



NIPPON PAPER INDUSTRIES CO., LTD.

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Nippon Paper Group Integrated Report 2021

Nippon Paper Industries Co., Ltd.

Shaping the Future with Trees

NIPPON PAPER GROUP
Integrated Report 2021

For the Fiscal Year Ended March 31, 2021

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Editorial Policy

This report is intended to promote understanding among stakeholders, such as shareholders and investors, regarding how the Company will achieve sustainable growth in the future by presenting its pursuits toward enhancing profitability and sustainability management through the Nippon Paper Group's value creation story.

This year's report has been enhanced with more content and features including a message from the executive officer responsible for finance and a roundtable discussion of outside directors. The Group hopes to convey its vision for creating economic and social value in an integrated manner and achieving sustainable growth.

Disclaimer

Statements in this report concerning plans, forecasts, strategies, beliefs, and other forward-looking information related to Nippon Paper Industries Co., Ltd. and companies comprising its corporate group, other than those of historical fact, are forecasts of future business performance based on the judgments of management at Nippon Paper Industries Co., Ltd. and Nippon Paper Group companies in light of currently available information.

Accordingly, please refrain from making investment decisions based solely on forecasts of business performance in this integrated report.

Actual business performance may differ significantly from these forecasts due to changes in a variety of factors.

Reporting Period

FY2021/3: April 1, 2020 to March 31, 2021
This report contains some information dated prior to April 1, 2020 and after April 2021. The points in question have been dated.

Reporting Organization

Nippon Paper Industries Co., Ltd. is the main subject of this report. However, data calculations include the Company and all 54 consolidated subsidiaries as of March 31, 2021.

Reference Guidelines

- Environmental Reporting Guidelines, Ministry of the Environment (2018 edition)
- Global Reporting Initiative (GRI) Sustainability Reporting Standards
- United Nations Global Compact
- SASB Sustainability Accounting Standards
- ISO 26000, etc.

Guideline Comparison Table

<https://www.nipponpapergroup.com/english/csr/gri/>

IR Library

<https://www.nipponpapergroup.com/english/ir/library/>

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Guideline Comparison Table



IR Library



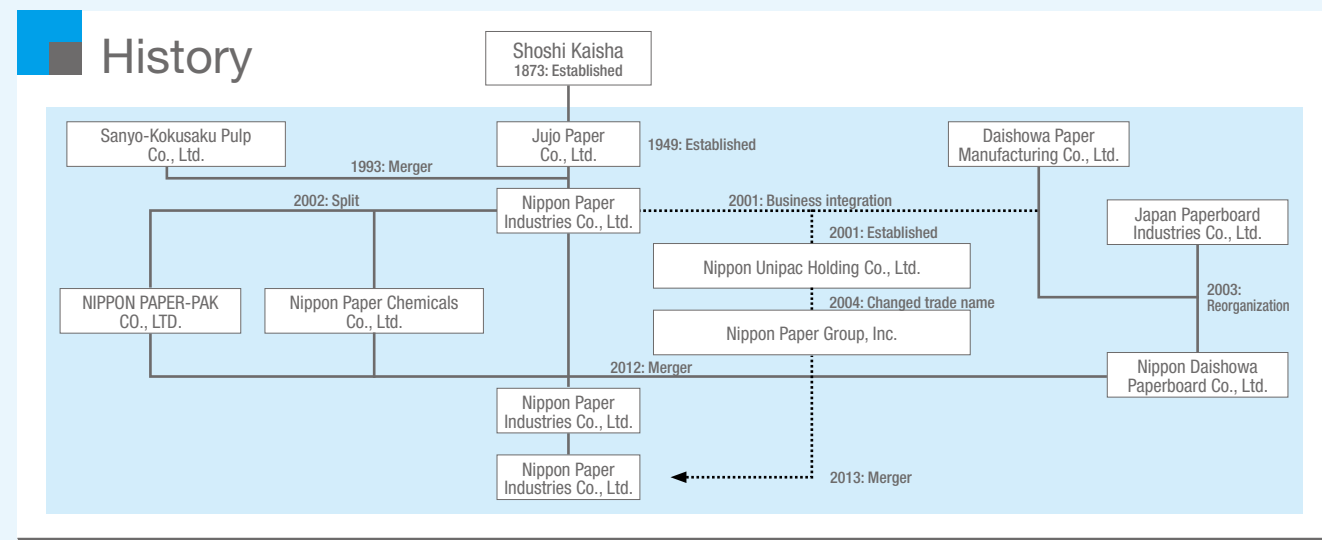
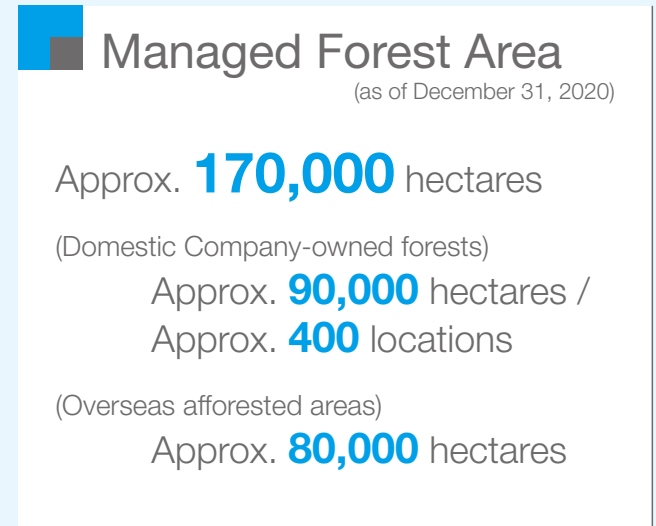
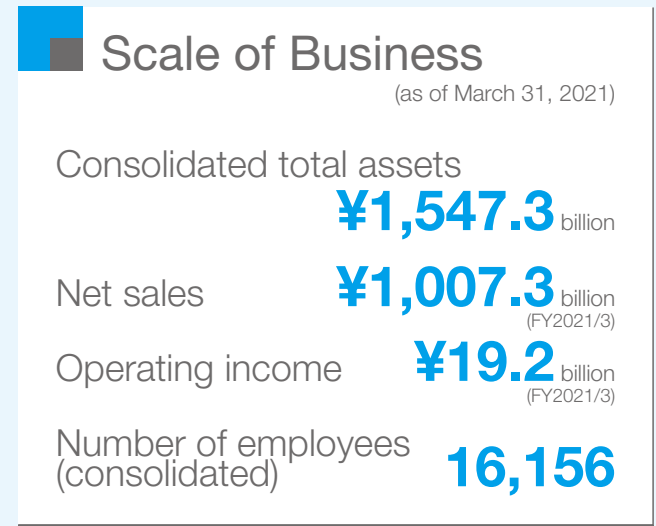
Get to Know the Nippon Paper Group

More Profitable

More Reliable

Data Section

A Brief Look at the Nippon Paper Group



Group Mission

Mission

The Nippon Paper Group aims to contribute to better living and cultural progress everywhere it does business.

Vision

1. Drive social sustainability through our business
2. Delight our customers
3. Instill pride in employees
4. Give back to society

Value

Challenge, Fairness, Teamwork

Slogan

Shaping the Future with Trees ~ Nippon Paper Group ~

Constantly creating new value and contributing to better living and cultural progress, as a comprehensive biomass company shaping the future with trees.

Over many years, we have nurtured trees, made paper, and offered a wide range of products that support people's lives and culture.

We have managed forests in an appropriate manner, and pursued a variety of businesses by fully utilizing wood resources out of sustainably managed forests. Those businesses address social issues such as global warming and depletion of resources on Earth, and contribute to running a sustainable society.

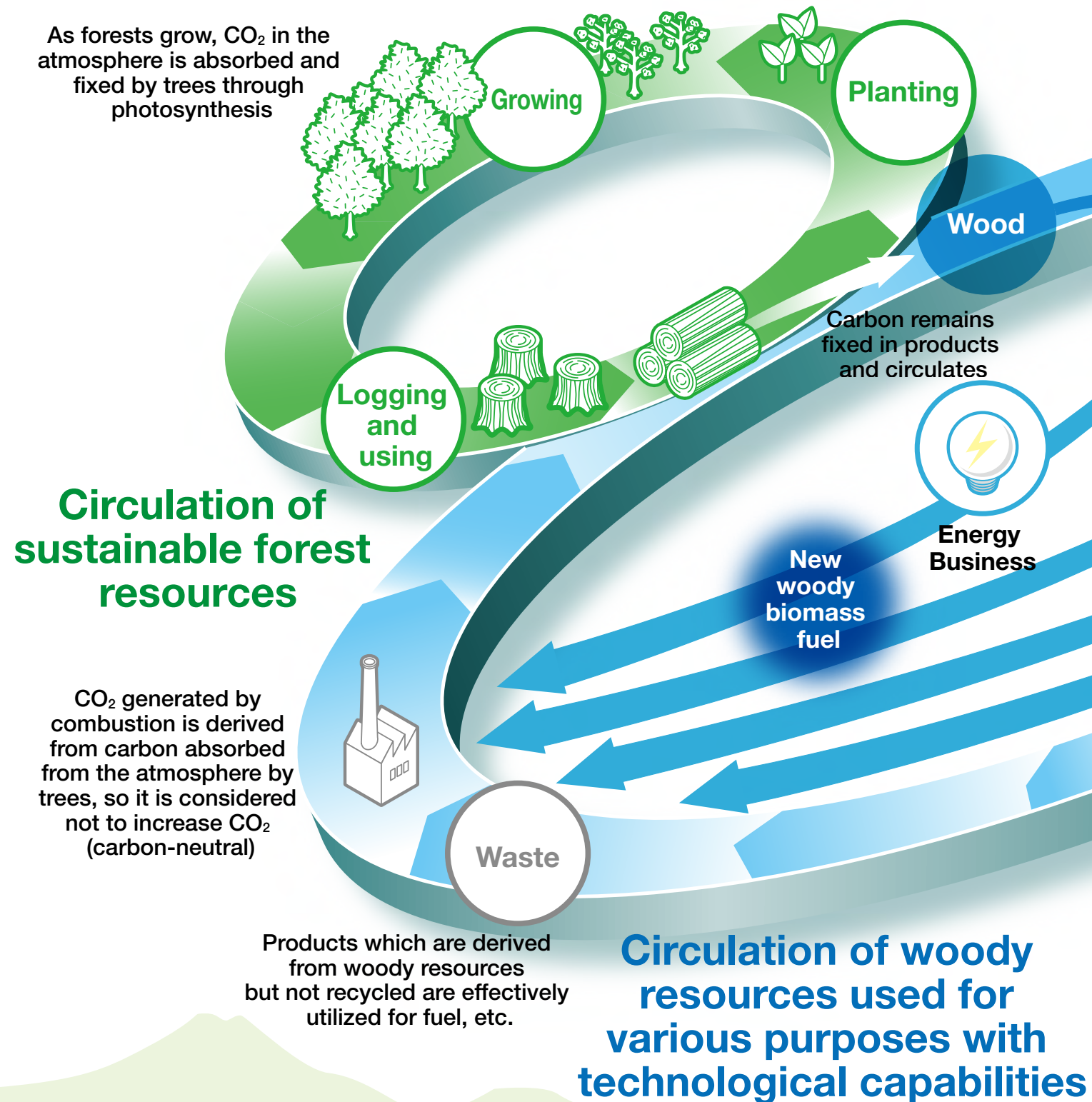
Going forward, we will continue to provide a wide range of products and services that make the most of the outstanding properties of wood, as we strive to maximize the value of sustainable forest resources for the future.

Shaping the Future with Trees



Through Circulation of Woody Resources

Realizing a Carbon-Neutral Business Model



A Comprehensive Biomass Company “Shaping the Future with Trees”

The Nippon Paper Group is a company group that consists of multiple businesses which generate stable profits and realize better living and cultural progress. It achieves this by using diverse technologies and know-how to maximize the use of renewable woody resources. This provides a wide range of products that help form a circulation-oriented society, supporting profit growth.

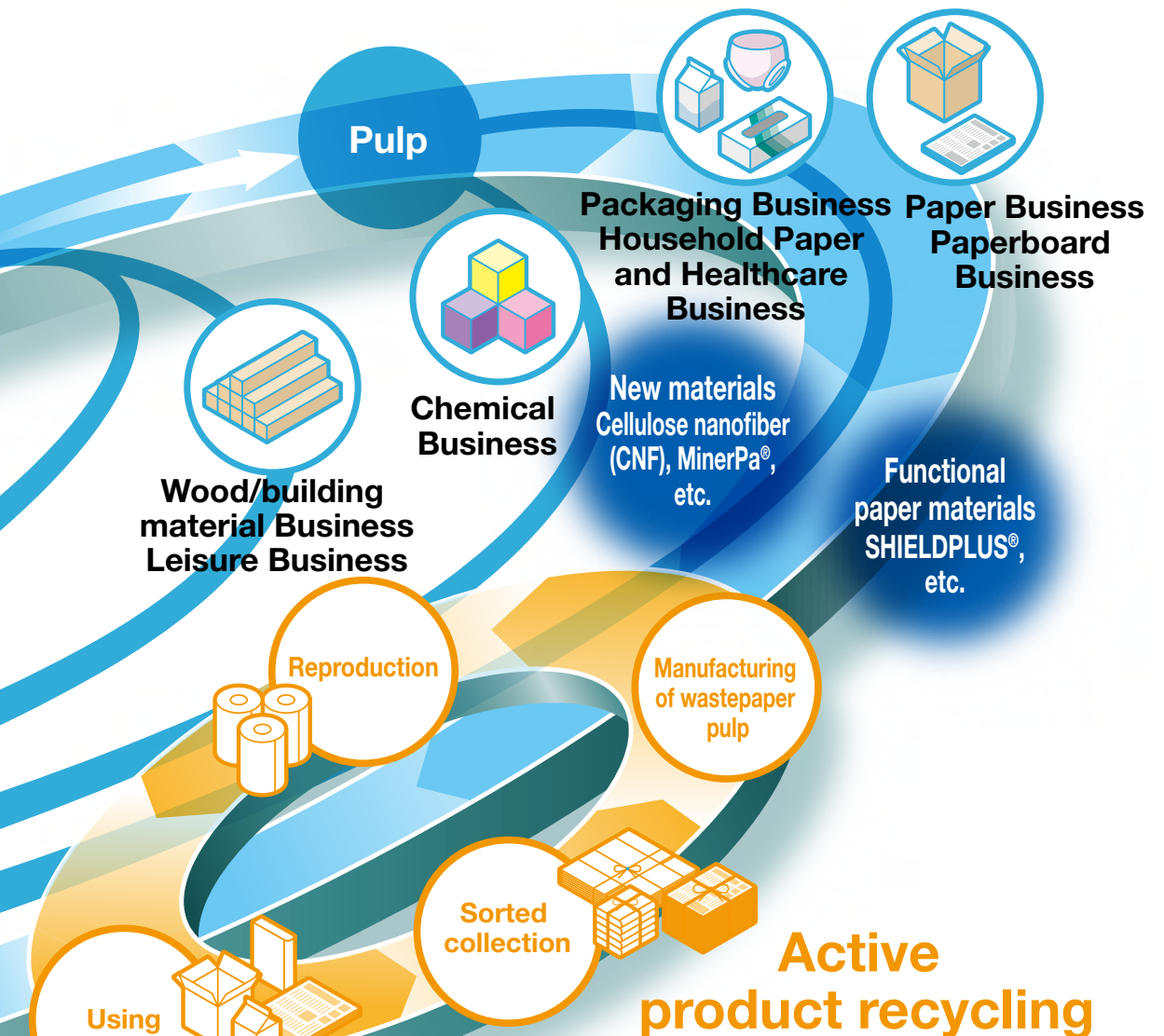
CNF
<https://www.nipponpapergroup.com/english/products/cnf/>



MinerPa®
[https://www.nipponpapergroup.com/research/organize/minerpa/\(Japanese only\)](https://www.nipponpapergroup.com/research/organize/minerpa/(Japanese%20only))



SHIELDPLUS®
<https://www.nipponpapergroup.com/english/products/shieldplus/>



• Outcomes from a series of mergers and integrations

Proven record
in research
and development

Group companies
with diverse
know-how

Human resources
with advanced
skills

• Compliance and high ethical standards

Important Management Issues (Materiality) to Realize the Group Mission

Nippon Paper Group's Materiality

The world has reached a turning point where such matters as climate change problems and infectious disease pandemics have forced changes on society. Domestic demand for paper had continued on a downward trend for structural reasons, but the decline has been further significantly accelerated by COVID-19.

Responding to change, and in order to realize its Group Mission, Nippon Paper Industries has formulated the 2030VISION, which outlines its goals for the next 10 years and the management tasks required to achieve them. In the process of formulating the 2030VISION, the Company discussed management issues that meet four requirements of the Vision in the Group Mission and summarized them as materiality of the Group.

Mission	The Nippon Paper Group aims to contribute to better living and cultural progress everywhere it does business.		
Vision	Meet These Requirements and Be a Corporate Group Permanently Needed by Society	Nippon Paper Group's Materiality	Reason for Selection
	1 Drive social sustainability through our business	Achieve the following through the value chain: <ul style="list-style-type: none">● Response to climate change● Utilization of sustainable forest resources● Preservation of biodiversity● Promotion of resource circulation● Reduction of environmental burden● Respect for human rights	The Nippon Paper Group clearly states in the 2030VISION that it will implement sustainable growth as "a comprehensive biomass company shaping the future with trees." The Company is rolling out diverse businesses using the Nippon Paper Group's forest resources as a foundation. As the environment is closely related to society and the economy, the Company believes that it is necessary to tackle the issues listed here throughout the entire value chain.
	2 Delight our customers	<ul style="list-style-type: none">● Response to changes in the social environment (consideration for the environment, healthcare, etc.)● Stable supply of products, enhance safety	Customers' needs change as society changes. The stable supply of products needed by society and the assurance of product safety and quality are issues that a manufacturing company naturally should address.
	3 Instill pride in employees	<ul style="list-style-type: none">● Realization of diverse work styles● Active participation of diverse human resources● Promotion of occupational safety and health	Flexible working styles are expected to support the growth of society and the economy. The Company believes that it is necessary for the Group to create a workplace where diverse human resources can maximize their ability to create value, as well as to realize diverse work.
	4 Give back to society	In addition to business growth achieved through activities 1 to 3 above, the Group will realize the following: <ul style="list-style-type: none">● Enhancement of governance● Communication with stakeholders● Coexistence with local communities and society	To contribute to building a sustainable society, generating stable profits from business is crucial, and doing that requires stronger governance. In addition, dialogue with stakeholders in various forms leads to corporate growth and the Group believes this will realize harmonious living together with communities and society.

Formula-tion Process



Dialogue with an expert

Materiality aiming to balance social issues related to forest resources and economy

The process of building management materiality based on the Group Mission was rational and my impression was that it was a sincere, grounded effort. I think there was nothing untoward about the way the material issues were identified. In particular, protecting and recovering ecosystems, including forest resources, are urgent global issues and there is an extremely large interest in them, so I expect the Company to provide information

steadily on how it is benefitting from ecosystems and how it impacts the ecosystems in its business. The Company also needs to recognize that environmental, social and economic factors are interrelated and integrated, and pay more attention to issues related to society and people. While addressing materiality going forward, it would be desirable for the Company to have dialogue with a variety of stakeholders.



Masao Seki
Senior Advisor,
Sustainability Department
Sompo Japan Insurance Inc.
Professor, School of Business
Administration, Meiji University

Contribution to SDGs through Materiality

The Nippon Paper Group, “a comprehensive biomass company shaping the future with trees,” promotes sustainability management that pursues both social and environmental sustainability and its future corporate growth by looking ahead to 2050 and enhancing activities to fulfill its corporate social responsibilities. The Nippon Paper Group’s aim under the Group Mission “to contribute to better living and cultural progress everywhere it

does business” is in harmony with the SDGs philosophy of “leave no one behind.” By promoting sustainability management, the Group will address the themes of activities, that meet the four requirements of the Vision to realize the Group Mission, as materiality. By solving these material issues the Company will contribute to achieving the SDGs aiming to build a sustainable society by 2030.

Material Issues Contributing to the SDGs

Vision		Key Issues and SDGs
1	Drive social sustainability through our business	<p>Achieve the following through the value chain</p> <ul style="list-style-type: none"> • Response to climate change • Preservation of biodiversity • Reduction of environmental burden • Utilization of sustainable forest resources • Promotion of resource circulation • Respect for human rights     
2	Delight our customers	<ul style="list-style-type: none"> • Response to changes in the social environment • Stable supply of products, enhance safety     
3	Instill pride in employees	<ul style="list-style-type: none"> • Realization of diverse work styles • Active participation of diverse human resources • Promotion of occupational safety and health    
4	Give back to society	<p>In addition to business growth achieved through activities 1 to 3 above, the Group will realize the following:</p> <ul style="list-style-type: none"> • Enhancement of governance • Communication with stakeholders • Coexistence with local communities and society  

Get to Know the Nippon Paper Group

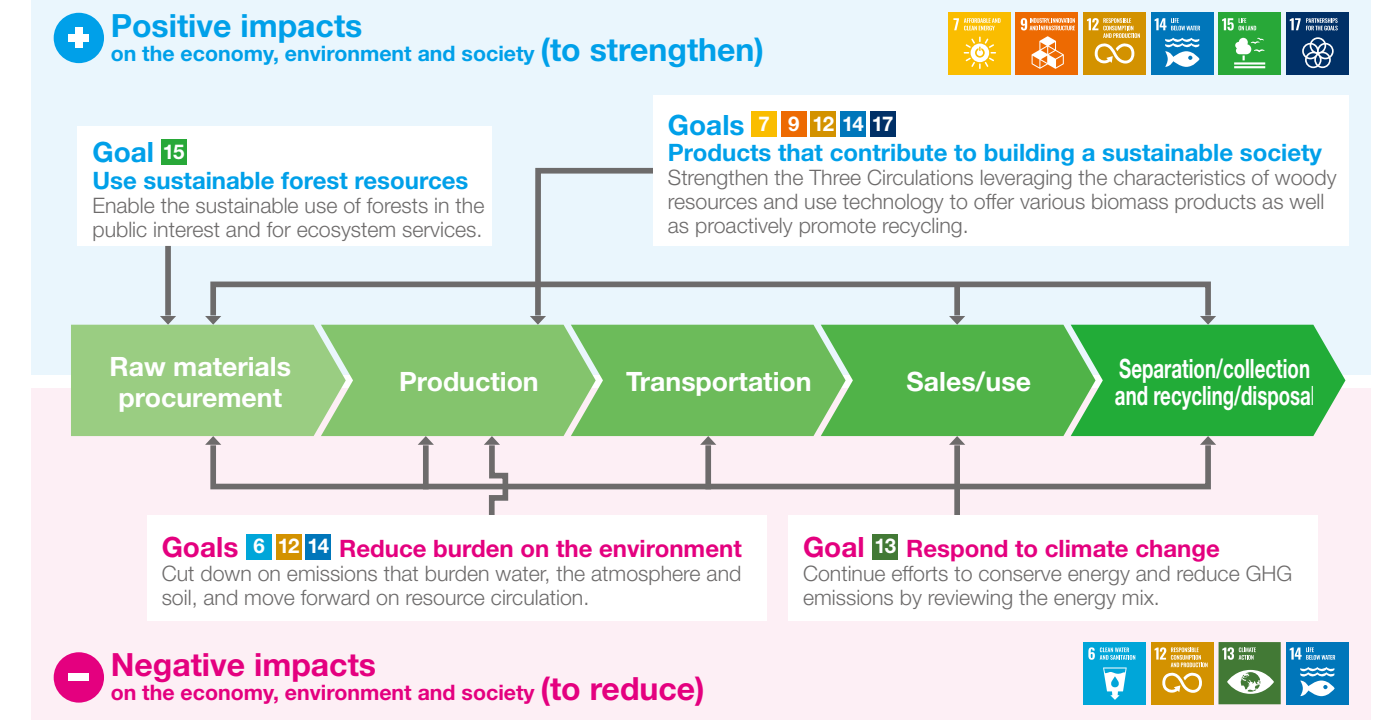
More Profitable

More Reliable

Data Section








The Nippon Paper Group sorts out the impact on the SDGs that occurs at each stage of the value chain. These overlap with SDGs related to the material issues to realize the Group Mission. Going forward, the Company will continue to work on strengthening positive impacts and strive to reduce negative influences.

Positive and Negative Impacts on the SDGs in the Value Chain



Utilizing Nippon Paper Industries' Originality to Contribute to the SDGs Cellulose Nanofiber

Nippon Paper Industries has developed manufacturing technologies for cellulose nanofiber (CNF), a biomass material using tree fibers, and is moving forward on a wide array of practical applications. This enables contributing to the SDGs as “a comprehensive biomass company shaping the future with trees.”

	<ul style="list-style-type: none"> • CNF has various functions as a plant-based material. Nippon Paper Industries is moving forward in partnership with users on developing applications where CNF can display its diverse features. • The Company's reinforced resin is being used in the Ministry of the Environment's NCV (Nano Cellulose Vehicle) Project aiming to reduce weight in cars, and advances are being made in expanding uses by providing samples. • The Company is participating in a project subsidized by the New Energy and Industrial Technology Development Organization (NEDO) to commercialize CNF as early as possible, and is advancing development together with manufacturers such as Ube Industries, Ltd. and Sumitomo Rubber Industries, Ltd. 	
	<ul style="list-style-type: none"> • Procurement of woody resources is made from forests with sustainable management. 	
 	<ul style="list-style-type: none"> • A biomass material with little burden on the environment related to production and disposal. • When added to food it retains moisture and extends the shelf life of food (reduces food loss). • CNF-reinforced resin has outstanding recyclability and raises expectations of reducing waste products. 	<p>Products that contribute to building a sustainable society (Japanese only)</p> 
	<ul style="list-style-type: none"> • Enables switching away from using fossil-based additives. • Enhances strength when added to resin, helps reduce weight and is expected to cut CO₂ emissions from vehicles. 	

The Nippon Paper Group's Value Creation Story

—Sustainable growth as a comprehensive biomass company

Get to Know the
Nippon Paper Group

More Profitable

More Reliable

Data Section

As a comprehensive biomass company shaping the future with trees, the Group will create integrated economic and social value and achieve sustainable growth by maximizing the management resources it possesses and largely solidifying the Three Circulations leveraging the characteristics of woody resources. As a result, it will realize its mission to contribute to better living and cultural progress everywhere it does business.

Medium- to long-term business opportunities and risks

Medium- to long-term opportunities

- Population increase and economic growth in developing countries
- Shift to a low-carbon society
- Increased consumer awareness of health and hygiene
- Rise of e-commerce

anticipated by the Group

Medium- to long-term risks

- Digital transformation
- Declining birth rate and aging population in Japan
- Increase in natural disasters
- Trends in environmental laws and regulations

Input

» Consolidated employees

16,156
(as of Mar. 31, 2021)

» Group companies

161
(as of Mar. 31, 2021)

» Managed forest area

Approx. **170,000** hectares total
(as of Dec. 31, 2020)
(Domestic Company-owned forests)

Approx. **90,000** hectares
(Overseas afforested areas)

Approx. **80,000** hectares

» Total assets

¥1,547.3 billion (as of Mar. 31, 2021)

» Net sales

¥1,007.3 billion (FY2021/3)

Strengths

» Research and development results

Research and development expenses:

¥6.2 billion (FY2021/3)

Patents held:

1,459
(as of Mar. 31, 2021)

» Group companies with diverse know-how

» Human resources with advanced skills

» Supply chain for procurement of woody materials

Basic Policies of the Group's 2030VISION

- Reallocate management resources to growing businesses
- Respond to rapid changes in the social landscape such as CO₂ reduction and environmental issues

Amplifying
the foundation of
value creation

Three Circulations Leveraging the Characteristics of Woody Resources (P.4-5)

Initiatives for important issues
(materiality) to realize its mission
and contribute to the SDGs

Creation of
value

Return of
value

Value provided by the Group

Economic value (FY2031/3 targets)

» Net sales

¥1,300.0 billion
(Daily-Life Products Business: 50% or more)

» Overseas sales ratio

30% or more

» Operating income margin of the Daily-Life Products Business

7% or more

» ROE

8.0% or more

Social value

» Realizing a carbon-neutral society

» Realizing a circulation-oriented society

» New utilization of woody resources through innovation

» Maximizing the value of forests

Mission

Contribute to better living and cultural progress everywhere it does business



Customers



Business partners



Shareholders and investors



Employees



Local communities



Global environment

Profit returns and contributions







to stakeholders

Important management resources

* Applies to Nippon Paper Industries Co., Ltd., Nippon Paper Papylia Co., Ltd., Nippon Paper Crecia Co., Ltd., Flowric Co., Ltd., Nippon Paper Lumber Co., Ltd., Sakurai Co., Ltd. and Akita Jujo Chemical Co., Ltd.

Value Provided by the Nippon Paper Group

By working on its 2030VISION, the Nippon Paper Group will continue to grow and expand profits, while pursuing sustainable management that contributes to building a sustainable society, with an eye to realizing a carbon-neutral society in 2050.

	Current Management Resources (as of March 31, 2021)	Strategies for Enhancing Management Resources
 Financial capital	<ul style="list-style-type: none"> Consolidated total assets: ¥1,547.3 billion Net sales: ¥1,007.3 billion (FY2021/3) 	<ul style="list-style-type: none"> Reallocate management resources to and invest in growing businesses Allocate about 80% of strategic investments of ¥350.0 billion through FY2031/3 to growing businesses, and earmark ¥52.0 billion for environmental initiatives
 Intellectual capital	<ul style="list-style-type: none"> Research and development expenses: ¥6.2 billion (FY2021/3) Number of patents held*: 1,459 <small>* Applies to Nippon Paper Industries Co., Ltd., Nippon Paper Papyrus Co., Ltd., Nippon Paper Creca Co., Ltd., Flowric Co., Ltd., Nippon Paper Lumber Co., Ltd., Sakurai Co., Ltd. and Akita Jujo Chemicals Co., Ltd.</small>	<ul style="list-style-type: none"> Revise business promotion framework (external collaboration) Commercialize new businesses early on Strengthen ties with external research and development institutions such as other companies and universities, and establish manufacturing technologies for new materials
 Human capital	<ul style="list-style-type: none"> Number of employees (consolidated): 16,156 	<ul style="list-style-type: none"> Promote diversity and human resource development Reallocate human resources Promote business structure transformation by fully harnessing the potential of diverse human resources
 Manufactured capital	<ul style="list-style-type: none"> Number of Group companies: 161 	<ul style="list-style-type: none"> Reallocate management resources to and invest in growing businesses Closely examine and rightsize the production structure for foundation businesses Fully utilize the Group's resources (land, equipment, etc.) anticipating increased demand in growing businesses
 Social and relationship capital	<ul style="list-style-type: none"> Diverse customer base 	<ul style="list-style-type: none"> Partnerships with customers Achieve early commercialization of new businesses utilizing the customer base built via extensive business operations
 Natural capital	<ul style="list-style-type: none"> Initiatives to utilize woody resources and reduce environmental impacts 	<ul style="list-style-type: none"> Balance business growth and contributions to establishing a circulating society that fully utilizes woody resources Realize a carbon-neutral business model by strengthening the Three Circulations

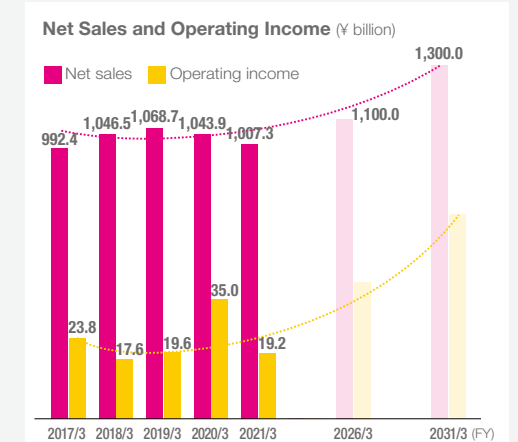
Creating Economic Value

01▶ Continually Creating Economic Value via Business Activities

The Nippon Paper Group has continued to practice sound management and create economic value, even with a volatile external environment marked by changes in market conditions and demand for products.

During its Sixth Medium-Term Business Plan, which spanned three years starting from FY2019/3, the Group was significantly affected by COVID-19. Nevertheless, it made steady progress working on two themes: 1) reorganize the production structure of the Paper Business and make maximum use of in-house facilities and 2) expand businesses in growth areas and achieve early commercialization of new businesses.

Especially with regard to the latter, the Group completed capital investments in growth areas almost exactly as planned, and acquired Orora Limited's paperboard and fiber-based packaging business in Australia and New Zealand as part of initiatives to pave the way for growth.



02▶ Striving for Better Living and Cultural Progress via Profit Growth

The Nippon Paper Group will continue to work to enhance its corporate value with sustainable profit growth, expanding business through growth investments that lead to solutions to environmental issues.

Under its Medium-Term Business Plan 2025 launched in May 2021, the Group aims to achieve net sales of ¥1,100.0 billion in FY2026/3 and operating income of ¥40.0 billion or more at an early stage. With the basic strategy of accelerating the transformation of the business structure, the Group will shift from foundation businesses to growing businesses with a greater sense of urgency than before. That will require grasping global trends, including changes in lifestyles due to COVID-19 and the shift from plastics to paper, and capturing the waves in demand. The Group has set a strategic investment budget of ¥350.0 billion for the next 10 years. It plans to use ¥210.0 billion of that during the period of Medium-Term Business Plan 2025, emphasizing investment in the first five years. It will proactively invest in growth to achieve sustainable growth.

Additionally, the Group earmarked ¥52.0 billion for environmental investment under the 2030VISION. With steps being taken worldwide to reduce greenhouse gas emissions, environmental investments are not backward looking. Rather, the Group believes that actively investing to help solve environmental issues will contribute to its sustainable growth.

The Group's Vision for 2030 is to be a comprehensive biomass company shaping the future with trees. Bolstering profitability will be vital to achieving sustainable growth as a comprehensive biomass company. Temporary losses could arise as the Paper Business's production structure is optimized. However, the Group will also prioritize and implement strategic investment in such growth domains as the Packaging, Household Paper and Healthcare, and Chemical Businesses. By putting itself firmly on a growth trajectory, the Group aims to enhance its corporate value and realize its mission to contribute to better living and cultural progress everywhere it does business.

For details, please see "Message from the Executive Officer Responsible for Finance" on pages 27–31. ▶

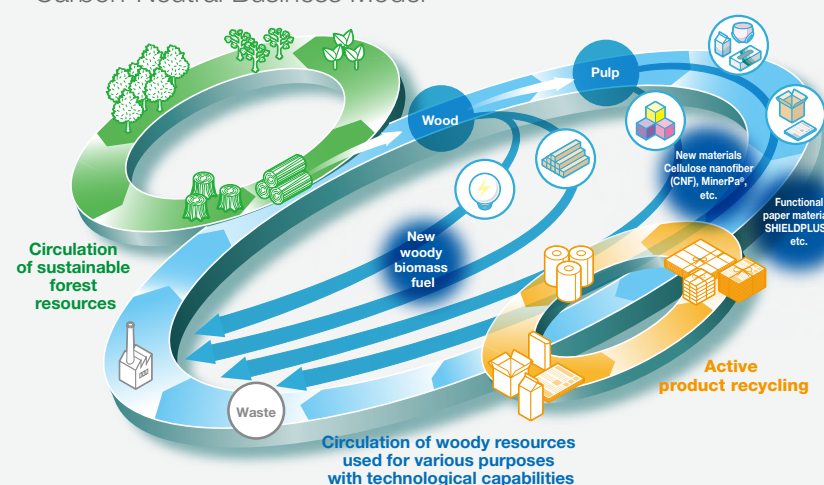
Creating Social Value

01▶ Helping Build a Circulating Society

To contribute to the establishment of a sustainable society, the Nippon Paper Group is strengthening its initiatives to expand the use of woody resources through resource circulation.

In its 2030VISION, the Group clarified its business model to expand and solidify the Three Circulations leveraging the characteristics of woody resources to both grow its business and help build a resource-circulating society. Its technological capabilities, marked by a robust research and development track record underpinned by the diverse human resources and extensive know-how of Group companies, will be central. Specifically, the Group will promote the circulation of forest resources through alliances with other companies, universities, research institutions, and so forth. It will also employ its technological capabilities to develop products that utilize an array of woody resources, and provide a wide range of eco-friendly products to realize circulation of woody resources. Moreover, the Group will actively work on product recycling to encourage the reuse of wastepaper and recycling throughout society, starting with the utilization of hard-to-recycle wastepaper, to create a carbon cycle based on forest resources in society as a whole.

Carbon-Neutral Business Model



02▶ Addressing Climate Change

The Nippon Paper Group has long worked to reduce greenhouse gas (GHG) emissions. Additionally, it established addressing climate change as a priority task in its 2030VISION, and expressed its support for the Task Force on Climate-Related Financial Disclosure (TCFD) recommendations in April 2021. Moving ahead, it will strengthen such initiatives in line with the TCFD recommendations.

The Group consumes a lot of energy and water during production processes. By revising its energy mix while continuing to work to conserve energy, it aims to reduce GHG emissions generated from production processes by 45% in FY2031/3 compared with FY2014/3. Furthermore, it will enhance the functions of its forests, such as CO₂ absorption and biodiversity protection, and maximize their value, while expanding biomass products through increased productivity in its forests to advance establishment of a carbon-neutral society.



Forests where productivity has greatly improved
(L: 2005, R: 2020) (Amapá Florestal e Celulose S.A., Brazil)

03▶ Customer Trust and Expectations

The Nippon Paper Group works to steadily provide safe, quality products and services that help form a sustainable society. The Group also strives to be a company that is selected by customers by actively communicating with customers on a regular basis, accurately understanding their needs, and earning their trust. Moreover, it will utilize the partnerships it has built with customers to date through a multitude of business activities to commercialize new businesses.



Sumitomo Rubber Industries, Ltd.'s brand of tires that uses CELLENPIA®

04▶ Hiring and Training Employees

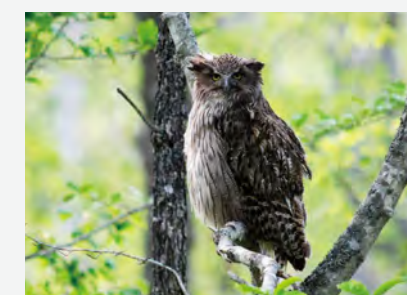
The Nippon Paper Group will change dramatically in the process of transforming its business structure as a comprehensive biomass company shaping the future with trees. While promoting diversity and employee-friendly workplaces and policies, the Group will raise the value of its human resources by working to foster personnel who push for changes. Along with appropriately repositioning personnel in line with growth strategies, the Group will realize the full potential of diverse human resources with varied personalities to raise employee engagement and tie that to its sustainable growth.



Training for new hires

05▶ Coexisting in Mutual Prosperity with Local Communities

The Nippon Paper Group is helping to shape a circulating society by providing products and services that make the most of woody resources, a sustainable raw material. Forest resources are therefore critical to the Group. Through procurement from external parties, the Group employs robust supply chain management to practice sustainable raw material procurement, and engages in environmentally and societally friendly initiatives, such as dialogue with stakeholders. Moreover, the Group does not regard the forests it owns as just a source for woody resources. It also works to balance and maintain the public interest and multifaceted functions of forests, including preserving biodiversity.



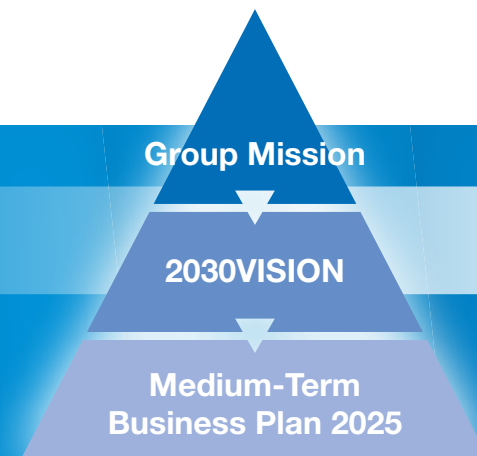
Blakiston's fish owl living in the Company's forests
Photo courtesy of the Wild Bird Society of Japan

For details, please see "More Reliable" on pages 57–92.



Nippon Paper Group's 2030VISION and Medium-Term Business Plan 2025

The Nippon Paper Group established the 2030VISION as a guideline that clarifies its goals for 2030 and business challenges to realize the Group Mission. It established Medium-Term Business Plan 2025 as an action plan for the next five years to realize the 2030VISION.



2030VISION

Vision for 2030

Realize sustainable growth as a comprehensive biomass company shaping the future with trees

FY2019/3–FY2021/3

> Sixth Medium-Term Business Plan Priority Tasks

Complete reorganization of the production structure
Expand continuously in growth areas
Promptly achieve EBITDA of ¥100.0 billion

> FY2021/3 Results

Net sales	¥1,007.3 billion
Operating income	¥19.2 billion
EBITDA	¥86.9 billion
Adjusted net debt/equity ratio	1.86 times
ROE	0.8%

FY2022/3–FY2026/3 Accelerate business transformation

> Medium-Term Business Plan 2025 Priority Tasks

Reallocate management resources to growing businesses
Accelerate enhancing profitability of new businesses
Reinforce competitiveness of foundation businesses

> Medium-Term Business Plan 2025 Targets

Net sales	FY2026/3	¥1,100.0 billion
Operating income	At an early stage	¥40.0 billion or more
EBITDA	Stably	¥100.0 billion
Debt/equity ratio	FY2026/3	1.5 to 1.6 times
ROE	FY2026/3	5.0% or more

> Targets by Business Segment

	Net Sales	Operating Income
Paper and Paperboard	¥490.0 billion	¥5.0 billion
Daily-Life Products	¥460.0 billion	¥27.5 billion
Of which, new business	¥15.0 billion	¥2.0 billion
Energy	¥45.0 billion	¥4.0 billion
Wood Products and Construction-Related	¥75.0 billion	¥6.5 billion
Other	¥30.0 billion	¥2.0 billion
Energy conversion	—	¥(5.0)billion
	¥1,100.0 billion	¥40.0 billion

FY2027/3–FY2031/3 Expand business domains through new and growing businesses

> 2030VISION Basic Policy

Reallocate management resources to growing businesses

- Continue to invest in and reallocate human resources to growing businesses
- Ensure new businesses and new materials make an early positive contribution
- Rightsize the production structure of foundation businesses to maintain competitiveness
- Expand in overseas markets

Respond to rapid changes in the social landscape such as CO₂ reductions and other environmental issues

- Review the energy mix
- Pursue a green strategy (maximize value of forest resources)

> FY2031/3 Targets

Net sales ¥1,300.0 billion	Of which, Daily-Life Products Business	50% or more (including ¥65.0 billion from new businesses)
	Overseas sales ratio	30% or more
Operating income margin for Daily-Life Products Business		7% or more
ROE		8.0% or more
GHG emissions (Scope 1+2)		45% reduction (vs. FY2014/3)

> Strategic Investment (10 years from FY2022/3 to FY2031/3)

Total: ¥350.0 billion	• About 80% for investments in growing businesses
	• Amount for investments in environmental initiatives: ¥52.0 billion

Growing businesses

Businesses to drive the Group's growth, with an eye on 2030

- Packaging (including industrial paper, paperboard and containerboard), Household Paper and Healthcare, Chemical, Energy, and Wood Products and Construction-Related Businesses

New businesses

Businesses to be developed through new market cultivation and other measures beyond existing business domains

- Cellulose nanofiber, SHIELDPLUS®, Lamina®, MinerPa®, Biocomposite™ etc.

Foundation businesses

Businesses to support the growth of growing businesses and new businesses in multiple ways, including cash perspectives

- Newsprint, printing and business communication paper, construction-related, logistics, leisure, and other

Aiming to Build a Sustainable Society and Strengthen Profitability toward 2030

Transforming Business with Medium- and Long-Term Viewpoints

In May 2021, Nippon Paper Industries Co., Ltd. announced its 2030VISION. To achieve our Group Mission, our goal for 2030 is to realize sustainable growth as a comprehensive biomass company shaping the future with trees. This vision articulates our determination to transform the Nippon Paper Group into a streamlined and lean enterprise that can generate solid profits while addressing a wide range of societal demands, as we make steady strides toward our goal for 2030.

Definition of a Comprehensive Biomass Company

In formulating our goal for 2030, we held internal discussions on what it means to be a comprehensive biomass company. As a result of these discussions, we settled on the following definition of a comprehensive biomass company: "A company group that consists of multiple businesses which generate stable profits and realize better living and cultural progress. It achieves this by using diverse technologies and know-how to maximize the use of renewable woody resources. This provides a wide range of products that help form a circulation-oriented society, supporting profit growth." This definition describes the essence of the comprehensive biomass company we aspire to become. I believe that this image of a comprehensive biomass company is one that our stakeholders can wholeheartedly embrace as a worthy goal for the 2030VISION.

Convinced Our Target Direction Is Right

The Group is now entering a period of major upheaval unlike anything it has faced before. We are facing trends which are irreversible, such as a declining birthrate and aging population, and digitalization. For many years, demand in Japan for graphic paper, such as newsprint and printing paper, has continued to decrease without showing any signs of stopping. In 2020, the spread of COVID-19 caused the pace of decreasing demand to accelerate further.

Many people may still picture Nippon Paper Industries as a company engaged in the paper business. But as the environment surrounding the domestic paper business comes under increasing pressure, the Group has pushed ahead with the transformation of its business structure.

Looking back at the past five years, I would first like to discuss our overseas business expansion initiatives. In 2016, we acquired the liquid packaging board business of Weyerhaeuser Company, a major U.S. forestry company. In 2020, we acquired the packaging (cardboard) division of Orora Limited of Australia. Additionally, in Japan, we made capital investments to expand the Packaging, Household Paper and Healthcare, Chemical, and Energy Businesses.

Toru Nozawa

President and Representative Director
Nippon Paper Industries Co., Ltd.

Message from the President

As a result, we have altered the business portfolio, while keeping the amount of consolidated net sales unchanged. Previously, the share of the domestic Paper Business accounted for over 50% of consolidated net sales. Now, with firm growth in the Daily-Life Products Business, which has been a strategic area of focus, the share of the Paper Business has fallen below 40%. On the profit front, although we faced some challenging times, we managed to generate operating income of ¥35.0 billion in FY2020/3.

In FY2021/3, I believe that we could have delivered an even better performance had we not been impacted by COVID-19. Despite this, overall, I am convinced that our target direction is right. Lifestyles are rapidly changing, and new needs are emerging one after another. As these trends reshape the environment, I am starting to feel confident that the Nippon Paper Group can contribute to society through the value created by its wide range of businesses.

Medium-Term Business Plan Period Changed from Three to Five Years

Under the 2030VISION, we have adopted two basic policies: (1) reallocate management resources to growing businesses, primarily the Daily-Life Products Business; and (2) respond to rapid changes in the social landscape such as CO₂ reduction and other environmental issues.

Guided by the former policy, we will expand growing businesses, such as the Packaging, Household Paper and Healthcare, Chemical, and Energy Businesses, as we rapidly commercialize new materials. Meanwhile, we do not foresee a

recovery of demand in the Paper Business going forward. Even so, we believe that it is still crucial to aim to secure the business's profits.

Based on the latter policy, we will reduce greenhouse gas emissions in the production process as we head toward 2030. In anticipation of the future over the next 10 years, we have set a target of achieving a 45% reduction in greenhouse gas emissions compared with FY2014/3. Specifically, we will reduce the usage of coal and use fuels such as waste and woody biomass, in addition to making steadfast efforts to address energy savings. Alongside this, we will take a close look at new technologies that will be implemented in society, and consider ways to make use of them, along with closely monitoring social trends and the government's energy policies. Moreover, the Group has excellent technologies related to woody biomass. By fully harnessing those technological capabilities, we will proactively move forward with the development of new biomass fuels.

Together with the 2030VISION, the Group has also formulated Medium-Term Business Plan 2025.

Although the periods of the Group's medium-term business plans were previously set at three years, we have decided to set the plan's period at five years for this new medium-term business plan. The five years covered by the plan correspond to the first five years of the 2030VISION.

There are several reasons why we changed the period of the medium-term business plan from three to five years.

The first reason is that we must firmly address declining demand for paper in Japan. Until now, we have reorganized the production structure based on projections of demand three years in the future. However, in reality, the decline in demand

Relationship between the 2030VISION and Medium-Term Business Plan 2025



has progressed faster than our projections. Consequently, we have been left saddled with a fixed cost burden from capital investments associated with our production reorganization. Considering these facts, in order to carry out fundamental measures over a long period of time, we drew up our Vision for the Group 10 years from now and devised a long-term plan to achieve it. Based on that plan, we decided to clearly define what we should accomplish in the 5 years covering the first half of the 10-year period.

The second reason is that it will take a period of five years for the specific achievements of business transformation to become evident. In hindsight, we see that implementing business transformation requires speedy but thoughtful initiatives with a forward-thinking mindset. This was the case, for example, when we reinforced the containerboard business through a business alliance with Tokushu Tokai Paper Co., Ltd., and withdrew from the paper business, shifting to the household paper business at our Fuji Mill. This perspective also led us to determine that a five-year period for the medium-term business plan would be preferable.

Building a Streamlined and Lean Enterprise by Accelerating the Transformation of the Business Structure

The main thrust of Medium-Term Business Plan 2025, which covers the first 5 years of the 10-year period of the 2030VISION, is to dramatically accelerate the transformation of our business structure and improve our profitability at the earliest opportunity.

The Group seeks to grow as an enterprise as it addresses a

diverse array of demands from society, including reducing greenhouse gas emissions. To do so, we will, of course, need to generate profits as an enterprise. Under our Medium-Term Business Plan 2025, we have set a target of achieving operating income of ¥40.0 billion or more at an early stage.

Additionally, operating income in the Daily-Life Products Business was ¥7.9 billion in FY2021/3. In FY2026/3, we will increase the operating income of this business to ¥27.5 billion, with ¥15.0 billion of this amount coming from growth in the overseas business. Increasing the earnings of Opal in Australia will be key to our success. In FY2021/3, Opal posted a downturn in its performance due to the impact of COVID-19. Worsening relations between Australia and China are also a potential concern. However, we believe the recovery of the cardboard business is a matter of time, so we are not concerned about the outlook. On the contrary, the creation of a company that seamlessly integrates the process from production of containerboards to cardboard boxes in the Australian and New Zealand markets will provide the latitude to reduce costs. We expect to see broadening opportunities in the future.

In Japan, we will continue to make capital investments in the Paper-Pak, Household Paper and Healthcare, and Chemical Businesses. Additionally, we newly established the Biomass Material Business Division to accelerate the growth of new materials businesses, such as cellulose nanofiber. We will focus on deepening collaboration with companies and research institutions, identifying user needs, and increasing sales. Through these efforts, I am strongly determined to transform the Group into an enterprise with a streamlined and lean operating structure.

Medium-Term Business Plan (MTBP) 2025: Operating Income by Segment

	(¥ billion)	
	FY2021/3 Results	MTBP 2025 Targets
Paper and Paperboard	2.5	5.0
Daily-Life Products	7.9	27.5
Energy	6.9	4.0
Wood Products and Construction-Related	6.5	6.5
Others*1	(4.6)	2.0
Energy conversion*2	—	(5.0)
Total	19.2	40.0

(Breakdown of profit increase)
Overseas:
Approx. +¥15.0 billion
Domestic:
Approx. +¥5.0 billion

*1 FY2021/3 results include ¥6.0 billion in acquisition-related expenses for the Australian and New Zealand businesses of Orora Limited's packaging division.
*2 Energy conversion incorporates increased costs due to fuel conversion away from coal. It does not reflect projections of the impact of carbon pricing.

Message from the President

“We will build an environmentally friendly business model with the Three Circulations serving as the driver for sustainable growth.”

Aiming to be a Comprehensive Biomass Company that Transforms Woody Resources into Value

As I have said occasionally, although Nippon Paper Industries contains the word “paper” in its name, I would like to make Nippon Paper Industries into a company that explores many different businesses not limited to paper. That is the type of company I would like to create.

In the 2030VISION, we clearly articulated our goal to be achieved in 2030 with respect to the direction of the Group's business development as follows: “Realize sustainable growth as a comprehensive biomass company shaping the future with trees.” Along with this, we announced the Three Circulations and described each one in detail. In essence, we will boldly and rapidly implement the following the Three Circulations: (1) Circulation of sustainable forest resources; (2) Circulation of woody resources used for various purposes with technological capabilities; and (3) Active product recycling. Such actions will harness the circulation of woody resources and spur our growth as an enterprise. I am proud of this business model that skillfully makes use of environmentally friendly resources because it is unprecedented and unique in comparison to the business models of other companies.

The Three Circulations: The Driver for Sustainable Growth

The first one is the circulation of forest resources, which are the foundation of the Group's business. The Company owns forests, so if it replants the trees it cuts down for use as resources, it can replenish and revive its forests.

In their growth process, trees absorb CO₂ from the air and fix carbon in their biomass. The Group possesses the technologies needed to create a wide range of products using wood as raw materials. It converts woody resources into a variety of products, such as food packaging, and makes these products widely available to society. In the process, carbon remains fixed in those products without releasing CO₂ into the atmosphere. On top of this, even when products are incinerated after being used, the total amount of CO₂ in the atmosphere does not increase.

Another strength of the Group is its technology for recycling pulp. The Group recycles not only newsprint, printing paper, cardboard and paper cartons, but also paper cups that had

previously not been recycled.

In these ways, properly implementing the Three Circulations will pave the way for the sustainable use of woody resources and for building an environmentally friendly, circulation-oriented society. With heightened environmental awareness among consumers, we believe that the Three Circulations will serve as the driver for the Group's sustainable growth.

Promoting a Green Strategy

Having said that, at this time, we fully acknowledge that the Group releases large amounts of CO₂ during its manufacturing processes which makes some stakeholders take a critical view of the Group.

As you know, the international community has been making stronger calls for society to become carbon-free, and circumstances in Japan have also changed dramatically. In October 2020, the Japanese government declared that Japan would become carbon-neutral by 2050. I believe it is fair to say that this declaration has drastically transformed the world.

Against this backdrop, the Company currently uses coal as the main source of its manufacturing energy. Considering these circumstances, we discussed how to reduce greenhouse gas emissions and formulated specific numerical targets in the 2030VISION. To achieve these targets, we will steadily implement various measures.

Additionally, as part of the 2030VISION, we formulated a green strategy for the Group. The strategy, which is closely intertwined with the Three Circulations, calls for pursuing the maximization of forest value and the expansion of biomass products.

The Group owns approximately 170,000 hectares of forest resources in Japan and abroad. Based on those forest resources, we have a proven track record of enhancing forest productivity. To this end, we have carried out selective breeding using genome data and increased the planting of tree seedlings leveraging tree grafting technologies.

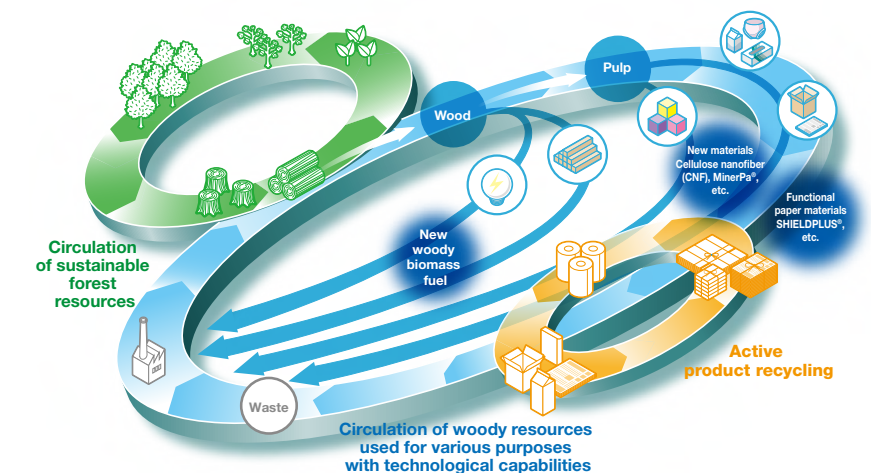
In addition, we will develop a diverse array of biomass products and promote their use in society. As a result, the social value that comes from the ability of woody resources to fix and circulate carbon will likely garner more and more attention. In

this manner, Nippon Paper Industries' efforts to strengthen its business platform and efforts by society as a whole to achieve carbon neutrality are aligned in the same direction. This is what makes the Group truly unique.

Meanwhile, to achieve these goals, we would like the rules for quantifying value, including the calculation of the CO₂ absorption amount by forests and the CO₂ fixation amount by biomass products, to be standardized. Going forward, it is expected that there will be a move to reassess the value of forests on a global basis. In the process, we hope to be actively involved in the development of shared frameworks.

Business Development as a Comprehensive Biomass Company

Carbon-Neutral Business Model



My Mission: Contributing to Society through Business and Generating Profits

The critical factor for realizing the 2030VISION will be human resources. It will be extremely crucial to determine how we will have our more than 15,000 employees on a consolidated basis work successfully under the Group's growth strategy.

At Nippon Paper Industries' Fuji Mill, the shift from the paper business to the household paper business has steadily gotten on track. The success of this business transformation was partly attributable to changes in the business environment, specifically to heightened demand for household paper. However, I believe that the greatest factor behind this success was that employees who had up until that point been working in paper manufacturing were wholeheartedly willing to work in household paper manufacturing and fully demonstrated their abilities in this new area.

This means that in order to achieve a transformation of the business structure, employees with a high degree of loyalty to the Group must proactively tackle challenges in new fields and make efforts actively.

The recruiting environment is becoming increasingly severe due to a declining birthrate and an aging population, along with a continuing decrease in the working-age population. In this environment, employees will need to shift to workplaces in new fields and work successfully. I believe this shift will provide an ideal way of harnessing the full potential of our human resources.

The reallocation of human resources, as set forth in the 2030VISION, refers to such shifts in workplaces based on employees' strong loyalty to the Group. I am convinced that these efforts will guide the transformation of our business structure to success.

Engagement is crucial to increasing the number of highly loyal employees.

I believe that engagement is created when employees grow together with the Company. That is why it is important to develop an environment where employees can truly feel satisfied with working at the Group, and to develop frameworks such as HR

■ Goal to Be Achieved in 2030

Realize sustainable growth as a comprehensive biomass company shaping the future with trees

Definition of a comprehensive biomass company



A company group that consists of multiple businesses which generate stable profits and realize better living and cultural progress. It achieves this by using diverse technologies and know-how to maximize the use of renewable woody resources. This provides a wide range of products that help form a circulation-oriented society, supporting profit growth

policies encompassing working conditions and remuneration. Based on this belief, as president, I will work in good faith to accomplish those priorities.

Responding to Demands to Strengthen Governance

Strengthening governance is also crucial, in addition to decarbonization and human resources. The utilization of outside directors is often noted as a key priority which the Company is proud to say it has firmly addressed.

Outside directors represent one-third of the Company's Board of Directors. As an officer responsible for business execution, I make a point of listening frequently to the opinions of outside directors on a wide range of matters. I have created many opportunities for discussion every month, including attending the Group Management Strategy Committee. Furthermore, the Company holds meetings between outside directors and institutional investors. These meetings have been well received by investors for being a unique initiative seldom carried out by other companies.

Additionally, the Company endorsed the Task Force on Climate-related Financial Disclosures (TCFD) in April 2021. The Company will strive to provide appropriate climate change-related disclosures as a key management issue under the supervision of the Board of Directors. This initiative will also play a pivotal role in strengthening the Company's corporate governance.

Looking ahead, we will carry out effective corporate governance in response to increasingly stringent demands from society. That will pave the way for reducing the business risks faced by the Company. Accordingly, we will conduct effective corporate governance from the standpoint of ensuring our growth as a business enterprise.

Contribute to Society to Lay the Groundwork for Profit Growth

Looking ahead, as I have said before, it will be essential to incorporate ESG-related issues into the Company's growth strategy. In 2004, the Company signed the UN Global Compact and declared its support for the Ten Principles covering four areas. We also pushed ahead with CSR management. In the 2030VISION, we clearly articulated our commitment to the promotion of sustainability management. We have also addressed SDGs. In the 2030VISION, we have linked materialities and the SDGs with efforts to realize the Group Mission as our starting point.

To be honest, many of the business activities that we have undertaken over many years contribute to building a sustainable society. Going forward, we will work to address materialities under the 2030VISION with a view to realizing the Group Mission. We believe that these efforts will pave the way for achieving the SDGs.

As a business enterprise, it is absolutely imperative that we contribute to society through business and generate profits. This is also crucial for realizing a sustainable society. From this standpoint, I would like to share my views once again on what we mean by "a comprehensive biomass company shaping the future with trees," which is our goal to be achieved in 2030, as clearly stated in the 2030VISION.

We are determined to realize a carbon-neutral business model through the Three Circulations and drive profit growth as a comprehensive biomass company. This year will mark the start of these efforts. I look forward to making this journey toward 2030 together with all our stakeholders.

Toru Nozawa

Toru Nozawa
President and Representative Director
Nippon Paper Industries Co., Ltd.

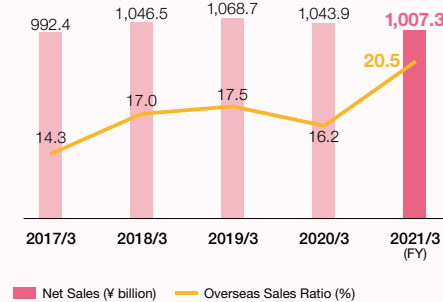
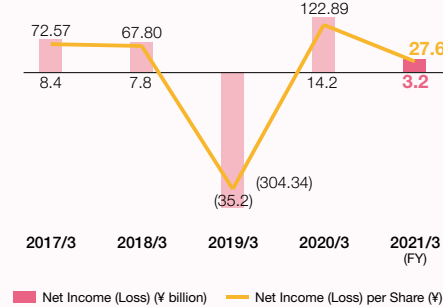
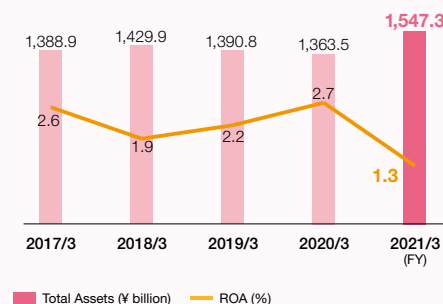
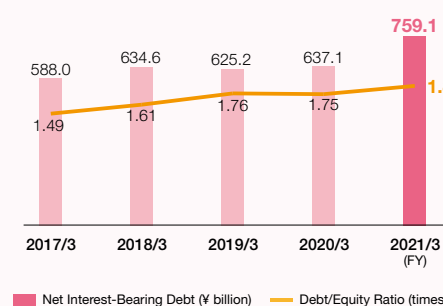
Shaping
the Future
with Trees

More Profitable

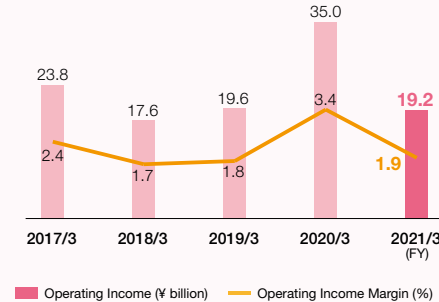
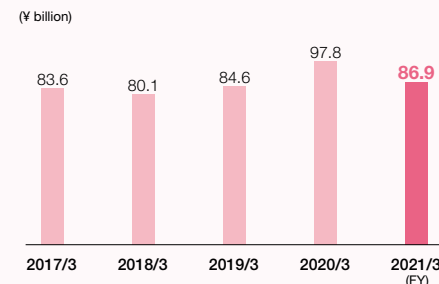
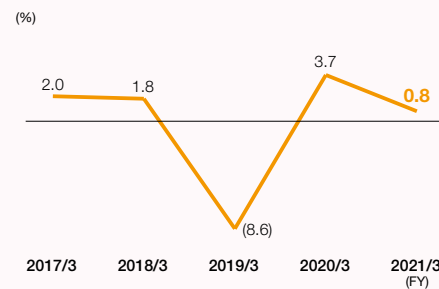
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Financial Highlights

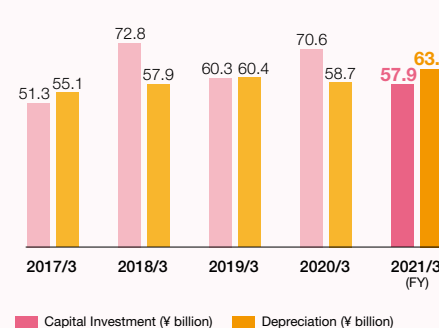
01 Net Sales and Overseas Sales Ratio

03 Net Income (Loss) and Net Income (Loss) per Share^{*1}05 Total Assets and ROA^{*3}07 Net Interest-Bearing Debt and Debt/Equity Ratio^{*5}

02 Operating Income and Operating Income Margin

04 EBITDA^{*2}06 ROE^{*4}

08 Capital Investment and Depreciation



01 Net Sales and Overseas Sales Ratio

Net sales in the Daily-Life Products Business increased by ¥47.7 billion due to the consolidation of Opal, leading to an increase in the overseas sales ratio for the Nippon Paper Group as a whole. However, net sales in the Paper and Paperboard Business decreased by ¥78.4 billion because of a large decline in domestic demand for paper due to the impact of COVID-19. As a result, net sales for the Group as a whole decreased from the previous year.

02 Operating Income and Operating Income Margin

Operating income in the Paper and Paperboard Business and Daily-Life Products Business decreased due to the impact of COVID-19. In addition, acquisition-related expenses of ¥6.0 billion were recorded in connection with the acquisition of Orora Limited's paperboard and fiber-based packaging business in Australia and New Zealand. These expenses were incurred as one-time expenses.

05 Total Assets and ROA

Total assets increased by ¥183.8 billion in connection with the consolidation of Opal, while efforts were made to reduce inventories. Additionally, ROA decreased in comparison to the previous year as a result of a decrease of ¥18.2 billion in ordinary income.

07 Net Interest-Bearing Debt and Debt/Equity Ratio

Net interest-bearing debt rose by ¥122.0 billion due to the borrowing of funds for the acquisition of Orora Limited's paperboard and fiber-based packaging business in Australia and New Zealand. The Group raised ¥60.0 billion of these funds through a hybrid loan.

^{*1} Profit (loss) attributable to owners of parent

^{*2} EBITDA = Operating income + Depreciation + Interest income + Dividend income + Amortization of goodwill

^{*3} Return on assets (ROA) = (Ordinary income + Interest expense) / Total assets at end of fiscal year x 100

^{*4} Return (loss) on equity (ROE) = Profit (loss) attributable to owners of parent / [Average of balances at the beginning and end of fiscal year (Shareholders' equity + Accumulated other comprehensive income)] x 100

^{*5} The FY2021/3 result for the debt/equity ratio represents the adjusted net debt/equity ratio.

Adjusted net debt/equity ratio = (Net interest-bearing debt - Equity-type debt) / (Shareholders' equity + Equity-type debt)
Equity-type debt: The amount of debt financed by hybrid loans that has been recognized as equity credit by ratings agencies (50% of the financed amount)

Message from the Executive Officer Responsible for Finance



Steadily implementing the initiatives laid out in Medium-Term Business Plan 2025 with the aim of increasing corporate value

Tomoyasu Itakura

Executive Officer and
General Manager, Financial Division
Nippon Paper Industries Co., Ltd.

With an unwavering resolve, the Nippon Paper Group will strive to increase its corporate value by accelerating the transformation of its business structure and strengthening its profitability

First, I would like to explain the results of our Sixth Medium-Term Business Plan (hereinafter, the "previous MTBP"), which covered the three-year period beginning in FY2019/3.

Underperformed Financial Targets Amid a Challenging Business Environment

In FY2021/3, the final year of the previous MTBP, net sales decreased by ¥36.6 billion year on year to ¥1,007.3 billion and operating income declined by ¥15.8 billion year on year to ¥19.2 billion. In FY2020/3, the Group delivered a solid performance, with operating income reaching ¥35.0 billion against the backdrop of steady progress on initiatives. However, as we entered FY2021/3, net sales and earnings both decreased as the Group was severely impacted by the COVID-19 outbreak. Consequently, the Group finished FY2021/3 with both net sales and operating income falling below the previous MTBP's targets.

The Group estimates that COVID-19 had an impact of approximately ¥69.0 billion on net sales and approximately ¥22.0 billion on operating income. Notably, demand decreased for newsprint and printing and business communication paper in Japan and Opal Limited's copy paper, which had a large impact on the Group. On the other hand, dramatic changes in people's lifestyles meant that demand increased for some paper carton, household paper and healthcare, and chemical products. In addition, interest-bearing debt increased due to the acquisition of Orora Limited's paperboard and fiber-based packaging business in Australia and New Zealand. Although the Group made use of a hybrid loan for this acquisition, the adjusted net debt/equity ratio still rose to 1.86 times.

ROE stood at 0.8%, far below the Group's target. In terms of ROA, the Group strove to streamline assets, which are in the denominator of ROA. To this end, we worked to reduce assets through such means as inventory reductions. We also

Message from the Executive Officer Responsible for Finance

reorganized our production structure by shutting down facilities that did not generate profits, while striving to step up investment in the growth of the Daily-Life Products Business and reshape its asset portfolio. However, growth in profit, which is in the numerator of ROA, remained sluggish. Consequently, ROA fell to 1.3%.

As discussed above, we underperformed on all the financial targets laid out in the previous MTBP except for the overseas sales ratio. This was a disappointing finish to the plan.

Steady Progress on Initiatives to Address Two Themes

We deeply regret that we underperformed on our financial targets. On the other hand, the Group achieved steady progress on forward-looking initiatives. Under the previous MTBP, we tackled the following two themes: “reorganize the production structure of the Paper Business and make maximum use of in-house facilities” and “expand businesses in growth areas and achieve early commercialization of new businesses.”

Regarding the first theme of “reorganize the production structure of the Paper Business and make maximum use of in-house facilities,” the Group made a difficult decision to resolutely push ahead with a drastic restructuring of its business. Specifically, we shut down eight paper machines and two coating machines as planned, thereby completing the reorganization of our production structure. The Group withdrew from the paper business at the Yufutsu Mill. However, we decided to commence the biomass mono-firing business and shifted business over to the functional specialty material field, which offers strong prospects for market growth. In addition, the Fuji Mill’s business was shifted from the paper business to the household paper business. Furthermore, against the backdrop of a larger decline in demand for newsprint

and printing paper due to the impact of COVID-19, we decided to withdraw from the paper and pulp business at the Kushiro Mill.

The second theme was to “expand businesses in growth areas and achieve early commercialization of new businesses.” Initiatives were steadily implemented to address this theme. The Group carried out capital investments in growth areas such as the Packaging, Household Paper and Healthcare, and Chemical Businesses largely as planned. It also established a production structure in anticipation of growth in demand. In new businesses, mass production machines for cellulose nanofiber (CNF) were installed at the Ishinomaki Mill and Gotsu Mill, and a demonstration test machine was installed at the Fuji Mill. In these and other ways, the Group has added variation according to each mill, thereby expanding product applications while meeting a wide range of customer needs.

One example of a large investment undertaken during the period of the previous MTBP was the acquisition of Orora Limited’s paperboard and fiber-based packaging business in Australia and New Zealand. In terms of the amount of investment, this deal far surpassed the strategic investment budget of ¥25.0 billion that the Nippon Paper Group had originally anticipated. However, we determined that this was a business investment essential to the Group’s future growth. While interest-bearing debt will temporarily increase, we decided to move forward with the acquisition because we judged that we could generate solid profits and recover the invested funds. In FY2021/3, the acquired business faced a challenging operating environment due to the impact of COVID-19. Nevertheless, the Group has begun initiatives to capture synergies with this business.

Next, I’d like to discuss Medium-Term Business Plan 2025 (hereinafter, the “new MTBP”), which is a five-year plan beginning in FY2022/3.

Accelerate the Transformation of the Business Structure

In May 2021, the Nippon Paper Group unveiled the 2030VISION and new MTBP. The 2030VISION anticipates what the Nippon Paper Group should be like in 2030. In response, new MTBP provides a roadmap for the first 5 years of the 10-year 2030VISION period. Under the new MTBP, the basic strategy is to accelerate the transformation of the business structure. The Group has adopted the following as its priority tasks: reallocate management resources to growing businesses, accelerate the commercialization of new businesses, and reinforce the competitiveness of the foundation businesses.

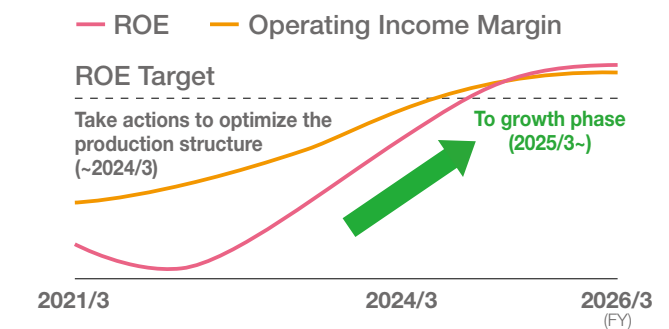
As for the financial targets of the new MTBP, the Group aims to achieve net sales of ¥1,100.0 billion in FY2026/3, and operating income of ¥40.0 billion or more at an early stage. The Group’s depreciation amounts to around ¥60.0 billion. Therefore, if operating income of ¥40.0 billion is achieved, EBITDA will amount to approximately ¥100.0 billion. If the Group can build a framework where it can steadily generate EBITDA of ¥100.0 billion, it will have a broader range of options to use cash for purposes such as investing in growth, reducing interest-bearing debt, and returning profits to shareholders. The Group will also be able to improve the debt/equity ratio, a measure of financial discipline, to the level of 1.5 times. That said, the Group seeks to steadily generate EBITDA of ¥100.0 billion not as a target, but as a bare minimum level of profitability.

The Group will aim for an ROE of 5.0% or more. In the first half of the new MTBP, the Group will need to carefully assess its course for optimizing the production structure of its foundation businesses. On the other hand, the seeds of growing businesses will not necessarily lead to profits immediately after they are

sown. Although the Group may incur temporary losses in the first half of the new MTBP, we will steadily implement the plan’s initiatives. Therefore, we expect ROE to worsen in the first half but improve during the second half.

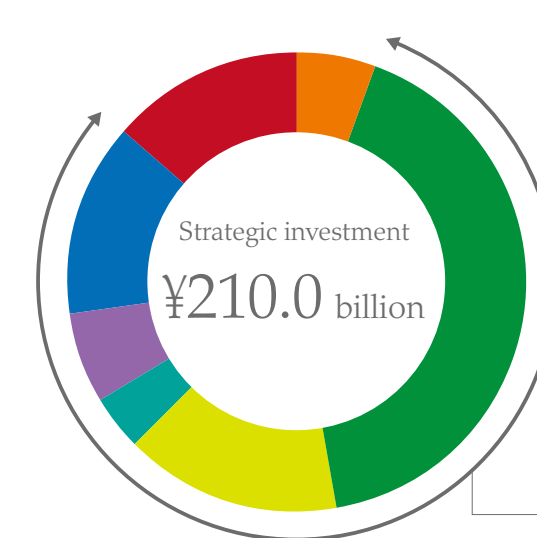
Strategic Investment to Accelerate the Transformation of the Business Structure

Under the new MTBP, we have adopted a basic strategy to accelerate the transformation of the business structure. With a greater sense of speed than before, we will shift from its foundation businesses to growing businesses. To make this happen, investment in growing businesses will be essential. That requires us to grasp trends in society such as lifestyle changes caused by COVID-19 and moves to reduce plastic and shift to paper, and firmly capture the tides of demand. The Group has established a budget of ¥350.0 billion for strategic investment over the next 10 years. During the new MTBP, the Group plans to use ¥210.0 billion of this amount. It is thus assigning a greater weighting of

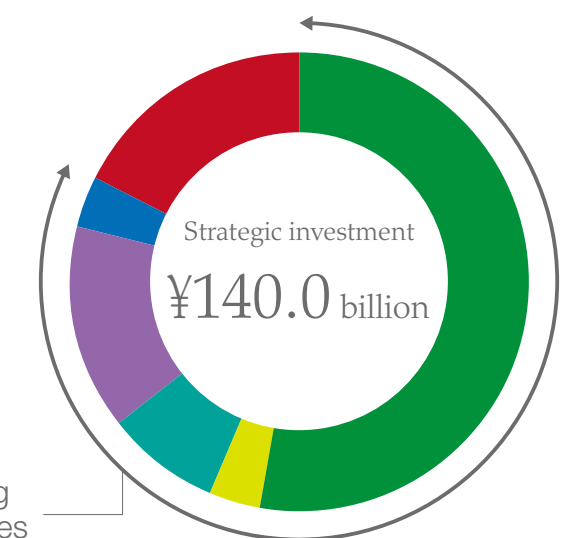
ROE Illustration**Targets and Results of the Sixth Medium-Term Business Plan and Targets of Medium-Term Business Plan 2025**

	Sixth MTBP Targets	FY2020/3 Results	FY2021/3 Results	MTBP 2025 Targets
Net Sales	¥1,115.0 billion	¥1,043.9 billion	¥1,007.3 billion	FY2026/3 ¥1,100.0 billion
Overseas Sales Ratio	19.0%	16.2%	20.5%	—
Operating Income	¥47.0 billion	¥35.0 billion	¥19.2 billion	At an early stage ¥40.0 billion or more
EBITDA	¥110.0 billion	¥97.8 billion	¥86.9 billion	Stably ¥100.0 billion
Debt/Equity Ratio*	1.5 times or less	1.75 times	1.86 times	FY2026/3 1.5 to 1.6 times
ROA	3.8%	2.7%	1.3%	—
ROE	5.0% or more	3.7%	0.8%	FY2026/3 5.0% or more

* The net debt/equity ratio of FY2021/3 result is after adjustment

Medium-Term Business Plan 2025: FY2022/3–FY2026/3

Paper and Paperboard Packaging Household Paper and Healthcare Chemical New Materials Energy Environmental Initiatives

FY2027/3–FY2031/3

Growing businesses

Message from the Executive Officer Responsible for Finance

investment to the first 5 years of the 10-year period than it has done for the second half of that period. This signals the Group's intention to make investments with a greater sense of speed. In order to achieve sustainable growth, it is imperative to make investments ahead of schedule. Naturally, these investments are premised on our steadfast commitment to maintaining financial discipline. Under the new MTBP, we will actively carry out investments in growth, and will transform our business structure at an accelerated pace.

In making investment decisions, we will adopt business viability as our decision-making criteria. This means that we will consider whether we can nurture a business into one of our core pillars, whether we can recover the cash we have invested, and whether the business can generate a level of profit commensurate with the investment. In the 2030VISION, we have set a target of raising the operating income margin in the Daily-Life Products Business to 7% or more. To reach this target, we will remain strongly aware of the importance of investing in high-value-added businesses with a high profit level above a certain threshold.

■ Establishing an Environmental Investment Budget

Additionally, in the 2030VISION, the Group has established an environmental investment budget of ¥52.0 billion. Society urgently needs to reduce greenhouse gas emissions. This has already

become a minimum requirement for the survival of business enterprises. Based on this awareness, the Group has set a target of reducing greenhouse gas emissions by 45% compared with FY2014/3. We see environmental investment as a "positive investment," not as a negative one. We believe that proactive investment in key technologies will lead to the solution of environmental issues and pave the way for the Group's sustainable growth.

Emphasis on Financial Discipline

While undertaking bold strategic investments, we will emphasize financial discipline to ensure that we maintain financial soundness.

For the acquisition of Orora Limited's paperboard and fiber-based packaging business in Australia and New Zealand, the Nippon Paper Group raised funds of ¥60.0 billion through a hybrid loan (subordinated loan), which has characteristics similar to equity, for the first time. This hybrid loan was taken out from the standpoint of maintaining financial discipline. Accordingly, the adjusted net debt/equity ratio, which takes into account the amount of debt financed through hybrid loans that has been recognized as equity credit by rating agencies, stood at 1.86 times as of March 31, 2021. I believe that the use of long-term, stable funds to finance this acquisition was a major achievement.

In terms of fund procurement, we have worked to diversify fund procurement methods to ensure stable financing. In the past few years, fund procurement methods based on environ-

mental perspectives have emerged, so we intend to use these sorts of methods to further enhance stable financing. One of the advantages of so-called transition financing, which supports the shift to a low-carbon society, is that the purpose of the use of funds is clearly defined. In other words, transition financing allows the Group to outwardly promote the fact that funds are being used for environmentally friendly projects. In addition, the use of funds is also closely aligned with the direction of the 2030VISION the Group seeks to realize.

From the standpoint of securing cash flows, a sound approach would be to secure profits in advance, and then allocate the surplus funds from those profits to investment. However, if this approach were applied to the current Nippon Paper Group, it would run the risk of leading the Group to a state of contraction and stagnation. For this reason, rather than emphasizing only financial discipline, the Group will simultaneously reorganize its production structure and invest in growing businesses. Although the Group's indicators related to financial discipline will temporarily deteriorate slightly, we believe that this is the best way to lay the groundwork for the Group's growth. The Group's basic policy on dividends will be to provide stable dividends as before.

Moreover, we will flexibly procure funds in the event of an emergency. In response to the COVID-19 outbreak in 2020, the Group increased its short-term credit line, including foreign currencies, and raised the balance of cash and deposits on hand. At its peak, the balance of cash and deposits on hand surpassed ¥100.0 billion for the Group as a whole. The Group secured liquidity on hand and prepared for unpredictable conditions. Leveraging its experience from the Great East Japan Earthquake, I believe that the Group has addressed the situation promptly.

We are also focused on maintaining our ratings from external evaluation agencies and improving them where possible. Indicators such as the debt/equity ratio and the debt repayment period are used to evaluate ratings. If the Group can build a framework for steadily generating EBITDA of ¥100.0 billion as planned, we will be able to create a positive cycle in various areas, including the repayment of loans payable. In growing businesses, specifically the Packaging, Household Paper and Healthcare, and Chemical Businesses, some investments were decided during the previous MTBP, so we expect the positive effects of those investments to emerge going forward. On the other hand, unless the Group speedily assesses the demand forecast for the post-COVID-19 period in the Paper Business, we run the risk of generating an additional supply-demand gap. Optimizing the Group's production bases is therefore an urgent priority. We would like to deliver solid results one step at a time as we move closer to achieving the new MTBP and the 2030VISION.



Striving to Increase Corporate Value by Strengthening Profitability

The Nippon Paper Group's vision for 2030 is to be a comprehensive biomass company shaping the future with trees. Strengthening profitability is essential to achieving sustainable growth as a comprehensive biomass company. Under the new MTBP, with an unwavering resolve, we will accelerate the transformation of our business structure dramatically. This means that we will consider ways of resolving the supply-demand gap in the Paper Business and make decisions accordingly. If decisions are postponed, we will only fall behind and repeat the setbacks of the past. We need to formulate demand forecasts well in advance and devise our plans from a long-term perspective. This was partly why the period of the new MTBP was set as five years. In terms of capital efficiency, the Group will steadily implement initiatives, even if it incurs temporary losses. Furthermore, we will give priority to strategic investments in growing businesses and put the Nippon Paper Group on a firm growth trajectory, as part of our efforts to lay the groundwork for increasing the Group's corporate value.

With dramatic changes in the social landscape, events may not necessarily proceed according to plan. I believe that the Financial Division's mission is to swiftly address changes in the environment, and run businesses, including those on the front line. We will consider how to best achieve the Nippon Paper Group's goals. From this perspective, we will make steady strides toward increasing the Group's corporate value.

Financial Strategy

Financial Policy

The Nippon Paper Group's financial policy is to enhance cash-flow generation capabilities by carrying out appropriate fund procurement to finance investments that enable sustainable growth, and to provide stable profit returns to shareholders, while maintaining a sound financial position.

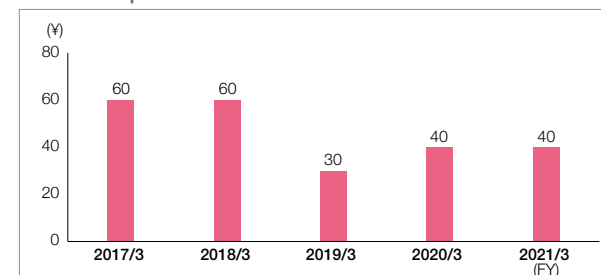
Fund Procurement Policy

In the course of undertaking fund procurement, the Nippon Paper Group strives to diversify its procurement methods to ensure stable financing. Concurrently, the Group seeks to extend repayment terms and standardize repayment amounts. Specifically, the Group procures funds through various sources when necessary, including borrowings from financial institutions and the issuance of commercial paper and corporate bonds, by estimating their amount based on the capital investment plan for the entire Group. Moreover, in order to maintain the liquidity of fund procurement, the Group has concluded commitment line agreements of ¥50.0 billion in total with major financial institutions.

Shareholder Return Policy

The Nippon Paper Group's basic policy on shareholder returns is to continuously provide stable dividends based on a comprehensive consideration of business results, increases in internal reserves, and other factors, and by taking into account the Group's management soundness and increases in shareholder value over the long term. The Group will put internal reserves to good use in expanding its business and strengthening its management foundation going forward, as it strives to increase its corporate value.

Dividends per Share



Policy on Ensuring Financial Stability

Nippon Paper Industries closely monitors (1) EBITDA, (2) the net debt/equity ratio, and (3) the debt repayment period as important indicators of financial discipline. The Company seeks to maintain stable credit ratings and improve them by upholding and enhancing financial discipline. The Company believes that keeping stable credit ratings and improving them are important management issues. Please refer to page 16 for the Company's targets under Medium-Term Business Plan 2025.

As of July 2021, the credit ratings acquired by the Company are as follows.

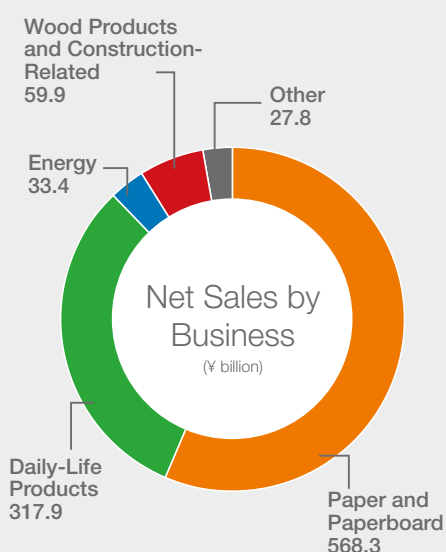
	Long-Term Bonds	Short-Term Bonds (CP)
Rating and Investment Information, Inc.	BBB+	a-2
Japan Credit Rating Agency, Ltd.	A	—

The Nippon Paper Group at a Glance

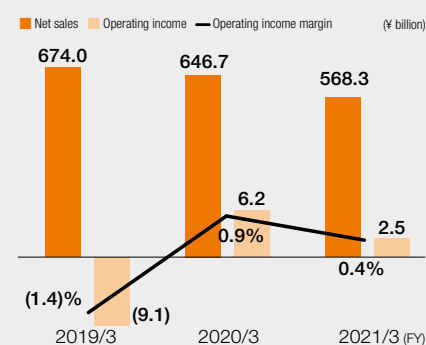
FY2021/3 Results

[Net sales]
¥1,007.3
billion

[Operating income]
¥19.2 billion



Paper and Paperboard Business



[Net sales]

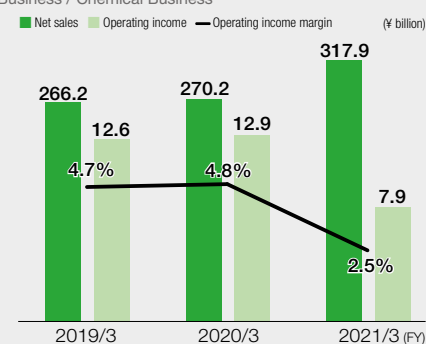
¥568.3 billion
(Down 12.1% YoY)

[Operating income]

¥2.5 billion
(Down 59.6% YoY)

Daily-Life Products Business

Packaging Business / Household Paper and Healthcare Business / Chemical Business



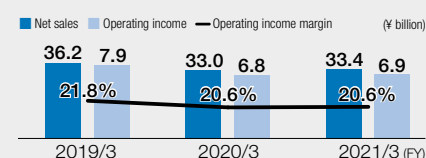
[Net sales]

¥317.9 billion
(Up 17.6% YoY)

[Operating income]

¥7.9 billion
(Down 39.0% YoY)

Energy Business



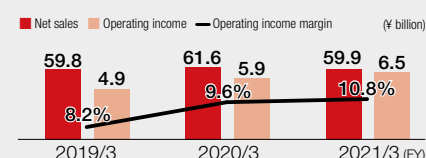
[Net sales]

¥33.4 billion (Up 1.2% YoY)

[Operating income]

¥6.9 billion (Up 1.2% YoY)

Wood Products and Construction-Related Business



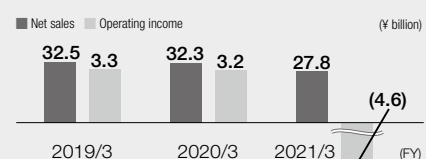
[Net sales]

¥59.9 billion (Down 2.8% YoY)

[Operating income]

¥6.5 billion (Up 10.1% YoY)

Other Businesses



[Net sales]

¥27.8 billion (Down 13.9% YoY)

[Operating income]

¥(4.6) billion (—)

Business Overview

Paper Business: Provides a stable supply of products in pursuit of conveying information, the function of paper, by leveraging papermaking technology and expertise cultivated over many years. While seeking out new types of needs that leverage paper's features of recyclability and biodegradability, product development is carried out to contribute to environmentally friendly, affluent lifestyles by maximizing use of existing facilities and resources.

Paperboard Business: Provides containerboards for cardboard using the latest environmentally

friendly technologies to meet a wide range of needs with outstanding safety, adhesion and ease of converting. Moreover, from fields related to daily living to advanced industries, product development that responds to the changing times is being carried out, such as paperboard packaging that improves logistical efficiency.

Main Products

Paper Business: Newsprint, printing paper, business communication paper, industrial paper, specialty paper, functional paper

Paperboard Business: Containerboards, white paperboards



Business Overview

Packaging Business: In Japan, provides liquid packaging cartons with a three-pronged marketing approach involving machine sales, carton supply and maintenance services. Overseas, produces and converts materials for packaging at Opal, NDP and TS Plastics.

Household Paper and Healthcare Business: Provides a wide variety of products, including household product brands Kleenex® and SCOTTIE®, healthcare products and business-use products.

Chemical Business: Provides chemical and other products leveraging technologies to utilize woody resources for various materials and coating technology developed through paper production.

Main Products

Packaging Business: Liquid packaging boards, liquid packaging cartons

Household Paper and Healthcare Business: Facial tissues, toilet paper rolls, adult diapers

Chemical Business: Dissolving pulp, chemical products, functional coating resin products, functional films



Business Overview

Engages in the power generation business proactively using woody biomass energy, leveraging operational expertise from in-house power gener-

ation at paper mills. Also develops effective new woody biomass fuels for GHG emission reduction toward building a carbon-neutral society.



Business Overview

Buys and sells lumber and building materials from Japan and overseas, fully utilizes the Nippon Paper Group's domestic wood materials and imported materials procurement networks to supply items such as wood chips for fuel. Also

conducts afforestation businesses in Brazil, producing and selling wood chips.

Main Products

Lumber, building materials, raw materials and fuel for papermaking



Business Overview

The leisure business utilizes Company-owned land to operate sports clubs and leisure facilities such as ski resorts, campsites and golf ranges. The

logistics business transports paper products shipped from Nippon Paper Group mills and warehouses in consumption areas and provides storage services at warehouses in major cities.



* Results from FY2019/3 and 2020/3 are restated in FY2021/3 segment results

* Operating income in other businesses for FY2021/3 results includes ¥6 billion in expenses related to the acquisition of the packaging division of Orora Limited in Australia and NZ

Envisioning the Ideal Toilet Paper Roll Is the First Step toward a Sustainable Society

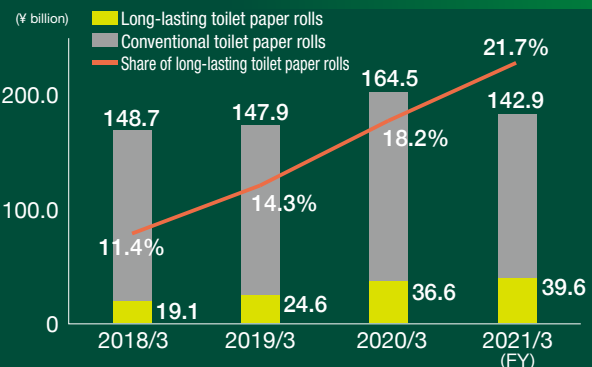
Nippon Paper Crecia ended production of common 12-roll toilet paper products on March 31, 2021. The share of 12-roll products in the toilet paper roll market is 80%. It made the bold decision to switch to long-lasting rolls to reduce the burden on the global environment, and has taken the first step as the industry's leader to realize a sustainable society.

CO₂ emissions from transport compared to 12 toilet paper rolls 43% reduction

* Nippon Paper Crecia's calculations

CO₂ emissions from (some) raw materials*1 40% reduction

*1 Reductions from toilet paper cores, film, and containerboards



Toilet Paper Roll Market and Share of Long-Lasting Toilet Paper Rolls

Source: INTAGE SRI+ data (aggregate sales, toilet paper market, April 2017–March 2021)
Long-lasting is defined as toilet paper rolls that are 1.5 times longer than a conventional roll, based on 50 m for a single-ply roll or 25 m for a two-ply roll (excluding Premium 4R) (defined by Nippon Paper Crecia)

“The SCOTTIE® Toilet Rolls FLOWERPACK 3 times long use 4 Rolls” contains the length of a conventional 12-roll product in 4 toilet paper rolls, about one-third the size*2. That means more products can be transported at one time, raising transportation efficiency and cutting CO₂ emissions. It also reduces plastic film used for outer packaging and paper resources used for toilet paper cores. Switching from conventional rolls to long-lasting toilet paper rolls will reduce the burden placed on the environment.

When the product was first placed in stores there was initially some confusion and complaints from customers, but long-lasting toilet paper rolls have expanded their share of the toilet paper roll market

*2 Comparison between “The SCOTTIE® Toilet Rolls FLOWERPACK 3 times long use 4 Rolls” and SCOTTIE® 12-roll FLOWERPACK



year by year. In FY2018/3, long-lasting toilet paper rolls had a share of about 11%, but this grew to approximately 22% in FY2021/3. Long-lasting toilet paper rolls are steadily and assuredly becoming a part of people's daily lives. “The SCOTTIE® Toilet Rolls FLOWERPACK 3 times long use 4 Rolls” is a product that realizes the company's aim for products with value that create better lifestyles and products that contribute to the global environment.

Going forward, the company will continue expanding business by creating products to realize a sustainable society as a company trusted by customers.

Marketing

Wow! Such a Compact Roll Contains the Same Amount as 12 Regular Rolls?

When switching to long-lasting toilet paper rolls, we first thought about naming as a way to easily convey the benefits. By analyzing reviews and comments, we learned people most appreciated products that were long-lasting and had to be replaced less frequently, so we straightforwardly called them long-lasting toilet paper rolls. We used one side of the packaging for advertising, and introduced the product with the copy “Wow! Such a compact roll contains the same amount as 12 regular rolls?” to emphasize it contains the same length as the conventional 12-roll product. Then, we aimed to maximize synergetic effects by linking the packaging to information media like TV commercials.

The company focuses on improving brand power and maximizing profits by rapidly picking up on trends in society and through marketing by thinking outside of the box. Looking ahead, we want to make similar efforts not just in household products but also for things like healthcare products, and move ahead on product development responding to changing consumer needs.



Yuta Saito
Supervisor
Marketing Department
Sales Promotion Division
Nippon Paper Crecia Co., Ltd.

Technological Capability

Paper Density × Embossing × Winding = Toilet paper rolls that are 3 times longer

When it comes to toilet paper rolls, softness and comfort are highly valuable to customers.

“The SCOTTIE® Toilet Rolls FLOWERPACK 3 times long use 4 Rolls” is two-ply and measures 75 meters in length, but the issue for us was how to fit three times the length of a conventional toilet paper roll on a toilet paper roll holder. We solved this through a perfect balance between the Nippon Paper Group's papermaking technologies of compressing thickness to reduce air between fibers, embossing to create softness through uneven layers and then winding rolls without compromising those uneven layers. To reach that perfect balance, it required numerous prototypes and two and a half years from the start of development to make a satisfactory product.

We have acquired tens of patents for this combination of paper density, embossing and winding that realizes long-lasting, soft and compact toilet paper rolls with long length and fine quality, that differentiate us from other companies. We will continue to evolve and remain meticulous about quality.



Yasunobu Ooka
Section Manager
Product Development
Department
R&D Division
Nippon Paper Crecia Co., Ltd.

Future Prospects

Providing Comfortable and Convenient Products and Contributing to a Sustainable Society

Demand for disposable products is expected to increase in conjunction with changing lifestyles, and there will be a challenge going forward to build a recycling system so those products do not go to waste and materials can be reused. “The SCOTTIE® Toilet Rolls FLOWERPACK 3 times long use 4 Rolls,” which are symbolic of long-lasting toilet paper rolls, are manufactured using recycled pulp as a raw material made from high-quality pulp using recyclables

such as milk cartons. The paper industry is one with an established recycling system and a high degree of sustainability. The Company has experience and techniques honed over many years through its use of fine-quality pulp from paper cartons. To achieve both comfort and convenience for customers and a sustainable society, the Company will make efforts to build a recycling system so that disposable products need not become waste.

[Each Business's Strengths and Future Strategies] Paper Business



Aiming to optimize the production structure
with an eye to future demand

Atsushi O'haru
Managing Executive Officer
General Manager, Sales Planning Division, Nippon Paper Industries Co., Ltd.

Link strengths to opportunities		Address challenges and threats	
<ul style="list-style-type: none">• Production bases located with good balance throughout Japan and robust production capacity• Technological capabilities to accommodate diverse production facilities	S Strengths	W Weaknesses	<ul style="list-style-type: none">• High fixed costs due to extensive facilities• Need for time to change the production structure
<ul style="list-style-type: none">• Trend of shift from plastic to paper• Customer needs for products that reduce environmental impacts	O Opportunities	T Threats	<ul style="list-style-type: none">• Shrinking market for conventional paper media and digitalization• Rapid changes in the world that are difficult to predict

■ Optimizing the Production Structure Based on Demand Forecasts for Each Grade

Looking to 2030, the market for products such as newsprint, printing paper, and copy paper is likely to continue to shrink due to digitalization and other changes in the demand structure. Naturally, we need to think about rightsizing the production structure to match demand. That said, many of Nippon Paper Industries' main paper products hold top market shares. Also, some products such as business communication paper and industrial paper are seeing almost no decline in demand. Therefore, securing profits while fiercely protecting our market shares will be important.

Meanwhile, there are also markets that are likely to grow moving forward, driven by the trend toward replacing plastic with paper. We will capture demand where paper is an alternative to materials such as plastics and films, including packaging paper, white paperboards, and base paper for paper cups.

The Sales Planning Division was newly established in June 2021. Its biggest role is to devise medium- to long-term strategies. Its top priority is to figure out how to optimize the production structure in light of each sales division's sales plans. We will rightsize the production structure based on demand forecasts for each grade, including facility-related actions like revamping paper machines that make

grades with shrinking demand to manufacture grades that are promising for the future.

In optimizing the production structure, we also need to think about reducing GHG emissions. Furthermore, we must strengthen our business continuity plan (BCP) as a measure to mitigate impacts from disasters such as earthquakes and heavy rain. Three key steps to that end span a variety of fields. The first is having another mill temporarily make products for a mill should it sustain damage. The second is strategically holding inventory. The third is securing diverse modes of transportation for logistics. Strategic inventory entails thinking about when, where and how much of each product we should store and in what kind of packaging. Moreover, short-term financial impacts need to be considered when optimizing the production structure.

The entire industry has sustained considerable damage from COVID-19 over the past year. The Company's paper sales volumes have also been affected significantly, including by a decline in inbound demand. However, we expect domestic demand to pick up to some extent as vaccination progresses going forward. Additionally, inbound demand could come back if COVID-19 treatments become available. Since we are making long-term

forecasts about demand growing, holding steady, or declining for each grade, we will advance initiatives in

line with those forecasts looking ahead a decade.

■ Importance of Anticipating the Market Five Years from Now

The Sales Planning Division's basic policy for Medium-Term Business Plan 2025 sets measures to be taken during the first five years of the 2030VISION. Each sales division will look at changes in demand, and formulate an action plan. During the process, they will think about the best way to sell their products, naturally with an eye to medium-term earnings but also to factors such as environmental issues. Based on that, we will consider what kind of production structure is desirable and proceed with optimization. I believe that is how the process will work.

Making market projections about five years from now is not easy, but we will start with demand forecasts based on major trends. The production structure cannot be changed overnight. This is partly because we have social responsibilities and cannot immediately carry out any decisions to end

production. Moreover, recent social conditions call for companies to address a wider variety of issues, such as reducing GHG emissions, than before. This will take some time and money. Since the times will change quickly going forward, we will delve into how to address those changes.

Along the way, our many production bases located with good balance throughout Japan, production capacity, and technological capabilities that can accommodate diverse facilities will be tremendous strengths. When transferring grades to other mills, it takes time and energy to gain customers' understanding about the justification and to maintain functions, quality, and so forth. It is therefore important to ascertain factors such as the life cycles of products in business and demand.

■ Contributing to a Better Environment and the Trend of Shifting to Paper

Reducing GHG emissions is a Company-wide task. The Sales Planning Division believes initiatives on the raw materials and logistics fronts are critical. For instance, if we specify our products are transported via environmentally friendly methods that reduce GHG emissions, they will be recognized as products responding to decarbonization and we will be fulfilling our responsibilities as a leading manufacturer. Customers are starting to make such requests in the printing and business communication paper domain, and we are working to address them.

One product that meets needs to shift from plastic to paper in fields that are likely to grow moving forward is SHIELDPLUS®, an eco-friendly paper-based barrier material.

SHIELDPLUS® was revamped in October 2020, and appears to be gradually gaining traction as more companies with a strong interest in environmental issues are adopting it. Uptake is greatest in the food industry, but SHIELDPLUS® is also being used for non-food applications such as cosmetics packaging. While it is mainly being used as secondary packaging now, we look to collaborate with R&D divisions to enhance the product's barrier properties and expand

its adoption as primary packaging in the future.

We are promoting products to replace plastic with paper through our Paperizing Campaign, and working to strengthen relationships with customers. Specifically, in addition

to engaging with companies like food manufacturers, we are holding exhibitions, moving forward with approaching local companies via our offices and factories, and carrying out promotional activities targeting high school clubs and universities addressing environmental issues, among others.

The Sales Planning Division will back up sales departments while providing them with information and advice, and optimize the production structure from a medium- to long-term perspective to enhance the competitiveness of foundation businesses.



SHIELDPLUS® product example

[Each Business's Strengths and Future Strategies] Paperboard Business



Leveraging our advantages as a specialized containerboard manufacturer to tap into the trend toward eliminating plastic and using more paper

Satoru Muto

President, Nippon Tokai Industrial Paper Supply Co., Ltd.

Link strengths to opportunities		Address challenges and threats	
<ul style="list-style-type: none">Development and production of high-added-value products utilizing kraft pulp*Framework unifying sales and development	S Strengths	W Weaknesses	<ul style="list-style-type: none">Stabilizing operationsLow direct transportation ratio
<ul style="list-style-type: none">Stable demand for packaging applications for daily necessitiesE-commerce-related demandRobust demand in Southeast Asia	O Opportunities	T Threats	<ul style="list-style-type: none">Falling demand due to economic deterioration and population decline in JapanSoaring prices for containerboard wastepaper and other raw materials and fuel

* Pulp produced by boiling wood chips, the raw material, in caustic soda (i.e., pulping) to release the fibers

■ Cutting Costs to Secure and Maintain Steady Profits

The Paperboard Business revised its containerboard prices in fall 2018, and has since worked to maintain prices. Thanks to this, its profitability is now stable. Heading towards 2030, we will strive to maintain and sustain this steady profitability.

Such an achievement will require work on both the production and sales fronts. Firstly, we will strive to reduce production costs as a manufacturer. We decided to invest in cost reductions at the Fuji and Otake Mills, and must ensure to deliver ongoing returns on those investments moving forward. Also, stabilizing operations is a major task. It is especially critical that we fully utilize the Akita Mill's paper machine, which is among the biggest kraft liner machines in Japan, by stabilizing pulp equipment, boilers, and other operations at the mill.

On the sales front, transportation has been

streamlined since Nippon Paper Industries and Tokushu Tokai Paper Co., Ltd. formed a business alliance and we now have realized production in suitable locations. However, further steps to address CO₂ emissions are called for because trucks are mainly used for transportation. We also need to think about efficient transportation while promoting the White Logistics Movement backed by Japanese government bodies, which aims to improve logistics, partly given the truck driver shortage. Direct transportation is the mainstay for containerboards, but costs for secondary transportation and operating warehouses in areas where the products are consumed could be reduced by further raising the ratio of direct transportation. Shortening the transport distance is also an effective means of reducing CO₂ emissions.

■ Concentrating on Sales and Export Strategies and New Product Development

On the sales side, we will secure sales volumes and maintain prices, taking into account the balance between the two. Specifically, we must work even more closely with our equity-method affiliate Nippon

Tokan Package Co., Ltd. We also want to build even better relationships with prominent containerbox manufacturers across Japan, and will advance strategies so that major beverage manufacturers and other

companies select us as their designated supplier for base paper. Since containerboards are mostly general-purpose products, we must work to maintain prices and concentrate on optimizing costs to generate profits.

Export strategies, focused on the Akita Mill, will also be important. Sales costs to the domestic market for products of the Akita Mill are higher than for other mills since it is far from the Tokyo metropolitan area, but on the other hand, it is an excellent export base since it is a coastal mill. The Akita Mill's export competitiveness is increasing further since demand for containerboards is strong overseas, and China has become a promising export destination, in addition to Malaysia and Vietnam. We will also actively promote business collaboration with Opal.

Regarding new product development, it is vital that sales teams accurately grasp market needs. We developed water-resistant linerboard, a multifunctional containerboard, as an alternative to styrofoam in line with the move to use less plastic. Marine product companies and others are considering adopting this



Akita Mill, a coastal mill leading export strategies

product. Moving forward, we are looking to accelerate this product's promotion via an array of applications. Furthermore, we are proactively developing heavy-duty linerboard, which is currently mainly imported.

■ Anticipating Demand Expansion with Extensive Containerboard Applications

We have focused on generating and maintaining stable profits as a pillar of our business strategy under Medium-Term Business Plan 2025. Since COVID-19 has affected a wide range of industries around the world, the demand forecast work is not easy. However, we think trends for containerboards will be stable, underpinned by solid demand for use as a packaging material for everyday necessities.

Looking 5 to 10 years ahead with that perspective, we believe the beverage and processed food-related fields, major sources of demand, will continue to drive the containerboard business as they are strong and unaffected by market conditions. Demand related to produce is affected by factors like the weather but should basically be stable. Additionally, we expect growth moving forward related to e-commerce since it entails the use of containerboards for transporting goods and has expanded during COVID-19. On the other hand, sales related to mechanical, electrical, automotive, and other components do fluctuate since economic and supply chain issues are involved.

In a society with an aging population and declining birth rate, dampening of domestic demand for food

on the whole is a concern. However, containerboard applications are extensive and the demand therein will not significantly decline. Containerboards excel as packaging material that can be steadily purchased and as recyclable, eco-friendly products from the standpoint of environmental considerations and the Sustainable Development Goals (SDGs). We therefore expect containerboard demand to stay strong. Moreover, we can reap benefits from the trend to replace plastics and styrofoam with paper. Going forward, I believe there will be a need for functions like water resistance in containerboards as well. We developed water-resistant linerboard, and look to greatly expand on products with additional functions in the future.

As a specialized containerboard manufacturer with kraft pulp facilities, we have an edge. Our ability to develop high-value-added products using kraft pulp manufactured in-house is also an advantage. While leveraging those strengths, we will step up R&D efforts incorporating user needs and continue to underpin profits as a foundation business of the Nippon Paper Group.

[Each Business's Strengths and Future Strategies] Domestic Packaging Business



Aiming to leverage our strengths as an integrated system supplier to expand sales to the global market

Yasuhito Obayashi
Managing Executive Officer
General Manager, Paper-Pak Sales Division, Nippon Paper Industries Co., Ltd.

Link strengths to opportunities		Address challenges and threats	
<ul style="list-style-type: none"> One of only a few integrated system suppliers in the world World-class technology for developing paper cartons and filling machines 	S Strengths	W Weaknesses	<ul style="list-style-type: none"> Insufficient global market share
<ul style="list-style-type: none"> Expansion of the paper carton market for non-beverage applications Demand for filling machines to increase efficiency and save labor accompanying the decrease in the working population Demand for eco-friendly products 	O Opportunities	T Threats	<ul style="list-style-type: none"> Declining younger population in Japan and beverage market diversification Escalating competition in the paper carton market

■ 2030VISION: Aiming to Be a Global, First-Class Business

The Paper-Pak Business is central to the Nippon Paper Group's Daily-Life Products Business, and ideally positioned for further growth. Over the past five years, we have developed and launched differentiated, new products mainly in the domestic market. However, we will broaden our target to the global market moving ahead, setting our sights on heightened demand for paper cartons worldwide. We have established a vision that targets major sales growth and becoming a global, first-class business by 2030; in other words, ranking among the top four globally.

We regard the five years leading up to 2025 as especially important to achieving the 2030VISION, and will forge ahead with initiatives based on three key themes under Medium-Term Business Plan 2025.

The first key theme is thoroughly reinforcing the packaging business for the domestic beverage market, which is the third largest in the world. In FY2021/3, sales rose 15% from five years ago despite headwinds from COVID-19, thanks to growth in sales of differentiated, high-value-added products. Over the next five years, we will work to expand market share and acquire new customers as we harness the beauty and full-surface printing afforded by paper cartons to propose to customers designs that appeal to consumers, while emphasizing strengths in terms of environmental factors, targeting

plastic containers in particular. Turning to filling machines, we have developed models with functions and capacity that can compete with those for plastic containers. Examples include NSATOM®, which is the world's first multifunctional filling system for aseptic paper cartons with support for beverages with particles and long fibers; UPN-SEC14, which is a highly hygienic filling machine for paper cartons with attached closures for chilled products; and UP-MC240, which boasts the world's fastest filling capacity for school milk cartons at 24,000 per hour. Moving ahead, we will continue to bolster the filling machine business. Based on our success in the domestic market, we will set out to capture the global market in the future.

The second key theme is cultivating new business fields. Paper cartons are also seeing growing demand for industrial applications. For instance, we started selling SPOPS® replaceable containers for shampoo in 2019, and demand for switching to paper cartons for disinfecting and sanitizing products, such as alcohol and surfactants, has arisen amid the normalization of measures to address COVID-19. Most of those products require long-term storage at room temperature, and there were numerous technological and other challenges to practical application. However, we succeeded in developing SPOPS® Hygiene specially designed for disinfectant

applications, of which commercial sales will commence in 2H FY2022/3. We will also promote the use of paper cartons as sustainable packaging for refills from the standpoint of recycling. Additionally, we will commercialize maintenance services for our filling machines utilizing IoT, and develop sales of kraft paper wrapping machines.

The third key theme is global market development. In June 2021, Nippon Paper Industries acquired a portion of shares in Elopak ASA, a Norway-based liquid packaging carton company. Elopak has large markets, mainly in Europe and North America, and is

robustly pursuing development of environmentally friendly products in line with its declaration to contribute to a low-carbon, circular society on a global scale. The Company and Elopak have been deepening their relationship for over three decades since they first entered into a licensing agreement. With this acquisition of shares, we will build on our business alliance with Elopak, including by utilizing its overseas sales network to accelerate global sales of our new products.



SPOPS® Hygiene product

■ Steps to Enhance Technological Capabilities and Cost Competitiveness

To powerfully advance such initiatives, we must enhance our technological capabilities and cost competitiveness. The three points described below will be especially important.

The first point is capital investment. The biggest topic is fully utilizing the central impression (CI) flexo printing press, which will start operating in October 2021. It is a state-of-the-art printing press that features eight colors, roughly double the printing capacity of conventional printing presses, and is compatible with small-batch, high-mix production. It can therefore increase efficiency and significantly reduce costs compared with conventional printing presses.

The second point is new product development. With regard to filling machines, we are making steady progress developing new models with Shikoku Kakoki Co., Ltd. under the capital and business alliance we forged in 2019. We already rolled out the NSATOM® aseptic filling system for paper cartons based on the new concept of making storage at room temperature possible, and will speed up development and launches of new products so as to continue to receive exceptional ratings in Japan and overseas going forward. As for containers, we will

develop and expand sales of environmentally friendly products such as School POP® straw-less paper cartons.

The third point is effective utilization of liquid packaging board produced in-house. In the past, we relied on imports from other companies for liquid packaging board. But in 2016, we acquired Weyerhaeuser Company's liquid packaging board business, and established Nippon Dynawave Packaging Company, LLC in the United States. And at the Otake and Shiraoi Mills in Japan, we manufacture liquid packaging board for aseptic containers stored at room temperature. Currently, about 70% of liquid packaging board used by the Nippon Paper Group is produced in-house. This has enabled us to include liquid packaging board as a part of our new product development scope. Also, we have strengthened the production structure from a BCP perspective by making it possible to produce liquid packaging board at several bases, which allows us to respond flexibly to natural disasters, international risks, and so forth.



School POP®
adopted by Himawari
Milk Company

■ Paper Carton Business Headed for an Even More Exciting Future

The global trends towards a decarbonized society and the use of less plastic present tremendous business opportunities for paper cartons. Demand for paper cartons is steadily growing, and we believe paper carton business will become even more exciting from here on out.

We have built a robust business foundation as an integrated system supplier handling everything from liquid packaging board to converting, filling machines,

maintenance service, and recycling, and can compete on all fronts such as liquid packaging board, paper carton converting, and filling machines. That is a unique strength that globally famous paper carton competitors do not have. While leveraging that strength to proactively launch differentiated products at an early date and undertake M&A in the global market, we will work to realize the 2030VISION.

[Each Business's Strengths and Future Strategies] Opal



Growing our profitability as an integrated fiber-based packaging company by strengthening the foundations of our business and responding to the opportunities created by social change

Masanobu Iizuka
Chief Executive Officer, Opal

Link strengths to opportunities		Address challenges and threats	
<ul style="list-style-type: none"> Integrated production system from raw material procurement to manufacturing base paper and converting Providing packaging solutions to meet customer needs 	S Strengths	W Weaknesses	<ul style="list-style-type: none"> Structural separation between Business Units Duplication of functions in the post-acquisition value chain
<ul style="list-style-type: none"> Environmental awareness in Australia and New Zealand and the trend to replace plastic with paper Expanding demand for e-commerce 	O Opportunities	T Threats	<ul style="list-style-type: none"> Decline in global demand for printing and writing paper Increased manufacturing costs due to higher energy prices

■ Opal's Vision

Following its foundation in May 2020, Opal has been promoting its Vision: "Opal shapes the future through sustainable packaging." After an extensive engagement process involving close to 1,200 team members, the company confirmed the following five key Values (Codes of Conduct): Safe (We put safety at the centre of everything); Agile (We thrive through change); Extraordinary (We go above and beyond); Collaborative (We are better together); and Trustworthy (We do what we say). In order to realize its Vision as an integrated fiber-based packaging company, Opal aims to grow together with its customers in alignment with the Values created by our team members.

To achieve this, the company will leverage its strengths in an integrated production system from procurement of raw material including wood resources and waste cardboard, through to manufacturing base paper and converting, not only to deliver better products to customers, but also to provide the market with a full range of fiber-based packaging and converting solutions. In addition, the move to adopt sustainable packaging has been rapid in Australia and New Zealand, where environmental awareness is high. Opal will continue to expand its packaging business by focusing on the opportunities presented by the trend

to replace plastic with paper; supplying the market with new materials and products.

As the impact of COVID-19 continues, the company is committed to the health and safety of its team members and their families in accordance with its Values, and is taking all possible measures to manage our operations safely. The pandemic has made the business environment extremely uncertain, and the company will continue to make every effort to win trust by providing customers with the packaging solutions that they require.



The Opal Values (Codes of Conduct)

■ Towards Achieving Medium-Term Business Plan 2025

Under Medium-Term Business Plan 2025, Opal has established two basic policies: 1) Maximize profits from existing businesses and 2) Expand new business domains.

With regard to the first policy to maximize profits from existing businesses, as the company continues to align its businesses as "One Opal," it is centralizing the commercial functions that have been spread across each business. This is enabling the company to move its organization to a more efficient structure and ensure that integration synergies are realized. This will also allow it to identify and focus management resources on growth opportunities.

In addition, Opal is taking steps to optimize its supply chain to make the company even more cost competitive. This includes reducing costs through centralized procurement, consolidating duplicate warehouses created by the acquisition, and establishing a more efficient transportation management system. In operations, the company is working to establish common KPIs across all Business Units to establish integrated standards and ensure

maximum efficiency.

Under the second policy of expanding new business domains, the company is working to develop new materials and sustainable products. Opal will focus on providing products that promote the shift from plastic to paper by making use of its own facilities and through collaboration with the Nippon Paper Group, with the aim of expanding its business.



■ High Environmental Awareness Presents a Major Opportunity

The Oceania region is expected to experience both population and economic growth going forward, with an attendant increase in demand for corrugated packaging also anticipated. Capturing expanding demand from e-commerce in response to lifestyle changes also represents a chance for the company to expand its business.

The Australian federal and state governments support the target of making all packaging materials reusable, recyclable, or compostable by 2025, and are working to further develop the domestic recycling industry and expand demand for recycled products. In line with this, many major food and FMCG companies, the Quick Service Restaurant sector, and retailers are developing sustainable packaging strategies and are moving towards eliminating or reducing their consumption of single-use plastic materials. This trend represents an extremely important business opportunity for Opal, which is well positioned as a fiber-based packaging business.

On the other hand, threats include the decline in global demand for printing and writing paper. This market decline has accelerated with the impact of COVID-19. In addition, high energy prices have been increasing the cost of manufacturing. As a counter

measure, Opal is currently exploring Energy from Waste projects at its two paper mills in collaboration with a range of partners.

Going forward, Opal will strengthen its ties with the Nippon Paper Group to take advantage of economies of scale to reduce procurement costs and switch from externally sourced base paper to Group products. Nippon Paper Industries and Opal will combine and develop their respective strengths in manufacturing technology and efficiency improvements for base paper production to benefit the Group. The company will make use of new materials from the Nippon Paper Group to produce products that respond flexibly to a range of needs in the Australian and New Zealand markets, as they pursue a shift from plastic towards paper.

Opal aims to steadily complete the structural integration process and achieve its business plan. In addition, as the company improves its structure as an integrated fiber-based packaging company, it will seize the opportunity presented by rapidly growing demand for sustainable packaging and seek to expand the packaging business quickly through the provision of new products and innovation.

[Each Business's Strengths and Future Strategies] Household Paper and Healthcare Business



Contributing to healthy, hygienic living through product development that will drive lifestyle changes

Kazumori Fukushima
President and Representative Director, Nippon Paper Crecia Co., Ltd.

Link strengths to opportunities		Address challenges and threats	
<ul style="list-style-type: none"> Raw material is sustainable woody resource Strong brands, technological capabilities, marketing capabilities Production sites near major consumption areas 	S Strengths	W Weaknesses	<ul style="list-style-type: none"> Large number of competitors Inefficient aspects of operations and logistics
<ul style="list-style-type: none"> Demand for products that are environmentally friendly Increase in needs for health and hygiene 	O Opportunities	T Threats	<ul style="list-style-type: none"> Capacity expansion by competitors Fluctuation in raw material and fuel prices

■ Hygiene, Health, and the Global Environment Are Key Themes for Product Development

Nippon Paper Crecia Co., Ltd. has adopted a corporate philosophy of providing valuable products and brands that can contribute to health and hygiene, from the customer's perspective. Guided by this philosophy, the company focuses on product development that is responsive to lifestyle changes, aiming to contribute to healthy, clean lifestyles.

The key themes underpinning the company's product creation are hygiene, health, and the global environment. By reflecting customer feedback in product development and conducting proper marketing, the company will strive to respond to changes in lifestyles and living environments in its product development. In addition, the raw material used by the company is based on sustainable woody resources. It is one of the company's strengths that its business is directly linked to an environmentally friendly image.

In April 2021, the company stopped producing its usual 12-roll packs of toilet paper and changed to long-lasting rolls. This has contributed to improved customer convenience and logistics efficiency, and reduced the use of resources like cardboard cores, thereby helping to reduce greenhouse

gas emissions. Looking ahead, the company plans to develop similar benefits for other products. In other efforts, the company has started sales of toilet rolls wrapped in paper-packaging, rather than plastic film, mainly sold through the e-commerce channel, and there are plans to increase the paper wrapped product lineup and to expand sales channels going forward. Likewise, the company needs to make further progress on responding to the global environment and customer needs by increasing its technological capabilities.



Paper-packaged tissue paper SCOTTIE® CASHMERE® NATURAL

■ Telling an Appealing Story to Gain Better Understanding of Product Value

Medium-Term Business Plan 2025 covers a five-year period during which the company will create a foundation for developing valuable products that will drive lifestyle change and products that will contribute to the global environment in order to realize the company's vision for 10 years in the future. With this foundation, the company will be able to expand its business even further in the following five years.

In the second five-year period, the emphasis will shift to product development based on the technological capabilities developed by that point and marketing capabilities to accurately communicate the benefit of the products developed. Recently, the purchasing methods of end users have been diversifying. The company will examine the most suitable marketing activities for each product, based on big data analysis using digital technology and so forth. In the field of e-commerce in particular, the company will leverage these data to further sales promotions.

On the other hand, it is necessary to make sales strategies for household products that encourage customers to actually grab products in stores. This requires creating and communicating a story to promote product value. That is to say, rather than simply selling a thing, the process must start with

communicating the value of that thing.

For the long-lasting rolls for household use, such a story effectively conveys product differentiation. For tissue paper, value addition and differentiation has yet to be accomplished. The development and marketing divisions are working on how to achieve this.

In healthcare products, the company aims to help customers to understand the odor-eliminating effects of cellulose nanofiber (CNF), and use this as a competitive advantage over other companies to expand market share. The company's focus will be on increasing exposure of these products through advertising such as TV commercials, as well as product improvements and new development aligned to customers' needs. Since it is difficult to convey the high performance of these products without actually using them, finding the most effective way to communicate is a challenge. Looking forward, the company will also focus on developing eco-friendly products. The healthcare product market is becoming much more competitive as society ages. In this situation, it is extremely important to ensure that consumers understand the true value of the company's products if they are to be the product of choice.

■ Envisaging Our Growth Using the Combined Capabilities of the Group

Under Medium-Term Business Plan 2025 measures for increasing the top line include taking on the role of an industry pioneer to drive a shift towards long-lasting rolls. Furthermore, in hand towels, the company integrated the sales functions of Try-Fu Co., Ltd. in October 2020, and expects to increase its top line by mutually sharing distribution channels. In particular, expanding sales through Try-Fu Co., Ltd.'s proprietary commercial product distribution channels are expected to deliver synergy effects. On the other hand, Try-Fu Co., Ltd.'s home-use products are also starting to be sold through the company's distribution channels, and the two companies are both seeking to realize a win-win situation.

Looking ahead, concerns for the company include increased competition as well as fluctuations in pulp price for raw material. As measures to alleviate these concerns, the company aims to increase the use of pulp manufactured within the Nippon Paper Group to

ensure stable earnings without supply instability.

In terms of logistics, the company's challenges are to further simplify and streamline its processes. While promoting pallet transportation, the company also needs to introduce digital technologies such as IoT and AI and take steps to help frontline employees use their time as efficiently as possible. Regarding the actual manufacturing operation, some previously manual processes at the Tokyo Mill are now being performed by robots.

To achieve the 2030VISION, under Medium-Term Business Plan 2025 the company will pursue product development that can meet customers' needs in order to stay ahead of changing lifestyles. The next step is to further expand the company's business domains and harness the combined capabilities of the Nippon Paper Group to drive the company's growth.

[Each Business's Strengths and Future Strategies] Chemical Business



Meticulous about the B2B business style and proactively propose useful products to customers

Kazunori Itaya
Executive Officer
General Manager, Chemical Sales Division, Nippon Paper Industries Co., Ltd.

Link strengths to opportunities		Address challenges and threats	
<ul style="list-style-type: none"> Diverse product groups including wood-based and natural materials and technical resources A business style of presenting, developing and providing products that are useful to customers 	S Strengths	W Weaknesses	<ul style="list-style-type: none"> Investment cost to upgrade production equipment Production is low-scale and high-cost
	O Opportunities	T Threats	<ul style="list-style-type: none"> Optimizing a wide diversity of businesses Rapid societal changes greater than expected

■ Aim to Create Win-Win Partnerships

Our division is based on a B2B business style centered on a wide range of products used in various fields and seeks to expand sales while earning the trust of customers. To put it another way, rather than developing products that customers want, our basic stance is to provide customers with useful products. Based on a philosophy of product-oriented evolution conscious of marketing, we have always strived to brainstorm with customers, proactively propose useful products to them and develop new products, and this style will continue going forward.

Our division has developed with a focus on comprehensive use of wood, including dissolving pulp,

lignin, fermentation and cellulose. At the same time, to ensure a good balance of earnings, we have also proactively engaged in businesses using chlorination, synthetic concrete admixture and film coating technologies. From that standpoint, over the next 10 years, including Medium-Term Business Plan 2025, the Chemical Business will aim to further expand under a policy of accurately grasping the needs of changing times and providing products that satisfy market demand in a timely fashion.

In so doing, it will be important to create more beneficial corporate partners to generate win-win relationships on a B2B basis.

■ Looking Ahead 10 Years and Using 4 Key Phrases as Opportunities

Looking ahead 10 years, we are adopting 4 key phrases: environmental issues, food issues, the aging society and DX (digital transformation). We want to be involved in multiple aspects of each of these key

phrases with a wide variety of products, and already have the resources to move forward.

Firstly, regarding environmental issues, we sell renewable woody resource cellulose in a variety of

fields, and its application is expected to expand further going forward. The division is also already selling raw materials for lithium-ion and lead acid batteries. Growth is expected in the future with demand increasing as electric vehicles require both types of batteries.

Then, regarding food issues and the aging society, realizing food safety, security and stability is an important issue. We are focusing on the livestock and aquaculture industries to sell and develop supplements that do not contain antibiotics or synthetic compounds. Various evidence is currently being gathered and preparations made to expand sales in the future. The division is selling raw materials for new functional ingredients and plant-based sweeteners that will support health maintenance and can also support provision of drinks that are easily consumed by the elderly.

Finally, regarding DX, the progress of IT means more work will be done on screens such as smart-phones and computers in the future. The division has already achieved many results with highly functional films related to displays, and will continue to do so. Moves responding to the 4 key phrases are underway. Work to increase production capacity is also moving forward to prepare for further market expansion. The aim is to expand business by accelerating

those initiatives while having close communication with customers.

These key phrases do not only present opportunities, but also threats. We have developed many products and brands, and must estimate whether demand for each product will increase, decrease, rebound or worsen over the next 10 years, and such decisions carry risk. Naturally, resources are also limited, so their reallocation is also a challenge. Put another way, it is important to resolutely decide where to apply offense or defense, go with the flow of the times and connect this to generating profits and solving social issues.

Examples of cellulose in use



■ Strengthening Profitability through Development-Led Sales Proposals and Human Resource Training

We believe the rapid changes currently taking place in the world are inevitable. The division has been preparing to respond to these changes. However, due to the COVID-19 pandemic, changes occurred faster than envisaged and we have to shift up a gear.

Moreover, the division is involved in the development of many products that are raising expectations even within Nippon Paper Industries, and we must collaborate with associated divisions to link new products to profits as soon as possible.

A three-in-one system of sales, R&D and production are indispensable for timely provision of products needed by markets. Sales and R&D teams work together to anticipate what customers will need going forward, the R&D teams give that shape and make proposals, and the production team

provides stable supply. Maintaining this development-led proposal sales function is an important theme for our division.

To achieve this theme and bolster profitability, it is important to secure outstanding human resources. We need to nurture human resources that are able to grasp global trends and draw their own conclusions. Overseas strategies are also important, so we need to have human resources that can stand strong.

We believe that our division's resources and distribution channels will definitely be useful for the new products that will support the Nippon Paper Group's growth. We will be involved in more new products launched by the Company, and will produce solid results at this major turning point for the Group.

[Each Business's Strengths and Future Strategies] Energy Business



Promoting decarbonization and carbon neutrality by reviewing the energy mix and adopting new fuels

Yoshinori Matsubara
General Manager, Energy Business Division
Nippon Paper Industries Co., Ltd.

Link strengths to opportunities		Address challenges and threats	
<ul style="list-style-type: none"> Accumulation of technology, facilities and expertise cultivated over many years of paper production Use of wood-based fuel leveraging a wood materials procurement network 	S Strengths	W Weaknesses	<ul style="list-style-type: none"> High ratio of fossil fuels in the energy mix Issues of cost and damage to social reputation due to significant use of coal
<ul style="list-style-type: none"> Needs for biomass fuel to achieve carbon neutrality in 2050 Future potential of hydrogen-using technology 	O Opportunities	T Threats	<ul style="list-style-type: none"> Increasing environmental awareness among the public Move to introduce carbon pricing

■ Initiatives to Achieve the Ambitious 2030 GHG Reduction Target

The Company has responded to the Japanese government's 2050 carbon-neutral declaration by setting an ambitious target to reduce the volume of its greenhouse gas (GHG) emissions by 45% from FY2014/3 levels by FY2031/3. As the Company strives for this goal in 2030, it will begin by switching from fossil fuel to non-fossil fuel for its in-house electric power generation in as many areas as possible, aiming to increase the ratio of non-fossil fuels used. At dedicated electricity selling facilities, the Company will also follow a basic policy of decreasing the ratio of fossil fuels and increasing that of non-fossil fuels, thereby reducing GHG emissions. By making a concerted effort in these initiatives, the Company's vision is to arrange a business situation that will make its stakeholders proud by 2030.

Under Medium-Term Business Plan 2025, the Company will work step by step to achieve the

challenging numerical target for in-house power generation in 2030. Up to now, coal has accounted for over half of the Company's total fuel use, at around 2 million tonnes per year. By 2030, the Company must reduce this to 1 million tonnes. This target has been set in consideration of what kind of fuel is currently optimal for society, as well as the Company's energy conversion measures.

Under the 2030VISION, the Company will proceed to review the energy mix, reduce fossil fuel usage by reorganizing its production structure, and promote development and social implementation of biomass fuels. From 2030 to 2050, the Company will convert its energy use base, aiming to realize carbon neutrality. To this end, the Company plans to improve its energy mix by making capital investments in the order of approximately ¥52.0 billion for environmental responses by FY2031/3.

■ Promoting Increased Use of Non-Fossil Fuels Using Existing Infrastructure and Technology

The specific direction towards achieving carbon neutrality in 2050 has yet to be determined worldwide, and there is not a clear projection of the future

condition of the social framework, technologies, and fuel markets. The Company will respond flexibly using its existing infrastructure to the fullest extent, until it

achieves the conversion of its energy use base.

To make paper, the Company has generated electricity by turning turbines with steam from boilers, making further use of the same steam as the source of heat for the production process. For this reason, the Company's infrastructure and electricity generation technology developed over many years is one of its strengths, and we have electricity generation capacity of around 2 million kW, which is rare in private sector companies aside from power companies. The Company's basic strategy in the 2030VISION and Medium-Term Business Plan 2025 is to use these strengths to realize the GHG reduction target of FY2031/3.

As a specific measure, the Company is maximizing the biomass combustion ratio in its existing coal-fired boilers for both in-house electric power generation and dedicated electricity selling facilities,

to clear electricity generation efficiency regulations for coal-fired thermal power generation. At the Ishinomaki Hibarino Power Plant (Nippon Paper Ishinomaki Energy Center Ltd.), the current maximum biomass combustion ratio is 30%. By expanding the combustion ratio, the plant can be converted to a power source with even higher environmental added value, contributing to the further increase of non-fossil fuel use in society.

However, external procurement will not satisfy the required volume of biomass fuel, and the Company is therefore taking steps to develop its own carbon-neutral biomass solid fuel and practically implement it in society. In addition, the Company aims to further reduce the amount of coal used by combining use of low-carbon fuels such as waste-oriented fuels and wood pellets.

■ Expected Start of Operation of 100% Biomass Power Generation Facility

Looking ahead, as public environmental awareness continues to increase, the Company is receiving requirements from its corporate customers to present high figures regarding GHG emission reductions per product. A major challenge is whether or not the Company can produce energy with zero fossil fuels in response to these requirements. The Company also purchases electricity, and not all of it is green electricity. Given this situation, one of the Company's major challenges is how to adhere to the demanding targets from society.

Carbon pricing is another movement that the Company cannot ignore. If it is to be actually incorporated into a system, then the cost of electricity generated using coal would effectively increase several-fold. This would increase production cost, as well as a perceivable risk that the Company's products would cease to be preferred in Japan and overseas if the Company were to continue using coal. As a countermeasure against this, the Company has made various internal investments in energy saving and has also introduced internal carbon pricing since July 2021. Furthermore, in April 2021, the Company agreed with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and will be promoting public disclosure of its climate-change initiatives.

In converting its energy use base from 2030 to 2050, the Company will promote initiatives towards decarbonization and carbon neutrality and internally develop biomass fuel as a new fuel. The Company's energy use base conversion going forward is, in effect, the utilization of new energy sources, primarily hydrogen, which is a green energy source that does

not emit CO₂. The Company has expectations for hydrogen-based ammonia and carbon-neutral methane synthesized from hydrogen and CO₂. In addition to these clean fuels, the Company will also strategically promote the use of green electricity generated from hydrogen.

With regard to the electricity sales business, the Yufutsu Biomass Power Plant (Yufutsu Energy Center, LLC), which features one of the largest biomass power generation facilities in Japan, is to begin operation in January 2023. The power plant will be fueled with wood chips and unused domestic wood. The use of these wood chips cannot be imitated by other companies as it relies upon the Nippon Paper Group's network developed for procurement of raw materials for paper. The Company also has high expectations for a power generation business at the Yufutsu Biomass Power Plant.

The Company is also promoting an ambitious project, unprecedented in Japan, of converting its coal-fired Suzukawa Thermal Power Plant (Suzukawa Energy Center Ltd.) into a biomass mono-firing power plant. Looking ahead, the Company will continue driving initiatives aimed at achieving the challenging targets of reducing GHG emission by 45% in FY2031/3 and becoming carbon-neutral in 2050.



CG rendering of the completed Yufutsu Biomass Power Plant

[Each Business's Strengths and Future Strategies] Wood/Building Material Business



Utilizing the wood material procurement network to facilitate rapid growth in the domestic lumber business

Kunihiko Hayama
President and Representative Director,
Nippon Paper Lumber Co., Ltd.

Link strengths to opportunities		Address challenges and threats	
<ul style="list-style-type: none"> Nationwide procurement network for wood chips used in paper manufacturing Procurement and supply system for wood chips used as fuel High flexibility to change 	S Strengths	W Weaknesses	<ul style="list-style-type: none"> Business related to housing, which is in decline Decreased demand for paper
	O Opportunities	T Threats	<ul style="list-style-type: none"> Downturn in demand for wood products following a decline in the number of new housing starts Lack of forestry workers Low productivity of forestry industry

■ Aiming to Significantly Increase the Handling Volume of Domestic Lumber

A theme important to Nippon Paper Lumber Co., Ltd. in the 2030VISION is to expand the domestic lumber business, which is one of the company's strengths, and to focus on expanding the fuel supply business for the energy sector in order to build a business foundation that will offset the declining trend in the housing and paper-related businesses.

In regard to the domestic lumber business, the company seeks to establish a firm position as the leading company by 2030. The company has developed a nationwide procurement operation for wood chips for paper, which it supplies to Nippon Paper Industries. One of the company's strengths is its ability to use this procurement network for procuring domestic lumber. When the company was originally

established, around 80–90% of the lumber handled by the company was imported. In the future, the company plans to gradually reduce its procurement of imported lumber and actively switch all of its supply to domestic lumber. Harnessing the strength of its domestic lumber procurement network, the company will increase its share of the domestic lumber market, aiming to supply over 1 million m³ per year by 2025, and 1.5 million m³ by 2030.

With regard to the fuel business for the energy sector, the company will leverage the strength of its fuel wood chip procurement and supply network to steadily capture growing needs for biomass power generation and aim to expand the business.

■ Initiatives to Support the Increase of Forestry Workers

The perceived threat to the achievement of these objectives is the declining and aging population of Japan, accompanying a decrease in the birthrate. By 2030, the number of new housing starts is projected to decrease by around 30% from 2019 levels, to around 630,000. Naturally, new housing starts are a

key driver of wood product demand, and if no action is taken, the industry itself may collapse due to the decrease in volume, causing the company to have a sense of crisis.

In response, the company has prioritized its initiatives to expand the domestic lumber business.

Japan's wood product self-sufficiency rate is somewhat low at 38%. The government aims to increase the rate to 50% or higher by 2025, and the supply of domestic lumber is steadily growing. However, the growth has now plateaued, mainly due to a lack of forestry workers. Japan is presently dependent on imported lumber for homebuilding, and there have been cases of unreliable import flows and high prices caused by rampant lumber demand in the U.S. and China and a global container shortage. The number of new housing starts is expected to continue to decline going forward, and by switching from imported to domestic lumber and increasing the ratio of the latter, the company aims to maintain its sales even as the market contracts. This is a key point of the domestic lumber business expansion strategy.

The company's strengths in terms of its nationwide wood products procurement and supply networks will be demonstrated in this strategy, while on the other hand the company also recognizes risks

such as the unmaintained state of mountain forests, low productivity of the forestry industry, and the serious shortage of forestry workers. For that reason, the company will concentrate its efforts on policies to increase forestry workers. In Hokkaido, the company is already conducting initiatives to train personnel from other industries to be forestry workers and provide them work, an effort that is resulting in an increase in workers. As the initiative has been successful, the company will implement it in other areas going forward.

To expand the domestic lumber business, the company will strengthen collaboration within the Group. Group company N&E Co., Ltd. produces medium-density fiberboard (MDF), using almost 100% domestic lumber as raw material. In addition to using domestic lumber, the company also has expertise in engineered wood,* which it will leverage to help expand the domestic lumber business.

* Secondary processed wood products with calculated, evaluated, and guaranteed strength characteristics

■ Strengths in Expansion of Fuel Business As Well

Another strategic pillar is expansion of the fuel supply business in the energy field. The company participates in the business of supplying biomass power plants from the planning stage of the power generation equipment. If all of the installations currently in progress become operational, it will generate new sales of around ¥30.0 billion through expansion of fuel wood chip supply.

The key to expanding this business is also the domestic lumber procurement network. The purpose of this network is to procure wood chips for making paper, but it can also be used to procure fuel wood chips and as a system for supplying fuel wood chips to boilers throughout Japan. This logistics infrastructure also includes a Group company that operates a maritime shipping business, enabling fuel wood chips to be transported over a wide area.

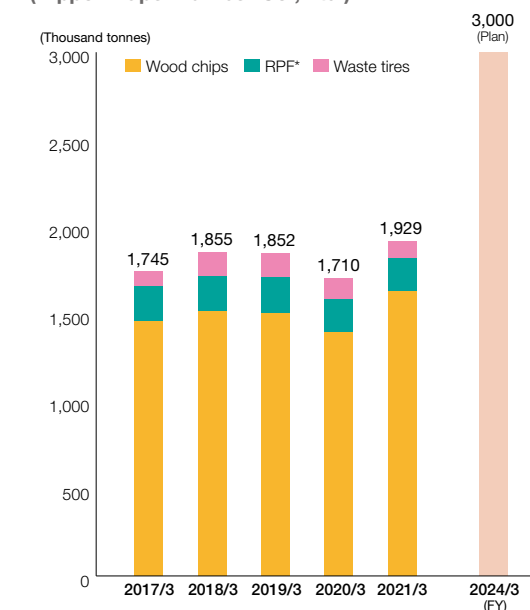
The volume of fuel handled in FY2021/3 was around 1.9 million tonnes, but the company plans to increase this to around 3.0 million tonnes by FY2024/3. These figures include not only domestic lumber, but also imported wood chips and imported pellets. The company will use domestic lumber procured through its network, along with a portion of imported fuel chips for large-scale boilers that consume large quantities of fuel.

Currently, around 200 people are working as a small but powerful team in the company. Although the scale may be small, this makes it easier to get everyone focusing their aims in the same direction. Employees responsible for wood chips for paper

manufacturing may be reallocated to focus on fuel wood chips depending on developments going forward. Employees are being trained so that they will be able to respond flexibly regardless of the situation.

The company is highly flexible to change. In an era where the pace of change is proceeding even faster, the entire company will work as one as it continues to evolve.

History and Plan Regarding Handling Volume of Fuel (Nippon Paper Lumber Co., Ltd.)



* RPF stands for refuse derived paper and plastics densified fuel that is pellet fuel made from paper and plastics industrial wastes which are difficult for recycling.

Accelerate Business Transformation

Launch of the Biomass Material Business Division



Building a New Material Business and Promoting Early Commercialization

Mitsuhiro Sugino
Executive Officer
General Manager, Biomass Material Business Division
Nippon Paper Industries Co., Ltd.

■ Undertaking the Group's Business Transformation and Strengthening of External Collaboration

The Biomass Material Business Division was established as an organization for powerfully promoting business transformation, which is a pillar of the 2030VISION and Medium-Term Business Plan 2025. It plays two important roles to achieve the numerical targets of the 2030VISION and Medium-Term Business Plan 2025. The first is to provide cross-divisional penetration throughout the Group, creating a structure that will drive Group-wide business transformation. The second is to play a central part in strengthening collaborative external relationships with other industries, university research institutions, etc.

Previously, the former Innovative Material Sales Division responsible for CNF and MinerPa® mainly worked on sales expansion with the support of other business divisions and affiliated companies. However, such structures were subject to resource limitations. A key strategy of Medium-Term Business Plan 2025 is for the division to fully utilize the diverse channels, knowledge, experience, and network of the entire Group to sell innovative materials. For this reason, the division is positioned not as a sales division, but as a business promotion division, a function that involves building the business. The Group's sales targets for innovative materials overall are for ¥15.0 billion in FY2026/3 and ¥65.0 billion in FY2031/3. The Biomass Material Business Division is deeply

committed to drive them.

As a specific measure for achieving this, the division has set up a cross-divisional project structure for each new material and will promote multiple projects in parallel. In addition, the division will share information and liaise between projects, promoting highly efficient operation. Project members are not fully fixed, allowing resources to be provided as needed. Each project conducts careful progress management and makes regular reports to the Group Management Strategy Committee. The committee's opinion will form a reference point for conducting a PDCA cycle.

Another initiative is to strengthen collaboration with external partners, as mentioned above. In promoting the commercialization of innovative materials, there is always some technology that cannot be supplied from inside the Group, necessitating external collaboration. To produce ideas such as new application development and so forth, it is important to have collaboration not only with companies, but also universities. The company currently has joint research ventures in place with multiple universities for different materials. Going forward, we will further increase communication with outside organizations to enable even deeper exploration of technologies and ideas.

■ Aiming to Achieve Targets by Promoting the Value of Woody Resources

The division has three organizations: the Business Transformation Promotion Office, the Biomass Material Sales Promotion Department, and the Biomass Material Communication Center. The Business Transformation Promotion Office is positioned to take over and continue the outline policy

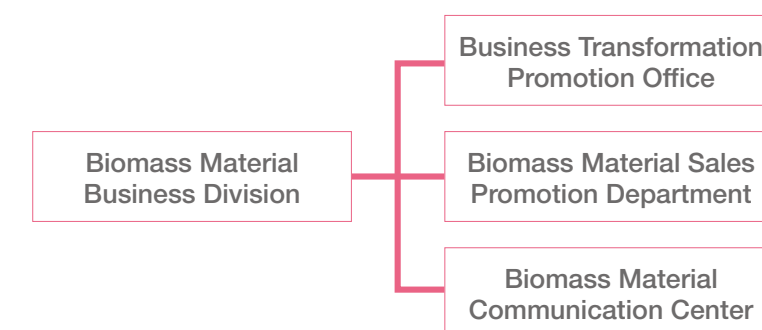
project that was promoted during the formulation of the 2030VISION and Medium-Term Business Plan 2025. Its role is to promote the implementation of projects and tasks through internal cooperation within the Group. The Biomass Material Sales Promotion Department focuses on innovative materials such as

CNF, MinerPa®, and Biocomposite™, conducting market surveys, proposing sales expansion strategies, and carrying out sample work. This organization is strongly expected to implement cross-divisional functions within the Group at a higher level than before and aims to achieve sales targets by forming projects with other sales divisions and affiliated companies. Meanwhile, the Biomass Material Communication Center performs the role of creating opportunities for customer contact and feedback.

The key to commercializing innovative materials is to thoroughly pursue the characteristics of woody resources based on the so-called Three Circulations, namely: (1) Circulation of sustainable forest resources; (2) Circulation of woody resources used for various purposes with technological capabilities; and (3) Active product recycling. Rather than simply replacing existing materials, the division must appeal to the unique strengths and value of woody materials. To achieve this, the challenge for the division is to increase opportunities for the customers to actually take a look at those materials and to receive feedback from them. By fully utilizing the functions of the Biomass Material Communication Center, which has a team of highly specialized staff, and pursuing eco-friendly products, the division will build the business and promote stronger collaboration with the R&D Division.

For the present, the division will focus on nine projects, including seven currently in progress at the Business Transformation Promotion Office, plus CNF and MinerPa®. The division considers these to be a priority for Medium-Term Business Plan 2025. From there, among the topics raised by the New Product

Biomass Material Business Division Organization Chart



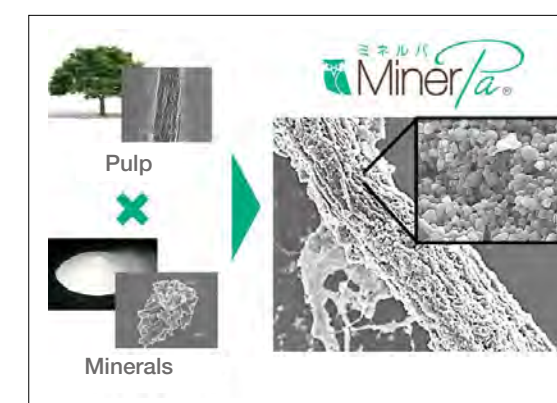
Development Committee, the division will handle those that have neared the trial stage. To reiterate, the role of the Biomass Material Business Division is not that of a sales division, but rather to develop innovative materials into businesses through measures such as strengthening collaboration. In other words, the R&D Division carries out development or refinement of technologies, while the Biomass Material Business Division takes charge of the business promotion stage. After that, the baton is passed to the Sales Division.

To achieve early commercialization of innovative materials, the main point is to strengthen cross-divisional functions within the Group and find ways to leverage the combined capabilities of the Group. To achieve the sales targets of ¥15.0 billion for FY2026/3 and ¥65.0 billion for FY2031/3, the Group must approach the challenge as though its very survival were at stake. To this end, the division is determined to effectively utilize all resources both internal and external, deepening and accelerating its initiatives with the cooperation of other divisions and Group companies.

Innovative Materials Aiming for Early Commercialization



CNF: An innovative material made from wood-derived fiber micro-refined to the nano level



MinerPa®: A compound material of pulp and minerals



Biocomposite™: A composite material of woody resources and resin

Research and Development for Further Growth



Takashi Ochi
Executive Officer
General Manager,
Research and Development Division
Nippon Paper Industries Co., Ltd.

Strengthening Internal and External Collaboration Aiming to Achieve Early Commercialization of Innovative Materials from Sustainable Woody Resources

The Nippon Paper Group is promoting research centered on afforestation and the use of paper, pulp, and biomass as a comprehensive biomass company. The Company's strengths lie in the technologies and expertise that it has cultivated through research and development. It has widened the scope of research, focusing mainly on technologies for extracting cellulose from wood, which is the raw material for paper, as well as papermaking and coating technologies.

As the basic policy of the 2030VISION has stated that the Group will "ensure new businesses and new materials make an early positive contribution," the Company is aiming to achieve product development and early commercialization of innovative materials such as cellulose nanofiber (CNF)

and MinerPa®. With declining demand for graphic paper, the Company's greatest challenge is to develop new applications for cellulose and pulp in unconventional forms. In addition, in new products and fields, the Company needs to consider everything starting from the manufacturing process and sometimes faces hurdles that it has not experienced before. In conventional paper development, much of the process can be handled internally; however, in new products, it can take significant time to evaluate one prototype. To solve this issue quickly, the Company will further deepen its collaboration with the research institutions of other companies and universities.

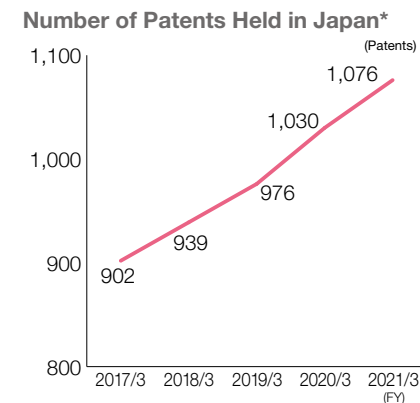
In a CNF-based dry electricity storage body currently under joint development with Tohoku University, the university was the first in the world to discover that CNF produced by the Company can effectively store electricity in nano-sized surface irregularities. The Company was not able to discover this by itself. Through open innovation, the Company has recognized the importance of increasing the number of joint research partners among institutions from different industries and widening the scope of development. Now the Company has started development of a dry, light-weight supercapacitor that makes use of this effect.

The Company is strengthening coordination, not only with outside partners, but also internally. In the Research and Development Division, efforts to foster exchanges between researchers and to share research challenges had made progress, and recently this led to the development of printing paper with antiviral properties.

Amid demands to reduce environmental impacts such as reducing GHG emission and shifting away from plastic, woody resources are experiencing a boost due to their renewable and biodegradable nature. The Company aims to seize this opportunity and promote R&D with a sense of urgency to realize a sustainable society.

Intellectual Property Strategy

The Group is strengthening its intellectual property capabilities because intellectual property is an important management resource for building a competitive advantage. Recently, the Group has focused on applying for patents in growth fields and new business fields. With the global development of its business, the number of overseas patent applications is also increasing. In addition, the number of domestic patents registered has been stably increasing, while the number of patents held in Japan is also climbing steadily.



* The target organizations are Nippon Paper Industries Co., Ltd., Nippon Paper Papyrus Co., Ltd., Nippon Paper Crecia Co., Ltd., Flowric Co., Ltd., Nippon Paper Lumber Co., Ltd., Sakurai Co., Ltd., and Akita Jujo Chemicals Co., Ltd.

Specific Initiatives of the Intellectual Property Strategy

Formulation and execution of intellectual property strategy in line with each type of research and business

Examination and utilization of information technologies such as AI for increasing intellectual property operation efficiency

Communication of beneficial information for business decisions combining intellectual property and financial information

Strategic use of intellectual property agreements that contribute to research and development and business development

Laboratory Introduction

Research Laboratory

The Research Laboratory conducts R&D on paper manufacturing, which is the Company's foundation business, breeding and proliferation technologies in the field of afforestation, and applications for woody resources other than paper. Research into breeding and proliferation is mainly focused on technology development for increasing the productivity of trees mainly in overseas afforested areas. Using afforestation techniques cultivated overseas, the laboratory is also promoting R&D for proliferation of specific cedar mother trees that have low pollen volume, excellent growing characteristics and high CO₂ absorption capability, and to provide a stable supply in the form of

seedlings. In research on applications for woody resources other than paper, the laboratory is developing applications for chemical products based on wood compounds such as cellulose and lignin (CMC, cellulose powder, various lignin products, etc.), as well as MinerPa®, a functional material combining wood fiber and minerals. With regard to paper, the laboratory is promoting R&D on high-performance paper materials for promoting the shift away from plastic, such as waterproof cardboard cases, by organizing an integrated research structure covering all processes from pulping, paper, coating, printing, and analysis.

CNF Research Laboratory

The Company is focusing on developing applications and new functions for TEMPO-oxidized CNF, carboxymethylated CNF, and CNF-reinforced resin. The Company's aim for TEMPO-oxidized CNF is to see it adopted as an industrial material for various kinds of rubber and coatings, such as general-purpose tires, by optimizing different physical properties and manufacturing conditions. Carboxymethylated CNF has been adopted in many applications for food and cosmetics, and the Company is promoting development of new functions through combination with other materials and so forth. For CNF-reinforced resin, the Company is introducing new kneading machines and carrying out sample work with CNF-reinforced nylon and CNF-reinforced polypropylene, while working to establish manufacturing methods and optimize manufacturing processes.

Packaging Research Laboratory

SHIELDPLUS®, the paper barrier packaging material, has been renewed. Now, its barrier bending resistance has been improved and its range includes a new grade with improved gravure printing suitability. The laboratory has organized a production system and started sales of Lamina® heat-sealable paper. Meanwhile, in liquid packaging cartons, the Company commercialized School POP®, a paper carton for school lunches that lets one drink beverages directly without using a straw. Furthermore, for the replaceable paper carton, SPOPS®, the laboratory developed a special specification with superior penetration resistance, SPOPS® Hygiene, to respond to increasing demand for disinfectant associated with the spread of COVID-19. Going forward, the laboratory will continue to develop products that are easy to use while reducing environmental impact.

Functional Materials Development Laboratory

The Functional Materials Development Laboratory develops optical films with functions that respond to customers' needs, mainly for display applications. Typical functions include transparency, anti-glare, hardness, dirt-resistance, and recoating properties. The laboratory will continue to actively pursue development that contributes to film products with diverse functions that provide high satisfaction and to new businesses. To this end, it will make full use of the Company's core technologies: 1) coating design that satisfies customer requirements, 2) clean and precise coating technologies, and 3) quality control that lets customers use the Company's products with confidence.

Chemical Products Research Laboratory

The Chemical Products Research Laboratory develops functional coating resins, adhesion promoters for paint and ink used for plastics such as polypropylene. The laboratory is developing eco-friendly products and new products that contribute to electrification and weight reduction of automobiles. It is also developing lignin products and synthetic resins used in concrete and dye dispersants, as well as new products that involve lignin as special modification. Likewise, the laboratory is expanding applications using its strengths as Japan's only comprehensive lignin manufacturer.

Case Study

TOPIC 1

Research Laboratory × CNF Research Laboratory
Launch of Printing Paper with Antiviral Properties

The recent spread of COVID-19 resulted in a surge in demand for products with antiviral properties. The Company utilized modified cellulose, a new proprietary material with antiviral properties, to develop and launch a printing paper called npf Antiviral Paper. The surface of chemically modified cellulose can be used as a carrier for metal ions, so that the high performance of metal ions (antiviral, antibacterial, and deodorizing) can be imparted to the paper. The developed product is a hybrid combining the respective strengths of the Research Laboratory, which has papermaking technology and expertise cultivated over many years, and the CNF Research Laboratory, which has recently been focused on new material development. By supplying the new paper for applications such as mask cases, envelopes, and notebooks, it will provide people with peace of mind in their daily lives.



Metal ion carrying modified cellulose



Application example (Mask case)

TOPIC 2

Nippon Paper Industries × The Japan Steel Works, Ltd.
Development of Torrefide Biocomposite™, a New Resin Composite Material with High Woody Material Content

Using the new biomass solid fuel torrefaction (semi-carbonization) technology developed by the Company, woody material is imparted with heat resistance, crushing resistance, and hydrophobic properties. This material is then blended into resin using a TEX series twin-screw extruder made by The Japan Steel Works, Ltd. to develop Torrefide Biocomposite™. The material has excellent heat resistance and moldability, reducing the amount of plastic used by over 50% while also helping to reduce greenhouse gas emissions. Furthermore, the two companies have also developed Cellulose Biocomposite™, combining cellulose powder with resin. Looking ahead, the two companies aim to commercialize these materials in various fields, including building materials, food containers, home appliances, and gardening.



Torrefide Biocomposite™



Cellulose Biocomposite™

More Reliable

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- 089 Human Resources
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Shaping
the Future
with Trees

Directors and Audit & Supervisory Board Members (as of June 29, 2021)

* The "Number of Company Shares Held" is as of March 31, 2021, and includes shares held by the Nippon Paper Industries executive shareholding association and Employee Share Ownership Association.

Directors



Fumio Manoshiro
Chairman and Director

Number of Company Shares Held

35,399 shares

Brief History

1953 Born
1975 Joined Jujo Paper Co., Ltd.
2006 Appointed Director, Nippon Paper Industries Co., Ltd. (NPI)
2014 Appointed President and Representative Director, NPI
2019 Appointed Chairman and Director, NPI (current position)



Toru Nozawa
President and Representative Director

Number of Company Shares Held

17,193 shares

Brief History

1959 Born
1981 Joined Jujo Paper Co., Ltd.
2014 Appointed Director, NPI
2019 Appointed President and Representative Director, NPI (current position)

Important Positions

- President and Corporate Officer
- Chairman, Japan Paper Association



Yutaka Kunigo
Outside Director

Number of Company Shares Held

0 shares

Brief History

1954 Born
2014 Representative Director and Executive Vice President, Tokyo Gas Co., Ltd. (until 2017)
2017 Chairman and Director, Tokyo Gas Engineering Solutions Corporation (until 2020)
2020 Appointed Outside Director, NPI (current position)



Kazumori Fukushima
Executive Vice President and Representative Director

Number of Company Shares Held

11,851 shares

Brief History

1958 Born
1980 Joined Sanyo-Kokusaku Pulp Co., Ltd.
2021 Appointed Executive Vice President and Representative Director, NPI (current position)

Important Positions

- Executive Vice President, Corporate Officer and Aide to the President
- President and Representative Director, Nippon Paper Crecia Co., Ltd.



Atsushi O'haru
Director

Number of Company Shares Held

12,283 shares

Brief History

1958 Born
1983 Joined Jujo Paper Co., Ltd.
2021 Appointed Director, NPI (current position)

Important Position

- Managing Executive Officer and General Manager, Sales Planning Division



Masanobu Iizuka
Director

Number of Company Shares Held

7,618 shares

Brief History

1960 Born
1984 Joined Jujo Paper Co., Ltd.
2019 Appointed Director, NPI (current position)

Important Position

- Managing Executive Officer and Chief Executive Officer, Opal



Tomoyasu Itakura
Director

Number of Company Shares Held

3,923 shares

Brief History

1964 Born
1988 Joined Jujo Paper Co., Ltd.
2021 Appointed Director, NPI (current position)

Important Position

- Executive Officer and General Manager, Financial Division



Makoto Fujioka
Outside Director

Number of Company Shares Held

1,000 shares

Brief History

1950 Born
1996 Deputy Director-General for Trade and Industry, at what was then the Ministry of International Trade and Industry, (now the Ministry of Economy, Trade and Industry)
2001 Ambassador Extraordinary and Plenipotentiary to the United Arab Emirates
2013 Director, Executive Vice President, and Senior Executive Officer, Nippon Light Metal Co., Ltd. (until 2015)
2015 Senior Director, Japan Association for Chemical Innovation (until 2019)
2016 Outside Director, Eagle Industry Co., Ltd. (current position)
Outside Director, NOK CORPORATION (current position)
Appointed Outside Director, NPI (current position)

Important Positions

- Outside Director, NOK CORPORATION
- Outside Director, Eagle Industry Co., Ltd.



Yoko Hatta
Outside Director

Number of Company Shares Held

0 shares

Brief History

1952 Born
1997 Partner, KPMG LLP New York Office
2002 Partner, KPMG Peat Marwick Tax Corporation (currently KPMG Tax Corporation) (until 2014)
2008 Auditor, International Christian University (current position)
2015 Outside Audit & Supervisory Board Member, Kobayashi Pharmaceutical Co., Ltd. (current position)
2016 Outside Auditor, IHI Corporation (until 2020)
Appointed Outside Audit & Supervisory Board Member, NPI (until 2019)
2019 Appointed Outside Director, NPI (current position)

Important Positions

- Auditor, International Christian University
- Outside Audit & Supervisory Board Member, Kobayashi Pharmaceutical Co., Ltd.

Audit & Supervisory Board Members



Kazunari Tatsu
Senior Audit & Supervisory Board Member

Number of Company Shares Held

3,431 shares

Brief History

1960 Born
1983 Joined Jujo Paper Co., Ltd.
2019 Appointed Audit & Supervisory Board Member, NPI
2021 Appointed Senior Audit & Supervisory Board Member, NPI (current position)

Important Position

- Audit & Supervisory Board Member, Nippon Paper Crecia Co., Ltd.



Tomoyoshi Nishimoto
Audit & Supervisory Board Member

Number of Company Shares Held

9,311 shares

Brief History

1962 Born
1984 Joined Jujo Paper Co., Ltd.
2021 Appointed Audit & Supervisory Board Member, NPI (current position)

Important Position

- Audit & Supervisory Board Member, NP Trading Co., Ltd.



Takafumi Okuda
Outside Audit & Supervisory Board Member

Number of Company Shares Held

0 shares

Brief History

1951 Born
1976 Assistant Judge, Tokyo District Court
2006 Judge, Tokyo High Court
2007 Chief Judge, Niigata District Court
2009 Presiding Judge, Tokyo High Court
2015 Chief Judge, Yokohama District Court
2016 Registered as attorney at law (Tokyo Bar Association)
Visiting Attorney, Mori Hamada & Matsumoto (current position)
2020 Appointed Outside Audit & Supervisory Board Member, NPI (current position)

Important Position

- Visiting Attorney, Mori Hamada & Matsumoto



Nanako Aono
Outside Audit & Supervisory Board Member

Number of Company Shares Held

0 shares

Brief History

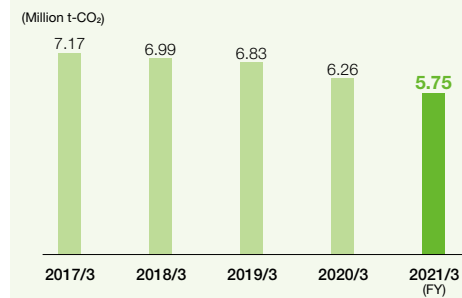
1962 Born
1995 Joined Chuo Aoyama Audit Corporation
2005 Director, BUSICOM Co., Ltd. (now OAG BUSICOM Co., Ltd.)
2008 Outside Audit & Supervisory Board Member, DUSKIN CO., LTD. (until 2016)
2010 Representative Director and President, GEN Co., Ltd. (current position)
2017 Outside Corporate Auditor, MISUMI Group Inc. (current position)
2019 Appointed Outside Audit & Supervisory Board Member, NPI (current position)
2020 Outside Director, Optex Group Co., Ltd. (current position)
2021 Outside Corporate Auditor, MEIKO NETWORK JAPAN CO., LTD. (current position)

Important Positions

- Representative Director and President, GEN Co., Ltd.
- Outside Corporate Auditor, MISUMI Group Inc.
- Outside Director, Optex Group Co., Ltd.
- Outside Corporate Auditor, MEIKO NETWORK JAPAN CO., LTD.

Non-Financial Highlights

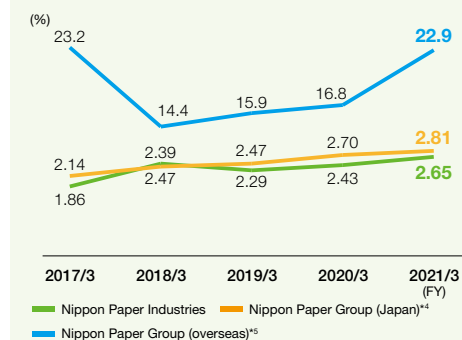
01 Greenhouse Gas Emission Volume*1



03 Forest Certification Rate in Company-Owned Forests

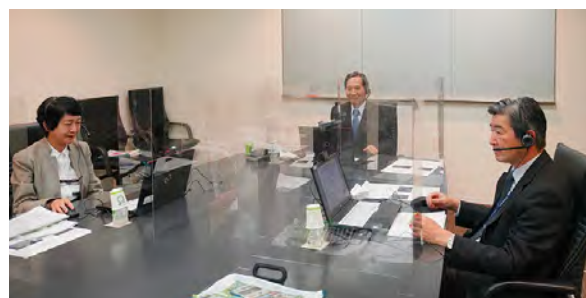


05 Percentage of Female Managers



Strengthening the Functions of Outside Directors

The Company is strengthening the functions of outside directors to enhance corporate governance by ensuring that outside directors have opportunities to engage in dialogue with institutional investors and to attend the Management Executive Committee, where monthly financial results information is shared, and the Group Management Strategy Committee, where business strategies are discussed.



Scenes from (online) dialogue between outside directors and institutional investors

01 Greenhouse Gas Emission Volume

Surpassed the targets of Green Action Plan 2020 resulting from systematic energy-saving investments and promotion of fuel conversion.

02 Fossil Energy Use Ratio in the Group

Reviewed the mix of fuels used, such as utilization of woody biomass fuel, and lowered the ratio of fossil energy used among overall fuel use.

03 Forest Certification Rate in Company-Owned Forests

By 2008, the Company had obtained forest certification and been verified by a third party as having sustainable forest management practices for all its own forests in Japan and overseas.

04 Circulation of Resources

The amount of waste generated varies from year to year, but efforts are being made to review the production process and to use boiler combustion ash for civil engineering materials.

05 Percentage of Female Managers

In April 2021, the Company formulated an action plan based on the Act on Promotion of Women's Participation and Advancement in the Workplace, and is working to achieve conditions in which women can continue to play an active role.

06 Supplier Survey Implementation Rate

In accordance with the Action Plan for Wood-Based Raw Material Procurement, the Company conducts supplier surveys for all pulp and all overseas wood chip suppliers to confirm their sustainability.

*1 Scope: Consolidated and non-consolidated Group companies in Japan subject to the Act on Rationalizing Energy Use

*2 Scope: Domestic companies within the environment-related organizations covered in ESG Databook 2021

*3 Estimate by Nippon Paper Industries based on Primary Energy Trends in Domestic Energy Supply for Fiscal 2019 reported by the Agency for Natural Resources and Energy

*4 Scope: Consolidated Group companies in Japan

*5 Scope: Consolidated Group companies overseas, all managers of sections or higher (including department managers and section managers)

Sustainability Management

Basic Stance

Nippon Paper Industries signed the UN Global Compact in 2004. The Company promotes sustainability management that pursues both social and environmental sustainability and the future growth of the Company by realizing the Group Mission and enhancing activities to fulfill its corporate social responsibility based on the Ten Principles of the UN Global Compact in four areas (human rights, labor, environment, and anti-corruption).

Under the 2030VISION formulated in May 2021, the Company clearly states that it will promote sustainability management as a comprehensive biomass company shaping the future with trees.

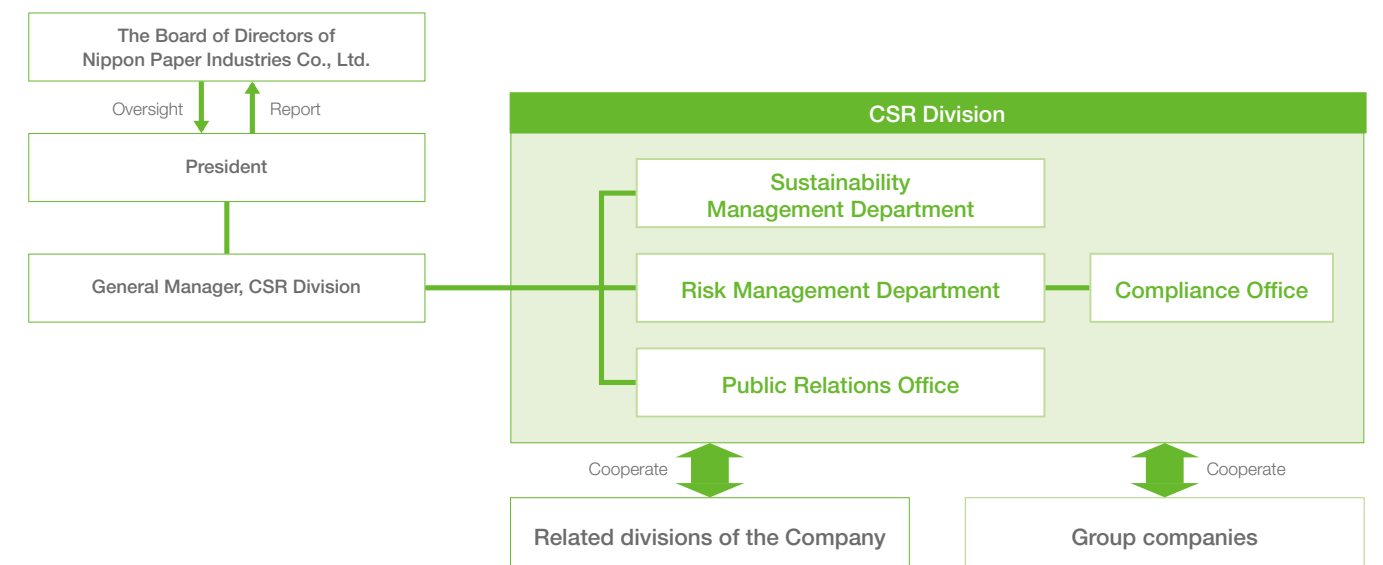


Promotion Structure

The Company formulated an Environmental Charter in 1993 to take a long-term standpoint on addressing circulation of resources and environmental preservation. The Company established a CSR committee in 2003 and used this as a basis to promote building a management framework to fulfill its corporate social responsibilities, and has established principles and basic policies related to raw material procurement, the environment, product safety, human rights, employment and labor, safety and disaster prevention and contributions to society. The Company established

a new CSR Division in 2008 leading to stronger CSR management.

Currently, the CSR Division, which reports directly to the president of the Company, includes the Sustainability Management Department, Risk Management Department, Compliance Office, and Public Relations Office, and is engaged in responding to ESG issues, promoting risk management and disclosing appropriate information toward realizing the Vision within the Group Mission.



ESG Databook 2021



Nippon Paper Group 2030VISION



Response to Social Issues Addressed in the 2030VISION

Nippon Paper Industries has formulated the 2030VISION as a guideline that clarifies management issues needed to achieve the vision it has drawn for the Nippon Paper Group to aim at for 2030. One of the basic policies of the 2030VISION is “respond to rapid changes in the social landscape such as CO₂ reduction and environmental issues.” To promote sustainability management pursuing both societal

and environmental sustainability, together with corporate growth, the Nippon Paper Group will strengthen its business base and contribute to building a carbon-neutral society by reviewing its energy mix around an axis of coal reduction and maximization of forest value and expansion of products that have maximized utilization of wood resources.

CO₂ Reduction

The Nippon Paper Group is proactively moving forward on reducing fossil fuel use by reviewing its energy mix and energy conservation over the next 10 years in order to cut greenhouse gas emission volume in production processes, aiming to realize carbon neutrality in 2050.

2021	2030	2050
Basic Policy	Reduce fossil fuel use by maximizing use of existing infrastructure	Conversion of energy use base
Self-generation	Review energy mix Reduce volume used by restructuring the production system Steady implementation of energy conservation	Decarbonization, move to carbon neutrality
Power generation business	Review energy mix	New utilization following the end of the FIT program Decarbonization, move to carbon neutrality
New fuels	Development and social implementation of biomass fuel	Internal use and sales of biomass fuel

FY2031/3 target	GHG emissions (Scope 1 and 2)	45% reduction (compared to FY2014/3)
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Green Strategy

The Company is maximizing forest value and strengthening its business base by enhancing various functions such as CO₂ absorption and biodiversity preservation in Company-owned forests and forests where it procures wood resources. The Company is also advancing construction of a carbon-neutral society by expanding biomass products in conjunction with enhanced productivity in forests.

Maximize Forest Value
<ul style="list-style-type: none">Strengthen the business base through sustainable forest management considering the environment, society and the economyImprove forest productivity to secure stability of resources and to expand the volume of fixed CO₂

Expand Biomass Products
<ul style="list-style-type: none">Develop and expand sales of various biomass products through cascading use of woodIncrease the volume of fixed CO₂ through popularization and expansion of biomass products

FY2031/3 target	Fixed CO₂ efficiency rate (overseas afforested areas)	30% improvement (compared to FY2014/3)
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Get to Know the Nippon Paper Group

More Profitable

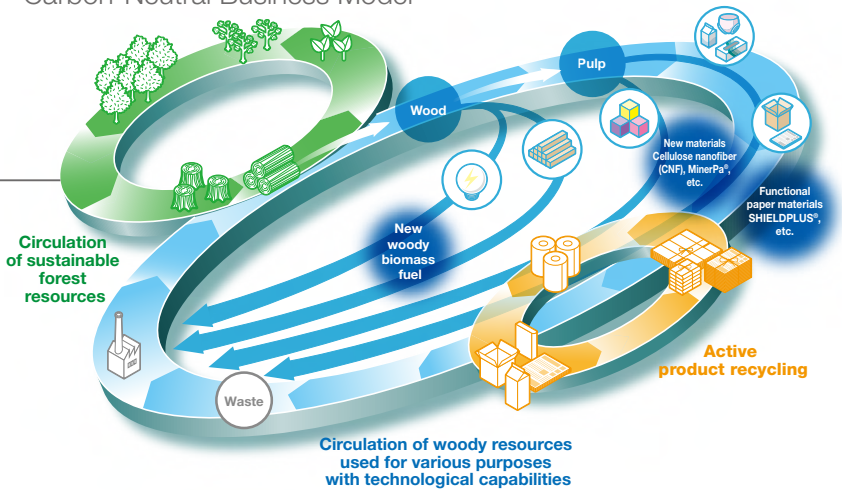
More Reliable

Data Section

Strengthening the Three Circulations

The Nippon Paper Group has human resources with advanced skills, Group companies arrayed across a wide range of fields and a wealth of research and development results. Using this as a base to reinforce the Three Circulations, the Group will contribute to both business growth and building a circulating society.

Carbon-Neutral Business Model



- Circulation of sustainable forest resources**
 - Pursue maximization of forest value through Company-owned afforested areas and forests in Japan and overseas
 - Improve productivity by deploying proprietary breeding and propagation technologies developed in the Company's afforested areas in forests that are Company-owned or those the Company uses for procuring resources
- Circulation of woody resources used for various purposes with technological capabilities**
 - Develop various environmentally friendly products using wood resources and expand fixed CO₂ throughout all of society
 - Grow business through innovative materials, such as CNF, MinerPa® and new woody biomass fuel and promote carbon circulation through wood resources
 - Reduce the CO₂ generation amount during transport by using Nippon Paper Crecia's long-lasting rolls and CNF-reinforced resin (which enables weight reduction)
- Active product recycling**
 - Actively utilize hard-to-recycle wastepaper
 - Construct collection schemes for paper cups, liquid packaging products and barrier paper materials, and minimize environmental burden

Reinforcement of Corporate Governance

The Nippon Paper Group is continuing to strengthen governance efforts, taking into account revisions of the Corporate Governance Code.

- Separation of supervision and business execution

The Company will promote strengthening the functions of outside directors by ensuring continued opportunities for them to engage in dialogue with institutional investors and attend meetings to discuss business strategies.

- Clarifying authority and responsibilities in execution

From FY2022/3, a chief officer will be newly appointed to clarify authority and responsibility for execution, as well as optimize the entire Group and accelerate growth

by strengthening the cross-functional organization.

- Addressing sustainability-related issues

In response to the increase in natural disasters in recent years, the Risk Management Committee will play a central role in operating business continuity management (BCM), formulating and periodically reviewing BCP, and strengthening preparation for natural disasters at mills.

Moreover, regarding the Company's response to climate change, it endorsed the Task Force on Climate-related Financial Disclosures (TCFD) in April 2021 and is disclosing more information in accordance with recommendations (→ P. 82–83).

Maximizing Utilization of Human Resources

The Company is responding to changes in the environment surrounding human resources, including the declining population in Japan, low birthrate and aging. In addition to human resource allocation attuned to business structure changes, the Company will promote job satisfaction, ease of working,

diversity including opportunities for women to be active, and implement measures for building relationships to ensure growth for both employees and companies, recruitment of seniors with an eye to extending the retirement age, and safe workplace creation to eliminate accidents and disasters.



Basic Stance

As the holding company of the Nippon Paper Group, Nippon Paper Industries established its Corporate Governance Policy in November 2015 as a guideline for the Company's basic approach to management and control of the Group, so as to achieve sustainable growth and enhance corporate value over the medium to long term in line with its corporate mission.

The Company's highest management priority is to

further enhance management transparency to shareholders and other stakeholders, and to realize fair management. The Company has adopted an executive officer system and is working to strengthen the oversight function of its Board of Directors to ensure the separation of business execution and management oversight. The Company is implementing growth strategies, monitoring businesses under its control, and promoting compliance.

Initiatives for Strengthening Corporate Governance

FY2007/3	— Formulated the Basic Policy for Establishing the Internal Control System — Shortened director terms to one year from two
FY2014/3	— Adopted an executive officer system — Began appointing independent outside directors
FY2016/3	— Established the Corporate Governance Policy — Began evaluating the effectiveness of the Board of Directors
FY2017/3	— Established the Personnel & Remuneration Advisory Committee — Increased the number of independent outside directors to two
FY2020/3	— Increased the number of independent outside directors to three — Appointed one female outside director and one female outside Audit & Supervisory Board member — Ensured the Personnel & Remuneration Advisory Committee consists mainly of outside directors — Introduced the Board Benefit Trust as a stock compensation system
FY2021/3	— Revised part of the Corporate Governance Policy concerning the policy for determining director remuneration

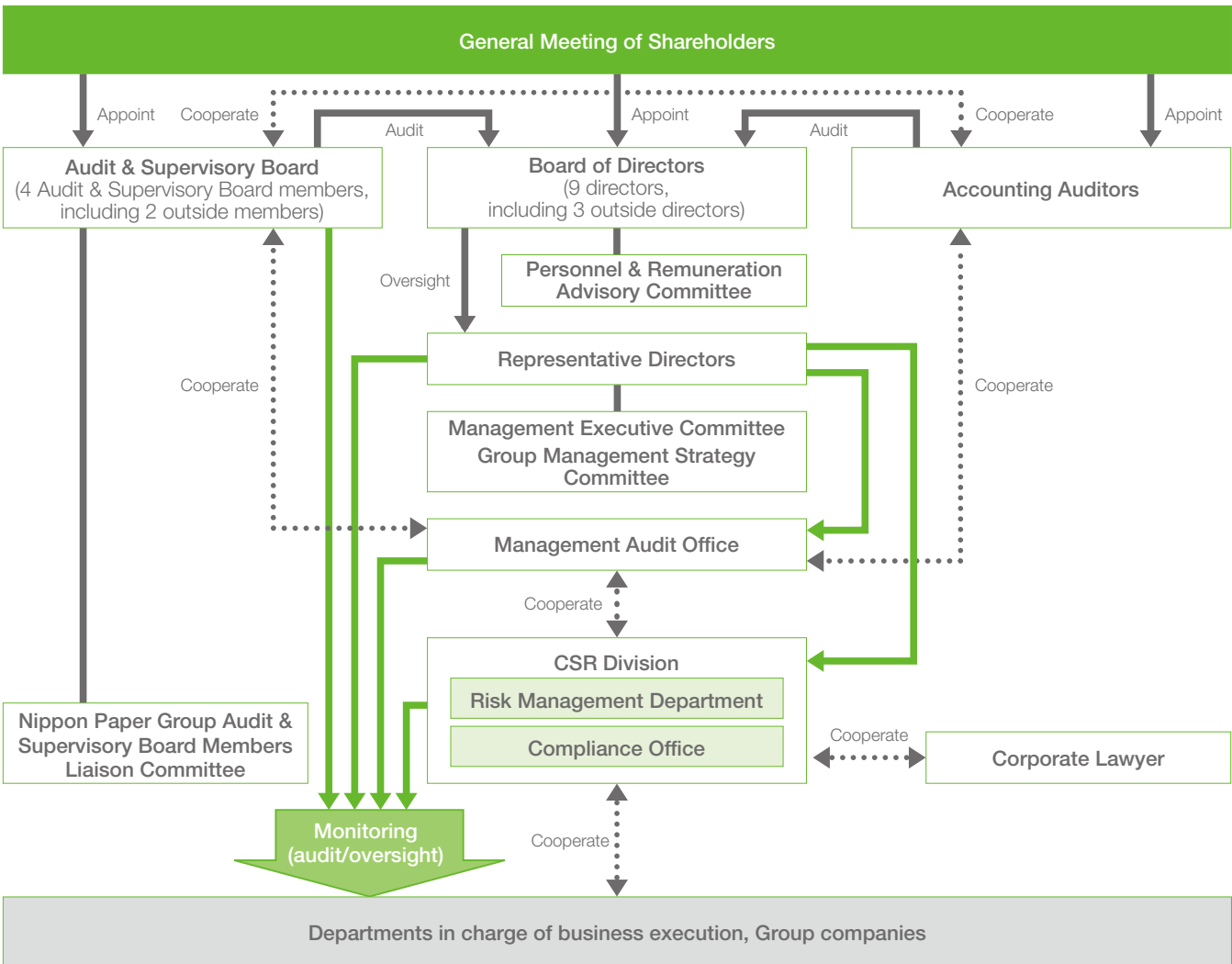
Corporate Governance Structure

Board of Directors

In May 2006, the Company formulated its Basic Policy for Establishing the Internal Control System. The role of the Company's Board of Directors is stipulated in the Corporate Governance Policy. The Board of Directors shall bear the supervisory function of management as a whole and make the most appropriate decisions for the Company through deliberations, etc. on the execution of important business issues that are to be decided, under laws, regulations, and the Articles of Incorporation, by the Board of Directors. The Board of Directors shall also supervise the status of the execution of duties by the president and representative director and other corporate officers. In view of the importance of environmental and social challenges related to sustainability, the Board of Directors shall raise awareness among

officers and employees, and strive to facilitate the sustainable development of society and enhance the corporate value of the Group by promoting active efforts to resolve challenges while giving consideration to stakeholders. The Company's Board of Directors shall ensure a balance of knowledge, experience, abilities, and diversification by comprising internal directors who have excellent abilities to execute and manage each business in their charge and outside directors who have specialized knowledge and extensive experience. The board achieves a 1/3 ratio of outside directors among the board members. Furthermore, the Company has appointed one female outside director and one female outside member of the Audit & Supervisory Board.

Corporate Governance Structure (as of July 1, 2021)



Type of Organization	Company with Audit & Supervisory Board
Chairman of the Board of Directors	Chairman and Director: Fumio Manoshiro
Number of Directors	9 (including 3 outside directors)
Number of Audit & Supervisory Board Members	4 (including 2 outside Audit & Supervisory Board members)
Number of Appointed Independent Officers	5 (including 3 outside directors and 2 outside Audit & Supervisory Board members)
Board of Directors Meetings Held in FY2021/3	Number of meetings: 13 Average rate of attendance by directors: 100.0% (outside directors: 100.0%) Average rate of attendance by Audit & Supervisory Board members: 98.1%
Audit & Supervisory Board Meetings Held in FY2021/3	Number of meetings: 14 Average rate of attendance by Audit & Supervisory Board members: 100.0%
Independent Accounting Auditor	Ernst & Young ShinNihon LLC

Management Executive Committee

Usually, the Company's Management Executive Committee meets once a week to deliberate on important management-related matters under the authority of the president to assist in the execution of the president's duties. Committee membership is basically composed of the president, other directors (excluding outside directors) and general managers

who do not serve as directors.
Meetings of the Management Executive Committee, held once a month, are attended by outside directors and general managers of the Company's mills in order to share information on monthly financial results among management.

Group Management Strategy Committee

The Company's Group Management Strategy Committee meets as necessary to deliberate on management strategies by business segment and other important matters related to the Group.

Committee membership is composed of the Company's management and presidents of major companies of the Nippon Paper Group.

Audit & Supervisory Board Members and Audit & Supervisory Board

The Audit & Supervisory Board members of the Company attend important meetings, such as meetings of the Board of Directors, the Management Executive Committee, and the Group Management Strategy Committee. In addition to strict monitoring of the execution of business by directors, the auditors strictly audit whether all company operations are conducted legally and appropriately, through on-site

audits of each division, business site, and Group companies.
The Audit & Supervisory Board periodically holds meetings with the representative directors, working to deepen mutual understanding. The Audit & Supervisory Board also strives to enhance Group audits by strengthening cooperation with auditors of each Group company.

Management Audit Office

The Company's Management Audit Office is directly under the president's control, and it conducts an internal audit of the Company and each Group company and a comprehensive evaluation of the maintenance and operation of the internal control system as

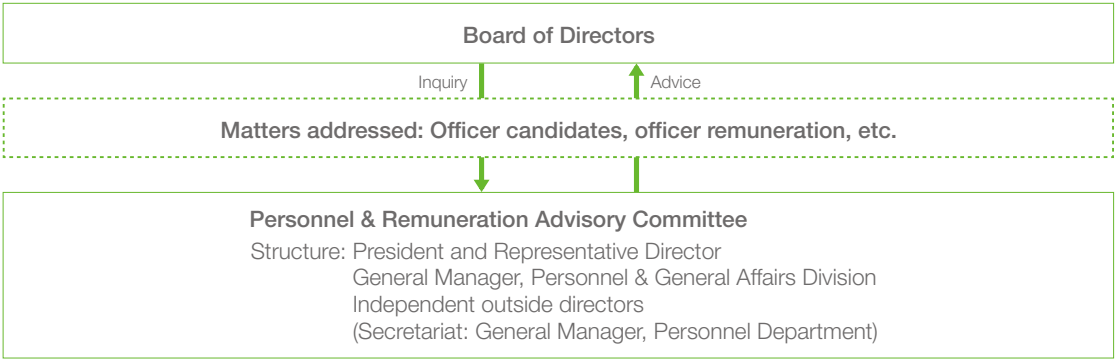
it relates to financial reporting. It also holds monthly information exchange meetings with the Audit & Supervisory Board members to ensure cooperation between Audit & Supervisory Board members and internal audits.

Personnel & Remuneration Advisory Committee

The Company's Personnel & Remuneration Advisory Committee receives inquiries from the Board of Directors on matters such as the selection process, qualifications, and reasons for nomination of director and Audit & Supervisory Board member candidates, the criteria for determining the independence of outside officers, and the remuneration system for directors. The committee responds to inquiries regarding appropriateness while obtaining appropriate

involvement and advice from independent outside directors and conducting inquiries based on its assessment of the Company's business performance and other factors. The Board of Directors shall make decisions regarding nomination of directors and Audit & Supervisory Board members, compensation for directors, etc. after receiving reports from the Personnel & Remuneration Advisory Committee.

Structure and Functions of the Personnel & Remuneration Advisory Committee



Independent Officers

The Company designates all outside directors who meet the requirements as independent officers. When appointing candidates for outside director or outside Audit & Supervisory Board member, the Company judges their independence by taking into consideration whether they satisfy the independence criteria

provided by the Tokyo Stock Exchange and the requirements for independence provided by laws and regulations (having not served as director, employee, etc. of the Company and its subsidiaries in the past), in addition to considering the existence of any conflicts of interest with general shareholders.

Outside Directors	Makoto Fujioka Mr. Fujioka was Deputy Director-General for Trade and Industry, at what was then the Ministry of International Trade and Industry, (now the Ministry of Economy, Trade and Industry) and Ambassador Extraordinary and Plenipotentiary stationed in the United Arab Emirates. He has also acted as an executive of a private company. He is expected to supervise and advise the execution of duties of the Company's other directors from an objective perspective using extensive knowledge and international awareness gained through his experience in both the public and private sectors.	Yoko Hatta Although Ms. Hatta has never been engaged in corporate management directly, it is expected that she will draw on her broad work experience in international accounting firms, considerable expertise in international tax practices, etc., and experience as an outside Audit & Supervisory Board member of the Company (from June 2016 to June 2019) to supervise and advise the execution of duties by the Company's other directors from an objective perspective.	Yutaka Kunigo Mr. Kunigo engaged in a wide range of fields at Tokyo Gas Co., Ltd., such as engineering, personnel affairs, procurement, sales, and overseas operations. He is expected to supervise and advise the execution of duties of the Company's other directors from an objective perspective using extensive experience and broad knowledge accumulated through his experience in managing a company as an executive.
	Takafumi Okuda Although Mr. Okuda has never been engaged in corporate management directly, it is expected that his extensive experience and broad knowledge accumulated as a legal professional in a judicial organization will enable him to act as an auditor of the Company and audit the execution of business activities by the Company's directors from an independent and objective perspective and contribute to improving the soundness and transparency of the Company's management.	Nanako Aono The Company determines that Ms. Aono's experience in serving as a director and auditor in private sector companies in a wide range of fields and the extensive knowledge she has accumulated as a certified public accountant will enable her to audit the execution of business activities by the Company's directors from an independent and objective perspective and contribute to improving the soundness and transparency of the Company's management.	

Evaluation of the Effectiveness of the Board of Directors

To continuously strengthen its functions, the Company's Board of Directors has been conducting self-evaluations of its effectiveness since FY2016/3. Once per year, the secretariat of the Board of Directors conducts a survey of the directors and Audit & Supervisory Board members regarding

management and the discussions held at its meetings. The results of the survey are reported to the Board of Directors, which analyzes and evaluates its effectiveness through deliberations, etc. on the reported contents and works toward improvement based on the results thereof.

Outline of the Results of the Analysis and Evaluation in FY2021/3

In December 2020, the Board of Directors conducted a self-evaluation of its effectiveness in the form of a survey. The results of the analysis showed the board was broadly appropriate overall in the five viewpoints of composition, agenda items submitted at meetings, conduct at meetings, training of directors and Audit & Supervisory Board members, and provision of information and support for outside directors.
The board has since added "Discussion by the Board of Directors" as an evaluation point and assessed whether or not discussions were being held based on medium- to long-term viewpoints. The

Board of Directors guaranteed opportunities to discuss strategic matters and the Company's long-term vision at board meetings. This has deepened awareness of medium- to long-term strategic issues and the board's oversight function has improved.
Based on the various opinions and suggestions obtained through the evaluation of effectiveness, the Board of Directors will continue to improve its method of operation and strengthen governance by expanding reported items, guaranteeing more time for deliberation, and making documents easier to understand.

Officer Remuneration

The Board of Directors decides remuneration for officers after receiving a report from the Personnel & Remuneration Advisory Committee. In accordance with the revised Companies Act, which took effect on

March 1, 2021, the Board of Directors has resolved to partially revise the Corporate Governance Policy to improve the transparency of procedures for determining executive compensation.

Monthly Remuneration

The standard amount of monthly remuneration for directors shall be decided according to his/her responsibilities within the Company. Of that, 70% shall be fixed and the remaining 30% shall be paid after adjustment based on the Company’s performance in the preceding business year. The standard amount is determined using objective survey data from outside sources and giving consideration to factors including the Company’s performance, scale of business, and managerial circumstances.

Performance indices are established to effectively function as motivation to achieve performance targets, and are reevaluated as needed in response to changes of circumstance.
Monthly remuneration for outside directors and outside Audit & Supervisory Board members shall be fixed. In light of their responsibilities, contributions to the executive shareholding association are on a voluntary basis.

Total Amount of Remuneration, etc. for Directors and Audit & Supervisory Board Members in FY2021/3*1

	Number of Executives*2	Total Amount of Remuneration, etc. by Type			Total Amount
		Fixed Remuneration	Performance-Based Remuneration	Stock Remuneration	
Directors	10	¥299 million	¥70 million	¥32 million	¥403 million
(Outside directors)	(4)	(36 million)	(—)	(—)	(36 million)
Audit & Supervisory Board members	5	58 million	—	—	58 million
(Outside Audit & Supervisory Board members)	(3)	(13 million)	(—)	(—)	(13 million)

*1 Figures are rounded down to the nearest million yen.
*2 Includes one director and one Audit & Supervisory Board member who resigned during FY2021/3.

Stock Remuneration Plan

The Company has introduced the Board Benefit Trust (BBT) as a stock compensation plan. The objective of the BBT is to further clarify the link between the compensation provided to directors and the Company’s share value and thereby increase directors’ motivation to contribute to improving the Company’s medium- to long-term performance and increasing its corporate

value by sharing the benefits and risks associated with share price fluctuations with shareholders.
The composition ratio of fixed remuneration, performance-based remuneration, and stock remuneration provided to directors is appropriately established based on the objectives of each type of remuneration.

Remuneration for Internal Directors

Method	Fixed Remuneration	Performance-Based Remuneration	Stock Remuneration
	Cash payment		Points granted
Payment allowance	Up to ¥700 million per year		Up to 25,000 points per year (1 point = 1 share)
Payment period	Monthly (no bonuses or retirement benefits)		Director resignation (cumulative points converted to shares)
Calculation method	Determined according to their respective responsibilities		Points granted according to their respective responsibilities
	70% paid as fixed remuneration	30% paid after adjustment based on the Company's performance in the preceding business year	
Performance standards	—	70%: Consolidated results (net sales, operating income, ROA) 30%: Non-consolidated results (net sales, ordinary income, ROA)	—
Other	Fixed amounts contributed to the Company's executive shareholding association		—

Cultivation of Successors to the President and Directors

Successor to the President

Nippon Paper Industries develops candidates for succession to the president by placing them in successively important roles such as executives and directors. Personnel matters related to executives and directors who are potential presidential candidates are deliberated by the Personnel & Remuneration Advisory Committee, which is an advisory body that reports to the Board of Directors. The Board of Directors, upon receiving the report, will carefully examine its contents,

deliberate, and decide on the candidate.
Through this process, the Board of Directors supervises the development of candidates to become the next president in a systematic and ongoing manner.
The process for the appointment and dismissal of the president is the same as that for candidates for directors, in that the Personnel & Remuneration Advisory Committee conducts a review and submits a report based on consultations with the Board of Directors.

Developing Candidates for Directors

From the standpoint of securing human resources capable of assuming management in the future, the Company makes a point of placing employees—particularly those in career-track positions—in various positions and rotations in different departments. It also makes an effort to appoint employees as early as possible to positions as managers and other

important posts and positions in which they assist management, such as the top management of affiliated companies and overseas subsidiaries. In this manner, it strives to develop a robust base of employees with highly sophisticated expertise and work experience, cultivating them for selection as the next generation of director candidates.

Policy for Executive Training, etc.

To support the execution of duties by directors, the Company provides information on matters necessary for their roles and functions (such as economic conditions, industry trends, legal compliance,

corporate governance, finance, and accounting) on an ongoing basis. It also ensures opportunities to participate in external training based on the needs of individual directors.

Achieving a radical shift toward sustainable growth through strong leadership by top management



In the 2030VISION, the Nippon Paper Group upholds realizing sustainable growth as a comprehensive biomass company shaping the future with trees as its Vision for 2030. In this roundtable discussion, outside directors Makoto Fujioka, Yoko Hatta, and Yutaka Kunigo spoke about strengthening the Group's governance.

Utilizing distinct expertise in supervision of management execution

— How do you utilize your own experience and skills?

Fujioka I worked for the Ministry of International Trade and Industry (currently the Ministry of Economy, Trade and Industry) where I oversaw matters such as industrial and energy policies, international economics, and patents and IP, and spent roughly 10 years working overseas during that time. I have also been widely involved in corporate sustainability from the viewpoint of management at private companies as a person in charge of areas such as environmental management, CSR, and compliance. After leaving that position, I worked as Senior Director of the Japan Association for Chemical Innovation, a public interest incorporated association that aims to promote innovation in the field of chemicals.

Although the Group has a long history in the traditional industries of pulp and paper, it is striving to evolve itself by adapting to the changing business environment. I feel that it has begun to change drastically, particularly in the past few years. The Company has been utilizing wood, a recyclable resource, as a raw material, which I feel fits incredibly well with recent trends. At occasions such as Board of Directors meetings, I try to provide opinions based on my experience as an administrator and a corporate manager in order to advance these changes.

Hatta I was employed at a U.S. accounting firm from the 1980s to the 2000s, and worked solely on tax matters. During my stay in the U.S., and after my return to Japan as well, I was consulted by clients many times regarding issues they faced in overseas development and struggles resulting from cultural differences, and also conveyed information about

U.S. tax matters to Japanese companies. For reports about corporate governance from the Ministry of Economy, Trade and Industry that had been translated into English in the U.S., I also compiled reports about Japanese corporate governance as seen from an American perspective based on interviews with American investors, corporate groups and universities.

The Group's top management makes a conscious effort to demonstrate strong leadership. I admire its steady engagement in overseas business, through subsidiaries such as Nippon Dynawave Packaging Company, LLC and Opal. I was appointed as an outside director in 2019, and try to provide opinions utilizing my specialized knowledge of tax matters.

Kunigo I worked intensely at Tokyo Gas Co., Ltd. for 43 years, during which I devoted the longest amount of time to setting up infrastructure for manufacturing supply, and was responsible for the closure and new installation of factories. I was also involved in the procurement of LNG and sales operations of gas for manufacturers such as Nippon Paper Industries. In my final years at Tokyo Gas, I was responsible for initiatives involving renewable energy and decarbonization. In addition to all this, I worked on a large number of investment projects when I was responsible for overseas business. By providing opinions at meetings such as those of the Board of Directors, I hope to utilize my experience for the Group. Although I have only served as an outside director of the Company for a little more than a year, I am aware of what a challenging task transforming the Group's business structure will be. At any rate, my impression is that many of the Company's employees are diligent. I think that utilizing that diligence and workplace skills will be the central point of future development.

While there is an impression that outside directors are being utilized more, it is important to constantly work on improving governance

— Please talk about your evaluation of the Group's governance as well as issues.

Fujioka I feel that the Group is working incredibly earnestly on enhancing governance. The Group is steadily promoting measures such as specifically increasing the number of outside directors, appointing female outside directors, and establishing a Personnel & Remuneration Advisory Committee. I would particularly like to evaluate the Group on its position of making various efforts to increase the transparency and effectiveness of the Board of Directors such as by utilizing outside directors.

Outside directors also attend meetings such as of the Management Executive Committee, where monthly financial results are reported, and the Group Management Strategy Committee. These meetings serve as opportunities to obtain the latest information, and are incredibly useful when it comes to deepening discussion at Board of Directors meetings. Even in the process of formulating the 2030VISION and Medium-Term Business Plan 2025, opportunities for the president and outside directors to exchange opinions were established, in addition to deliberation at Board of Directors meetings, thereby greatly deepening discussion.

Kunigo In corporate governance, monitoring makes up a large part of the role fulfilled by outside directors. As Mr. Fujioka stated, I was surprised that we were allowed to attend Management Executive Committee meetings. I think that revealing discussions about management execution to outside directors is unprecedented. There is absolutely no sense that we are being shut out, and the Group consults with us on various issues in advance. There are also opportunities for outside directors to engage in dialogue with institutional investors. There are not many companies that practice this, so I feel high expectations for outside directors on this point as well.

In regard to this type of company stance, as an outside director, I believe that I must properly monitor the status of management execution at every opportunity. For governance to be effective, I think it is important to ensure monitoring is not conducted from a short-term perspective, but one in which we properly identify areas for improvement, and inadequacy, looking ahead 5 or 10 years.

Hatta To borrow Mr. Kunigo's expression, the Group's governance can be summed up with a single word—"diligence." As a company with a long history, it is presumed the personnel and organization are solid. Naturally, there are cases where that becomes a hindrance, but I feel that the Company is working proactively to listen to outside opinions.

To give an example, I was previously employed as an outside Audit & Supervisory Board member of the Company. At that time, meetings were held where monthly results were examined from top to bottom. I asked frankly, "What was the point of that?" I proposed having meetings where we focused on pointing out the problems instead. As a result of my suggestion, the way those meetings are held has now changed. In this way, I have seen the Group listen to outside opinions, incorporate useful elements from the perspective of governance after reevaluating its structure and methods, and change.



Fujioka On the other hand, the Group's issue will be to constantly evaluate the form of the governance structure, remain vigilant and work hard on improvements as the social environment undergoes drastic changes. I think it is important for the Board of Directors to carry out discussions with more emphasis on the Group's medium- to long-term issues and its management strategy.

Hatta Up until now, the Group has experienced success with paper. However, the Group must now respond to the dramatic

changes in the external environment with real change. In order to do that, it is necessary that departments cooperate and collaborate in terms of each specialty area and work flexibly to produce synergies, rather than operate separately, and I feel that this is an issue for the Group. Now, we are in the middle of trying to build that type of structure under the leadership of the president.

The ability to make the crucial decision to review the production structure can be evaluated. The challenge is to use speed and collaboration to expand in growth areas.

— How do you evaluate the progress of initiatives for the transformation of the business structure? And what do you think are the issues?

Kunigo I rated the Group highly for quickly deciding to withdraw from the paper and pulp business at the Kushiro Mill and shut down the largest facility at the Ishinomaki Mill, as well as the shift from paper to household paper at the Fuji Mill. I myself was involved in plant closures during my time at Tokyo Gas, but I presume that being forced to make a decision in such a short amount of time must have been difficult for the Company, which had centered itself around the paper business over many years.



Fujioka As for the reorganization of the domestic paper production structure, which involves closures and shutdowns of mills and production facilities, my evaluation is similar to Mr. Kunigo's. It will be difficult and cause hardships, but the Company is aware it must tackle these medium- to long-term issues and has been working vigorously. In addition, the Group has decided to make large purchases in the U.S. and Australia for its overseas business. Meanwhile, it has moved ahead with neatly reorganizing existing overseas businesses which do not show future potential. So far, the Group has made considerable effort toward transforming the business structure in this way, and I feel that results are gradually appearing.

Hatta Mill closures have a tremendous impact on local economies as well, making them an extremely difficult decision. In particular, I evaluate the Group highly for closing the paper machine at the Ishinomaki Mill, which was announced this past May. As that machine is a symbol of recovery from the Great East Japan Earthquake, the message had a strong impact on employees. Accelerating the business restructuring has been designated as the basic strategy of Medium-Term Business Plan 2025, however an issue lies in how to maintain this momentum and complete the transformation. For that reason, we must be aware of lateral communication between divisions, which is not currently sufficient.

Kunigo I think the Group's issue from now on is that we must synchronize the two wheels of optimizing the production system and investing in growth fields.

Fujioka Going forward, considerable effort will be needed to achieve the sales ratio target of 50% or more for the Daily-Life Products Business, which is a growing field, in FY2031/3. When we consider the impact of the pandemic and the evolution in lifestyles emerging from people's increased awareness of health and hygiene, in addition to changes in the business environment surrounding paper, it is necessary to work on structural reform more quickly than ever before. We could say this is more of a challenge than an issue. In order to succeed, each individual employee within the Company, from research and development to sales and manufacturing, must adapt.

Achieving a radical shift toward sustainable growth through strong leadership by top management

Evolving as a comprehensive biomass company through the leadership demonstrated by top management

— I would like to hear your thoughts about the possibility of achieving the 2030VISION and Medium-Term Business Plan 2025.

Kunigo The 2030VISION has a clear message, and I think the employees are in agreement as well. If top management properly illustrates their 2030VISION for the next 10 years and demonstrates strong leadership to steer the Company in that direction, then I think we can achieve good results by using the workplace skills the Group has cultivated so far.

Meanwhile, because of the specific steps required in the next 10 years to achieve the 2030VISION, many aspects will need to be considered at the same time as running the business, so a sense of speed will also be necessary. Nippon Paper Industries has a structure in which the entire organization directly connects to the president, so in that regard, I think it will be able to make efforts with that sense of speed.

On the other hand, one thing the Company is lacking is, as Ms. Hatta also pointed out, lateral communication. I think that strengthening this will require strong leadership. As President Nozawa aims to transform the business structure and achieve profit targets by enhancing communication through sales leadership, I feel he is acutely aware and expect the Company to achieve that sense of speed.

Hatta In the process of working to achieve the 2030VISION, I predict that unexpected circumstances such as natural disasters will also occur. Will the Company be able to remain motivated in the face of such unexpected circumstances? This is an incredibly difficult task, but I think the Company will be able to pull through.

Meanwhile, as securing human resources becomes difficult due the low birthrate and aging population, employees will probably be required to operate beyond the roles which they have confidently undertaken up to now. For that reason, it will also become necessary to flexibly incorporate ways of thinking unlike anything before and promote diversity.

The Company's business foundation is wood, which allows it to demonstrate its strengths on both environmental and social fronts. As the Company is a material manufacturer, it is far removed from consumers, which is an issue. However, advancing research and development with a focus on profit through practical implementation of woody resources in new fields will probably become the central point.

Fujioka If the Group succeeds in transforming into a true comprehensive biomass company shaping the future with trees, I think it will be able to realize sustainable growth as a company with a unique presence in society. Wood is a renewable resource, and so the Company's business activities, which are based on wood, will be able to help form a truly sustainable circulating economy.

There will be many issues and challenges to reach that point. First of all, although I have repeated myself many times, the Company must itself adapt to the changes in the world with a sense of speed.

Additionally, amid those changes, I think that internal human resource development and promotion of synergies with external sectors will become critical to utilize the latest digital technology such as AI.

Hatta To make a comparison, the Company has so far been a team that has won by making strong defensive plays with each individual player in their assigned positions. However, it is as if they are now being told to become a professional organization that gains points, adapts to environmental changes and scores a victory by having all members work cooperatively. That is not something that can easily be achieved.

Therefore, both top management and employees are in a position where they must change their previous ways of thinking, and work hard as a team with a flexible mindset. I hope that they can firmly succeed at this tremendous transformation through the leadership demonstrated by top management.





Basic Stance

The Nippon Paper Group conducts risk management during normal operation and in the event of emergencies, with the aim of preventing managerial risks from manifesting and minimizing the impact of those that do occur. All possibilities that may result in a physical or economical loss or a loss of credit or

disadvantage to the Group are considered risks to the Group.

Basic Policies

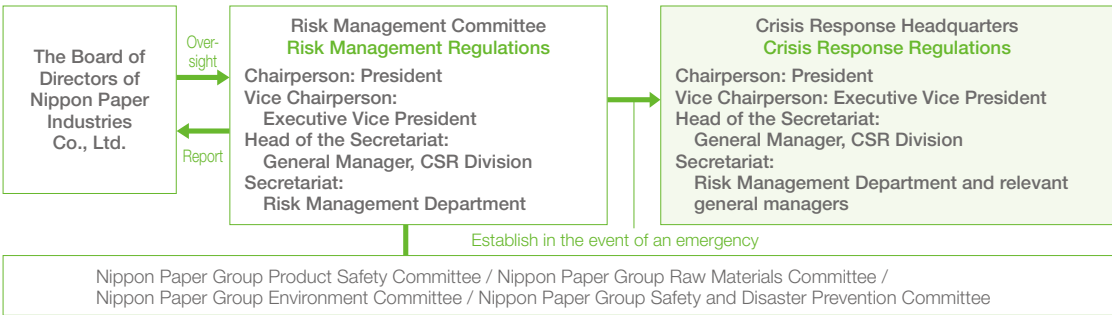
(1) Prioritizing human life and safety
(2) Continuing business
Under the aforementioned policies, we will follow and comply with the guidance and recommendations of national and regional governments.

Promotion Structure

Nippon Paper Industries Co., Ltd. has established its Risk Management Committee, which is chaired by the president and representative director under the supervision of the Board of Directors and meetings are held once per year or more. The Risk Management Department established within the CSR Division serves as the secretariat. In normal operations, the committee regularly identifies and evaluates the Group's risks, considers and deliberates

measures to reduce its risks and at the time when the risks occur in reality, and reports them to the Board of Directors.

In the event of an emergency, a crisis response headquarters will be launched. The crisis response headquarters swiftly carries out initial responses and BCPs (business continuity plans) in the event of emergencies depending on risks such as earthquakes, typhoons, and infectious diseases.



Risk Management Activities

In FY2021/3, the Risk Management Committee carried out an identified sampling of risks from the Company and five consolidated and non-consolidated subsidiaries to evaluate their managerial impacts and their frequency of occurrence.

At the same time, the Group is working to establish business continuity management (BCM) for the major risks it has identified based on the assumption of the occurrence of large-scale natural disasters, which have become more frequent in recent years. In addition to promoting the stockpiling of food and daily commodities, the Group is formulating and reviewing our BCP, including inventory response and

Main Identified Risks

Decreased demand in Japan and overseas
Changes in market demands
Earthquakes, tsunamis, volcanic eruptions, typhoons, floods, extraordinarily heavy snowfall
Fires, explosions
Equipment malfunction, deterioration, etc.

alternative production to ensure a stable supply of products, based on the assumption of earthquakes, typhoons, and the spread of infectious diseases.

Also, each plant uses hazard maps to recognize the characteristics of its location and formulates disaster mitigation measures in advance, which are utilized in daily preparations.

Committees Held (FY2021/3)	Number of Times	Attendees
Risk Management Committee	1	Nippon Paper Industries Co., Ltd. // President / Executive Vice President / General Manager, CSR Division / General Manager, Personnel & General Affairs Division / General Manager, Corporate Planning Division / General Manager, Financial Division / General Manager, Raw Materials and Purchasing Division / General Manager, Research and Development Division / General Manager, Technical & Engineering Division / General Manager, Sales Management & Planning Division
Crisis Response Headquarters (Response to COVID-19 and earthquakes)	6	Nippon Paper Industries Co., Ltd. // Chairman, President, Executive Vice President, and all general managers
Report to Nippon Paper Industries Co., Ltd. Board of Directors	1	Nippon Paper Industries Co., Ltd. // Chairman, President, Executive Vice President, and all directors



Basic Stance

Nippon Paper Industries Co., Ltd. has formulated the Nippon Paper Group's Action Charter and the Nippon Paper Group's Codes of Conduct based on its Corporate Governance Policy. Its Group companies also have codes of conduct. Based on the Nippon Paper Group's Action Charter, the Group's position is that "Compliance goes beyond laws and regulations

to include decency, common sense, customs, and other rules and 'social norms' that are expected by society in general, and we are called upon to respond to the expectations and trust of society." The Group continually carries out activities that raise employees' awareness of compliance.

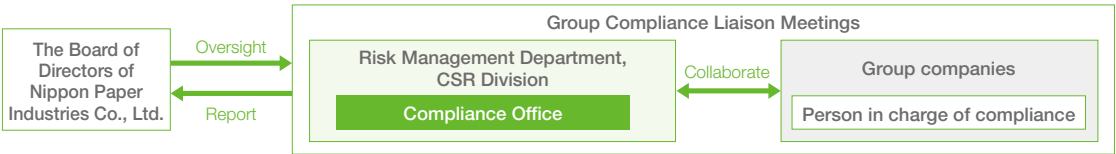
The Nippon Paper Group's Action Charter



Promotion Structure

The Company has established the Compliance Office within the CSR Division. The Compliance Office collaborates with the Legal Affairs Office of the Personnel & General Affairs Division, Management Audit Office, Human Resources Department, and other relevant sections. The Group companies appoint a person to be in charge of compliance. The Company supervises Group Compliance Liaison Meetings and aims to enhance collaboration with regard to compliance.

Compliance Activity Reports (FY2021/3)	Number of Times
The Board of Directors of Nippon Paper Industries Co., Ltd.	1
Nippon Paper Industries Co., Ltd. Audit & Supervisory Board	4
Nippon Paper Industries Co., Ltd. Management Executive Committee	4
Labor-management council	1



Compliance Activities (Compliance Education and Operation of Internal Whistleblower System)

The Group strategically carries out compliance training. In FY2021/3, training was carried out a total of 12 times at the Company. Approximately 1,000 employees studied examples of improper conduct. Furthermore, compliance training is also carried out in sessions like training for new supervisors and new employees, including training for executives of the Company and its Group companies.

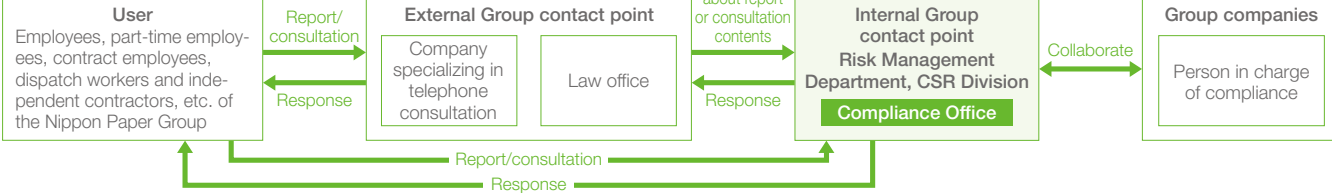
The Company has set up the Nippon Paper Group

Helpline which makes it possible for employees to directly report and consult on any conduct that violate laws, regulations, social norms, or corporate ethics and that may become a problem in the workplace. The Company periodically notifies employees about the helpline. It can even be used anonymously under the protection of privacy. The operation status is reported to the Audit & Supervisory Board and to the Management Executive Committee on a quarterly basis.

Number of Reports Made to the Helpline

FY2017/3	11
FY2018/3	32
FY2019/3	33
FY2020/3	46
FY2021/3	39

Flow of the Nippon Paper Group Helpline



Preventing Corruption

In 2017, the Company determined a Basic Policy on Prevention of Bribery to Public Officials and a Basic Policy on Compliance with Competition Laws. Based on these policies, the entire Group adheres to the laws and regulations of each country.

In FY2021/3, the Group was subject to no legal actions whatsoever involving incidents of corruption or public legal cases regarding corruption, anti-competitive behavior, anti-trust, or monopolizing practices.

Basic Policy on Prevention of Bribery to Public Officials



Basic Policy on Compliance with Competition Laws





Philosophy and Basic Policy Concerning Raw Materials Procurement



Basic Stance

The Nippon Paper Group maximizes renewable woody resources through diverse technology and know-how, thereby providing products that contribute to building a sustainable society. As the use of woody resources is indispensable to the Group, it has constructed a system to continually procure the woody resources that are generated from sustainable forest management.

In 2005, the Group established its Philosophy and Basic Policy Concerning Raw Materials Procurement. Based on this philosophy and basic policy, the Group practices sustainable raw material procurement

through supply chain management. It also promotes dialogues with stakeholders, and constantly works on improving the level of raw material procurement with consideration for the environment and society.

Key Points in the Group's Procurement of Woody Resources

- Sourcing from sustainable forests (sustainability)
- Clearly identifying the origin of timber (traceability)
- Maintaining full accountability (accountability)

Philosophy and Basic Policy Concerning Raw Materials Procurement (Excerpt)

(formulated on October 5, 2005)

Philosophy

We are committed to establishing a reliable raw materials procurement system through global supply chain management with consideration for the environment and society.

Basic Policy

1. Environmentally friendly raw materials procurement

- (1) Procurement from forests under sustainable forest management
- (2) Support for the eradication of illegal logging
- (3) Active use of recycled materials
- (4) Compliance with relevant laws and regulations on chemical substances

(5) Building of traceability systems

2. Socially aware raw materials procurement

Fair deals with suppliers and appropriate consideration for human rights and labor practices

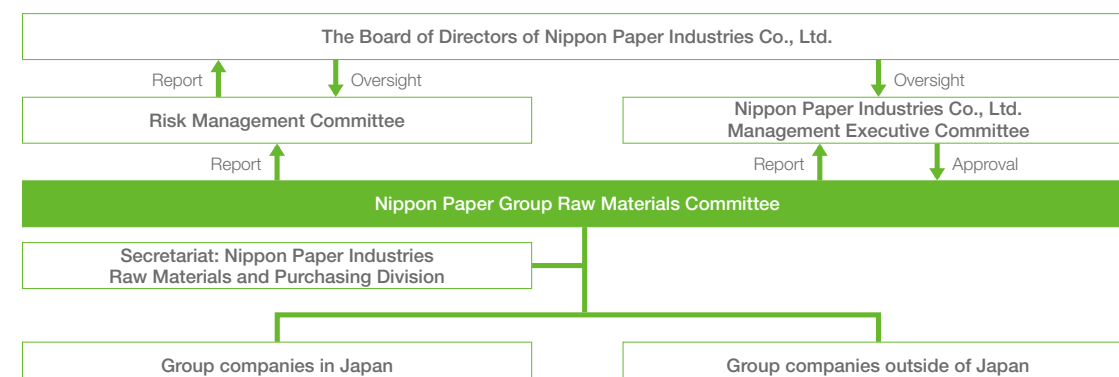
3. Promotion of dialogue with stakeholders

Dialogues with stakeholders and proactive disclosure

Promotion Structure

The Group has established the Nippon Paper Group Raw Materials Committee, which is chaired by the general manager of the Raw Materials and Purchasing Division at Nippon Paper Industries.

This committee discusses key issues related to raw material procurement for the entire Group, such as policies of raw material procurement.



Management of Suppliers

Raw material for paper, which is the Group's main product, consists of woody resource such as wood chips and wastepaper. Among the Company's paper raw materials, more than 60% of its wood chips are procured from overseas, while the remaining amount comes from within Japan. This requires supply chain management both within and outside Japan.

In addition to suppliers in Japan and overseas, many people including local communities and government institutions are involved in the procurement of woody resources. Based on this intersection between society and environment, the Company believes it is important to create a sustainable supply chain while working with suppliers to take into consideration local forest ecosystems and communities, as well as occupational safety and health and other factors.

In addition to ensuring the legality of woody material supplies, the Company formulates and

executes an action plan to achieve sustainable resource procurement that take into consideration human rights, labor, local communities, and the preservation of biodiversity.

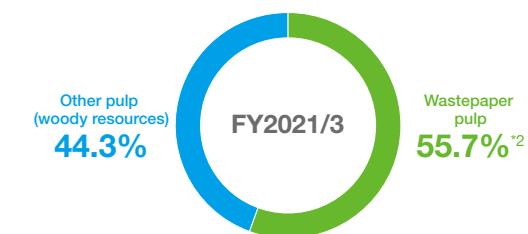
To ensure sustainability, each year the Company conducts surveys and on-site interviews with its overseas suppliers of woody materials. As for domestic woody materials, it promotes trade association certification for legal authenticity.

The Company receives third-party verification, utilizing annual forest audit and the due-diligence system for legal certification stipulated in the Clean Wood Act, which was introduced in Japan in 2017. In FY2021/3, all of the woody raw materials used for paper were approved under forest certification systems (including controlled material and controlled wood).

Action Plans for Procurement of Woody Resources (Japanese only)



Breakdown of Main Raw Materials Used in the Nippon Paper Group's Paper Manufacturing*1



*1 Consolidated Group companies in Japan
*2 Includes purchased wastepaper pulp

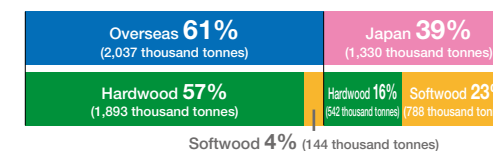
Details of Supplier Surveys

- Basic information on forests from which materials were sourced (type of tree, compliance with laws and regulations related to forests, etc.)
- Status on obtaining forest certifications
- Establishment of policy and systems regarding to human rights and labor policies
- Implementation of biodiversity efforts, etc.

Number of Implementations of Nippon Paper Industries' Action Plan for Procurement of Woody Resources

In Japan	359 wood chip suppliers, 4 pulp suppliers (implemented for all suppliers)
Overseas	23 wood chip suppliers, 10 pulp suppliers (implemented for all suppliers)

Breakdown of Wood Raw Materials (Wood Chips) Procured by Nippon Paper Industries Co., Ltd. (FY2021/3)



Stable Procurement of Wastepaper and Expansion of Recycling

Wastepaper is perfectly suited for recycling, and serves as an indispensable resource which makes up more than half of the raw materials used by Japan's paper industry. The Group has built up a stable procurement system alongside the wastepaper industry over many years. In recent years, with the aim of stable resource recycling of newspaper, the Company has been building and expanding the

"closed loop" system in which it directly purchases used newspaper collected by newspaper companies. In addition, in order to promote paperizing in response to the global trend of eliminating the use of plastic and using more paper, the Company is working on constructing a recycling system for unused wastepaper including used food trays.



Basic Stance

Forests possess tremendous value to the Group as a management resource. For this reason, the Group nurtures forest resources on its own while also procuring sustainable woody raw materials from outside sources.

The Group manages forests with consideration toward the environment, society and the economy based on its Philosophy and Basic Policy Concerning Raw Material Procurement. The Company manages and operates approximately 170,000 total hectares of forests both within and outside Japan which have all completely received

forest certification. At the same time, it is undertaking various initiatives to maximize the value of forest resources.

Values Emphasized by the Group in Usage of Forest Resources

- Sustainable forest management and productivity improvement
- Maintaining supply chain for forest resources
- Fulfilling public interest including preservation of biodiversity

Sustainable Forest Management and Productivity Improvement (Overseas Initiatives)

Overseas, the Group manages approximately 80,000 total hectares of afforested areas in Brazil, Chile, and Australia, where it conducts sustainable forest management with consideration toward local residents, regional culture and traditions, as well as the natural environment and ecosystem. Based on requests obtained through communication with stakeholders including visits to places such as communities close to the Company-owned forests, it also contributes to local communities by, for instance, giving consideration to indigenous peoples and providing them with support for educational activities.

The Group's overseas afforestation operations are the foundation of its procurement of sustainable woody raw materials. It will continue to maintain the

afforestation business while exploring possibilities for expansion.

Meanwhile, the Company believes that increasing the amount of fixed CO₂ by improving the productivity of forests is more important for responding to climate change than expanding forest area, and has set a CO₂ fixation efficiency rate target of 30% improvement in overseas afforested areas (P. 62–63) for FY2031/3. It utilizes the unique breeding and proliferation technologies which the Company cultivated in its overseas afforestation business. This contributes to building a carbon-neutral society while enhancing the Company's forest resources through productivity improvement per unit area (= improving the CO₂ fixation efficiency rate).

CASE STUDY

Productivity Improvements at AMCEL in Brazil

AMCEL is developing eucalyptus trees, which grow rapidly in tropical climates and are suitable for raw paper materials. The company shortened the time needed for selection through its unique breeding and proliferation technologies, greatly improving the productivity of its afforested areas in a short timeframe. Through cost reductions brought on by productivity improvements, AMCEL was able to achieve significant improvements to business profitability as well as to the rate of CO₂ fixation per unit area.



Forests where productivity has greatly improved (L: 2005, R: 2020)

Maintaining Supply Chains for Woody Resources (Domestic Initiatives)

Over many years, the Group has built up a supply chain with partners such as owners of forests, forestry businesses, wood processing businesses, and distribution companies both within Japan and overseas to effectively utilize forest resources. With regard to domestic woody materials in particular, it is moving ahead with procurement using a domestic supply chain, which is the Company's strength, and promoting use of domestic materials.

Although man-made forests are now mature enough to be used, the reality is that maintenance and woody material production are insufficient because of a long-term decline in domestic affore-

station business. On the other hand, in recent years, the Japanese government has been promoting forestry measures with a basic policy of green growth through forests, forestry and wood industries due in part to an increase in opportunities to use domestic materials and demand for biomass fuel.

With those measures as a tailwind, in order to maintain a domestic supply chain and promote further use of domestic wood materials, the Company will move ahead with initiatives that utilize the 90,000 hectares of Company-owned forests in various regions of Japan to support vitalization of forestry.

CASE STUDY

Contributions to Spreading Superior Seedlings

The Company produces and breeds superior seedlings (specialized seedlings) which have unique properties such as excellent growth potential and reduced pollen, with the aim of improving forest resources. Using these specialized seedlings, in collaboration with the Japanese government and local governments, the Company has set up sample forests within Company-owned forests and is working to expand the use of these seedlings further.



Forests grown from specialized cedar and cypress seedlings as an illustrative example in Company-owned forests in Kitayama, Shizuoka Prefecture (Photo taken in July 2020)

Enhance Public Interest in Forests Including Preservation of Biodiversity

In order to use sustainable forest resources, it is necessary to balance and maintain the public interest and multifaceted functions of forests, alongside their function as a supply source of woody resources.

The Group has particularly emphasized preservation of biodiversity among its services for forest ecosystem for procurement of sustainable forest resources and to build a sustainable society, and formulated the Basic Policy on the Preservation of Biodiversity in 2016.

Approximately 20% or 18,000 hectares of

Company-owned forests in Japan are designated as Environmental Forest Areas where trees are not harvested and environmental functions related to public interest such as watershed and ecosystems are preserved, and also where many wildlife species are supported. In overseas afforestation business, the Group has established conservation areas on its lands and carries out initiatives such as periodic surveys to verify the existence of plants and animals from the perspective of biodiversity preservation.

Basic Policy on the Preservation of Biodiversity



CASE STUDY

Balancing Preservation of the Natural Habitat of Blakiston's Fish Owls with Business Activities

In 2010, in collaboration with the Wild Bird Society of Japan, Nippon Paper Industries established a shared conservation area for Blakiston's fish owls, which has been designated as an endangered species in the critically endangered category of the Ministry of the Environment's Red List, at its Company-owned forests in Hokkaido Prefecture. In addition, the Company operates the facility based on a standard of balancing preservation of the natural habitat with economic activity.



Blakiston's fish owl (Photo courtesy of the Wild Bird Society of Japan)



Basic Stance

The Nippon Paper Group provides society with a wide range of products and services through the effective use of wood, a renewable resource. At the same time, its manufacturing processes use a great deal of energy and water. Bearing this in mind, the Nippon Paper Group has formulated the Nippon Paper Group Environmental Charter. The Group practices environmental management that contrib-

utes to the formation of a circulation-oriented society by working from a long-term perspective to reduce environmental impact, promote resource recycling, conserve biodiversity, and respond to climate change. Under the 2030VISION, the Group has identified these priorities as materiality for realizing the Group Mission and will contribute to building a sustainable society through its business activities.

The Nippon Paper Group Environmental Charter

Philosophy

The Nippon Paper Group is committed to helping preserve the global environment over the long term and contributing to the development of a recycling based society by carrying out its corporate activities in recognition of the importance of biodiversity.

Basic Policy

1. Act to counter global warming
2. Protect and develop forest resources
3. Increase use of recycled resources
4. Comply with environmental statutes and work to minimize our environmental impact
5. Develop environmentally friendly technologies and products
6. Engage in active environmental communication

(Established on March 30, 2001, and revised on March 30, 2007)

Promotion Structure

The Nippon Paper Group Environmental Committee, chaired by the general manager of the Technical Division, who is also the director in charge of environmental matters at Nippon Paper Industries, identifies management risks related to the Group's environmental activities and promotes countermeasures. Additionally, the committee manages and assesses the proper implementation of the Environmental Action Plan in accordance with the Nippon Paper Group Environmental Charter and reports to the Board of Directors through the Risk Management Committee.

With the aim of creating corporate value through environmental management, the Group regularly convenes the New Product Development Committee, and promotes the development of products derived from wood resources in line with growing environmental awareness. The Management Executive Committee deliberates and decides on environmental management policies and measures based on this information, and incorporates them into business strategies to address environmental risks and capture business opportunities, thereby enhancing the resilience of the Company's growth strategies.

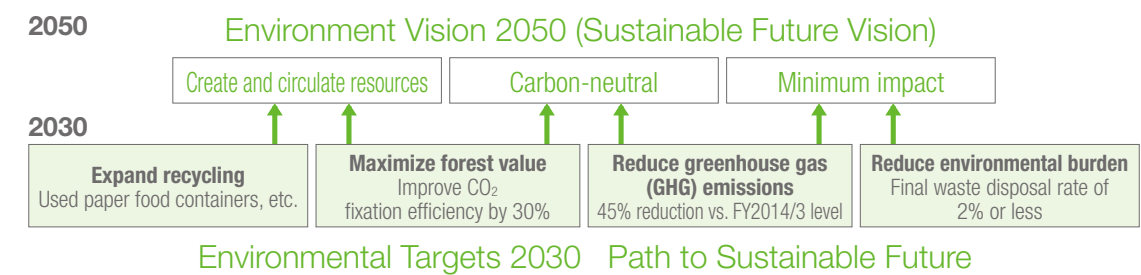
The Nippon Paper Group's Environmental Management Promotion Structure



Aiming for a Sustainable Society Where Nature and People Can Coexist in Harmony

In order to be more effective in dealing with environmental issues such as climate change, which are highly uncertain and require long-term responses and countermeasures, it is necessary to have a vision and goals based on a medium- to long-term perspective. The Group has formulated targets and plans for 2030 by backcasting from the ideal state of the Group in 2050, and the entire Group is working together to achieve them.

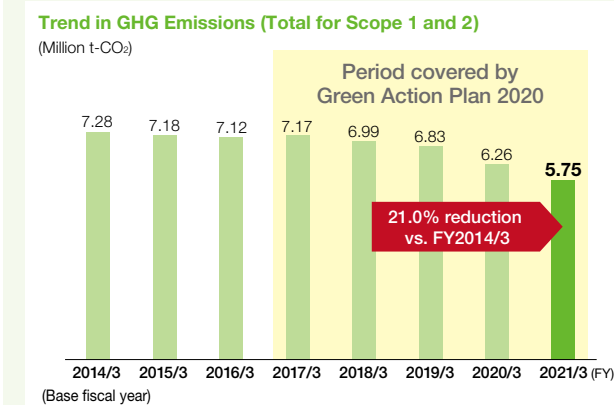
Sustainable Society Where Nature and People Can Coexist in Harmony



Results of Green Action Plan 2020 (Excerpt)

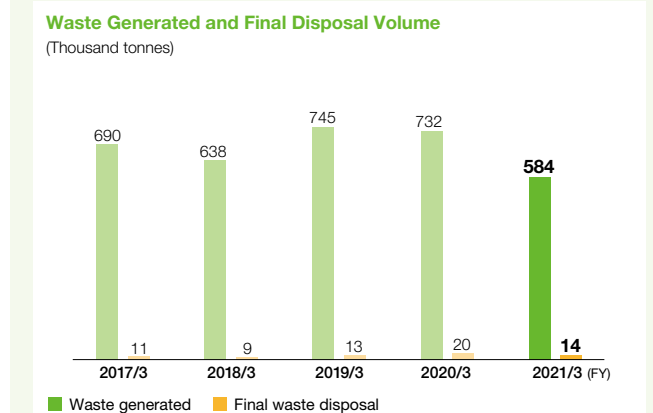
Global Warming Countermeasures

Target Reduce greenhouse gas emissions by 10.0% compared with FY2014/3*1
Result 21.0% reduction vs. FY2014/3



Circulation of Resources

Target Increase waste recycling rate to at least 98.0%*2
Result Waste recycling rate of 98.0%



Protection and Cultivation of Forest Resources

Target Maintain forest certification for all Company-owned forests, both domestically and overseas
Result Maintained forest certification for approximately 90,000 hectares of Company-owned forests in Japan and approximately 80,000 hectares overseas



Development of Eco-Friendly Technologies and Products

Target Reduce environmental load through provision of eco-friendly products and services
Result Developed Waterproof Liner, a recyclable, multi-purpose container-board product



*1 Scope: Consolidated and non-consolidated Group companies in Japan subject to the Act on Rationalization of Energy Use.

*2 Domestic Group companies classified as environment-related organizations in ESG Databook 2021.



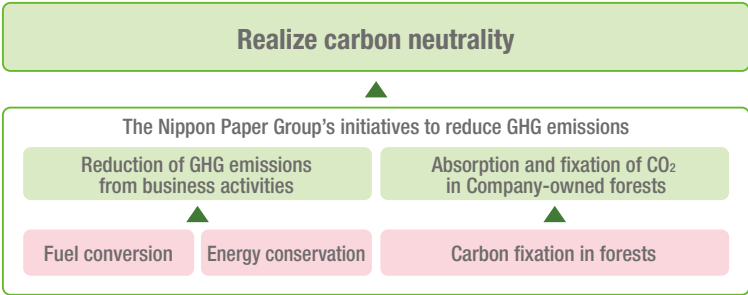
Aiming for Carbon Neutrality in 2050

The Nippon Paper Group sees addressing climate change as one of its material issues for realizing the Group Mission. Under the 2030VISION, in its basic policy, the Company states “respond to rapid changes in the social landscape including CO₂ reduction and environmental issues,” and it will work to reduce GHG (greenhouse gas) emissions and implement green strategies to achieve carbon neutrality by 2050.

The Nippon Paper Group's FY2031/3 Targets
Reduce greenhouse gas (GHG) emissions (Scope 1 and 2) by 45% compared with FY2014/3
· Reduce fossil fuel use by maximizing the use of existing infrastructure
Green strategy
· Maximize the value of forests (Improve CO₂ fixation efficiency in overseas afforested areas by 30% compared with FY2014/3)
· Expand biomass products

Carbon neutrality in 2050

Initiatives to Reduce GHG Emissions



The Nippon Paper Group has worked on fuel conversion, energy saving in manufacturing and logistics processes, and CO₂ absorption and fixation through optimal management of its own forests as three pillars for GHG reduction. In FY2021/3, the Group reduced the fossil energy use ratio (heating value)* to 55% (FY1991/3: 66%). In addition to reviewing the Group energy mix with an eye toward 2030, it began introducing internal carbon pricing in July 2021 in order to accelerate the reduction of GHG emissions.

* Scope: The Nippon Paper Group's main production bases in Japan

Addressing TCFD

In April 2021, the Group endorsed the Task Force on Climate-related Financial Disclosures (TCFD) with the aim of disclosing appropriate information on its response to climate change issues.

Governance

The Nippon Paper Group has identified the reduction of GHG emissions as a management issue. Since 2008, the Group has established quantitative targets for reducing GHG emissions and has worked to achieve those targets.
Nippon Paper Industries regards addressing climate change issues as a material issue in realizing the Group Mission. In addition to the Risk Management Committee, it receives reports on and oversees initiatives from the Nippon Paper Group Environmental Committee. Since FY2022/3, the executive officer responsible for environmental management has also been reporting on these and other issues to the Board of Directors on a quarterly basis.

Risk Management

Assessments of and responses to climate-related risks are integrated into the Nippon Paper Group's risk management structure and are managed by the Risk Management Committee (see P. 74).
In order to properly foresee risks, the Nippon Paper Group Environmental Committee, established under the Risk Management Committee, collects and analyzes information, identifies climate-related risks and promotes countermeasures. In addition, the Group has established the Climate Change Strategy Working Group to collect information and forecast risks.

Indicators and Targets

The Group will perform 1.5°C scenario analysis, enhance and broaden its indicators and targets, and strengthen risk management going forward.
Indicator: Carbon pricing information
Targets: Reduce GHG emissions (Scope 1 and 2) by 45% in FY2031/3 compared with FY2014/3
Non-fossil energy use ratio 60%

Scenario Analysis and Strategy

In 2020, the Group drew up a vision of society taking into account the growing awareness of ESG issues around the world, and identified climate-related risks and opportunities, mainly in the paper and paperboard business, using two scenarios: one in

which temperature rise is limited to 2°C and the other in which it rises by 4°C or more.
To incorporate these into the Group's business strategy, it qualitatively assessed the financial impact.

Risk Identification and Assessment

The Nippon Paper Group is affected significantly by physical risks because its business foundation comprises forest resources. Additionally, the Group purchases raw materials from overseas. For this reason, the Group also closely monitors the climate change countermeasures of countries from which it procures raw materials as a risk factor. On the other hand, in Japan, the Group is affected by regulatory risk such as carbon tax, and reputational risk arising from the climate change countermeasures of customers.
Regarding transition risk, the Group endeavors to reduce risk through fuel conversion and energy conservation, with a view to achieving its target of

reducing GHG emissions (Scope 1 and 2) by 45% in FY2031/3 in comparison with FY2014/3.
Regarding physical risk, the Group strives to spread out and diversify the geographic location of its afforested areas and suppliers of wood chips and other resources. Concurrently, as a means of mitigating damage to production bases and logistics networks, the Group formulates and implements appropriate BCP measures, such as backup production and inventory management. Through these efforts, the Group endeavors to reduce risk.

■ Risks Assessed to Have a Large Financial Impact (Some excerpts are shown below)

Type of Risk		Predicted Phenomena
Transition risk	Regulatory	Stricter emissions restrictions and increases in carbon prices · Fuel price increases and renewable energy surcharges · Increases in the prices of wood chips for use as raw material and various supplies
	Market	Customers' GHG reduction strategy · Decrease in sales due to a decline in the amount of paper used
Physical risk	Acute	Losses due to catastrophic disasters · Stoppage in the delivery of supplies and products as logistics networks are cut off · Interrupted production due to rising turbidity of water intake from rivers · Production stoppage due to damage at production sites · Procurement difficulties caused by damage to afforested areas and raw materials suppliers
	Chronic	Changes such as rising temperatures and precipitation · Procurement difficulties resulting from fires or the emergence of pests at afforested areas or suppliers' forests · Increases in prices or procurement difficulties for forest resources or plant-derived supplies due to reduced plant productivity

Identification and Assessment of Opportunities

Climate-related risks also simultaneously present opportunities. The Nippon Paper Group will implement a green strategy combining its tangible assets, such as mill facilities and Company-owned forests, and its intangible assets, such as its raw material procurement networks and technological capabilities developed

over many years. In this way, the Group will be able to enter markets that offer growth prospects in step with changes in the environment and social conditions, thereby capturing opportunities to drive growth in its businesses.

■ Opportunities in Existing and Growing Markets (Some excerpts are shown below)

Type of Risk	Predicted Phenomena	The Nippon Paper Group's Strengths
Stricter government policies	· Widespread use of storage batteries due to progress on electrification	· Technologies for using tree components
	· Further reduction of vehicle weight	· Cellulose nanofiber (CNF) development technologies and production facilities
	· Progress on carbon recycling	· Breeding technology for trees with a high CO ₂ fixation efficiency · Company-owned forests in Japan · Chemical CO ₂ fixation and usage technology · Biomass-derived CO ₂ supply infrastructure (recovery boilers)
Changes in consumer tastes and preferences	· Market growth driven by penetration of biomass products in society	· Biomass material development technology · Recycling technology and wastepaper procurement networks
Customers' GHG reduction strategies	· Strengthening of GHG reductions across the entire supply chain	· Shorten transportation distance by decentralizing production sites
Losses due to catastrophic disasters	· Stronger requests for BCP measures from customers	· Production structure spanning multiple mills
Changes such as rising temperatures and precipitation	· Buildings are required to be more resilient	· Manufacturing technology for fly ash concrete admixture
	· Trees that can withstand high temperatures, drought, and pests are needed	· Tree breeding and propagation technologies

Environment

Alleviation of Environmental Burden and Promotion of Resource Circulation

ESG Databook 2021



Basic Stance

Environmental burden can never be fully eliminated in activities to provide products and services to society. However, companies have a responsibility to society to reduce their environmental burden as much as possible. The Nippon Paper Group identifies this priority as an important management issue for realizing the Group Mission. The Group has worked for many years to minimize its environmental burden by curtailing the generation of waste and other emissions, while promoting the circular use of resources. Under the 2030VISION, the Nippon Paper Group has

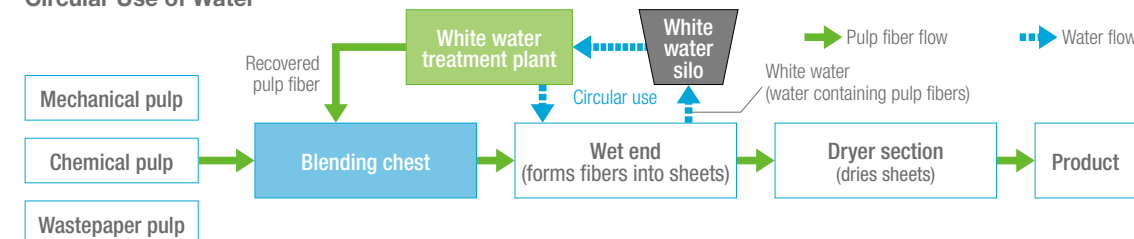
clearly articulated a business model designed to expand and reinforce the Three Circulations, which take advantage of the characteristics of woody resources. The purpose of this business model is both to achieve business growth and contribute to realizing a circulating society. The Group will step up recycling, which is one of the Three Circulations, by harnessing its broad range of strengths, including recycling technology. This way, the Group will reduce its environmental burden and contribute to realizing a circulating society.

Effective Use of Water Resources

The manufacture of paper requires large amounts of water. In the paper mills of the Group, in order to conserve water resources, which are natural capital, so-called white water, which contains fine fibers generated during the wet process of dispersing pulp fibers in water to make thin sheets, is collected and

recycled. As of this time, the Group has not received any information from governments or local communities regarding negative impacts on the environment resulting from water intake and use at the Group's mills. Therefore, the risks imposed by the Group's operations on the water supply in Japan are minimal.

Circular Use of Water

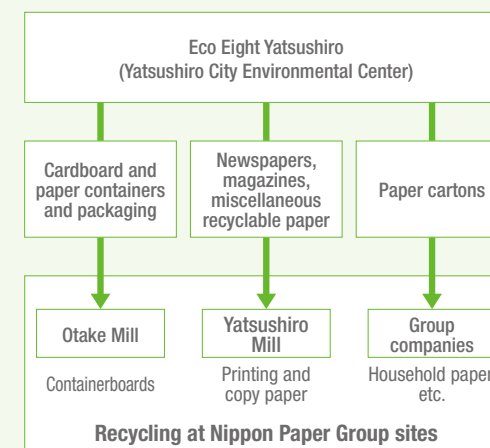


CASE STUDY Circular Use of Wastepaper

Yatsushiro Mill and Other Sites: Circular Use of Wastepaper Together with Local Governments

Nippon Paper Industries' Yatsushiro Mill, in partnership with the city of Yatsushiro, has built a comprehensive wastepaper recycling system for the wastepaper generated in Yatsushiro.

A wide variety of used paper (newspapers, magazines, corrugated cardboard, paper cartons, paper containers and packaging) collected by Yatsushiro City is accepted by the Yatsushiro Mill and other plants of the Group, recycled using facilities and technologies such as wastepaper pulp production facilities, and used as raw materials for making paper.



CASE STUDY

Effective Use of Quicklime Waste

Ishinomaki and Iwanuma Mills: Circular Use of Quicklime

At its papermaking mills, the Group uses quicklime to recover chemicals used in the pulp manufacturing processes and to manufacture fillers that impart functionality to paper. Quicklime waste is generated in this process. The Group has so far disposed of this material as an industrial waste. However, Nippon Paper Industries' Ishinomaki and Iwanuma Mills have started collaborating with a supplier that can recycle quicklime waste. Under this collaboration, the Ishinomaki and Iwanuma Mills have commenced initiatives to reuse quicklime waste as a resource.



CASE STUDY

Effective Use of Coal Fly Ash

Ishinomaki Mill: Processing Coal Fly Ash from a Boiler into a Construction Material

The Ishinomaki Mill operates a coal boiler to privately generate electricity on-site. In the process, combustion ash is generated in its coal boiler. Nippon Paper Industries processes the combustion ash through heat modification, and sells the material as CfFA® (Carbon-free Fly Ash) concrete admixture. Mixing CfFA® into concrete has the effect of making it more durable and longer lasting. CfFA® has so far been adopted in earthquake recovery construction (bridges, seawalls, etc.) in the Tohoku region of Japan.



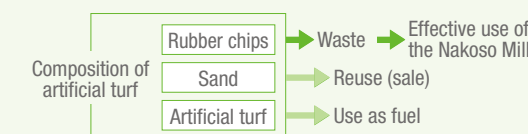
CfFA® was used in bridge beams, arches and vertical supports in the JR Kesennuma Line Sakuragawa Bridge on the JR Kesennuma Line (Minamisanriku Town, Motoyoshi District, Miyagi Prefecture)

CASE STUDY

Effective Use of Local Waste

Nakoso Mill: Local Production and Consumption of Energy

At Nippon Paper Industries' Nakoso Mill, waste generated in neighboring areas is actively used as fuel. This waste includes shiitake mushroom beds and rubber chips from artificial turf. The use of waste as fuel allows the Nakoso Mill to reduce its use of fossil fuels. The local production and consumption of fuel has not only contributed to reducing GHG emissions from the Nakoso Mill, but it has also helped to reduce waste generated in local areas.



Rubber chips

Artificial turf

Customer Trust

Philosophy and Basic Policy of Product Safety

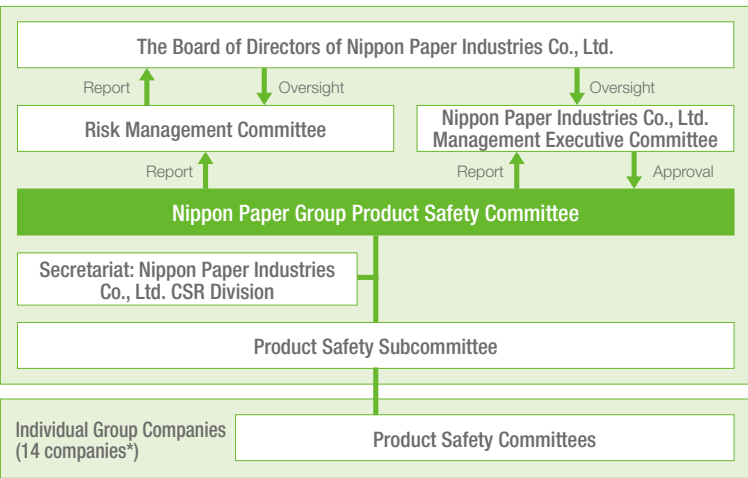


Basic Stance

The Nippon Paper Group has made “delighting our customers” (by accurately responding to the needs of customers) one of the requirements of the Vision to realize its Group Mission. Through the provision of products that contribute to the building of a sustainable society, the Group aims to enhance its social and economic value as a company and to realize its Group Mission.

The Group ensures safety and quality based on the Philosophy and Basic Policy of Product Safety, and strives for the stable supply of diverse products indispensable for daily living.

Promotion Structure (Product Safety Management)



* Nippon Paper Industries Co., Ltd., Nippon Paper Crecia Co., Ltd., Nippon Paper Papylia Co., Ltd., Nippon Paper Lumber Co., Ltd., Daishowa Uniboard Co., Ltd., Nippon Seitai Corporation, Kyoei Seitai K.K., NP Trading Co., Ltd., Nippon Paper Development Co., Ltd., Opal, Jujo Thermal Oy, Siam Nippon Industrial Paper Co., Ltd., Nippon Dynawave Packaging Company, LLC, and Akita Jujo Chemicals Co., Ltd. (as of June 30, 2021)

Nippon Paper Industries has established a Risk Management Committee under the supervision of the Board of Directors. The Nippon Paper Group Product Safety Committee, chaired by the general manager of the CSR Division, manages activities related to the Group’s product safety and reports to the Risk Management Committee. The Group complies with laws, regulations, etc. in Japan and overseas, and strives to ensure product safety using management methods appropriate to each business or product.

The Product Safety Subcommittee exchanges information and opinions related to product safety among Group companies, discusses countermeasures if there are any concerns and reports to the Nippon Paper Group Product Safety Committee. Product Safety Committees or similar organizations have been established at each Group company to promote product safety activities.

ESG Databook 2021



Understanding Customer Needs

The Group proactively communicates through daily sales activities and quality patrols by technical staff to gain an understanding of the widely varied needs of customers. When customers inquire about raw materials (such as the type of lumber, country of origin or legality), the Company explains its proactive approach and third-party evaluations. For customer inquiries about CSR procurement, the Company provides individual responses about its CSR initiatives and is registered as a supplier on a global platform related to information disclosure about CSR procurement.

Quality Control

Quality control is managed according to the characteristics of the Company’s various products and services. [Examples:]

Paper and Paperboard Division: Operates a service engineer (SE) system where technical staff involved in manufacturing observe paper being used on-site by printers, converters, etc., and acquire feedback from customers

Paper-Pak Sales Division: Holds annual on-site, quality-related meetings with its production company (Nippon Paper Liquid Package Product Co., Ltd.) and conducts product safety audits

Stable Supply

The Group is committed to providing reliable supplies of its products by ensuring stable supply of raw materials and through the systematic maintenance and renewal of production facilities. Collaboration between the sales and production departments works to establish a stable supply of products through flexible and lean production planning and inventory control. The Group has established BCM (business continuity management) regulations (December 2020) to prepare for cases in which it becomes difficult to carry out normal business operations due to large-scale disasters or infectious diseases. Based on these regulations, each division formulates and implements its own BCP (business continuity plan).

Get to Know the Nippon Paper Group

More Profitable

More Reliable

Data Section

Products that Contribute to the Building of a Sustainable Society

Developing an Array of Products Using Wood Raw Materials

As a comprehensive biomass company shaping the future with trees, the Group develops various businesses that maximize the use of renewable woody resources using diverse technologies and expertise, and the products and services it provides have a high affinity with building a sustainable society.

The Group is developing various products using woody resources procured from forests with sustainable management. Furthermore, the Company utilizes the characteristics of woody resources and provides environmentally friendly products which reduce usage of fossil-based raw materials and improve recyclability, transportation efficiency, etc.

[Examples of the Group’s environmentally friendly products]

*Improve transport efficiency

Devising new shapes and improving packing efficiency will lead to reducing CO₂ emission volume during transportation.

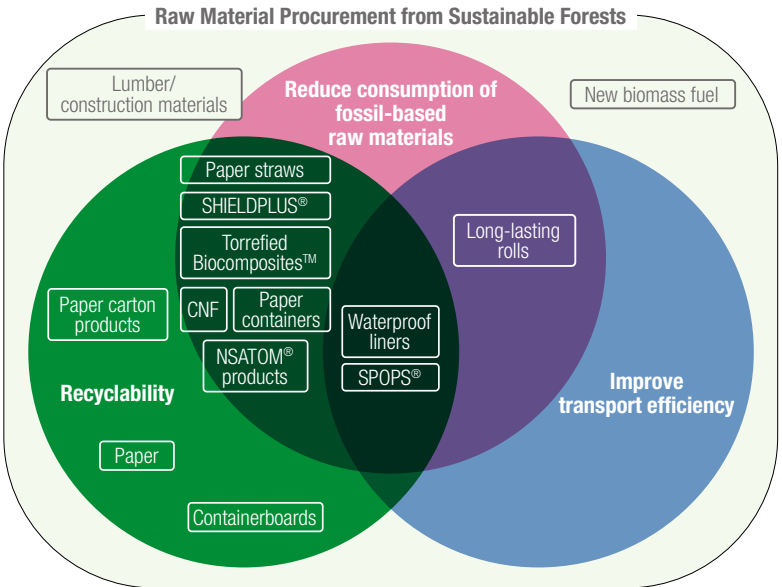
*Recyclability

By separating, collecting and extracting wood fibers from used paper products, fibers can be used as wastepaper pulp, which reduces the volume of waste.

*Reduce consumption of fossil-based raw materials

Converting conventional plastic products to paper reduces consumption of fossil-based raw materials and makes raw materials sustainable.

Reducing packaging materials by devising new shapes will also lead to reducing the volume of fossil-based raw materials used.



Promotion of Recycling

The Group has outlined its basic stance for the circulation of resources in the Nippon Paper Group Environmental Charter and aims to contribute to the formation of a sustainable, circulating society.

Through its promotion of paper product recycling, the Group aims to achieve a sustainable society by promoting resource conservation by reducing the consumption of woody resources and using recycling resources appropriately, embodying a circulating economy and contributing to increased fixed carbon. Under Medium-Term Business Plan 2025, the Recycling Promotion Office was newly established to actively promote the use of paper that had previously been regarded as difficult to recycle and to build a collection and recycling system for paper cups and new paperized products.

Through these initiatives, the Group aims to reduce the burden on the environment and acquire business opportunities based on societal demands.

CASE STUDY

Joint Recycling Project with Hamamatsu City

The Company received the support of Hamamatsu City and started yearlong tests and verification of a new recycling project from April 2021. This project being carried out together with Hamamatsu Green Wave Co., Ltd. and NPO Ecolife Hamamatsu uses a collection box installed at Ecohama, a facility in Hamamatsu City to raise environmental awareness. Used paper food containers are collected and taken to one

of the Company’s mills to be utilized as raw material for paper.

By raising recycling awareness among ordinary consumers and using the Company’s technologies to recycle paper, this project leverages the recyclability inherent in paper to reuse it as a resource. This will reduce the volume of incinerated rubbish and contribute to fixed carbon by prolonging use of woody resources.



Basic Stance

Philosophy and Basic Policy on Human Rights, Employment and Labor



The Nippon Paper Group established its Philosophy and Basic Policy on Human Rights, Employment and Labor in 2004 based on the Ten Principles of the UN Global Compact in four areas (human rights, labor, environment, and anti-corruption). Furthermore, the Philosophy and Basic Policy Concerning Raw Materials Procurement formulated in 2005 shows consideration for the human rights of all Group

employees and the Group advances activities emphasizing respect for human rights throughout the supply chain.

Going forward, the Group will move ahead with efforts to reinforce respect for human rights throughout the entire value chain in accordance with the UN's Guiding Principles on Business and Human Rights.

Promotion Structure

Philosophy and Basic Policy Concerning Raw Materials Procurement



The Group has established its Risk Management Committee, which is chaired by the president and representative director, operates under the supervision of the Board of Directors of the Company, and holds meetings at least once annually. This risk management promotion structure handles risks related to the Group's human rights.

In addition to the Nippon Paper Group Helpline

system, which the Company set up as an internal whistleblower system, the Group also accepts inquiries regarding concerns about any possible violation of human rights through the Group's corporate website (<https://www.nipponpapergroup.com/english/inquire/>), and the Company's Compliance Office and associated departments respond to them.

Activities Related to Respect for Human Rights

The Company has the opportunity to share opinions with Amnesty International Japan at least once a year. Based on the opinions that came out in these exchanges, the Company has conducted annual field surveys of human rights issues at subcontracted mills in Japan, and audits of overseas wood chip suppliers, since 2015.

Human Rights Surveys at Subcontracted Mills in Japan

The Company sends surveys to subcontracted mills in Japan once a year and has them conduct a self-check, mainly to confirm compliance with labor and safety laws and regulations. Survey results are shared with the human resource managers of each mill for the purpose of supporting improvements. Furthermore, follow-up surveys have been conducted since FY2020/3.

Confirmation of Consideration for Human Rights at Overseas Wood Chip Suppliers

Based on the Philosophy and Basic Policy Concerning Raw Materials Procurement, the Company has employees in charge of procurement visit overseas wood chip suppliers to conduct interviews covering matters such as health, hygiene, safety, disaster preparedness, and local environmental concerns from the perspective of respect for

< An inspection in Thailand >



Alcohol disinfectant spray set up inside an office



Employees in a rest area



A display of precautions to prevent the spread of COVID-19



A display showing refuge areas in the event of an emergency

human rights. In FY2021/3, inspections were carried out in Thailand.*

* Conducted by a Company employee stationed locally



Basic Stance

The Nippon Paper Group upholds instilling pride in employees as a necessary condition of its Vision to realize its Group Mission. For that reason, as the human resources environment within Japan (declining population, declining birthrate and aging population) changes, it views building an organization in which diverse employees can maximize their potential as a critical issue.

The Group will allocate its workforce in line with its growth strategy in such ways that a diverse range of people with different personalities can maximize their individual capabilities. By establishing an organizational structure that encourages this, and by strengthening employee engagement, the Group aims to become an organization where both employees and the Company can grow together.

An Environment to Embrace Diversity

Realizing Flexible Work Styles

Nippon Paper Industries is working to review and improve its working environment and its system to introduce a "flexible work style" so that employees can better demonstrate their capabilities. Regarding such work styles, it is not only necessary to promote diversity, but BCP that incorporates measures for events such as pandemics must also be considered.

In FY2021/3, the Company introduced the following systems geared toward helping employees balance work with private matters such as childcare and nursing care.

- (1) A system that allows employees to take expired annual paid leave (preserved leave) in half-day units
- (2) A system that allows employees to apply the preserved leave (expired annual paid leave) for short-term childcare (paid leave can be used)
- (3) A system of financial assistance for employees transferred alone (without their family) who are not the head of their household
- (4) A system to allow employees to take leave when accompanying their spouses during an overseas assignment

In addition, the Group has introduced the following three systems in FY2022/3 to realize flexible work styles.

- (1) Revisions to flextime system
Revised the flextime system, in which core time (the time during which employees must be at work) is not fixed in order to realize flexible work styles autonomously at the employees' own discretion.
- (2) Introduced a system to work from home
Introduced a system that can be widely used by

not only employees involved in matters such as childcare or nursing care, but also employees who will handle work that can be done from home and who can work autonomously.

- (3) Introduced a system for taking annual paid leave in hourly increments
Introduced a leave system that is efficient for employees balancing matters like childcare or nursing care with work over the course of a day so that employees can take leave flexibly in response to various circumstances.

Response to the Act on Advancement of Measures to Support Raising Next-Generation Children

In April 2021, the Company formulated its Action Plan Based on the Act on Advancement of Measures to Support Raising Next-Generation Children, which supports employees balancing work and childcare.

Action Plan Based on the Act on Advancement of Measures to Support Raising Next-Generation Children

1. Plan period

Two years from April 1, 2021 to March 31, 2023

2. Contents

- | | |
|----------|---|
| Target 1 | Carry out initiatives to improve the rate of annual paid leave taken. |
| Target 2 | Implement initiatives to support career development for workers who have returned to work from childcare leave or are raising children. |

Promoting Diversity

The Company formulated its Action Plan for the Advancement of Women in April 2021. It strives to

establish and realize an environment in which women can flourish continually.

Action Plan for the Advancement of Women

1. Plan period

Five years from April 1, 2021 to March 31, 2026

2. Contents

Target 1

The Company will set the ratio of female employees, compared to male employees, promoted to section manager from a lower rank over the past three business years at 80% or higher

Target 2

At head office divisions, which have no production sites, the rate of usage of systems such as flextime, taking leave in hourly increments and working from home will be set at 70% for both men and women to promote diversity.

From now on, to achieve the goals of its Action Plan, the Company will consider and implement new initiatives such as creating an online system for autonomous career planning and providing opportunities and tools to acquire management skills.

In addition, it will monitor the usage of systems to realize flexible work styles introduced in April 2021 (P. 89), which will lead to reevaluation and new measures to achieve targets.

CASE STUDY

Holding a Study Session about Diversity (Nippon Paper Crecia)

Nippon Paper Crecia held a study session about diversity in March 2021.

This time, based on the theme of learning about LGBTQ*, employees first learned basic knowledge about LGBTQ. Afterward, two speakers, Yu-kun (who is transgender) and Kazue-chan (who is gay), were invited to share their life stories and experiences. The event was held both at a venue and online, and approximately 320 Group employees attended.

Employee impressions, expressed through a questionnaire conducted after the study session, included “We must be aware that everyone has unconscious biases” and “This was an opportunity to properly learn about LGBTQ and help foster a corporate culture so that we can become a company where diverse employees thrive.”

- L: A woman who is emotionally or sexually attracted to other women
- G: A man who is emotionally or sexually attracted to other men
- B: A person who is emotionally or sexually attracted to more than one gender (men and women)
- T: A person whose gender identity is not aligned with the gender they were assigned at birth
- Q: A person who is in the process of understanding and exploring what their sexual orientation and/or gender identity and gender expression might be



Developing Human Resources

The Group upholds Challenge, Fairness, and Teamwork as standards of value and judgment on which employees should place emphasis to realize its Group Mission. It has also set accelerating the transformation of the business structure as its basic strategy in Medium-Term Business Plan 2025.

The Company strives to cultivate leaders who push for such changes. When hiring employees, it looks for people who constantly seek new challenges, exercise fair judgment and act accordingly, are able to work in an inclusive team, and have the mental fortitude to overcome hardships. To develop employees into leaders, the Company is enhancing its human resource development system to create “autonomous human resources” who respond to situations by determining the right approach to a challenge and then overcoming it, while also seeking new challenges on the global stage.

(1) Leader Development

The Company cultivates managerial-track employees through on-the-job training, scheduled rotations and off-the-job training (stratified education and optional training).

Scheduled rotations to internal and external

departments, as well as to affiliated companies, give such employees the ability to see matters from a wide variety of perspectives, so that they will not be limited to a single viewpoint. Off-the-job training is a career development program that provides stratified education prior to managerial appointments while also arranging systems for dispatching employees to overseas locations. The Company also provides additional training when employees are appointed or promoted to managerial positions and offers elective training to cultivate candidates for executive positions.

(2) Initiatives Aimed at Developing Human Resources

The Nippon Paper Group supports employee self-development and voluntary skills acquisition through means such as distance learning, group training, and encouragement for acquiring professional qualifications. Stratified education is conducted jointly throughout the Group companies to promote the Group-wide development of employees, such as new hires and new managers. The Group works to develop employees with broad perspectives. Stratified education at mills, for example, is conducted not just for each mill but together with neighboring mills.

Human Resource Placement Based on Transformation of the Business Structure

In order to achieve Medium-Term Business Plan 2025, the Company promotes human resource allocation in response to its business structure through its personnel division, in addition to establishing an organizational structure that pushes such efforts forward and visualizing employee information.

In line with human resource utilization for the Group as a whole, the Company works on

mid-career employment to accelerate transformation of the business structure. It actively recruits personnel with unique insight and experience from outside the Company and tries to place them quickly. The Group believes that active contribution by employees with various types of insight and experience will reinvigorate the Company's organization and development and will continue to work on this.

Enhancing Engagement

The Group will continue to change drastically by advancing transformation of the business structure as a comprehensive biomass company shaping the future with trees. Even amidst such changes, it is important to enhance engagement so that employees can experience motivation and a comfortable work environment. The Group defines engagement as a relationship in which both employees and

companies can mutually grow. The Group will implement measures for enhancement of engagement. In FY2022/3, it will conduct its second employee engagement survey geared toward all employees, the results of which will be reflected in new measures. It will also try out a system of internal side occupations to allow employees to take on challenges according to their desire for growth.



Philosophy and Basic Policy on Safety and Health Measures



Basic Stance

The Nippon Paper Group upholds instilling pride in employees as a necessary condition of its Vision to realize its corporate Group Mission. This is based on the prerequisite of ensuring the safety and health of employees at each of the Group's locations, which is a critical issue for maintaining sound management.

The Group formulated a Philosophy and Basic Policy on Safety and Health Measures and constructed a system for occupational safety and health under which all employees and members of management are united. It maintains the health of employees, realizes a comfortable and friendly working environment and helps to prevent disasters.

Promotion Structure



The Group established the Risk Management Committee under the supervision of the Board of Directors of the Company. Under this committee, the Nippon Paper Group Safety and Disaster Prevention Committee, which is chaired by the general manager of the Technical & Engineering Division, supervises and promotes occupational safety and health and disaster prevention. In case of a disaster, the Group has established a communication system between the mills and the head office as well as the departments within the head office. It also operates a system to report necessary information to the Nippon Paper Group Safety and Disaster Prevention Committee and top management.

The Company regularly holds health and safety meetings attended by both employees and management, including safety and health personnel from the head office, mills, and labor unions, where the opinions of employees are represented. Meetings of the Safety and Health Committee and Safety and Health Promotion Council (consisting of mills and affiliated companies) are held separately at each location including mills and offices. The Company promotes safety and health management activities by cooperating and collaborating with management and employees, as well as subcontractors and related contractors working at each location.

Initiatives for Preventing Work-Related Accidents

The Group implemented its own system (NPSS*) for continuously pursuing occupational safety and health management activities at the organizational level. Under NPSS, the Company formulated health and safety plans that incorporate specific and voluntary activities at each site in accordance with the Company's policies and measures relating to safety and health. The system is helping to improve safety and health levels through the prevention of occupational accidents, promotion of workers' health, and creation of comfortable working environments.

The safety and health plans for each location are evaluated on points such as progress through a mill safety audit performed at least once per year, and improved with the aim of enhancing the safety

standards of the Company overall. The Company has expanded this mill safety audit to the Group companies for deepening exchanges between them and improving safety standards.

Additionally, the Company formulated a medium-term management plan centered on safety initiatives in July 2020. It established a safety action plan (2020–2025) to work on constructing a foundation for preventing work-related accidents through, for instance, work-related accident prevention measures utilizing AI-IoT technology and realization of safe environments through three pillars of activity: (1) Creating safe environments, (2) Risk management, and (3) Developing people who value safety.

* Nippon Paper Occupational Safety and Health Management System

Shaping the Future with Trees

Data Section

- 094 Eleven-Year Financial and Non-Financial Summary
- 096 Overview of Financial Results
- 098 Business and Other Risk Factors
- 100 Company Profile / Investor Information

Eleven-Year Financial and Non-Financial Summary

Nippon Paper Industries Co., Ltd. and Consolidated Subsidiaries*1
Fiscal Years Ended March 31

	FY2011/3	FY2012/3	FY2013/3	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	(Millions of yen) FY2021/3
Profit / Loss (Fiscal Year)											
Net sales	1,099,817	1,042,436	1,025,078	1,081,277	1,052,491	1,007,097	992,428	1,046,499	1,068,703	1,043,912	1,007,339
Cost of sales	854,238	803,653	796,411	844,603	825,576	800,185	787,464	846,109	871,218	832,151	803,686
Operating income	35,608	36,524	25,145	28,536	23,656	22,623	23,764	17,613	19,615	35,048	19,233
Ordinary income	31,599	6,057	23,081	28,188	23,204	17,123	26,994	18,649	23,901	30,524	12,276
Profit (loss) attributable to owners of parent	(24,172)	(41,675)	10,652	22,770	23,183	2,424	8,399	7,847	(35,220)	14,212	3,196
Cash flows from operating activities	115,454	60,114	65,978	75,763	81,846	52,419	87,087	44,944	59,760	67,036	84,197
Cash flows from investing activities	(93,467)	(46,626)	(61,766)	(24,861)	(42,483)	16,270	(65,278)	(62,731)	(47,461)	(70,113)	(182,945)
Free cash flow	21,987	13,488	4,212	50,902	39,363	68,689	21,809	(17,787)	12,299	(3,077)	(98,748)
Financial Position (End of Fiscal Year)											
Total assets	1,560,592	1,527,635	1,497,729	1,480,894	1,495,622	1,390,918	1,388,885	1,429,892	1,390,814	1,363,469	1,547,326
Total current assets	515,392	546,344	507,335	505,417	484,498	502,912	486,205	490,479	515,407	496,871	533,764
Total property, plant and equipment	798,482	752,501	747,423	729,179	715,406	669,298	686,813	717,927	677,613	680,524	782,012
Other non-current assets	246,718	228,789	242,970	246,297	295,716	218,707	215,867	221,484	197,792	186,074	231,549
Total liabilities	1,151,829	1,160,983	1,101,269	1,054,309	1,005,881	966,233	953,974	986,493	995,470	976,892	1,122,605
Total net assets	408,762	366,652	396,460	426,584	489,740	424,685	434,911	443,398	395,343	386,577	424,721
Interest-bearing debt	832,347	838,285	830,220	775,597	731,834	703,831	678,504	693,562	688,703	689,937	828,870
Other											
Capital investment	46,591	57,172	53,323	47,162	48,518	46,899	51,289	72,765	60,338	70,636	57,929
Depreciation	78,639	74,352	64,903	63,181	61,374	57,672	55,083	57,892	60,422	58,705	63,357
Research and development expenses	6,855	6,484	6,348	5,690	5,431	5,555	5,622	6,013	6,694	6,051	6,217
Per Share Data											(Yen)
Profit (loss) attributable to owners of parent	(208.73)	(359.90)	92.00	196.67	200.27	20.95	72.57	67.80	(304.34)	122.89	27.67
Cash dividends	60.00	30.00	40.00	40.00	50.00	60.00	60.00	60.00	30.00	40.00	40.00
Financial Indicators											
Operating income margin	3.2%	3.5%	2.5%	2.6%	2.2%	2.2%	2.4%	1.7%	1.8%	3.4%	1.9%
EBITDA (Millions of yen)	118,469	114,754	93,752	96,333	89,467	85,145	83,571	80,137	84,583	97,779	86,940
Return (loss) on equity (ROE)	(5.6%)	(10.9%)	2.8%	5.6%	5.1%	0.5%	2.0%	1.8%	(8.6%)	3.7%	0.8%
Return on assets (ROA)	2.7%	1.2%	2.3%	2.7%	2.2%	2.0%	2.6%	1.9%	2.2%	2.7%	1.3%
Return on invested capital (ROIC)	3.5%	1.5%	2.9%	3.3%	2.8%	2.4%	3.2%	2.3%	2.9%	3.5%	1.6%
Debt/equity ratio (times)	1.75	1.94	1.89	1.70	1.55	1.47	1.49	1.61	1.76	1.75	1.86
ESG Indicators*2											
Percentage of outside directors	0%	0%	0%	11.1%	11.1%	12.5%	22.2%	22.2%	22.2%	33.3%	33.3%
Forest certification acquisition rate	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GHG emissions*3 (Million t-CO ₂)	-	-	-	7.28	7.18	7.12	7.17	6.99	6.83	6.26	5.75
Waste recycling rate*4	99.0%	96.7%	95.8%	95.9%	98.2%	97.6%	98.4%	98.6%	98.2%	97.2%	97.6%
Percentage of female managers*5	-	-	1.49%	1.48%	1.57%	1.60%	1.86%	2.47%	2.29%	2.43%	2.65%
Lost-time injury frequency rate (LTIFR)*6	0.50	0.37	0.58	0.53	0.62	0.44	0.40	0.64	0.77	0.79	0.79

*1 Nippon Paper Industries Co., Ltd. merged with and absorbed its parent company Nippon Paper Group, Inc. and was publicly listed on April 1, 2013. For this reason, figures for FY2013/3 and prior fiscal years represent the financial results of Nippon Paper Group, Inc.

*2 Data available on a continuing yearly basis have been provided for comparison purposes, considering changes in the scope of aggregation and similar factors.

*3 Scope: Consolidated and non-consolidated Group companies in Japan subject to the Act on Rationalization of Energy Use.

*4 Consolidated Group companies in Japan

*5 Nippon Paper Industries Co., Ltd.

*6 For the manufacturing offices belonging to Nippon Paper Industries Co., Ltd., Nippon Paper Papyrus Co., Ltd., Nippon Paper Crecia Co., Ltd., and Nippon Paper Liquid Package Product Co., Ltd. (including affiliated companies)

* Free cash flow = Cash flows from operating activities + Cash flows from investing activities

* Interest-bearing debt = Short-term borrowings + Long-term debt

* EBITDA = Operating income + Depreciation + Dividend income + Interest income + Amortization of goodwill

* Return (loss) on equity (ROE) = Profit (loss) attributable to owners of parent / [Average of balances at the beginning and end of fiscal year (Shareholders' equity + Accumulated other comprehensive income)] x 100

* Return on assets (ROA) = (Ordinary income + Interest expense) / Total assets at end of fiscal year x 100

* Return on invested capital (ROIC) = (Ordinary income + Interest expense) / (Year-end shareholders' equity + Year-end accumulated other comprehensive income + Year-end balance of interest-bearing debt) x 100

* The FY2021/3 result for the debt/equity ratio represents the adjusted net debt/equity ratio.

* Adjusted net debt/equity ratio = (Net interest-bearing debt - Equity-type debt) / (Shareholders' equity + Equity-type debt)

* Equity-type debt: The amount of debt financed by hybrid loans that has been recognized as equity credit by ratings agencies (50% of the financed amount)

Overview of Financial Results

Profit / Loss

In FY2021/3, the Nippon Paper Group's business environment faced severe pressures due to the impact of the COVID-19 pandemic. The Group recorded a large decline in sales of newsprint and printing paper owing to sluggish advertising demand, particularly in the first half of the fiscal year.

FY2021/3 was the final year of the Sixth Medium-Term Business Plan. In this crucial year, the Group strove to strengthen the competitiveness of the Paper Business and also steadily transformed its business structure. Notably, the Group reaped the benefits of reorganizing the production structure of the Paper Business, started operating production facilities for household paper, and decided to withdraw from the pulp and paper business at the Kushiro Mill.

In terms of consolidated business results, net sales decreased 3.5% year on year to ¥1,007.3 billion and operating income declined 45.1% year on year to ¥19.2 billion. These results mainly reflected the impact of a substantial downturn in demand for newsprint and printing paper and the recording of acquisition-related expenses of ¥6.0 billion in connection with the acquisition of Orora Limited's paperboard and fiber-based packaging business in Australia and New Zealand.

In non-operating expenses, the Group incurred a foreign exchange valuation loss at a Brazilian subsidiary due to the impact of the depreciation of the Brazilian real. Additionally, the Group recorded several items under extraordinary loss, including an impairment loss on the withdrawal from the pulp and paper business at the Kushiro Mill, and a loss on disaster associated with the 2021 Fukushima Prefecture Offshore Earthquake. As a result, ordinary income was ¥12.3 billion, down 59.8% year on year, and profit attributable to owners of parent was ¥3.2 billion, down 77.5% year on year.

Overview by Segment

Paper and Paperboard Business

Net sales were ¥568.3 billion and operating income was ¥2.5 billion. Sales volume of newsprint and printing paper in Japan decreased substantially from the previous fiscal year due to the impact of the COVID-19 pandemic. Sales volume of paperboard in Japan decreased slightly from the previous fiscal year, owing to a decline in demand for industrial products and sluggish demand from general consumption as people refrained from going outdoors during the pandemic.

Daily-Life Products Business

Net sales were ¥317.9 billion and operating income was ¥7.9 billion. In household paper, net sales were mostly unchanged from the previous fiscal year, mainly owing to the effects of integrating sales functions for hand towels with Try-Fu Co., Ltd., although demand declined for products such as tissue paper. In liquid packaging cartons, sales volume increased year on year mainly due to sales growth driven by the installation of new filling machines. Sales volume of dissolving pulp decreased from the previous fiscal year in response to weakening overseas demand in countries such as China. In functional film, sales volume increased year on year atop firm demand for mobile device applications.

Energy Business

Net sales were ¥33.4 billion and operating income was ¥6.9 billion. Net sales increased mainly due to the impact of an increase in the number of operating days at electric power generation facilities.

Wood Products and Construction-Related Business

Net sales were ¥59.9 billion and operating income was ¥6.5 billion. The number of new housing starts was stagnant and the sales volume of lumber and other products decreased year on year.

Net Sales

(¥ billion)	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3
Paper and Paperboard	659.2	675.8	674.0	646.7	568.3
Daily-Life Products	224.2	258.4	266.2	270.2	317.9
Energy	14.6	17.8	36.2	33.0	33.4
Wood Products and Construction-Related	63.5	62.8	59.8	61.6	59.9
Other	30.9	31.7	32.5	32.3	27.8
Total	992.4	1,046.5	1,068.7	1,043.9	1,007.3

* Results for FY2017/3 to FY2020/3 have been restated to reflect the segment classification of results for FY2021/3.

Operating Income

(¥ billion)	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3
Paper and Paperboard	1.1	(8.0)	(9.1)	6.2	2.5
Daily-Life Products	13.0	13.7	12.6	12.9	7.9
Energy	3.5	4.1	7.9	6.8	6.9
Wood Products and Construction-Related	4.4	4.5	4.9	5.9	6.5
Other	1.8	3.3	3.3	3.2	1.4
Acquisition-related expenses	—	—	—	—	(6.0)
Total	23.8	17.6	19.6	35.0	19.2

* Results for FY2017/3 to FY2020/3 have been restated to reflect the segment classification of results for FY2021/3.

Financial Position

Consolidated total assets at the end of FY2021/3 were ¥1,547.3 billion, an increase of ¥183.8 billion from ¥1,363.5 billion at the end of FY2020/3. This was mainly because of an increase in assets due to the acquisition of Orora Limited's paperboard and fiber-based packaging business in Australia and New Zealand.

Total liabilities increased ¥145.7 billion from ¥976.9 billion at the end of FY2020/3 to ¥1,122.6 billion. The main reason for this increase was the borrowing of funds for the aforementioned business acquisition, as well as an increase of ¥14.3 billion in deferred tax liabilities.

Total net assets increased ¥38.1 billion from ¥386.6 billion at the end of FY2020/3 to ¥424.7 billion. This was mainly because of an increase of ¥39.3 billion in accumulated other comprehensive income.

For the abovementioned business acquisition, the Group raised ¥60 billion through a hybrid loan, for which 50% of the financed amount is recognized as equity credit. This hybrid loan was taken out from the standpoint of maintaining financial discipline.

With this move, the Group has adopted the adjusted net debt/equity ratio as a management indicator. The adjusted net debt/equity ratio is determined by taking into account the amount of debt financed through hybrid loans that has been recognized as equity credit by rating agencies.

As a result, the adjusted net debt/equity ratio was 1.86 times and the equity ratio was 26.7%.

Cash Flows

Consolidated cash and cash equivalents increased ¥16.9 billion compared with the end of FY2020/3, to ¥69.7 billion as of the end of FY2021/3.

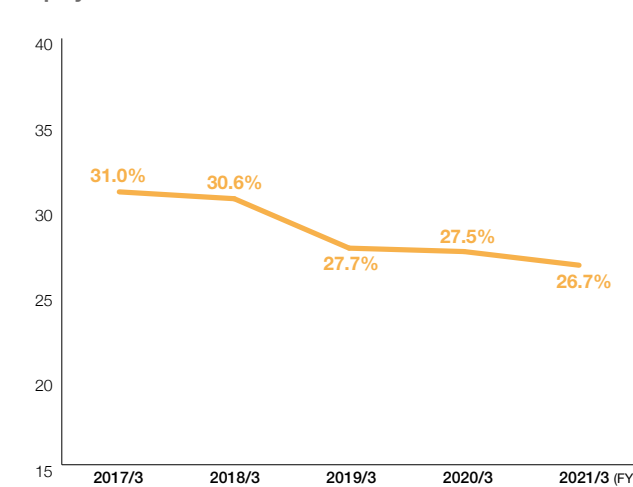
Net cash provided by operating activities was ¥84.2 billion, an increase of ¥17.2 billion from FY2020/3. The main factors were profit before income taxes of ¥10.7 billion, depreciation of ¥63.4 billion, impairment loss of ¥8.6 billion, and an increase in working capital (total changes in receivables, inventories, and payables) of ¥10.2 billion.

Net cash used in investing activities was ¥182.9 billion, an increase of ¥112.8 billion from FY2020/3. The main uses of cash were ¥131.1 billion for the acquisition of Orora Limited's paperboard and fiber-based packaging business in Australia and New Zealand and ¥61.5 billion for purchases of non-current assets.

As a result, free cash flow for FY2021/3 was negative ¥98.7 billion.

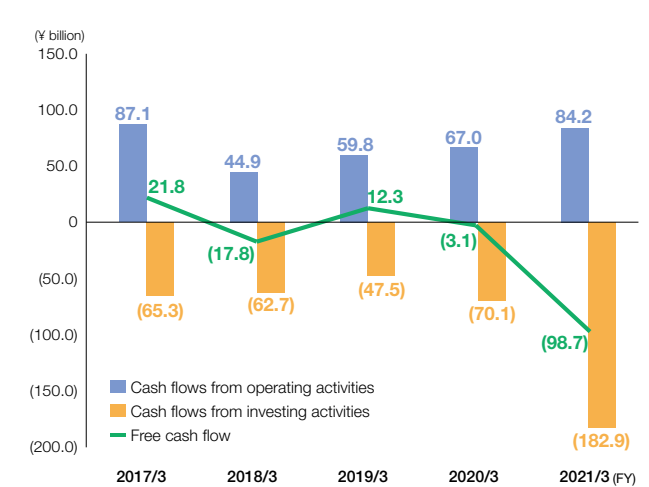
Net cash provided by financing activities in FY2021/3 was ¥113.7 billion, compared with net cash used of ¥7.4 billion in FY2020/3. This was mainly because the Group raised funds related to the aforementioned business acquisition by obtaining long-term and short-term loans payable, while there were outflows such as redemption of bonds of ¥15.0 billion and cash dividends paid of ¥4.6 billion.

Equity Ratio



* Equity ratio = (Year-end shareholders' equity + Year-end accumulated other comprehensive income) / Year-end total assets x 100

Cash Flows



Business and Other Risk Factors

The management of the Nippon Paper Group has identified the following as major risks due to their potentially significant impact on the financial position, business performance, and cash flows of consolidated Group companies.

(1) Major Risks Associated with Management Strategies

Delays in Business Structure Transformation and the Creation of New Businesses

In the Paper Business, which is one of the Nippon Paper Group's businesses, a market contraction has been continuing as a trend in response to IoT and digital transformation (DX), as well as the impact of the COVID-19 pandemic. In response, the Group has been shifting its business structure to growing businesses such as the Daily-Life Products Business. While the Group strives to develop new businesses and products, if these efforts do not progress as planned, the Group's business performance, financial position, and other aspects could be affected.

Overseas Business

The Nippon Paper Group manufactures and sells pulp and paper and operates forestry plantations and other businesses in North America, South America, Scandinavia, Southeast Asia, Australia, and other overseas locations. In the past few years, the Group has been strengthening the development of its business operations overseas. Developing business operations overseas entails a number of risks, including changes to laws and regulations by local governments, labor disputes, and the impact of political uncertainty on economic activities. The materialization of such risks may affect the Group's business performance, financial position, and other aspects.

(2) Risks Associated with the Business Environment and Business Activities

Product Demand and Market Conditions

The Nippon Paper Group carries out businesses such as the Paper and Paperboard Business, Daily-Life Products Business, Energy Business, and Wood Products and Construction-Related Business. The Group is exposed to the risk of fluctuations in demand for its products based on factors such as economic conditions and fluctuations in product prices based on factors such as market conditions. Such fluctuations could affect the Group's business performance, financial position, and other aspects.

Raw Material and Fuel Prices

The Nippon Paper Group is engaged in businesses in which it purchases raw materials and fuel such as wood chips, wastepaper, heavy oil, coal, and chemicals, and uses these resources to manufacture and sell products. The Group is thus exposed to the risk of fluctuations in input prices for raw materials and fuel based on domestic and international market conditions. Such fluctuations could affect the Group's business performance, financial position, and other aspects.

COVID-19

The Nippon Paper Group has set up the COVID-19 Response Office to monitor the Group's condition in relation to COVID-19. The COVID-19 Response Office is also responsible for preparing guidelines designed to prevent the spread of COVID-19 among employees and ensure business continuity. Based on these guidelines, COVID-19 response measures are implemented in each division.

Natural Disasters

The occurrence of an earthquake or large-scale natural disaster in the vicinity of the Nippon Paper Group's production and sales bases may impact its production, sales and other business activities. This may lead to opportunity losses due to a production stoppage, additional costs to restore facilities, and/or damage to products, merchandise and raw materials. Such consequences of natural disasters may affect the business performance, financial position, and other aspects of the Group.

Environment-Related Legal Risk

The Group is subject to the application of environmental regulations in various businesses. Revisions and amendments to such regulations could limit production activities and result in additional costs, affecting the Group's business performance, financial position, and other aspects. In addition, the Group releases CO₂ emissions in manufacturing processes and other activities. The introduction of a full-scale carbon pricing scheme could affect the Group's business performance, financial position, and other aspects.

Manufacturing Conditions

The Nippon Paper Group's production activity is based on the estimated demand and production capacity of existing facilities. The Group is exposed to the risk of a reduction in product supply capability due to fires, accidents or other problems occurring at facilities, or a decline in the capacity utilization rate of production facilities caused by disruptions to the procurement of raw materials and fuel. Such fluctuations in product supply capability could affect the Group's business performance, financial position, and other aspects.

Product Liability

The Nippon Paper Group could receive claims for compensation for loss or damage in relation to product liability, but it has not received any significant claims of this sort at present. However, the Nippon Paper Group may be liable for the payment of compensation for loss or damage in the future. While the Group has enrolled in product liability insurance, it may not be enough to cover the amount of compensation for loss or damage for which the Group may be held liable.

Human Resource Recruitment and Labor-Related

The Nippon Paper Group recognizes that there is a vital need to recruit and develop optimal human resources to expand its business in the future. The Group's inability to recruit optimal human resources could restrict its business operations, which could in

turn affect its business performance, financial position, and other aspects. Additionally, if the Group were found to be out of compliance with various labor-related rules, the Group could be subject to lawsuits or experience a loss of public trust. Such events could adversely impact the business performance, financial position, and other aspects of the Group.

Litigation

In the course of doing business worldwide, the Nippon Paper Group is exposed to the risk of litigation or other actions associated with criminal or civil affairs, taxation, antitrust law, product liability law, intellectual property rights, and environmental and labor issues. As a result, such litigation could affect the Group's business performance, financial position, and other aspects.

Information Systems

The Nippon Paper Group strengthens and rigorously implements security measures for its information systems. The Group also implements extensive information security measures to address the work-from-home environment. If there are any problems such as information leakages due to unauthorized access to computers and/or data breaches due to criminal acts, the Nippon Paper Group may be held liable for the payment of compensation for loss or damage and experience a loss of public trust in the Group. Such events could affect the business performance, financial position, and other aspects of the Group.

Foreign Exchange

The Nippon Paper Group is exposed to the risk of foreign exchange fluctuations associated with import, export and other transactions. In terms of the balance of import and exports, the Group's imports of raw materials and fuel, such as wood chips, heavy oil, coal, and chemicals, exceed its exports of products and other items. For this reason, the depreciation of the yen against the U.S. dollar has a negative impact on business performance.

M&As and Business Alliances

The Nippon Paper Group may conduct activities such as M&As and business alliances. In the process, the Group conducts a thorough examination of business strategies and synergistic effects before it decides to engage in such activities, and it works to maximize its results after it concludes such agreements. However, changes in the operating environment and other factors may prevent the Group from achieving the results it had initially anticipated. In these circumstances, the business performance, financial position, and other aspects of the Group could be affected.

(3) Financial and Accounting Risks

Share Prices

The Nippon Paper Group holds marketable shares primarily in business partners and affiliated companies. Therefore, the Group is exposed to the risk of share price fluctuations that could affect its business performance, financial position, and other aspects.

Interest Rates

The Nippon Paper Group is exposed to the risk of interest rate fluctuations with respect to interest-bearing debt and other items. Such fluctuations could affect the business performance, financial position, and other aspects of the Group.

Credit Risk

The Nippon Paper Group takes care to limit its credit risk through measures such as continuously evaluating the financial and related information of its business partners in accordance with credit management rules and establishing credit limits accordingly, but any event that disrupts the collection of receivables, such as a deterioration in the financial condition or bankruptcy of customers, could affect the business performance, financial position, and other aspects of the Group.

Impairment of Fixed Assets

The Nippon Paper Group owns fixed assets such as production facilities and land. Changes in the operating environment and other factors that result in a significant decline in future cash flow generated through these assets may lead to an incurrence of an impairment loss and affect the business performance, financial position, and other aspects of the Group.

Retirement Benefit Obligation

The Nippon Paper Group's retirement benefit expenses and obligation are calculated based on actuarial assumptions such as the rate of return and the discount rate on pension assets. However, any circumstances requiring a change in the actuarial assumptions or an impairment to pension assets resulting from stagnation of the stock market and other factors may affect the business performance, financial position, and other aspects of the Group.

Reversal of Deferred Tax Assets

The Nippon Paper Group records deferred tax assets after it judges the recoverability of deductible temporary differences and operating loss carryforwards based on an estimation of future taxable income. However, changes in the operating environment and other factors that lead to a decline in taxable income, or changes in the tax regulations and other factors that lead to a revision in recoverability, may cause a reversal of deferred tax assets. Such a reversal could affect the business performance, financial position, and other aspects of the Group.

For the full text of Business and Other Risk Factors, please visit the website below.

<https://www.nipponpapergroup.com/english/ir/policy/risk/>



Company Profile / Investor Information (as of March 31, 2021)

Corporate Overview

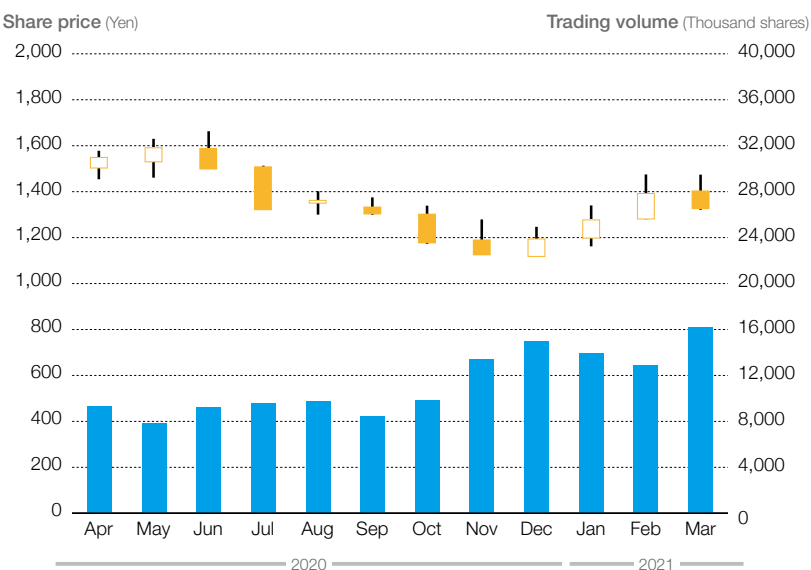
Company Name	Nippon Paper Industries Co., Ltd.
Head Office	4-6 Kanda-Surugadai, Chiyoda-ku, Tokyo 101-0062, Japan
Establishment	August 1, 1949
Number of Employees	5,329 non-consolidated 16,156 consolidated
Capital	¥104,873 million
Shares	Number of shares authorized to be issued 300,000,000 shares Number of shares issued 116,254,892 shares (including 355,784 shares of treasury stock)
Number of Shareholders	115,836

Major Shareholders

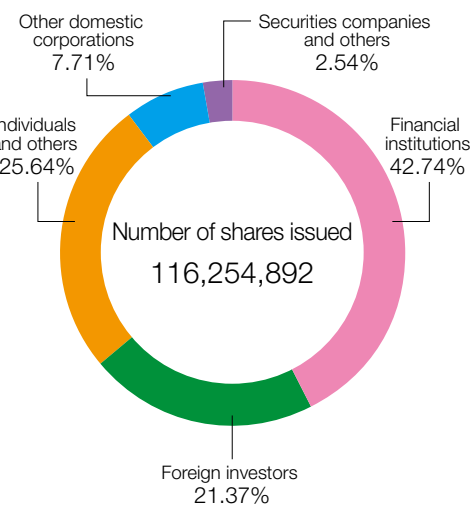
Name	Shares Held	Shareholding Ratio (%)
Ichigo Trust Pte. Ltd.	9,693,600	8.36
Custody Bank of Japan, Ltd. (Trust Account)	9,327,200	8.05
The Master Trust Bank of Japan, Ltd. (Trust Account)	8,990,600	7.76
Mizuho Bank, Ltd.	4,341,855	3.75
Nippon Paper Industries Co., Ltd. Employee Share Ownership Association	3,139,129	2.71
Nippon Life Insurance Company	2,473,165	2.13
State Street Bank and Trust Company 505103	2,296,181	1.98
TAIJU LIFE INSURANCE COMPANY LIMITED	2,258,900	1.95
Nippon Paper Industries Co., Ltd. Business Partners Share Ownership Association	2,087,500	1.80
Custody Bank of Japan, Ltd. (Trust Account 7)	1,793,200	1.55

* The shareholding ratio was calculated after deducting 355,784 shares of treasury stock.

Share Price and Trading Volume Trends



Percentage of Shares Held by Shareholder Type



ESG Databook 2021

The Nippon Paper Group has issued the ESG Databook 2021 on its website at the same time as this report. In the ESG Databook 2021, the Group discloses information on CSR-related activities to all stakeholders. The ESG Databook 2021 was prepared in accordance with the Core option of the Global Reporting Initiative (GRI) Sustainability Reporting Standards.

https://www.nipponpapergroup.com/english/csr/npg_esgdb2021_e_ALL.pdf



Online Resources

Nippon Paper Group's Website:

<https://www.nipponpapergroup.com/english/>



CSR Website:

<https://www.nipponpapergroup.com/english/csr/>



Securities Report (Japanese only):

<https://disclosure.edinet-fsa.go.jp/>
(EDINET code: E11873)



Corporate Governance Report:

<https://www.nipponpapergroup.com/english/ir/20210706ECGR.pdf>



External Evaluations



2021 CONSTITUENT MSCI JAPAN
ESG SELECT LEADERS INDEX

2021 CONSTITUENT MSCI JAPAN
EMPOWERING WOMEN INDEX (WIN)



The Development Bank of Japan (DBJ) has awarded Nippon Paper Industries its highest environmental rating, citing its particularly advanced environmental initiatives.
Environmental rating acquisition date: November 2018



Sumitomo Mitsui Banking Corporation (SMBC) has awarded Nippon Paper Industries the AAA rating, its highest rating for ESG / SDGs assessment-based financing.