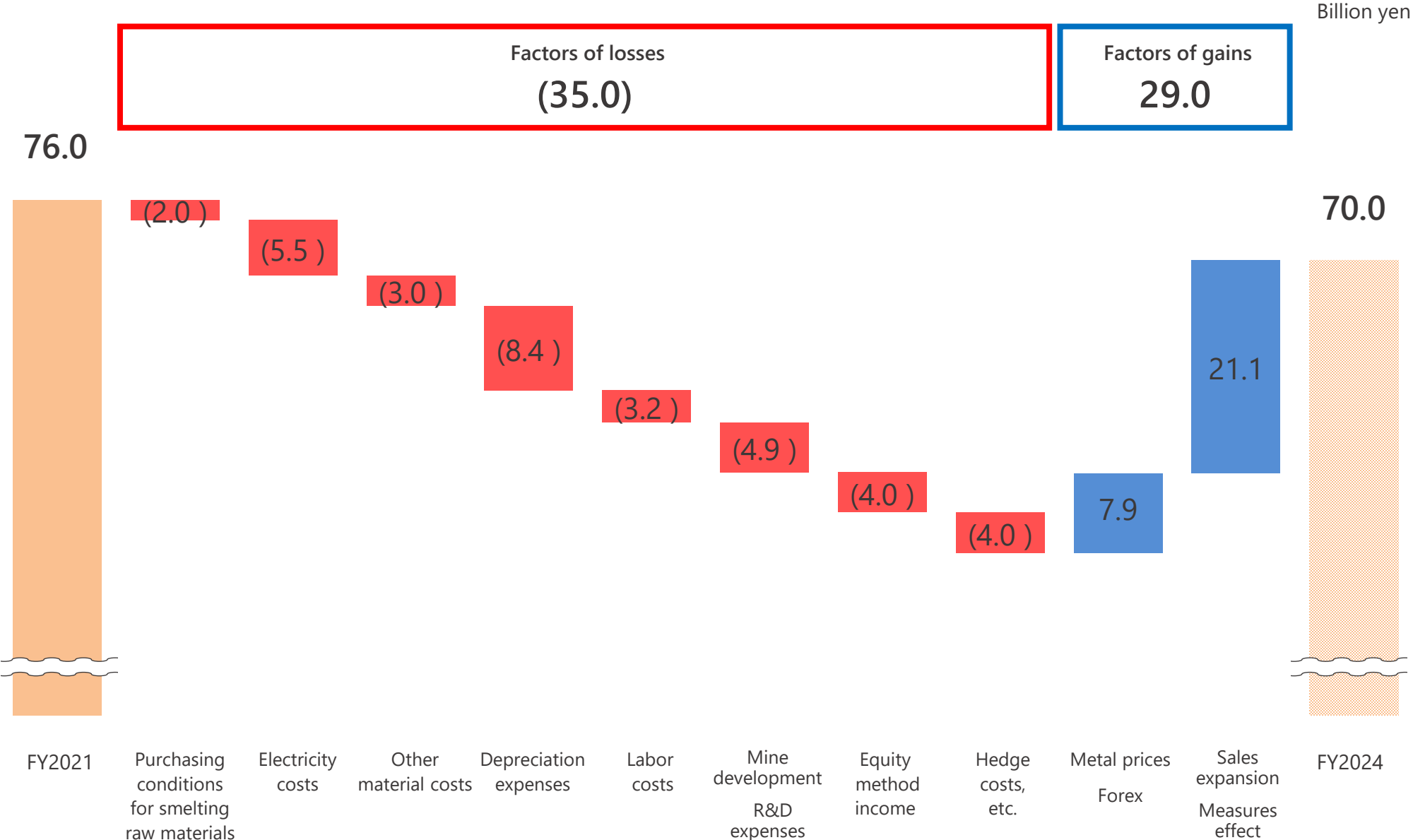
	Assumptions	Fluctuation	Sensitivity
Exchange rate	120.0 ¥/\$	±1 ¥/\$	<b>680</b>
Copper	10,000 \$/ton	±100 \$/ton	<b>40</b>
Zinc	3,800 \$/ton	±100 \$/ton	<b>420</b>

\* Exchange rate sensitivity; Nonferrous Metals 540 million yen and Electronic Materials 140 million yen.

### Exchange Rate and Metal Prices

	Midterm Plan 2020 (results)				Midterm Plan 2024		
	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
Exchange Rate: (¥/\$)	110.9	108.7	106.1	112.4	<b>120.0</b>	<b>120.0</b>	<b>120.0</b>
Copper: (\$/t)	6,341	5,860	6,879	9,691	<b>10,000</b>	<b>10,000</b>	<b>10,000</b>
Zinc: (\$/t)	2,746	2,405	2,419	3,254	<b>3,800</b>	<b>3,800</b>	<b>3,800</b>

# (Appendix 2) Factor Analysis of Ordinary Income



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# DOWA

Forward-looking statements made in this document, such as business forecast, are based on the information available at this time and on certain premises that the Company assumes to be reasonable. Actual performance may differ materially from such forecasts due to a variety of factors.