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Chapter  
**01**

# Our Value Creation Story

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# Our History of Value Creation

The origins of Japan Pulp & Paper can be traced back to 1845, when the traditional Japanese paper (washi) merchant Echisan Shoten was founded in Kyoto. Since then, we have continued to create value while constantly grasping the changes of the times and society and transforming our business. We will contribute to the sustainable development of society by identifying the areas in which we should demonstrate the strengths we have cultivated, drawing up management strategies, taking on challenges, and mobilizing the collective strength of the group.

## 1845-

### Market Needs and Social Issues

With the establishment of a modern market-oriented society in Japan, demand for paper for newspapers, magazines, books and other products increases, and the paper manufacturing industry expands

### Initiatives and Strategies of the Japan Pulp & Paper Group

- Founded as a traditional Japanese paper (washi) merchant
- First in Japan to trade in machine-made paper
- Expansion of scope of operations as a distributor for paper manufacturers in Japan



- 1845 Echisan Shoten established in Kyoto as a merchant in the trade of traditional Japanese paper (washi).
- 1876 First in Japan to trade in machine-made paper.
- 1899 Shanghai Nakai established.
- 1955 Hong Kong Representative Office opened.
- 1967 New York Representative Office opened.

## 1970-

### Market Needs and Social Issues

Paper demand in Japan expands further after a period of rapid economic growth. Applications for paper become more diversified. Japan becomes one of the world's leading paper and paperboard producing countries.

Interest in recycling increases rapidly due to measures to reduce waste and resource/energy issues associated with a global oil crisis

### Initiatives and Strategies of the Japan Pulp & Paper Group

- Strengthening competitiveness through mergers
- Enhancing management base by listing stock
- Entry into the wastepaper recycling business



- 1970 Japan Pulp & Paper formed through a merger with Fuji Yoshiten.
- 1972 Listed on the Tokyo Stock Exchange. Dusseldorf Representative Office opened.
- 1973 JP Resources established, marking the group's full-scale entry into the wastepaper recycling business.
- 1979 JP Information Center established, marking the group's entry into the ICT business.
- 1998 Safeshred (of the US) joins the group.

## 2000-

### Market Needs and Social Issues

- Demand for paper and paperboard in Japan reaches its peak
- Activities to protect nature and forest resources spread globally, resulting in increased demand for eco-friendly materials such as paper with forest certification

### Initiatives and Strategies of the Japan Pulp & Paper Group

- Entry into the paper manufacturing business (containerboard and printing paper using recovered paper as a raw material)
- Entry into the comprehensive recycling business, including waste plastic recycling
- Acquisition of ISO 14001 certification and forest certification (FSC®/PEFC) at Japan Pulp & Paper



- 2003 Taiho Paper and Indonesia's Oriental Asahi JP Carton Box (OAJ) join the group.
- 2007 Kawabe Biomass Power Generation begins power generation from woody biomass. Eco-Port Kyushu established.
- 2009 Transfer of the paper manufacturing business of Tokiwa to Eco Paper JP.

## 2010-

### Market Needs and Social Issues

- In Japan, due to structural issues in society such as population decline and digitalization, demand for printing and communication paper decreases. Paperboard production exceeds paper production for the first time in 2020.
- Paper begins to gain greater attention as a material that supports resource recycling and the elimination of plastics as part of efforts to realize a sustainable society

### Initiatives and Strategies of the Japan Pulp & Paper Group

- Entry into the recycled household paper manufacturing business
- Expanding the Non-Japan Wholesaling segment
- Strengthening the renewable energy power generation business



- 2010 Gould Paper, a leading US paper merchant, joins the group.
- 2011 Corelex Group joins the group.
- 2012 KCT Trading, an Indian paper merchant, joins the group.
- 2015 Eco Power JP begins operation of Kushiro Onbetsu Solar Power Generation Plant.
- 2016 Noda Bio Power JP begins power generation from woody biomass.
- 2017 Ball & Doggett Group, the largest paper merchant in Oceania, joins the group. Fukudasansho, a major Japanese wastepaper trading company, joins the group.
- 2018 In Southeast Asia, paper merchants Spicers Paper (Singapore) (now OVOL Singapore) and Spicers Paper (Malaysia) (now OVOL Malaysia) join the group. OVOL New Energy established.
- 2019 Premier Paper Group, a leading paper merchant in the UK, joins the group.
- 2022 Osaka Paperware Mfg. and Misuzushigyo, containerboard manufacturers in Osaka, join the group.

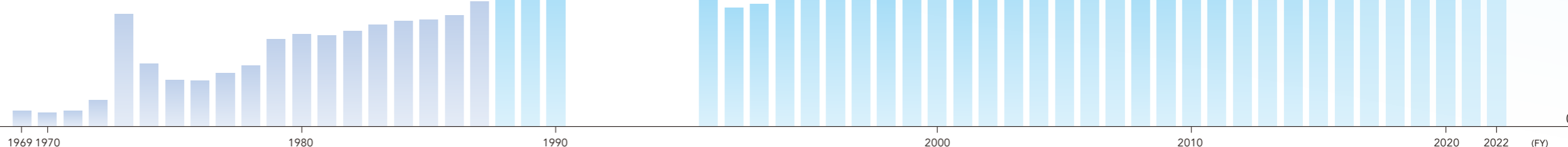
Fostering the Japan Pulp & Paper Group's unique strengths based on trust



Fiscal 2022 Consolidated Ordinary Profit  
**JPY 21,233 million**

### Ordinary Profit

- Non-consolidated
- Consolidated



Introduction  
Our Value Creation Story  
Strategies and Strengths  
Foundation for Sustainable Growth  
Data

Corporate Philosophy

▶ Page 2

OVOL Vision 2030

▶ Pages 8, 32

Material Issues ▶ Pages 57-59

Environment	Society	Employees	Governance
<ul style="list-style-type: none"> <li>Climate Change</li> <li>Biodiversity</li> <li>Resource Recycling</li> <li>Environmental Impact</li> </ul>	<ul style="list-style-type: none"> <li>Supply Chain</li> <li>Communities</li> <li>Digitalization</li> </ul>	<ul style="list-style-type: none"> <li>Work Environment</li> <li>Diversity and Inclusion</li> </ul>	<ul style="list-style-type: none"> <li>Corporate Governance</li> <li>Compliance</li> <li>Stakeholder Engagement</li> </ul>

Social and Business Issues

- Climate change and decarbonized society
- Biodiversity and forest conservation
- Depletion of water resources and water pollution
- Circular economy
- Social demand for respect for human rights and diversity
- Human capital management
- Digitalization
- Changes in people's awareness of the environment
- Harmonious coexistence with local communities
- Geopolitical risks
- Declining birthrate and aging population in Japan
- Changing world population and demographics
- Disclosure of ESG initiatives

Inputs

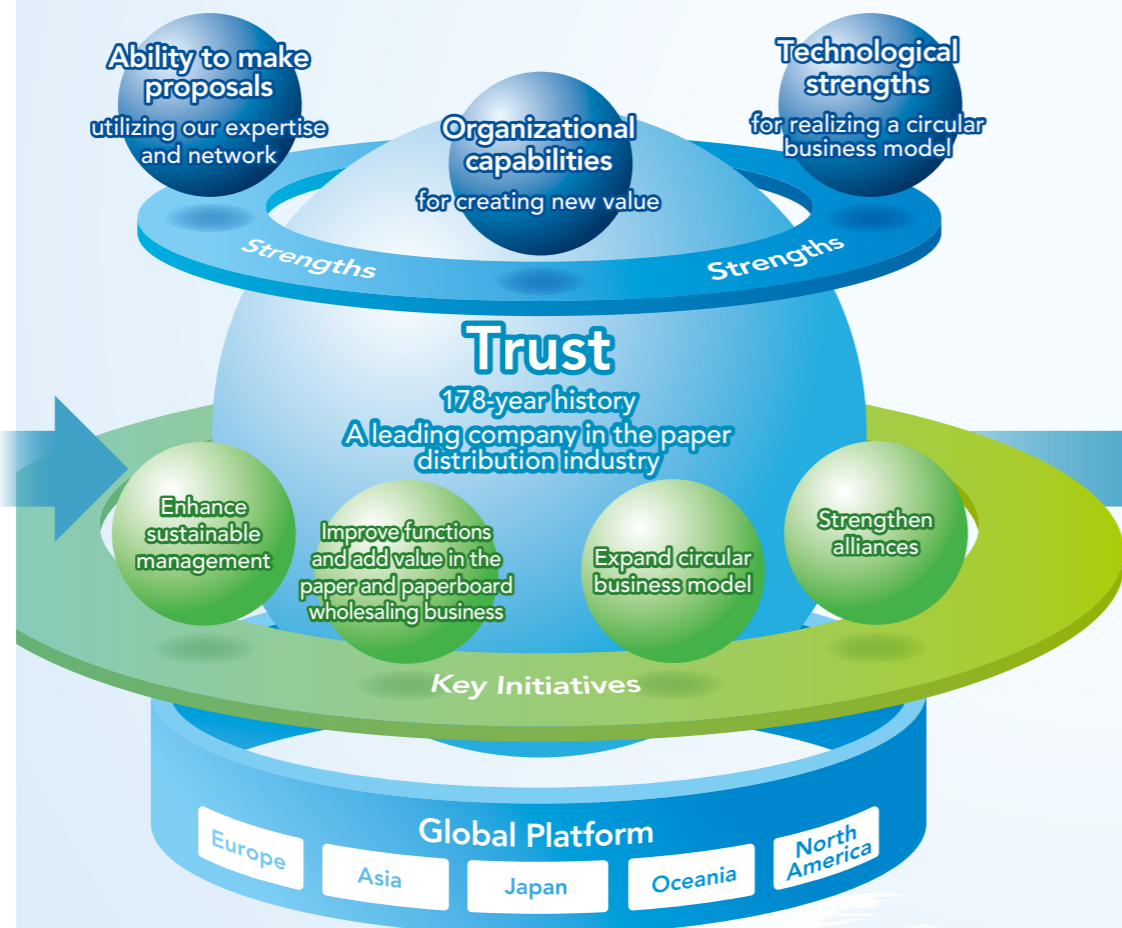
▶ Pages 18-19

Note: As of March 31, 2023

- Human Capital**
- Quality human resources and status as an industry-leading company
  - Number of consolidated employees: 4,338
  - Percentage of female employees (parent company): 38.4%
  - Percentage of employees working outside of Japan: 48.3%
  - Average length of service of parent company employees: 19.7 years
- Financial Capital**
- Sound financial base and ability to procure funds
  - Net assets: JPY128,295 million
  - Interest-bearing debt: JPY108,887 million
  - Net D/E ratio: 0.66 times
  - Free cash flow: JPY23,977 million
  - Issuer credit rating: A
- Manufactured Capital**
- Distribution sites around the world
  - Paper mills with unique technologies
  - 92 distribution sites for wholesaling businesses
  - 15 manufacturing and processing sites
  - 29 recycling business sites
  - 5 renewable energy sites
  - 13 rental properties
- Intellectual Capital**
- Expertise and ability to make proposals in the paper business
  - Expertise in paper manufacturing, processing, sales, wastepaper collection, and environmental businesses
  - Paper distribution IT systems
- Social and Relationship Capital**
- Networks and relationships of trust with business partners built over 178 years
  - Good relationships with communities near business sites
- Natural Capital**
- Wood, water, raw materials derived from fossil fuels, fossil fuels, woody biomass, and solar power

Business Model

▶ Pages 20-23

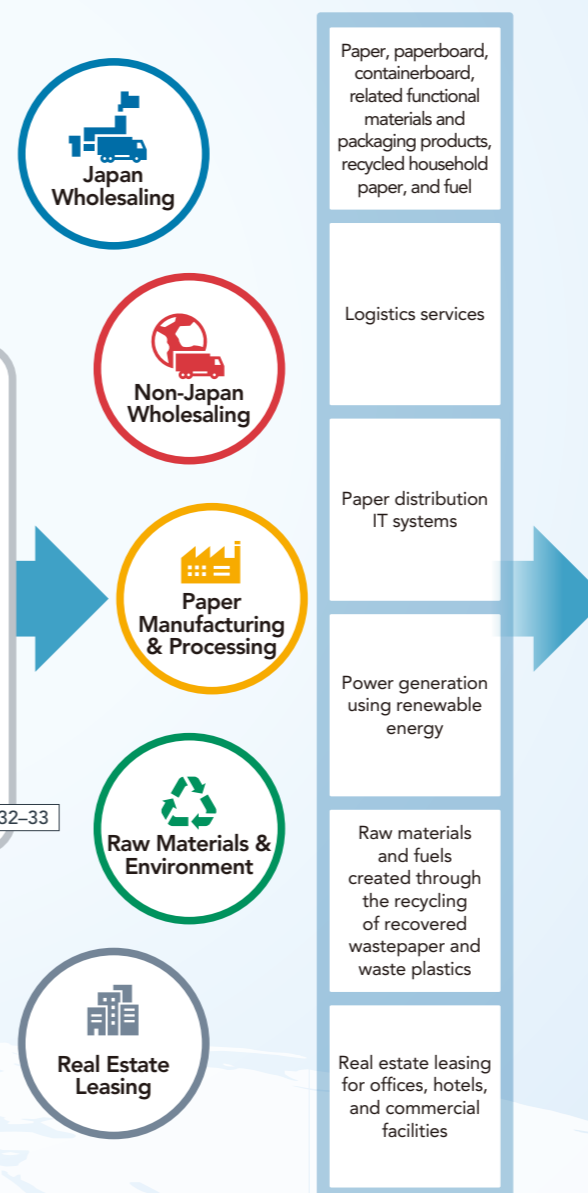


Medium-term Business Plan 2023  
▶ Pages 9, 32-33

Outputs

▶ Pages 38-51

Group Products and Services



Outcomes

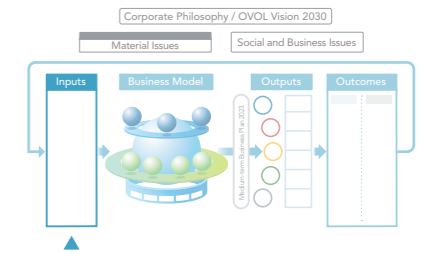
▶ Pages 24-25

Value for Stakeholders Created through Our Business Activities and Outputs

- Direct Outcomes**
- Executives and Employees**
- Stable, long-term employment opportunities
  - Growth opportunities through education and on-the-job training
  - Well-being
- Customers**
- Improve the value of customers' products by proposing new products and services such as material mix coordination
  - Create new business models
  - Stable procurement of paper and paperboard
  - Reduce financial burden and improve creditworthiness by providing trading company finance
  - Acquire new business opportunities for customers by creating demand through educational activities for consumers and society to reaffirm the value of paper
- Suppliers**
- Consigning sales to the group results in:
    - Reliable sales
    - Sales opportunity expansion
    - Optimized production and reduction of inventory risk
    - Creation of product development opportunities by providing information concerning market needs
  - Stable procurement of recovered paper raw materials
- Shareholders and Investors**
- Dividends
  - Stock price increases in line with earnings growth
- Communities**
- Job creation
  - Tax payment
  - Reduce waste by recycling wastepaper
  - Community contribution through activities such as disaster support and human resource development
- Environment**
- Resource recycling by reusing wastepaper and waste plastic
  - Promote reduction of CO<sub>2</sub> emissions through the use of renewable energy
- Indirect Outcomes**
- Culture**
- Enhanced enrichment of life through understanding of the true value of paper
- Education**
- Paper is beneficial to education
- Industry**
- Ensure stable procurement of paper and paperboard products for a wide-range of industries beyond those of our customers
  - Revitalization of the industry through use of paper-based packaging that is easy to recycle and has lower environmental impact
  - Contribution to environmental conservation efforts in the supply chain through promotion of recycling
  - Improve business foundation and standing of the pulp and paper industry and business partners through educational activities to reaffirm the value of paper
- General Consumers**
- Opportunities to participate in a circular economy
  - Stable purchase of daily necessities that are environmentally friendly
  - Enrichment of daily life through paper and paperboard products
- Communities**
- Revitalization of local economies and environmental conservation
  - Reduce burden on incineration facilities by recycling wastepaper
  - Enhance the value of resource recycling initiatives through educational activities to reaffirm the need to recycle
- Environment**
- Lower CO<sub>2</sub> emissions by reducing waste through recycling
  - Promote the sustainable use of forest resources through the use of recovered paper materials
  - Conserve biodiversity

## Management Capital (Inputs)

The Japan Pulp & Paper Group invests its six forms of management capital in the value creation process to support ongoing business activities and increase corporate value. The group is committed to sustainable business management that realizes both social and economic value and reinvests in the value creation process to strengthen and increase each form of management capital.



### Human Capital ▶ For details, see "Employees" on pages 69–72.

**Quality human resources** and status as an **industry-leading company**

Number of consolidated employees  
**4,338**

Percentage of female employees (parent company)  
**38.4%**

Percentage of employees working outside of Japan  
**48.3%**

Average length of service of parent company employees  
**19.7** years

Human capital is the most important form of management capital for achieving the group's goal of becoming a corporate group that strives to be considered a trustworthy and engaging partner both within and beyond the paper industry. The creation of new value, which is achieved by organically combining extensive expertise in the paper business with internal and external assets, is based on human capital. We will further strengthen our human capital by qualitatively and quantitatively hiring highly skilled people and empowering them to generate value by leveraging their diversity, individuality, and ideas. We are also committed to creating a corporate culture in which all employees can continue to work enthusiastically and in good health.

### Financial Capital ▶ For details, see "Financial Strategies" on pages 34–37.

**Sound** financial base and ability to procure funds

Net assets  
**JPY128,295** million

Interest-bearing debt  
**JPY108,887** million

Net D/E ratio  
**0.66** times

Free cash flow  
**JPY23,977** million

Issuer credit rating  
**A**

The group is further increasing its corporate value by diversifying its businesses, reinforcing existing platforms, and creating value by strengthening alliances. The group also needs to enhance its financial capital because it is the source of funding for investments that will strengthen earnings. Our financial capital features stable earnings from a well-balanced business portfolio and high-quality receivables based on the relationships of trust built with business partners that the group has nurtured over the years. It also features stable and sound finances as a result of a practice of maintaining strict financial discipline and thorough management and execution of measures to ensure capital efficiency. The group is committed to improving its corporate value by investing the cash it generates from its financial capital in the value creation process.

### Manufactured Capital ▶ For details, see "Business Segments" on pages 40–51.

Distribution sites **around the world**

Paper mills with **unique technologies**

Distribution sites for wholesaling businesses  
**92**

Manufacturing and processing sites  
**15**

Recycling business sites: **29**  
(Wastepaper yards: 28; Comprehensive recycling business sites: 1)

Renewable energy-related business sites: **5**  
(Renewable energy power plants: 3; Palm kernel shell storage sites: 2)

Rental properties: **13**

Guided by OVOL Vision 2030, the group is refining its expertise and network in the paper and paperboard wholesaling business to become recognized as the world's leading paper distribution group. We must therefore establish distribution sites in markets around the world, and provide the highest level of locally rooted services in the key markets of the countries and regions we serve. The group also intends to increase its manufactured capital, one of its strengths, to encompass the manufacturing and processing of wastepaper as a raw material, which also includes the businesses of wastepaper collection and recycling. Furthermore, our commitment to contributing to the realization of a circular economy involves the renewable energy power generation business.

### Intellectual Capital

**Expertise** and **ability to make proposals** in the paper business

**Expertise** in paper manufacturing, processing, sales, wastepaper collection, and environmental businesses

**Paper distribution IT systems**

The group has been involved in the paper business for 178 years. Its extensive knowledge and experience related to paper and other materials, peripheral markets such as printing and processing, and the entire supply chain is a potent strength. This intellectual capital is unique to the group.

The Corelex Group, which is engaged in the recycled household paper manufacturing business, has a proprietary technology for removing foreign matter in the wastepaper pulping process. This technology enables the recycling of difficult-to-recycle wastepaper for use as a raw material for paper manufacturing.

Furthermore, the group uses all of its intellectual capital to create new value in ways such as developing and marketing paper distribution IT systems. We will improve our ability to make proposals utilizing our expertise and network while quickly turning ideas into realities to increase the group's corporate value.

### Social and Relationship Capital

**Networks and relationships of trust** with business partners built over **178 years**

**Good relationships with communities** near business sites

The group has built relationships of trust with stakeholders including business partners over 178 years. This social and relationship capital is unique to the group, and helps us create business opportunities and maintain our reputation in the markets we serve.

The group needs to address major changes in the market, such as the continued decline in demand for paper due to population decline and digitalization. Part of that effort will involve greater collaboration with various stakeholders, including communities, to realize both social and economic value and the sharing of information through dialogue to strengthen our relationship and grow together.

### Natural Capital ▶ For details, see "Environment" on pages 60–66.

**Wood**

**Water**

**Raw materials derived from fossil fuels**

**Fossil fuels**

**Woody biomass**

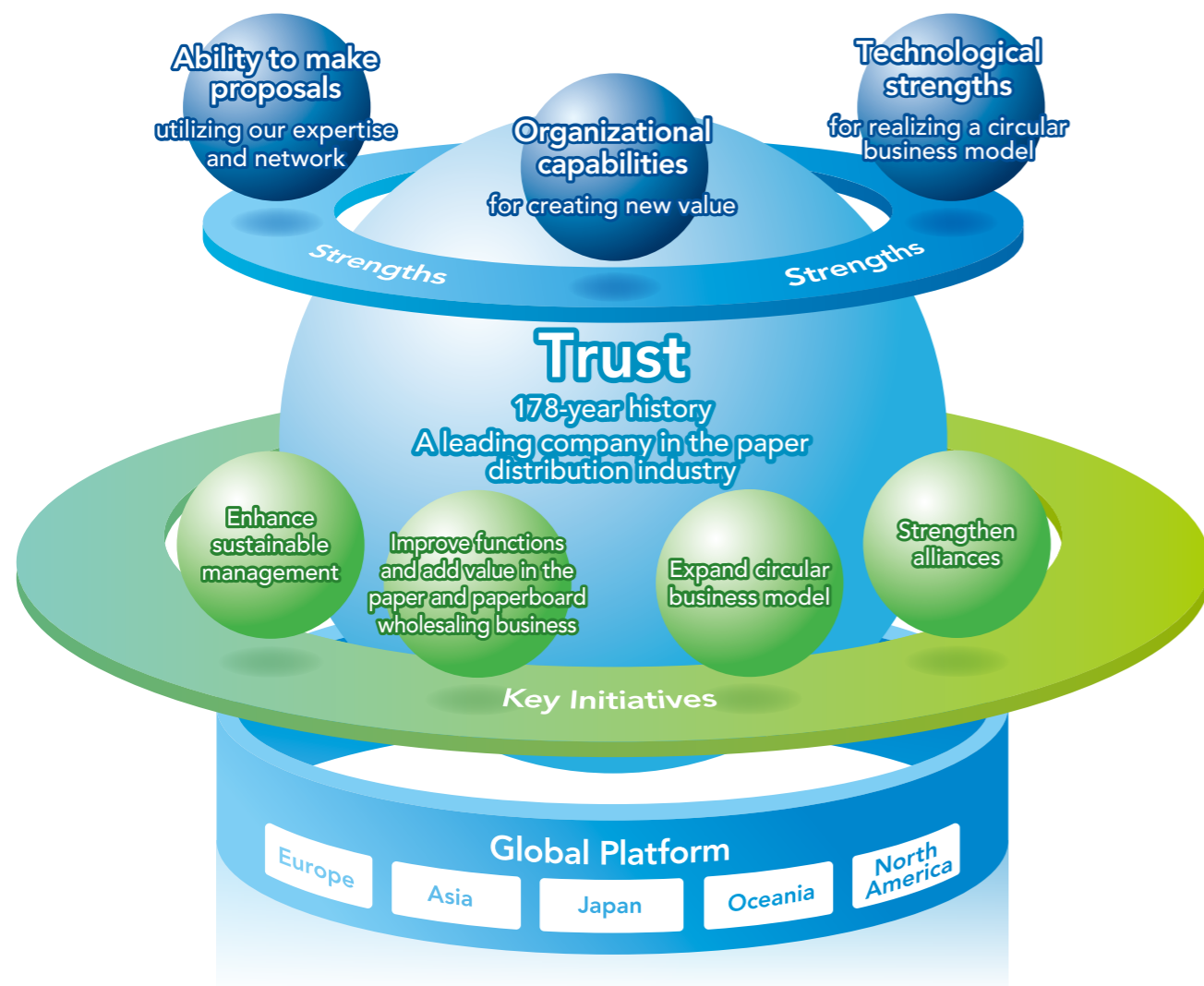
**Solar power**

The group's business activities are closely related to natural capital, which encompasses the use of wood, water, and fossil-derived materials as product-related raw materials, and fossil fuels as energy sources. We are using the power of natural capital to build our businesses. For example, the renewable energy power generation business, which includes woody biomass and solar power, promotes initiatives related to decarbonization. Furthermore, the group operates in the wastepaper and waste plastic recycling businesses, and in so doing aims to create a circular economy that supports the recycling and conservation of natural capital. We will enhance our environmental knowledge, expertise, and technology to efficiently use natural capital and reduce our environmental impact. Our initiatives to conserve the global environment and create economic value will help us fulfill our corporate social responsibility.



Throughout its long history, the Japan Pulp & Paper Group has worked to build a unique business model based on trust. The group will further evolve this business model to realize both social and economic value.

## A Business Model Based on Trust



We have continued to build trust over our 178-year history with a commitment to what we do as a leading paper distribution group. Our Corporate Philosophy identifies integrity, fairness, and harmony as our core values, and everything we do begins and ends with our Corporate Philosophy. The trust we receive from our stakeholders is a major asset and the source of the group's unique strengths.

### Three Strengths

#### 1 Ability to make proposals utilizing our expertise and network

Our 178-year history in the paper industry gives the group confidence in its strengths, which include extensive knowledge, expertise, and experience related to paper and other materials, peripheral markets such as printing and processing, and the entire paper supply chain. We leverage these strengths, our global network, and strong relationships of trust with business partners to offer the optimal products and appropriate processing technologies according to customer needs and application. We will demonstrate our ability to make proposals to coordinate every step from development to delivery, striving to create new value by rediscovering the value of paper and exploring all possibilities.

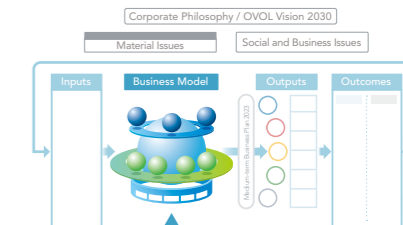
#### 2 Technological strengths for realizing a circular business model

We see our paper recycling technology as a powerful technological strength that helps us realize a circular business model unique to the group. In each of the Corelex companies in the group we deploy this technology to manufacture household paper from recovered wastepaper materials that are difficult to recycle. The Corelex Group transformed milk cartons and paper cups into recycled resources—items that are now commonly recycled. We are also developing new recycling systems by creating innovative technologies for applications such as transforming laminated paper, aluminum packing paper, and used paper plates into recycled resources. We have been involved in recycling wastepaper into a resource since the 1970s, and we will organically link our unique technological strengths to this and other businesses to promote resource recycling, take part in resolving social issues, and contribute to the creation of a society that recycles.

#### 3 Organizational capabilities for creating new value

The group is able to create new value by integrating group functions and competitive advantages, and these organizational capabilities are a group strength. The 127 group companies around the world employ their various functions and capabilities in a broad array of businesses centered on paper in five segments: Japan Wholesaling, Non-Japan Wholesaling, Paper Manufacturing & Processing, Raw Materials & Environment, and Real Estate Leasing. In addition, the group will exercise its organizational capabilities within alliances that combine its assets with those of external business partners. Our organizational capabilities allow us to create new value as we utilize a unique tapestry of functions and strengths. The group intends to exercise new functions and provide greater added value while deploying its organizational capabilities to further expand its businesses, which will further enhance the group's unique strengths.

► See "Value Creation Examples" on pages 26–29 for examples of initiatives that leverage the group's unique strengths to create value.



#### The Japan Pulp & Paper Group's Ability to Make Proposals

##### Wholesaling

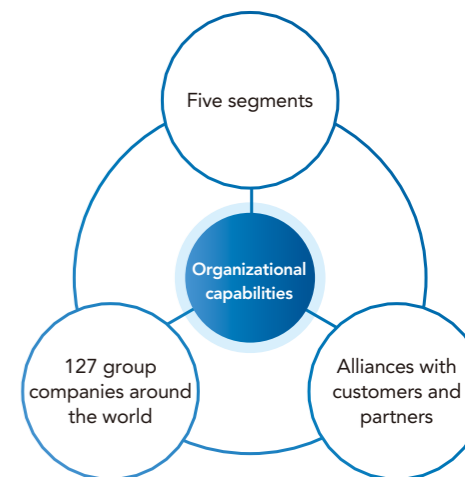
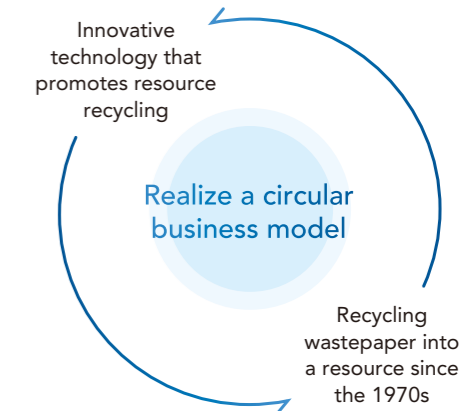
Our ability to make proposals involves coordinating everything from selecting the optimum product to meet the needs of society to development and delivery by making use of our technological strengths to realize appropriate processing.

##### Manufacturing

Our ability to make proposals contributes to developing products that meet the new demands of society using our technological strengths.

##### Environment

Our ability to make proposals to promote resource recycling using the organizational capabilities of the group



**Business Model**

The Japan Pulp & Paper Group leverages its three strengths (the ability to make proposals, technological strengths, and organizational capabilities) in working to realize its long-term vision. As such, we are promoting the following four key initiatives: improve functions and add value in the paper and paperboard wholesaling business; strengthen alliances; expand circular business model; and enhance sustainable management.

**Four Key Initiatives**

**1 Improve functions and add value in the paper and paperboard wholesaling business**

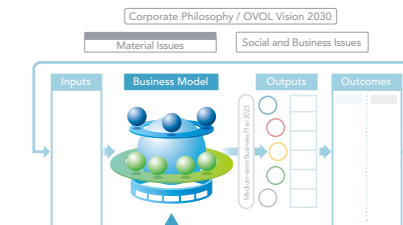
<b>Reason for Selection and Goal</b>	In order to continue to be selected by customers, it is crucial that we provide the functions and added value customers need to improve their businesses. In addition to analyzing information such as market trends, we make full use of the product and peripheral knowledge we have cultivated to date. We are expanding functions and increasing added value in order to make proposals that help customers manage their business operations, such as proposals for optimizing overall logistics or realizing a circular business model that includes recycling items post-sale.
<b>Initiative Status</b>	Paper and paperboard are ubiquitous materials that are difficult to differentiate. We need to leverage the relationships of trust we have built with customers over many years and make proposals that employ the organizational capabilities that combine our ability to make proposals and technological strengths. This will enable us to help improve the business of our customers, effectively providing the new functions and added value the group offers along with products that already offer value.

**2 Strengthen alliances**

<b>Reason for Selection and Goal</b>	Strengthening alliances throughout the group is key to value creation and will involve utilizing our ability to make proposals, technological strengths, and organizational capabilities. The group has built relationships of trust over many years, and we have business partners in a variety of businesses and regions. We understand the importance of strengthening and expanding alliances with them.
<b>Initiative Status</b>	Paper and paperboard are bulky, which makes strengthening our alliances geographically the key to creating an efficient inventory and delivery network that serves local production and consumption. In addition, market trends including population decline and digitalization suggest a downward trend in demand for paper and paperboard, so alliances will be important for improving efficiency. Our alliances with business partners will be the catalyst for developing new products, services, and businesses.

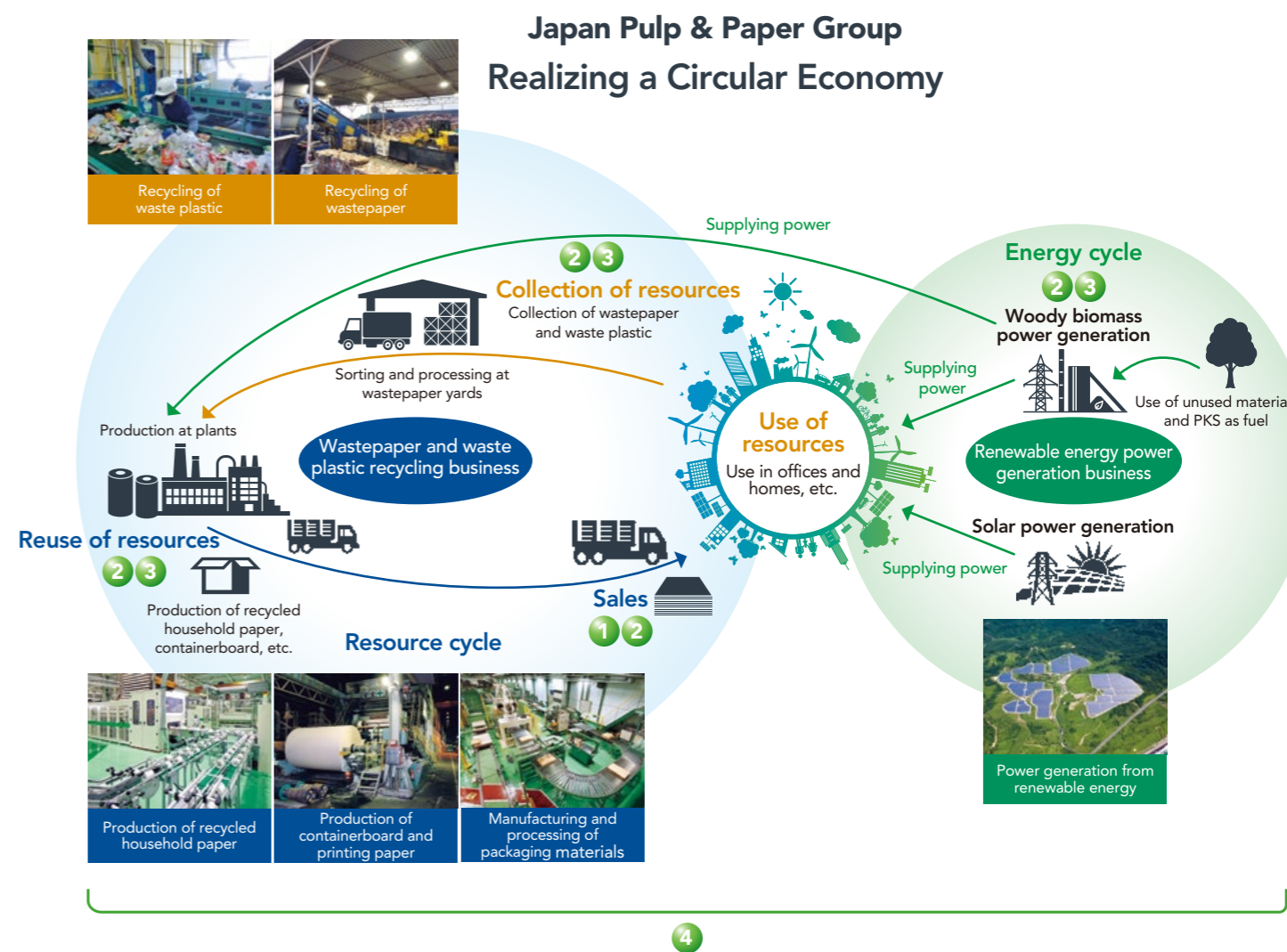
**3 Expand circular business model**

<b>Reason for Selection and Goal</b>	We will contribute to solving social issues by expanding our circular business model, which leverages the group's strengths. We have been further enhancing sorting quality in our wastepaper recovery business to help maintain and promote a circular business model in the Japanese paper industry with a focus on stably supplying paper manufacturers in Japan. In addition, our renewable energy power generation business contributes to reducing CO <sub>2</sub> emissions.
<b>Initiative Status</b>	In the resource cycle, in addition to the wastepaper recovery business, we are manufacturing household paper using difficult-to-recycle wastepaper. We are also expanding our comprehensive recycling business with an emphasis on recycling plastic materials, thus achieving both waste reduction and resource recycling. In addition, the energy cycle includes the use of woody biomass as renewable energy for paper mills that employ used paper as a raw material.



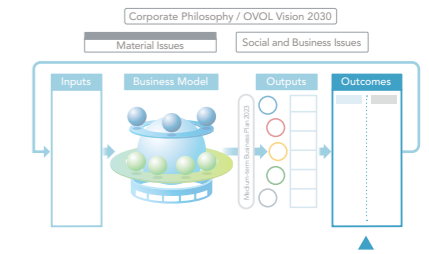
**4 Enhance sustainable management**

<b>Reason for Selection and Goal</b>	As society now expects companies to contribute to environmental, social, and economic sustainability, the group is working to enhance sustainable management, based on the recognition that it is important to realize both social and economic value.
<b>Initiative Status</b>	On April 1, 2022, we established the Executive Sustainability Committee and the Corporate Sustainability Division. We also established the Sustainability Policy as a way to link our Corporate Philosophy to sustainable management. We also conducted related initiatives such as revising our Charter of Corporate Behavior and Code of Conduct for Executives and Employees. In January 2023, we signed the United Nations Global Compact (UNGC), and are promoting further sustainability initiatives in line with the 10 principles advocated by the UNGC. We will promote awareness and understanding of sustainable management, and encourage all executives and employees to embrace that approach in order to drive initiatives that increase corporate value and achieve sustainable development.



# Creating Value for Stakeholders

The Japan Pulp & Paper Group creates direct outcomes and indirect outcomes for its stakeholders through a business model based on trust. Going forward, the group will continue to engage in sustainable business activities that realize both social and economic value.



## Direct Outcomes

Stakeholders	Direct Outcomes	Examples of Initiatives
Executives and Employees	<ul style="list-style-type: none"> <li>Stable, long-term employment opportunities</li> <li>Growth opportunities through education and on-the-job training</li> <li>Well-being</li> </ul>	<ul style="list-style-type: none"> <li>Improving engagement by instilling the group's corporate philosophy</li> <li>Extension of retirement age</li> <li>Promote dialogue between management and employees</li> <li>Create an environment where executives and employees can work comfortably and make the most of their abilities</li> </ul>
Customers	<ul style="list-style-type: none"> <li>Improve the value of customer's products by proposing new products and services such as material mix coordination</li> <li>Create new business models</li> <li>Stable procurement of paper and paperboard</li> <li>Reduce financial burden and improve creditworthiness by providing trading company finance</li> <li>Acquire new business opportunities for customers by creating demand through educational activities for consumers and society to reaffirm the value of paper</li> </ul>	<ul style="list-style-type: none"> <li>An extensive lineup of products to suit all users, needs, and applications</li> <li>Supply of products at the right price, volume, and time</li> <li>Global paper and paperboard distribution network</li> <li>Provide products with low environmental impact that resolve social issues</li> <li>Propose new business models for co-creation</li> <li>Recycle the paper and plastic used in product packaging</li> <li>Sponsor campaigns related to paper books and hold events to reaffirm the value of paper</li> </ul>
Suppliers	<ul style="list-style-type: none"> <li>Consigning sales to the group results in:                             <ul style="list-style-type: none"> <li>Reliable sales</li> <li>Sales opportunity expansion</li> <li>Optimized production and reduction of inventory risk</li> <li>Creation of product development opportunities by providing information concerning market needs</li> </ul> </li> <li>Stable procurement of recovered paper raw materials</li> </ul>	<ul style="list-style-type: none"> <li>Revitalize pulp and paper-related industries by improving the value of paper through the implementation of educational activities</li> <li>Create sales opportunities</li> <li>Enhance wastepaper supply network</li> </ul>
Shareholders and Investors	<ul style="list-style-type: none"> <li>Dividends</li> <li>Stock price increases in line with earnings growth</li> </ul>	<ul style="list-style-type: none"> <li>Realize OVOL Vision 2030 and implement Medium-term Business Plan 2023</li> <li>Promote sustainable management and disclose information in response to requests related to ESG</li> </ul>
Communities	<ul style="list-style-type: none"> <li>Job creation</li> <li>Tax payment</li> <li>Reduce waste by recycling wastepaper</li> <li>Community contribution through activities such as disaster support and human resource development</li> </ul>	<ul style="list-style-type: none"> <li>Realize OVOL Vision 2030 and implement Medium-term Business Plan 2023</li> <li>Expand resource collection in cooperation with local governments</li> <li>Conclude disaster prevention agreements with local governments and establish human resource development funds</li> </ul>
Environment	<ul style="list-style-type: none"> <li>Resource recycling by reusing wastepaper and waste plastic</li> <li>Promote reduction of CO<sub>2</sub> emissions through the use of renewable energy</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen the recycling business for wastepaper and waste plastic</li> <li>Manufacture printing paper, containerboard, and household paper using wastepaper as a raw material</li> <li>Manufacture recycled pulp and recycled plastic materials</li> </ul>

## Indirect Outcomes

Stakeholders	Indirect Outcomes	Examples of Initiatives
Culture	<ul style="list-style-type: none"> <li>Enhanced enrichment of life through understanding of the true value of paper</li> </ul>	<ul style="list-style-type: none"> <li>Sponsor campaigns related to paper books to increase awareness of the functions and value of paper, its new possibilities, and other benefits</li> </ul> <p><b>How does paper enrich people's lives?</b> For example, flipping through the pages of a book gives you a sense of how the story unfolds and the overall picture. Writing a letter not only lets you convey and organize your thoughts but is also a tactile experience.</p>
Education	<ul style="list-style-type: none"> <li>Paper is beneficial to education</li> </ul>	<ul style="list-style-type: none"> <li>Hold events to reaffirm the value of paper to increase awareness such as through reading, writing, and learning on paper</li> </ul> <p><b>How is paper beneficial to education?</b> Education encompasses more than simply gathering information. Writing or marking on paper allows one to physically experience something that would otherwise be intangible.</p>
Industry	<ul style="list-style-type: none"> <li>Ensure stable procurement of paper and paperboard products for a wide-range of industries beyond those of our customers</li> <li>Revitalization of the industry through use of paper-based packaging that is easy to recycle and has lower environmental impact</li> <li>Contribution to environmental conservation efforts in the supply chain through promotion of recycling</li> <li>Improve business foundation and standing of the pulp and paper industry and business partners through educational activities to reaffirm the value of paper</li> </ul>	<ul style="list-style-type: none"> <li>Stable supply of daily necessities such as printing and communication paper, household paper, and containerboard</li> <li>Recycle wastepaper and waste plastic</li> <li>Sponsor campaigns related to paper books and hold events to reaffirm the value of paper</li> </ul>
General Consumers	<ul style="list-style-type: none"> <li>Opportunities to participate in a circular economy</li> <li>Stable purchase of daily necessities that are environmentally friendly</li> <li>Enrichment of daily life through paper and paperboard products</li> </ul>	<ul style="list-style-type: none"> <li>Support resource recycling in homes and communities through the recycling of wastepaper and waste plastic</li> <li>Provide opportunities for tours of recycled paper manufacturing mills and recycling facilities to promote understanding of paper, which is an environmentally friendly and sustainable material, as well as resource recycling</li> <li>Provide opportunities to purchase environmentally friendly products at reasonable prices</li> </ul>
Communities	<ul style="list-style-type: none"> <li>Revitalization of local economies and environmental conservation</li> <li>Reduce burden on incineration facilities by recycling wastepaper</li> <li>Enhance the value of resource recycling initiatives through educational activities to reaffirm the need to recycle</li> </ul>	<ul style="list-style-type: none"> <li>Establish recycling systems in communities in cooperation with local governments</li> <li>Promote understanding of resource recycling by providing opportunities for tours of recycled paper manufacturing mills and recycling facilities</li> </ul>
Environment	<ul style="list-style-type: none"> <li>Lower CO<sub>2</sub> emissions by reducing waste through recycling</li> <li>Promote the sustainable use of forest resources through the use of recovered paper materials</li> <li>Conserve biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>Contribute to the environment through the group's supply chain, from the collection of wastepaper to the commercialization of products</li> <li>Reduce CO<sub>2</sub> emissions through efficient logistics and shortening of delivery distances resulting from optimized inventory locations</li> </ul>



Value Creation Example

1



### Promoting Resource Recycling through a Unique Wastepaper Processing Technology

## Corelex Shin-Ei's "Smart Flower"

Within the Japan Pulp & Paper Group, the Corelex Group has established a proprietary contaminant removal technology. This technology enables the recycling of difficult-to-recycle wastepaper and contributes to the realization of a circular economy. Corelex Group company Corelex Shin-Ei, located in Fuji City, Shizuoka Prefecture, has utilized this revolutionary wastepaper recycling technology to launch a coreless toilet paper and tissue paper box set, which also exemplifies our efforts to reduce CO<sub>2</sub> emissions. Corelex Shin-Ei reflects both environmental and customer needs in its household paper products to create new value.

Social Issues and Solutions Proposed by the Japan Pulp & Paper Group

### Recycling Discarded Difficult-to-Recycle Wastepaper

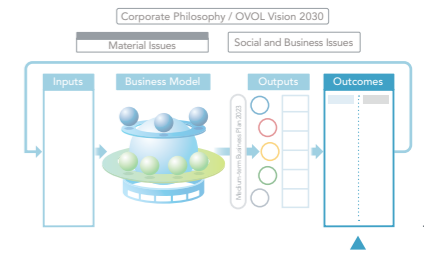
Japan has long been a proponent of recycling paper. In comparison with other developed countries/regions such as the United States and Europe, wastepaper collection is at a high level in Japan (wastepaper collection rate of 80%). However, paper cartons containing aluminum, paper covered with film and other materials, duplicate slips, dirty food containers, and similar items are often simply discarded or incinerated because they are not suitable for use as a raw material for paper manufacturing.

The Corelex Group manufactures recycled household paper as part of the Japan Pulp & Paper Group, and is working to utilize difficult-to-recycle wastepaper in order to make more effective use of limited resources. The Corelex Group's proprietary contaminant removal technology makes it possible to extract only paper fibers from difficult-to-recycle wastepaper. In addition, storage boxes containing confidential documents discarded by companies and government institutions can be pulped and recycled without the need for opening and sorting them.

As the demand for paper declines, the shortage of wastepaper continues to grow. As part of its efforts to strengthen the collection of difficult-to-recycle wastepaper, the Corelex Group makes proposals to local governments and companies for the collection of mixed paper,<sup>1</sup> which was previously incinerated as garbage. In this way, the company is focusing on building win-win relationships where it ensures a supply of wastepaper for use as a raw material, and local governments, companies, and others can help reduce the amount of waste.

The Japan Pulp & Paper Group regards previously unutilized waste as a new resource, and will continue to contribute to the realization of a sustainable society by accelerating recycling that circulates resources.

1. Wastepaper that falls outside the category of items that are typically collected such as newspapers, containerboard, and milk cartons.



Specific Value Created

## Manufacturing Ethical Toilet Paper and Tissue Paper Using Difficult-to-Recycle Wastepaper

Corelex Shin-Ei manufactures and sells box sets of coreless toilet paper and tissue paper made from difficult-to-recycle wastepaper under the "Smart Flower" label.

Coreless toilet paper "One Touch Fuwahana" is a long roll-type made of 100% recycled paper, with a length of 70 meters per roll and 21 rolls in a package. This is equivalent to 49 rolls of standard 30-meter roll toilet paper, making it efficient to ship. It only uses half the usual amount of containerboard packaging, so it is also very environmentally friendly. In addition, by using a simple packaging design, in which products are directly packed into containerboard without individual packaging, we are contributing to the reduction of plastic waste.

"Hana Ippai Tissue" is a large-capacity 6-pack of 200 2-ply (400) sheets of 100% recycled paper, which is equivalent to 6.5 packs of 180 2-ply (360) sheets of standard tissue paper.

Corelex Shin-Ei uses its proprietary technology for recycling difficult-to-recycle wastepaper to recycle items such as mixed paper and confidential documents, which previously had to be incinerated, and is striving to reduce CO<sub>2</sub> emissions in the manufacturing process by conserving energy. In addition, toilet paper is directly packed into containerboard instead of being packaged individually, and comes in a long roll-type with more than twice the length of typical toilet paper. This helped us achieve a 53% reduction in CO<sub>2</sub> emissions (compared with manufacturing using virgin pulp) in the Decarbo Score,<sup>2</sup> which measures the reduction rate of CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e).

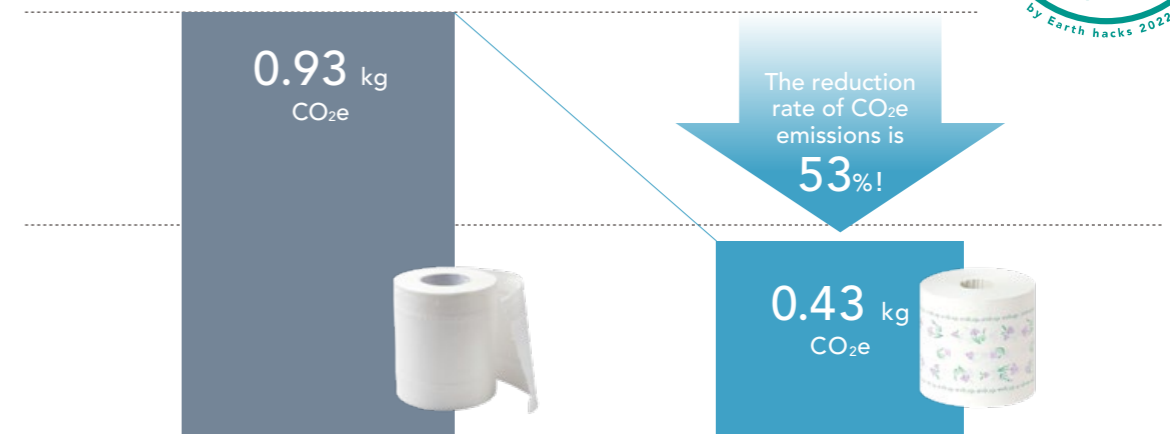
Furthermore, as the product can only be purchased online, Corelex Shin-Ei can ship it directly from the head office factory to its final destination, thereby contributing to a further reduction in CO<sub>2</sub> emissions.

2. Decarbo Score: The platform Earth hacks, which promotes a decarbonized society, shows the reduction rate of CO<sub>2</sub>e emissions from products and services. This indicator shows how much less CO<sub>2</sub> is emitted from a product compared with products made with conventional materials and methods. The Decarbo Score of a 53% reduction was determined by comparing CO<sub>2</sub>e emissions during the manufacture of toilet paper made from virgin pulp with toilet paper made from 100% recycled pulp (60% difficult-to-recycle wastepaper) using Corelex Shin-Ei's equipment.

<https://earthhacks.jp/> (Japanese only)



The Decarbo Score shows the reduction rate of CO<sub>2</sub>e emissions from this product.



In the case that standard virgin pulp toilet paper was manufactured by Corelex Shin-Ei With core, 70-meter roll (2.33 rolls equivalent)

"One Touch Fuwahana" 70-meter double-ply toilet paper manufactured by Corelex Shin-Ei Coreless, 70-meter roll/Difficult-to-recycle wastepaper containment rate of 60%





Value Creation Example

2

## Improving Product Value through Proposals and Manufacturing in Anticipation of Market and Customer Needs

# Oriental Asahi JP's New Plant

Containerboard is mainly used as a packaging material. It is also highly recyclable and contributes to the realization of a circular economy. In recent years, demand for containerboard boxes has increased dramatically in line with economic growth in the Asia-Pacific region, including Indonesia. Japan Pulp & Paper has long been engaged in containerboard box manufacturing in Indonesia through a joint venture with Asahi Shigyo. In order to meet recent strong demand for containerboard boxes in Indonesia, we built a new plant nearly double the size of the previous one and it is now operating smoothly.

### Social Issues and Solutions Proposed by the Japan Pulp & Paper Group

## Increase Production Capacity in Indonesia Due to Growing Domestic Demand for Containerboard Boxes

The global market for containerboard boxes reached approximately US\$200 billion in 2022, and the market is expected to grow at a compound annual growth rate (CAGR) of more than 2% from 2023 to 2028, reaching approximately US\$230 billion by 2028.

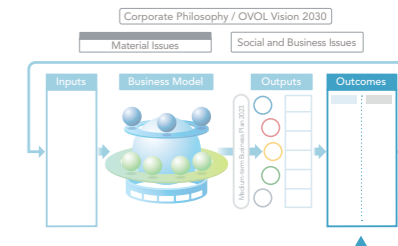
The increase in demand for containerboard boxes is largely due to the recent expansion of mail-order sales, in addition to the wide range of applications for them as packaging materials, such as boxes for food items, electronic products, chemicals, and household goods. In addition, the impact of non-biodegradable plastic packaging on the environment and ecosystems is further driving demand for containerboard boxes. In terms of recyclability, containerboard boxes are almost 100% recyclable paper resources, and we have a recovery rate of roughly 96% in Japan, including imported

containerboard boxes. This is another factor that further boosts the demand for highly recyclable containerboard boxes.

Containerboard can also be used for a variety of purposes other than packaging. For example, it can also be used as a cushioning material (as an alternative to polystyrene foam). Applications like this take advantage of the lightweight and sturdy nature of containerboard, as well as its recyclability. It has also been used to make simple beds for evacuation shelters in the event of a disaster.

Japan Pulp & Paper has been developing its containerboard box manufacturing business in Indonesia through PT Oriental Asahi JP Carton Box (OAJ), a joint venture with Asahi Shigyo.

In order to meet the growing demand in the Indonesian market, we built a new plant to increase production capacity, and began full-scale operation in September 2021.



### Specific Value Created

## Stable Supply of High-Quality Containerboard Boxes and Promotion of Sustainability Together with Customers

OAJ established a plant in West Java Province, Indonesia in 1992. The aim was to supply containerboard boxes with the same quality as those in Japan to Japanese companies exporting products from Indonesia. OAJ has consistently been highly evaluated by its Indonesian-based Japanese customers, who demand high quality and accurate deliveries, for establishing a high-value-added, small lot, high-variety, just-in-time delivery system (the same as in Japan).

In recent years, domestic demand for daily necessities, such as food and beverages, has been rapidly expanding in Indonesia due to the growth of the middle and affluent classes. As a result of OAJ's efforts to capture demand for containerboard boxes in the domestic market, it became necessary to further increase production capacity.

Therefore, we acquired a site in an industrial park adjacent to the old factory in December 2018, and started construction of the new factory in May 2019. Although the project was delayed by about a year due to the COVID-19 pandemic, the new factory was completed in June 2021. The land and building area are almost double that of the old factory, and the new factory is equipped with two corrugators, four printing/folding machines, and four flatbed die-cutting machines as its main production equipment.

Since the new factory commenced operation, we have further enhanced our existing services, and together with customers who value sustainability, we will continue to explore the creation of new added value that meets the needs of society. This includes proposing the production and use of containerboard pallets made from reused waste materials, and switching from wooden box packaging to special containerboard packaging.

Furthermore, OAJ had previously taken the initiative in obtaining ISO and FSC certifications and has been carrying out environmentally considerate management. In addition, the company acquired OHSAS 18001 certification, an international standard for occupational health and safety management systems, in June 2015. It also acquired the ISO equivalent of this, ISO 45001 certification, in April 2020. At the new plant, we are also working to improve conditions for our employees and create an even safer operating environment.

OAJ will continue to provide a stable supply of high-quality containerboard boxes to Japanese companies in Indonesia as well as to local companies, and will also work with customers to strengthen environmental conservation and sustainability initiatives.

### Containerboard Box Production Process



Panoramic view of the new plant

### Overview of the New Plant

Site Area	60,000 m <sup>2</sup>
Building Area	38,000 m <sup>2</sup>
Business Activities	Manufacture and sale of containerboard boxes
Main Production Equipment	<ul style="list-style-type: none"> <li>• 2 corrugators</li> <li>• 4 printing/folding machines</li> <li>• 4 flatbed die-cutting machines</li> </ul>
Certifications Acquired	<ul style="list-style-type: none"> <li>• ISO 9001</li> <li>• ISO 14001</li> <li>• ISO 45001</li> <li>• FSC® forest certification (CoC certification)</li> </ul>