

"2030VISION" MEDIUM-TERM BUSINESS PLAN 2025

May 14, 2021

Concept of the "2030VISION" and the Medium-Term Business Plan 2025

1 Nippon Paper Group "2030VISION"

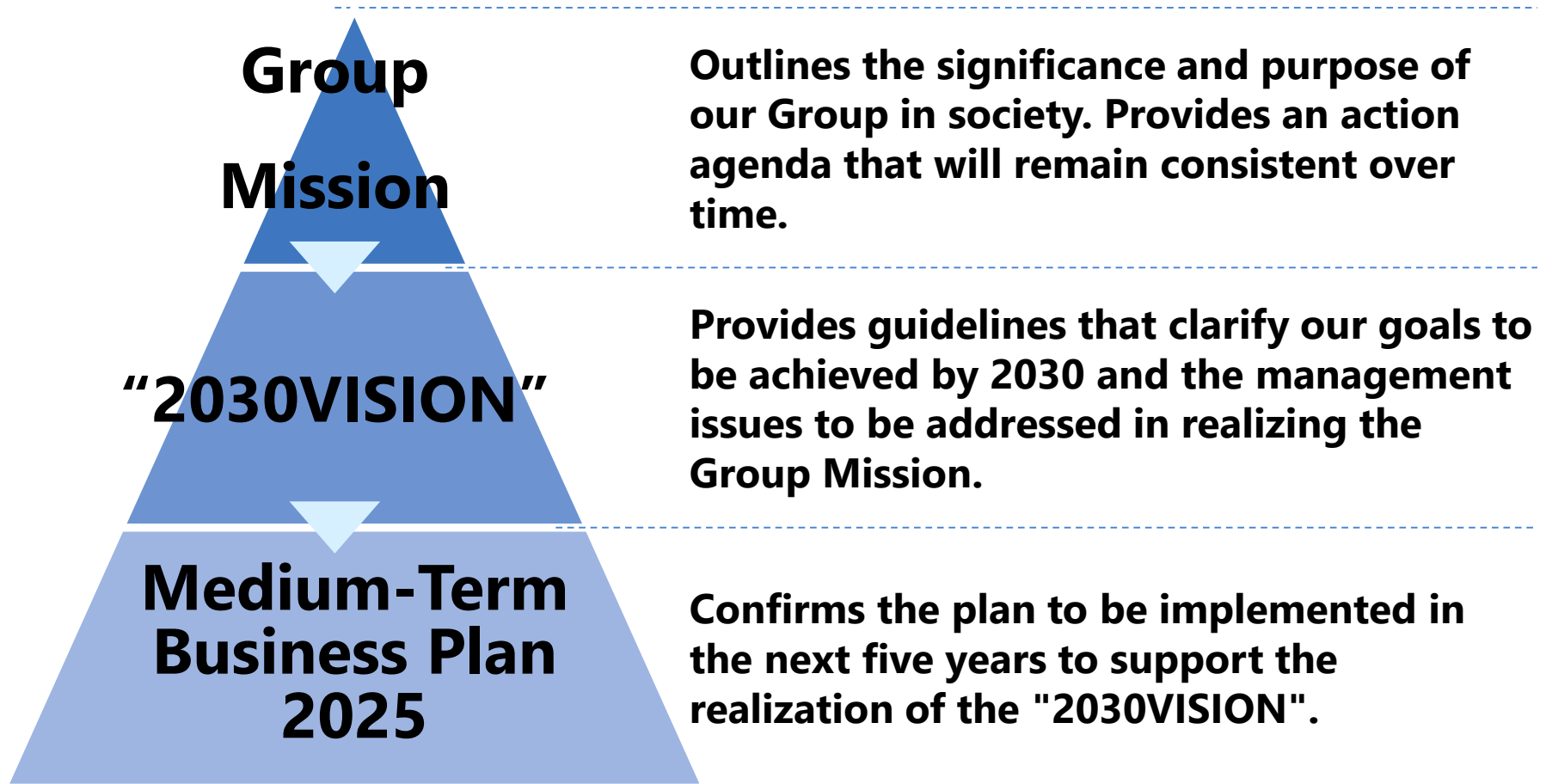
2 Sustainability Management

3 Reflection on FY2016 to FY2020

4 Medium-Term Business Plan 2025



Aim to achieve the Group Mission while the world has reached a great turning point



Nippon Paper Group "2030VISION"

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.

2021

2025

2030

Group Mission

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

Nippon Paper Group "2030VISION"

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

- Reallocate management resources to growing businesses
- Respond to the rapidly changing social landscape such as CO₂ reduction and environmental issues

Medium-Term Business Plan 2025
(FY2021–FY2025)

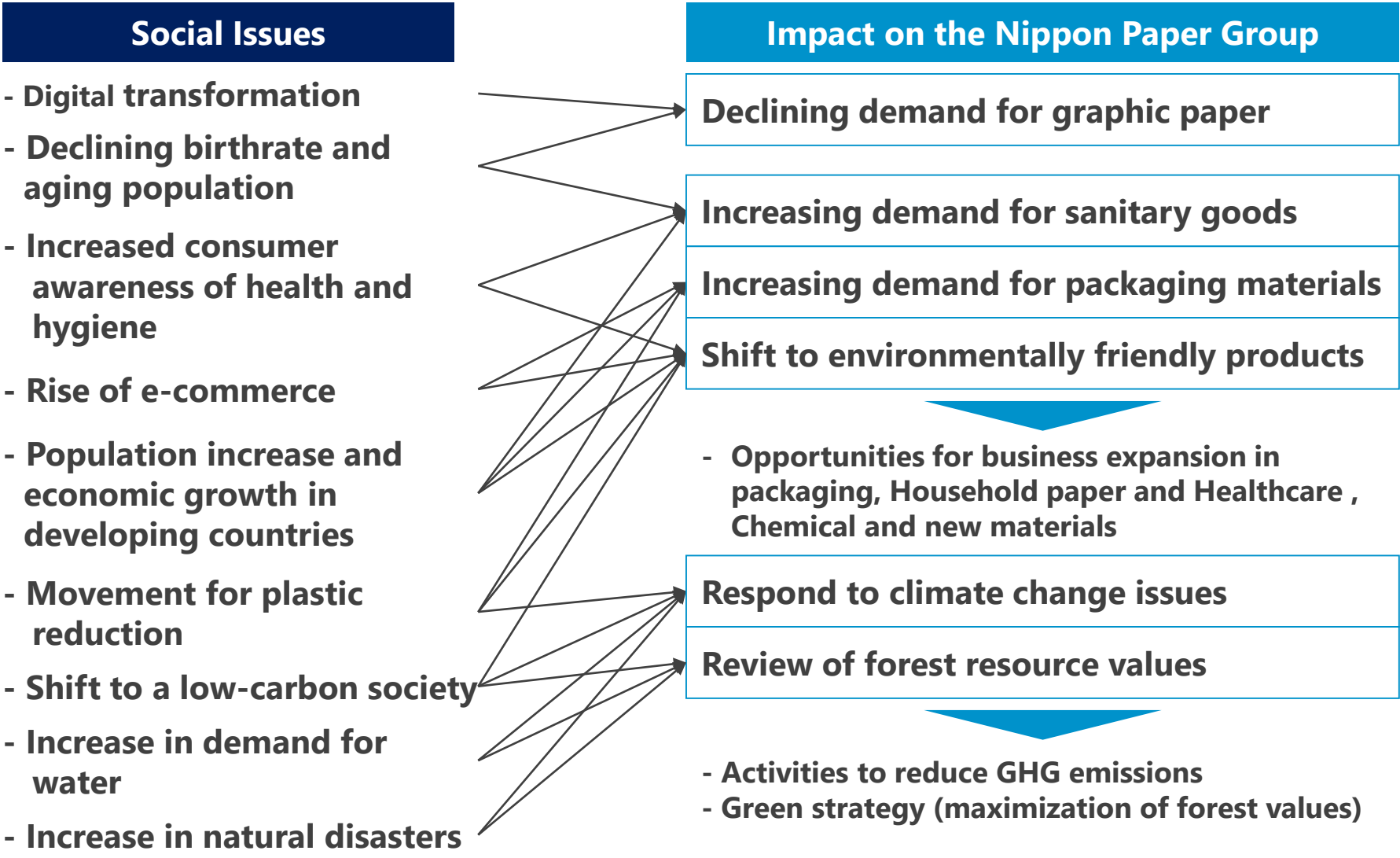
Accelerate the business transformation



(FY2026–FY2030)

Expand the business domain through new and growing businesses

The environment surrounding the world has changed greatly the past several years



1. **Reallocate management resources to growing businesses**

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

Make maximum use of the resources of our Group

2. **Respond to the rapidly changing social landscape including CO₂ emissions reduction and environmental issues**

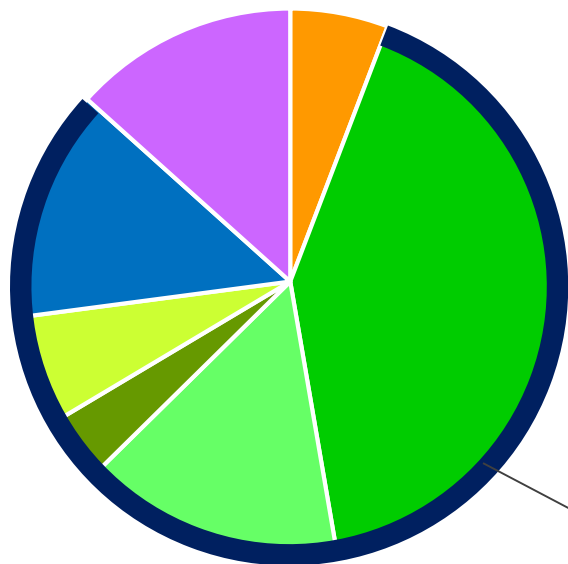
- Review the energy mix
- Pursue a green strategy (maximize the values of forest resources)

Continue to Invest in Growing Businesses

- ◆ Out of 350 billion yen strategic investment, around 80% will be allocated to growing businesses
- ◆ Investment for Environmental Initiatives : 52 billion yen

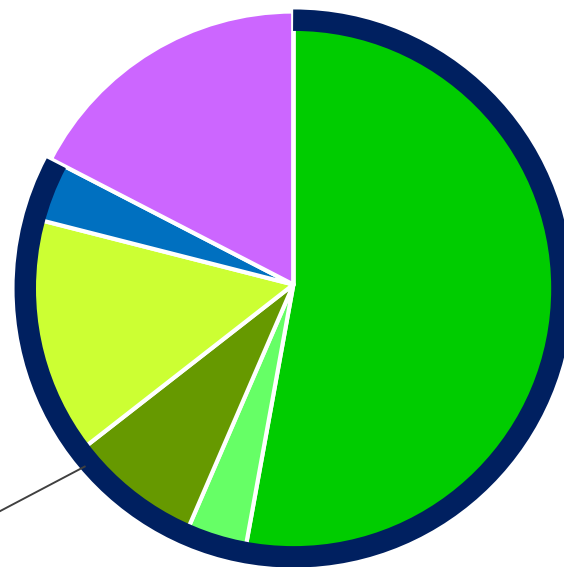
Medium-Term Business Plan 2025:
FY2021–2025

Strategic investment : 210 billion



FY2026–FY2030

Strategic investment : 140 billion



Growing
businesses

■ Paper and Paperboard
 ■ Package
 ■ Household paper and Healthcare
 ■ Chemical
 ■ New Materials
 ■ Energy
 ■ Environmental Initiatives



- ◆ **The sales Target for FY2030 for new business and new materials is 65 billion yen**
- ◆ **To establish technological development and organize mass-production for new business and new materials, human resources and infrastructure will be utilized from foundation businesses**

Expand sales of innovative paper-based products

- Primary packaging material (SHIELDPLUS®)
Leverage barrier coated paper materials to establish a new position in the market
- Secondary packaging materials (Lamina®, etc.)
Meet the demand for recyclable and biodegradable materials

Practical application of products made of new materials

- Establish the cost reduction technology of cellulose nanofibers (CNF)
- Expand applications for bio composite and improve manufacturing capabilities including facility upgrades
- Contribute to the reduction of CO₂ emissions by establishing mass production technology for new fuel

Rightsizing the Production Structure of the foundation business

- Utilizing human resources and infrastructures related to graphic paper is the key to making new business profitable at an early stage
- Forecast the long-term demand for graphic paper to identify the timing for new business realization and optimize production transition.

- ◆ **Aim to expand in overseas markets, focusing on Southeast Asia and Oceania, where population growth and economic growth are expected following the impact of COVID-19 pandemic**
- ◆ **Aim to expand sales of chemical products associated with the growth in Electric Vehicles (EV)**

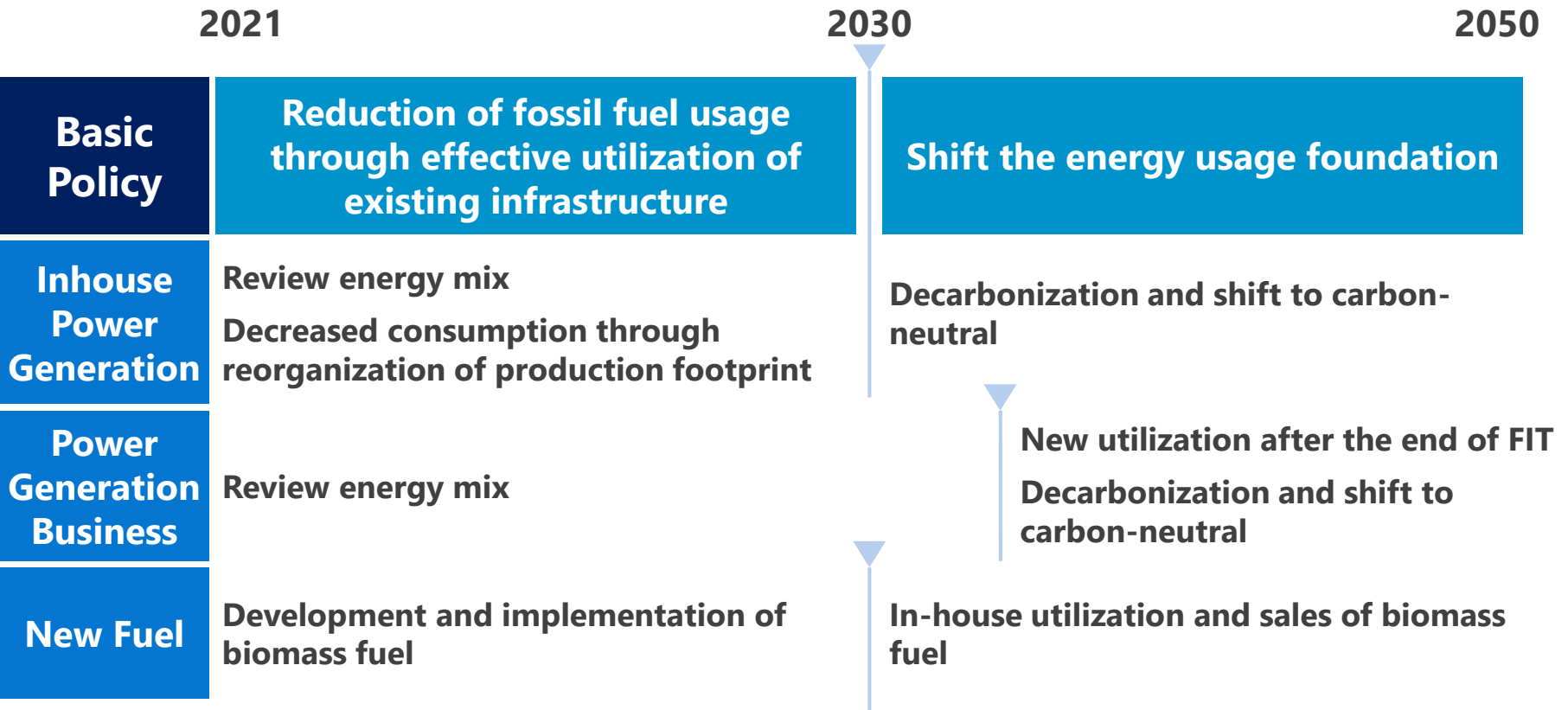
Packaging

- Capture the strong demand for cardboard in growing market segments in Oceania.
- Aim to expand the flexible packaging business of TS Plastics (TSP) in Malaysia and grow sales of SHIELDPLUS®, Lamina®, etc.
- Aim to expand sales of liquid packaging through collaboration through the overseas business footprint.

Chemical

- Growth in EV
Expand sales of high-functional cellulose (CMC) for lithium-ion batteries and improve manufacturing capabilities including facility upgrades.
Expand the use of functional coating resin for paint designed for plastic materials and improve manufacturing capabilities including facility upgrades.

Aim to go carbon-neutral in 2050



FY2030 Target	- GHG emissions (Scope 1 and Scope 2)	45% reduction (compared with FY2013)
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Reinforce the business foundation while promoting the construction of a carbon-neutral society by maximizing forest values and expanding biomass products

Maximization of forest values

- Reinforce the business foundation through sustainable management of forests considering the economy, society, and the environment
- Stably secure resources and increase the CO₂ fixation amount by improving forest productivity

Expansion of biomass products

- Develop and increase sales of diverse biomass products through varied use of woods
- Increase the CO₂ fixation amount by popularizing biomass products (Fixing CO₂ with HWP*)

◆ Green Strategy of the Nippon Paper Group

Maximization of forest values and expansion of biomass products = Reinforce the business foundation while helping to bring about a carbon-neutral society

*HWP (Harvested Wood Products/Woods logged and carried out of forests)

- Concept of evaluating the amount of carbon fixed to products and counting the change in the carbon content as the CO₂ absorption amount
- The rules after the Kyoto Protocol's second commitment period allow for counting of HWP derived from domestic materials as a forest sink measure.

Improve Forest Productivity

Efficient production and increase in the CO₂ fixation amount using breeding and proliferation technologies

- Use proven breeding and proliferation technologies of Amcel in Brazil, etc.
- Increase the CO₂ fixation amount per unit area (i.e. improve the CO₂ fixation efficiency)
- Aim to secure plantations mainly in Asia (target is 100,000 ha)
- Consider support to improve productivity in plantations of other parties as well

**FY2030
Target**

**CO₂ fixation efficiency
(overseas plantations)**

30% improvement

Realize Public Benefits

Preservation of biodiversity and water resources, provision of the recreation function, etc.

- Expand activities with other industries, environment NPOs, etc. for our domestic and overseas forests

Utilize Our Domestic Forests

Use our forests to revitalize domestic forestry

- As a field for seeding production using proliferation technologies, large-scale forestry business complexes, trials of advanced forestry technologies, etc.
- Cooperate with governments, research institutions, other industries, NPO, etc.



Achieve total sales of 1,300 billion yen with the Daily-life Products business accounting for 50% or more

FY2030 Targets

- Net Sales : 1,300 billion yen**
 - Ratio of sales out of Daily-life Products business: 50% or more
(Of this amount, 65 billion yen for new businesses is included)
 - Ratio of overseas sales: 30% or more
- Operating Income per sales of Daily-life Products business : 7% or more**
- ROE: 8.0% or more**
- Green House Gas emissions : 45% reduction**
(Scope 1 and Scope 2) (compared with FY2013 level)

Promotion of Sustainability Management



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

Materiality and SDGs

Achieve the following through the value chain

- Response to climate change
- Utilization of sustainable forest resources
- Preservation of biodiversity
- Promotion of resource circulation
- Reduction of environmental burden
- Respect for human rights



- Response to changes in the social environment
- Stable supply of products
- Improvement in safety



- Realization of diverse work styles
- Active participation of diverse human resources
- Promotion of occupational safety and health



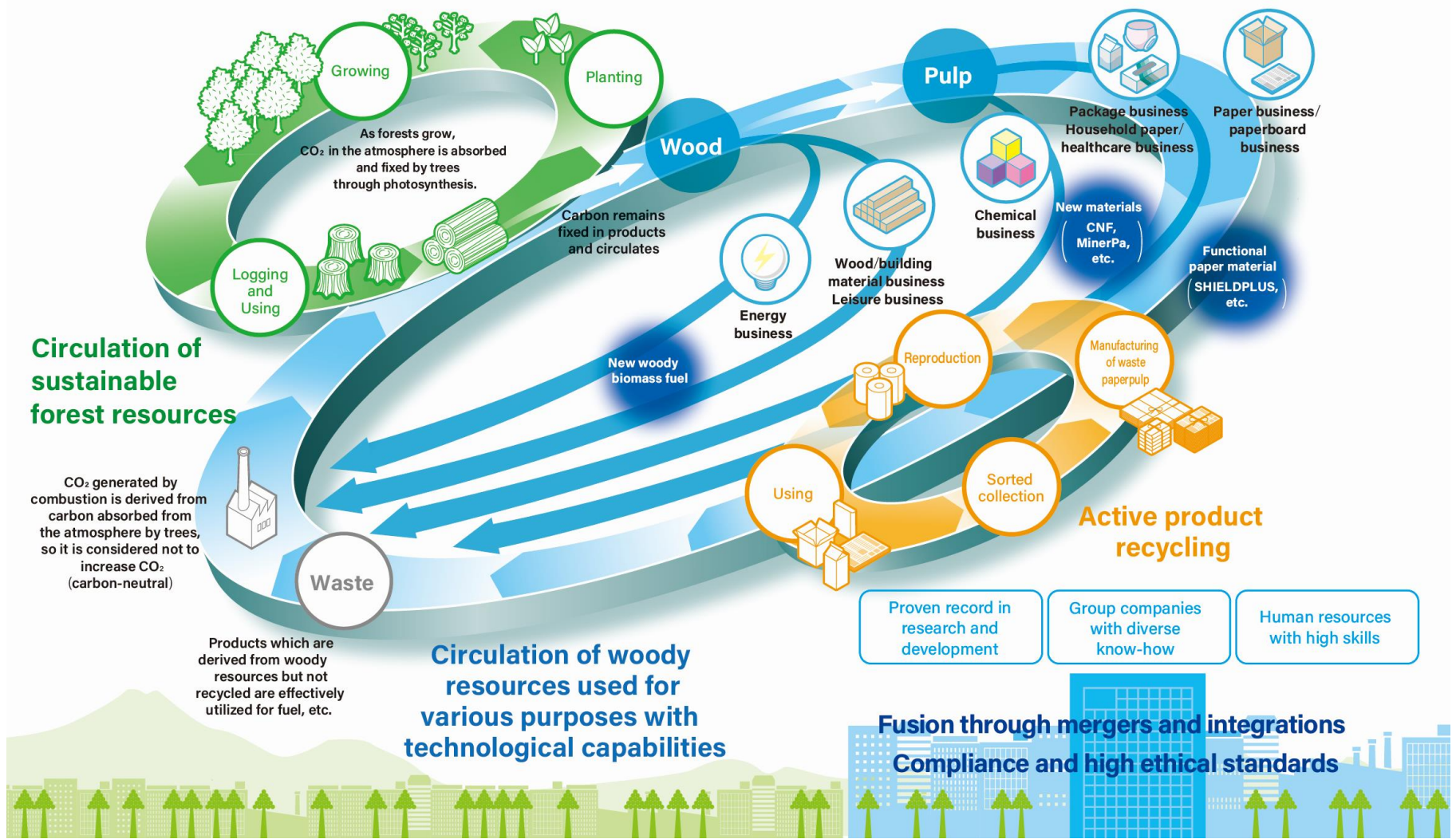
In addition to business growth achieved through activities 1 to 3 above, the following will be realized

- Enhancement of governance
- Communication with stakeholders
- Coexistence with local communities and society





Promotion of "three circulations" taking advantage of the characteristics of woody resources



Grow the business and help to bring about a circulation-oriented society by reinforcing “three circulations” , which take advantage of woody resources

Circulation of Sustainable Forest Resources

- Aim to maximize forest values by using our domestic and foreign plantations and forests (about 170,000 ha)
- We have developed unique breeding and proliferation technologies using plantations of Amcel as fields, greatly improving the productivity of the plantations of Amcel
- Apply the breeding and proliferation technologies to other forests to increase the CO₂ fixation amount per unit area and improve the productivity of forest management

Circulation of Woody Resources Used for Various Purposes by Using Technological Abilities

- Develop various environmentally friendly products using woody resources and increase the CO₂ fixation amount
- Aim to grow the business and circulate carbon through woody resources using biomass materials such as CNF and MinerPa® as well as new biomass fuel
- Reduce the CO₂ generation amount during transport using “Long lasting roll” of Nippon Paper Crecia and CNF reinforced resin, which enables weight reduction

Active Product Recycling

- Actively utilize unused wastepaper, which has so far been difficult to recycle (establish technologies and the collection system)
- Construct collection schemes for paper cups and liquid packaging products and barrier paper materials, and minimize environmental burden

◆ Separation of supervision and business execution

- Strengthen the function of outside directors

◆ Clarifying authority and responsibilities in business execution

- Create Chief Officer positions
(Technology, Raw Materials, R&D, Logistics)

◆ Addressing sustainability related issues

- Disaster Response
(Formulate and manage Business Continuity Plan)
(Prepare for natural disasters such as earthquake or heavy rain)
- Develop disclosure based on TCFD recommendations

Reflection on FY2016 to FY2020

The proportion of Daily-life Products business sales to total sales greatly increased from 22% in FY2016 to 32% in FY2020

	FY2016	FY2017	FY2018	FY2019	FY2020	(¥billion) Impact of COVID-19 (estimate)
Paper and Paperboard	659.2	675.8	674.0	646.7	568.3	-46.0
Overseas Business	19.4	17.1	18.5	16.8	14.1	-2.0
Daily-life Products	224.2	258.4	266.2	270.2	317.9	-14.0
Overseas Business	74.8	100.2	102.8	97.2	146.0	-14.0
Energy	14.6	17.8	36.2	33.0	33.4	0.0
Wood Products and Construction Related	63.5	62.8	59.8	61.6	59.9	-4.0
Others	30.9	31.7	32.5	32.3	27.8	-5.0
Total	992.4	1,046.5	1,068.7	1,043.9	1,007.3	-69.0

*FY2016 to FY2019 results are retroactively adjusted to FY2020 segment basis, as business segments were reclassified in FY2020.



Operating Income by Segment

Three Business Units achieved five billion yen of operating income, respectively from Household paper and Healthcare business unit in Daily-life Products, Energy business, and Wood Products and Construction Related.

(¥billion)

	FY2016	FY2017	FY2018	FY2019	FY2020	Impact of COVID-19 (estimate)
Paper and Paperboard	1.1	-8.0	-9.1	6.2	2.5	-15.0
Overseas business	-2.5	0.1	1.1	-0.1	0.7	-0.5
Daily-life Products	13.0	13.7	12.6	12.9	7.9	-5.5
Overseas business	2.2	3.5	5.3	1.6	-4.8	-5.5
Energy	3.5	4.1	7.9	6.8	6.9	0.0
Wood Products and Construction Related	4.4	4.5	4.9	5.9	6.5	-0.5
Others	1.8	3.3	3.3	3.2	1.4	-1.0
Acquisition-related Expenses	-	-	-	-	-6.0	-
Total	23.8	17.6	19.6	35.0	19.2	-22.0

*FY2016 to FY2019 results are retroactively adjusted to FY2020 segment basis, as business segments were reclassified in FY2020. 23

- ◆ Reinforced business by integrating the sales functions of Tokushu Tokai Paper corrugated board base paper/kraft paper business
- ◆ Reorganized the production organization of the paper business as planned
- ◆ The rate of reduction in demand increased in FY2020 due to COVID-19

Reinforced the corrugated board base paper/kraft paper business

- Integrated the sales functions of Tokushu Tokai Paper and the corrugated board base paper/kraft paper business in 2016
Founded Nippon Tokai Industrial Paper Supply to reinforce business

Reorganized the production organization of the paper business

- Reorganized the production organization of the paper business as planned from 2018 to 2019
The biomass power generation business and the functional special material business are deployed in Yufutsu
Fuji has shifted to a production site for household paper
- In 2020, we decided to withdraw from the paper and pulp business in Kushiro mill considering economic stagnation due to COVID-19

Decrease in demand and price correction

- The structural decrease in demand is still going on due to the progress of digitization, etc.
- The rate of reduction in demand increased in FY2020 due to COVID-19
- We corrected the prices of newsprint printing paper, communication paper, and corrugated board base paper. We maintained the corrected prices.

- ◆ Acquired the liquid packaging board business of Weyerhaeuser (NDP)
- ◆ Performed CAPEX to enhance the earning power of NDP
- ◆ Acquired the packaging division of Orora in Australia and NZ (Opal)
- ◆ As for domestic paper packs, expanded the sales of cartons by reinforcing sales of filling machines, etc.

NDP (Nippon Dynawave Packaging)

- In 2016, acquired the business of liquid packaging board of Weyerhaeuser
- In 2019, reinforced the earning power by installing new dry pulp machines and upgrading the dry end process of paper machines. The progress of construction is slower than planned due to COVID-19. The effect of construction will be realized through higher sales of pulp, etc.

Opal

- In 2020, acquired the fibre packaging division of Orora in Australia and NZ. The former Australian Paper was merged with this business, forming Opal.
- Severe business environment due to COVID-19 in FY2020
- Realize synergies and recover earnings post COVID-19 pandemic.

Domestic Paper-pak Business

- We have been reinforcing sales of filling machines since FY2018. Higher sales of cartons and closures
- Development of new filling machines and new systems is accelerated via a capital and business alliance with Shikoku Kakoki



- ◆ **Two household paper machines operated as planned in Crecia Kasuga**
- ◆ **Established the production structure for making “long lasting rolls” for toilet rolls and rolled towels**
- ◆ **Decided to install new high-functional cellulose (CMC) manufacturing equipment**

Household paper and Healthcare

- In 2016, “SCOTTIE Toilet Rolls FLOWERPACK 3times long use 4Rolls” was launched.
- In 2016, Nippon Paper Crecia and Kasuga Paper Industry Co., Ltd. agreed to establish a household paper joint venture. In 2018 and 2020, the first and second paper machines, respectively, started operation
- In 2018, healthcare processing machines was installed in Kyoto mill of Nippon Paper Crecia
- In 2019, Nippon Paper Crecia installed non-woven production facility in Fuji mill to start its domestic production.
- In 2020, the sales functions of the towel paper business of Nippon Paper Crecia and Try-Fu Co.,Ltd. were integrated.
- In 2021, all products have been shifted to “long lasting rolls ^{note1}” as a pioneer in this industry

Chemical

- In 2019, decided to install new high-functional cellulose (CMC) manufacturing equipment in Gotsu mill
The construction is expected to be completed in FY2021. Shift to fields of high-added value and high quality such as materials for lithium-ion batteries to respond to global demand increase.
- Performed construction to increase production for functional coating resin in Iwakuni mill.
It is planned to be completed in FY2021. Aim to expand sales for areas related to car parts and packaging.

Note1: Products with the concept of “benefit for all four sides,” consumers, distributors, manufacturers , and global environment. Those brings benefits like more efficient logistics and storage, lower environmental burden, and so on.

- ◆ For cellulose nano fibers (CNF), installed mass production machines in Ishinomaki mill and Gotsu mill and demonstration machines in Fuji mill. Adoption cases increased for a wide range of fields
- ◆ The development of new materials such as SHIELDPLUS, Lamina, and MinerPa proceeded
- ◆ Established an organization to expand sales by coordinating development, manufacturing, and sales

CNF (CELLENPIA®)

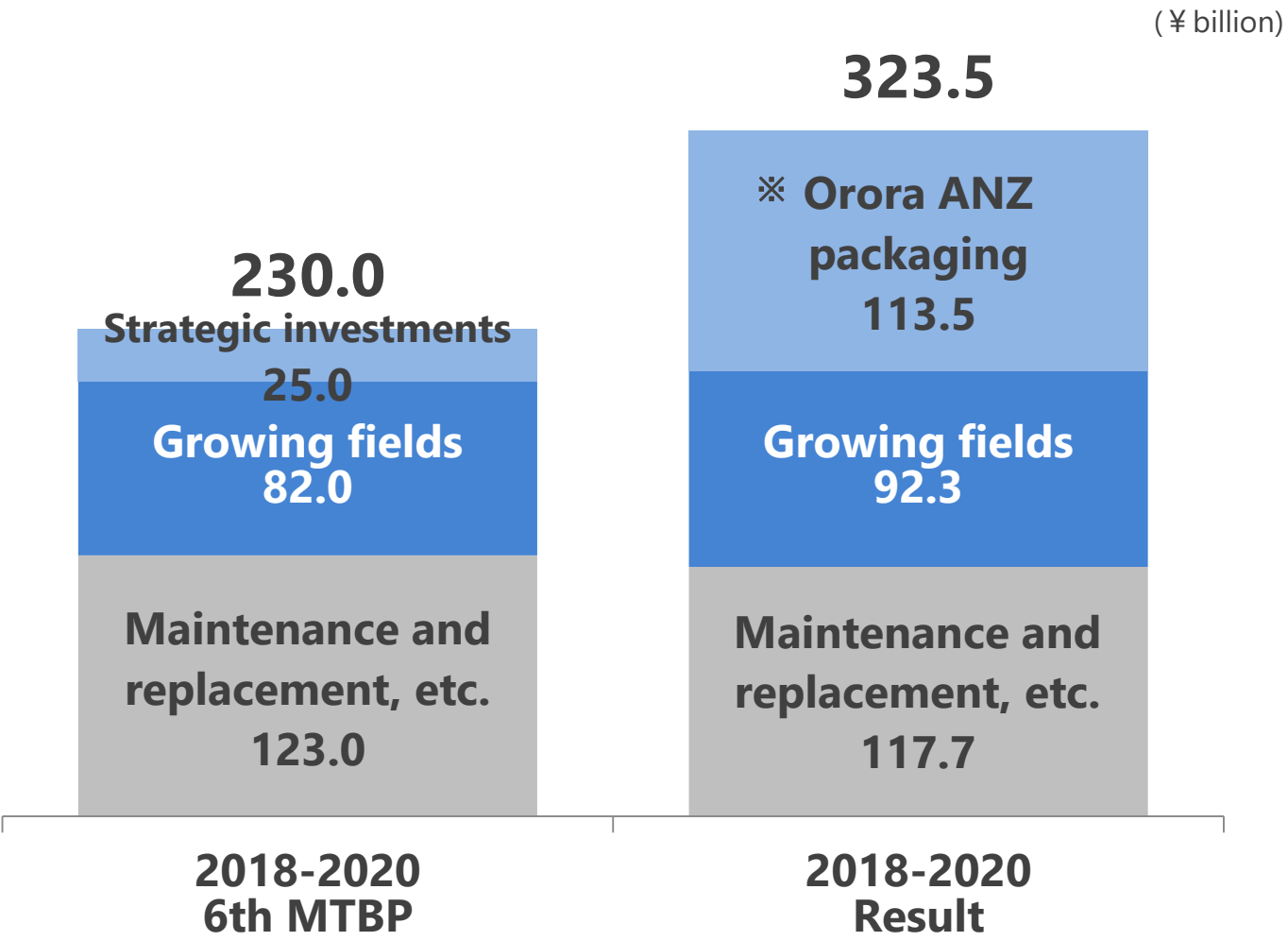
- In 2017, mass production machines were in operation in Ishinomaki mill and Gotsu mill. Demonstration production machines of CNF reinforced resin were in operation in Fuji mill
- In 2019, it was adopted for tires for the first time in the world
- In 2020, modified cellulose (intermediate in CNF manufacturing) with an antivirus function was developed
- In 2021, it has turned out that CNF stores electricity, and a light electric storage device development has been started.

SHIELDPLUS®, Lamina®, etc.

- In 2016, started reinforcing application development of the paper barrier packaging material "SHIELDPLUS®"
- In 2019, acquired a soft package processing company in Malaysia (TSP)
- In 2019, developed the heat seal paper "Lamina®"
- In 2020, completed the mass production equipment of SHIELDPLUS in Jujo Thermal Oy (JTOy)
- From 2020, the development and proposals of new packaging materials in cooperation with other industries increased



Capital investment in growing fields was performed mostly as planned
Acquired the fiber packaging division in Oceania (Orora)



※ The acquisition of Paperboard Package division in Australia and New Zealand from Orora.

Medium Term Business Plan 2025

Basic strategy

Accelerate the transformation of the business structure

Key issues

Reallocate management resources to the Growing Business

Accelerate enhancing profitability of the New Business

Reinforce the competitiveness of the Foundation Business



Growing Business	Package	<ul style="list-style-type: none"> - Businesses to lead growth of our group with an eye on 2030 - Strategically allocate resources
	Industrial paper	
	Paperboard/Corrugated board base paper	
	Household paper and Healthcare	
	Chemical	
	Energy	
	Wood/Building material	
New Business	New material products (CNF, etc.)	<ul style="list-style-type: none"> - Businesses to be developed through new market cultivation and other measures beyond the existing business domains
Foundation Business	Newsprint	<ul style="list-style-type: none"> - Businesses to support Growing Business and New Business in a multilateral manner including cash perspective
	Printing/Communication paper	
	Civil engineering and construction	

	FY2020 Result		MTBP 2025 Target
Sales	1,007.3 billion yen		1,100 billion yen
Operating Income	19.2 billion yen		40 billion yen or more at an early stage
EBITDA	86.9 billion yen		Stably 100 billion yen
D/E ratio	1.86		1.5 to 1.6 times
ROE	0.8%		5.0% or more



※As for D/E ratio, the results in FY2020 is Adjusted to Net D/E ratio

Adjusted Net D/E ratio= (Net interest-bearing debt- Equity-type debt)/(Shareholders' Equity + Equity-type debt)

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

The Medium-Term Business Plan 2025 - Financial Targets (by Segment)

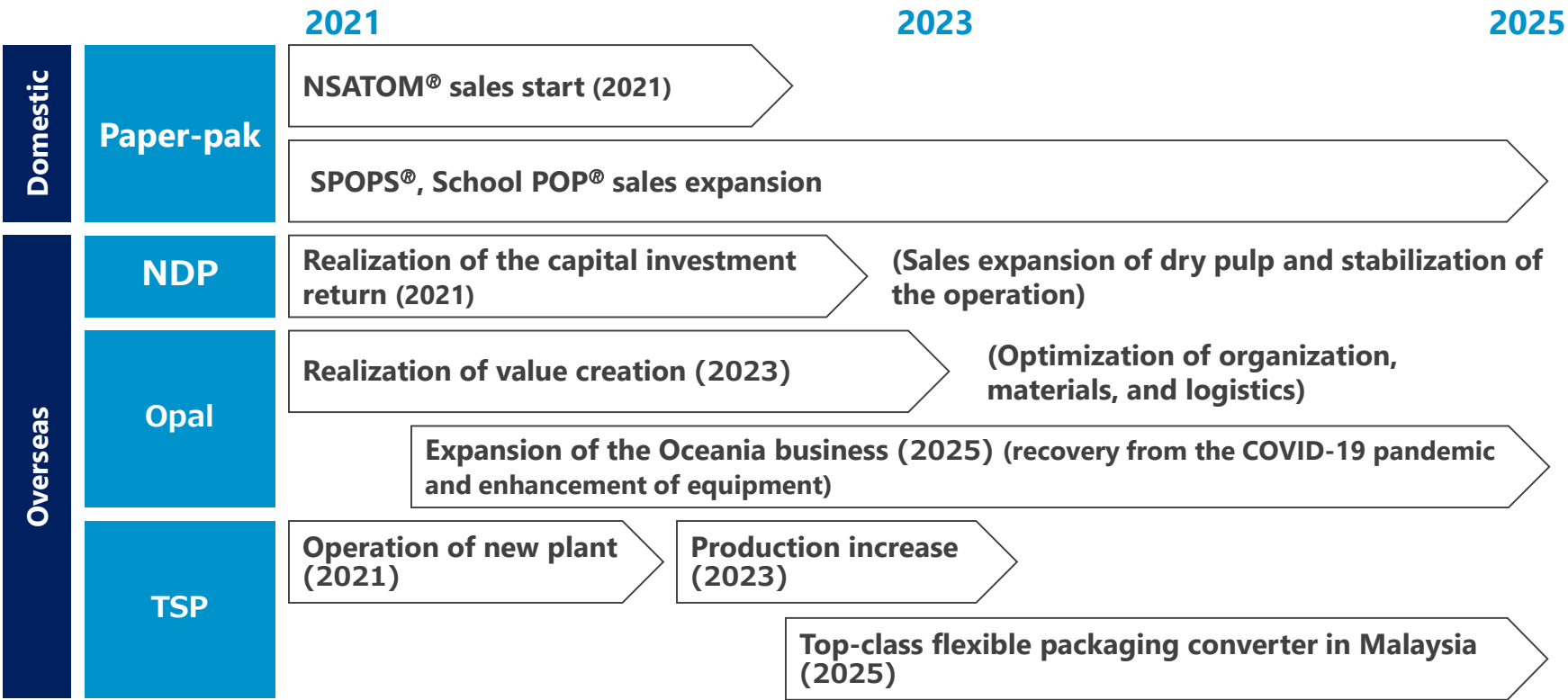


	Sales (billion yen)		Operating Income (billion yen)		
	FY2020 Result	MTBP 2025 Target	FY2020 Result	MTBP 2025 Target	
Paper and Paperboard	568.3	490	2.5	5.0	(breakdown of increased income) Oversea: Approx.+15.0 Domestic: Approx.+5.0
Daily-life Products	317.9	460	7.9	27.5	
New Business	-	15	-	2.0	
Energy	33.4	45	6.9	4.0	
Wood Products and Construction Related	59.9	75	6.5	6.5	
Other Business	27.8	30	-4.6	2.0	
Energy Conversion*	-	-	-	-5.0	
Total	1,007.3	1,100	19.2	40.0	

*Energy Conversion: Reflected the increase in cost due to energy conversion from coal.
The impact of carbon pricing is not assumed.

- Realize the value creation at Opal
- Proceed investments in response to the stronger demand in Oceania post COVID-19 pandemic
- As for NDP, revenue increase expected realizing the return of capital investments in dry pulp machines, etc.

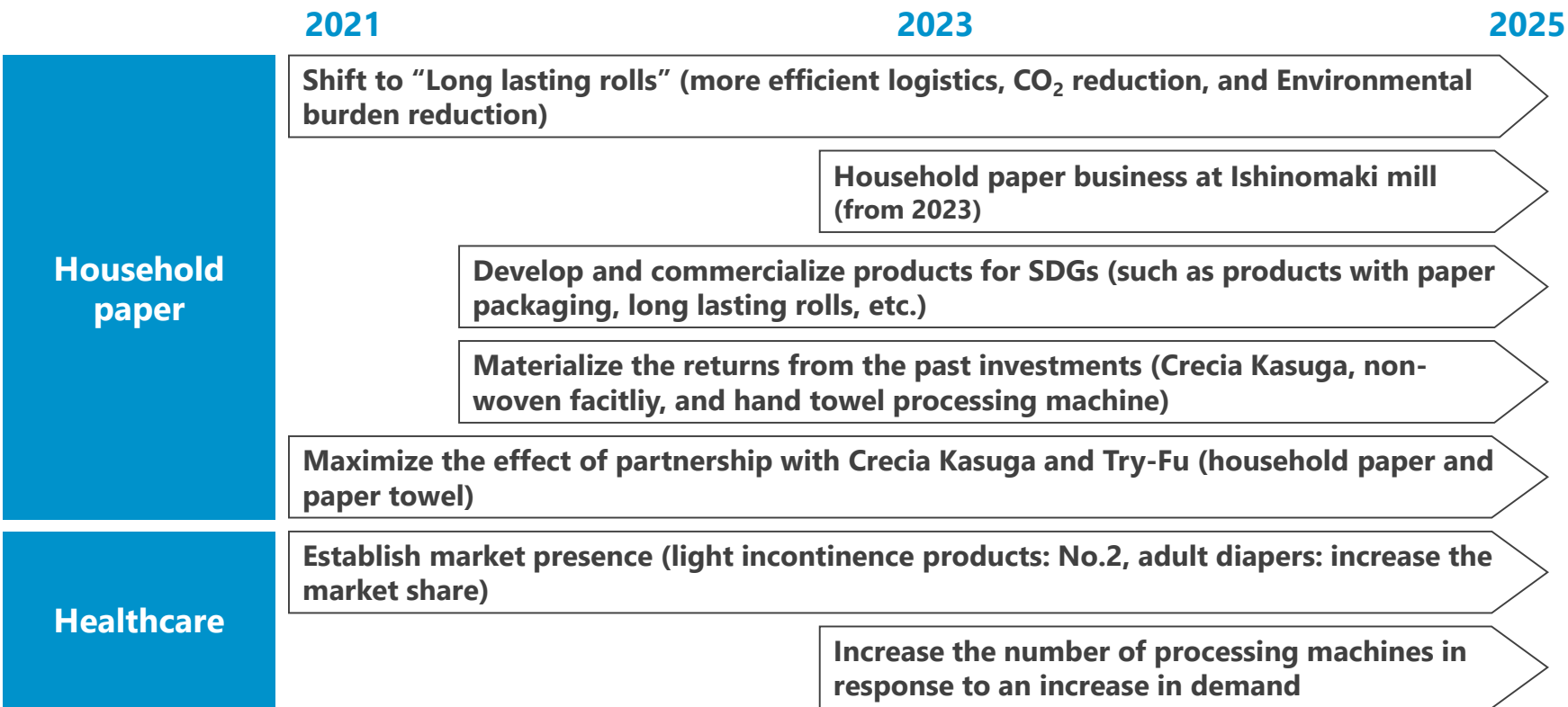
◆ Target sales for FY2025: **260 billion yen** (+70 billion yen compared with FY2020)





- All toilet roll products have been shifted completely to “long lasting rolls”
- Meet new demands in response to changes in the lifestyle such as increased awareness of hygiene and aging society
- Develop the life-style leading products to meet customer needs
- Differentiate the product lines by unique technologies (non-woven and super long lasting roll)

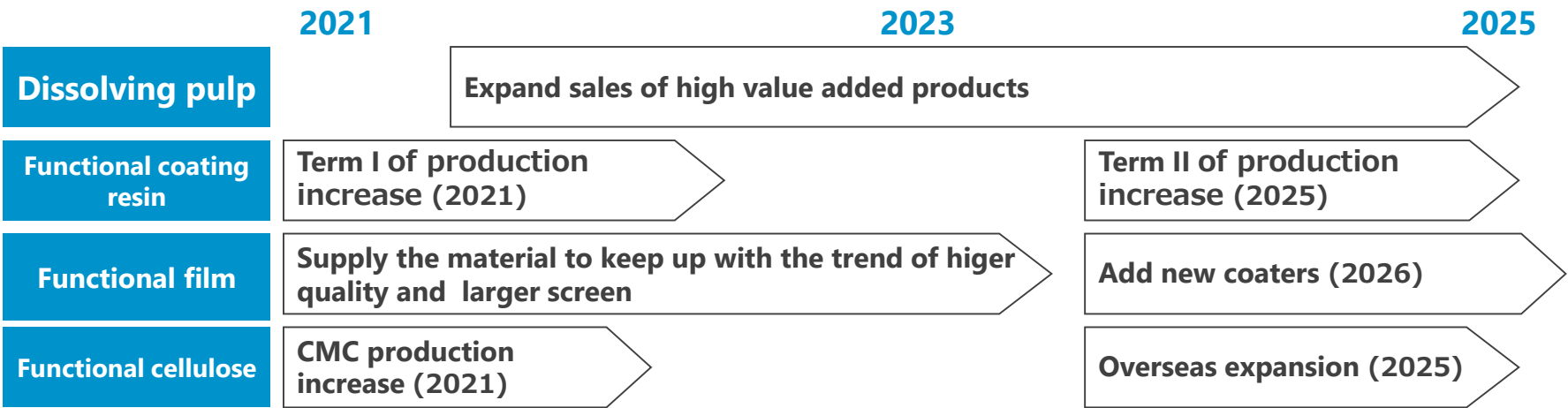
◆ Target sales for FY2025: **125 billion yen** (+40 billion yen compared with FY2020)





- Early realization of the return of capital investments approved in the 6th Medium Term Business plan (functional coating resin and functional cellulose)
- Continuation of timely investments and arrangement of the research and development organization considering the demand trend

◆ Target sales for FY2025: **60** billion yen (+18 billion yen compared with FY2020)



*For lithium-ion batteries and foods

- Sales target: 15 billion yen in 2025 to 65 billion yen in 2030
- Promote development and practical application of environmentally friendly products, mainly CNF
- SHIELDPLUS®/Lamina®: Establish the position in the flexible packaging market

<p>New Organization</p>	<ul style="list-style-type: none"> - Establish “Biomass Material Business Division” (June 2021) Reinforce analysis of customer needs and promote early commercialization of new materials and new products - Reinforce the functions of the “Paper Conversion Solution Promotion office” (utilize Group’s collective strength) - Cultivate new customers using NP Trading and the existing commercial channels of each business category
<p>Enhancing Production</p>	<ul style="list-style-type: none"> - Establish the CNF mass production and manufacturing technology by 2023 - Establish bio composite manufacturing technologies and business schemes by 2023 - Establish new fuel manufacturing technologies and raw material procurement schemes by 2023 - Launch the bio refinery business by using existing pulp manufacturing capacity by 2024
<p>Expand Sales of Paperization Products</p>	<ul style="list-style-type: none"> - Provide new value by expanding sales of SHIELDPLUS®, Lamina®, waterproof cardboard case, and hybrid materials with biodegradable resin - Reinforce relationships with customers by promotion activities
<p>Promote Recycling</p>	<ul style="list-style-type: none"> - Promote utilization of unused wastepaper by setting up the “Recycling Promotion Office” (June 2021) - Establish the recycling system of paper cups (from 2022)

- Reinforce the BCP response and optimize the production organization from a long-term viewpoint matching with the demand trend (Optimum use of resources considering the shift to the Growing Business and New Business)
- Fulfill the supply responsibility by promoting stable operation

Optimization of Production Sites

- **Establish the optimum production footprint which enables the maximum use of resources including human resources, equipment and land**
 - Need to consider increase in the demand of Growing Business and commercialization of New Business
 - Assume the demand trend and make multiple scenarios of supply organizations of the Foundation Business up to 2030
- **Establish Business Continuity Plan assuming natural disasters**
 - Consider and promote multiple production sites and equipment preparation for main product types



Shut down the N6 paper machine in Ishinomaki mill at the end of May 2022 (Capacity: 271,000MT/year)
Continue to consider some options to mitigate the supply and demand gap caused by COVID-19 pandemic

Stable Operation

- Promote preventative maintenance and reduce workloads of plant operations by introducing AI, IoT, and DX technologies
- Reinforce the operation support organization with consolidated management of plant engineers

◆ Domestic demand assumption in the Medium-Term Business Plan 2025 (YoY)

- Newsprint : -5% to -7% - Printing paper: -3% to -5% - Copy paper: 0 to -2%**

◆ Policy for the optimal production footprint in 2030

2021

2023

2025

2030

Respond to supply-demand gap

Identify and respond to the impact of COVID-19

Identify the future plans of production sites

Work on Growing Business and New Business

Reorganize the production sites

Shift to a new organization which consists of Growing Business, New Business, and competitive Foundation Business

Optimize production footprint

Shareholder return	No change in the basic policy to continue stable dividends
EBITDA	Stable earning 100 billion yen
Capital Efficiency	Aim to achieve 5.0% or more ROE in FY2025

◆ Use of cash

- Prioritize investments for growth while monitoring financial discipline
- Focus on investments in Growing Business (174 billion yen in total in 5 years)
- Target D/E ratio 1.5 to 1.6 times

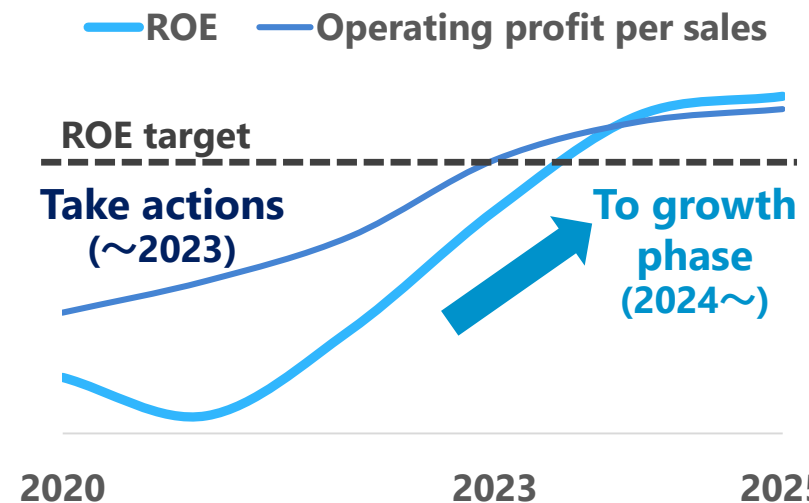
◆ Capital efficiency : Take actions in the early stage to improve the capital efficiency and aim to achieve 5.0% or more ROE in FY2025

- Realize value creation at Opal quickly
- Implement investments in growing fields in a timely manner
- Consider taking further actions to resolve the supply-demand gap caused by COVID-19 pandemic



The actions may cause one-time loss but will be executed accordingly

◆ ROE Image





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

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