

OJI HOLDINGS

November 7, 2024

# Summary of Financial Business Results



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# 01

## 1st-half of FY2024 Result Overview

## ① Financial Highlights of 1st-half of FY2024 (consolidated)

	1st-half of FY2023	1st-half of FY2024	Increase(Decrease)
Net Sales	847.1	922.9	75.8
Operating Profit	38.8	37.2	(1.6)
[Domestic Companies]	[25.7]	[22.8]	[(2.9)]
[Overseas Companies]	[13.1]	[14.4]	[1.3]
Ordinary Profit	50.8	39.4	(11.4)
Profit Attributable to Owners of Parent	31.6	24.2	(7.4)
Depreciation	39.1	41.2	2.1
Overseas Sales Ratio	34.4%	40.9%	6.5pt
Average Exchange Rate (¥/US\$)	141.1	152.8	11.7
Number of Consolidated Companies	95	94	(1)
Domestic	105	124	+19
Overseas			
Total	200	218	+18

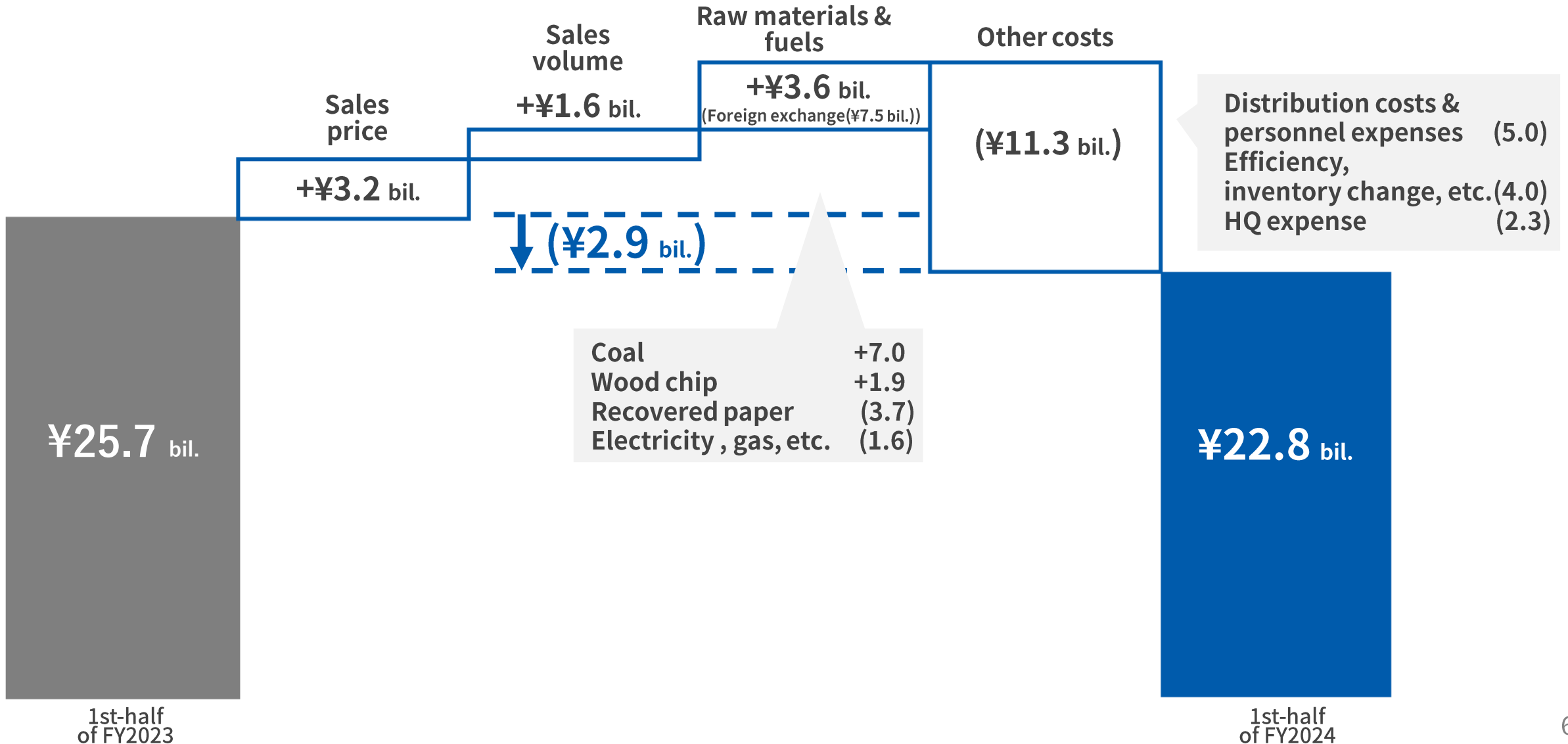
Domestic : (1)[Printing]

Overseas : +1[Forest Plantation in Uruguay], +21[Packaging in Europe], (1)[Filter in China], (1)[Corrugated Containers in Singapore], (1)[Labels in Singapore]



# ① Financial Highlights of 1st-half of FY2024 (consolidated)

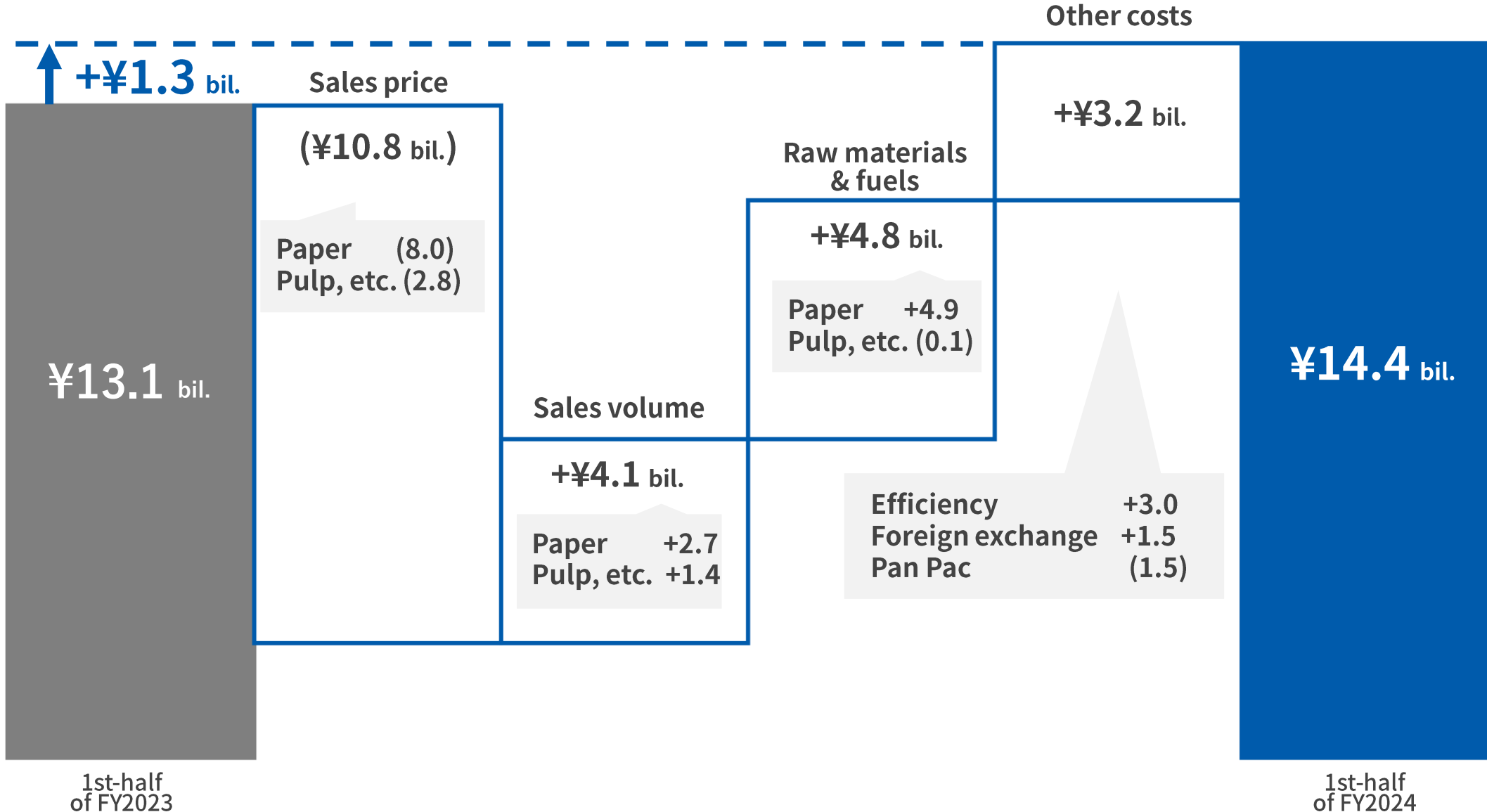
Domestic Companies - Breakdown of Operating Profit Difference (FY2023 1st-half vs FY2024 1st-half)





# ① Financial Highlights of 1st-half of FY2024 (consolidated)

## Overseas Companies - Breakdown of Operating Profit Difference (FY2023 1st-half vs FY2024 1st-half)



## ② Sales and Operating Profit by Segment [1st-half of FY2024 Result]

(¥ billion)

	1st-half of FY2023		1st-half of FY2024		Increase (Decrease)	
	Net Sales	Operating Profit	Net Sales	Operating Profit	Net Sales	Operating Profit
Household & Industrial Materials	399.1	5.6	418.3	3.8	19.2	(1.8)
Functional Materials	113.8	4.4	121.5	6.7	7.7	2.3
Forest Resources & Environment Marketing	180.5	18.7	202.3	17.5	21.8	(1.2)
Printing & Communications Media	149.0	7.1	146.2	4.1	(2.8)	(3.0)
Others	4.7	3.0	34.7	5.2	30.0	2.2
<b>Total</b>	<b>847.1</b>	<b>38.8</b>	<b>922.9</b>	<b>37.2</b>	<b>75.8</b>	<b>(1.6)</b>

\*1: Sales include inter-segment sales \*2: Others include adjustment amount



# ③ Analysis of Operating Profit by Segment

## Household and Industrial Materials

Decreased profits due to deteriorating overseas markets and raw materials price differences in NZ

**Increase (Decrease) of Operating Profit**

**(1.8) ¥ bil.**

**1st-half of FY2024**

Net Sales	Operating Profit
<b>¥418.3 bil.</b>	<b>¥3.8 bil.</b>
	Dom ¥7.2b OS ¥(3.4b)



**1st-half of FY2023**

Net Sales	Operating Profit
<b>¥399.1 bil.</b>	<b>¥5.6 bil.</b>
	Dom ¥7.6b OS ¥(2.0b)

**Domestic (¥0.4 bil.)**

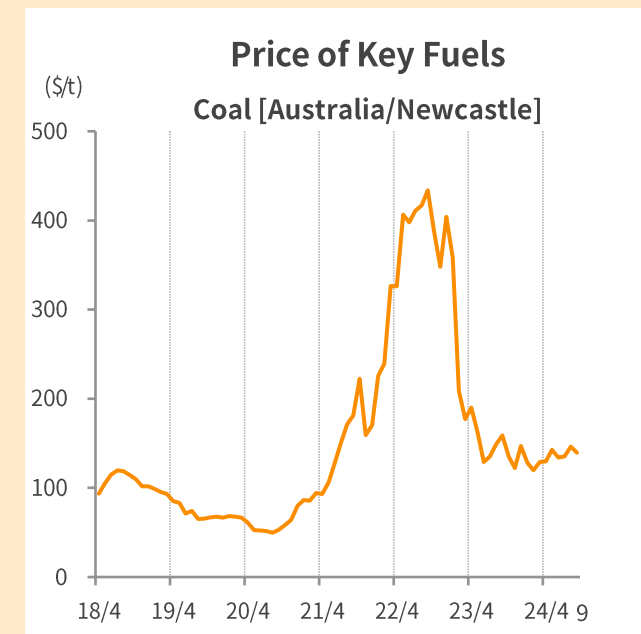
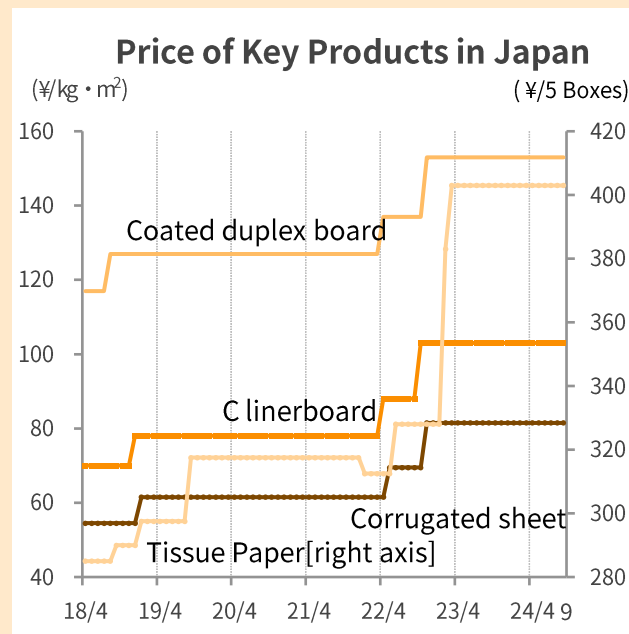
Other costs (¥4.0 bil.)  
(Personnel Expenses & Distribution Costs : (3.8))

Sales & market factor +¥3.1 bil. etc.

**Overseas (¥1.4 bil.)**

Sales & market factor (¥3.1 bil.)

Price difference in raw materials & fuels (SEA +3.3, NZ (1.1)) etc.



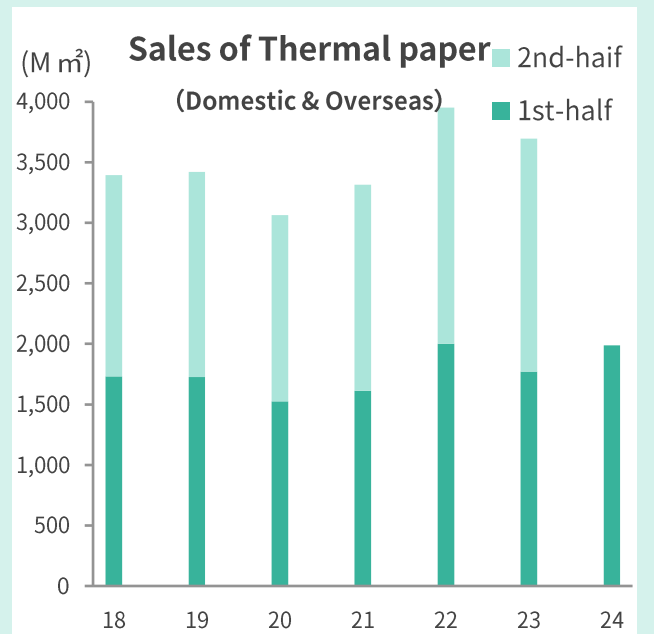
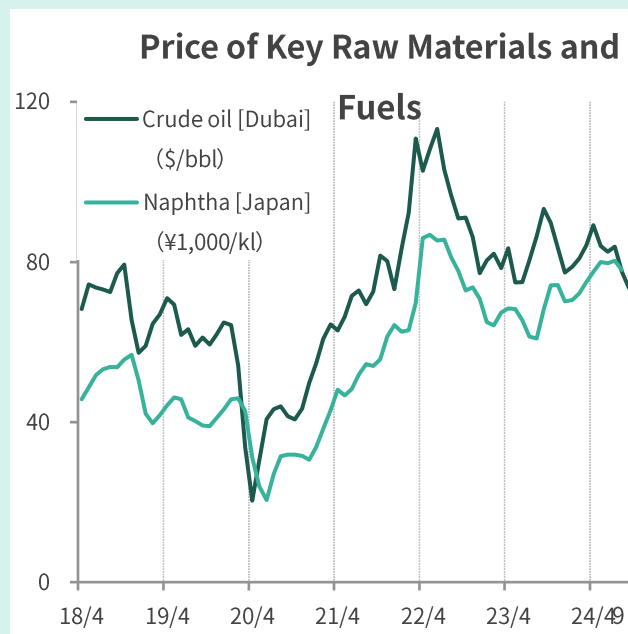
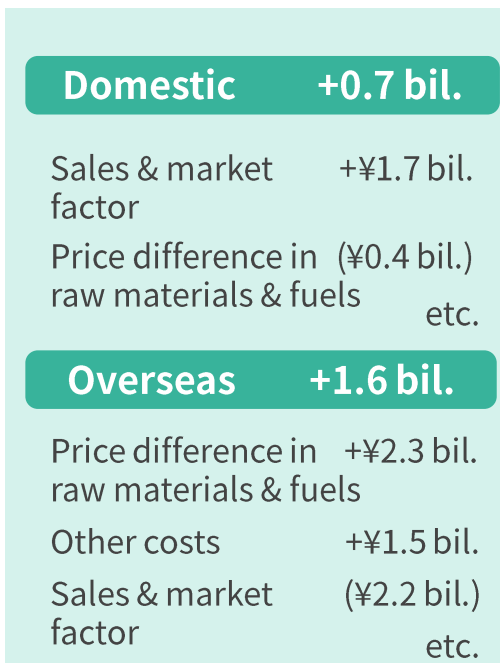
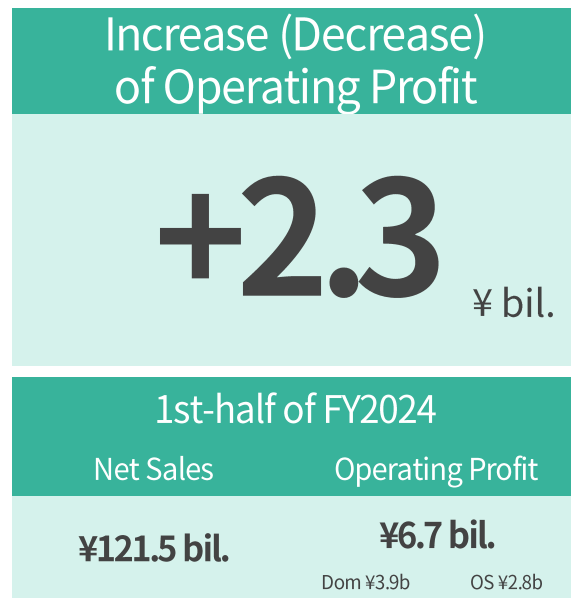
Sales of Key Products (*)		1st-half of FY2023			1st-half of FY2024			Increase (Decrease)			
		Sales Volume 1,000t(or) million m <sup>3</sup>	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion	Sales Volume 1,000t(or) million m <sup>3</sup>	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion	Sales Volume 1,000t(or) million m <sup>3</sup>	Year-on Year %	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion
Paperboard	Domestic	1,398	85.63	119.7	1,410	86.34	121.7	12	100.9%	0.71	2.0
Corrugated containers (million m <sup>3</sup> )	Domestic	1,505	76.56	115.2	1,504	76.81	115.5	(1)	99.9%	0.26	0.3

\*Total amount of consolidated Group's manufacturing companies including internal consumption

# ③ Analysis of Operating Profit by Segment

## Functional Materials

Increased profits due to higher volumes in domestic markets and improvement in price of raw materials & fuels in overseas



Sales of Key Products (*)	1st-half of FY2023			1st-half of FY2024			Increase (Decrease)			
	Sales Volume 1,000t(or) million m <sup>2</sup>	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion	Sales Volume 1,000t(or) million m <sup>2</sup>	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion	Sales Volume 1,000t(or) million m <sup>2</sup>	Year-on-Year %	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion
Thermal paper (million m <sup>2</sup> ) Domestic & Overseas	1,772	25.91	45.9	1,988	24.82	49.3	215	112.1%	(1.08)	3.4

\*Total amount of consolidated Group's manufacturing companies including internal consumption

# ③ Analysis of Operating Profit by Segment

## Forest Resources and Environment Marketing Manufacturing facilities at Pan Pac restored

**Increase (Decrease) of Operating Profit**

**(1.2) ¥ bil.**

**1st-half of FY2024**

Net Sales	Operating Profit
<b>¥202.3 bil.</b>	<b>¥17.5 bil.</b>
Dom ¥2.2b	OS ¥15.3b

**Overseas (¥1.0 bil.)**

Pan Pac (¥1.5 bil.) etc.

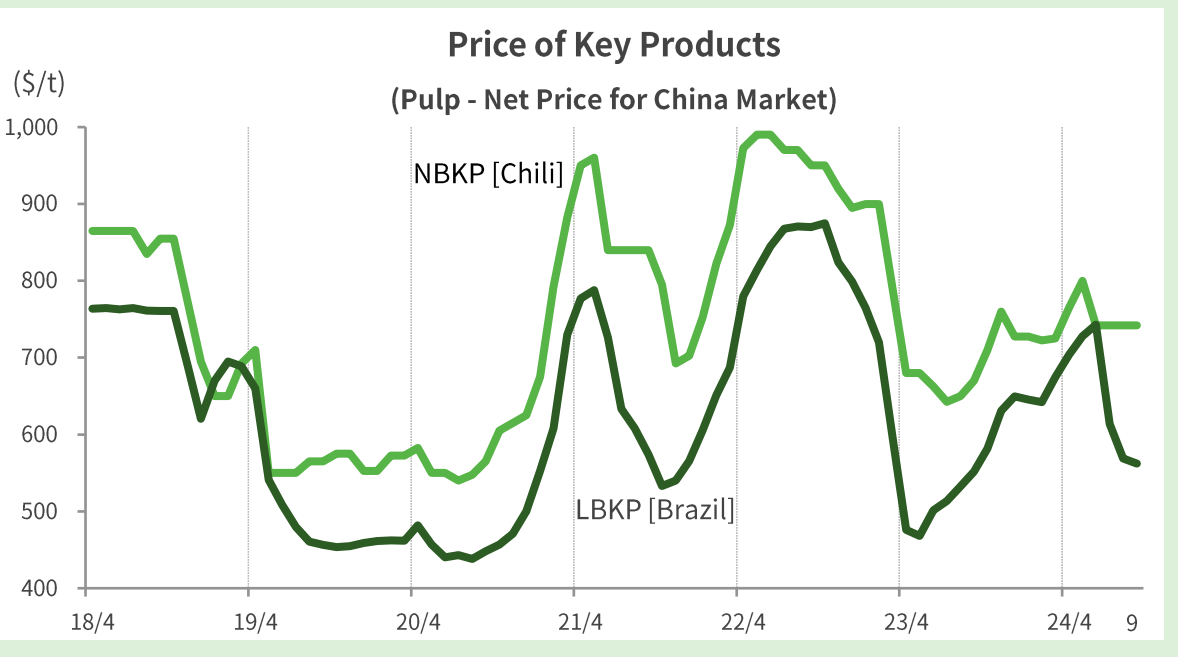
**NBKP**

725 \$/t	+25	750 \$/t	745 \$/t	750 \$/t	760 \$/t
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**LBKP**

580 \$/t	+55	635 \$/t	690 \$/t	575 \$/t	560 \$/t
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2023 Result (Jan-Dec)    2024 Assumption (Jan-Dec)    2024 (Jan-Jun. Result)    2024 (Jul-Dec Assumption)    Reference (Oct. Assumption)



**1st-half of FY2023**

Net Sales	Operating Profit
<b>¥180.5 bil.</b>	<b>¥18.7 bil.</b>
Dom ¥2.4b	OS ¥16.3b

Sales of Key Products (*)		1st-half of FY2023			1st-half of FY2024			Increase (Decrease)			
		Sales Volume 1,000t(or) million m <sup>3</sup>	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion	Sales Volume 1,000t(or) million m <sup>3</sup>	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion	Sales Volume 1,000t(or) million m <sup>3</sup>	Year-on Year %	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion
Market pulp	Domestic& Overseas	951	100.60	95.7	1,069	109.55	117.1	118	112.4%	8.96	21.4
	Electric power (GWh) Domestic	942	-	-	800	-	-	(143)	84.9%	-	-

\*Total amount of consolidated Group's manufacturing companies including internal consumption

# ③ Analysis of Operating Profit by Segment

## ■ Printing and Communications Media

Decreased profits due to increased costs in domestic markets while overseas business profit increased

**Increase (Decrease) of Operating Profit**

**(3.0) ¥ bil.**

**1st-half of FY2024**

Net Sales	Operating Profit
<b>¥146.2 bil.</b>	<b>¥4.1 bil.</b>
	Dom ¥3.9b OS ¥0.2b

**Domestic (¥4.2 bil.)**

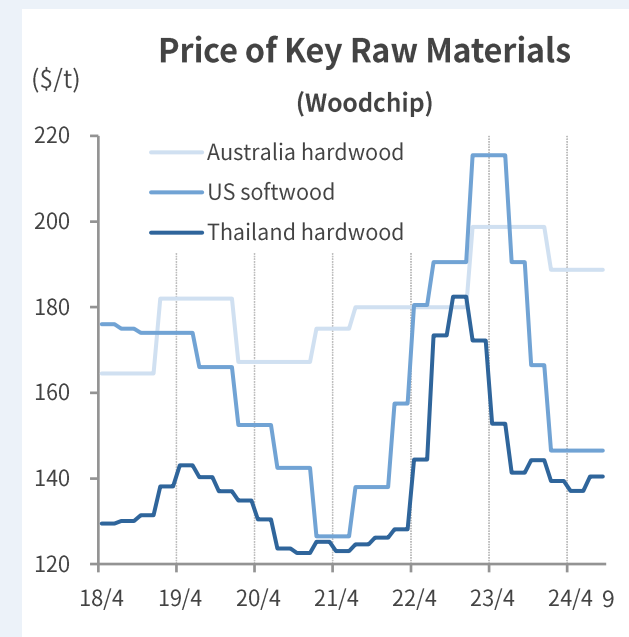
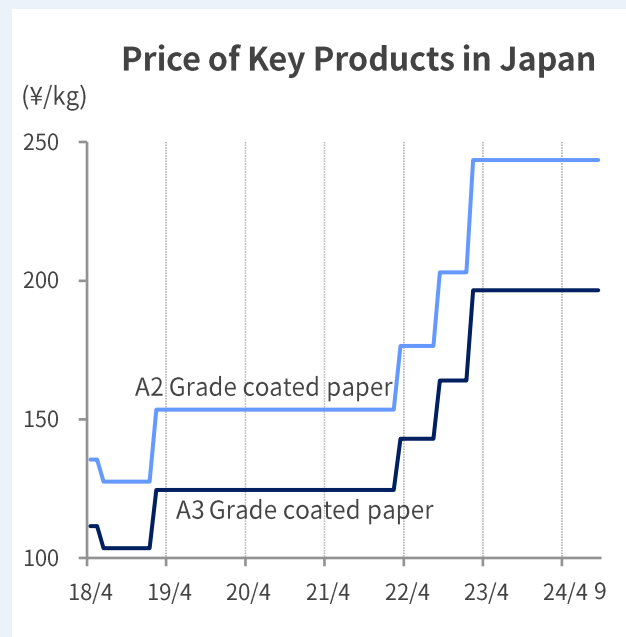
Other costs (¥6.6 bil.)  
(Personnel Expenses & Distribution Costs : (1.3))

Price difference in raw materials & fuels +¥2.4 bil. etc.

**Overseas +¥1.2 bil.**

Price difference in raw materials & fuels +¥0.4 bil. etc.

Other costs +¥0.7 bil. etc.



**1st-half of FY2023**

Net Sales	Operating Profit
<b>¥149.0 bil.</b>	<b>¥7.1 bil.</b>
	Dom ¥8.1b OS ¥(1.0b)

Sales of Key Products (*)	1st-half of FY2023			1st-half of FY2024			Increase (Decrease)			
	Sales Volume 1,000t(or) million m <sup>2</sup>	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion	Sales Volume 1,000t(or) million m <sup>2</sup>	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion	Sales Volume 1,000t(or) million m <sup>2</sup>	Year-on Year %	Unit Price ¥/kg(or)m <sup>2</sup>	Sales Amount ¥ billion
Newsprint, printing & communication paper Domestic	851	126.92	108.0	804	126.35	101.6	(47)	94.5%	(0.57)	(6.4)

\*Total amount of consolidated Group's manufacturing companies including internal consumption



02

# FY2024 Financial Forecast

## ① Financial Forecast for FY2024 (consolidated)

	FY2023	FY2024F	(¥ billion) Increase(Decrease)
Net Sales	1,696.3	1,877.0	180.7
Operating Profit	72.6	70.0	(2.6)
[Domestic Companies]	[64.8]	[50.0]	[(14.8)]
[Overseas Companies]	[7.8]	[20.0]	[12.2]
Ordinary Profit	86.0	73.0	(13.0)
Profit Attributable to Owners of Parent	50.8	57.0	6.2
Depreciation	79.5	88.0	8.5
Overseas Sales Ratio	34.9%	40.7%	5.8pt
Average Exchange Rate(¥/US \$)	144.6	153.9	9.3

## Assumption for FY 2024 Financial Forecast

## ◆Assumption

Exchange rates	:155JPY/USD (Assumed exchange rate for 2nd-half)
Woodchip	:based on current contract
Recovered paper	:static at current level
Coal	:based on current Australia coal price (US\$150/t)
Heavy Oil	:based on current Dubai crude oil price (US\$75/bbl)

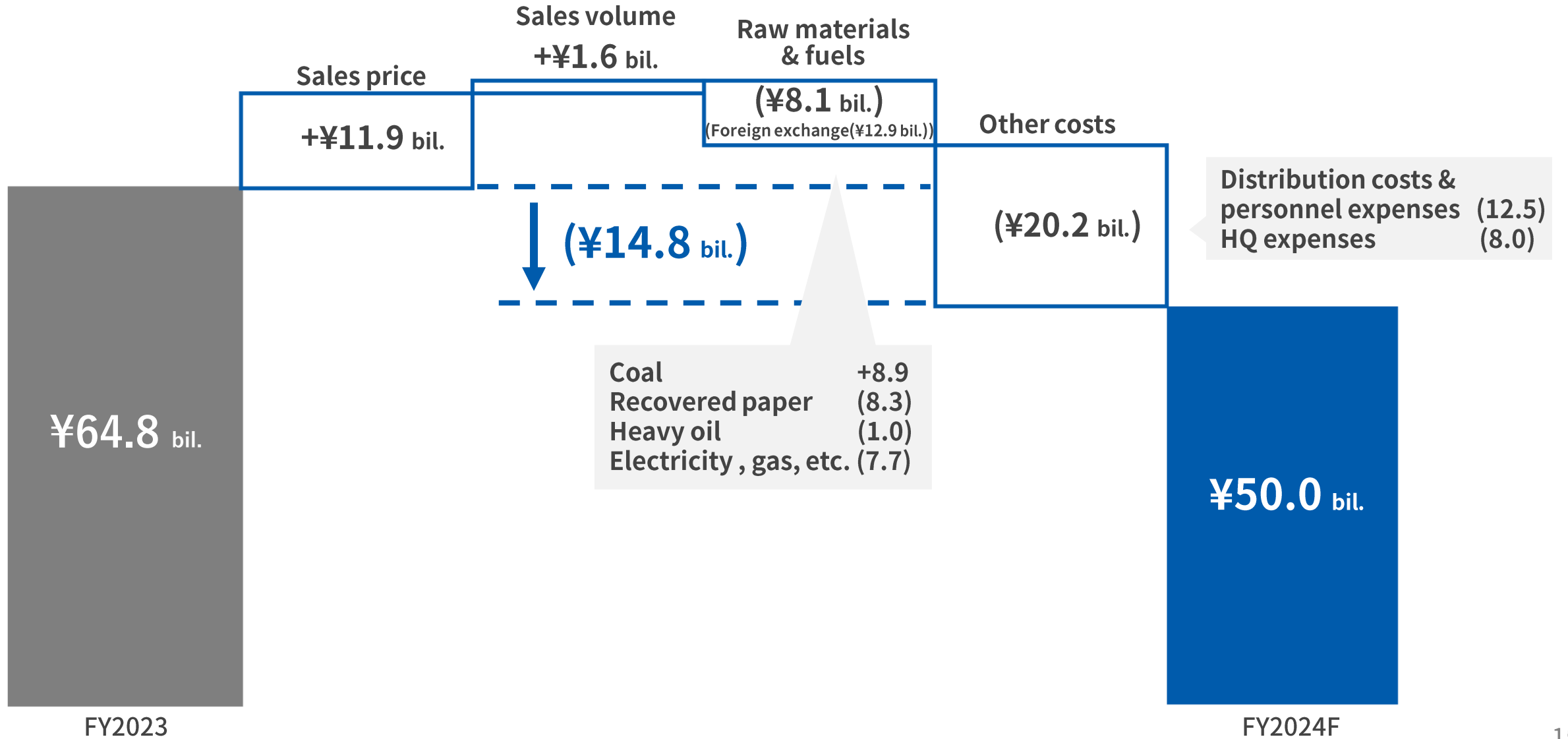
## ◆Effects of fluctuation on operation profit (per annum)

Exchange rates [JPY]	: approx. ¥0.83 billion with a fluctuation of US\$ by 1% (strong US\$ -)
[BRL]	: approx. ¥0.41 billion with a fluctuation of US\$ by 1% (strong US\$ +)
[NZD]	: approx. ¥0.82 billion with a fluctuation of US\$ by 1% (strong US\$ +)
Price of pulp	: approx. ±¥3.16 billion with a fluctuation of US\$10/t (high price +)
Price of woodchip	: approx. ±¥5.14 billion with a fluctuation of US\$10/BDt (high price -)
Price of recovered paper	: approx. ±¥3.07 billion with a fluctuation of ¥1/kg
Price of Dubai crude oil	: approx. ±¥0.34 billion with a fluctuation of US\$1/bbl (heavy oil, bunker, naphtha and others)



# ① Financial Forecast for FY2024 (consolidated)

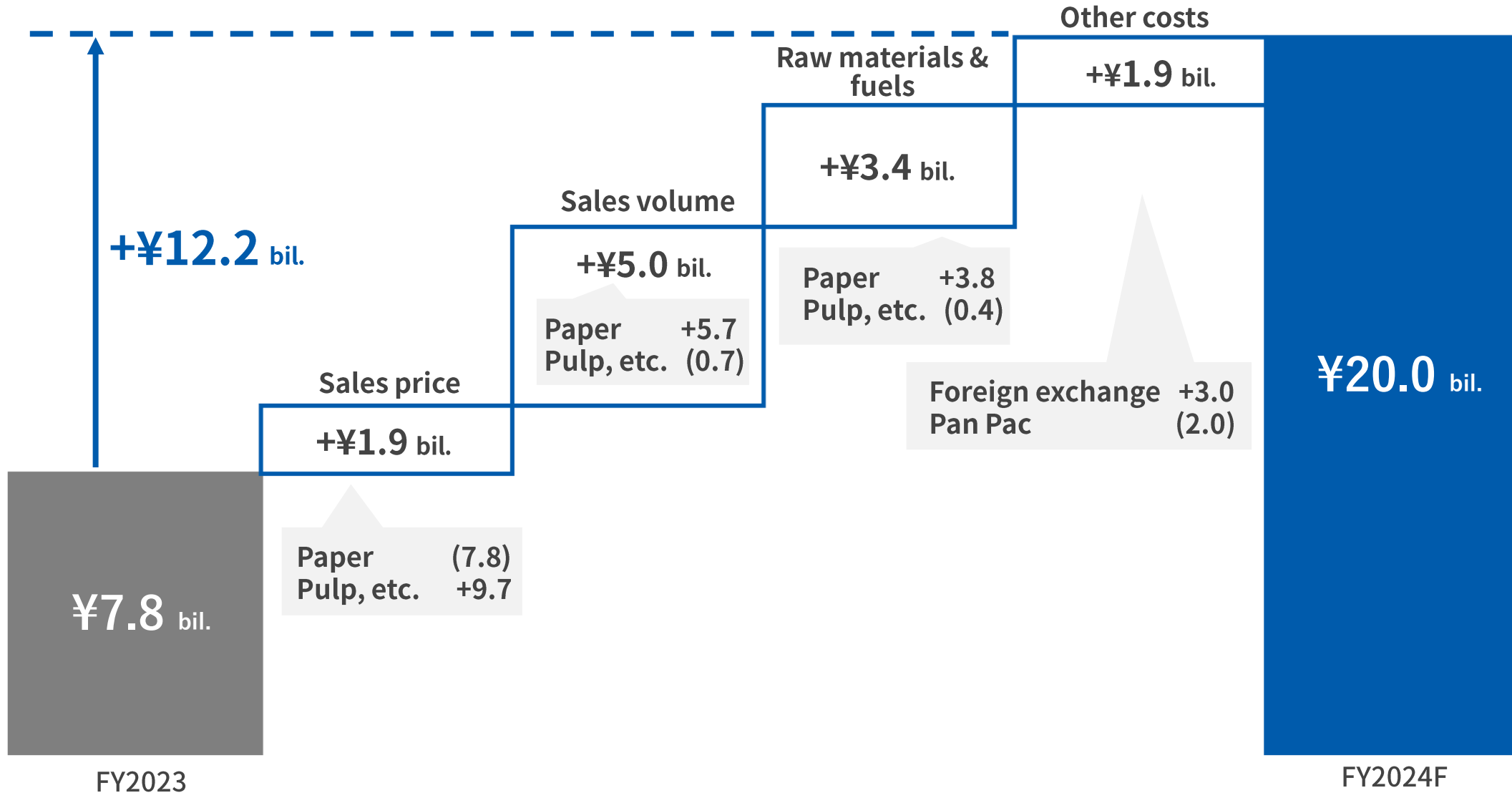
## Domestic Companies - Breakdown of Operating Profit Difference (FY2023 vs FY2024F)





# ① Financial Forecast for FY2024 (consolidated)

## Overseas Companies - Breakdown of Operating Profit Difference (FY2023 vs FY2024F)





## ② Sales and Operating Profit by Segment [FY2024 Forecast]

(¥ billion)

	FY2023		FY2024F		Increase (Decrease)	
	Net Sales	Operating Profit	Net Sales	Operating Profit	Net Sales	Operating Profit
Household & Industrial Materials	798.7	21.2	846.6	11.0	47.9	(10.2)
Functional Materials	227.5	9.1	240.1	12.0	12.6	2.9
Forest Resources & Environment Marketing	359.6	19.6	409.2	30.0	49.6	10.4
Printing & Communications Media	299.4	16.8	293.0	9.0	(6.4)	(7.8)
Others	11.1	5.9	88.1	8.0	77.0	2.1
<b>Total</b>	<b>1,696.3</b>	<b>72.6</b>	<b>1,877.0</b>	<b>70.0</b>	<b>180.7</b>	<b>(2.6)</b>

\*1: Sales include inter-segment sales \*2: Others include adjustment amount

### ③ Operating Profit by Segment

		FY2023	FY2024F		
Household & Industrial Materials	Net Sales	798.7	846.6	Operating Profit (¥10.2 bil.)	Domestic (¥7.8 bil.) Overseas (¥2.4 bil.)
	Operating Profit	21.2	11.0		
	[Domestic]	[26.1]	[18.3]		
	[Overseas]	[(4.9)]	[(7.3)]		
	Operating Margin	2.7%	1.3%		
Functional Materials	Net Sales	227.5	240.1	Operating Profit ¥2.9 bil.	Domestic (¥0.1 bil.) Overseas +¥3.0 bil.
	Operating Profit	9.1	12.0		
	[Domestic]	[7.2]	[7.1]		
	[Overseas]	[1.9]	[4.9]		
	Operating Margin	4.0%	5.0%		
Forest Resources & Environment Marketing	Net Sales	359.6	409.2	Operating Profit ¥10.4 bil.	Domestic +¥0.0 bil. Overseas +¥10.4 bil.
	Operating Profit	19.6	30.0		
	[Domestic]	[5.5]	[5.5]		
	[Overseas]	[14.1]	[24.5]		
	Operating Margin	5.5%	7.3%		
Printing & Communications Media	Net Sales	299.4	293.0	Operating Profit (¥7.8 bil.)	Domestic (¥8.2 bil.) Overseas +¥0.4 bil.
	Operating Profit	16.8	9.0		
	[Domestic]	[17.4]	[9.2]		
	[Overseas]	[(0.6)]	[(0.2)]		
	Operating Margin	5.6%	3.1%		

## ④ Impact on Operating Profit from External Environment

(¥billion/year)

◆ Changes in exchange rates				Household & Industrial Materials	Functional Materials	Forest Resources & Environment Marketing	Printing & Communications Media	Total
Assumed exchange rates for 2nd-half of FY2024								
Impact from USD fluctuation on trade & profit-conversion (in case of stronger USD by 10%)	Japanese Yen	(※)	155.00 ¥/USD	↓	↓	↑↑	↓↓	↓↓ (8.3)
	Brazilian Real	(BRL)	5.70 BRL/USD			↑↑		↑↑ +3.6
	New Zealand Dollar	(NZD)	1.67 NZD/USD	↑		↑↑↑		↑↑↑ +8.2

(※) The figure includes the effect of conversion of profit in USD to JPY

◆ Changes in pulp prices				Household & Industrial Materials	Functional Materials	Forest Resources & Environment Marketing	Printing & Communications Media	Total
Pulp sales & purchase (USD 10/t higher)				↓	↓↓	↑↑	↓	↑↑ +3.4

## ⑤ FY2024 Comparison with Previous Forecast

	(¥ billion)		
	FY2024F	FY2024F (Revised)	Increase(Decrease)
Net Sales	1,950.0	1,877.0	(73.0)
Operating Profit	95.0	70.0	(25.0)
[Domestic Companies]	[54.0]	[50.0]	[(4.0)]
[Overseas Companies]	[41.0]	[20.0]	[(21.0)]
Ordinary Profit	100.0	73.0	(27.0)
Profit	75.0	57.0	(18.0)
Attributable to Owners of Parent			
Depreciation	92.0	88.0	(4.0)
Overseas Sales Ratio	41.6%	40.7%	(0.9pt)
Average Exchange Rate(¥/US \$)	155.0	153.9	(1.1)
Dividend(¥/share)	24	24	-
Dividend payout ratio	31.5%	41.7%	10.2pt

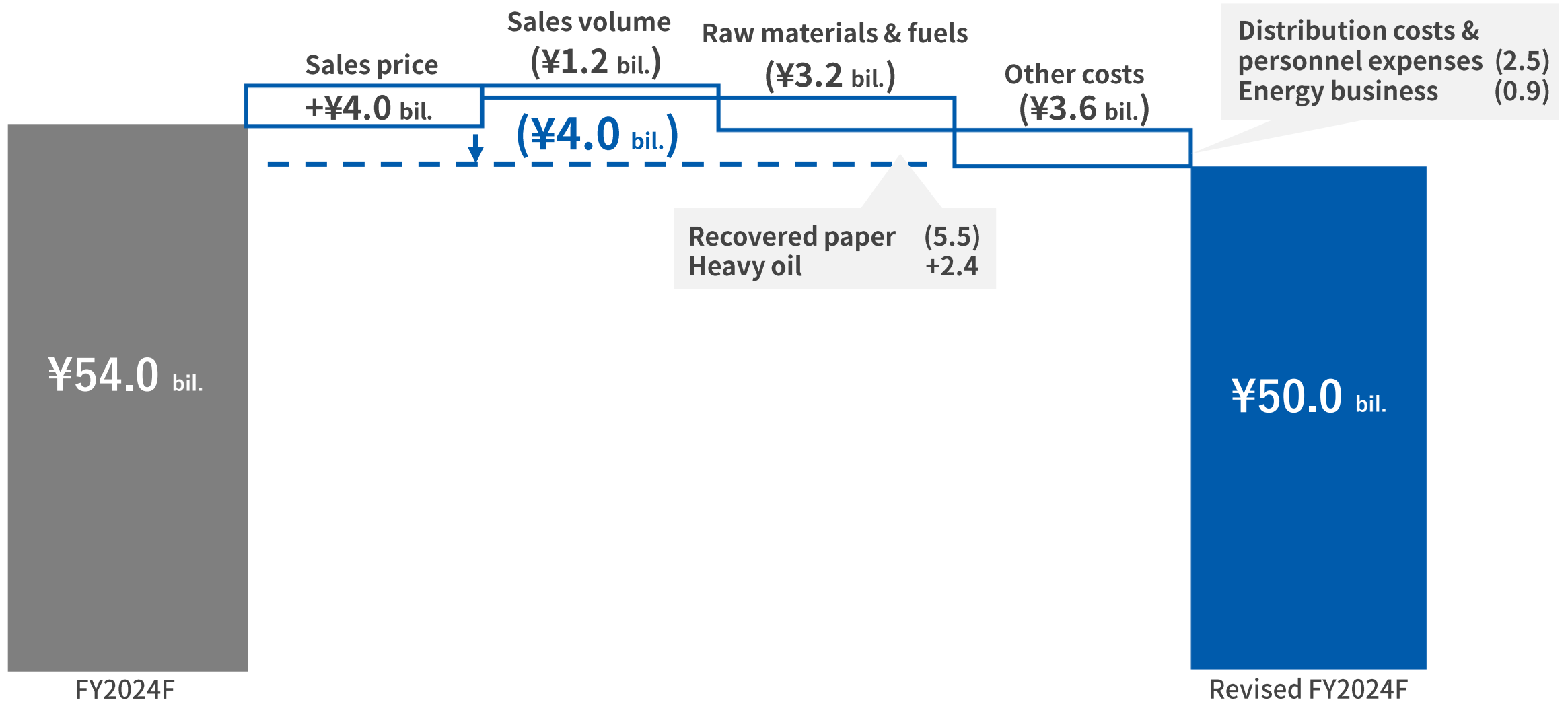
**Dividend policy**

We will maintain a stable dividend commensurate with profitability for the time being, with a minimum annual dividend of ¥24/share and payout ratio of 30% as an adequate ratio, while considering internal reserves to prepare for investment in growth to enhance corporate value over the long term.



# ⑤ Revised Financial Forecast for FY2024 (consolidated)

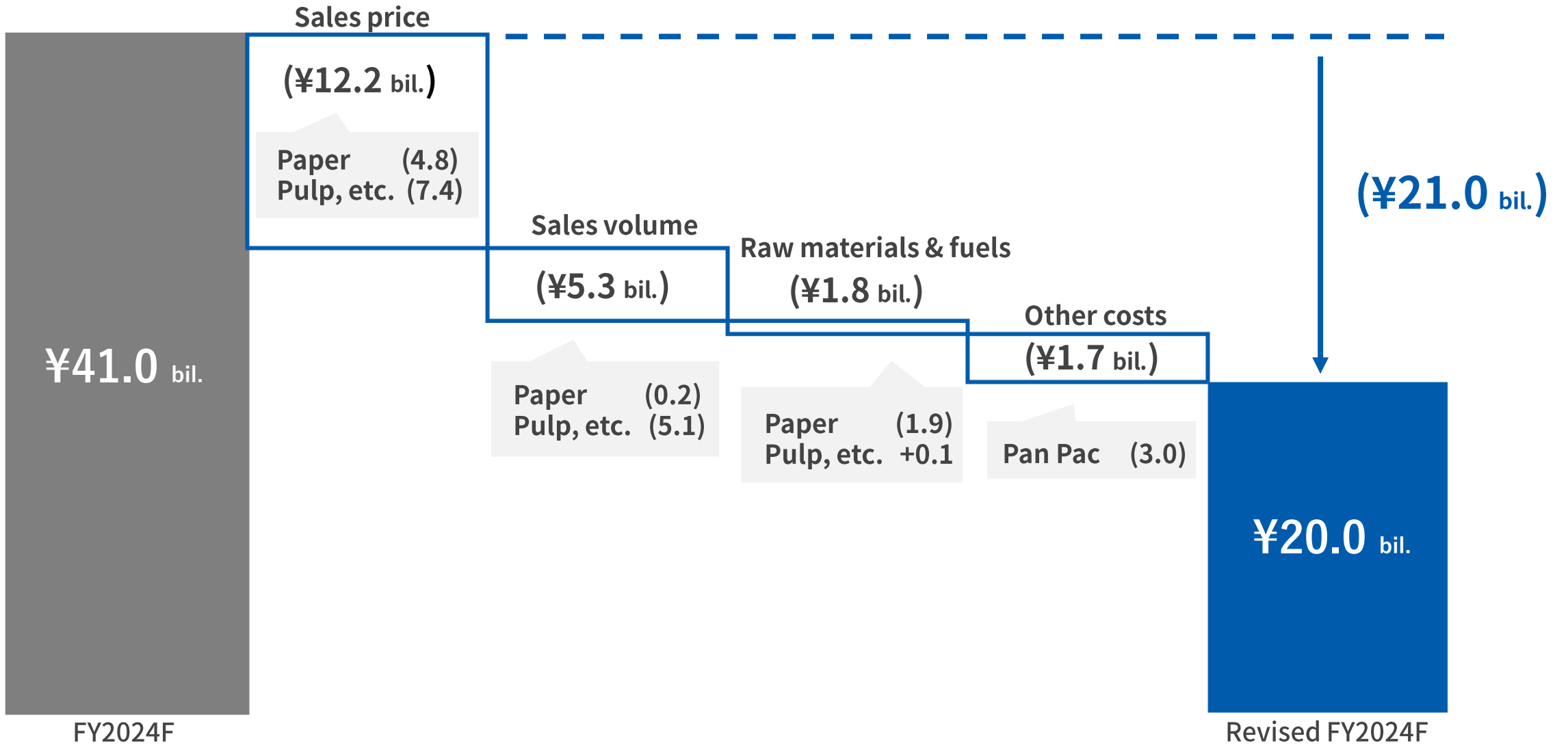
## Domestic Companies - Breakdown of Operating Profit Difference (FY2024F vs Revised FY2024F)





# ⑤ Revised Financial Forecast for FY2024 (consolidated)

## Overseas Companies - Breakdown of Operating Profit Difference (FY2024F vs Revised FY2024F)



## ⑥ Sales and Operating Profit by Segment [Revised FY2024 Forecast]

(¥ billion)

	FY2024F		FY2024F (Revised)		Increase (Decrease)	
	Net Sales	Operating Profit	Net Sales	Operating Profit	Net Sales	Operating Profit
Household & Industrial Materials	866.0	20.0	846.6	11.0	(19.4)	(9.0)
Functional Materials	247.0	11.0	240.1	12.0	(6.9)	1.0
Forest Resources & Environment Marketing	442.0	47.0	409.2	30.0	(32.8)	(17.0)
Printing & Communications Media	298.0	12.0	293.0	9.0	(5.0)	(3.0)
Others	97.0	5.0	88.1	9.4	(8.9)	4.4
<b>Total</b>	<b>1,950.0</b>	<b>95.0</b>	<b>1,877.0</b>	<b>70.0</b>	<b>(73.0)</b>	<b>(25.0)</b>

\*1: Sales include inter-segment sales \*2: Others include adjustment amount

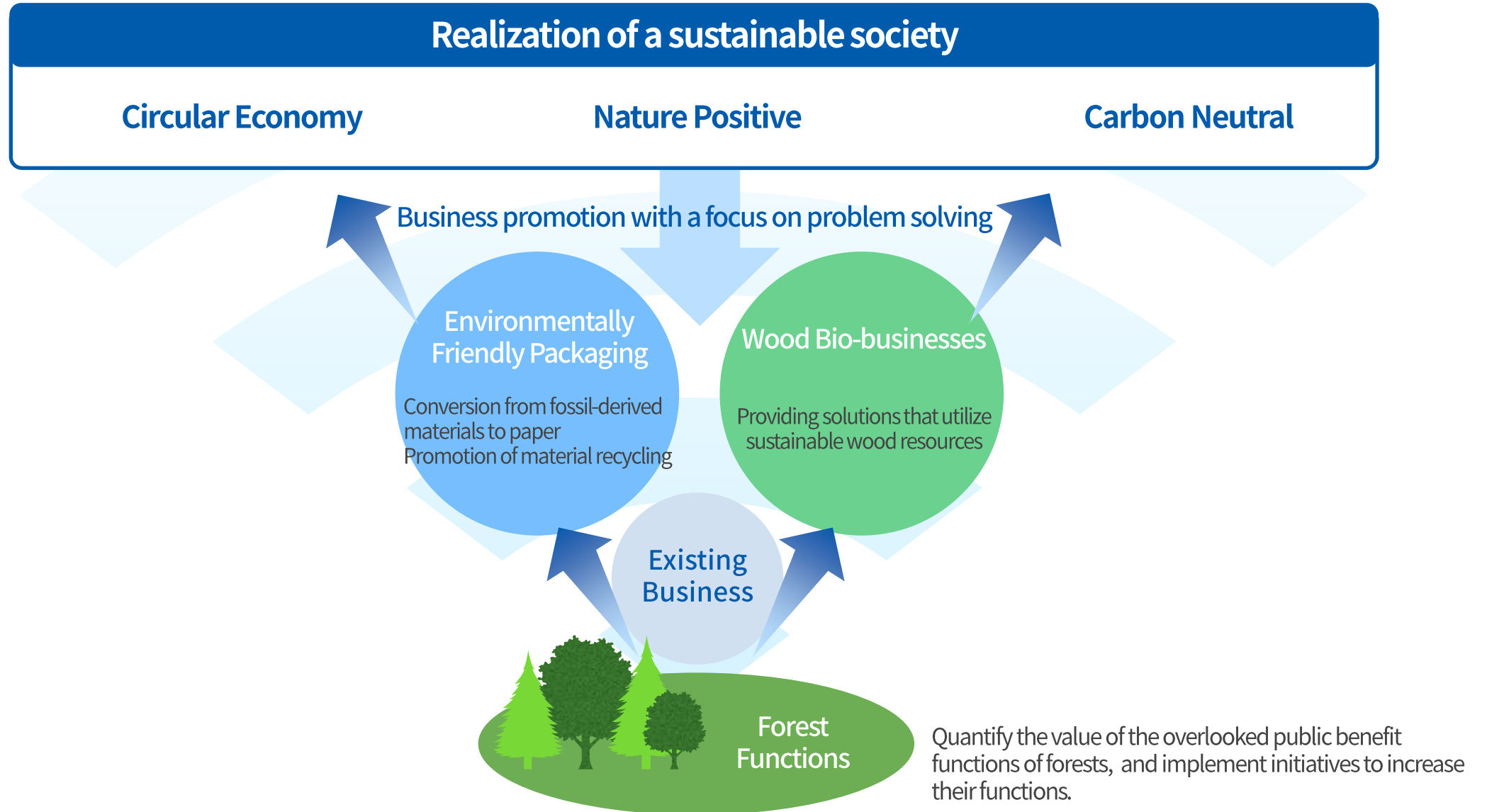


# 03

## Topics



# Initiatives for Sustainable Growth-State



# Initiatives for Sustainable Growth-State of Progress



① Economic Value Assessment

▶ Announcement of economic value assessment of company owned forests (Oji Forests) and quantification projects in Japan

② TNFD Report

▶ Issuance of “Oji Group TNFD Report 2024”

① #9 Machine in Tomakomai

▶ Restructuring of production system  
▶ Convert for wood bio-businesses in the future

② Streamlining of Assets

▶ Promoting reuse and sale of assets  
▶ Promoting reduction of shares held

① Walki Case Study

▶ Adopted by a brand of major French dairy cooperative  
▶ Development of environmentally friendly packaging

② Investments in Deluxe

▶ Investments in Deluxe, high-end molded pulp packaging equipment and product manufacturer in Taiwan

③ Material Recycle

▶ Establishing a new business model with Hoshino Resorts  
▶ Recycling used paper cups into hand towels

④ Contest Awards

▶ Received awards at JAPAN PACKAGING CONTEST 2024  
▶ OJI Materia’s easy-to-transparent base paper “Sankayou”

⑤ Exhibiting at Tokyo Pack

▶ Provided sustainable packaging solutions

① (Plastics, fuels) Sugar solution, Ethanol

▶ Scheduled to be completed in Dec 2024(sugar solution), Mar 2024(ethanol)  
▶ Contributing to decarbonization by replacing petroleum-based fuels and plastics with "wood-based" fuels and plastics

② Biomanufacturing Ecosystem

▶ Selected as NEDO Research and Development of Technologies to Promote Biomanufacturing  
▶ Promote to reduce shareholdings

③ Cellulose Resin Composite Pellets

▶ Developed “ToughCel pellet VF” with low acetaldehyde emissions

④ Licorice, Wood-derived Pharmaceuticals

▶ OJI Pharma is licensed as 1st & 2nd class marketing authorization holders of pharmaceuticals  
▶ Expand licorice into pharmaceutical, cosmetics and food fields

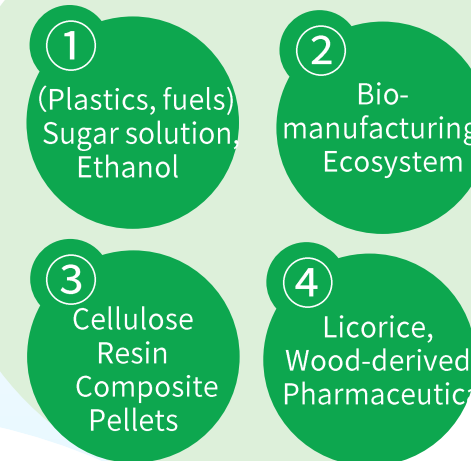
## Environmentally Friendly Packaging

Aim for early expansion

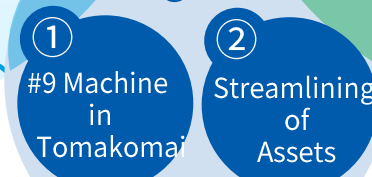


## Wood Bio-businesses

As next-generation core business



## Existing Business



Forest Functions  
Aim to create economic value



① Economic Value Assessment

② TNFD Report

Future

Medium-term

Short-term

# Business Activities Rooted in Forest Resources



Photo provided by: The Paper Museum

The Company is established by Eiichi Shibusawa



Oji Zorin is established



CENIBRA (Brazil)

Total area of Oji Forests **635k ha**

Production forest **472k ha**  
Sustainable management through reforestation

Conservation forest **163k ha**  
Focusing on forest conservation activities

1873

1875

1890

1937

2024

Continuing Nature Positive Management rooted in forest resources

Wood pulp production starts

A factory is built in Oji, Tokyo

Waste cloth was used as a raw material

**“Those who use trees have the responsibility to plant trees.”**

Ginjiro Fujiwara  
President, Oji Paper Co., Ltd. (1930s)

Topics

1

▶ p.28

Visualization of Forest Public Benefit Functions

Topics

2

▶ p.29

Initiatives for the Conservation of Biodiversity

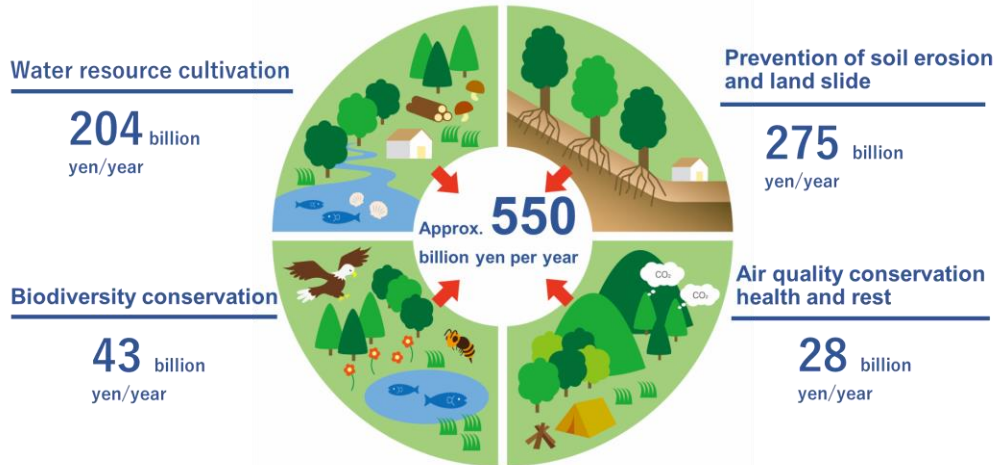


### 03. Topics [Initiatives for Forest Functions]

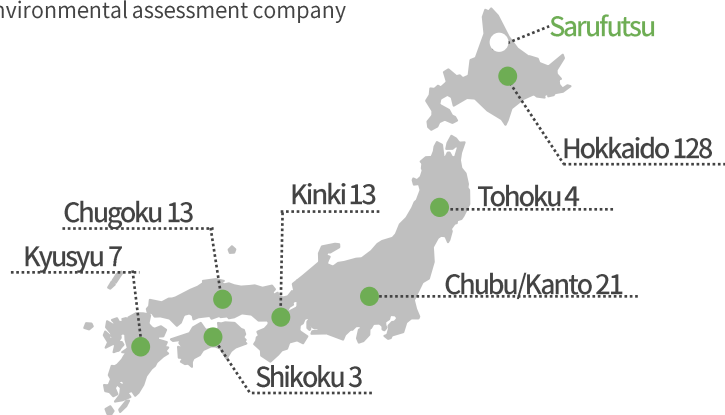
# ① Visualization of Forest Public Benefit Functions and Biodiversity Visualization Project in Sarufutsu

## Visualization of non-financial information on forests to promote nature positivity

### Evaluation of the public value of Oji Forests in Japan (190k ha)



\*Calculation based on the methodology used in the Forestry Agency of Japan's Valuation of the Public Benefit Functions of Forests. Reviewed by an external environmental assessment company



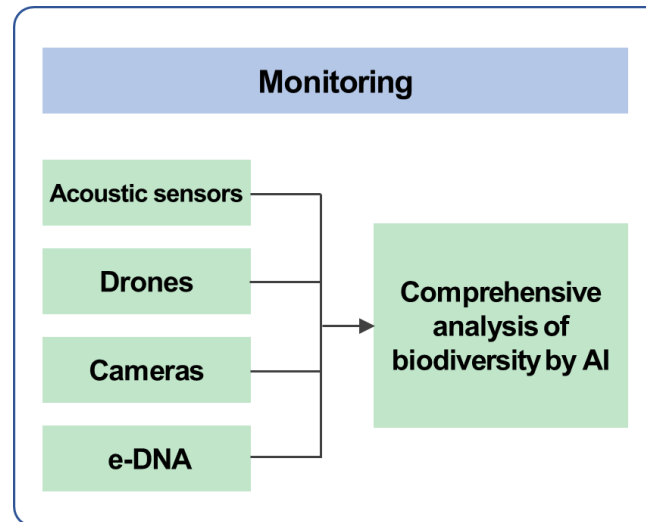
Area by region of Oji Forests (k ha)

### Biodiversity Visualization Project in Sarufutsu

- Efforts are underway to further improve accuracy in Oji Forests in Sarufutsu, Hokkaido, which is estimated to be of high biodiversity importance
- Collaboration with Hokkaido University and a startup with biodiversity visualization technology



Sarufutsu Forest and Mokeuni Marsh with the Sea



Acoustic sensors for animal sounds



Imagery of vegetation using drones

Examples of results of various surveys using modeling and monitoring technologies of startups.

## ② Issuance of TNFD Report



Disclosing the Oji Group's nature-related issues and initiatives  
➔ Visualize the value of nature and accelerate the initiatives to enhance that value

### Topics of the TNFD Report

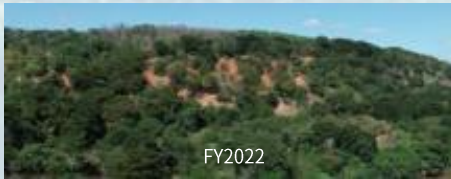
#### CENIBRA (Brazil) Forest, the largest in the Oji Group

##### Initiatives

- Of the 250,000 ha of forest owned and managed, 107,000 ha (43%) are conservation forests.
- Monitor biodiversity regularly.
- Implement various protection and conservation activities, including the reforestation and the protection of endangered species.
- Build close relationships with local communities through the CENIBRA Institute.



FY2001



FY2022

Reforestation in wastelands

- Sustainable forest management for approximately 50 years.
- Obtained LIFE certification, indicating that the positive impact of biodiversity conservation outweighs the pressure from corporate activities.
- Identified nature-related dependencies, impacts, risks and opportunities and organized responses.
- Set measurable time-bound targets for nature.

#### Japanese forests of high biodiversity importance



Fairy pitta in Koyagauchi Company-owned forest, Kochi Prefecture, Japan.

- Registered Kochi Koyagauchi Company-owned forest as an OECM, contributing to the achievement of the 30 by 30.
- Visualized forest value by quantifying the importance of biodiversity and the water source cultivation function.
- The annual economic value of forest functions is approx. 550 billion yen.



# ① Production Facilities Shutdown

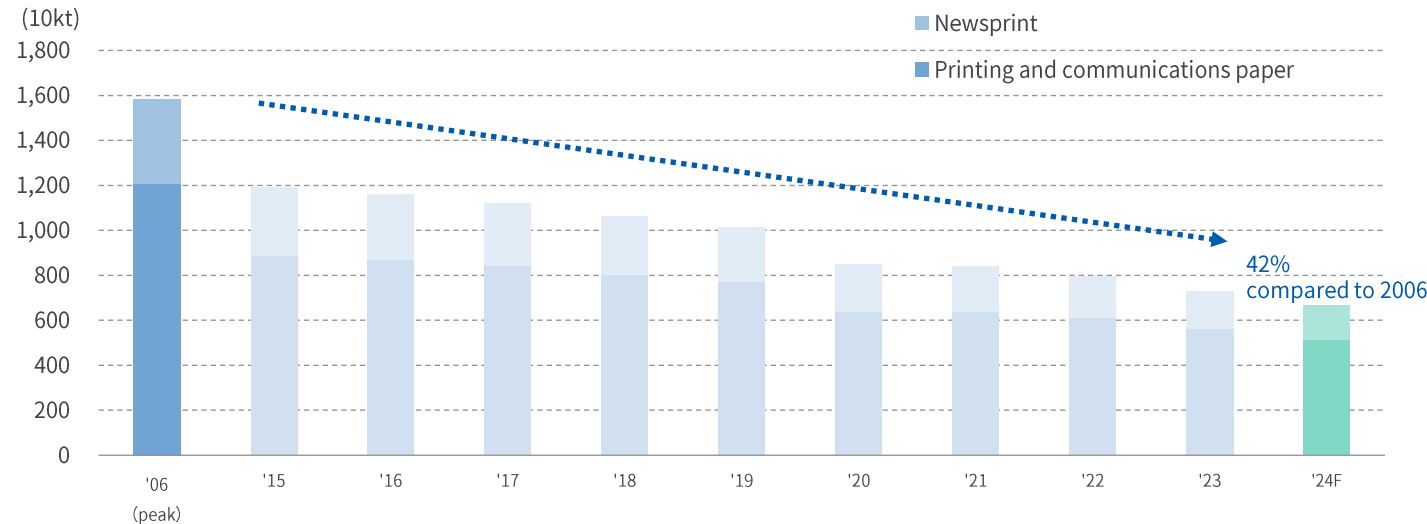
Reduce fixed costs and improve production efficiency through machine consolidation and establishing an optimized production system.

Overview	Name	Products	% of annual capacity reduction
	Oji Paper Tomakomai Mill, #9 Machine	Printing paper	( 5 %)

Trend for domestic demand for graphic paper (Newsprint, printing and communications paper)

Continued decline since peaking in 2006, due to structural environmental changes such as advancements in ICT, declining birth rates, and population decrease.

<Domestic demand trend for graphic paper>



Graphic paper production facilities shutdown since '08

No. of shutdown	21 facilities (5 facilities since '20)
Reduced volume	1,780 kt/year
Capacity reduction	53% reduced
Future direction	<ul style="list-style-type: none"> <li>• Avoid efficiency deterioration by shutting down facilities in response to current declining demand and thoroughly implement cash flow management.</li> <li>• Convert graphic paper production facilities to wood bio-businesses in the future</li> </ul>

Source : Japan Paper Association "Statistics on Paper and Paperboard"

## ② Streamlining of Assets



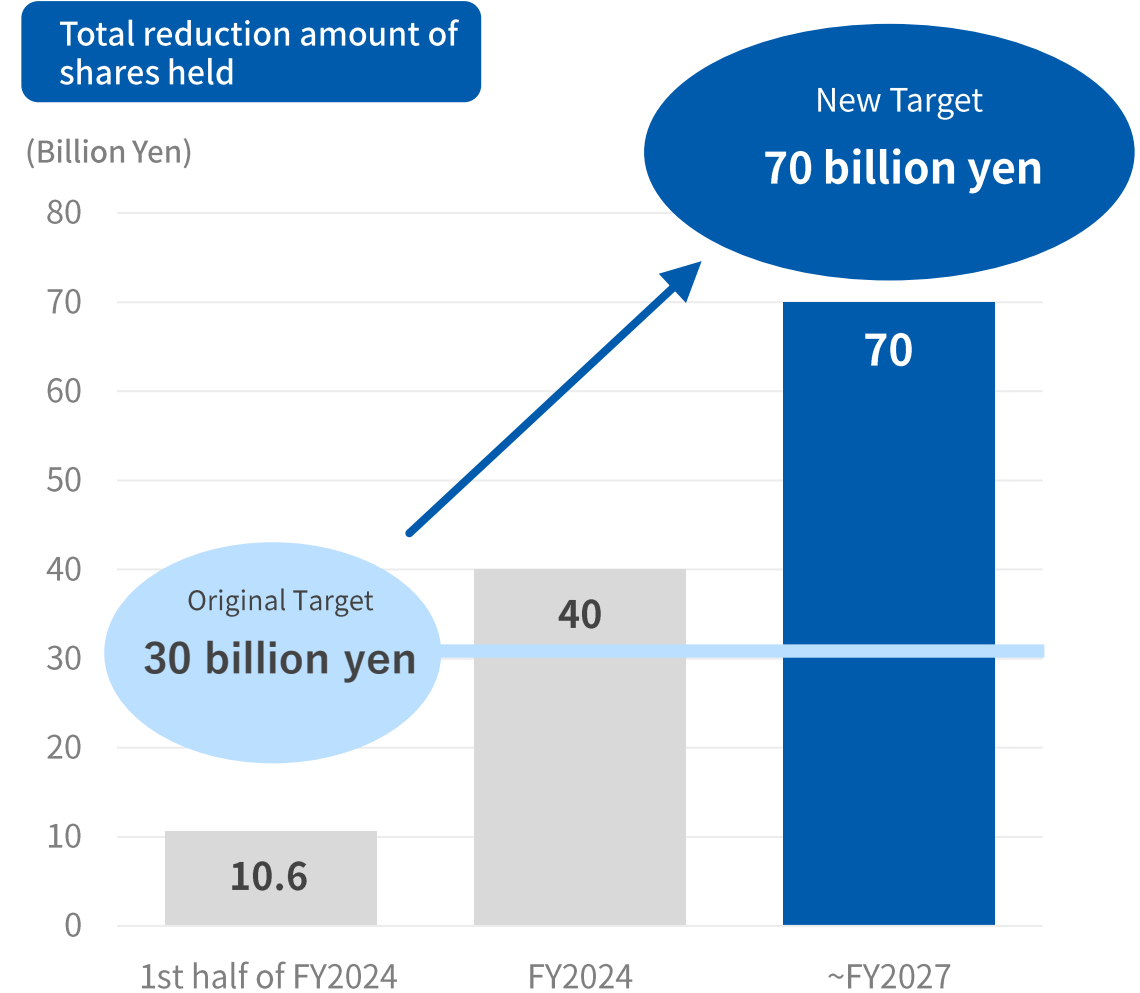
### Promoting reuse and sale of assets

- Determination of policy on the sale of real estate for rent held in Tokyo
- Continuous consideration on the sale of non-core businesses and assets

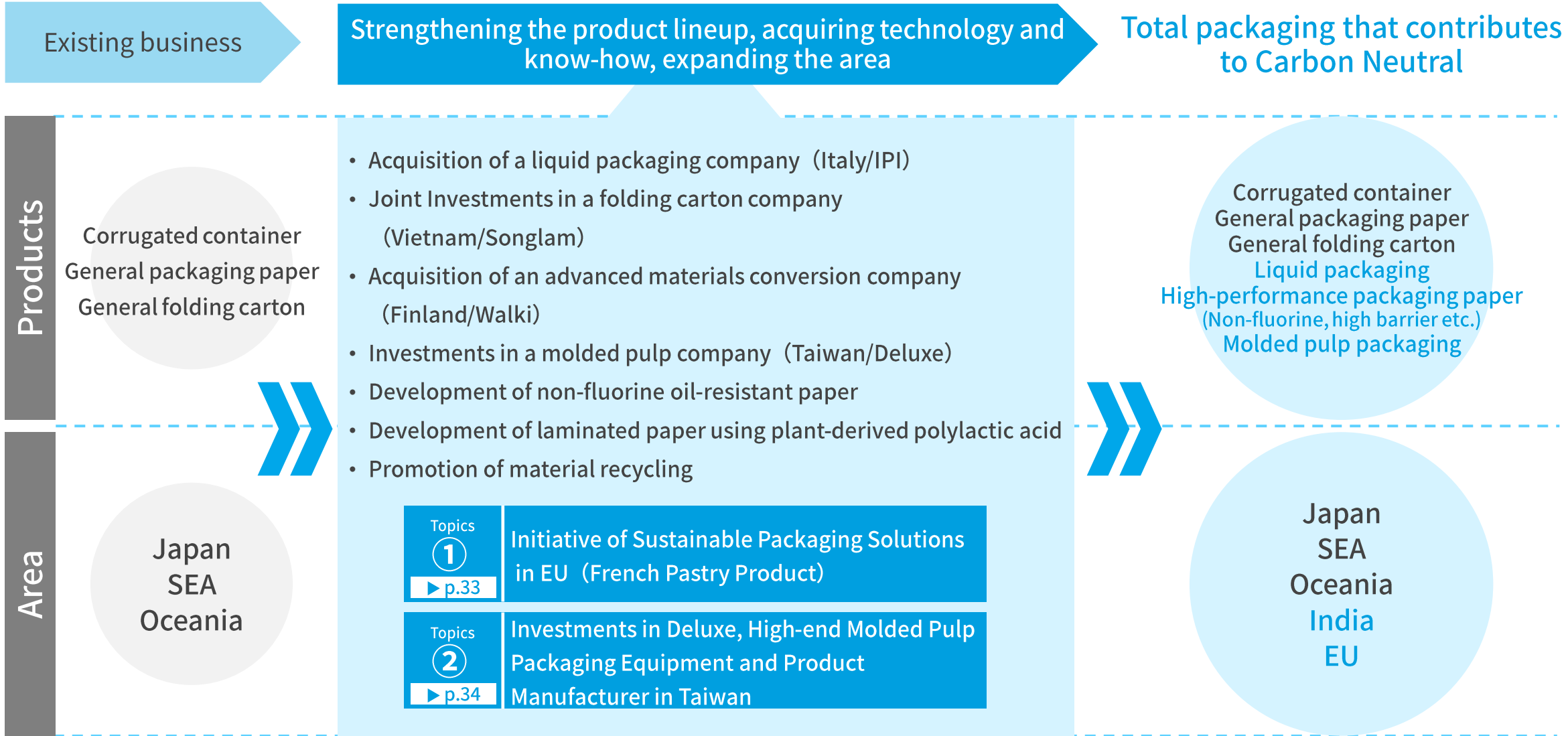
### Promoting reduction of shares held

- Strengthen initiative to reduce strategic shareholdings
- Thoroughly reconsider current shareholdings with focus on the shares contributed to retirement benefit trust

Funds from the sale of shares will be utilized for investments to support sustainable growth, shareholder returns (dividends, acquisition of own shares), etc.



# Initiatives to provide a solution for plastic-free products







# ① Initiative of Sustainable Packaging Solutions in EU (French Pastry Product)

## Case Study Walki's Recyclable Packaging adopted for the Secondary Packaging of "Paysan Breton", a brand of Major French Dairy Cooperative, Laita\*1

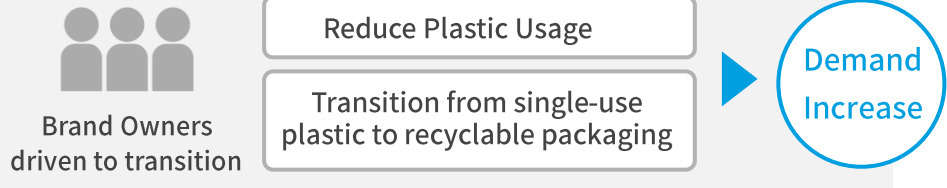
~Packaging Solutions Compliant with European Environmental Regulations for Packaging Materials.~



Laita's pancake brand "Paysan Breton" secondary packaging

Background: Implementation of packaging regulations in Europe

	France	<b>AGEC</b> *2	Banning single-use plastics to promote a circular economy
	EU	<b>PPWR</b> *3	Reduce packaging waste, increase recycling rate of packaging materials



**Walki** A leading company with advanced technologies in material conversion (Joined Oji Group in April 2024)

**Proposals Based on Walki's Unique Technology**

- Recyclable packaging ensures runnability and material sturdiness.
- Packaging that stands out on store shelves achieved by optimizing the printing process, enhancing print reproducibility.

- Walki's sustainable packaging**
- (Consumer Packaging)
- paper-based aluminum-free lids
  - Plastic-free paper-based packaging
  - PET-free trays for food
- (Industrial Packaging)
- Water/oil resistant barrier liner

Future Dev

Expand and upgrade sustainable packaging solutions in Japan, Asia, Oceania and other regions to

**Establish sustainable growth and industry leadership in the environmentally friendly packaging industry**

\*1) Laita, one of the leading dairy cooperatives in Western France.  
 \*2) Anti-Gaspillage pour une Économie Circulaire: a French law on waste management for a circular economy  
 \*3) Packaging and Packaging Waste Regulation (Regulations aimed at reducing packaging waste and increasing the recycling rate of packaging materials in the EU)

# ② Investments in Deluxe, High-end Molded Pulp Packaging Equipment and Product Manufacturer in Taiwan



OJI HOLDINGS



①



②



③

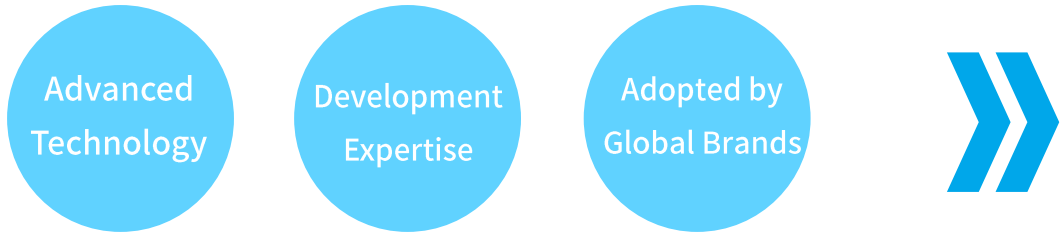
①Trays adopted in Europe for small consumer electronics ②Food/beverage cups  
③Precise embossing and sharp molding is also available

**【Deluxe Overview】**

Company Name	Deluxe Technology Group Co., Ltd
Location	Taipei city, Taiwan
Business	Manufacturing and sales of molded pulp packaging equipment and products

Deluxe Features

## High-end Molded Pulp Packaging with Strength and Refined Finish



- 0-degree draft angle\* technology certified by leading global brand owners
- Meets strict quality requirements for applications such as electronics, cosmetics, and food products.
- High dimensional stability for mass production, with a strong track record of adoption across Europe and Asia.

\* "0-degree draft angle" – processing technology that requires extremely high precision, as the side surface is completely perpendicular to the direction of mold removal

Oji Holdings acquired Deluxe products and equipment's



exclusive sales rights

## Applications as Alternatives to Plastic Packaging

Integrated production from wood pulp to molded pulp packaging

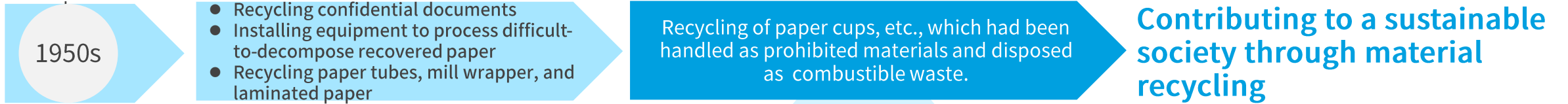
# Expanding Sustainable Total Packaging Solutions

Create innovative fiber-based solutions including molded pulp products, corrugated containers, and folding carton packaging for the markets in Japan, India, Southeast Asia, Oceania and Europe

# Material Recycling Initiatives

Has maintained a high recovered paper utilization ratio by continuously working on the recycling of various types of recovered paper  
 Implementing initiatives aimed at further increasing the domestic recovered paper utilization ratio

Start of paper production using recovered paper as raw material



Used Paper cups  
Paper packs  
Etc.

➔

Corrugated board  
Hand towel  
Etc.

Recycle

**【Case study】**

Topics

3

Initiatives with Hoshino Resort

Establishing a new business model by proposing recycling systems

➔

p.36

	Initiatives with Super Hotel <b>Recycling into corrugated board</b>	➔
	Initiatives with Tetra Pak <b>Recycling into corrugated board</b>	➔
	Initiatives with Thespa Gunma, Kuribara Medical instruments, KPP <b>Recycling into box tissue case</b>	➔
	Initiatives with Shimizu Corporation <b>Recycling into hand towel</b>	➔



# ③ Establishing a new business model by proposing recycling systems

## Recycling promotion activities – case study : A joint initiatives with Hoshino Resorts

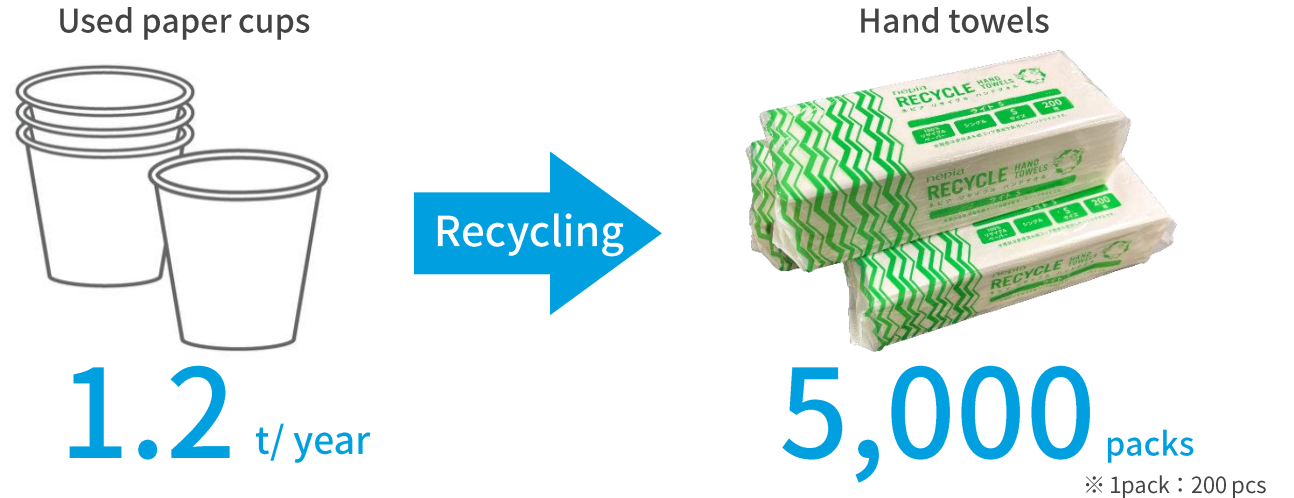
### Background

Paper cups are generally laminated with plastic to enhance their water resistance, as a result they are handled as prohibited materials in current recycling system, and mostly **disposed as combustible waste**.

**As a part of actions to achieve a paper recycling rate of over 70%** stated in our "Environmental Action Goals 2030", we are establishing a recycling system for various paper packaging.

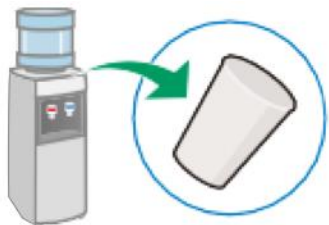
### [Initiatives]

Start	July,2024
Place	Karuizawa, Nagano Pref
Recycle material	Used paper cups
Recycle product	Nepia Hand towels



## Material recycling from “used paper cups” at Hoshino Onsen Tombo-no-Yu into “Hand towels”

### Hoshino Onsen Tombo-no-Yu



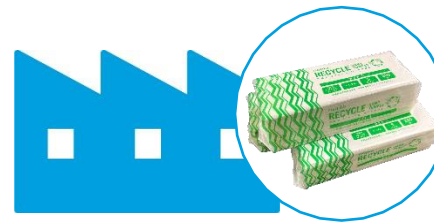
Collect used paper cups

### Existing distribution network



Post-delivery returns

### Sub-contract factory of Oji Nepia



Recycle as hand towels

### Hoshino Onsen Tombo-no-Yu



Provide to customers



## ④ Action for Plastic-free Society (Contest awards)

Two works using OJI Materia's easy-to-transparent base paper "Sankayou" received Japan Star Awards.

➔ Kami ale processing, which processes paper itself to make it transparent, realizes a single paper package as an alternative material to plastic.



### JAPAN STAR

[Minister of Economy, Trade and Industry Award] \*Highest award

#### 『Kami-ale Design Window』

Japan Pulp & Paper Co., Ltd./IMURA & Co., Ltd  
Base paper : OJI Materia's "Sankayou"



### JAPAN STAR

[Chairman of Japan External Trade Organization (JRTRO) Award]

#### 『FUDE DE MANNEN by THE SAILOR』

PEN THE SAILOR PEN CO., LTD./IMURA & Co., Ltd  
Base paper : OJI Materia's "Sankayou"

## JAPAN PACKAGING CONTEST 2024 Winning Entry

### Appropriate Packing Award

Great Improvement!! "A Home-Use Automatic Fire Extinguisher Case" That Possesses All Features



### Food Packaging Award

720g UD Eco PET



### Food Packaging Award

Biomass-Allocated OPS Lid Via Mass Balance Approach



### Daily Necessities and General Merchandise Packaging Award

Eco Package HANABI



### Daily Necessities and General Merchandise Packaging Award

Corrugated Paper Cat Puzzle Box



### Transport Packaging Award

Bee Star 1000



### Industrial Packaging Award

Elimination of Adhesive Bonding for Packaging Materials of Ceiling-Mounted Air Conditioner Indoor Units



### Large-sized Equipment Packaging Award

Reliable Strength Is Secured by Hiple-ACE with American Lock



### Large-sized Equipment Packaging Award

Improvement of Automotive Fender Carton



## ⑤ Action for Plastic-free Society (Exhibiting at Tokyo Pack)

Packaging Materials : TOKYO PACK (Tokyo International Packaging Exhibition 2024) (Oct 23-25, 2024)

➡ Theme : “ GREEN INNOVATION – To the Next Frontier – ”

For promoting wide range of environment friendly products across Oji Group to the public, we offered 3 solutions as the total packaging provider of sustainable packaging materials. We offered appropriate solutions to the various level of requests from visitors.

Number of registered visitors to Tokyo Pack : 70,712

Number of visitors to our booth : 16,836

Special Web Site of Oji Group for TOKYO PACK : <https://oji-tokyopack2024.com>



### [Solution 1 – Replaced with Paper]



Proposing developed products that replaces current plastic products with paper or reduced plastics amount. As a result, we are able to contribute to the reduction of plastics used in daily life. The products developed were numerous and responding the needs of society.

- \*1 Sankayo \*2 O-hajiki \*3 SILBIO CLEAR
- \*4 Eco Multi・Combi \*5 Latest®Bio
- \*6 100% paper bags with window for fruits and vegetables

### [Solution 2 – Global Network]



Proposing eco-friendly packaging materials from Walki of Finland as a solution that complies with advanced EU packaging and packaging waste regulations. Also proposing high quality pulp molds that have been adopted as an alternative to plastic containers by many brand owners mainly in Europe and Asia.

- \*1 Walki Products \*2 Deluxe Products

### [Solution 3 – Expansion of Recycling]

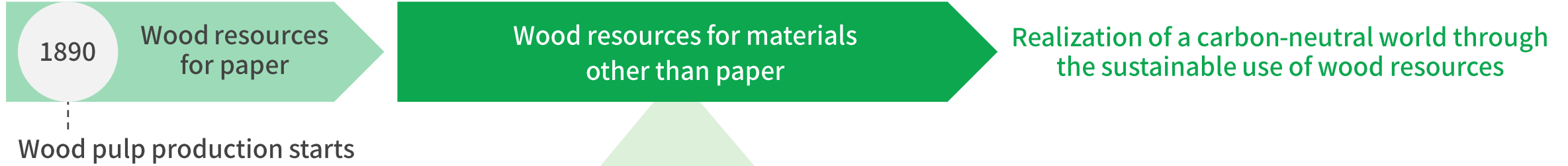


Showing expansion of recycle system with paper cups and paper cartons with aluminum which had been eliminated from recycling system and burned.

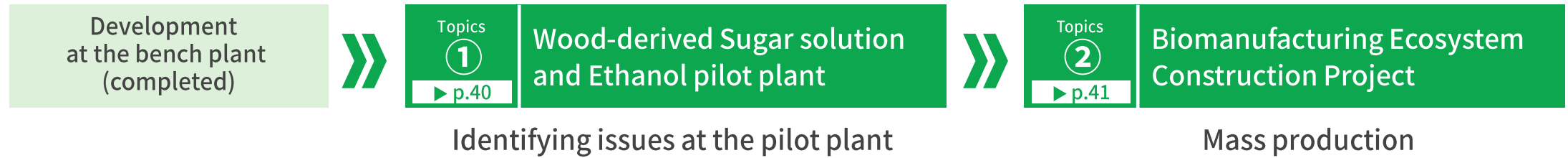
- \*1 Corrugated container \*2 Hand towel \*3 Folding carton



# Initiatives toward a Carbon-Neutral World



## Wood-derived Sugar solution and Ethanol



### [Case study]

- PLA for film and laminated paper
- Ethanol for SAF
- Petroleum alternative materials for rubber and fiber
- Cellulose Resin Composite Pellets for automotive interior components
- Pharmaceuticals
- Polyelectrolyte membrane for fuel cells
- Advanced Semiconductor Photoresist
- E-methane made in Japan

Topic 3 Expands Applications for Cellulose Resin Composite Pellets

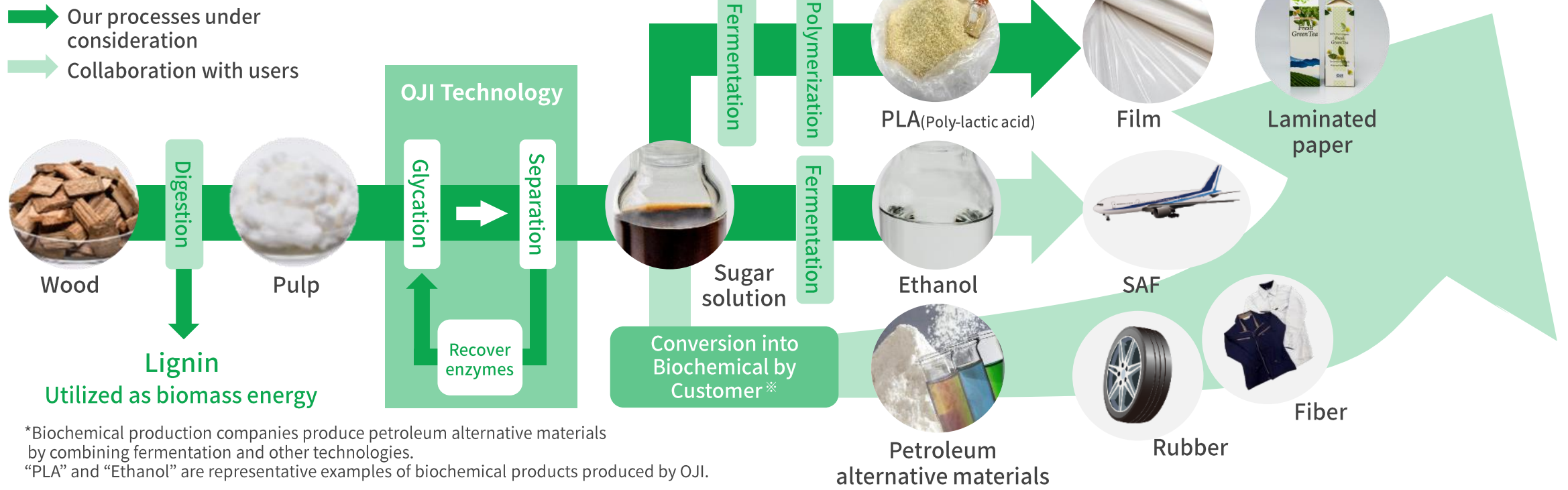
▶ p.42

Topic 4 Licorice, Wood-derived Pharmaceuticals

▶ p.43

# ① Progress of Wood-derived Sugar solution and Ethanol pilot plant at Yonago

Contributing to decarbonization by replacing petroleum-based fuels and plastics with "wood-based" fuels and plastics.



\*Biochemical production companies produce petroleum alternative materials by combining fermentation and other technologies.  
 "PLA" and "Ethanol" are representative examples of biochemical products produced by OJI.

## Summary of wood-based sugar and ethanol pilot plant

**Project is progressing as planned**

Wood-derived sugar solution Dec 2024  
 Wood-derived ethanol Mar 2024

- Location : Oji Paper Co., Ltd. Yonago Mill
- Max 3,000t/year
- Max 1,000kL/year



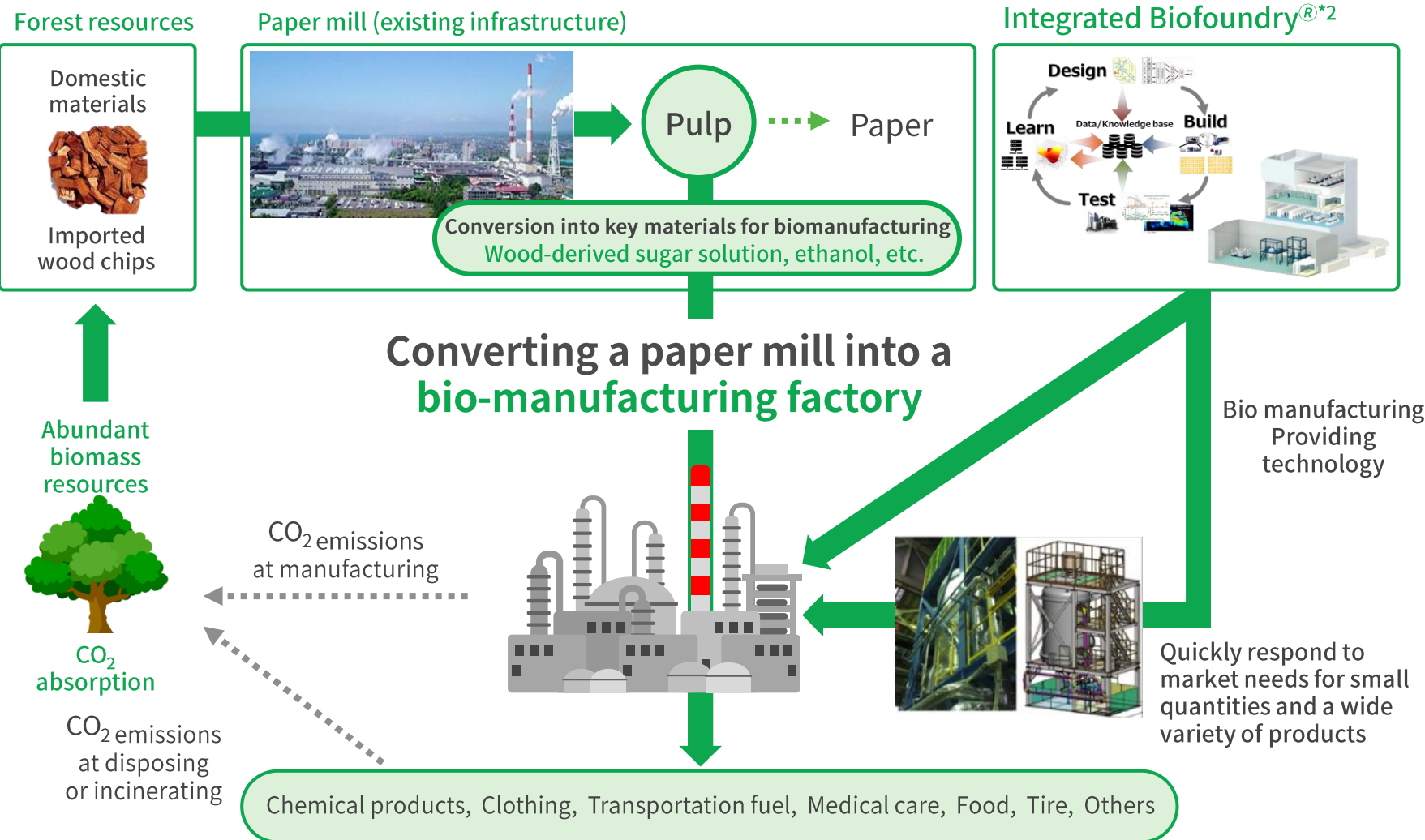
Construction status of pilot plant



# ② Biomufacturing Ecosystem \*1 Construction Project Using Wood and Other Under-Utilized Resources

A consortium of six companies selected as NEDO Research and Development of Technologies to Promote Biomufacturing

Oji Holdings Corporation (managing company), Bacchus Bio innovation Co., Ltd., JGC Holdings Corporation, ENEOS Materials Corporation, Osaka Gas Co., Ltd., Toray Industries, Inc.



## Role of Oji HD

- Utilizing several hundred thousands tons of wood chips and recovered paper, which are surplus due to the decline in paper demand as unused resources
- Developing materials that solve social issues such as “wood-derived sugar solution, ethanol, polylactic acid” from wood, Conducting production demonstrations for industrialization, and Considering commercialization.

### \*1:Ecosystem

A structure in which products from companies in the same field collaborate with each other, or companies in different industries generate profits while sharing their respective technologies and know-how.

### \*2:Integrated Biofoundry<sup>®</sup>

A one-stop bio-manufacturing platform that handles everything from developing and improving microorganisms to scaling up culture tanks and developing production processes.

# ③ Expands Applications for “ToughCel” Series of Cellulose Resin Composite Pellets

## Developed “ToughCel pellet VF” with low acetaldehyde emissions

Before Cellulose Resin Composite “ToughCel pellet”



- Granular (pellet) form that can be molded into various shapes
- Manufactured using Oji’s unique method
- ➔ Excellent rigidity and impact strength due to Uniformly dispersed cellulose and resin
- ➔ High whiteness due to less damage to cellulose
  - Cellulose content is up to 52%
- ➔ Reduction of plastics

Issues/Requests

- VOC (\*1) generation is a bottleneck for applications, such as large automotive interior components
- The molten pellets flow more easily into the mold, when producing components.

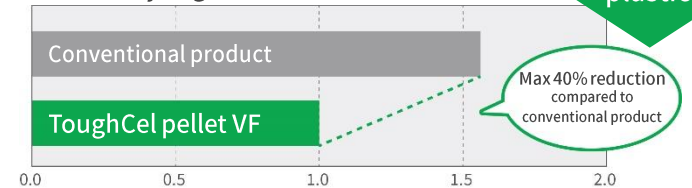
\*1) Volatile Organic Compounds  
Acetaldehyde is a kind of VOC

New “ToughCel pellet VF”



- High strength
- High whiteness
- Reduction of plastics

Acetaldehyde generation (relative value)



- Reduce acetaldehyde emissions during injection molding
- Improve material flowability

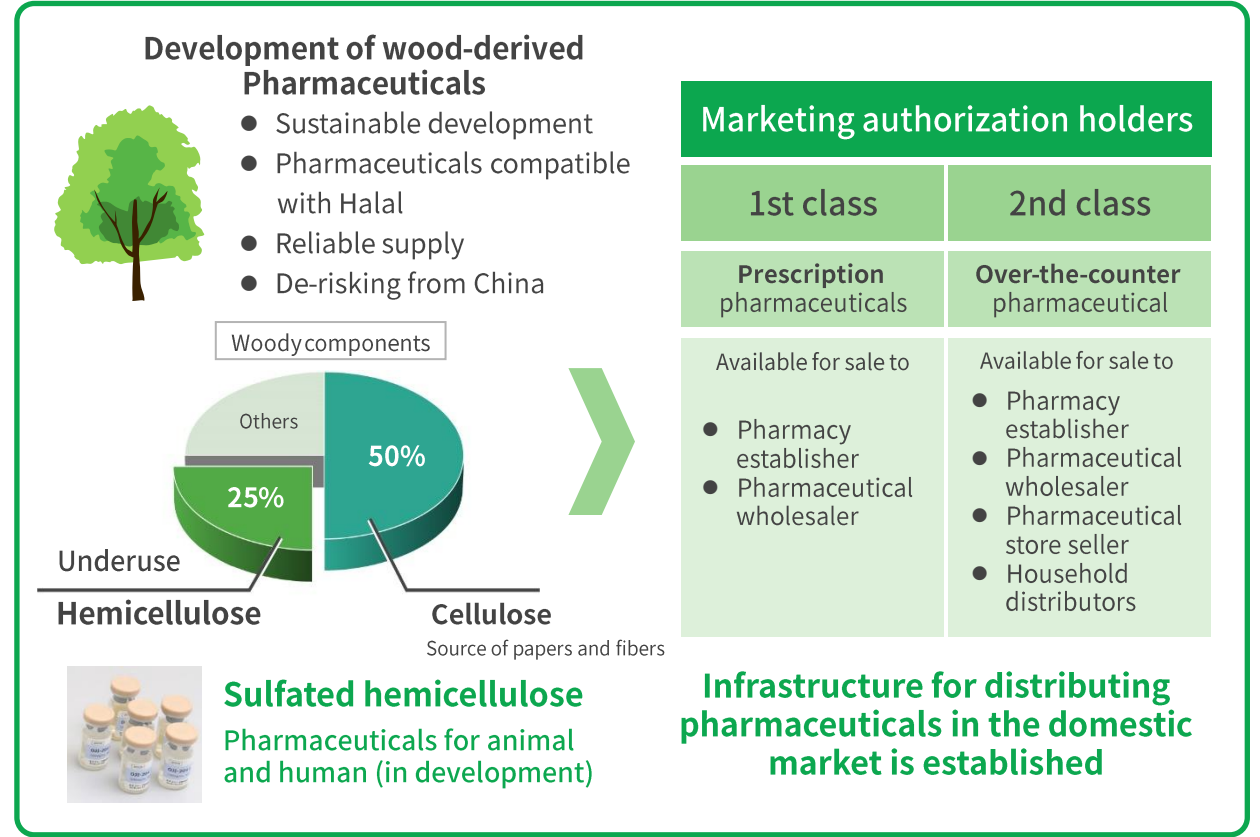
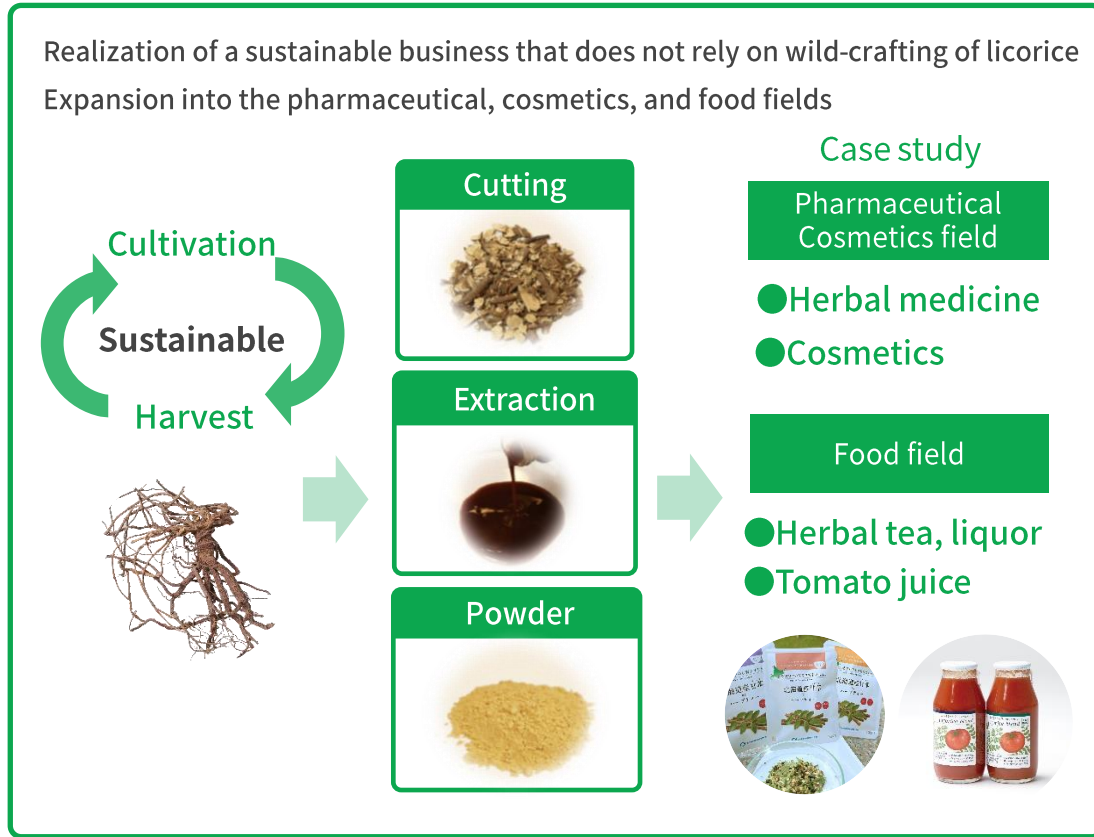


Sample work started ➔ Adoption for automotive interior components ➔ Expansion of supply system

# ④ Licorice, Wood-derived Pharmaceuticals — Establishing Infrastructure for Commercialization

Success in large-scale cultivation with “proprietary breeding technology” of Licorice

OJI Pharma is licensed as 1st & 2nd class marketing authorization holders of pharmaceuticals



**Accelerating the development of pharmaceuticals sales, including herbal medicine**

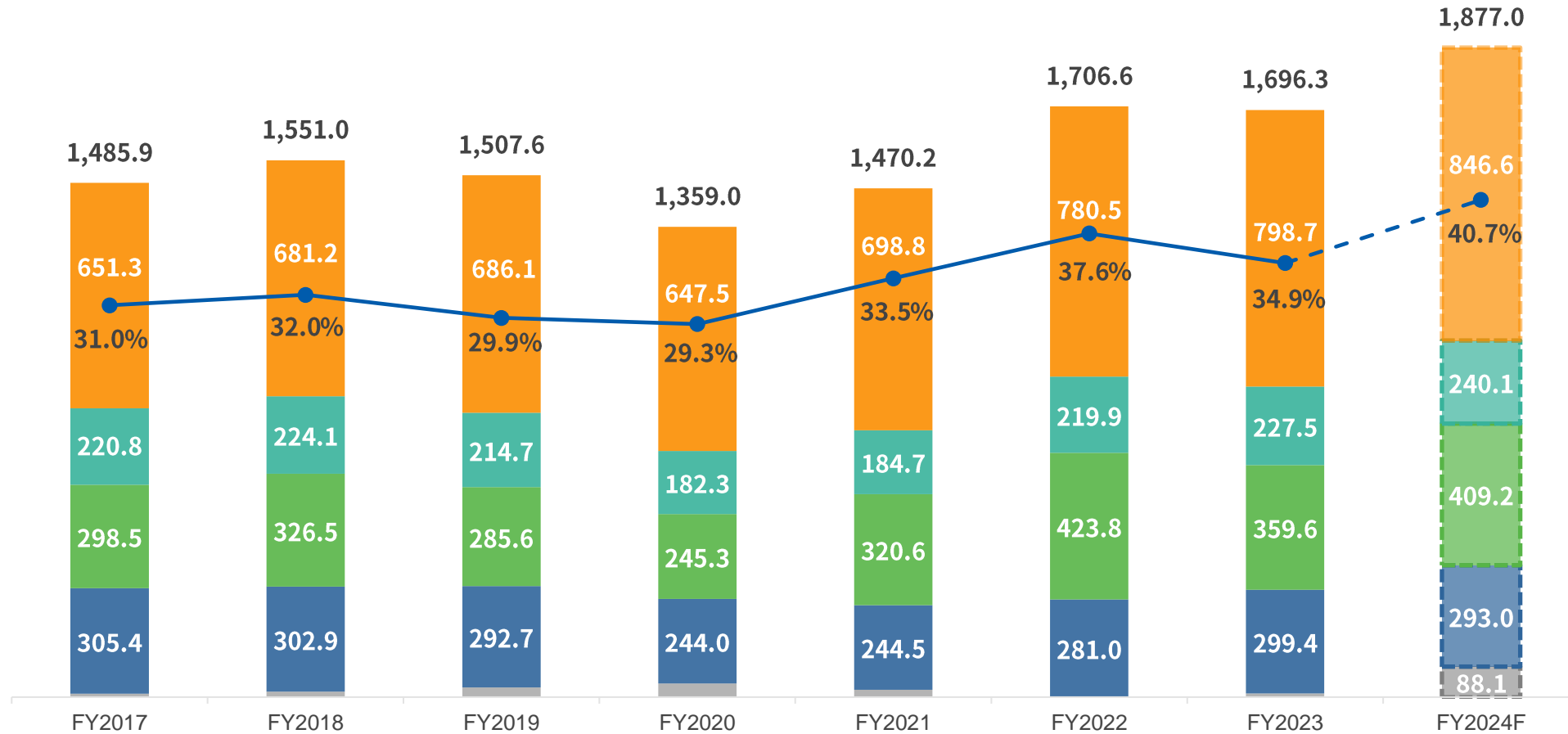


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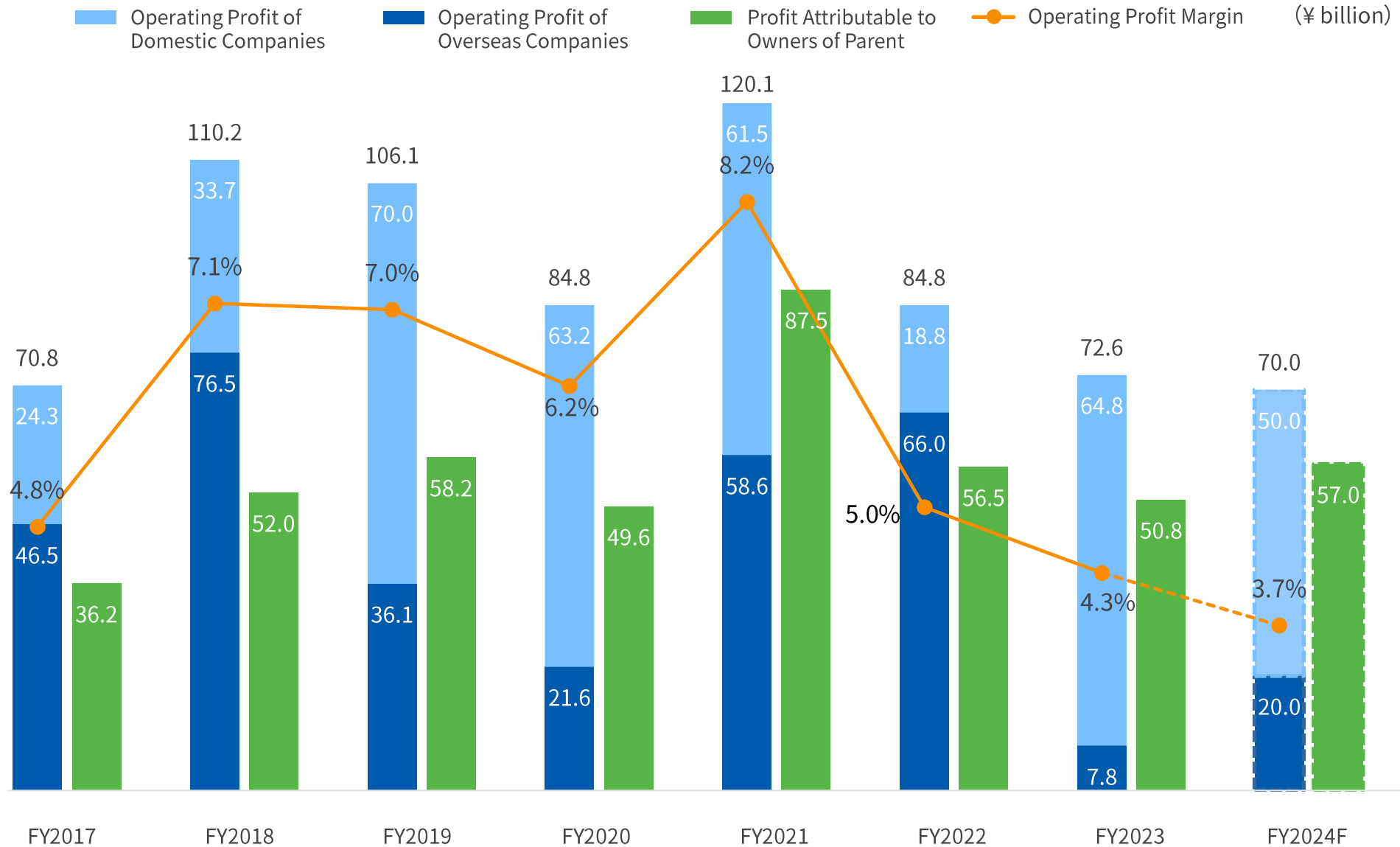
## Reference Materials

# Trends of Net Sales by Segment (consolidated)

■ Household & Industrial Materials  
 ■ Functional Materials  
 ■ Forest Resources & Environment Marketing  
 ■ Printing & Communications Media  
 ■ Others  
 ● Overseas Sales  
 (¥ billion)



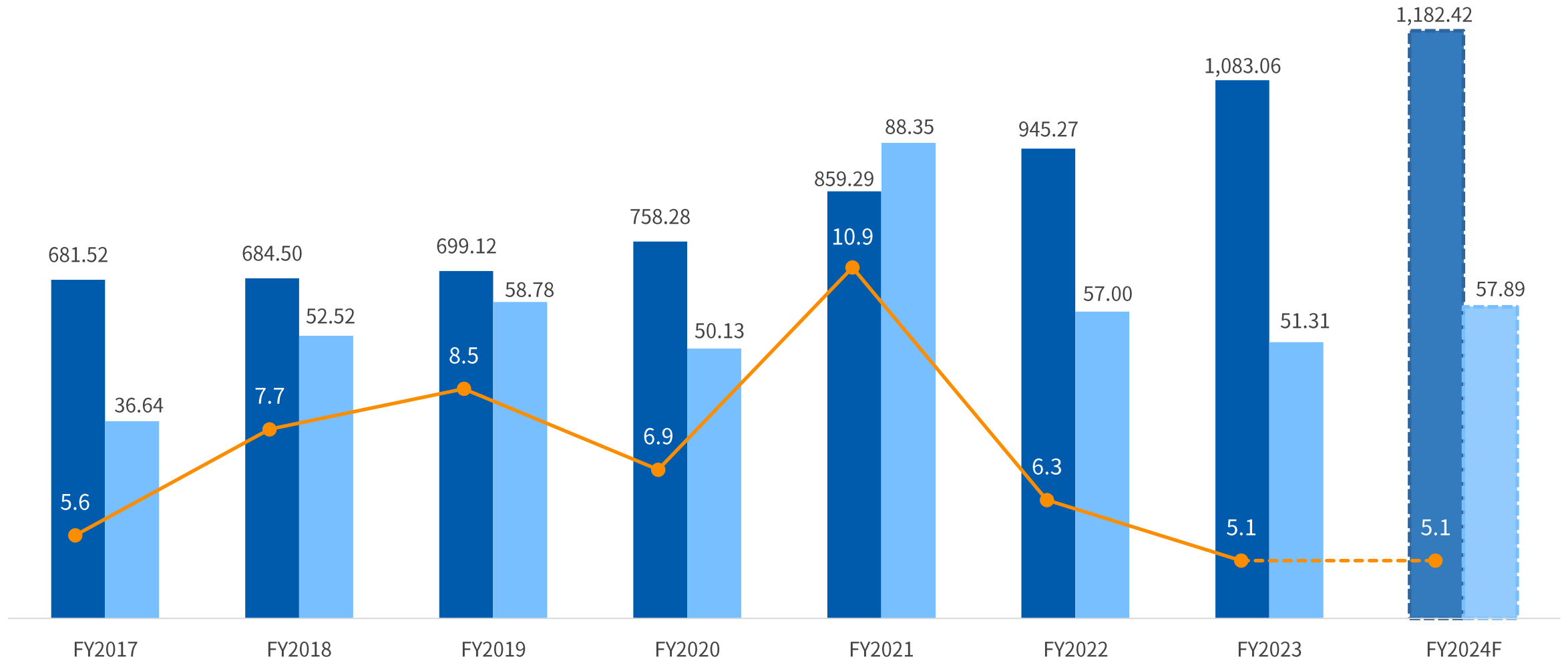
# Trends of Operating Profit (consolidated)



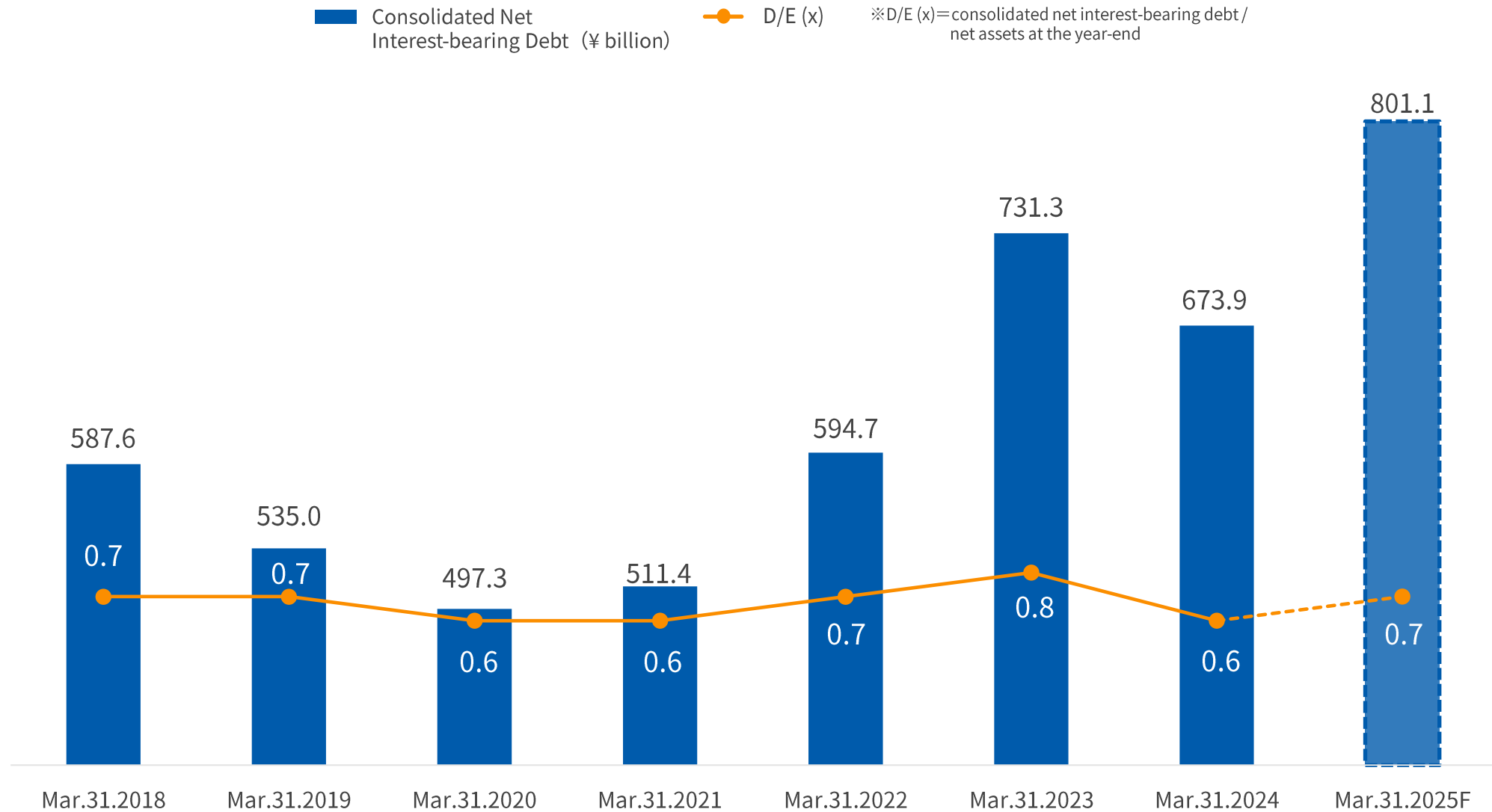
# Trends of Return on Equity (ROE)



■ Net Assets per Share (¥)
 ■ Net Profit per Share (¥)
 —●— ROE (%)



# Trends of Net Interest-bearing Debt (consolidated)



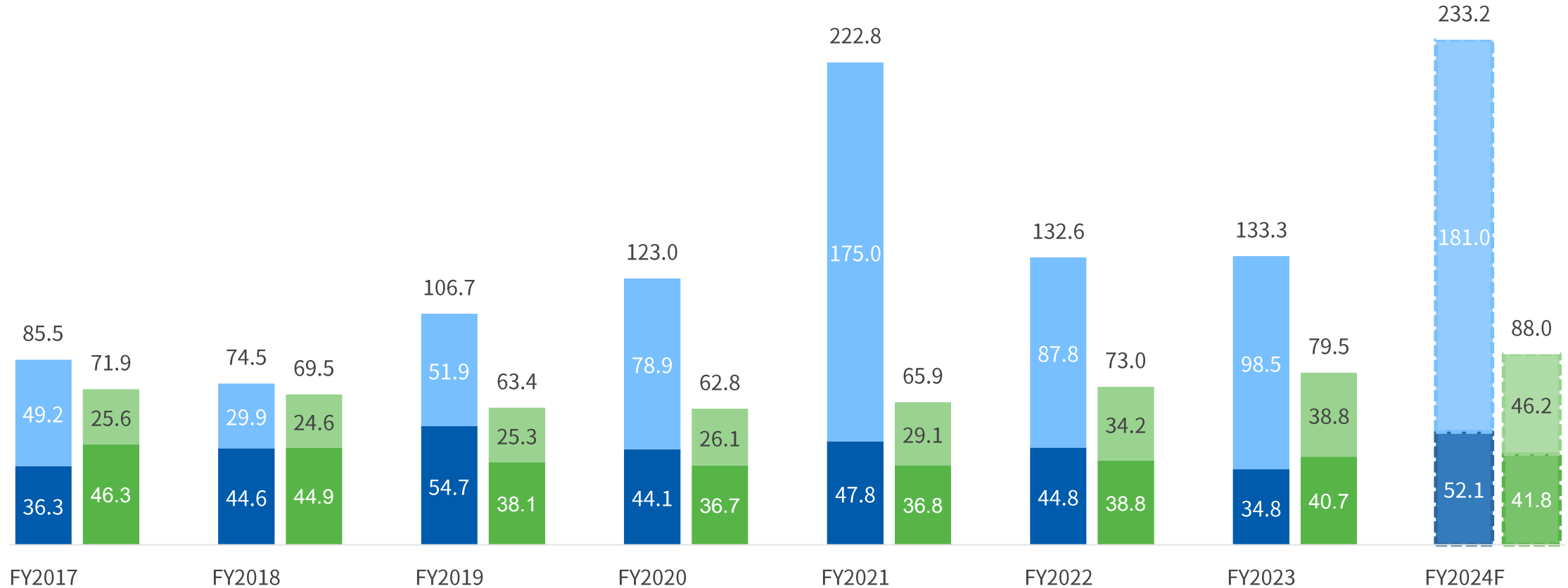


# Trends of CAPEX / Depreciation (consolidated)



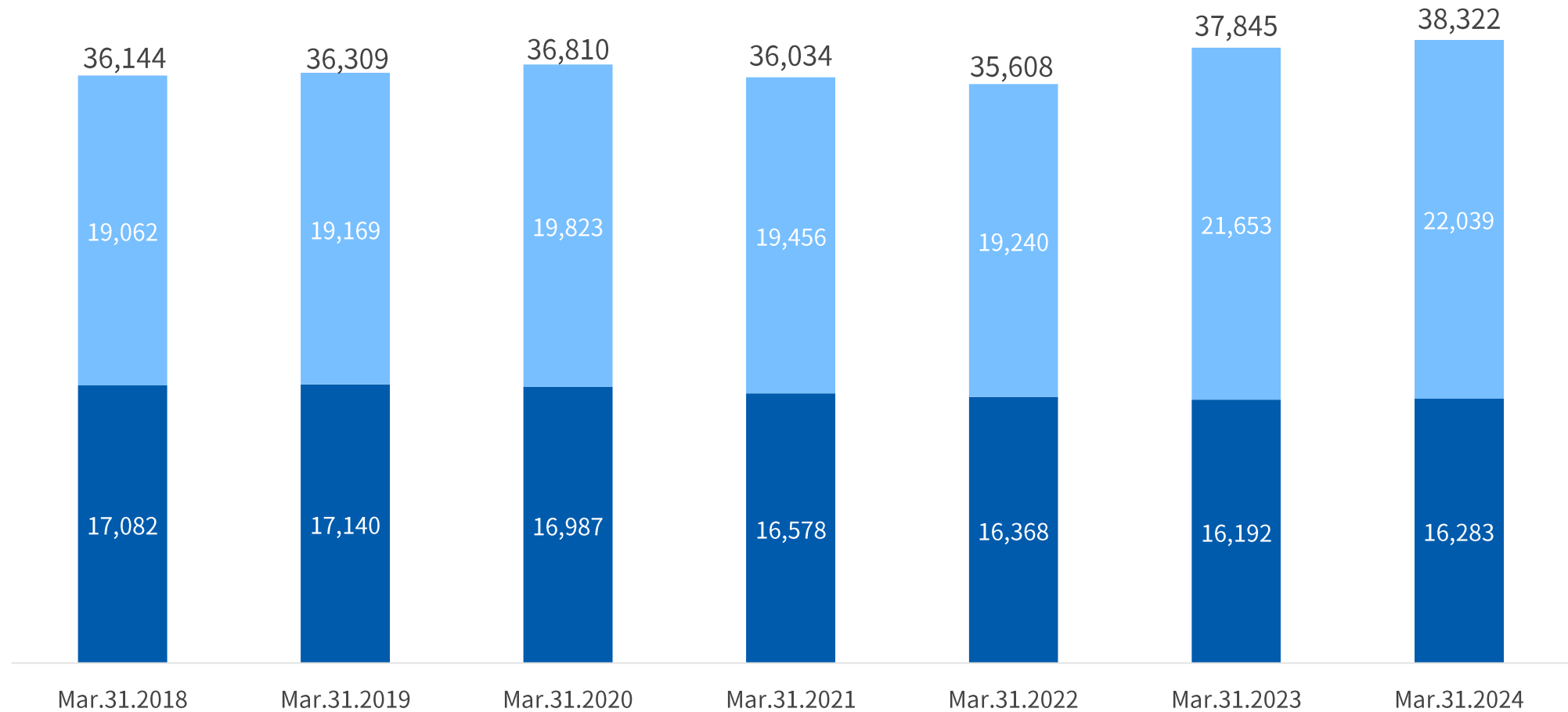
■ CAPEX, investment & loan [Domestic]    
 ■ CAPEX, investment & loan [Overseas]    
 ■ Depreciation [Domestic]    
 ■ Depreciation [Overseas]

(¥ billion)



# History of the Number of Employees (consolidated)

■ Employees [Domestic] (consolidated)
 ■ Employees [Overseas] (consolidated)
 (person)



# 1st-half of FY2024 Industry Demand



(thousand ton)

		Domestic Shipments		Imports (Custom-cleared) ※1		Total	
		Year-on-Year		Year-on-Year		Year-on-Year	
Paperboard	Containerboard	4,324	99.4%	13	119.9%	4,336	99.4%
	Boxboard	721	102.1%	103	108.8%	824	102.9%
	Other Paperboard	278	100.4%	11	78.6%	289	99.4%
<b>Paperboard Total</b>		<b>5,323</b>	<b>99.8%</b>	<b>126</b>	<b>106.3%</b>	<b>5,449</b>	<b>99.9%</b>
Paper	Sanitary Paper	915	101.4%	122	103.9%※2	1,037	101.7%
	Packaging Paper	298	100.0%	6	117.3%	304	100.3%
	Newsprint	748	90.5%	0	40.2%	749	90.5%
	Printing/Communications Paper	2,277	92.6%	259	98.4%	2,536	93.2%
	Miscellaneous Paper	271	106.3%	10	134.8%	281	107.1%
<b>Paper Total</b>		<b>4,509</b>	<b>95.1%</b>	<b>397</b>	<b>100.9%</b>	<b>4,907</b>	<b>95.6%</b>
<b>Paperboard and Paper Total</b>		<b>9,833</b>	<b>97.6%</b>	<b>523</b>	<b>102.1%</b>	<b>10,356</b>	<b>97.8%</b>

(million m<sup>2</sup>)

<b>Corrugated Containers</b> ※3		<b>7,069</b>	<b>99.9%</b>	—	—	<b>7,069</b>	<b>99.9%</b>
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Source: Japan Paper Association - Statistics on Paper and Paperboard; Trade Statistics of Ministry of Finance, Japan; Japan Corrugated Case Association - Production Volume of Corrugated Case

\*1: Statistics for customs cleared imports of paper: April 2024 - September 2024 (preliminary)

\*2: The figure includes secondary products (processed goods)

\*3: The figure represents the production volume of corrugated board