

# The Oji Group Integrated Report 2021

Fiscal year ended March 2021



# Management Philosophy & Corporate Slogan

## Management Philosophy

Creation of  
Innovative Value

Contribution to  
the Future and  
the World

Harmony with  
Nature and  
Society

Untiring self-transformation, challenging manufacturing, strategic business model creation, and innovation. In a world that is constantly changing, the Oji Group aims to create innovative value in the global arena.



### Slogan

“Beyond the Boundaries”

This slogan expresses the Oji Group's commitment to actively go beyond the “boundaries” of business domains, countries, and the respective capabilities of individual employees to contribute to the future, society, and the world as well as the determination of all Group members to maximize corporate value as a truly global company.

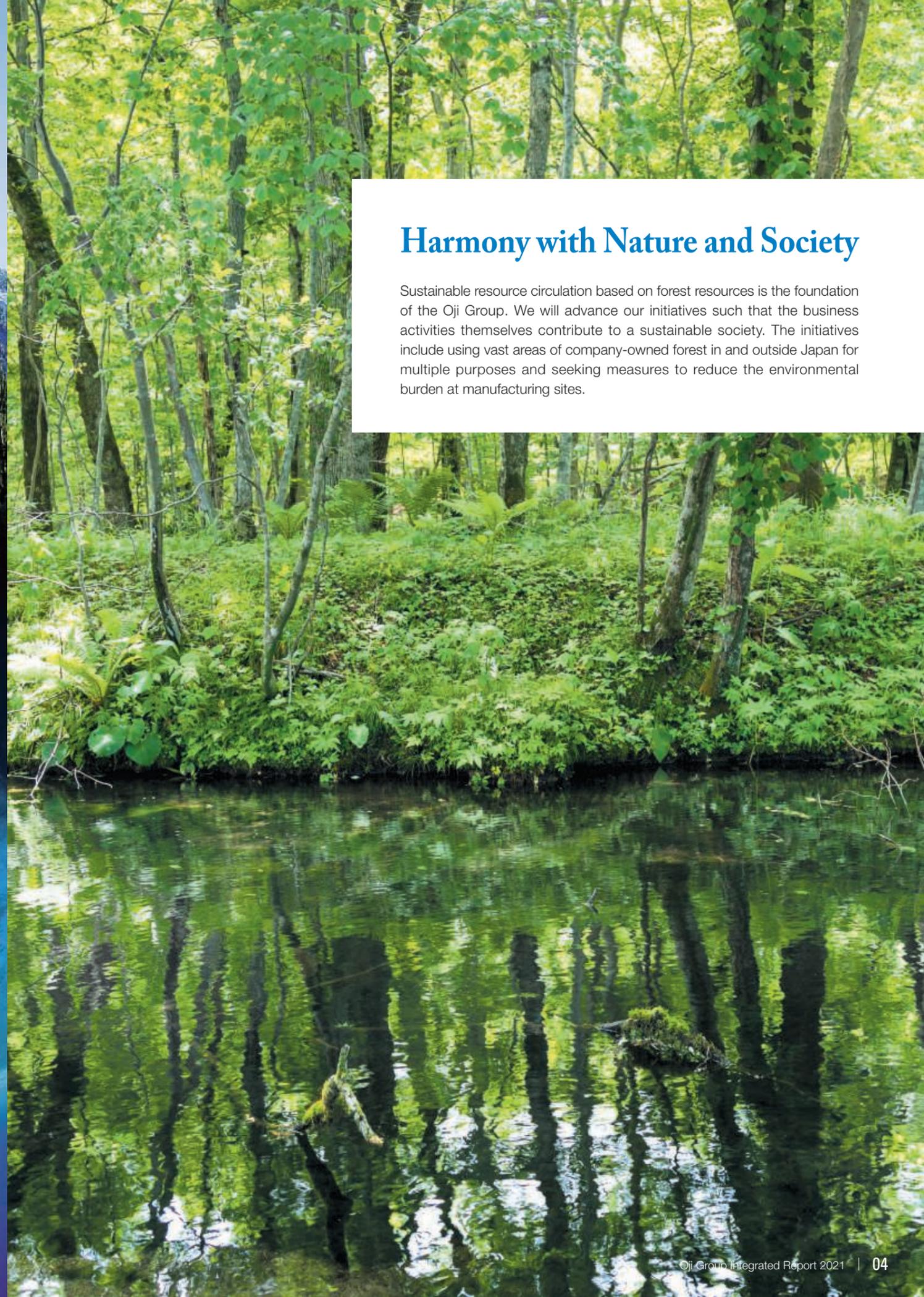
## Creation of Innovative Value

Innovation is essential for the Oji Group to make a big leap forward. Changes must take place in the research and technological development leading up to revolutionary new products. At the same time, our organizational systems and the behaviors of each and every employee need to be transformed. We will promote “challenging manufacturing” based on novel ideas and fulfill society's latent needs.



## Contribution to the Future and the World

The Oji Group comprises a diverse range of businesses. We have grown into a global corporate group, with an overseas sales ratio of around 30%. The Group will continue to provide innovative value to all countries, regions, and societies and create a new future through proactive global expansion in Asian and other countries.



## Harmony with Nature and Society

Sustainable resource circulation based on forest resources is the foundation of the Oji Group. We will advance our initiatives such that the business activities themselves contribute to a sustainable society. The initiatives include using vast areas of company-owned forest in and outside Japan for multiple purposes and seeking measures to reduce the environmental burden at manufacturing sites.

We started publishing the Oji Group Integrated Report in 2019. This report presents both financial and non-financial information in an easy-to-understand manner in order to provide information about our initiatives to our customers, shareholders, investors, local residents, and all other stakeholders. As with the previous report, this fiscal year's report was compiled in such a way that provides narratives and makes it easier to understand. We have also enhanced the links between this report and our "Sustainability Report (online)."

In recent years, concern has been growing over global environmental issues such as climate change and the issue of plastic in the ocean, and the drive to solve these problems is gathering momentum. With the additional impacts of the COVID-19 pandemic, the social environment surrounding us is facing a significant crossroads. Under these circumstances, the Oji Group, which has been operating a sustainable paper manufacturing business since our foundation in 1873, has held numerous discussions as to what new values can be created and how we can meet social expectations, by obtaining internal and external cooperation.

We consider it the mission of the Oji Group to continue progress toward the realization of a sustainable society through our forest resources-centered business, while deepening communication with stakeholders through this Integrated Report.

### Editorial Policies

When preparing this Report, and reference was made to the following. Additionally, the report is structured in relation to the 10 principles in four areas found in the United Nations Global Compact.

- **International Integrated Reporting Framework** (International Integrated Reporting Council)
- **GRI Standard** (Global Reporting Initiative)
- **Guidance for Collaborative Value Creation** (Ministry of Economy, Trade and Industry)

### Ensuring Reliability

To ensure the reliability of this report, FY2020 figures marked with a star (★) have been assured in accordance with the International Standard for Assurance Engagements (ISAE) 3000 and ISAE 3410 by KPMG AZSA Sustainability Co., Ltd.

### Scope of Coverage of this Report

In general, this report covers Oji Holdings, 188 consolidated subsidiaries, and 23 equity-method affiliates (as of March 31, 2021). In cases where coverage differs, this is indicated.

### Reporting Period

The reporting period is from April 1, 2020 to March 31, 2021 (except for lost time injury frequency rate, and environmental data for certain overseas sites, for which the period is from January 1, 2020 to December 31, 2020). With the exception of numerical data, however, activities carried out from and after April 2021 are also referenced.

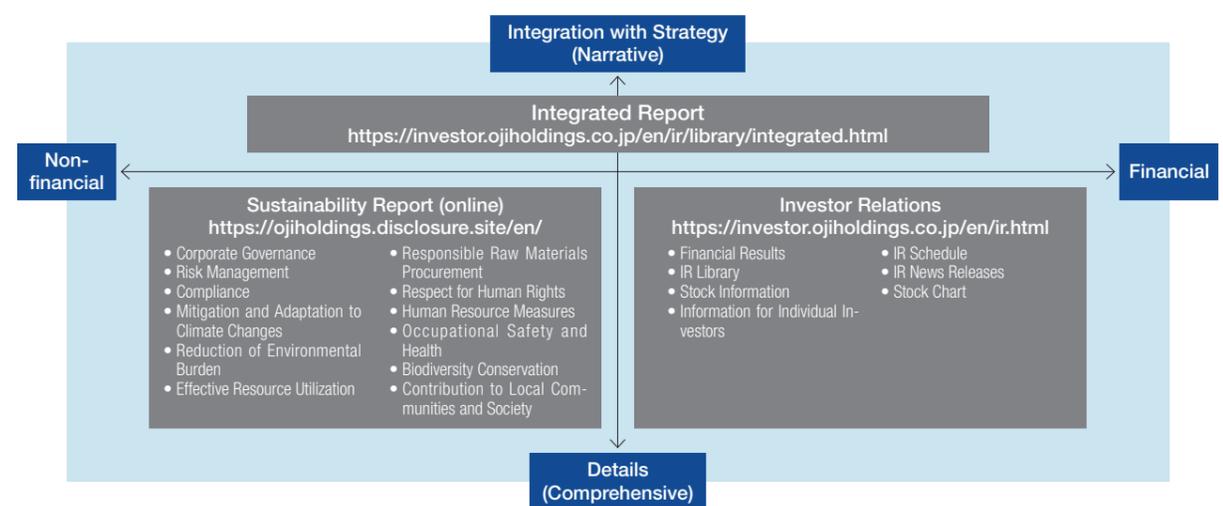
### Disclaimer Regarding Forecasts and Other Forward-looking Statements

Forecasts and other forward-looking statements in this report represent projections by Oji Holdings based on information available at the time of publication and reasonable judgments and therefore contain uncertainties. Actual results may differ substantially due to various factors.

### This Report is Printed on Forest Certified Paper

The report's cover is printed on Oji F-Text's OK Muse Gulliver Gloss CoC (157.0 g/m<sup>2</sup>), while the main body of the report is printed on Oji Paper's OK Pixeed 01 EF (80.0 g/m<sup>2</sup>). Both of these are FSC™ forest certified paper made from resources harvested from responsibly-managed forests (FSC™C005431, FSC™014119).

## Communication Map



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## Evaluation from Society



**FTSE Blossom Japan Index**  
Oji has been selected for the FTSE Blossom Japan Index, one of the ESG indexes selected by the Government Pension Investment Fund (GPIF), since September 2019. (Scope: Oji Holdings)

**FTSE4Good Index Series**  
Oji has been selected for the FTSE4Good Index Series, an ESG index established by FTSE Russell, since September 2019. (Scope: Oji Holdings)

**SOMPO Sustainability Index**  
Oji has been selected since June 2019 for the SOMPO Sustainability Index, which is used for SOMPO Sustainable Investment, an investment product of SOMPO Asset Management Co., Ltd. (Scope: Oji Holdings)

**S&P/JPX Carbon Efficient Index**  
Oji has been selected for S&P/JPX Carbon Efficient Index since September 2018. Constituents of the index are selected with a focus on companies' disclosure of environmental information and carbon emissions per net sales. (Scope: Oji Holdings)

**Dow Jones Sustainability Asia Pacific Index**  
In November 2020, Oji was selected for the first time as a constituent of the Dow Jones Sustainability Asia Pacific Index, one of the Dow Jones Sustainability Indices (DJSI) selecting companies based on their outstanding performance on sustainability issues. (Scope: Oji Holdings)

**MSCI Japan Empowering Women (WIN) Index**  
Oji has been selected since June 2017 for MSCI Japan Empowering Women (WIN) Index, an ESG index established by MSCI Inc. (Scope: Oji Holdings)

**"Eruboshi" certification received under the Act on Promotion of Women's Participation and Advancement in the Worksite**  
On December 21, 2017, Oji was granted "Eruboshi" (Grade 3, the top grade) company certification by the Minister of Health, Labour and Welfare in recognition of its efforts to promote women's participation and career advancement. (Scope: Oji Holdings)

**FY2020 "Nadeshiko Brand"**  
On March 22, 2021, Oji was selected for a second time (first selection in 2018) by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange as "Nadeshiko Brand" companies as enterprises that are outstanding in terms of encouraging the empowerment of women in the worksite. (Scope: Oji Holdings and Oji Management Office)

**JPX Nikkei Index 400**  
Oji has been selected for JPX Nikkei Index 400 since August 2014. The stock price index comprises stocks that meet the requirements of global investment standards and are attractive to investors. (Scope: Oji Holdings)

**2021 Certified Health and Productivity Management Organization Recognition Program**  
On March 4, 2021, Oji was recognized under the 2021 Certified Health and Productivity Management Organization Recognition Program (Large Enterprise Category), administered jointly by the Ministry of Economy, Trade, and Industry (METI) and the Nippon Kenko Kaigi. (Scope: Oji Holdings and Oji Management Office)

# History of the Oji Group's Value Creation

Since its founding in 1873, the Oji Group has been growing through the expansion of business fields. While keeping abreast of the trends of the times, we have tackled changing social needs and evolved our business structure. In recent years, aiming for contribution to a sustainable society, we have been actively rolling out the technologies cultivated in our domestic business to the global market.

**1873**  
**Birth of the Modern Paper Manufacturing Industry**

The origin of the Oji Group dates back to the establishment of Shoshi Kaishya, a paper manufacturing company, advocated by Eiichi Shibusawa, the founder of the modern Japanese economy.



From the collection of the Shibusawa Memorial Museum

Shibusawa advocated that "paper and printing businesses are the source of civilization." He held on to his great ambition to supply domestic paper.

**1910**  
**Establishment of Domestic Supply Structure**

We established the Tomakomai Mill in a fishing village in Hokkaido, which had abundant resources such as forests and water as well as vast and flat land, which are required for paper manufacturing, and started producing newsprint.



We worked on unimaginably difficult construction such as building a latest hydroelectric power plant at Waterfall Nassou on the undeveloped shore of Lake Shikotsu.

**1950s**  
**Efforts toward New Technologies**

With a view to producing high-quality paper quickly and in large quantities, we turned to a continuous digester, which was unproven at that time but highly productive. We introduced the equipment at the Kasugai Mill.



Tomakomai Mill for newsprint and Kasugai Mill for woodfree paper contributed to our growth. Kasugai Mill even became a pioneer of urban factories.

**1970s**  
**Start of Packaging and Household Paper Production**

Demand for paper was only growing, and people started to have high expectations for the material, which found its way into products other than newsprint and printing paper.



Paper materials such as boxboard, thermal paper, and household paper have come to play an active role in various situations that support daily life.

**1990s**  
**Response to Environmental Issues**

Attention was drawn to issues that are directly related to people's lives, such as resource saving, energy saving, and urban waste treatment.



Light-weighted newsprint became common, and in the household paper field, we succeeded in volume reduction of tissue paper cartons. In addition, due to advances in recovered paper utilization technology, the recovered paper utilization ratio exceeded 50%.

**2000s**  
**Shift in the Business Structure**

Paper production volume has been declining since 2008. This unprecedented crisis created an opportunity for shifts in the business structure.



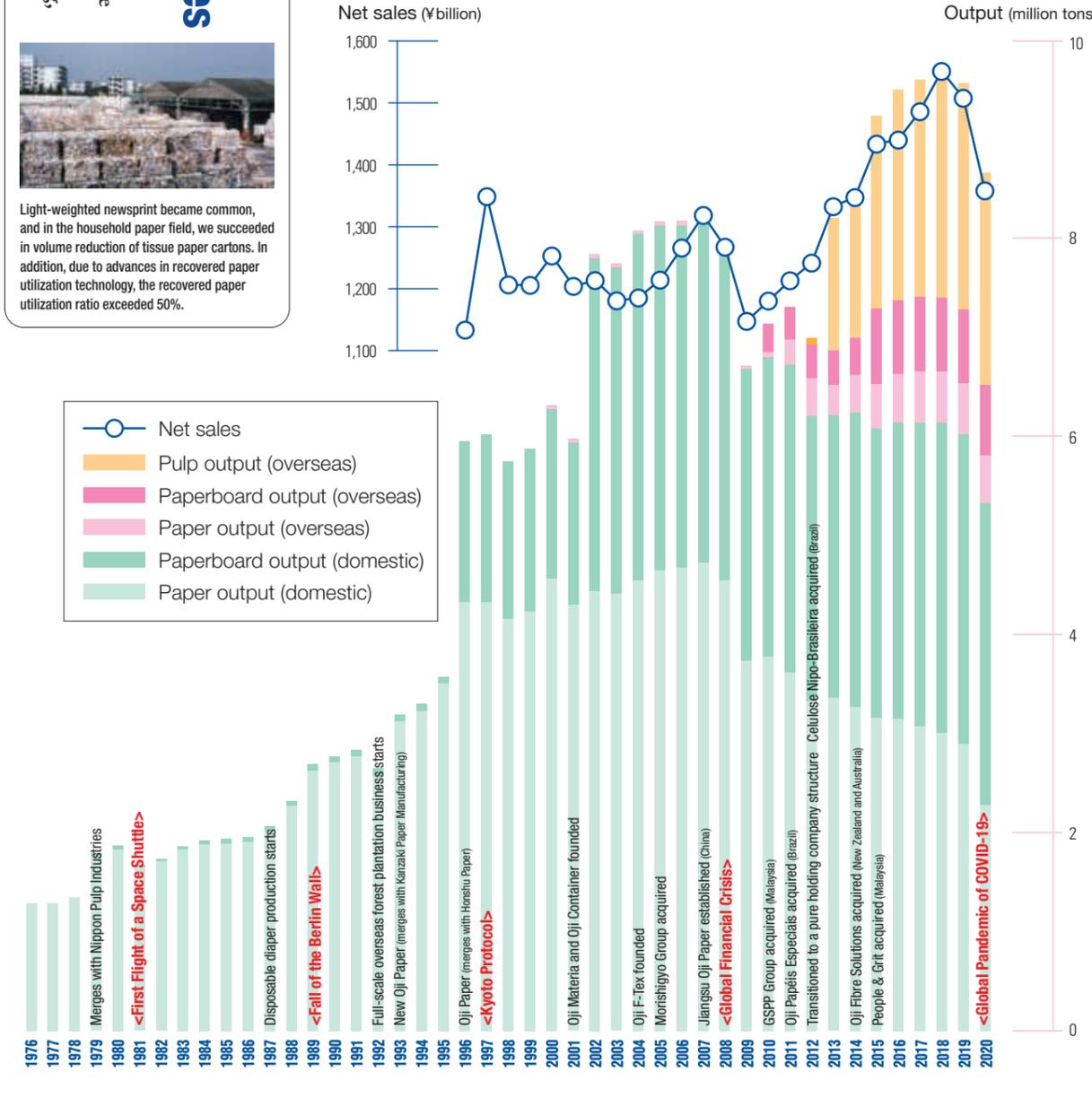
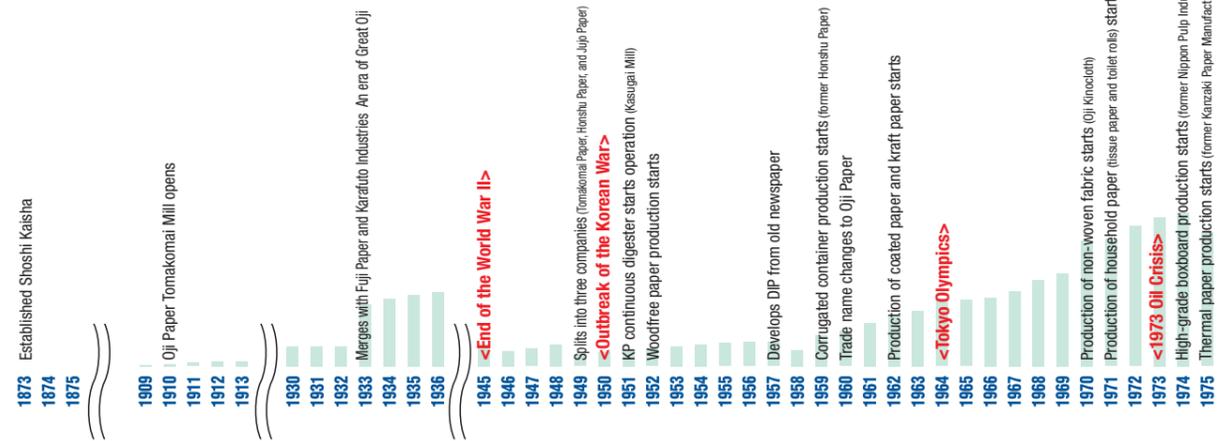
Demand for paperboard as a packaging material was strong. The production ratio of paper and paperboard gradually changed.

**2010s**  
**Further Global Deployment**

We actively developed the overseas business with a focus on Southeast Asia. The overseas sales ratio reached approximately 30%.



We have newly established corrugated container and folding carton factories in Malaysia, Cambodia and India, among other countries, to meet vigorous local demand.



# Oji Holdings Corporation

Net Sales **¥1,359.0 billion**

Operating Profit **¥84.8 billion**

Changes in Net Sales and Operating Profit

■ Net Sales (¥ billion)  
 ■ Operating Profit (¥ billion)  
 †Net sales and operating profit include adjustments (primarily those for internal transactions).



## Industrial Materials COMPANY

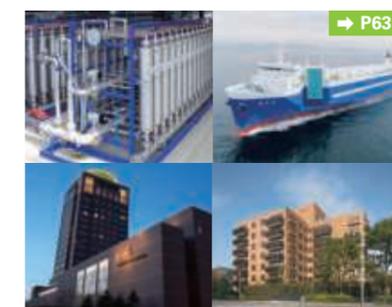
## Household and Consumer Products COMPANY

## Functional Materials COMPANY

## Forest Resources and Environment Marketing COMPANY

## Printing and Communications Media COMPANY

## Corporate Management Group and Shared Service Companies



**Main businesses**  
 Containerboard/corrugated containers, Boxboard/folding cartons, Packaging materials/paper bags

**Main businesses**  
 Household paper, Disposable diapers

**Main businesses**  
 Specialty paper, Thermal paper, Adhesive products, Film

**Main businesses**  
 Pulp, Energy, Plantation services, Lumber processing

**Main businesses**  
 Newsprint, Printing and Publication paper, Communications paper

**Main businesses**  
 Real estate, Engineering, Trading, Logistics, etc.

**Affiliated companies**

**Affiliated companies**

**Affiliated companies**

**Affiliated companies**

**Affiliated companies**

**Affiliated companies**

Domestic	Overseas
43 companies	44 companies

Domestic	Overseas
1 company	8 companies

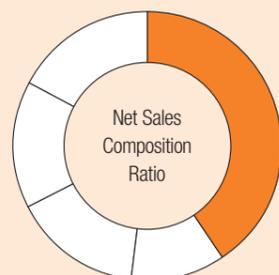
Domestic	Overseas
9 companies	12 companies

Domestic	Overseas
15 companies	15 companies

Domestic	Overseas
7 companies	1 company

Domestic	Overseas
17 companies	16 companies

**Earning structure**

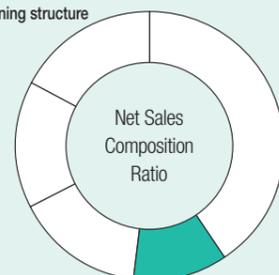


40.8%

Net Sales **¥647.5 billion**

Operating Profit **¥38.1 billion**

**Earning structure**

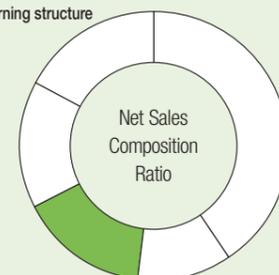


11.5%

Net Sales **¥182.3 billion**

Operating Profit **¥11.5 billion**

**Earning structure**

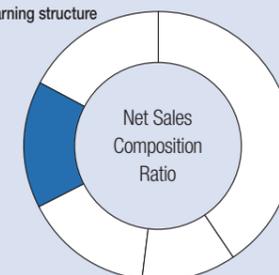


15.4%

Net Sales **¥245.3 billion**

Operating Profit **¥16.7 billion**

**Earning structure**

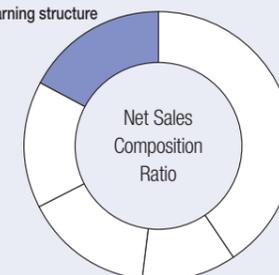


15.3%

Net Sales **¥244.0 billion**

Operating Profit **¥11.2 billion**

**Earning structure**

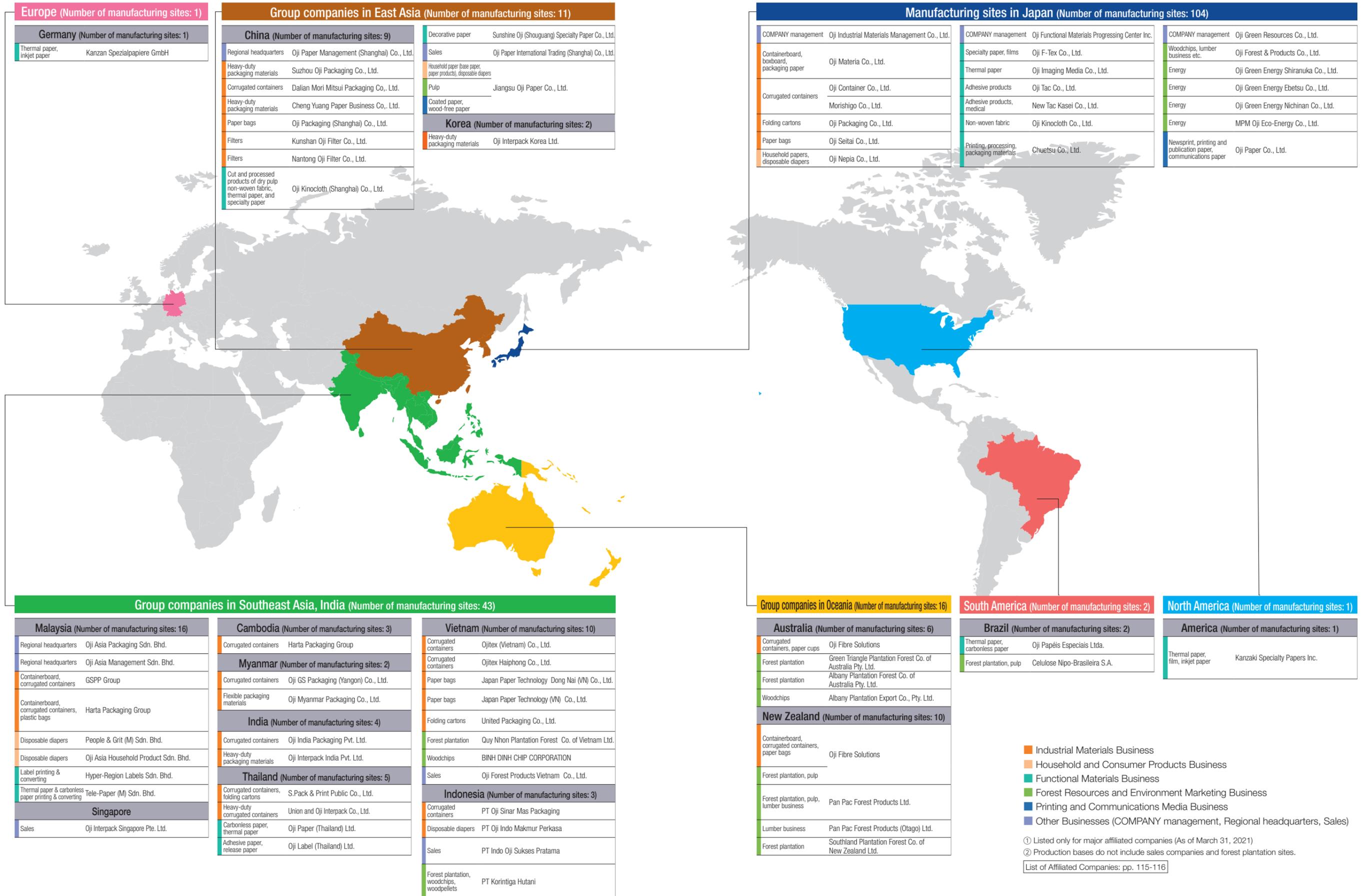


17.0%

Net Sales **¥270.2 billion**

Operating Profit **¥6.8 billion**

# Major Affiliated Companies Distribution Map



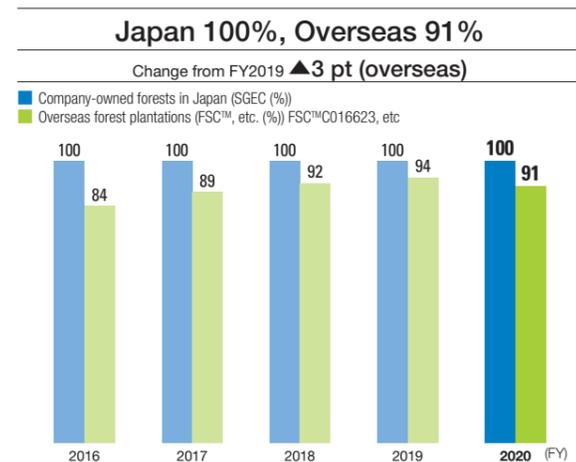
Financial Highlights

Segment		FY2010	FY2011	FY2012	FY2013
Net sales	(¥billion)	1,180.1	1,212.9	1,241.5	1,332.5
Overseas sales ratio	(%)	9.7	10.6	16.7	20.3
Operating profit	(¥billion)	65.4	53.8	43.5	57.3
Profit per share	(¥)	24.92	22.46	21.91	32.01
Free cash flows	(¥billion)	25.7	38.3	29.2	42.1
Net D/E ratio	(times)	1.7	1.6	1.4	1.1
Return on equity (ROE)	(%)	5.6	5.0	4.6	5.9
Capital investment, etc.	(¥billion)	77.1	54.7	70.1	76.7
Dividend per share	(¥)	10.0	10.0	10.0	10.0

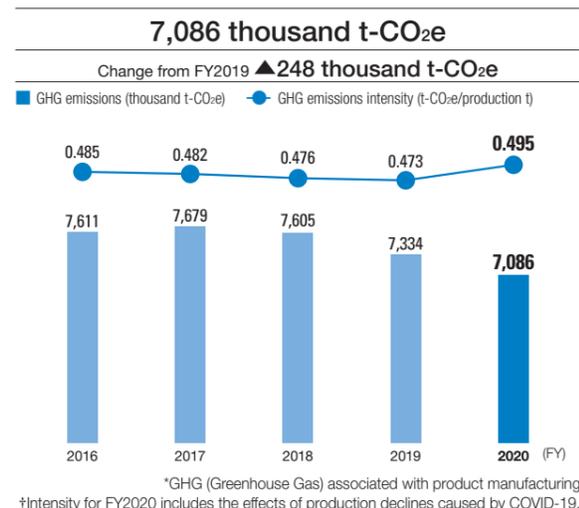
	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
	1,347.3	1,433.6	1,439.9	1,485.9	1,551.0	1,507.6	<b>1,359.0</b>
	22.8	27.8	28.2	31.0	32.0	29.9	<b>29.3</b>
	43.9	72.0	70.2	70.8	110.2	106.1	<b>84.8</b>
	15.71	12.86	40.74	36.64	52.52	58.78	<b>50.13</b>
	(74.6)	84.8	117.2	49.2	74.0	59.7	<b>35.5</b>
	1.0	1.0	0.8	0.7	0.7	0.6	<b>0.6</b>
	2.6	2.1	6.7	5.6	7.7	8.5	<b>6.9</b>
	80.1	57.4	57.9	69.3	62.1	97.5	<b>98.4</b>
	10.0	10.0	10.0	10.0	12.0	14.0	<b>14.0</b>

Non-financial Highlights

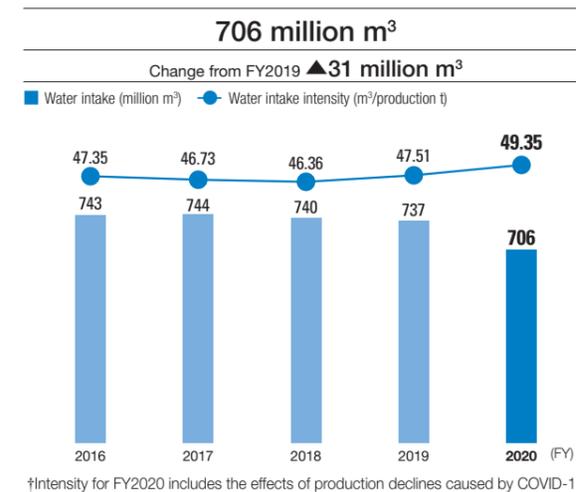
Forest certification acquisition rate



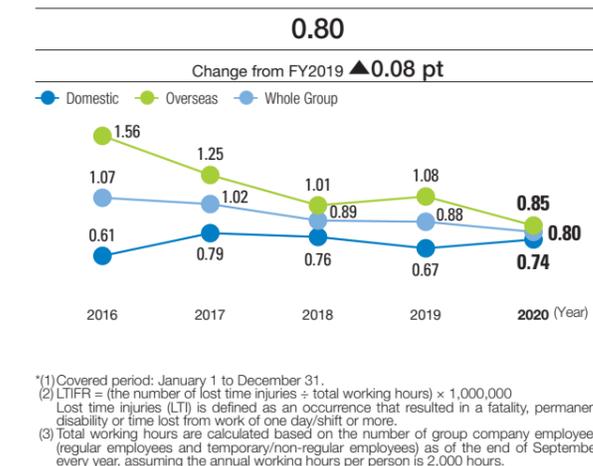
GHG emissions\*



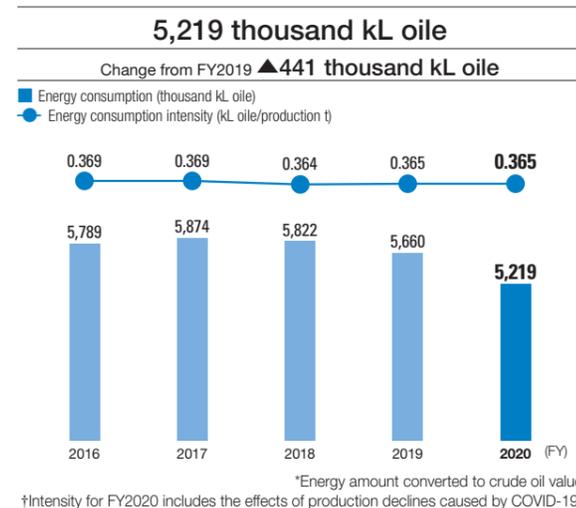
Water intake



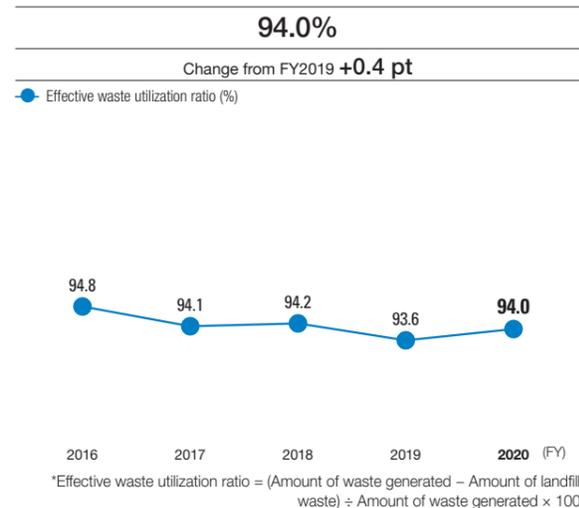
Lost Time Injury Frequency Rate (LTIFR)\*



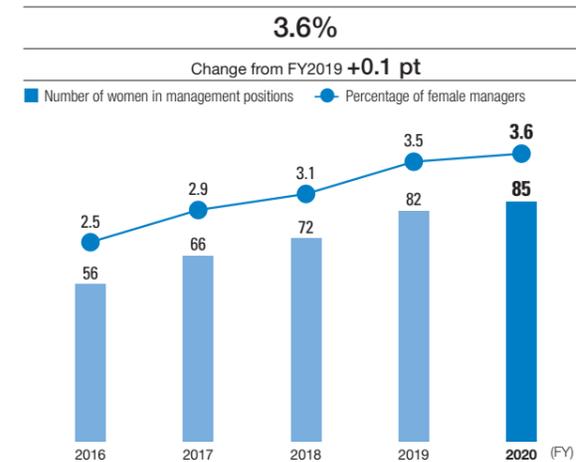
Energy consumption\*



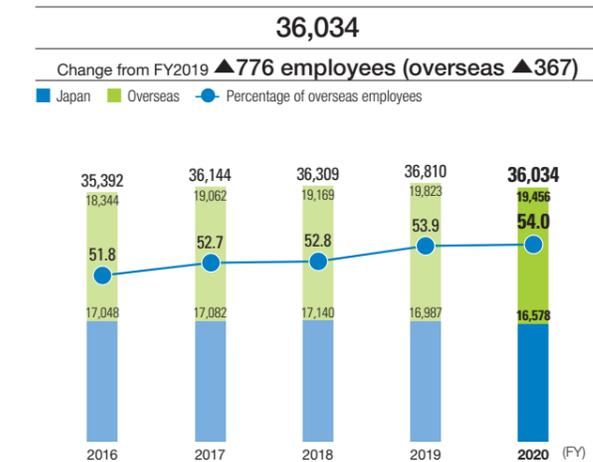
Effective waste utilization ratio\*



Percentage of female managers (16 Group companies in Japan)



Number of employees (excluding temporary employees)



# To Create Sustainable Value for the Future by Responding to Change

Today, we find ourselves in a situation where each and every decision will greatly change the future. As the global spread of COVID-19 has been reshaping people's lifestyles, the demand structure is drastically changing. It should also be noted that the climate change issues have drawn more attention and the trend towards resolving the issues is gaining momentum. I would like to discuss the path that the Oji Group should take to create sustainable value that the society demands and to achieve growth in response to changes at present as well as new changes that will emerge in the future.

Oji Holdings Corporation  
Representative Director of the Board, President and Group CEO

**Masatoshi Kaku**

## I. Overview of the Changes Resulting from COVID-19

### Impact on the Oji Group and Transition into a New Normal

First, in terms of change, I would like to examine changes in the business environment during the COVID-19 pandemic, which I believe is of particular interest to everyone.

The economic impacts are severe both in Japan and overseas. I understand that it was inevitable to some extent to reduce the movement of people as the only reliable measure to protect their lives, but countries around the world implemented such policies as lockdowns, self-quarantine and travel restrictions. The policies were further strengthened by individuals' conscious efforts to stay at home. I believe it is still fresh in your memory that the nationwide state of emergency declared in April 2020 left the streets quiet and dark in Japan. Consequently, with the markets and economic activities coming to a standstill, the Oji Group's business was impacted profoundly. In Japan, with the exception of a temporary rise in demand of household paper products due to panic buying in the first half of 2020, the sales volumes of other businesses were significantly lower than the previous year, which forced us to adjust production. Although there was a momentary recovery in the latter half of 2020 due to the government's

economic stimulus, such as the "Go To Travel" tourism campaign and "Go To Eat" dining campaign, these were suspended as the spread of infection continued, leading to persistently challenging condition today. Particularly, for the Paper Business, demand had been shrinking prior to the pandemic with the popularization of smartphones and changes in information collection methods, and this shrinkage has been further accelerated due to weaker consumption as well as diversified workstyles such as working from home as a result of the pandemic. While the Paper Business continues to struggle, other businesses are seeing a gradual recovery since the latter half of 2020, including the Paperboard Business, which centers on corrugated container products, due to expanded demand from those staying at home, and the Specialty Paper Business, which centers on industrial products, driven by the recovery in the automotive industry. Looking overseas, in Southeast Asia and New Zealand, uncertainties increased due to such factors as lower factory utilization ratio and delays in strategic investment timelines caused by lockdowns. The situation has required us to be more cautious in assessing the business environment.

The COVID-19 pandemic has drastically changed our awareness and lifestyles. While it is needless to say that we will respond to this change, even when the pandemic comes to an end, things will not return to the way they were before the pandemic, nor will our current lifestyles in the middle of the COVID-19 pandemic remain the same. It is critical that we determine what the new post-pandemic



normal will look like with the changed awareness and demand structure caused by the pandemic. The basic functions of paper are to collect and store information, to wrap and protect objects, and to wipe and absorb liquid. These functions remain unchanged even during the pandemic. By looking at the trend thus far, it is evident which functions will expand and which ones will shrink. We must accurately grasp both upsides and downsides of the changes, and speed up the restructuring and optimization of our business portfolio. We will constantly ask ourselves what society needs, and keep an eye out. Placing our main focus on the question, we will continue to create value and provide solutions to issues.

## II. Achieve Sustainable Growth through “Response to Change”

### Our “Founding Spirit” and “Management Philosophy”—a Constant Direction That Transcends Environmental Changes

Our “Founding Spirit” and “Management Philosophy” are always at the core of our thinking, enabling us to remain steadfast beyond change. Our “Founding Spirit” is “unity of economy and morality,” or the idea that “the profits that businesses pursue should benefit society.” This was advocated around 150 years ago by our founder, Eiichi Shibusawa, who has recently been drawing renewed attention. I view this as a lesson that a company is an entity that is made alive by society, and a company should take its social responsibility and continue to be needed by society as the premise of pursuing profit.

This is linked to the ideas of the SDGs, and also incorporated in the Oji Group’s “Management Philosophy” that upholds the “Creation of Innovative Value,” “Contribution to Future and the World,” and “Harmony with Nature and Society.” At the time of our founding, in Meiji era Japan, we aimed to proliferate books and newspapers to raise the level of knowledge of the public in contributing to social and economic development. Likewise, we will continue to create innovative value through promoting challenging manufacturing with foresight into the future in order to meet the needs and resolve issues of the current generation and beyond both in Japan and overseas, utilizing the technology and expertise we have gained through 150 years of business. Furthermore, as a company that develops its business with forest resources as its core, we will constantly be aware of co-existing with the environment and committed to contributing to a sustainable society.

### The History of “Transformation” Itself Forms the History of Growth

The following is a quote from Darwin’s evolutionary theory. “It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change.” In other words, “response to change” is

connected to growth and development. The Oji Group has willingly undergone “transformations” by constantly perceiving “change” and cultivating the organizational adaptability as the times and the needs of the society and people shift.

In the past, we embraced difficult situations and overcame turbulence by merging with various companies in order to adapt to environmental change and survive. We are proud of the fact that, by mutually respecting and fostering cultures and customs in the process of such mergers, we have created a foundation that secures and nurtures diverse and flexible human resources, and as a result, a structure that embraces “transformation” has been established.

As a plethora of events occurred worldwide in 2020, the year also marked a year of drastic change for the paper industry in Japan. The domestic shipment of Paperboard often used in packaging, such as containerboard and folding carton base paper, has exceeded that of Paper, including newsprint and printing/communication paper, for the first time. The domestic shipment of Paper peaked for printing/communication paper in 2000, and for newsprint in 2006, due to factors such as Japan’s aging population and declining birthrate, the development of information and communications technology, and the rise of imported paper. Then, it had continued to gradually decline, with the global financial crisis causing yet another rapid decline, which has not recovered to date. However, it was still higher than that of Paperboard. And finally, this situation reversed. Since the 1990s, we have allocated more management resources to the packaging field based on the perspective of raw material recycling, in addition to the aging population and declining birthrate, and the development of information and communication technology, with a particular emphasis to strengthen the corrugated container business, as a downstream business of containerboard. Around 10 years ago, in 2012, we made the major decision to steer towards business structural reforms to diversify away from the Paper business, and transitioned to a pure holding company structure in order to foster stronger conviction as an organization. Since the transition, we have pursued the optimized production system in response to the shrinking Paper market in Japan, generated cash flows and freed up management resources, and continuously redistributed them to other promising businesses, including the Paperboard business, and particularly to other growth areas overseas. With our steady efforts to adapt to change to date, we have seen continued growth through making an early shift from Paper to other businesses, expanding from Japan to overseas, and focusing on growth areas and regions.

Our slogan “Beyond the Boundaries” was created in tandem with the transition. It expresses our determination to move forward into the future as a global company by actively going beyond various “boundaries” including business domains, national territories, and the individual abilities of our employees, to contribute broadly to society and the world. When transforming in the face of change, the cultivation of “ability to perceive and think about the

present and the future calmly without being complacent,” and “ability to take action nimbly and swiftly,” plus the sharing of directions of business to move forward, among all officers and employees, will become a great driving force. Going forward, we will continue to constantly seek out new opportunities and predict risks, and while we create a growth strategy targeting these, we will also develop and maintain a structure to nimbly implement measures as a whole organization.

## III. Progress and Future Development of the Medium-term Management Plan

### Direction of the FY2019-2021 Medium-term Management Plan

This year marks the final year of the FY2019-2021 Medium-term Management Plan. I would like to discuss the future path that we should take from the perspective of the Medium-term Management Plan.

In the final fiscal year of the previous FY2016-2018 Medium-term Management Plan, or FY2018, we achieved consolidated operating profit of 110.2 billion yen, and became the first Japanese paper manufacturer that earned over 100 billion yen, which had long been our target. We are currently in the FY2019-2021 Medium-term Management Plan, which takes a further step up on the target by further promoting selection and concentration. The plan was formulated with the anticipation of solidifying the foundation of our corporate group to reach 150 billion yen in consolidated operating profit while maintaining a steady profit level of 100 billion yen or more by aiming for “Contribution to a Sustainable Society” through steady implementation of the three pillars: “Profitability Improvement of Domestic Business,” “Expansion of Overseas Business,” and “Promotion of Innovation.”

Specifically, “Profitability Improvement of Domestic Business” has been positioned as a top priority. During the previous Medium-term Management Plan, I was very concerned as the greater-than-expected shrinkage of the Japanese market deteriorated the utilization ratio of manufacturing facilities, and reduced our domestic business’ earnings capacity. Therefore, we sought to streamline business through drastic manufacturing restructuring and business collaboration with other companies, and concentrate secured management resources to investment in strengthening promising businesses, to regenerate and enhance our earnings capacity. With respect to “Expansion of Overseas Business,” the overseas sales ratio has rapidly risen from less than 10% in FY2010 to 30%, which I hope to further bring up to around 50% going forward. In particular, we aim for business expansion from existing bases and synergy between businesses and bases in growth regions and growth fields, including the packaging business in Southeast Asia, India and Oceania, the disposable diaper business in Southeast Asia and China, the thermal paper business worldwide, and the pulp business worldwide in aiming to improve profitability. We consider



“Promotion of Innovation” as the key to building the pillars of our future business. We will further cultivate the technology and know-how we have accumulated in the paper manufacturing industry to develop new materials and products in fostering the pillars of future businesses. For example, we will accelerate efforts to achieve commercialization of products such as “cellulose nanofibers (CNF),” “wood-derived pharmaceutical products,” and “biodegradable and biocomposite materials” at an early stage.

### Review of the First and Second Years (FY2019-2020) and Forecast for the Final Year (FY2021)

Here, I would like to look back on our performance in FY2019 and FY2020 as well as talk about our forecast for FY2021.

In FY2019, consolidated net sales decreased 3% year-on-year to 1,507.6 billion yen and operating profit decreased 4% year-on-year to 106.1 billion yen, as we have maintained operating profit at over 100 billion yen since FY2018.

In FY2020, consolidated net sales decreased 10% year-on-year to 1,359.0 billion yen and operating profit fell 20% year-on-year to 84.8 billion. Operating profit saw positive factors such as a decline in raw materials and fuel costs and cost savings effects at each business site inside and outside of Japan, but the impacts of decreased sales totaled 28.6 billion yen, broken down as 23.9 billion yen in Japan and 4.7 billion yen overseas, while the loosening in market conditions of the overseas pulp business had a major impact, resulting in a year-on-year decrease in profit. It was a rather unprecedented year with the COVID-19 pandemic, as we struggled in the first half and we eventually fell short of our target of maintaining operating profit at 100 billion yen or higher for the year. However, focusing on the second half alone, performance improved especially in the fourth quarter (January to March 2021) despite another state of emergency, resulting in operating profit of 55.5 billion yen, on par with the record high set in FY2018.

In FY2021, we will aim to increase net sales by 7% year-on-year to 1,450.0 billion yen and operating profit by 42% to 120.0 billion yen, assuming a moderate economic recovery along with a recovery in pulp market conditions and effects of capital expenditures inside and outside of Japan. We expect to increase profit at each level for the first time in one year, but the increase still does not represent a satisfactory level when compared with the targets

in the Medium-term Management Plan. This is because the situation is not what we first expected, as sales volume is not anticipated to fully recover immediately and some strategic investments were delayed. Nevertheless, we need to make preparations now to ensure we can capitalize on the recovery wave once the COVID-19 pandemic ends. Toward this end, we are moving ahead with each individual initiative.

	Targets under the Medium-term Management Plan	FY2019 results	FY2020 results	FY2021 forecasts
Net sales	—	1,507.6 billion yen	1,359.0 billion yen	<b>1,450.0 billion yen</b>
Operating profit	<b>150.0 billion yen</b>	106.1 billion yen	84.8 billion yen	<b>120.0 billion yen</b>
[Domestic]	*Maintain stable operating profit of more than 100 billion yen	[70 billion yen]	[63.2 billion yen]	<b>[62.0 billion yen]</b>
[Overseas]		[36.1 billion yen]	[21.6 billion yen]	<b>[58.0 billion yen]</b>
Ordinary profit	—	101.3 billion yen	83.1 billion yen	<b>120.0 billion yen</b>
Profit attributable to owners of parent	—	58.2 billion yen	49.6 billion yen	<b>70.0 billion yen</b>
Overseas sales ratio	<b>40.0%</b>	29.9%	29.3%	<b>34.5%</b>
ROE	<b>10.0%</b>	8.5%	6.9%	<b>9.1%</b>
Net D/E ratio	<b>0.7 times</b>	0.6 times	0.6 times	<b>0.7 times</b>

## Review of Key Measures

Accordingly, it is important to revisit the Medium-term Management Plan to take a look at the progress for each key measure to really examine what we do now that will be effective for future development before moving on to implementation.

### “Profitability Improvement of Domestic Business”

First, I would like to look at “Profitability Improvement of Domestic Business.” Under the “manufacturing restructuring”, we shutdown and relocated various facilities as planned and without delay over the past two years. In FY2021, we have promoted the effective use of our facilities including shifting to growth businesses, such as modifying the newsprint machines at the Oji Paper Tomakomai Mill into containerboard and kraft paper machines. Going forward, we will consider further business structure transformation in an effort to reinforce our foundation and strengthen competitiveness.

In terms of “business collaboration with other companies”, in our business partnership with Mitsubishi Paper Mills Limited, we set up joint ventures for household paper and biomass power generation in FY2019, and in FY2020 we integrated our carbonless paper business and pressboard business and worked to increase productivity and profitability by promoting selection and concentration of our management resources, including raw materials procurement, sales channels, and transport methods. Additionally, our joint venture business with ISHIZUKA GLASS CO., LTD. for paper containers became the first in Japan to successfully develop milk carton base paper. It is now establishing an integrated production system in Japan spanning from base paper to beverage packaging. Leveraging our cost competitiveness through efficient

production and superior quality, we will expand these offerings in the domestic market as well as look to overseas markets as the next target.

In terms of “strengthening and expanding promising businesses”, we will mainly engage in the Packaging, Household and Consumer Products, Functional Materials, and Energy Businesses in an energetic manner. This is intended for fully performing our role as a “company with a sustainable business model” and as a “life support company,” of which we have become more aware due to recent environmental changes. In the Packaging Business, in the Greater Tokyo area, which is home to roughly 40% of the business’ growing demand driven by e-commerce, we decided in FY2020 to construct a new plant in Utsunomiya City, Tochigi Prefecture, in addition to operating Japan’s largest corrugated container plant in Funabashi City, Chiba Prefecture. While pushing ahead with business expansion, we are exploring ways to utilize the Group’s strengths as other companies follow the same strategy. The new plant in Utsunomiya City, Tochigi Prefecture will be built in one of our base paper production sites. In addition to such improved collaboration from upstream to downstream, we will also pursue new solution services symbolized by OJI FLEX PACK’AGE (automated packaging system) to increase our market share. Moreover, this plant will feature a solar power generation system and supply environmentally-friendly products as a RE100 plant (powered by 100% renewable energy). In the Household and Consumer Products Business, we must analyze the causes and results of changes in consumer behaviors in a timely and accurate manner to supply products that the market truly desires. In FY2020, to help stop the spread of COVID-19, we began selling medical gowns and masks completely made in Japan, where all materials are sourced and processed within Japan. In addition, to expand sales of household paper in the Greater Tokyo area, we established



a new household paper converting site in Edogawa Ward, Tokyo. For disposable diapers, we have decided to increase capacity of converters for adult disposable diapers given growth prospects following the increase in people requiring nursing care or other assistance. In the Functional Materials Business, I feel the need to promote R&D-oriented businesses with an even greater conviction than before while also pursuing the optimal production system. Amid the quickening shift from gasoline to electric and fuel cell vehicles to achieve a decarbonized society, in FY2021 we have decided to increase capacity of manufacturing facilities for films used in capacitors for electric vehicles. Moreover, we will promote development of functional products that contribute to a sustainable society by utilizing the unique characteristics of paper materials. In the Energy Business, in FY2019 we started operation of a biomass power generation facility in Hachinohe with a capacity of 75 MW, and today we are working to vertically start up our fourth facility in 2022. Looking ahead, we will expand and reinforce the renewable energy business, including biomass power generation.

### “Expansion of Overseas Business”

As for “Expansion of Overseas Business,” overall progress has been steady, though some projects have been delayed due to the COVID-19 pandemic. In terms of the “packaging business in Southeast Asia, India and Oceania,” FY2019 and FY2020 saw the commencement of operation at the fifth facility in Vietnam, the third in Cambodia, the fourth in India and the first corrugated container plant in Indonesia. In FY2021, we will introduce the latest cutting-edge facilities at one base in New Zealand along with relocation and commencement of operations. Moreover, we have also decided to build the ninth and tenth corrugated container plants in Malaysia and the sixth in Vietnam. For the future, we will achieve vertical start-up with all of our efforts as well as consider next measures without interruption. As we anticipate the competition to become fiercer overseas, we will pursue overall expansion in the area and enhance our competitiveness through utilizing

the containerboard facility in Malaysia that is planned to begin operation shortly, strengthening the integrated system from materials to processing, and starting the operation of the state-of-the-art machines. As for the “disposable diaper business in Southeast Asia and China,” we have implemented measures to restructure the production system and enhance the production capacity, including adding new converters for disposable diapers in FY2021 in Malaysia. In Indonesia, we established a factory in FY2019 in order to transition from the conventional processes of purchasing and sales to the comprehensive system that covers from manufacturing to sales. Sales volume in the country has been steadily growing. As such, we aim to add more disposable diaper converters with the launch scheduled for early next year. As demographic dividend will continue in Southeast Asia going forward, we will expand the disposable diapers business in addition to the corrugated container business as mentioned earlier. With regard to the “thermal paper business worldwide,” we have enhanced and reinforced equipment in Brazil in FY2021, and will strive to expand sales in South America, where demand is strong, and export to North America for early realization of effects. Moreover, we will promptly develop and implement measures in Southeast Asia, where we believe it is possible to draw out more creativity on synergy with the downstream bases of printing and processing that joined our Group during the previous Medium-term Management Plan. As for the “pulp business worldwide,” we acquired in FY2021 equity of minority shareholders of Japan Brazil Paper and Pulp Resources Development Co., Ltd., the parent company of one of our most important bases, Celulose Nipo-Brasileira S.A. in Brazil, in order to conduct agile business operations. Further, we are also striving to enhance the productivity and cost competitiveness at each base through upgrading major facilities.

### “Promotion of Innovation”

In our “Promotion of Innovation,” we are looking to create innovative value for the future to go “Beyond the



Boundaries.” With the paper manufacturing technology we have amassed over nearly 150 years and renewable wood resources as our basis, we are developing new materials, such as “cellulose nanofibers (CNF),” “wood-derived pharmaceutical products,” and “biodegradable and biocomposite materials” in aiming to contribute to a sustainable society.

Unlike in the material processing industry, it takes a considerable amount of time to develop fundamental materials. Carbon fiber was developed over 60 years ago in the 1960s. While the material was originally used for fishing gear and golf club shafts, carbon fiber now finds application in aircraft materials. Material development was the starting point for contributing to resolving global warming issues such as improving aircraft fuel efficiency.

CNF is in the spotlight as a wood-derived material that is stronger than iron and glass yet lightweight, for which we also have high expectations. It has been more than 10 years since the start of its development, and the material development is approaching its completion. From now on, we will have to focus on addressing issues found during processing of the material. Already-commercialized cosmetics, concrete pump primers, and paints with CNF make good use of its viscous property and contain it as additives. In addition, the composite material of polycarbonate and a CNF sheet is being developed for use in car windows. Going forward, we will progressively push forward with the application development.

With regard to wood-derived pharmaceutical products, we established Oji Pharma Co., Ltd. in FY2020 for the development of products including anticoagulant, anti-inflammatory agent, and moisturizer, using chemically synthesized “sulfated hemicellulose” as the base material.

We are accelerating the development of plastic alternative materials and biodegradable materials in order to find solutions to the issues of marine plastic litter and global warming. We are also focused on the development of paper materials with enhanced functionality.

Many products are already on the market, such as OJI FLEX PACK’AGE, liquid containers, and barrier paper. For the commercialization of future innovation, the key lies not only in the research and development but also in the engineering capability; therefore, we will be committed to cross-organizational human resources development.

#### Looking Ahead to the Next Medium-term Management Plan

I feel that the reorganization so far has come to fruition, and that we are gradually becoming lean and springy as we are cutting back on waste. However, as I mentioned earlier, there is still much work ahead of us. In other words, there is still plenty of room for growth, and I would like to accelerate our steps. There is only so much that we can do in the remaining one year, and I believe some initiatives will be left unaddressed and carried over to the next Medium-term Management Plan. While we will make steady efforts to address these outstanding issues in the next Medium-term Management Plan, I hope to put more emphasis on business structural reform and energy business transformation from the perspective of growing our domestic and overseas businesses and addressing climate change and marine plastic litter issues, as well as innovation with a focus on new materials development in aiming for a sustainable future.

## IV. Aiming for a Sustainable Future

### “Harmony with Nature and Society” as Criteria for Business Continuity and Growth Opportunities, and Establishment of “Environmental Vision 2050,” and “Environmental Action Program 2030”

Part of our management philosophy upholds the ideal of “Harmony with Nature and Society,” which, to us, is both a condition for business continuity and an opportunity for growth.

Here is what I mean by a “condition for business continuity”: We at the Oji Group see the resources for our business, including paper which we have been handling since our founding, as well as new businesses derived from paper, as finite resources, and we have been engaging in business by thoroughly implementing the sustainable business model of “resource circulation throughout the value chain” inside and outside of Japan. In our “forest recycling”, as the concept states that “those who use trees have the responsibility to plant trees”, we have been conducting sustainable forest management through the continuous cycle of planting, cultivation, and logging. The same goes for our “paper recycling” and “water recycling”. Our mission is to create businesses that will contribute to a sustainable society through resource circulation.

As for “opportunities for growth”, the discussion goes back to “response to change.” The increased awareness towards environmental issues around the world itself is also one of the important changes in the business environment of recent years. As we see the increase in related news reports on a daily basis, I believe it is an opportunity for the Oji Group to display our proactive stance and presence towards problem solving by developing strategic and global measures aimed at the future. In addition to what I said earlier regarding “Promotion of Innovation,” we will place our focus, from diverse angles, on creating new value and functions unique to our specialty field of wood resources.

In October 2020, then Prime Minister Suga declared on the formal occasion of his first policy speech that Japan will commit to carbon neutrality by 2050. At the same time, the Oji Group has also formulated “Environmental Vision 2050” and “Environmental Action Program 2030” that start from FY2021. These vision and goals specify our targets: (i) maximize CO<sub>2</sub> absorption and fixation capability through forest preservation and afforestation in the 580,000-ha Oji Forests we own and manage in Japan and overseas, (ii) implement thorough energy conservation and use of renewable energy in manufacturing and logistic service divisions in achieving net-zero greenhouse gas emissions by 2050, and (iii) reduce these emissions by 70% or more compared to FY2018 by 2030. The entire Group is committed to achieving these targets including maintaining and preserving biodiversity and reducing environmental burdens.

In December 2020, we announced our support for the

recommendations of the “Task Force on Climate-related Financial Disclosures (TCFD)” and committed to promoting information disclosure from a bird’s eye view on risks and opportunities concerning governance, strategy, risk management posed by climate change. We announced our determination to promote environmental management towards “Environmental Vision 2050” and “Environmental Action Program 2030.”

### Towards a Corporate Group That Achieves Sustainable Growth—“Human Resources” and “Safety, Environment and Compliance”—

The most important element in achieving our management strategy is “human resources.” They form the foundation of a company’s strengths, and it is of utmost importance for each and every one of our diverse human resources to share the Group’s management strategy and policy and exert their maximum potential toward the same vector. It is my mission to establish such an environment to foster their abilities and maximize their potential. As such, we are doing our best in implementing each measure of human resources development, working style reforms, and promotion of diversity.

Moreover, I would like to reaffirm that we continue to be a company that prioritize “Safety, Environment and Compliance” over profits, even in times of drastic change. Firstly, as I always talk about “safety”, it is the responsibility of all managers and supervisors, including directors, to ensure that “employees who come to work in the morning go back home healthy at the end of the day.” To put these words into action, we are promoting the safety of workplaces (making equipment and procedures safe). Regarding the “environment”, our efforts do not just stop at what I discussed earlier. We will take thorough preventive measures against environmental incidents and product liability incidents that may instantly cripple our relationship of trust with the community. In terms of “compliance”, we repeatedly encourage all officers and employees to be fully aware of “sound common sense,” “sensitivity to immorality” and “courage to take action,” to adhere to laws and regulations as well as social norms, and to conduct everyday activities with a sincere attitude. In order to co-exist with society as a company, we will prioritize and adhere to these approaches which form the basis for our company’s continued existence.

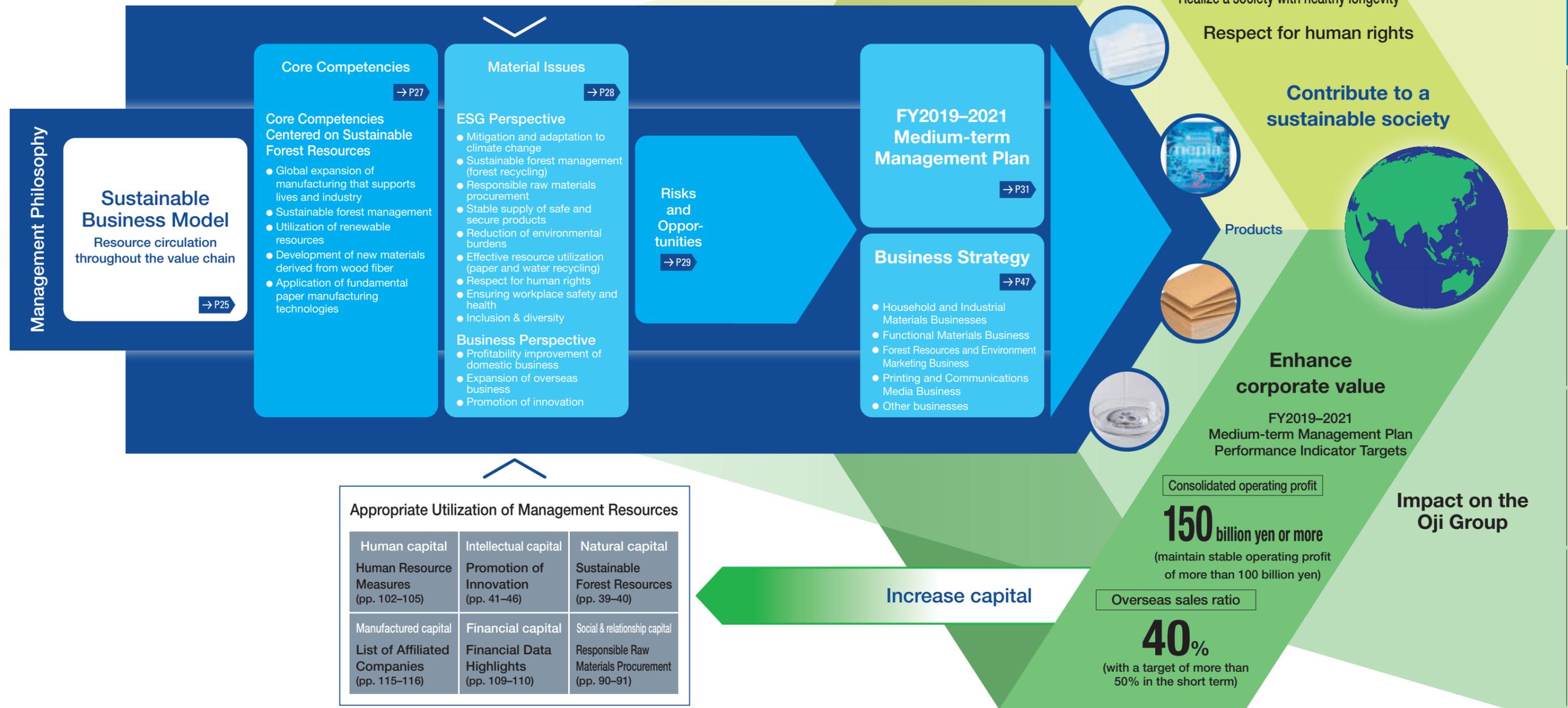
Last but not least, I would like to send a message to all our stakeholders.

The Oji Group will continue to work with you in responding to changes of the times, constantly embracing innovations, and creating sustainable value for the future in order to become a corporate group that never ceases to grow. I look forward to your continued understanding and support.

The **sustainable business model** (resource circulation throughout the value chain) forms the foundation of the Oji Group. The Group will identify **material issues** through the **core competencies** that underpin the foundation, create social and economic value through business activities based on the risks and opportunities recognized in these issues, and contribute to a sustainable society.

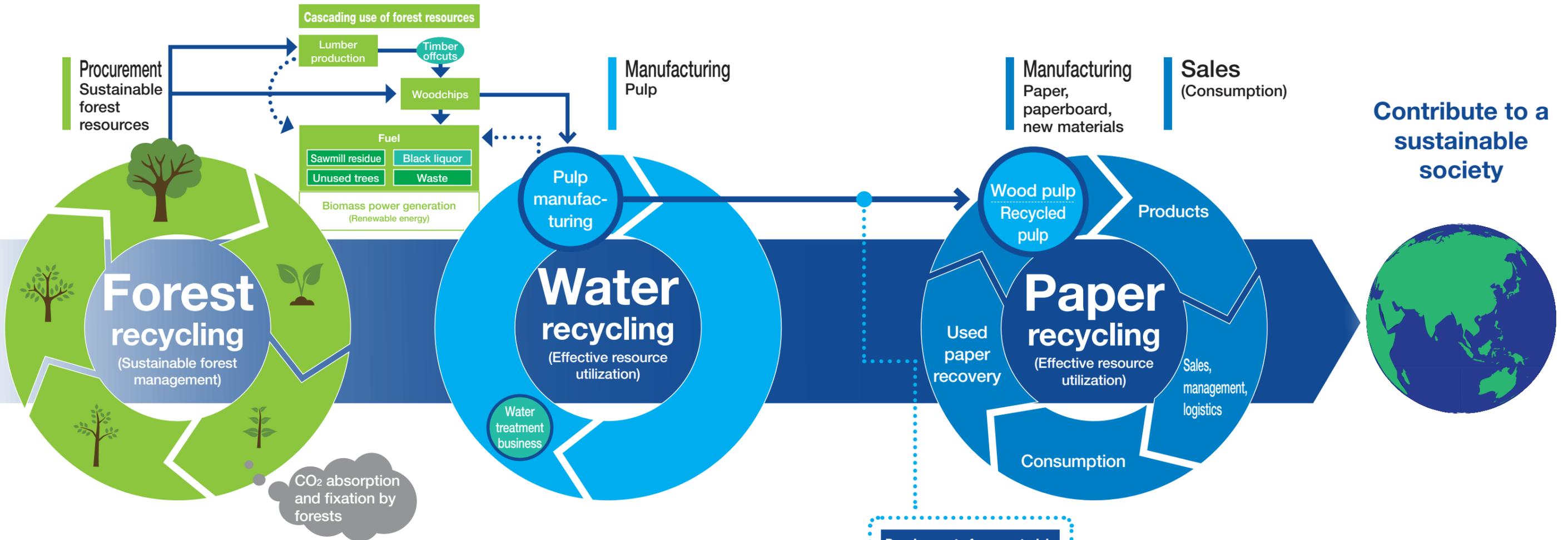
**Social Issues, Megatrends and Global Goals**

- Climate change
- Natural disasters
- Biodiversity
- Resource depletion
- Environmental pollution (issues such as marine plastic litter)
- Increased concern about human rights
- Increase in health-consciousness with greater longevity

### Sustainable business model “Resource circulation throughout the value chain”

The sustainable business model which serves as the foundation of the Oji Group is supported by three forms of recycling: “Forest recycling,” in which we practice sustainable forest management through growing, harvesting and planting trees due to the fact that approximately 60% of the raw material used in paper is recovered paper, and the remaining 40% comes from wood; “water recycling,” in which we reduce water consumption by circulating and reusing water in manufacturing processes and purify wastewater; and “paper recycling,” in which we collect and recycle paper products. By deploying this model globally, we are working to enable our businesses to help build a sustainable society.



### Aiming for Further Development of the Sustainable Business Model

Toward the realization of a decarbonized society, renewable forest resources have gathered significant attention. Alongside the conventional use of wood resources as raw materials for paper manufacturing, the Oji Group is accelerating their use in fields outside of papermaking. Specifically, we are expanding our biomass power generation business, which utilizes wood chips as a primary fuel, across Japan, and are proactively making use of unused trees such as forest residues, for which few applications had previously been developed. In addition, we are accelerating green innovations for the future, including developing biomass plastics derived from cellulose, promising replacements for existing plastics; cellulose nanofiber (CNF); and wood-derived pharmaceutical products.

## Core Competencies

The Oji Group possesses Oji Forests spanning 580,000 ha domestically and overseas. As the Group engages in a cycle of cultivating forest resources, utilizing them, and cultivating them again, we are developing a wide range of businesses without regard for business domain. Rooted in our core competencies centered on forest resources, we will aim to develop business and contribute to realizing a sustainable society.

### 1 Global Expansion of Manufacturing that Supports Lives and Industry

We are proactively developing our businesses on a global level, including our packaging business, which engages in the integrated manufacturing of corrugated containers from base paper; as well as our household paper, thermal paper, pulp, and other businesses. We are expanding our businesses in response to continuously growing overseas market needs.

### 2 Sustainable Forest Management

Giving due consideration to environmental conservation, the Group possesses production forests primarily for producing wood spanning a total of 450,000 ha, with 190,000 ha domestically and 260,000 ha overseas, as well as conservation forests spanning 130,000 ha. Implementing sustainable forest management, which is environmentally, economically, and socially conscious, forms the basis of our businesses.

### 3 Utilization of Renewable Resources

We promote recycling paper. Recovered paper makes up about 60% the raw material of the paper. We also thoroughly circulate and reuse the water that is essential to paper manufacturing in our production processes, and create systems for reducing the amount of water used and purifying wastewater.

### 4 Development of New Materials Derived from Wood Fiber

Aiming to create new value, we are developing new materials, including cellulose nanofiber (CNF), a promising material for numerous fields; wood cellulose-derived biomass plastics; and wood hemicellulose-derived pharmaceutical products.

### 5 Application of Fundamental Paper Manufacturing Technologies

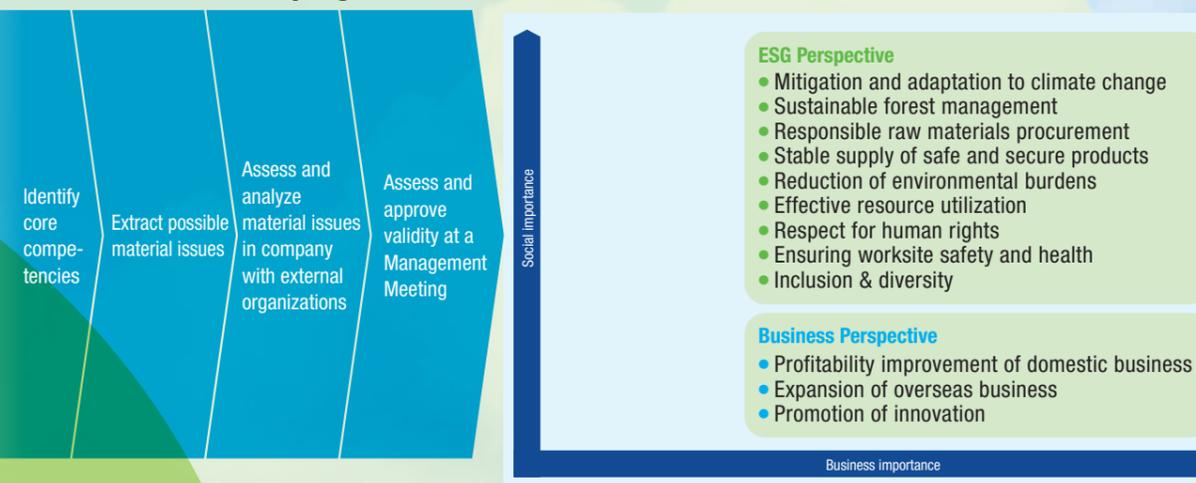
Utilizing the fundamental technologies we have cultivated in our paper manufacturing business, we are aiming to expand our businesses in a variety of fields which will help reduce our environmental burden. This includes developing our renewable energy business with a focus on hydroelectric power generation and wood biomass power generation, industrial water production and industrial wastewater treatment businesses.

## The Oji Group's Sustainable Forest Resources

## Material Issues

Based on our core competencies, we have extracted material issues that have significant impacts on sustainable business model of the Oji Group. These material issues have been identified based on evaluations and analyses of relevant domains from the perspectives of ESG and business.

### Process for identifying material issues



### Material Issues and Reason for Identification

ESG Perspective	
Material Issues	Reason for Identification
Mitigation of and adaptation to climate change	As responding to the progression of climate change becomes an urgent issue, it is essential to promote GHG emission reductions in the production and logistics processes, and extensively ramp up CO <sub>2</sub> absorption via the expansion of company-owned forests.
Sustainable forest management (forest recycling)	In order to secure a stable supply of raw materials and, at the same time, maintain forests' functions in areas such as conservation of biodiversity and CO <sub>2</sub> absorption, it is necessary that we engage in the sustainable management of the vast forests we own in Japan and overseas.
Responsible raw materials procurement	The Oji Group's procurement of raw materials is supported by numerous suppliers in Japan and overseas. Working to improve human rights, labor, environmental, and other issues at all of our suppliers, and fulfilling our social responsibilities are things which are essential to the continuation of our business activities.
Stable supply of safe and secure products	As a manufacturer, the core of our business involves strengthening relationships of trust while building a system which provides services and quality which customers in a variety of fields can use with peace of mind.
Reduction of environmental burdens	We have a responsibility to promote the prevention of pollution, and in order to contribute to the conservation of local environments, we establish voluntary management standards which are even stricter than existing laws and regulations regarding wastewater and emissions.
Effective resource utilization (paper and water recycling)	It is important that we work to protect resources and reduce waste by maintaining our recovered paper recycling systems through the procurement of recovered paper at fair prices, promoting the use of recovered paper, and promoting the effective use of waste and water resources in our manufacturing processes.
Respect for human rights	In order to achieve an even greater level of globalization going forward, it is necessary that not only our employees but all of our suppliers share our beliefs regarding respect for human rights, and implement concrete initiatives which will help prevent and reduce human rights issues.
Ensuring worksite safety and health	Ensuring employee safety and building a work environment where people can work with a sense of security is the cornerstone of our continued existence as a corporation. Also, responding rapidly to disasters, infectious diseases, and other risks is essential to ensuring safety and health.
Inclusion & diversity	As a global enterprise, it is essential to have a diverse array of human resources that flourishes regardless of gender, age, disability, or nationality, and to receive a variety of values and ideas in order to enhance corporate competitiveness and further development.
Business Perspective	
Material Issues	Reason for Identification
Profitability improvement of domestic business	For our businesses whose domestic market has contracted more than assumed, we have determined it essential that we work to resuscitate and enhance their earnings capacity by fundamentally restructuring production systems and promoting streamlining through business partnerships with other companies.
Expansion of overseas business	In overseas regions and business fields which are expected to continue experiencing growth in the future, we have deemed it important to expand outward from existing sites, aim to create synergies between businesses and between sites, and enhance profitability.
Promotion of innovation	We have deemed it essential that we further cultivate the technologies and expertise we have accumulated in our paper manufacturing business, accelerate the development of innovative new materials and new products with a focus on wood resources, and develop future sources of revenue.

# Risks and Opportunities

This section presents the risks and opportunities posed by material issues in various domains from the perspectives of ESG and business. Note that risks and opportunities as seen from a business perspective are limited to those concerning our management strategy.

## ESG Perspective

Material Issues (ESG) and KPI pp. 81–82

Material Issues	Associated Risks and Opportunities ▲ Risk ○ Opportunity	Main Countermeasures against Major Risks
Mitigation and adaptation to climate change Sustainable forest management (forest recycling)	<ul style="list-style-type: none"> <li>▲ Greater natural disasters caused by extreme weather</li> <li>▲ An increase in costs due to strengthening and introduction of the carbon tax, introduction of an emissions trading system, etc.</li> <li>▲ Impact on sales from changes in the evaluation of corporate attitudes and values of the market</li> <li>○ An increase in demand for low-carbon products</li> <li>○ An increase in value of company-owned forests through trading carbon credits associated with the carbon absorbed by the forests</li> </ul>	<ul style="list-style-type: none"> <li>● Reduce GHG emissions through improving production efficiency, saving energy, and utilizing renewable fuel and waste fuel</li> <li>● Expanded use of non-fossil fuels and biomass fuels as alternatives to coal</li> <li>● Sustainable forest management such as promotion of forest plantation and conservation of company-owned forests</li> <li>● Maintain and expand the multi-functionality of forests</li> <li>● Absorb and fix CO<sub>2</sub> through sustainable forest management</li> <li>● Develop biomass power generation business</li> <li>● Develop eco-friendly products</li> <li>● Opportunities arising from introduction of carbon pricing (especially emissions trading)</li> </ul>
Responsible raw materials procurement	<ul style="list-style-type: none"> <li>▲ Occurrence of cases lacking consideration for the environment and society in the supply chain</li> <li>○ An increase in demand for eco-friendly products owing to changes in consumer awareness</li> </ul>	<ul style="list-style-type: none"> <li>● Expand CSR procurement, taking into consideration the environment and society following the Oji Group Partnership Procurement Policy and Wood Raw Material Procurement Guidelines</li> <li>● Central management for appropriate procurement of major raw materials</li> <li>● Manage the supply chain thoroughly (appropriate procurement through supplier monitoring, risk assessment, securing various suppliers, etc.)</li> <li>● Supply of FSC™ certified products (FSC™ C014119, etc.)</li> </ul>
Stable supply of safe and secure products	<ul style="list-style-type: none"> <li>▲ A decline in trust of stakeholders due to spread of negative rumors</li> <li>○ Contribution to society through stable supply of safe and secure corrugated containers, household paper, and hygiene products, and the resulting increase in corporate value</li> </ul>	<ul style="list-style-type: none"> <li>● Stably supply own products</li> <li>● Ensure safe quality design and management in compliance with relevant laws and regulations and stricter voluntary management values</li> <li>● Provide customers with information on safety of raw materials (chemicals, materials)</li> <li>● Supply of hygiene products such as masks and gowns to prevent the spread of infectious diseases such as COVID-19</li> </ul>
Reduction of environmental burdens	<ul style="list-style-type: none"> <li>▲ Adverse effects on society due to pollution and the resulting decline in trust of stakeholders</li> <li>○ An increase in demand for eco-friendly products owing to changes in consumer awareness</li> </ul>	<ul style="list-style-type: none"> <li>● Set voluntary management values that are stricter than the environmental regulatory standards</li> <li>● Purify wastewater and save emissions of chemical substances in exhaust</li> <li>● Reduce and effectively use waste</li> <li>● Develop eco-friendly products and biodegradable materials</li> </ul>
Effective resource utilization (paper and water recycling)	<ul style="list-style-type: none"> <li>▲ Impact of resource depletion on core businesses</li> <li>○ Deployment of water treatment technology</li> </ul>	<ul style="list-style-type: none"> <li>● Paper recycling (improve the recovered paper utilization ratio)</li> <li>● Reduce water intake and improve water recycling</li> <li>● Expand the water treatment business overseas</li> </ul>
Respect for human rights	<ul style="list-style-type: none"> <li>▲ A decline in trust of stakeholders due to lack of consideration for human rights</li> </ul>	<ul style="list-style-type: none"> <li>● Formulate and implement the "Oji Group Corporate Code of Conduct", the "Oji Group Behavior Standard", and the "Oji Group Human Rights Policy"</li> <li>● Perform internal audits</li> <li>● Implement the whistleblowing system</li> <li>● Raise awareness of compliance and human rights through in-house training</li> <li>● Assess risks associated with suppliers' respect for human rights</li> </ul>
Ensuring workplace safety and health	<ul style="list-style-type: none"> <li>▲ Occupational accidents</li> <li>▲ Health of employees hindered by the spread of infectious diseases</li> <li>○ An increase in trust of employees and other stakeholders resulting from prompt response to disasters and infectious diseases</li> </ul>	<ul style="list-style-type: none"> <li>● Establish safety and health management structures and promote activities aimed for safety and health</li> <li>● Thoroughly ensure safety in the handling of machines and equipment and in other operations</li> <li>● Promote safety education (introduce VR risk experience education, etc.)</li> <li>● Promote physical and mental well-being of employees</li> <li>● Create comfortable work environments</li> <li>● Respond to infectious diseases including COVID-19</li> </ul>
Inclusion & diversity	<ul style="list-style-type: none"> <li>○ Securing outstanding human resources</li> <li>○ Creation of innovative value</li> <li>○ Contribution to globalization</li> </ul>	<ul style="list-style-type: none"> <li>● Implement human resource strategies and develop human resources</li> <li>● Promote working style reforms</li> <li>● Promote diversity</li> </ul>

## Business Perspective

Securities Reports: <https://investor.ojiholdings.co.jp/ja/ir/library/securities.html> (available only in Japanese)

Material Issues		Business Risks and Opportunities (Relating to Group Management Strategy)/Countermeasures against Risks
Profitability improvement of domestic business	Risks arising from fluctuations in demand	<p>Domestic business fluctuations and the continuing decline of the population could result in declines in demand for our products as well as in sales prices, affecting the Oji Group's performance.</p> <p><b>Main countermeasures</b></p> <p>We are working to strengthen our business foundation via thorough cost reductions. In the field of industrial materials, we are promoting total, integrated material and processing packaging solutions, thereby strengthening product development capabilities and curbing the effects of demand fluctuations. In other fields, as well, we are working on the development of paper products and new materials to support the shift away from plastics.</p>
	Opportunities for growth	<p>In overseas markets which continue to exhibit strong economic growth, demand for household paper products is rising in accordance with increasingly sophisticated lifestyles. In addition, per the expansion of distribution due to the diversification of consumption, demand for corrugated containers and other packaging materials is on the rise. In such countries, we will be proactively investing in our household paper and corrugated container businesses.</p>
Expansion of overseas business	Risks arising from changes in international market conditions	<p>The procurement prices of woodchips, fuel oil, and other raw materials are influenced by fluctuations in demand, countries' changes to their trade policies, and international disputes. In addition, the sales prices of pulps are linked to international market conditions. Such price changes affect the Oji Group's performance.</p> <p><b>Main countermeasures</b></p> <p>We monitor markets in relation to the procurement of raw materials, strive to maintain a variety of suppliers, and promote advantageous, stable procurement group-wide. In terms of recovered paper, we strive to maintain recovered paper recycling systems. We also strengthen coordination among Oji Group companies with the aim of ensuring stable recovered paper procurement.</p>
	Risks associated with overseas business	<p>The Oji Group has promoted global business expansion. Some markets where the Group does or will do business pose risks such as political or social instability; decelerating economic growth; revisions to laws, regulations, and tax systems; destabilizing financial conditions; and human rights issues. These risks could affect the Oji Group's overseas business strategy and future plans.</p> <p><b>Main countermeasures</b></p> <p>We establish regional headquarters to gather information on the political, economic, and social conditions of countries in which we do business and neighboring countries, and prepare for all relevant risks. In terms of business, we diversify risks by expanding across wide areas. Financially, we mitigate the effects of exchange rates through derivatives, and utilize group financing to secure liquidity on hand. With regard to human rights issues, based on the "Oji Group Human Rights Policy," we implement initiatives aimed at ensuring respect for human rights.</p>
Promotion of innovation	Opportunities for growth	<p>Advancing into countries and regions experiencing continued high economic growth contributes to the expansion and strengthening of a business foundation which will help the Oji Group to grow even more. The Oji Group is developing businesses in emerging regions harnessing the technical superiority of its existing businesses and is expanding overseas with the aim of achieving an overseas sales ratio of 40%.</p>
	Risks associated with structural changes in demand arising from development of innovation	<p>COVID-19 has resulted in the popularization of remote work, furthering digital transformation and significantly altering peoples' lifestyles. The Oji Group's performance could be affected greater than anticipated due to further changes in demand in markets for graphic paper.</p> <p><b>Main countermeasures</b></p> <p>Facing a shrinking market, we are restructuring domestic business production systems and are striving to secure cash flow. The cash thus obtained is being invested in businesses in growth markets in Japan and overseas, and is also being appropriated for the development of new material products.</p>
	Opportunities for growth	<p>Due to the advancement of digital transformation, demand for mobile devices and a diverse array of other electronic devices is on the rise. The film products of the Oji Group are employed in smartphones and other precision devices as well as electric vehicles, and this business is undergoing rapid growth. In addition, the Group is moving forward with initiatives to complement its weaknesses and transform them into strengths through partnerships with other companies. Specific examples include a business partnership with Mitsubishi Paper Mills concerning carbonless paper and other products, and a paper carton business with Ishizuka Glass.</p>

## FY2019–2021 Medium-term Management Plan

In order to continuously increase corporate value in the ever-changing world, the Oji Group has formulated and is implementing a strategic medium-term management plan that promotes business restructuring through transformation based on its Management Philosophy and sustainable business model.

### Review of the Strategies



Fundamental Policies	Fundamental Policies	Fundamental Policies
<ul style="list-style-type: none"> <li>Deepening of the core businesses</li> <li>Development of new businesses and products</li> <li>Further expansion of overseas businesses</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of overseas businesses</li> <li>Concentration / advancement of domestic businesses</li> <li>Enhancement of financial foundation</li> </ul>	<ul style="list-style-type: none"> <li>Profitability improvement of domestic business</li> <li>Expansion of overseas business</li> <li>Promotion of innovation</li> <li>★ Contribution to a sustainable society</li> </ul>

### Major Indicators

	FY2015 and earlier		FY2016–2018		FY2019–2021	
	Targets	Final fiscal year results	Targets	Final fiscal year results	Targets	FY2021 forecasts
Consolidated operating profit	¥90.0 billion	¥72.0 billion	¥100.0 billion	¥110.2 billion	<b>Over ¥150.0 billion</b>	<b>¥120.0 billion</b>
Overseas sales ratio	26.0%	27.8%	35.0%	32.0%	<b>40.0%</b>	<b>34.5%</b>
ROE	7.0%	2.1%	8.0%	7.7%	<b>10.0%</b>	<b>9.1%</b>

### Overview of the FY2019–2021 Medium-term Management Plan

Under the FY2019–2021 Medium-term Management Plan, the Oji Group aims to constantly earn over 100 billion yen in annual consolidated operating profit through “contribution to a sustainable society,” with “profitability improvement of domestic business,” “expansion of overseas business” and “promotion of innovation” positioned as the fundamental policies. Amid the continuing impact of COVID-19, we are not planning on achieving our performance indicator targets. However, in the final year of the current Plan, we will continue to steadily move forward with Plan measures.

**Group Fundamental Policies**

**Contribution to a Sustainable Society**  
Responding to needs of the environment and society through business activities

Profitability improvement of domestic business	Expansion of overseas business	Promotion of innovation
<ul style="list-style-type: none"> <li>Restructure production system</li> <li>Enhance competitiveness through business partnership</li> <li>Concentrate management resources on promising businesses</li> </ul>	<ul style="list-style-type: none"> <li>Expand organically from existing bases</li> <li>Generate synergies between businesses and operations</li> <li>Focus on Asia and Oceania regions</li> </ul>	<ul style="list-style-type: none"> <li>Promote development and achieve early profitability of new business and products</li> </ul>

**FY2021 Performance Indicator Targets**

<b>At least 150 billion yen</b> Consolidated operating profit Maintain stable operating profit of more than 100 billion yen	<b>40%</b> Overseas sales ratio With a target of more than 50% in the short term
<b>At least 1 trillion yen</b> Market capitalization	
<b>10.0%</b> ROE	<b>Maintain current status*</b> Net D/E ratio * FY2018 result: 0.7 times

## FY2019–2020 Results and FY2021 Priority Measures

Industrial Materials Business Household and Consumer Products Business Functional Materials Business Forest Resources and Environment Marketing Business Printing and Communications Media Business R&D and others

### Profitability improvement of domestic business

FY2019 Major Results	FY2020 Major Results	FY2021 Main Priority Measures
<ul style="list-style-type: none"> <li>Apr. Start of commercial operation of JV household paper business with MPM*</li> <li>Sep. Start of commercial operation of JV biomass power generation with MPM*</li> <li>Nov. Start of joint procurement of imported woodchips with Chuetsu Pulp &amp; Paper and MPM*</li> <li>Dec. Start of sales of OJI FLEX PACK'AGE, a next-generation packaging solution, and Rakudan, its packaging material</li> <li>Feb. Shutdown of the #9 machine at the Oji Paper Tomioka Mill</li> </ul>	<ul style="list-style-type: none"> <li>Jun. Shutdown of the #N-5 machine at the Oji Paper Tomakomai Mill</li> <li>Jun. Shutdown of the #4 machine at the Oji F-Tex Ebetsu Mill (#1 machine shutdown in Jul.)</li> <li>Jun. Start of supply of medical isolation gown base material (non-woven fabric)</li> <li>Jul. Start of commercial operation of new non-woven fabric face mask manufacturing facility</li> <li>Jul. Start of commercial operation of new Morishigyo Group corrugated container plant (Funabashi City, Chiba Prefecture)</li> <li>Sep. Start of liquid paper containers business with ISHIZUKA GLASS</li> <li>Sep. Start of commercial operation of a new household paper processing machine (Edogawa Mill)</li> <li>Sep. Transfer of carbonless paper business to MPM*</li> <li>Sep. Shutdown of the #N-1 machine at the Oji Paper Tomakomai Mill</li> </ul>	<ul style="list-style-type: none"> <li>Jun. Start of trial operation of the #L-1 machine (former #N-5 machine) at the Oji Paper Tomakomai Mill as a containerboard and kraft paper machine</li> <li>Sep. Shutdown of the #2 machine at the Oji Materia Nayoro Mill Note: Scheduled to be relocated to and resume operation at the Tomakomai Mill (Apr. 2022)</li> <li>Oct. Transfer of pressboard business from MPM*</li> <li>Dec. Shutdown of the #3 machine at the Oji Materia Nayoro Mill</li> <li>Dec. Shutdown of the pulp manufacturing facility at the Oji F-Tex Ebetsu Mill</li> </ul>

\*MPM: Mitsubishi Paper Mills

### Pick Up

- Start of our third biomass power generation facility, fourth under construction and scheduled to start operating in Sep. 2022
- Start of operation of one of the largest corrugated container plants in Japan in a major consumption area
- Tomakomai Mill newsprint machine to become containerboard machine, resume operation

Through the expansion of renewable energy business and the strengthening of our biomass fuel business, we are aiming to contribute to the prevention of global warming.



Amid the increasing importance of online shopping and the logistics industry, growth in demand for the corrugated containers which support them is expected to be particularly large in the Kanto region. Accordingly, in the Funabashi area in Kanto, we have retrofitted an existing logistics center to start the commercial operation of one of the largest corrugated container plants in Japan.

Further, we have decided to relocate and build a new corrugated container plant on the grounds of a containerboard mill in the Utsunomiya area (start of commercial operation scheduled for Oct. 2022), putting in place a system that can supply higher quality products in a sustainable and efficient manner.

A newsprint machine at the Oji Paper Tomakomai Mill shutdown in June 2020 has been retrofitted into a containerboard and kraft paper machine and started trial operation in June 2021. In addition, two containerboard machines at the Nayoro Mill will be shut down in September and December of 2021, respectively, and we are planning on transferring one of these to Tomakomai to consolidate production. Leveraging facilities in our possession as well as geographical convenience, we will engage in the restructuring of production systems Group-wide, meet increasing domestic and export demand for containerboard, and prepare for intensifying competition at the same time.

Start of operation of new household paper processing facility in Edogawa Ward, promoting sales expansion in the Greater Tokyo area

In September 2020, we started operation of a processing facility in Edogawa Ward to utilize household paper base paper newly being manufactured in China.



## FY2019–2020 Results and FY2021 Priority Measures

● Industrial Materials Business ● Household and Consumer Products Business ● Functional Materials Business  
● Forest Resources and Environment Marketing Business ● Printing and Communications Media Business ● R&D and others

### Expansion of overseas business

FY2019 Major Results	FY2020 Major Results	FY2021 Main Priority Measures
<ul style="list-style-type: none"> <li>● Jul. Vietnam: Start of commercial operation of fifth corrugated container plant</li> <li>● Nov. Brazil: Construction for the pulp business profitability enhancement</li> <li>● Jan. Indonesia: Start of commercial operation of a new disposable diaper plant</li> <li>● Feb. Cambodia: Start of commercial operation of third corrugated container plant</li> <li>● Mar. India: Start of commercial operation of fourth corrugated container plant</li> </ul>	<ul style="list-style-type: none"> <li>● Nov. China: Start of commercial operation of a new filter plant</li> <li>● Feb. Brazil: Phase 1 of construction to reinforce thermal paper machine</li> <li>● Mar. Indonesia: Start of commercial operation of first corrugated container plant</li> </ul>	<ul style="list-style-type: none"> <li>● Apr. Malaysia: Machine expansion and site integration of disposable diaper business</li> <li>● May. Acquisition of treasury stock in Japan Brazil Paper and Pulp Resources Development</li> <li>● Jul. China: Start of commercial operation of fourth corrugated container plant</li> <li>● Fall Malaysia: Expansion and start of commercial operation of containerboard facility</li> <li>● Oct. New Zealand: New construction, relocation, and start of commercial operation of corrugated container plant</li> <li>● Nov. Brazil: Phase 2 of construction to reinforce thermal paper machine</li> <li>● Dec. Brazil: Expansion of thermal paper machine</li> <li>● Jan. Malaysia: Start of commercial operation of ninth corrugated container plant</li> </ul>

● Industrial Materials Business ● Household and Consumer Products Business ● Functional Materials Business  
● Forest Resources and Environment Marketing Business ● Printing and Communications Media Business ● R&D and others

### Promotion of innovation

FY2019 Major Results	FY2020 Major Results	FY2021 Main Priority Measures
<ul style="list-style-type: none"> <li>● Apr. Commercialization of CNF* AUROVISO CS as a cosmetic ingredient</li> <li>● Apr. Adoption of hydrolyzed xylan by ROHTO Pharmaceutical for their cosmetics</li> <li>● Apr. Start of provision of SILBIO BARRIER, a paper material with barrier properties</li> <li>● Aug. Development of KAMIWAZA, a paper-based temporary construction material used in civil engineering</li> <li>● Sep. Adoption of our products by Nestlé (Thailand) for packaging materials for their products</li> <li>● Oct. Adoption of our biomass plastic business by the Ministry of the Environment as the commissioned project</li> <li>● Oct. Provision of technology of CNF* reinforced polycarbonate resin (automobile window application)</li> <li>● Dec. Start of sales of OJI FLEX PACK'AGE and Rakudan</li> <li>● Jan. Adoption of our products by Nestlé (Japan) for packaging materials for their products</li> <li>● Feb. Adoption of CNF* AUROVEIL for materials for table tennis rackets</li> </ul>	<ul style="list-style-type: none"> <li>● Apr. Establishment of Oji Pharma</li> <li>● Aug. Development of a product with high-grade transparency of SILBIO BARRIER, a paper material with barrier properties</li> <li>● Aug. Start of provision of PaPiPress, a molded pulp product</li> <li>● Nov. Conclusion of capital and business partnership with ReqMed</li> </ul>	<ul style="list-style-type: none"> <li>● May Establishment of Oji Medicinal Plants Laboratory</li> <li>● Jul. Adoption of PaPiPress by ALBION for their cosmetics containers</li> <li>● Aug. Start of first-ever production of milk carton base paper in Japan</li> <li>● Sep. Adoption of our products by Nestlé (Malaysia) for packaging materials for their products</li> <li>● Sep. Three new products added to SILBIO series</li> </ul>

\*CNF: Cellulose nanofiber

#### Pick Up

##### Indonesia: Start of operation of our own disposable diaper factory

Through in-house production, we will increase the cost competitiveness of production. As sales expansion is progressing steadily, we are also planning on building a new processing machine targeting early 2022.



The PT Oji Indo Makmur Perkasa Factory (Indonesia)

##### Brazil: Facility expansion and production capacity enhancement of thermal paper business

By engaging in construction for facility expansion and reinforcement to roughly double production capacity, we will strengthen sales in Brazil (current market share: approximately 85%) and exports to Central and South America.



Oji Papéis Especiais PC3 coater (Brazil)

##### Malaysia: Start of a new containerboard facility, promoting expansion and reinforcement of the business through integrating of material and converting

The packaging business has experienced remarkable growth in the Southeast Asia and Oceania regions, and during FY2019–2021, we have built corrugated container plants in Vietnam (5), Cambodia (3), India (4), Indonesia (1), and New Zealand (4). We have also decided to build new plants in Malaysia (9 and 10) and Vietnam (6) targeting FY2022 and beyond.

Amid continuing expansion of converting sites, we will start operation of a new containerboard facility with a production capacity of 450,000 tons per year in Malaysia. At the same time, we have also engaged in drastic improvements to our energy and water costs. By strengthening our production of highly cost competitive base paper and increasing our supply to Group companies, we will enhance the foundation of our entire corrugated container business and seek to steadily capture the growing demand for corrugated containers.

Note: Figures in parentheses refer to the ordinal number of the plants.



GSPP PM3 containerboard facility (Malaysia)



Ojitem Haiphong Ha Nam Plant (Vietnam) (started commercial operation Jul. 2019)



Harta Cambodia Plant (Cambodia) (started commercial operation Feb. 2020)



Oji India Packaging Plant (India) (started commercial operation Mar. 2020)



United Kotak Plant (Malaysia) (scheduled to start commercial operation Jan. 2022)

#### Pick Up

##### Promotion of biomass plastic development as the commissioned project of the Ministry of the Environment

We are moving forward with a new business aimed at replacing conventional plastics derived from fossil fuels with sustainable biomass-derived plastics. This same business has been adopted as a Demonstration Project for a Plastic Resource Circulation System toward a Decarbonized Society by the Ministry of the Environment. Using non-edible wood pulp as the raw material in place of food sources such as sugarcane and corn, we are aiming to avoid competing with food resources while reducing atmospheric CO<sub>2</sub> and contributing to the prevention of global warming.



Biomass plastic



Sugar solution

##### Provision of technology for CNF composite resin glass at Tokyo Motor Show 2019

The Oji Group provided the technology for resin glass combined with cellulose nanofiber (automobile window application) exhibited by Toyota Motor East Japan at Tokyo Motor Show 2019. Compared to inorganic glass, resin glass is lighter in weight and in turn shows promise in helping to reduce automobile weight (and thus reduce CO<sub>2</sub> emissions during operation). Using cellulose nanofiber for reinforcement makes it possible to drastically reduce the thickness of resin glass, which is expected to reduce weight even further.



CNF are light, durable, and resist deformation due to heat



We are also developing biomass plastic films



A vehicle exhibited at the Tokyo Motor Show 2019

##### Proactive advancement into the pharmaceutical products business with the establishment of Oji Pharma

In April 2020, we established Oji Pharma with the aim of further strengthening collaborations with, among others, universities and pharmaceutical companies, in order to commercialize pharmaceutical products using sulfated hemicellulose, which can be chemically synthesized from hemicellulose derived from wood resources.

In addition, in November of the same year, we invested in and engaged in joint development with ReqMed. ReqMed is a company developing pharmaceutical products using pentosan polysulfate sodium, which can similarly be derived from wood resources. Going forward, we will continue to promote initiatives aimed at furthering our pharmaceutical products business.



Joint research with Hokkaido University



Research and development samples



The Oji Group's Environmental Vision 2050, established to help us to achieve our target vision, sets out our intention to aim toward net-zero carbon by FY2050. As a milestone on the way to this vision, we set the target of reducing our GHG emissions\*1 by 70% (as compared to FY2018 emissions of 7,836 kt) in our Environmental Action Program 2030 in September 2020.

The FY2030 reduction target comprises the GHG emissions reductions and the Net increment in carbon stocks by forests\*2 owned by the Oji Group and we have organized a project team to both draw up a roadmap toward this goal and increase the likelihood of achieving our target.

\*1 Scope 1 (direct emissions from fuel combustion) + Scope 2 (indirect emissions from the purchase of electricity and heat)

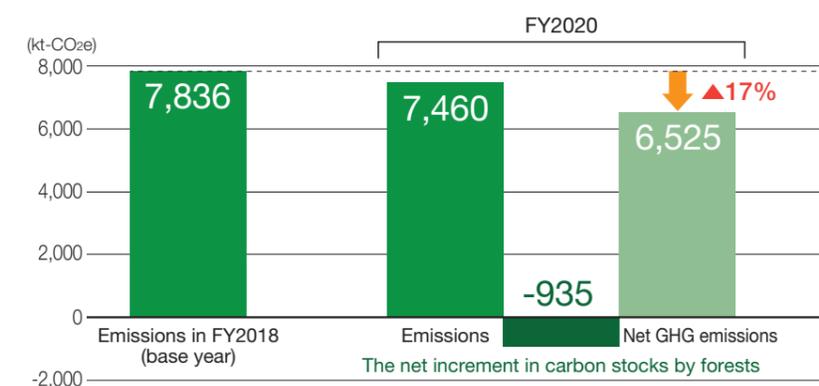
\*2 The net increment in carbon stocks by forests = CO<sub>2</sub> absorbed per year with the growth of trees - CO<sub>2</sub> emissions per year with felling.

Category	Sub-category	GHG reduction (kt-CO <sub>2</sub> e)	GHG reduction	2021 2022 2023 2024 2025 2026 2027 2028 2029 2030										
				2021 2022 2023 2024 2025 2026 2027 2028 2029 2030										
GHG emissions reduction	Improve energy efficiency	Maintaining energy conservation	204	2.6%	Continue to reduce energy consumption by 1.0% or more per year, averaged over five years									
	Increase the percentage of renewable energy use	Reducing coal consumption	508	6.5%	Technological research, development, investment decisions, installations									
		Ceasing sales of fossil-fueled electricity	279	3.6%	Review, ceasing sales of electricity									
	Installation of private solar panels, etc.	60	0.7%	Installation planning, investment decisions, installations										
	Transform the business structure	Move toward business structure with low GHG emissions	516	6.6%	Shift toward low GHG emissions business									
Subtotal			1,567	20%										
The net increment in carbon stocks by forests	Invest in forestry conservation and tree planting	Expanding forest plantations	3,918	50%	Overseas production forests total 260,000 ha → Overseas production forests total 400,000 ha									
					Search for sites, land surveys → Assessment of business feasibility → Consideration of acquisition, decision									
Total			5,485	70%										

Emissions were reduced by 17% in FY2020, toward our target of a 70% reduction by FY2030 (including the Net increment in carbon stocks by forests). Progress toward our reduction target is at 24%.

Going forward, we will continue to actively pursue the reduction of GHG emissions and increase of the net increment in carbon stocks by forests.

FY2020 Net GHG Emissions



## Toward Achieving Our Targets

### GHG Emissions Reduction

A key area for reducing emissions is the reduction of coal consumption. We own 16 coal-fired boilers in Japan and are examining the possibility of fuel conversion for 12 of these, not including boilers with low coal consumption and backup boilers.

In order to bring our coal consumption to zero by 2050, we plan to move forward with a switch to wood and other fuels, modification of our coal-fired power generators with a view to prospective co-firing with hydrogen or ammonia, and installation of private solar panels by the interim point of FY2030.

We will also strive to achieve our target of reducing GHG emissions by 20% (as compared to FY2018) through ongoing, thorough energy conservation measures and a shift toward a business structure with low GHG emissions.

Further, we will continue our efforts to contribute to lowering third-party GHG emissions by providing renewable energy through biomass power generation, hydroelectric power generation, and other forms of production from renewable sources.



Biomass power generation facility scheduled to begin operating in September 2022

### Expanding the net increment in carbon stocks by Forests

The Oji Group owns a total of 580,000 ha of forest, comprising production forests totaling 190,000 ha in Japan and 260,000 ha overseas and conservation forests of 130,000 ha, and practices sustainable forest management. (▶ pp. 39–40, 87–89)

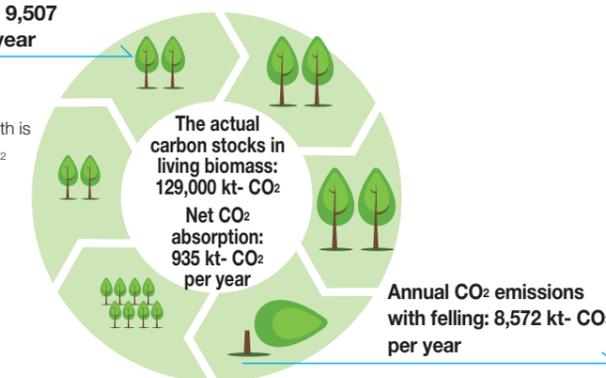
As a result of our sustainable forest management, the net increment in carbon stocks by forests (our production forests and conservation forests) was 935,000 tons- CO<sub>2</sub> per year, while the actual carbon stocks in living biomass\*3 reached 129,000 kt by the end of FY2020.

Our Environmental Action Program 2030 (established in September 2020) set out the target of increasing the area of our forests by a further 150,000 ha by FY2030.

We estimate that this will bring the net increment in carbon stocks by forests on up to the equivalent of approximately 50% of FY2018 GHG emissions. As of March 2021, preliminary calculations suggest that the expenses associated with expanding our forests by 150,000 ha will amount to approximately 100 billion yen.

Annual CO<sub>2</sub> absorption with growth: 9,507 kt- CO<sub>2</sub> per year

The amount of carbon fixed by annual tree growth is converted to CO<sub>2</sub> (tons).



\*3 The CO<sub>2</sub> stocks in Oji's 580,000 ha of forest

†For details, see ESG Data/Environment/Table 20 ▶ <https://ojiholdings.disclosure.site/en/themes/116/>  
Figures for CO<sub>2</sub> absorption and fixation by forests and GHG emissions are for consolidated companies.

## Sustainable Forest Management

The Oji Group possesses extensive company-owned forests in Japan and overseas, amounting to approximately 580,000 ha. The portfolio comprises about 450,000 ha of production forests primarily for producing forest products in consideration of environment, and about 130,000 ha of conservation forests principally for preserving biodiversity and basins.

When we began our forest plantation business, our goal was to secure a steady supply of raw materials for manufacturing paper. However, changing times have led to a reevaluation of forests as a sustainable resource, and various sectors are taking an interest in the utilization of this resource. In addition, recent years have seen many hopes pinned to forest “functions,” including not only their role as a “resource,” but also in conserving national land and living environments, replenishing water sources, protecting biodiversity, and absorbing and fixing carbon dioxide.

Alongside practicing sustainable forest management with a direct connection to our business, the Oji Group will continue to take steps toward the realization of a carbon-free society, increasing the value of forest resources and aiming to further expand our company-owned forests.



## The Oji Group and Forestation

### The Oji Group and Forestation

The Oji Group originated with “Paper manufacturing company,” founded in 1873. At that time, the company used cotton rags collected from urban areas to manufacture paper. In 1889, in order to respond to the rapidly increasing demand for paper that was accompanying the progress of civilization, the company built a new plant in the Tenryu River basin, in what is now Shizuoka Prefecture, and began paper production using pulp from wood. In 1910, seeking to further guarantee a steady supply of raw materials, the company opened a new plant in Tomakomai, Hokkaido (today’s Oji Paper Tomakomai Mill). Securing supplies of wood, our raw material, has been

an important issue for the paper-making industry since that time.

Within this context, Oji Zorin was established in 1937. The company initiated a resource recycling loop in order to guarantee steady supplies of raw materials for the future. The practice of cultivating our own resources has since been passed down through each generation of the company, and in the 1990s we took the lead among our competitors in starting our overseas forest plantation business. Today, we possess the largest area of company-owned forest of any Japanese private business.

### Initiatives for Sustainable Forest Management

We practice sustainable forest management in our production forests, planting, tending, and harvesting our trees, then re-planting. In addition, we actively utilize forest certification programs\* to implement appropriate forest management that considers the environment, society, and the economy, including for conservation forests. The forest certification acquisition rates in FY2020 were 91% for overseas forest plantations and 100% for company-owned forests in Japan.

\* In pursuit of sustainable forest management, a third-party organization certifies forests after examining whether they are managed in good condition according to the standard. The certification covers all types of forest, including production forests and conservation forests. e.g.: FSC™ (FSC™C016623, etc.) and PEFC, etc.

Country	Company	Established	Production forests (1,000 ha)	Conservation forests (1,000 ha)	Total (1,000 ha)
Brazil	CENIBRA	1973	144	105	249
	Pan Pac	1971	35	5	40
New Zealand	SPFL	1992	9	3	12
	Oji FS	2014	6	0	6
Indonesia	KTH	1998	39	12	51
Vietnam	QPFL	1995	9	1	10
Other (4 companies in Vietnam, Australia and China)			16	3	19
Overseas subtotal			258	129	387
Company-owned forests in Japan			188	0	188
<b>Group total</b>			<b>446</b>	<b>129</b>	<b>575</b>

Production forests: forests primarily for producing forest products in consideration of environmental conservation.

Conservation forests: forests primarily for environmental conservation, including protecting biodiversity and basins.



CENIBRA in Brazil: Production forest (left) and conservation forest (right)

## Initiatives in Japan and Overseas



Rubeshibe company-owned forest in Hokkaido



Pan Pac's forest plantation, New Zealand

### Initiatives in Japan

Our company-owned forests in Japan total approximately 650 sites across the country, from Hokkaido to Kyushu, amounting to an area of approximately 190,000 ha. We plant fir, larch and Ezo spruce, among other species, in Hokkaido, and grows Japanese cedar and cypress in Honshu and southward. It takes over 60 years to harvest these trees. The harvested trees are processed into lumber and the residuals are used as raw materials for paper and wood-based fuel. The Oji Group establishes collaborative relationships between people engaged in company forest management and users of lumber in each geographical region, and provides lumber, plywood, raw materials for paper, wood-based fuels, and other wood products to companies both inside and outside the Group. In this and other ways, we strive to revitalize Japan's forestry industry and ensure a stable supply of domestic lumber.

### Initiatives Overseas

Our forest plantation business spans ten regions within a total of six countries, and we maintain and manage forests amounting to an area of approximately 390,000 ha, including conservation forests. We select species and growing methods suited to the climate and natural conditions of each region. For example, we grow hardwoods such as eucalyptus and acacia (harvestable in around 10 years), and softwoods such as radiata pine (harvestable in around 30 years). Hardwood is mainly used for pulp. Thinned softwood is used for pulp, while harvested softwood is used for lumber production. In cooperation with various local experts, including subcontractors, we work through a sequence of tasks, including raising seedlings, planting, silviculture, and harvesting.

## Contribution to the Local Environment, Economy, and Society



Supporting beekeeping at CENIBRA

Sustainable forest management requires a mutual understanding between forest plantation business operators and the local community. Also indispensable is their sharing of environmental, economic, and social benefits. To give an example of economic benefits, our overseas forest plantation companies have created over 14,000 jobs locally. Another such example is our technical training on planting and forest management provided to owners of small-scale forests. Further, we cooperate with local governments, NGOs, and civic groups in each region to create and share environmental and social benefits. Their activities include biodiversity conservation programs in environmentally protected forests, vocational and educational support in local communities, and medical assistance in areas that have poor access to medical services.

## Value Creation by the Innovation Promotion Division

The Innovation Promotion Division creates innovations by refining cutting-edge technologies based on a range of core technologies accumulated from paper manufacturing and forestation, which are the roots of our founding.

To contribute to solving global issues such as climate change and marine plastic waste, we will continue to act as an incubator for commercialization, nurturing new themes and creating innovative value in order to help build a sustainable society.

### Green Innovation Oji is Aiming for

—Continuing to Develop Eco-friendly Products—

- 1 Development of eco-friendly materials and products** To help solve social issues such as climate change and the problem of marine plastic litter. → P43, 44
- 2 Entry into medical field** Utilizing our knowledge and know-how for medical care of the future. → P45
- 3 Total solution** Aiming for contribution to industrial development by understanding needs and seeds. → P46

**We accelerate the promotion of innovation.**

The Innovation Promotion Division is responsible for one of the three pillars of the mid-term management plan, "Promotion of Innovation". Accordingly, our task is the development of unique new materials and the provision of new solutions.

Based on the technologies acquired in the conventional pulp and paper business, we are developing wood-derived biomass plastics, cellulose nanofibers (CNF), and pharmaceutical raw materials as unique new materials. Additionally, we are taking on the challenge of efforts to apply new materials by replacing petrochemical-derived films with biomass-derived films.

Furthermore, by providing products and services that meet the needs of the times such as the liquid packaging carton business, next-generation packaging solutions, and water treatment business, we are promoting a business structure that goes beyond our conventional boundaries and providing new value as new solutions.

Through these efforts, we will contribute to a sustainable society, while strengthening the profitability of our domestic business and expanding our overseas business.



**Muraji Nishi**  
General Manager, Innovation Promotion Division  
Oji Holdings Corporation  
Corporate Officer



**Contribution to a Sustainable Society**

**Eco-friendly materials and products**

- 2 ZERO HUNGER
- 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
- 13 CLIMATE ACTION
- 14 LIFE BELOW WATER

**Medical field**

- 3 GOOD HEALTH AND WELL-BEING
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- 15 LIFE ON LAND

**Total solution**

- 6 CLEAN WATER AND SANITATION
- 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- 14 LIFE BELOW WATER

**SUSTAINABLE DEVELOPMENT GOALS**

- Biomass plastic films
- Wood-derived biomass plastic
- Sulfated hemicellulose for pharmaceutical use
- Cell culture substrates for controlled cell orientation
- Functional films for industrial use
- Functional non-woven fabric
- Special adhesive products
- Condenser films
- Cellulose nanofiber
- High-function optical adhesive products



## Development of Eco-friendly Materials and Products

### Wood-derived Biomass Plastic

The Oji Group has been considering manufacturing wood-derived biomass plastic. Unlike conventional plastics made from petroleum resources, the wood-derived biomass plastic can significantly contribute to the reduction of CO<sub>2</sub> emissions from fossil fuel into the atmosphere.

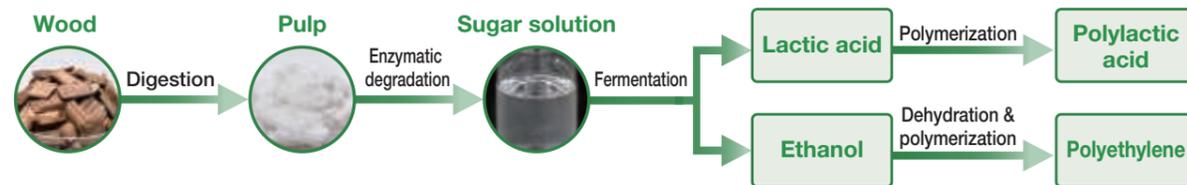
The raw material for biomass plastics is sugar, which has been produced from edible raw materials such as sugar cane and corn. However, by producing sugars from wood which is inedible, biomass plastics can be produced without causing a global food supply shortage problem.

Additionally, this project has been adopted as a commissioned project by the Ministry of the Environment. Using wood pulp-derived sugar solution, we produce lactic acid and ethanol, and are working on demonstrating production of polylactic acid and polyethylene.

We are studying how to use this biomass plastic to manufacture biomass plastic films, with the aim of moving away from petrochemical-derived plastics.

\* 2019 Demonstration Project for a Plastic Resource Circulation System toward a Decarbonized Society

### Producing wood-derived biomass plastics to move away from petrochemical-derived plastics



### Development of Biomass Plastic Films

The Oji Group is working to develop biomass plastic films with the processing technology for polypropylene films, cultivated through the manufacture of thin films for capacitors.

Replacing the conventional plastic films, which are essential to our daily lives, with the recycling-based materials will have a major impact on solving environmental problems.

In the future, Oji will produce wood-derived biomass plastics and integrate all stages from raw materials through to processing.



Biomass plastic films

### PaPiPress—New Molded Pulp Product

This paper packaging can clearly show curved surfaces. Even containers with complex shapes can be created seamlessly. PaPiPress offers smoother products than conventional pulp molds, and uses a high-temperature, high-humidity press to provide lids and other products with high fitability.



### Aqueous Coated Cups and Lids

Aqueous coated cups and lids are made of the Oji Group's base paper that does not include laminated film. Recycling, which was difficult with previous products, is now possible. Using the cup and lid as a set eliminates the need for sorting at the time of collection and recycling.



### CNF (Cellulose Nanofiber)

Cellulose nanofiber (CNF) is a wood fiber that has been produced by fibrillated into a nanometer order. (1nm = 0.000001mm)

CNF is expected to be applied in many fields as the material with high quality such as transparency, lightweight, durable, resistant to deformation, and high viscosity.

### Infinite possibilities of CNF, customizable according to the application

We can provide optimal CNF products by customizing their fiber sizes and forms, according to the customer's requirements.

Form	Slurry	Continuous sheet	Powder
Transparent CNF			
Coarse CNF			
Pulp			
Physical properties	Viscosity, thixotropy	Strength, dimensional stability Flexibility	Dispersion in various organic solvents

### Possible applications

We are utilizing the characteristics of the material in various forms, promoting its practical application in a wide range of fields.

#### On construction sites



Concrete pump primer "RUBURI" TAKEcite Co., Ltd.

#### In sports products



Table tennis rackets using our AUROVEIL LS Darker Co., Ltd.

#### In cosmetics



An example of cosmetics using our AUROVISCO CS

#### For lightening cars (under development)



Provided technology to CNF reinforced resin glass exhibited by Toyota Motor East Japan Inc. at Tokyo Motor Show 2019.  
CNF reinforced polycarbonate resin for composite use (car window application)

### Cellulose Composites (of Biodegradable Plastic and Pulp)

We are developing cellulose composites which have improved their properties such as strength and rigidity by mixing cellulose (pulp) into biodegradable plastic.

Pulp is 100% biomass-derived and has excellent biodegradability. Therefore, this is best as a way to strengthen biodegradable plastic.



### Multibarrier Paper SILBIO BARRIER

SILBIO BARRIER is a recyclable paper material and a functional paper material with high barrier properties to replace plastic film. It is oxygen- and water vapor-impermeable, and retains aroma and moisture.

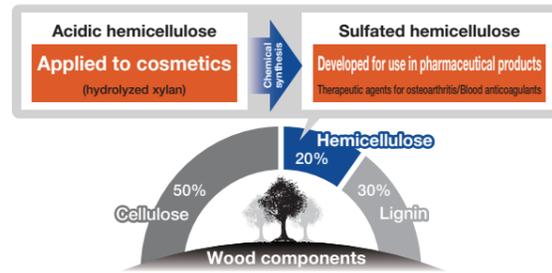
It is also impervious to oil, and can be disposed of as paper. This multibarrier paper is recommended as a packaging for products with strong scents such as coffee and soap.



### Entry into Medical Field

#### Wood-derived pharmaceutical products

Hemicellulose is one of the major wood fiber components. Hemicellulose extracted and refined through the Oji Group's unique technology, called hydrolyzed xylan, is used as a cosmetic ingredient. We have also developed sulfated hemicellulose, which is a chemically modified hemicellulose, with the aim of further increasing the added value of the wood fiber component. Sulfated hemicellulose is anticipated to have the effects of suppressing inflammation of joints and the bladder as well as blood coagulation.



#### Establishment of Oji Pharma Co., Ltd.

In April 2020, we established Oji Pharma Co., Ltd., as a subsidiary that takes charge of the medical and healthcare field of our business. The new company is promoting the development to utilize wood fiber components as active pharmaceutical components together with domestic and overseas pharmaceutical companies and universities.

#### Medicinal Plants

##### —Japan's first large-scale cultivation of licorice—

Licorice, which is used in many Chinese herbal medicines, is mostly imported from abroad, and domestic production is required due to fears of resource depletion in exporting countries and export restrictions. The Oji Group is applying its forest tree breeding technology to develop cultivation techniques within Japan, and has succeeded in conducting a demonstration test at our farm. We established the mechanization technology necessary to increase the scale of the business and are now proceeding with large-scale cultivation.



Domestic large-scale cultivated field of licorice

#### Establishment of Oji Medicinal Plants Laboratory Co., Ltd.

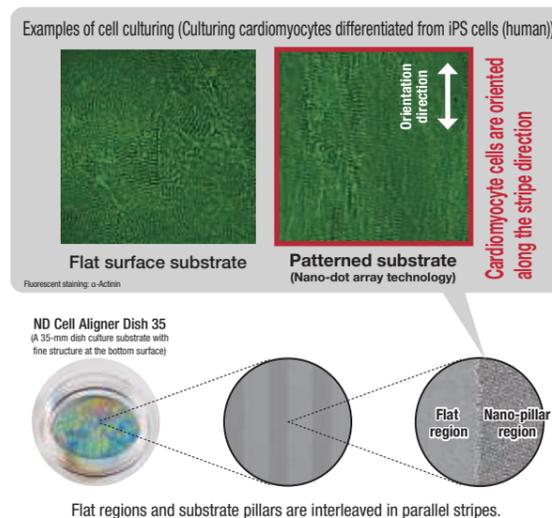
In May 2021, we established Oji Medicinal Plants Laboratory Co., Ltd., and started production and sales of medicinal plants. We will first carry out planned cultivation in the Hokkaido area targeting the stable supply of high-quality domestic licorice, making business proposals for pharmaceuticals, food, and cosmetics.

#### ND Cell Aligner—cell culture substrates for controlled cell orientation

The Oji Group is using the nano-dot array technology that creates nano-level fine structures to develop a range of applications in the fields of life sciences and optics. With this technology, we have developed the ND Cell Aligner cell culture substrates that have nano-pillar and flat regions interleaved in parallel stripes.

Cultivating cells such as cardiomyocytes on this substrate enables reproduction of cell orientation similar to that of intravital (in vivo), despite the cells being in a culture vessel (in vitro). These cultivated cells are expected to exhibit bioactivity similar to that in vivo, and therefore are expected to be used in pharmaceutical development and regenerative medicines.

At present, we are conducting joint research with Juntendo University.



### Total solution

#### Automated Packaging System —OJI FLEX PACK'AGE, a next-generation packaging solution—

Faced with packaging and logistics issues in the wake of rapid expansion of e-commerce market, the Oji Group has put together the technologies and know-how of packaging materials and packaging machines cultivated over many years, and started to provide "OJI FLEX PACK'AGE," a next-generation packaging solution that enables packaging based on the size of the products. The system, which allows its users to prepare a corrugated box that fits the product perfectly, offers different solutions to meet a variety of needs: a 3-sided variable

system, which uses our fanfold corrugated sheets Rakudan, and a variable height automatic sealing system, which uses standard-sized corrugated box. Introduction of OJI FLEX PACK'AGE helps realize resource saving (corrugated containers and packaging materials), cost saving (improving work efficiency and solving the labor shortage issue through automation), and energy saving (reduction of transportation costs due to improvement in loading efficiency) at once.

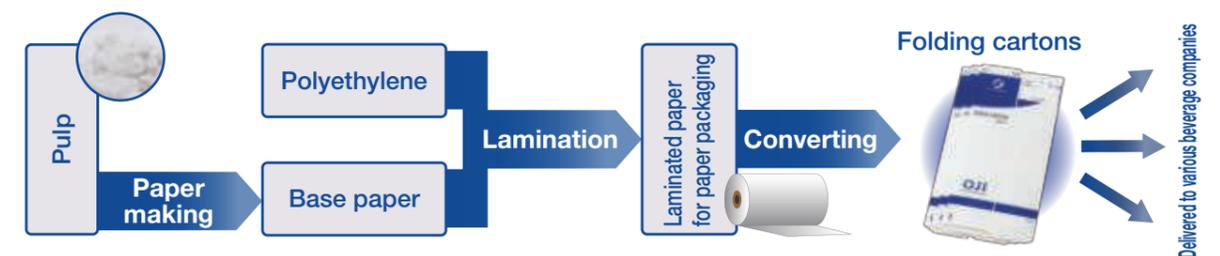


#### Liquid Paper Containers Business —Integrated domestic production system for beverage packages and overseas expansion—

The Oji Group has utilized its core paper manufacturing and various converting technologies and established Ishizuka-Oji Paper Packaging Co., Ltd. in collaboration with Ishizuka Glass CO., LTD., a comprehensive packaging manufacturer, to enter the liquid paper packaging business. This enables the construction of an integrated domestic production system ranging from pulp to liquid paper packaging. This leads to not only further efforts towards safety and security with advanced quality control but also stable supply by freeing ourselves of a

supply chain dependent on overseas sources. In addition to manufacturing paper packaging in Japan, we provide flexible solution to meet customer needs through an entire service by selling and maintaining machines that fill paper packaging with beverages. In the future, we will expand the business outside in Japan by utilizing our overseas infrastructure, where demand is expected.

#### Integrated domestic production system ranging from pulp to liquid paper packaging



#### Water Treatment Business

The Oji Group provides customers in and outside Japan with water treatment systems that meet a wide range of needs, based on the paper manufacturing technologies, and the technologies and operational expertise for water production and wastewater treatment, which have been accumulated since the founding. Based on investigation from various standpoints, we design and build optimal equipment from a

broad viewpoint, and maintain and manage it for the purpose of stable operation including remote operation and trouble prevention. In this way, we propose appropriate water quality management solutions from a holistic perspective. We aim to realize a sustainable society by providing stable water treatment technologies and making effective use of limited water resources.



We aim to be a “lifestyle and social support enterprise” that contributes to the prosperity of society by providing materials and technologies that are closely tied to people’s day-to-day lives.

**Yoshiki Koseki**

President, Household and Consumer Products COMPANY  
 President, Industrial Materials COMPANY  
 Senior Executive Officer  
 Oji Holdings Corporation



**Changes in Net Sales and Operating Profit**



**Segment Overview**

In FY2020, the Household and Industrial Materials Businesses had net sales of 647.5 billion yen (down 38.6 billion yen from FY2019) and operating profit of 38.1 billion yen (down 2.8 billion yen from FY2019). Due to stay-home trend under the COVID-19 pandemic, there was strong demand for corrugated containers for processed food products and online shopping domestically. Also, while some products such as kitchen towels, wet wipes, and face masks saw a jump in sales because of a change in lifestyles, overall sales and profits dropped as a result of the significant impact of restrictions on economic activity both in Japan and overseas.

In FY2021, net sales of 700.0 billion yen (up 52.5 billion yen from FY2020) and operating profit of 31.0 billion yen (down 7.1 billion yen from FY2020) are planned.



**Industrial Materials Business**

**Business Overview**

The Industrial Materials Business has production and sales structures that integrate material and converting from base paper manufacturing to product processing and packaging design for the packaging materials that are essential to industry such as corrugated containers, folding cartons, and paper bags and responds in a timely manner to customer needs.

**[Corrugated container business]**

As well as corrugated containers used in food-stuffs, daily products, electronics, and other areas, we also offer heavy-duty packaging materials used for transporting mainly industrial parts. We also provide automatic packaging systems adjusting the packaging dimension in order to fit each product size inside.

**[Folding carton business]**

For folding cartons used in a range of fields including confectionaries, cosmetics, and pharmaceuticals, we are combining aesthetically pleasing base paper with structural design tailored to the application and appealing graphics, thereby further enhancing the value of our customers’ products.

**[Paper bag business]**

We handle a wide range of customer needs—from heavy-duty sacks for packaging used for safe and secure transport of various products, through to paper bags that are used for packaging of retail products and also play a role in sales promotions, and bags for home delivery, which are seeing increased demand given the growth in online shopping.



Morishigyo Chiba Plant

**Business Strategy Profitability Improvement of Domestic Business**

Domestic demand for corrugated containers is steady even during the COVID-19 pandemic, with growth especially expected in the Kanto region. To strengthen our business base in the Kanto region, we made the decision to relocate and construct a new corrugated container plant within the premises of our containerboard mill in Utsumomiya City, Tochigi Prefecture (scheduled to start operation in October 2022), following the plant in Funabashi City, Chiba Prefecture, which started commercial production in July 2020.

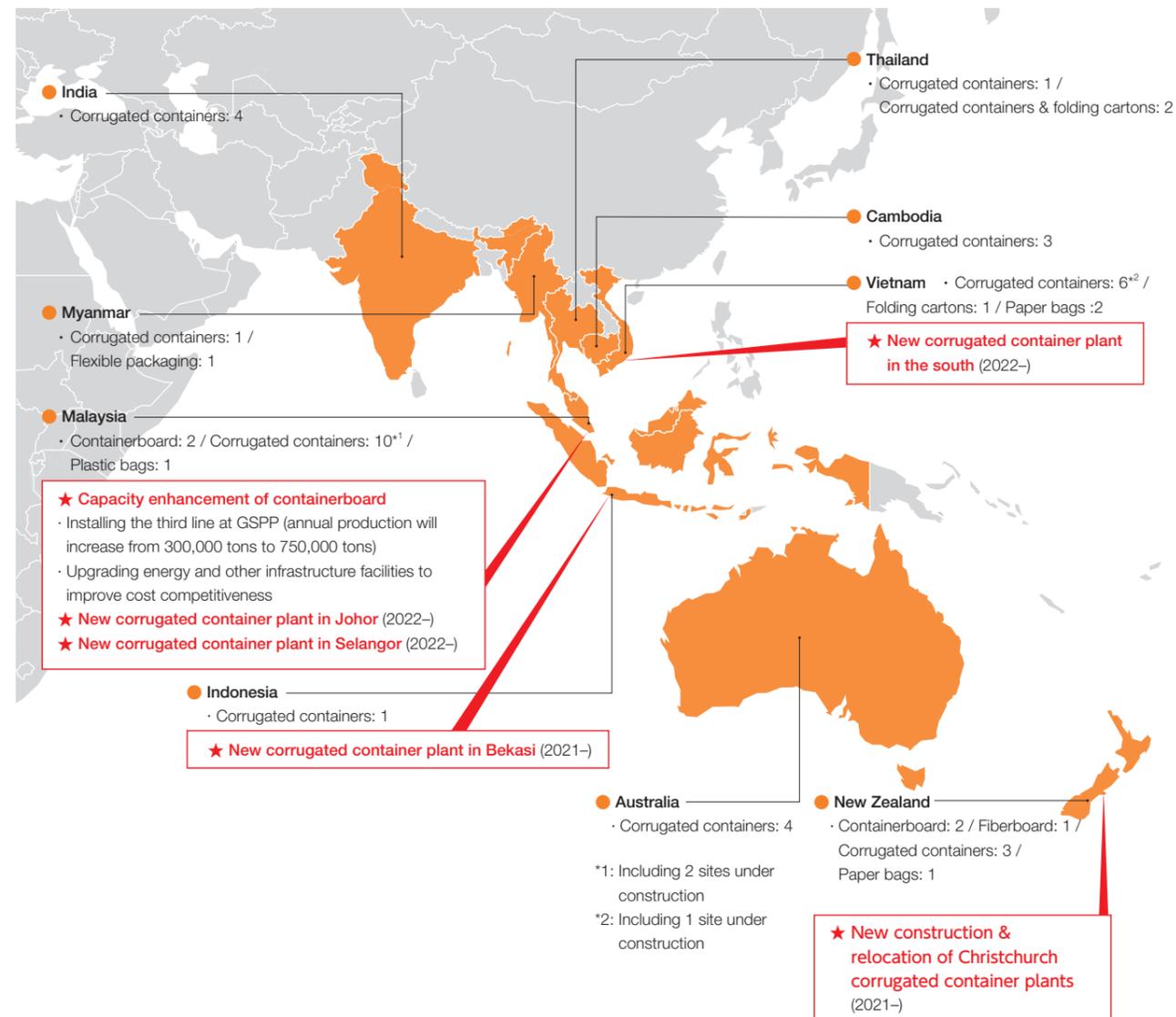
Having an integrated plant for processing the base paper for making corrugated containers means we have in place a system that can supply higher quality products in a sustainable and efficient manner, thereby contributing

to the local economy and society.

At the same time, as part of its initiatives to restructure manufacturing in response to structural changes in domestic demand, we completed modifications of the Oji Paper Tomakomai Mill newsprint production facilities for the production of containerboard and kraft paper, and started trial operation in June 2021. In order to handle the increased domestic and overseas demand for containerboard, we are moving ahead with further quality improvements and sales expansion.

To further reinforce earnings bases through the integration of material and converting, a range of investments will be made for the optimization of the domestic business structure.

Main Overseas Sites



**Business Strategy** Expansion of Overseas Business

To meet the increasing demand for packaging in various regions, we own a total of 47 manufacturing bases in 9 countries throughout Southeast Asia, India, and Oceania, and we are developing our business in the countries.

Up until now, we have been expanding our business with a focus on expanding and strengthening our corrugated container business. However, our new facility for manufacturing containerboard is planned to start operation in Malaysia soon, significantly bumping up the annual capacity from 300,000 tons to 750,000 tons. This will enable development of an integrated base paper and converting business even in overseas, further strengthening our business foundation.

Meanwhile, the recent COVID-19 pandemic has resulted in more demand of hygiene product due to its increased awareness, online shopping and furniture under

stay-home trend. These are all leading to a continuous increase in demand for packaging, and thus we will actively increase our corrugated container business. New corrugated container plants started operation in Indonesia in March 2021 (our first plant in the country) and will start in October 2021 in New Zealand (scheduled), and we are also constructing three new plants—two in Malaysia, and one in Vietnam.

With monitoring risk and return carefully in each region/market, we will further expand our business by way of new plant starting-up from greenfield and/or M&A activities.



New corrugated container plant in Indonesia



New corrugated container plant in Christchurch (rendering of completed plant)

**Voice** A new containerboard machine (PM3) begins operation



Sia Boon Soon  
President  
GSPP

We have been striving hard for the completion of construction and installation, coping with lockdowns and movement control orders.

This is significant investment for us, increasing annual capacity of containerboard production up to 750,000 tons 2.5 times bigger than before. GSPP keeps contribution to Oji group's integrated business expansion by maximizing the benefit of group-wide preparation for PM3, including raw material securement, pre-sales, recruitment and training.

**Business Strategy** Promotion of Innovation

Given the rapid expansion of the online shopping market and the investigation of labor-saving measures in various industries, Oji Group is bringing together its packaging materials, technologies, and know-how gained over many years to work with customers on solving issues with packaging and logistics. Adding new concepts to structural design has led to the development of groundbreaking new products. These include corrugated containers for

assembly packaging that, by changing their shape, lead to labor-saving in packaging and considerable reduction of plastic materials, as well as easy-to-open corrugated containers incorporating zippers and creases that significantly reduce the time required for displaying products in stores. These efforts have been recognized by a number of packaging awards, including the WorldStar Global Packaging Awards and the Japan Packaging Contest.



Products awarded in the WorldStar Global Packaging Awards 2021 and Japan Packaging Contest 2020  
Left: Suzuki Motor Corporation  
Center: Nissin Foods Holdings Co., Ltd.  
Right: Daikin Industries, Ltd.

## Household and Consumer Products Business



### Business Overview

We own the household paper brand 'nepia'. Quality of life as in the seeking of good texture, comfort, and functionality. Environmental quality as in forest conservation such as the adoption of FSC™ certified paper. Social quality as in aligning with customers' hope and contributing to the society through actions such as taking CSR initiatives. In the pursuit of these three quality domains, Oji Nepia is producing tissue paper, toilet rolls, disposable diapers, and other products indispensable in our daily lives. (FSC™ C018118)



Edogawa Mill



Malaysia Mill

Indonesia Mill

### Business Strategy Profitability Improvement of Domestic Business

In our household paper business, we are responding to market trends such as by producing extra long toilet rolls at the Edogawa Mill, which started commercial production in the fall of 2020. We will also build a new warehouse within the mill scheduled for completion in the fall of 2022, thereby streamlining logistics. Additionally, our Hana Celeb moisturizing tissues were awarded the Grand Prize at the Japan Naming Award 2020. We will continue to work to be a brand well-loved by customers.

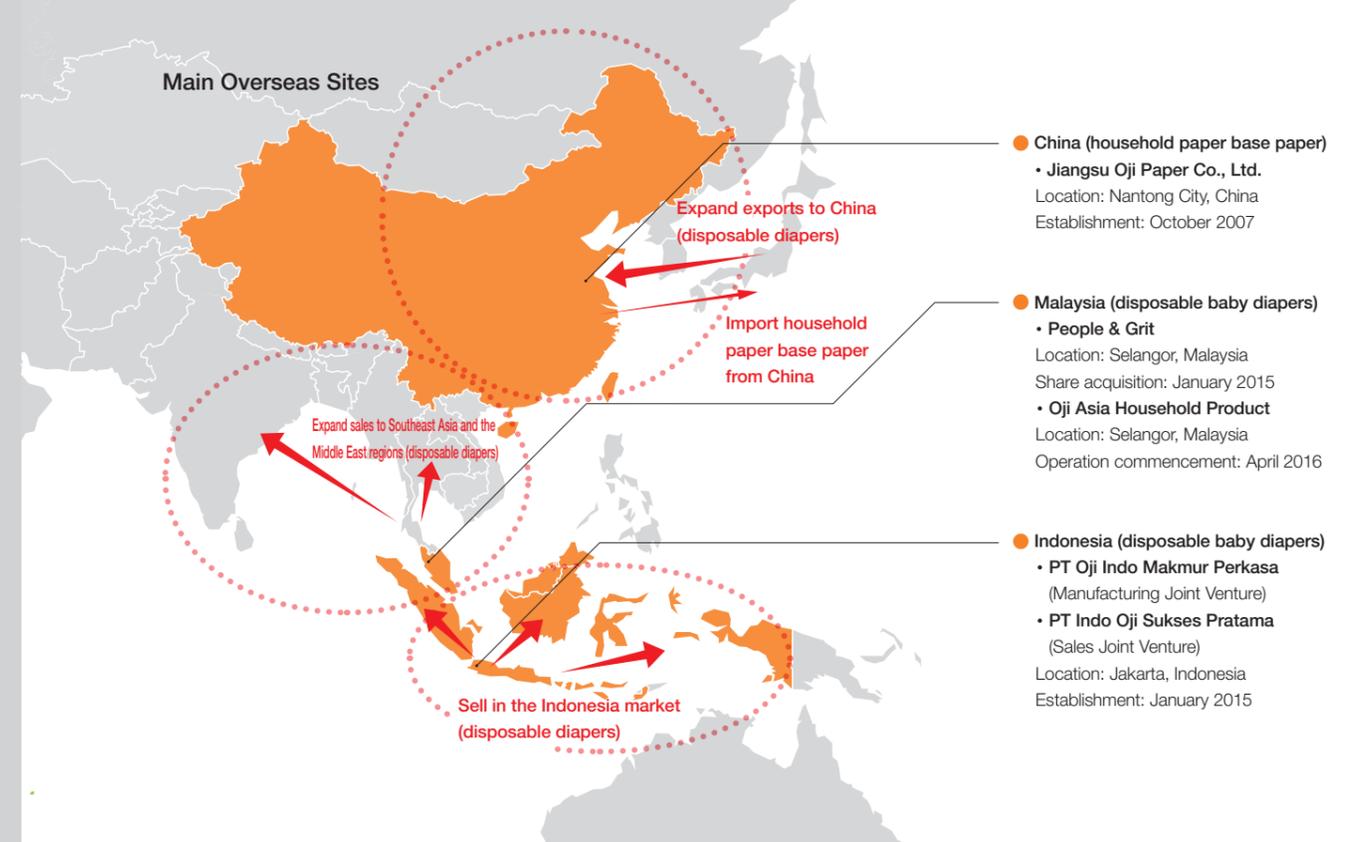
In our disposable diaper business, as well as boosting sales of nepia Genki! baby diapers, we are also working to increase our market share of disposable adult diapers. As we look towards the time when the second baby boomers reach young-old age, we will build a new processing machine at our Fukushima Mill with the commencement of production scheduled for the fall of 2022.

### Business Strategy Expansion of Overseas Business

The Household and Consumer Products COMPANY will promote business expansion in Southeast Asia and China, where consumption of baby diapers is expected to grow, and work to enhance both production and sales.

In Malaysia, through the integration of production bases and scrap-and-build, the capacity boosting setup were completed in April 2021, and in Indonesia, which has the largest population in the region, we will continue to increase the production capacity of our factory that has been operating from January 2020, in order to respond to the increasing demand. In China, we actively promote e-commerce to explore new customers, whereby continuing to expand sales through the export of "made in Japan" products.

In addition to the export of products made in Malaysia, we will also expand supply of high-quality "made in Japan" products such as Genki! and Whito to other Southeast Asian countries, whereby actively exploring new target countries.



### Business Strategy Promotion of Innovation

Oji Nepia was the first manufacturer in the industry to use FSC™ certified paper, and we are taking measures for the reduction of environmental burden, such as using biomass ink when printing product packages. We have, however, long held concerns regarding the plastic film used for packaging toilet rolls and other products. Plastic films, manufactured from petrochemicals, do not break down in nature, and plastic waste that reaches the oceans has become a global issue. To combat this issue, the Oji Group has combined its efforts to create "nepi eco."

The package design features an attractive blue color scheme that evokes the beauty of the ocean together



nepi eco

with marine life, and encapsulates the message that purchasing this product helps to protect the ocean.

## ESG and SDGs Topics

### Response to COVID-19 pandemic

#### Nepia Long Lasting Best Fit Face Mask

New Tac Kasei Yamamoto Mill has renovated its cleanroom, and has been producing Nepia Long Lasting Best Fit Face Masks since July 2020.

In January 2021, we developed a new product, the Nepia Long Lasting Best Fit Face Mask Block Filter Plus that blocks 99% of virus droplets.

These masks are "All Made in Japan," from materials procurement to processing, and from the wire around the nose to the ear straps.





By anticipating market needs and rapidly providing products and services that exceed customer expectations, we aim to be the company chosen by our customers.

**Shigeki Aoki**

President, Functional Materials COMPANY  
Executive Officer  
Oji Holdings Corporation



**Changes in Net Sales and Operating Profit**



**Segment Overview**

In FY2020, the Functional Materials Business had net sales of 182.3 billion yen (down 32.4 billion yen from FY2019) and operating profit of 11.5 billion yen (down 3.9 billion yen from FY2019). In the midst of the ongoing impact of the COVID-19 pandemic, we saw a recovery trend in films for capacitors for electric vehicles and paper used in the manufacturing process of electronic components for smartphones. However, sales dropped because of reduced numbers of tourists visiting Japan and of events, and our overseas business was also impacted by stay-home trend and a stagnation in economic activity, leading to an overall decrease in both sales and profits.

In FY2021, net sales of 179.0 billion yen (down 3.3 billion yen from FY2020) and operating profit of 10.0 billion yen (down 1.5 billion yen from FY2020) are planned.



Glass paper (Oji F-Tex)

**Specialty Papers Business**

The Specialty Papers Business has a lineup of products with advanced special functions such as electrical material paper including insulation materials, dry pulp non-woven fabric, and glass paper. Production of pressboards will be consolidated at Oji F-Tex from October 2021 through the transfer of the business from Mitsubishi Paper Mills.



Eco Marine Tac™ (Oji Tac)

**Adhesive Products Business**

Using proprietary adhesive force control technology, the Adhesive Products Business handles from familiar products like various labels, adhesive tape for packaging, and wound dressings to less familiar, special applications like aluminum tape for construction material and forgery prevention tape. We are also focusing on the development of biodegradable film sticker.



Thermal papers (Oji Imaging Media)

**Imaging Media Business**

With diverse coating technologies such as thermal and inkjet technologies, the Imaging Media Business boasts a top class global market share, developing products that meet diverse industries' customer needs. Production and sales operations for carbonless paper have been consolidated into Mitsubishi Paper Mills, aiming to strengthen competitiveness.



Film used in capacitors (Oji F-Tex)

**Film Business**

Films for capacitors are used as an essential material in the power supply units of electric vehicles, and the Oji Group is refining development of these based upon its thin film technology that produces the world's thinnest films. The Film Business also offers optical double-sided adhesive films and hard-coated films that are seeing growth due to their use in precision devices.

**Business Strategy Profitability Improvement of Domestic Business**

The Functional Materials Business provides a variety of different products to the automotive industry, as well as electronics materials, environmental and medical domains, based on core technologies such as papermaking, converting (functional and adhesive coatings), film forming and non-woven fabric. Furthermore, the continuing review of manufacturing systems increases competitiveness and profitability, and so the Functional Materials Business will continue to engage in the swift development of high-function and high-value-added products, fusing core technologies and new materials.

At the Oji F-Tex Shiga Mill, we have built new production facilities for biaxially oriented polypropylene film (OPP) mainly used in capacitors in electric vehicles, and after the facilities start operation in 2023, the capacity is expected to be 1.6 times higher than the current capacity.



The Oji F-Tex Shiga Mill

**ESG and SDGs Topics**

As the world aims to achieve a decarbonized society, it is shifting to electric vehicles, and a corresponding jump in demand for OPP for capacitors is expected. There have been needs for thinner OPP for capacitors, but at the same time the films also need higher levels of insulation to withstand high voltages and currents so that they can achieve higher power. Oji F-Tex has a long track record in this field. The company has unique technologies that achieve thin films and high insulation at a high level, and boasts a stable supply capability.

Additionally, together with the Advanced Film Research Center of Oji Holdings' Innovation Promotion Division, we are tackling the development of biomass plastic films that are based on OPP film-forming technologies.

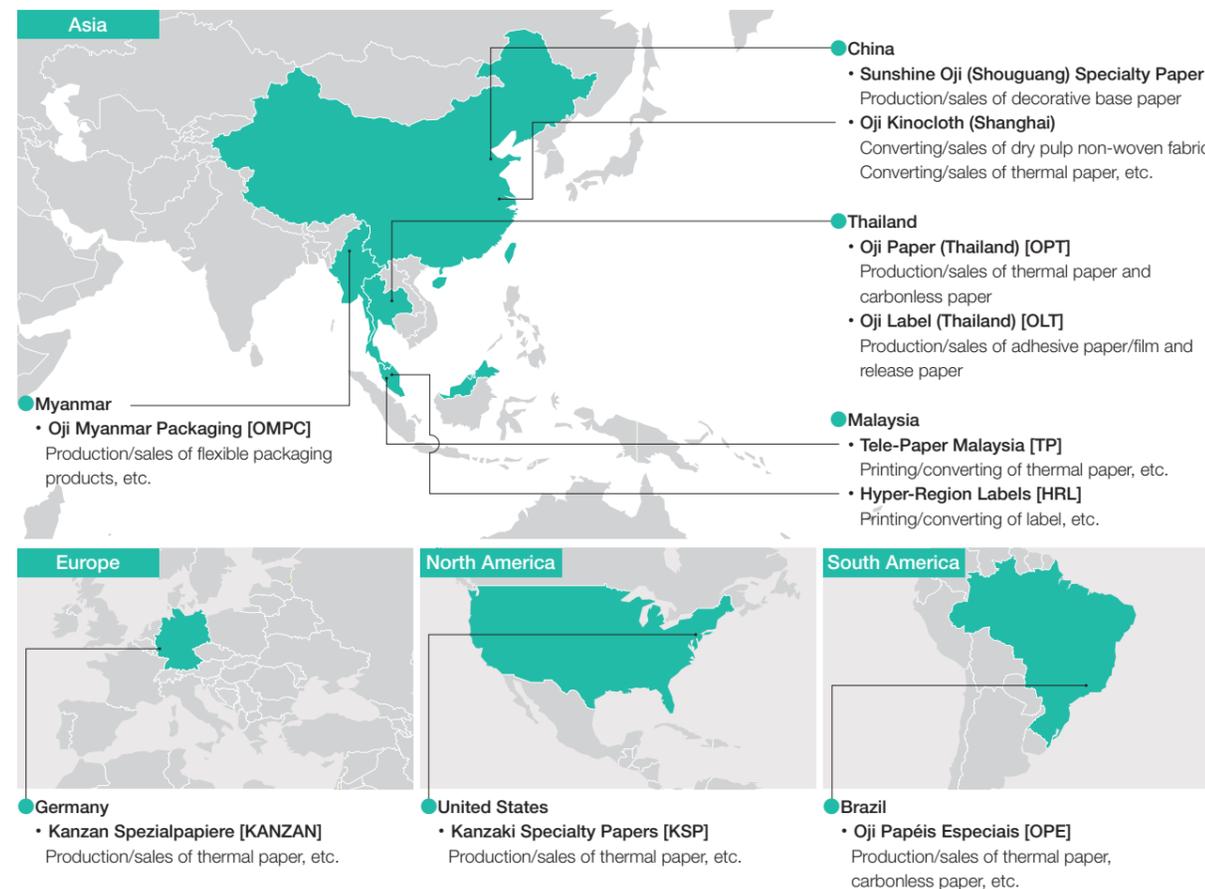


Advanced Film Research Center (within the Oji F-Tex Shiga Mill)



Oji Papéis Especiais

### Main Overseas Sites



### Business Strategy Expansion of Overseas Business

We are striving to expand its business that integrate material and converting across the world, pivoting on the thermal paper business, which boasts a share of around 20% of the global market. In response to increasing demand in line with economic advancements in newly industrialized countries in Southeast Asia, South America, the Middle East, Africa and elsewhere, we will continue to leverage its core technologies, which are a strength of the Group, to expand into new business.

In Southeast Asia, we are implementing M&A targeting downstream operating companies in Malaysia that convert,

print, and sell thermal paper and adhesive paper, in order to further strengthen and reinforce the upstream businesses that primarily manufacture and sell thermal paper and adhesive paper.

In Central and South America, demand is rising for thermal paper, due to the spread and expansion of POS systems and logistics systems. Through increased manufacturing capacity at Oji Papéis Especiais in Brazil, we aim to improve quality and cost competitiveness, maintain the share of Brazil's thermal paper market, and expand its share of the thermal paper market across Central and South America.

## Voice

**We are proud that these new technologies will bring us a new opportunity on the 10th anniversary as a member of the Oji group.**



Agostinho Monsserocco Junior  
President  
Oji Papéis Especiais

In 2021, Oji Papéis Especiais celebrates the 10th anniversary as a member of the Oji Group. At this milestone, we are working on the third phase of expanding production so that we can meet the strong demand for thermal paper in South America, and this expansion is scheduled to be complete in December 2021.

The expansion will almost double our production capacity in Brazil.

We aim for a smooth launch, and hope to be able to make the most of the new opportunities presented by these new technologies.

### Business Strategy Promotion of Innovation

#### Paper Net Envelopes

Oji Tac's Paper Net Envelope was awarded the 44th Kinoshita Awards in the New Creation Category by the Japan Packaging Institute. The product is a padded envelope made fully of paper and does not require the plastic bubble wrap used in conventional padded envelopes.

In Paper Net Envelopes, the slit paper sheet attached to the opening spreads out like a mesh when a product is inserted and thus works as a cushioning material that prevents product movement, thereby removing the need for conventional plastic bubble wrap. Furthermore, optimization of the base paper material has created a structure that can easily be inserted into mailboxes. This reduces redeliveries, an issue that is on the rise given the increasing use of online shopping. This plastic-free construction and design of easy insertion into mailboxes have been highly recognized and adopted by many customers.





We are comprehensively leveraging assets owned by the Group, including pulp, renewable energy, afforestation, and lumber processing to promote enhancement of the business.

**Fumio Shindo**  
 President, Forest Resources and Environment Marketing COMPANY  
 Senior Executive Officer  
 Oji Holdings Corporation



**Pulp Business**

We produce a diverse lineup of pulp grades including hardwood kraft pulp, softwood kraft pulp, and dissolving pulp. With 2.5 million tons per year market pulp supply capacity, it is boosting sales in Asia and other growth regions.

**Energy Business**

We are promoting the electric power generation business by newly establishing and expanding electricity generation facilities using renewable energy, including wood biomass, hydroelectric power, and solar power. In 2022, our new wood biomass power generation facility Oji Green Energy Tokushima is slated to start operation.



**Lumber Processing Business**

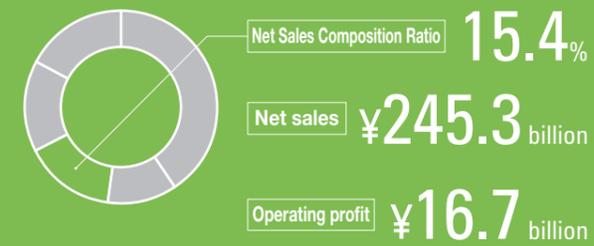
We are taking measures to expand production capacity, and are purchasing and selling lumber and processed lumber products, primarily in Asia and Oceania. Efforts to expand sales at sales bases established in China and Southeast Asia are also ongoing.

**Forest Plantation Business**

We are working to cultivate and manage company-owned forests in Japan and overseas. Harvested wood are supplied for pulp raw materials, as well as for a range of applications such as lumber, plywood materials, and biomass fuels.

**Fuels/Chemicals and Other Material Procurement Business**

Centralized procurement management and advantageous and stable procurement are conducted for the Oji Group as a whole. CSR procurement is conducted while taking into consideration the environment and society in accordance with the Oji Group Partnership Procurement Policy.



**Changes in Net Sales and Operating Profit**



**Segment Overview**

In FY2020, we had net sales of 245.3 billion yen (down 40.3 billion yen from FY2019) and operating profit of 16.7 billion yen (down 12.1 billion yen from FY2019). In the energy business, electric power sales increased due to a full year of operation of MPM Oji Eco-Energy that commenced operations in September 2019. However, the global stagnation in business resulting from the COVID-19 pandemic has resulted in a weaker pulp market. The domestic dissolving pulp business and the overseas pulp business were particularly impacted, resulting in an overall drop in net sales and operating profit.

In FY2021, net sales of 312.0 billion yen (up 66.7 billion yen from FY2020) and operating profit of 54.0 billion yen (up 37.3 billion yen from FY2020) are planned.

**Business Strategy Profitability Improvement of Domestic Business**

**Energy Business: Expansion of the renewable energy business with a focus on establishing new biomass power plants**

We are pursuing further expansion of the energy business, and a joint venture biomass power generation facility established with Mitsubishi Paper Mills commenced operation. Additionally, a decision was made to construct a biomass power generation facility in Tokushima Prefecture as a joint venture with ITOCHU ENEX, and preparations are underway for the start of operations in September 2022.

Additionally, we are reinforcing the biomass fuel business in conjunction with expansion of the energy business. In Japan, we are increasing procurement of fuel woodchips by making use of unused wood resources. Overseas, efforts to increase procurement of palm kernel shells (PKS) for use as fuel continue in Indonesia and Malaysia, while ensuring lawfulness and maintaining sustainability.

**MPM Oji Eco-Energy**  
 Operation commenced in 2019 (within Mitsubishi Paper Mills Hachinohe Mill)  
 Generating capacity: 75,000 kW  
 Joint venture with Mitsubishi Paper Mills

**Oji Green Energy Tokushima**  
 Operation to commence in 2022 (within the Oji Paper Tomioka Mill)  
 Generating capacity: 75,000 kW  
 Joint venture with ITOCHU ENEX

**Other**  
 Undertakings that seek to contribute to the development of a low-carbon society including the fuel procurement business for biomass power generation, hydroelectric power business, and other businesses

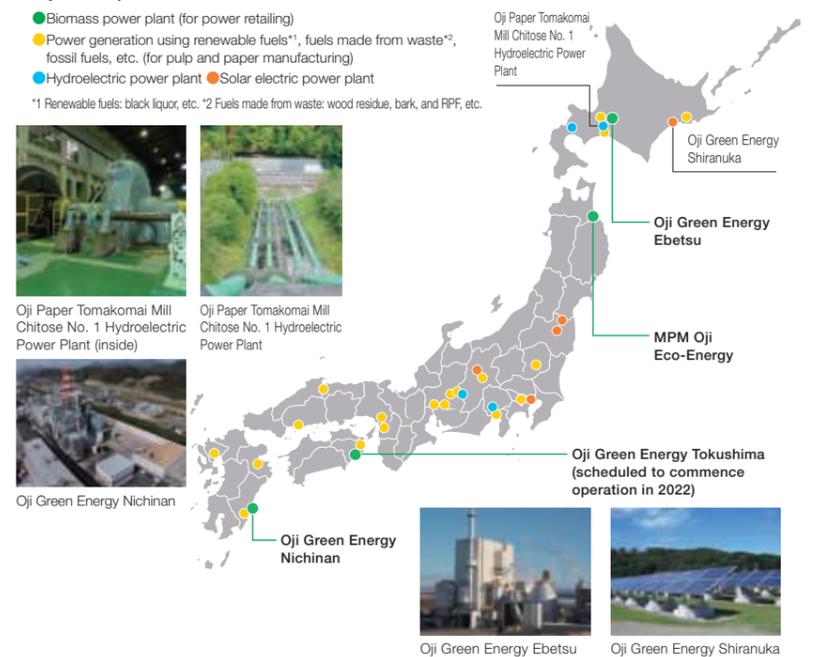


MPM Oji Eco-Energy's biomass power generation facility



Biomass fuel

**Oji Group's Power Generation Sites**



Oji Paper Tomakomai Mill Chitose No. 1 Hydroelectric Power Plant (inside)



Oji Paper Tomakomai Mill Chitose No. 1 Hydroelectric Power Plant



Oji Green Energy Nichinan



Oji Green Energy Ebetsu



Oji Green Energy Shiranuka

**Business Strategy** Expansion of Overseas Businesses

In the pulp business, we continue to implement strategic profit measures at key business sites to reinforce business foundations that are resilient to fluctuations in pulp markets.

Oji Group know-how and operational management methods have been introduced and used in Oji Fibre Solutions and Pan Pac in New Zealand to stabilize operations and raise efficiency. In Brazil, profit measures are implemented on a continuous basis by updating production facilities and through other means.

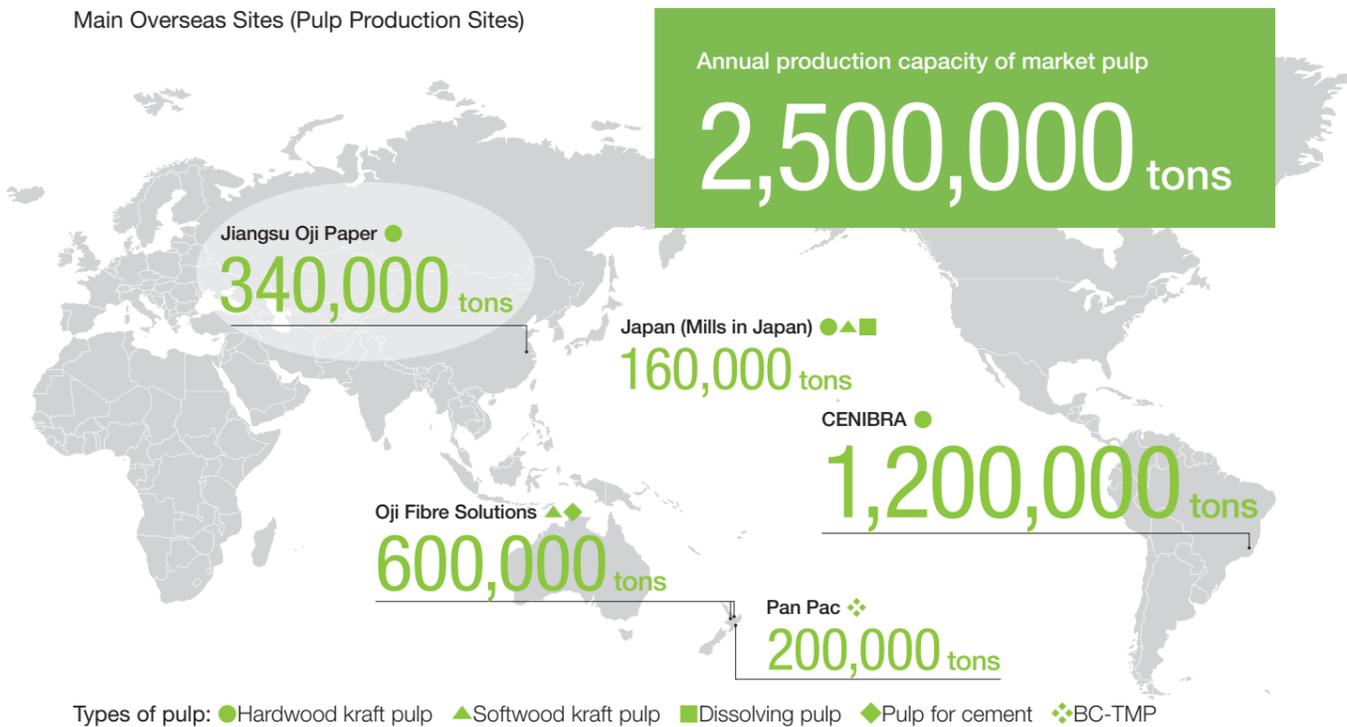
In May 2021, Japan Brazil Paper and Pulp Resources Development Co., Ltd., the parent company of CENIBRA, acquired shares of CENIBRA as treasury stock from non-controlling shareholders. Accordingly, our Group holds all voting rights of the company, which will strengthen the Group's business foundation as well as facilitate flexible



Products are loaded onto a ship (Brazil)

business operations at CENIBRA, thereby enhancing the production and sales of our pulp business.

Main Overseas Sites (Pulp Production Sites)



CENIBRA Mill (Belo Oriente, Minas Gerais, Brazil)



Pan Pac Mill (North Island, New Zealand)

**Business Strategy** Promotion of Innovation

Massive forest fires have become common occurrences in many parts of the world, a critical global issue that needs urgent global solutions. Cenibra, which has forest plantations and a pulp mill in Brazil, has introduced an innovative forest fire prevention and fighting system using artificial intelligence (AI) for their 250,000 ha forests.

The company has 38 watchtowers equipped with 360

degrees rotating cameras. When the AI detects smoke and fires, the monitoring room notifies fire crews nearest to the site of the incidents. They start firefighting immediately. The AI-equipped cameras are more efficient than human eyes and can locate the accurate fire site within 1-2 minutes. Cenibra has reduced forest fire risks significantly.

**ESG and SDGs Topics**

**Forestry Activities that Contribute to Achieving the Sustainable Development Goals (SDGs)**

The UN Strategic Plan for Forests 2030 indicates that forestry activities contribute to achieving SDG goals, and establishes six Global Forest Goals for international society to achieve by the year 2030. This section introduces the Oji Group's initiatives towards the second Global Forest Goal, as an example.

**Promote the Employment of Local Residents**

In Vietnam, we hire local residents for planting acacia forests in the wet season and harvesting them in the dry. This leads to creating local employment throughout the year, thus contributing to enhanced living standards.

**Social Contribution Activities (QPFL, Vietnam)**

• Dispatch of medical teams

In February 2020, QPFL dispatched a medical team to villages without doctors, and 650 villagers received medical examinations.

Blood pressure measurement equipment, clinical thermometers, beds and second-hand clothes were also provided to village clinics.

• Installation of water purification equipment

In March 2021, water treatment filters were installed at kindergartens and elementary schools in Canh Lien village, and at elementary schools in Dak Mang village.



**Global Forest Goal 2**

Enhance forest-based economic, social and environmental benefits



The Global Forest Goal 2 includes 9 goals for SDGs.

**Voice**

**Cenibra & Oji in times of Covid-19**



Adermo Costa  
Commercial and Logistics Manager  
Celulose Nipo-Brasileira S.A.

Cenibra is a traditional company in the sector of bleached kraft pulp from eucalyptus, with a current production of 1,200,000 tons/year, located in the state of Minas Gerais, Brazil founded in 1973.

This year OJI acquired all JBP shares making Cenibra 100% as Oji Group which brought us a lot of joy and pride. We do hope that the OJI culture which is already present in our daily lives can help us to go even further, maintaining Cenibra's tradition, reinforcing its values, always thinking beyond the boundaries.

During this pandemic period, Cenibra hasn't stopped. With a lot of internal collaboration from employees, Cenibra implemented several measures to minimize the impacts of COVID-19 and other negative factors bringing harmony to the work environment and serenity to its employees, prioritizing production safely and even achieving an annual record of production in 2020.

Cenibra has preserved the partnerships and the good relationship that maintains with the Government and the communities around it.

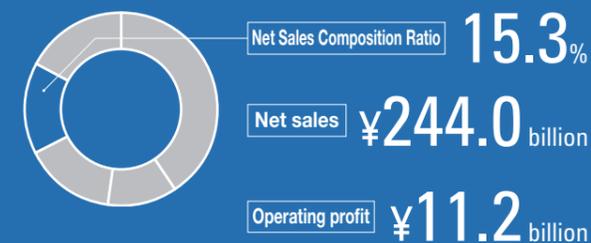
Cenibra is like this, always with a vision of the future overcomes difficulties and goes beyond expectations.



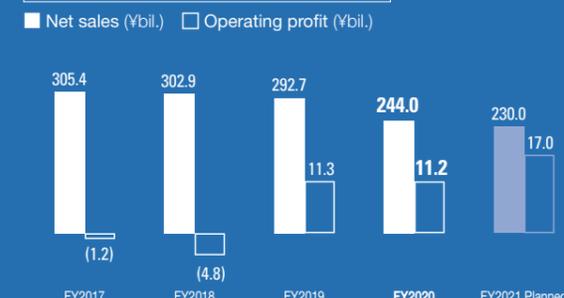
In response to the changing demand structure in Japan and integration with Asian markets, we are advancing with our business structure reforms while maximizing our cash flow.

**Fumio Shindo**

President, Printing and Communications Media COMPANY  
Senior Executive Officer  
Oji Holdings Corporation



**Changes in Net Sales and Operating Profit**



**Segment Overview**

In FY2020, the Printing and Communications Media Business had net sales of 244.0 billion yen (down 48.7 billion yen from FY2019) and operating profit of 11.2 billion yen (down 0.1 billion yen from FY2019). Sales volumes of comic books increased because of higher demand from stay-home trend under the COVID-19 pandemic and from the release of new popular works. However, lower domestic demand for newsprint, printing / publication paper, and communications paper stemming from the economic downturn and spread of telework resulted in a drop in net sales. With stringent cost reductions, the operating profit stood at a level similar to last fiscal year.

In FY2021, net sales of 230.0 billion yen (down 14.0 billion yen from FY2020) and operating profit of 17.0 billion yen (up 5.8 billion yen from FY2020) are planned.



**Newsprint Business**

We hold approximately 30% share of the Japanese market for newsprint, and provide newspaper companies throughout the country with a stable supply of high-quality newsprint.

**Printing and Publication Paper Business**

We have various types of printing paper used for different applications including books, magazines, and catalogs, etc.

**Communications Paper Business**

We provide various output media for information processing systems, including copying paper and forms.

**Business Strategy Expansion of Overseas Businesses**

Jiangsu Oji Paper Co., Ltd. newly installed two household paper base paper machines in 2020, and it is carrying out works to increase its pulp facilities in 2021. Produced household paper base paper will be used in nepia brand products, as well as being sold to external customers who require base paper. It is also considering the installation of more household paper base paper machines. This expansion of pulp facilities will let us secure raw materials for household paper base paper, and will let us rapidly leverage the synergies of capital investment while taking advantage of our forte in integrated pulp and paper production.



Household paper base paper machine (TM2)

**Business Strategy Promotion of Innovation**

In our mills, in order that we can pass on the knowledge of our skilled engineers that has been accumulated over many years to up-and-coming generations, and that we can improve the production skills of younger workers, we are working on putting advanced tools and systems to practical use utilizing technical information sharing and as educational tools. For example, we are installing sensing devices such as vibration sensors and temperature

sensors at manufacturing sites for use in remote monitoring, and with these we are working to enable rapid detection of problems and improve the productivity of our monitoring operations.

Looking forward, we will work to verify the usage of the latest technologies that include using AI for more accurate monitoring and diagnosis, and for understanding the status of other facilities.



The #L-1 machine (post-retrofit name of the #N-5 machine) at the Tomakomai Mill

**Business Strategy Profitability Improvement of Domestic Business**

Looking towards medium- to long-term changes in the demand structure, we are working at consolidating our production facilities with the aim of improving profitability and strengthening our international competitiveness. In FY2020, we shut down the #N-1 machine at the Tomakomai Mill, and started retrofitting the #N-5 machine (conversion of product type), completing the retrofitting in June this year, and this has already started trial operation. We are also continuing our efforts in thorough cost reductions within each department. In partnership with Mitsubishi Paper Mills, successful outcomes have been seen in production efficiency improvement and cost reduction by eliminating mixed transportation and sharing operating technologies, and mutually utilizing sales channels.

**ESG and SDGs Topics**

**Awarded the Excellence Prize at the Eco Mark Award 2020**

We were awarded the Excellence Prize at the Eco Mark Award 2020 held by the Japan Environment Association, Eco Mark Office. In addition to promoting sustainable forest management and paper recycling, we are the first company in the industry to achieve Eco Mark certification for printing paper. We have continued to obtain Eco Mark certification since 1990 and are working to expand our environmentally-friendly products by obtaining Eco Mark certification with products that combine waste paper pulp and forest-certified wood pulp. We have been highly recognized as an important party in supporting domestic paper recycling systems, given that we have some of the highest consumption of recovered paper in Japan.





Desk partition to prevent airborne virus droplets, developed in collaboration with subsidiary, Sunprot

### Kyokuyo

Kyokuyo Co., Ltd. is a specialized trading company that purchases and sells various products of the Oji Group and other companies. These products include pulp and paper, synthetic resin materials and products, packaging materials, chemicals, and machinery, from upstream (raw and other materials) to downstream (finished products). As a trading company that proposes and develops solutions to customer problems, we respond to customer requirements in the best ways possible.



"Pulfine," highly-expanded polypropylene containers that feature excellent heat resistance and heat retention properties

### Ginpo Pack

Ginpo Pack Co., Ltd., a subsidiary of Kyokuyo, conducts planning, production, and sales of plastic containers for food packing with a focus on heat-resistant polypropylene foam containers using the new material "Pulfine," which can reproduce steaming hot home cooking when using a microwave oven.



Industrial water production system

### Oji Engineering

Oji Engineering Co., Ltd. leverages its technologies accumulated through paper manufacturing to offer one-stop engineering services ranging from facility design to operations. To explore other new fields, it also makes active efforts in proposals for practical waste water treatment and other systems in the water environment business, and in development of fuel handling facilities in the biomass power generation business. In addition, it is also promoting technical support for digital transformation, such as enhanced safety education utilizing VR-simulated disaster experience, remote maintenance using drones equipped with thermographic cameras, as well as realization of working style reforms through improved operational efficiency using IoT technology.



A roll-on roll-off (RORO) ship that can transport vehicles carrying goods

### Oji Logistics

In addition to the existing domestic and international logistics operations for Oji Group products, Oji Logistics Co., Ltd. is also expanding the scope of operations to include the distribution of nepia products. We are aiming to be a comprehensive logistics company that can offer integrated logistics services such as processing and delivery also to customers outside the Oji Group (external sales shipping), by utilizing our sea and land transport capabilities. We have started operations to meet the needs of customers, such as having roll-on roll-off ships call at Hachinohe Port. Also, We received the Excellent Business Award by the Ministry of Land, Infrastructure, Transport and Tourism's Green Logistics Partnership Conference for the promotion of White Logistics (good-standing logistics). We are continuing to promote business reforms, and are striving to achieve productivity improvements in logistics services.



The Grand Hotel New Oji

### Hotel New Oji

Hotel New Oji Co., Ltd. is engaged in the hotel and flight catering businesses. In addition to the hotel business at the Grand Hotel New Oji, a 16-story city hotel located in Tomakomai City, Hokkaido, we prepare inflight meals for domestic and overseas airlines in the catering building at the New Chitose Airport and load the meals onto aircraft using large, specialized vehicles.



Plant

### Ishizuka-Oji Paper Packaging

Amid increasing attention on paper materials in the context of a worldwide heightening of environmental awareness, Oji Holdings has invested in the paper beverage container business that was split from ISHIZUKA GLASS, and launched a joint venture in September 2020.

Ishizuka-Oji Paper Packaging Co., Ltd. combines the Oji Group's expertise in manufacturing and processing paper with ISHIZUKA GLASS' expertise in processing and filling paper containers for a diverse range of contents including milk, juice, soft drinks, tea beverages, and soups. We have established a domestic integrated production system covering papermaking of base papers through to



Oji Homes Aoyama (located in Minamiaoyama, Minato-ku, Tokyo)

### Oji Real Estate

Oji Real Estate Co., Ltd. is a general developer active nationwide in the development and sales of condominiums and single-family homes, lease and management of office buildings, condominiums, and commercial facilities, and the renovation business. We also have a construction division that conducts design, supervision, and consultation in a wide range of areas including factories and plants as well as public and private facilities.



Drink cartons made using base paper manufactured by the Oji Group

laminate processing and beverage packaging. By selling superior filling equipment from both Japan and overseas, as well as providing service and maintenance, we are also supporting companies involved in the handling of delicate paper container beverages.

By moving away from our former dependence on overseas sources of base paper, and establishing Japan's first integrated production systems for paper beverage containers, we can ensure stable supply of high-quality, safe, and dependable products to dairy and beverage manufacturers throughout Japan.