

**Nittobo**

Nittobo

Nittobo Group Integrated Report 2022



Nittobo Group

# INTEGRATED REPORT 2022

**Nittobo**

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## Nittobo Declaration

Nittobo Group aims to become the "Best Partner" of your community. (Nittobo BP Declaration)

We will relentlessly strive to identify our customers' needs and will find great satisfaction in steadfastly earning their confidence and trust. In addition, we will attach importance to sharing this satisfaction with all of our stakeholders (communities) through our products and services, including shareholders, investors, public administrations and regional communities.

We are committed to becoming a corporate group in which the potential of our respective, independent employees is valued and thereby inspires our employees to freely and willingly share their own ideas, ultimately achieving greater results through teamwork.

Our corporate group will provide its employees with an opportunity for progress and self-realization based on the belief that their progress leads to everyone's success. We will encourage our employees to be good citizens, think deeply, observe widely, act courageously and to approach their jobs with resolve and determination.



〈 Deeply, Widely, Strongly and Hospitably 〉

Proud that  
customers trust  
Nittobo

## Nittobo Group's Vision for 2030 Big VISION 2030

As a corporate group that continues to create a global No. 1 niche business, we aspire to contribute to "Environment/Energy," "Digital Society," and "Health/Security/Safety" for realizing a sustainable society

Provide products and services that contribute to environment/energy

Provide products and services that contribute to digital society

Provide products and services that contribute to health/security/safety

We aspire to be a company that gains the trust of all stakeholders in the pursuit of client satisfaction.

## Corporate Philosophy

Nittobo Group will, as a corporate group, enhance its significance by striving to create healthy and comfortable lifestyles, and thereby continue to contribute to the realization of prosperous communities.

# Mission

# Values

# Vision

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### Editorial Policy

The *Nittobo Group Integrated Report* brings together financial information and sustainability-related information in one volume to provide stakeholders with a greater understanding of our medium- to long-term value creation structure, strategies, and specific initiatives. This issue aims to further evolve our integrated reporting by chronicling the progress of the Mid-Term Business Plan, which started in fiscal 2021, as well as the Nittobo Group's efforts to address important social issues through its business activities toward the realization of Big VISION 2030, our long-term vision for 2030.

### Report Period

This report covers business activities in FY2021 (from April 1, 2021 through March 31, 2022). This may be abbreviated to "FY21" when figures are presented.

### Scope of Report

This report covers the business activities of Nitto Boseki Co., Ltd. and its consolidated subsidiaries and affiliates in Japan and overseas.

### Company References

"Nittobo Group" and "the Group" refer to Nitto Boseki Co., Ltd. and its consolidated subsidiaries and affiliates in Japan and overseas.

"Nittobo" and "the Company" refer to Nitto Boseki Co., Ltd. individually.

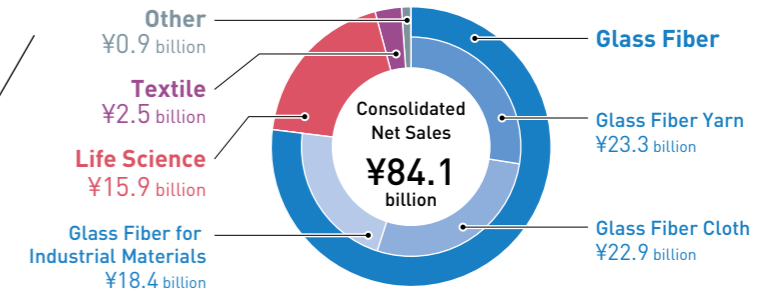
**Date of Publication**  
September 22, 2022

**Forward-looking Statements**  
The forecasts presented in this report are based on information available to the Company as of the publication date. Forward-looking statements included in this report do not represent promises or guarantees that the Company will attain its forecasts or realize the business measures expressed herein.

# History of Value Creation

The Nittobo Group was founded in 1923 in Fukushima Prefecture as a textiles manufacturer. Over the decades, we were the first Japanese company to industrially produce glass fiber (1938), became the first in Japan to manufacture glass wool (1949), and made inroads into medical business (1978). In each era, we have embraced change as opportunity and continually developed the Company by relishing the challenge to create new technologies and priding ourselves on our pioneer spirit.

FY2021  
Net Sales



## Historical Background and Social Issues and Needs

Period	Social Issues and Needs
Around 1930	Development of modern industry
1930s	Development of heavy industry Japan becomes world's largest staple fiber producer
After 1945	Postwar rebuilding demand
1960s	The first apartment boom, wave of motorization
Mid-1970s	Rising health consciousness
1980s	Rising demand for healthcare Widening choice of fashion materials
After 1990	Increase in usability, functionality, and miniaturization of integrated circuits Widespread adoption of Internet, mobile phones, and PCs
After 2000	Widespread adoption of smartphones and broadband Shift from treatment to prevention

## Nittobo's Business Transitions

Business Transition	Timeline
Started with the silk yarn Textile Business	Japan's first industrialization of glass fiber and rock wool, full-scale production of staple fiber
Building the foundation for our current core products and businesses	Expanded business by building more glass fiber furnaces
Started pharmaceutical sales	Entered the in vitro diagnostic reagents field Withdrawal from staple fiber business
Making glass cloth thinner and more functional	Withdrawn from cotton spinning business at Tomari Factory Shifted focus to beverage business
Business selection and concentration, withdrawal from construction materials business (rock wool production)	Expansion of in vitro diagnostics reagents development
Withdrawal from the raw yarn business	

## Life Science Business ... Contributing to preventive medicine becomes the Group's second business pillar

1952 Opened Chemical Fiber Laboratory (the roots of the medical business), which later evolved into the Biochemical Laboratory	1978 Launched synthetic substrate for $\gamma$ -GTP	1983 Launched specialty chemicals PAA™ 1986 Acquired International Immunology Corporation, the predecessor of Nittobo America Inc. Started immunological in vitro diagnostic reagent business 1987 Established NITTOBO MEDICAL CO., LTD. and its own brand for in vitro diagnostic reagents Launched immunological in vitro diagnostic reagents	1997 Established Nitto Beverage Co., Ltd.	2012 Launched Osteolinks TRAP-5b, an in vitro diagnostic reagent kit with genetically modified silkworm technologies 2018 Launched IgG4 measuring reagent kit for use on an automated analyzer 2019 Acquired Kamiya Biomedical, LLC to gain sales networks and know-how for regulatory clearance in the U.S. 2019 Acquired Capricorn Products, LLC to strengthen procurement of raw materials for in vitro diagnostic reagents in the U.S.
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## Glass Fiber Business ... Providing high-performance glass that matches the times, strengthening our leading position in the glass fiber industry

1938 Succeeded in industrial production of glass fiber and started manufacturing rock wool—both firsts in Japan	1949 Start glass wool production—first in Japan	1964 Glass fiber adopted for use in Tokaido Shinkansen nose cone 1967 Fukushima glass fiber yarn factory newly established Direct melt furnace No.1 installed to meet growing glass fiber demand 1969 Fukushima No.2 factory newly established (Plant specializes in production of glass cloth for printed wiring boards) Launched glass cloth for printed wiring boards	1984 Launched T-glass (low thermal expansion) 1985 Launched fine count yarn 1988 Yarn manufacturer Nittobo Norplex Oak Co., Ltd. established Predecessor of NITTOBO ASIA Glass Fiber Co., Ltd. (Taiwan)	1998 Launched NE-glass (low-dielectric)	2006 Launched Flat Fiber	2019 Cloth manufacturer Baotek Industrial Materials Ltd. (Taiwan) converted into a consolidated subsidiary
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## Textile Business ... Contributing to the creation of comfortable lifestyles

1898 Koriyama Kenshi Boseki Co., Ltd. established in Koriyama 1918 Fukushima Seiren Seishi Co., Ltd. established in Fukushima 1923 The above two companies merged to form Nitto Boseki Co., Ltd.	1933 Staple fiber operations started at Fukushima Factory	1960 Launched Nittobo Dishcloth™ 1965 Launched shirt interlining brand "DANKEEP™" Started production of dual-structure stretchable yarn "C-S-Y™" 1969 Launched ladies' apparel interlining brand "Dan Reine™"	1976 Introduced single dot interlining machines 1988 Introduced double dot interlining machines	2004 Launched SDDC® interlining that can accommodate difficult-to-adhere materials	2015 Nittobo Dishcloth™ won Good Design Long Life Design Award 2018 Launched "Innovative Fabric™" applying interlining processing technology
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## Net sales and operating profit ratio (consolidated)



▶ For details, please see page 30

## Glass Fiber Business

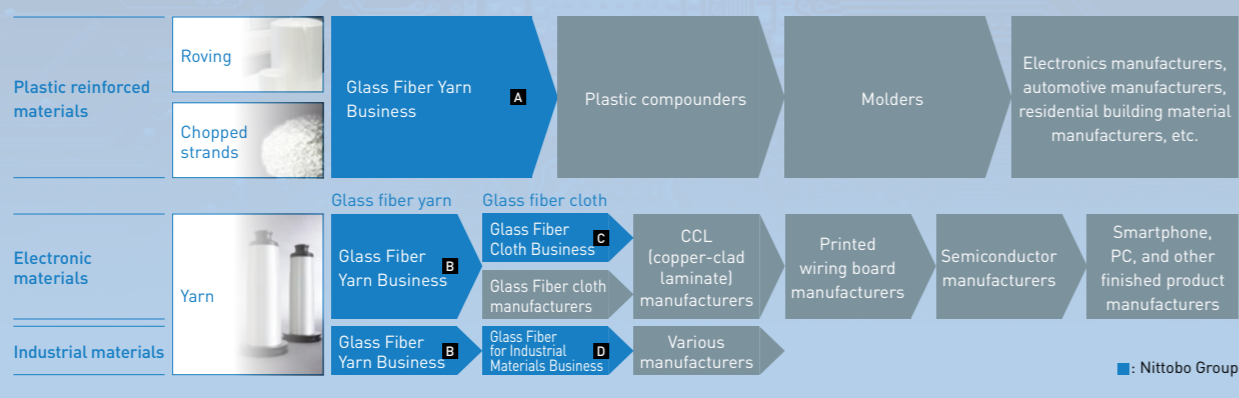
### Only 1, No. 1 Technologies

- World-leading precision in glass fiber
- Special Glass made from unique compositions

### Nittobo as Global Niche No. 1

- Electronic Materials: No. 1 in the world for ultra-fine, ultra-thin Special Glass by refining our technologies and product capabilities
- Composite Materials and Industrial Materials: No. 1 in client satisfaction by contributing to value creation through effective proposals, response capabilities (speed), and quality

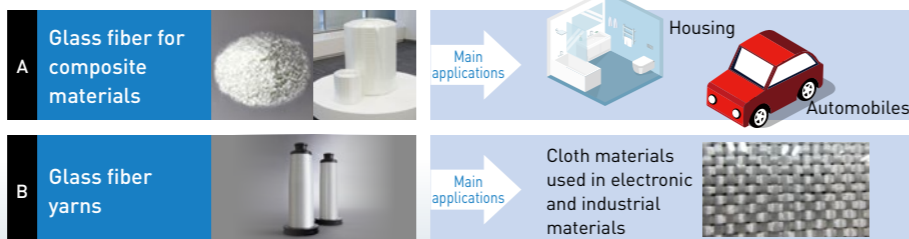
#### Supply Chain



■ : Nittobo Group

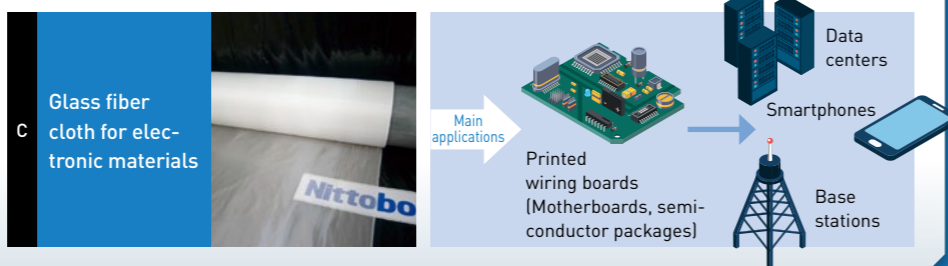
### Glass Fiber Yarn Business

We provide a wide range of distinctive glass fiber products for use in reinforced plastics and electronic materials.



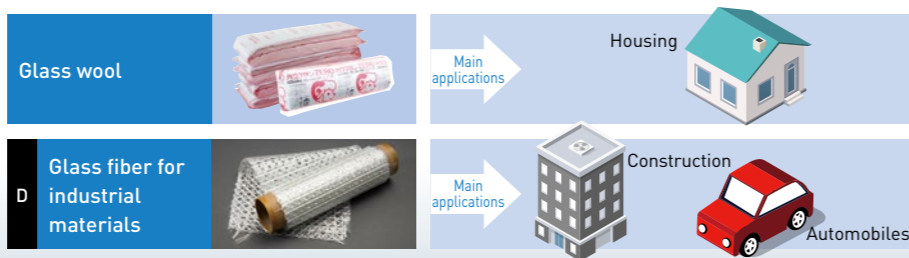
### Glass Fiber Cloth Business

We provide glass fiber cloth woven with glass fiber yarn for electronic materials in a wide range of applications, from infrastructure such as base stations and data centers to electronic devices such as PCs and smartphones.



### Glass Fiber for Industrial Materials Business

We provide glass wool and glass fiber for industrial and construction materials.



▶ For details, please see page 36

## Life Science Business

### Only 1, No. 1 Technologies

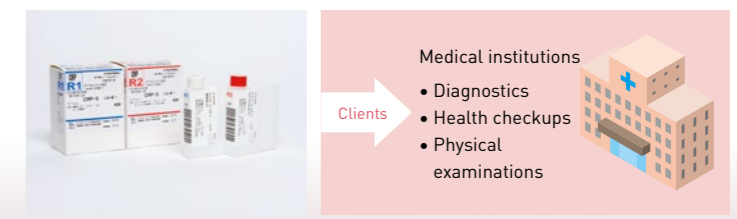
- Integrated system from antisera production to reagent sales

### Nittobo as Global Niche No. 1

- No. 1 in the world for immunological plasma protein diagnostics through global, vertically integrated business from antisera to reagent manufacturing and sales

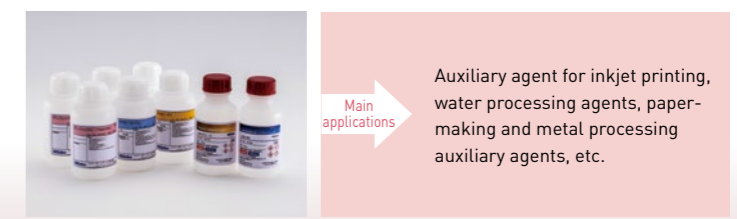
### Medical business (In vitro diagnostic reagents)

In vitro diagnostic reagent kits are used in health checkups, physical examinations, and hospital visits, and we provide them to medical and laboratory institutions through integrated production from raw materials to the finished product.



### Specialty chemicals business

We provide highly unique, functional polymer compounds for a wide range of applications to meet customer needs.



### Beverage business

We provide soft drinks, container molding, beverage manufacturing, and bottling, mainly through OEM contracts for private brands.



▶ For details, please see page 38

## Textile Business

### Only 1, No. 1 Technologies

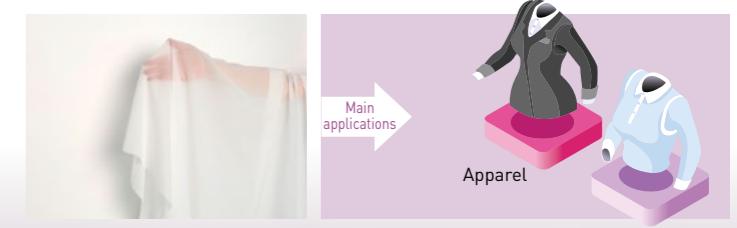
- The world's thinnest level of adhesive interlinings

### Nittobo as Global Niche No. 1

- No. 1 in the world for high-performance materials using adhesive technology

### Adhesive Interlinings Dishcloths

We provide adhesive interlinings for garment silhouettes and our long-selling Nittobo Dishcloth™.



Corporate Philosophy

The Nittobo Group will, as a striving to create healthy and contribute to the realization of

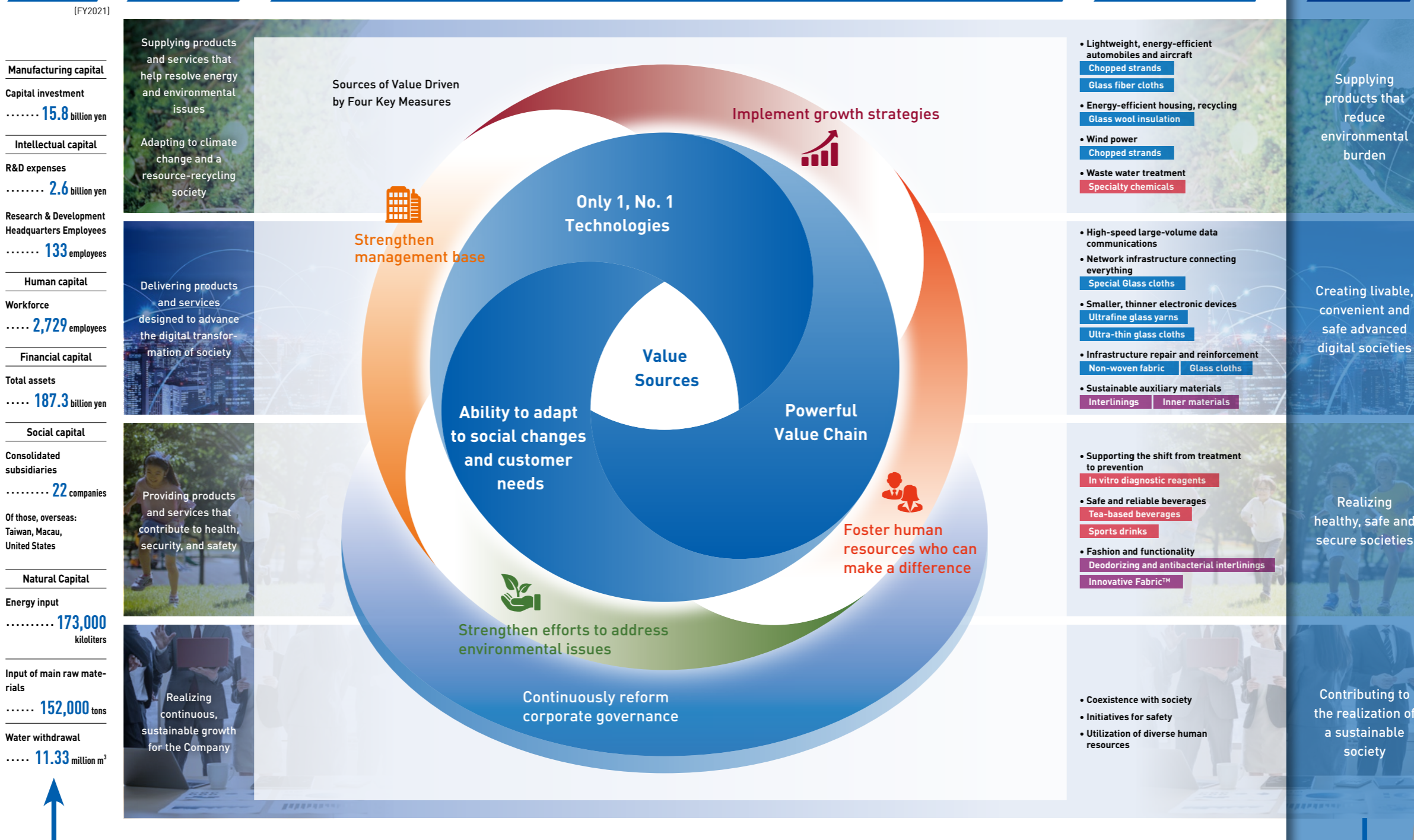
corporate group, enhance its significance by comfortable lifestyles, and thereby continue to prosperous communities.



- Social Issues & Change**
- Intensification of Global Warming and Environmental Issues
    - Formation of a recycling-oriented society
    - Acceleration of laws and regulations
  - Becoming an Ultra-Smart Society
    - Higher speed communication (5G/6G)
    - Evolution of AI technology
    - Entering the IoT era
  - Societal Structure Issues
    - Low birthrate and aging population (Japan)
    - Population issues, etc.

- Risks and Opportunities in the Business Environment**
- Realization of SDGs and ESG management with corporate social responsibility
  - Increased demand for Special Glass (low dielectric, low thermal expansion)
  - Improvement of preventive medicine and increase in health-oriented mindsets

INPUT (FY2021) | Material Issues | Mid-Term Business Plan | OUTPUT | OUTCOME



As a corporate group that continues to create a global No. 1 niche business, we aspire to contribute to "Environment/Energy," "Digital Society," and "Health/Security/Safety" for realizing a sustainable society.

**Big VISION 2030**

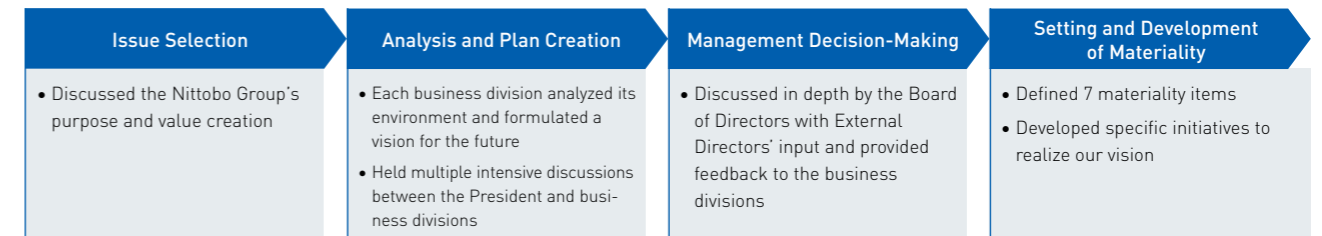
Nittobo Group's Value Creation  
Strategies for Value Creation  
Foundation for Value Creation  
Data Section

# Nittobo Group's Materiality

In order for the Nittobo Group to enhance its social value and continue contributing to the realization of prosperous communities, we have identified materiality as important management tasks to address to help solve social issues through the lens of ESG and the SDGs.

We have defined seven material issues from the perspective of strategic CSR, which leverages the strengths of the Nittobo Group to contribute through business activities, and from the perspective of basic CSR, which focuses on ESG to build a foundation that enables sustainable growth.

## Materiality Identification Process



Social Issues	Nittobo Group's Materiality	Risks	Opportunities	Key Measures	Relevant SDGs
<b>Intensification of Global Warming and Environmental Issues</b> <ul style="list-style-type: none"> <li>Formation of a recycling-oriented society</li> <li>Acceleration of laws and regulations</li> </ul>	Provide products and services that contribute to environment/energy Adapting to climate change and a resource-recycling society	<ul style="list-style-type: none"> <li>Increase in environmental costs</li> <li>Restrictions on business due to environmental regulations</li> <li>Elimination of non-environmental-friendly products and companies</li> </ul>	<ul style="list-style-type: none"> <li>Increasing demand for sustainable products</li> <li>Expanding demand for composite materials to meet the needs of lightweight automobiles and aircraft</li> <li>Increased demand for insulation materials due to stricter energy conservation regulations</li> </ul>	<ul style="list-style-type: none"> <li>Develop new environmental-friendly products</li> <li>Reduce CO<sub>2</sub> emissions</li> <li>Implement recycling and reusing</li> </ul>	
<b>Arrival of a Super Smart Society</b> <ul style="list-style-type: none"> <li>Higher speed telecommunication (5G/6G)</li> <li>Evolution of AI technology, arrival of IoT era</li> </ul>	Provide products and services that contribute to digital society	<ul style="list-style-type: none"> <li>Decline in technological superiority</li> <li>Replacement by other materials</li> <li>Speed of technological development in the electronic materials industry</li> </ul>	<ul style="list-style-type: none"> <li>Increasing demand for devices that require high-speed, high-capacity processing</li> <li>Utilization of the production system in Japan and in Taiwan, where electronic materials are concentrated</li> <li>Opportunities to expand sales and develop next-generation products through first-mover advantage</li> </ul>	<ul style="list-style-type: none"> <li>Grow profits through Special Glass</li> <li>Strengthen development capabilities for new products</li> <li>Strengthen solution capability to increase value for customers</li> </ul>	
<b>Societal Structure Issues</b> <ul style="list-style-type: none"> <li>Aging society with a declining birthrate (in Japan)</li> <li>Population issues, etc.</li> </ul>	Provide products and services that contribute to health/security/safety	<ul style="list-style-type: none"> <li>Shrinking domestic market due to declining birthrate</li> <li>Business continuity risks specific to biologically-derived materials</li> <li>Replacement by other diagnostic agents</li> </ul>	<ul style="list-style-type: none"> <li>Global shift from treatment to prevention due to increased awareness</li> <li>Expanding demand for diagnostic reagents in Asia due to population growth and rising income levels</li> <li>Utilize three raw material production bases in the U.S.</li> <li>Utilize the value chain from upstream (antigens, antibodies, raw materials) to downstream (product manufacturing and sales)</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of sales channels in the field of in vitro diagnostic reagents</li> <li>Strengthen development capabilities for new products</li> <li>Strengthen solution capability to increase value for customers</li> </ul>	
<ul style="list-style-type: none"> <li>Increased geopolitical risks</li> <li>Intensifying competition due to industry reorganization, entry from other industries, etc.</li> <li>Increasing sophistication and complexity of social demands</li> <li>Accelerating the rate of change</li> </ul>	Realizing continuous, sustainable growth for the Company <b>Strengthen management foundation</b>	<ul style="list-style-type: none"> <li>Diversification of factors causing changes in the socioeconomic environment</li> <li>Price fluctuations of fuels, materials, etc.</li> <li>Impact of geopolitics and human rights issues, etc. on the supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Selection and concentration</li> <li>Capture growth opportunities through innovative technology development</li> </ul>	<ul style="list-style-type: none"> <li>Lean management that is not substantially affected by economic fluctuations</li> <li>Optimize business portfolio and review unprofitable businesses</li> <li>Transform technology development and production technology through the introduction of IT and digital transformation</li> <li>Maintain sustainability in procurement and the supply chain</li> </ul>	
	<b>Foster human resources for innovation</b>	<ul style="list-style-type: none"> <li>Decline in workforce due to low birthrate and aging population</li> <li>Intensifying competition to recruit young and specialized human resources</li> </ul>	<ul style="list-style-type: none"> <li>Increasing diversity</li> <li>Fluidization of the labor market</li> <li>Innovation expected through human resource development</li> </ul>	<ul style="list-style-type: none"> <li>Cultivate human resources for innovation</li> <li>Implement diversity and inclusion</li> <li>Workstyle reform and business reform</li> <li>Improve employee engagement</li> </ul>	
	<b>Continuously revise corporate governance</b>	<ul style="list-style-type: none"> <li>Expanding and refining CSR scope</li> <li>Compliance and security in a remote environment</li> </ul>	<ul style="list-style-type: none"> <li>Permeation of corporate philosophy</li> <li>Strengthening the corporate foundation by gaining trust from society</li> </ul>	<ul style="list-style-type: none"> <li>Continuously revise corporate governance</li> <li>Thoroughly implement corporate ethics and compliance</li> </ul>	



Director,  
Representative and  
Chief Executive Officer

Yuichi Tsuji

We will contribute to solving social issues through our products and services, which we will provide by engaging in human resource development and R&D from a long-term perspective.

Fiscal 2021, the first of the three-year Mid-Term Business Plan, marked an investment phase where we continued to aggressively invest in capital for future growth. Nevertheless, earnings before interest, taxes, depreciation and amortization (EBITDA), which indicates core profitability, landed at a higher level than the previous fiscal year. This is a good start toward achieving the goals of the Mid-Term Business Plan.

### A Year of Achieving What Needs to Be Done

In fiscal 2021, the COVID-19 pandemic continued to affect industry, but there was a sharp recovery in production in the automobile and other manufacturing sectors, especially in the first half of the year. On the other hand, the semiconductor shortage became evident from the middle to the second half of the year, affecting the production of high-end equipment. In terms of market trends, the year was marked by both positive and negative factors.

In the first year of the Mid-Term Business Plan, we progressed with the structural reform of businesses with significant challenges. In the Glass Fiber Division, we focused on the composite materials business, which produces materials for reinforced plastics. We downsized facilities at the Fukushima Factory while expanding and consolidating facilities at Fuji Fiber Glass Co. Ltd. In the Textile Business, which had been suffering from losses for many years, we were able to achieve results,

including a significant reduction in losses, by withdrawing from the raw yarn business and spinning off the interlinings business.

These structural reforms stemmed from a revision of the cost structure centered on fixed costs. They will directly improve profitability going forward. We are also developing new products in order to increase the ratio of high value-added products in our future product portfolio.

As a milestone in our growth strategy, we installed a manufacturing facility for Special Glass at our glass fiber base in Taiwan. The new factory, which has been under construction for several years, started operation at the end of September 2021. Some time is still required for customer certification before we receive new orders, but the two production systems in Japan and Taiwan are now in place.

→ Please see [page 16](#) for information on the progress of Mid-Term Business Plan in fiscal 2021.

## Progress and Outlook for Key Initiatives of the Mid-Term Business Plan

The Nittobo Group is taking on the challenge of providing No. 1, Only 1 products that are needed by society and that offer new value, in order to realize Big VISION 2030, our vision for 2030.

The Mid-Term Business Plan sets four key measures to achieve this vision: implement growth strategies, strengthen the management foundation, strengthen efforts to address environmental issues, and foster human resources that bring about changes. First, we will go over the progress and prospects for the first year of each measure.

With regard to the implementation of growth strategies, as mentioned above, we have made steady progress in preparing for the future expansion of the high-speed digital equipment market by starting operation of a factory in Taiwan for new low-dielectric NE-glass, which is a type of Special Glass (a type of glass with characteristics such as low dielectric strength, high strength, and low thermal expansion).

As high-end semiconductors used in data centers and other applications continue to increase in size and layers to achieve higher speeds, our low thermal expansion glass (T-glass) for semiconductor packages is also attracting attention. In anticipation of strong demand over the medium to long term, we have accelerated our capital investment plan to increase the production capacity for T-glass at factories in Fukushima City and Koriyama City in Japan.

In the electronics industry, customers' needs for the next generations of products, not to mention subsequent generations, are accelerating due to global competition in development based on roadmaps put forward for the industry. The Nittobo Group is also

responding with speed. In the development of next-generation low-dielectric glass (NER), customer evaluations are already in progress, and preparations are underway to start mass production by the end of fiscal 2022.

We are also strengthening our management foundation. Structural reform is proceeding as planned in the composite materials of the Glass Fiber Business and the Textile Business, where concrete results are being achieved. A new initiative is to strengthen our digital transformation (DX) efforts. In 2021, we established a DX promotion organization within the Research & Development Headquarters and began training young engineers. At the same time, we have started specific activities to implement AI functions in glass melting furnaces. In addition to continuing these activities, in fiscal 2022 we will establish a new DX model factory and assign DX ambassadors to lead the way, starting with small activities in front of us.

In April 2021, the Sustainability Committee, which I chair, started to reinforce efforts to address environmental issues. In terms of specific initiatives, we have set targets for reducing CO<sub>2</sub> emissions and recycling waste glass for the year 2030, and are also focusing on the development of new environmentally-friendly products, mainly with our R&D centers. The Corporate Business Planning Department serves as the secretariat of the committee and has established five task forces composed of members from business divisions to prioritize the use of waste heat recovery and renewable energy in order to ensure energy savings. By accumulating such energy-saving activities, we hope to achieve not only CO<sub>2</sub> emission reduction but also cost reduction.

We are working to make advances in fostering human resources that bring about changes. As the year's first initiative, we are working to improve internal communication by enhancing one-on-one meetings between supervisors and subordinates. I myself have sent out a video message on the background and aims of the new Mid-Term Business Plan, and also held round-table discussions with younger employees at business sites and R&D centers. In addition, we will realize workstyle reform by enhancing flexible working hours and telecommuting systems, and promoting smarter office work such as paperless office work.

→ Please see [page 50](#) for more information on our commitment to diverse human resources.

## The Glass Fiber and Medical Business Serve as the Cornerstones of Our Growth Strategy

I will explain a little more in depth about the implementation of growth strategies. New product development is the key to achieving further growth in the glass fiber business and medical business. It is the very starting point of a manufacturing business. We believe that improving our new product development capabilities is the key to achieving our goal of being a No. 1 global niche company.

It is essential to further improve the level of customer solution activities, in which we learn deeply what customers want and propose new products as solutions to those needs. In the Glass Fiber Business, the Product Planning and Development Division was established as an organizational structure for customer solution activities, and sales staff are actively approaching customers' technical departments with engineers in tow.

Amid increasing 5G adoption, demand is increasing for Special Glass as a material for high-frequency/high-speed transmission from infrastructure to edge devices. Demand continues to be strong for glass cloth for semiconductor packages such as high-end network equipment, processors and memory devices. The Nittobo Group is focusing its efforts on Special Glass because we expect market expansion over the medium to long term.

Targeting this growing market, we are building a solid production base for the era of full-fledged adoption. We are steadily accelerating R&D so that we can supply next- and subsequent-generation products in a timely manner to meet the needs of our customers.

In the medical business, overseas demand has been growing in recent years. We will expand production capacity for immunological in vitro diagnostic reagents, one of our strengths, to meet growing demand. At the U.S. site, a new building is scheduled to go operational in the fall of 2022, promoting more stable supply of raw materials and strengthening the value chain. More than ever, to capture growing global demand, we also intend to strengthen our relationships with major players in the global diagnostic equipment market.

→ Please see [page 16](#) for information on the progress of the Mid-Term Business Plan in fiscal 2021, regular technical meetings with customers, and Implementation of Growth Strategies.

→ Please see [page 33](#) for information about Special Glass.

	Glass Fiber Business	Medical Business
Goal	<ul style="list-style-type: none"> <li>No. 1 in the world for Special Glass</li> </ul>	<ul style="list-style-type: none"> <li>No. 1 in the world for immune system plasma protein diagnostic reagents</li> </ul>
Target Market	<ul style="list-style-type: none"> <li>Increased demand for Special Glass due to expansion of 5G-related markets</li> </ul>	<ul style="list-style-type: none"> <li>Growing demand for in vitro diagnostic reagents in emerging markets</li> </ul>
Strengths	<ul style="list-style-type: none"> <li>Special Glass development and production technology</li> <li>World's finest and thinnest production technology</li> <li>Integrated production system from yarn to cloth</li> </ul>	<ul style="list-style-type: none"> <li>Global value chain (from R&amp;D to raw material production and reagent production and sales)</li> </ul>
Strategy	<ul style="list-style-type: none"> <li>Expansion of production capacity for high value-added products</li> <li>Development of new next-generation products</li> </ul>	<ul style="list-style-type: none"> <li>Stable supply to existing markets and global market development</li> <li>Expansion of production capacity (from raw materials to reagents)</li> </ul>





## Research & Development Headquarters Responsible for Fostering Human Resources to Champion Future Fundamental Technology and R&D

To continue providing products and technologies that ensure customer trust, the Nittobo Group established the Research & Development Headquarters in 2017 and completed construction of the new NI-CoLabo building in 2020. The entire Group has been working together to improve its research and development system.

One of the important roles of the Research & Development Headquarters is to manage the development of technical human resources, or in other words, to train key personnel who will be responsible for the future development of the Nittobo Group's fundamental technologies and products. We make sure that the career plans of our engineers are discussed thoroughly and make the necessary investments by setting a path to develop new graduate entrants in technical fields into key personnel who will lead research and development in the next 10 to 15 years through education, training, study outside the Company, and appropriate rotations after they join the Company. We are currently working on specifics, and we intend to make changes to

our personnel system and treatment of employees. Mr. Kazuhiko Igarashi, Managing Executive Officer, who became President of the Research & Development Headquarters in April 2022, has a wide range of experience from the manufacturing floor to R&D and product development, making him an appropriate choice for this mission of technical human resource development management. At the same time, as a member of the Board of Directors, I look forward to identifying issues and getting advice from an engineer's perspective.

In addition, the Environment Technology Strategy Office was established within the Research & Development Headquarters to serve as a Company-wide command post for environmental issues in order to strengthen efforts to address environmental issues, which is one of the key measures of the Mid-Term Business Plan.

→ Please see [page 28](#) for more details on the Research & Development Headquarters.

## DX to Improve Employee Technology Literacy and Increase R&D Efficiency and Productivity

DX initiatives are one of the most important issues in the Mid-Term Business Plan. These include efforts to improve the efficiency of research and development using machine learning and other data analysis technologies, to increase productivity in manufacturing processes, and to improve other operational efficiencies.

In the first year of the plan, we established a DX Strategy Office in the Research & Development Headquarters and started online training for all young engineers to acquire DX literacy. We believe that employees, who are familiar with the actual operations at manufacturing and R&D sites, will be able to act as "business translators" and be the driving force to spread DX within the Company. It will take some time for engineers in the field to use DX knowledge to improve their own work and experience success, but they will persevere.

For DX to permeate actual business operations, it must be incorporated into autonomous decentralized activities. Each department will be assigned a DX ambassador, and a system will be established in which diverse teams and departments will collaborate to solve issues and share the results of their efforts throughout the Company. The establishment of the DX model factory and the appointment of DX ambassadors is the first step in this long-term effort. Specific to the production process, we installed a variety of specialized sensors in our glass melting furnaces. We intend to establish a system by the end of fiscal 2023 that can detect furnace conditions while collecting big data, and take various measures to prevent defective products through advance detection.

## Expecting the Unexpected

Entering the second year of the three-year Mid-Term Business Plan, we are naturally encountering events that were not anticipated at the outset. These include the semiconductor shortage, further increases in energy prices due to the prolonged situation involving Russia and Ukraine, and the clear impact on supply chains from the lockdown of major cities in China.

In this rapidly changing business environment amid the trend of heightened uncertainty, we anticipate that the unexpected will happen. The rising energy prices and supply chain disruptions that are occurring around the world are unavoidable challenges

that must be faced head-on, given the globalization of corporate activities themselves, and we recognize anew the need to ensure management flexibility and resilience, the cornerstones of the Mid-Term Business Plan.

We believe that the social issues that we are addressing through our business activities, such as the worsening global environmental problems, the advent of a super-smart society, and the growing concern for people's health, have not changed at all since the formulation of our Long-term Vision, and in fact have become clearer.

## Shareholder Returns

Our basic policy for shareholder returns is to aim for stable dividend growth over the medium to long term. At the end of each fiscal year, dividend decisions will be made in light of the proper balance between shareholder returns and the need to maintain a stable financial base and funds for future growth investment. In addition, the Company will also flexibly return profits to shareholders in response to conditions at the time. The acquisition of own shares in May 2022 was conducted under this basic policy to

enhance shareholder returns and further improve capital efficiency, as major investments under the Mid-Term Business Plan have run their course.

We will continue to aim for stable dividend growth and flexible shareholder returns.

→ Please see [page 17](#) for more details on shareholder returns.

## In Conclusion

The Nittobo Group will celebrate its 100th anniversary on April 1, 2023. There's a reason we have been able to continue our business for a century. We have consistently taken on new challenges in response to changing times, and the world has continued to believe that Nittobo's technologies and products are necessary.

In a passage from Samuel Ullmann's "Youth" poem, he writes, "Youth is not a time of life; it is a state of mind; it is not a matter of rosy cheeks, red lips and supple knees; it is a matter of the will, a quality of the imagination, a vigor of the emotions; it is the freshness of the deep springs of life." Although we are a 100-year-old company, we want to continue to anticipate changes in society and always take on new challenges—in other words, we want to continue to be a youthful company.

We believe that it is the Nittobo Group's responsibility to contribute to solving social issues by providing our products and services, which we will advance through human resource

development and R&D from a long-term perspective, rather than being overly preoccupied with short-term, immediate events.

We will continue to openly discuss and share our activities, our ideas and thoughts with our shareholders, investors, local communities, employees and suppliers, and listen carefully to feedback.



# Progress of the Mid-Term Business Plan (FY2021–2023)

We are working to realize the Nittobo Group's vision for 2030, Big VISION 2030, which we announced in February 2021. Under the Mid-Term Business Plan, which began in fiscal 2021, we are focusing on the following four long-term priority measures: implement growth strategies, strengthen the management foundation, strengthen efforts to address environmental issues, and foster human resources who can make a difference.

## Nittobo Group's Vision: Big VISION 2030

As a corporate group that continues to create global niche No. 1 businesses, we aspire to contribute to "Environment/Energy," "Digital Society," and "Health/Security/Safety" for realizing a sustainable society.



Nittobo strives in the pursuit of all stakeholders' satisfaction.

### Growth Strategy Implementation

Create further business growth through high value-added products

- Grow profits through Special Glass
- Expand sales channels in the in vitro diagnostic reagent field
- Strengthen development capabilities for new products
- Strengthen sales force solutions to increase value for customers

**Progress in FY2021**

**Progress in Infrastructure Development for High Value-added Products**

- New NE-glass yarn factory in Taiwan began operation

**Enhancing development of next-generation Special Glass**

- Strengthening development of next-generation low-dielectric glass

**Facilitating customer solutions activities**

### Management Foundation Reinforcement

Evolve into a lean business entity (secure resiliency)

- Lean management that is not substantially affected by economic fluctuations
- Optimize business portfolio and review unprofitable businesses
- Transform technology development and production technology through the introduction of IT and digital transformation

**Progress in FY2021**

**Execution of Structural Reforms in the Composite Materials and Textile Businesses**

**Enhancing Cost-Reduction Measures**

**Implementing Digital Transformation (DX)**

- Started specialized literacy training mainly for young engineers
- Preparing for DX implementation on electric furnaces

### Action for Environment Issues

Make efforts to address environment issues for a sustainable society

**Progress in FY2021**

**Implemented Systems**

- Started Sustainability Committee activities
- Started reducing CO<sub>2</sub> emissions, promoting recycling and reusing, and developing eco-friendly products
- Endorsed the TCFD recommendations (May 2022)

- Reduce CO<sub>2</sub> emissions
- Implement recycling and reusing
- Develop new environmentally friendly products

### Human Resources Development

Foster human resources/organization/work environment that bring about changes

**Progress in FY2021**

**Human Resource Development**

**Promoting Diversity & Inclusion**

- Increasing the ratio of females in management positions

**Implementation of Workstyle Reforms**

- Promoting work-life balance

- Cultivate human resources for innovation
- Implement diversity and inclusion
- Workstyle reform and business reform
- Improve employee engagement

### 4 Key Measures

## MESSAGE



We aim to achieve the goals of the Mid-Term Business Plan while maintaining a sound financial structure even in an uncertain environment.

**Hiroyuki Tada**  
Managing Executive Officer  
General Manager of the Corporate Business Planning Division

The Nittobo Group is working to build a resilient corporate structure that withstands economic fluctuations by steadily implementing the Mid-Term Business Plan. In fiscal 2021, while making necessary growth investments and implementing growth strategies, we have been strengthening our management base through structural reforms and improving working capital efficiency through inventory reduction and cash management.

In the first two years of the Mid-Term Business Plan, the business environment surrounding the Company continues to be uncertain, with soaring global energy prices, rising commodity prices, lockdowns in China, supply chain disruptions, and the semiconductor shortage.

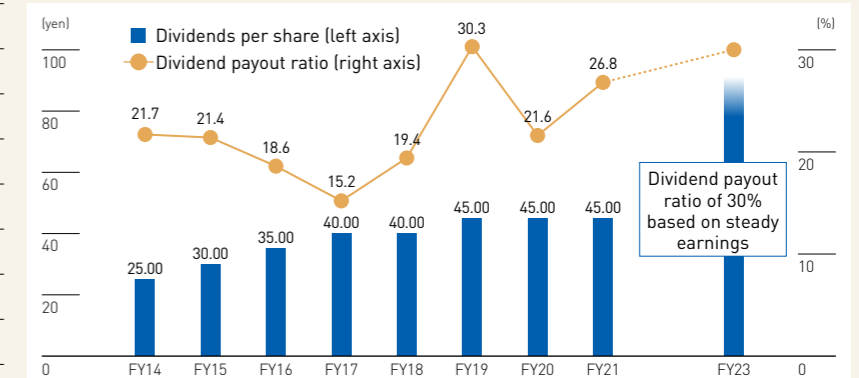
Despite these circumstances, in the mainstay Glass Fiber Business, we are making steady progress with strategies in line with our Mid-Term Business Plan, such as increasing earnings by increasing sales of high value-added yarns and cloths, as well as improving the productivity of composite materials. In the medi-

cal business, our second pillar of business, we aim to further improve profitability by strengthening our global vertically integrated business and increasing sales of immunological in vitro diagnostic reagents, which is one of our strengths. In the Textile Business, the interlinings business was transferred to a newly established subsidiary, Nittobo Advantex Co., Ltd., to improve profitability, and structural reforms are proceeding as planned.

As always, we consider the dividend policy for shareholder returns to be one of the most important management priorities, and our basic policy is stable dividend growth. The annual dividend for fiscal 2021 is set at 45 yen per share, the same as the previous year. While we will invest in growth and create business growth in line with the strategies of the Mid-Term Business Plan, we will maintain a sound financial position and consider flexible approaches to shareholder returns in accordance with our financial situation, in order to achieve the goals of the Mid-Term Business Plan.

### Financial Targets for FY2023

Net sales	100 billion yen
Operating profit	14 billion yen
EBITDA	25 billion yen
EBITDA margin	25%
ROE	10%
ROIC	6%
Equity ratio	55%
Debt-to-equity ratio	0.4 times

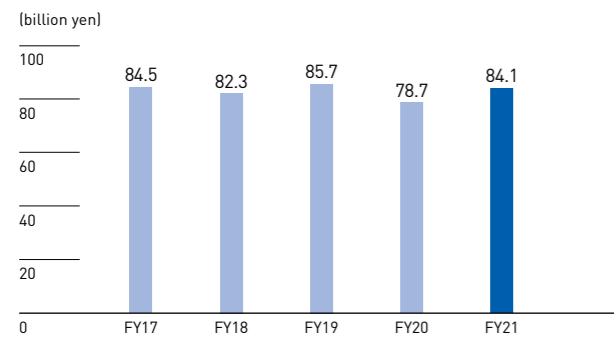


# Financial and Non-Financial Highlights

▶ For details, please see pages 44 and 50.

## Financial Value

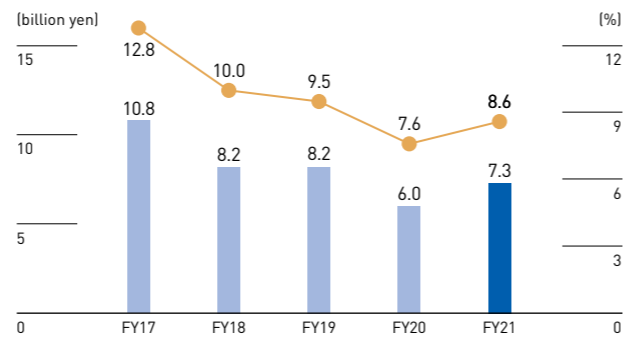
### Net Sales



■ Net Sales

Sales of composite materials, Special Glass, in vitro diagnostic reagents, etc. grew in fiscal 2021 compared to fiscal 2020, when sales declined due to the impact of the spread of COVID-19.

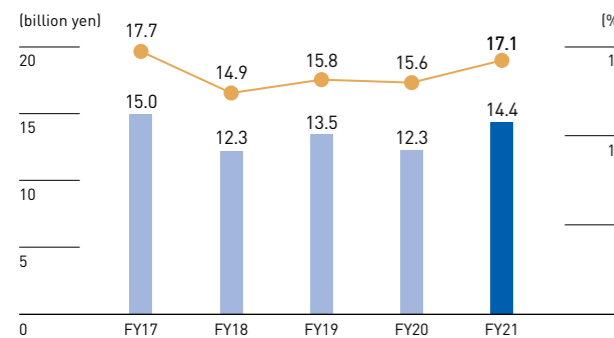
### Operating profit/Operating profit ratio



■ Operating profit (left axis)  
● Operating profit ratio (right axis)

Operating profit in fiscal 2021 increased by more than 20% year on year due to increased sales of high value-added products and successful structural reform, despite an increase in upfront investment and other expenses.

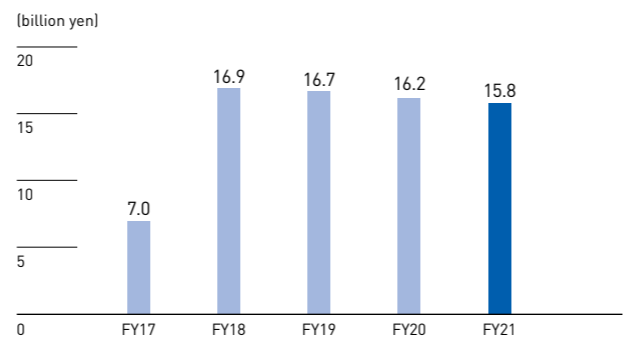
### EBITDA/EBITDA margin



■ EBITDA (left axis)  
● EBITDA margin (right axis)

EBITDA and EBITDA margins have been increasing year by year as well as EBITDA growth by increasing earning power through a growth strategy to expand high value-added products such as Special Glass and in vitro diagnostic reagents.

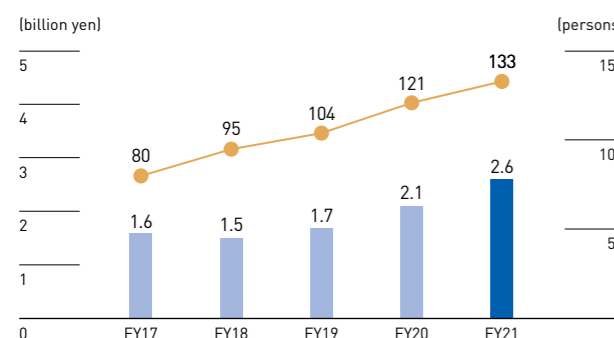
### Capital expenditure (including M&A)



■ Capital expenditure (including M&A)

Since fiscal 2018, we have been making aggressive capital expenditure, including capacity expansion of Special Glass, to meet growing demand. In fiscal 2021, we established a new Special Glass factory at NITTOBO ASIA Glass Fiber Co., Ltd. in Taiwan.

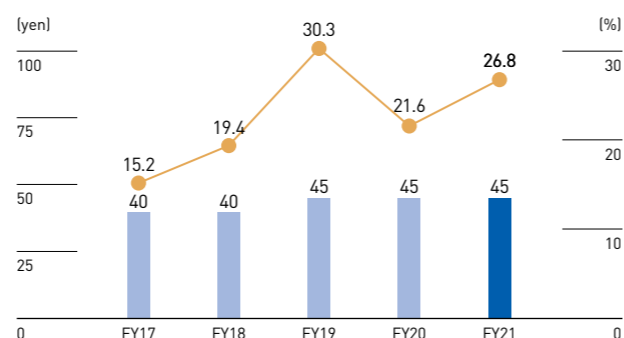
### R&D expenses/Research & development headquarters personnel



■ R&D expenses (left axis)  
● Research & Development Headquarters personnel (right axis)

In response to changing market needs, we are strengthening R&D to develop next-generation products. The Company is also promoting digital transformation (DX) initiatives, including the establishment of a DX implementation organization at the Research & Development Headquarters.

### Dividends/Dividend payout ratio

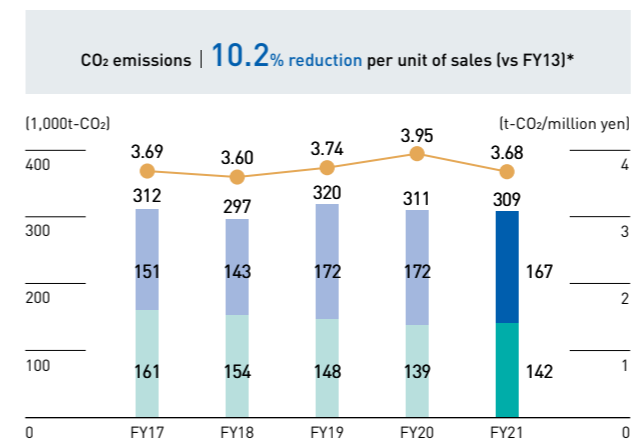


■ Dividends per share (left axis)  
● Dividend payout ratio (right axis)

The total dividend per share for fiscal 2021 is 45 yen, consisting of an interim dividend of 22.50 yen and a year-end dividend of 22.50 yen. During the period of the Mid-Term Business Plan (FY2021–2023), the Company's policy is to flexibly return profits to shareholders based on stable dividend growth.

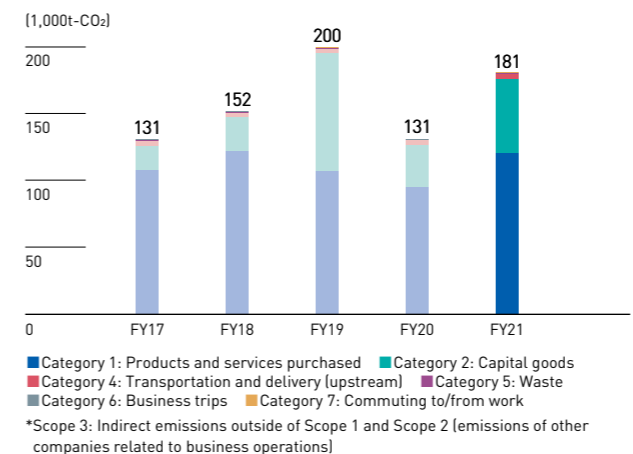
## Non-Financial Value

### CO<sub>2</sub> emissions from business operations



\*FY2013 CO<sub>2</sub> emissions: 349,000 t-CO<sub>2</sub>; per unit of consolidated net sales: 4.10 t-CO<sub>2</sub>/million yen

### Greenhouse gas emissions in the value chain (Scope 3\*)



\*Scope 3: Indirect emissions outside of Scope 1 and Scope 2 (emissions of other companies related to business operations)

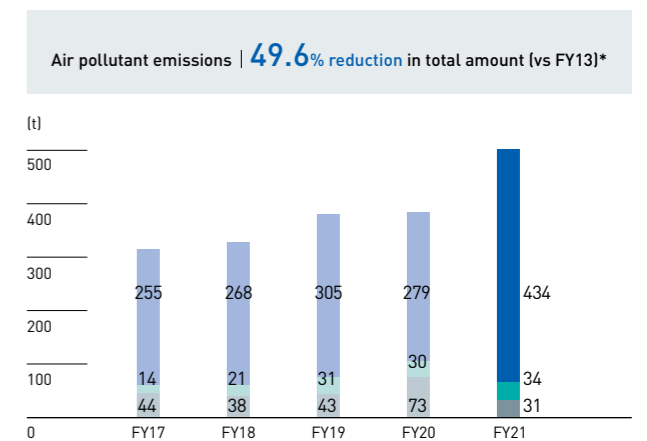
### FY2021 Scope 3 Category Details (t-CO<sub>2</sub>)

1. Products and services purchased..... 120,573
2. Capital goods..... 55,370
4. Transportation and delivery (upstream)..... 3,525
5. Waste..... 774
6. Business trips..... 355
7. Commuting to/from work..... 329

### Scope 3 Reduction Initiatives

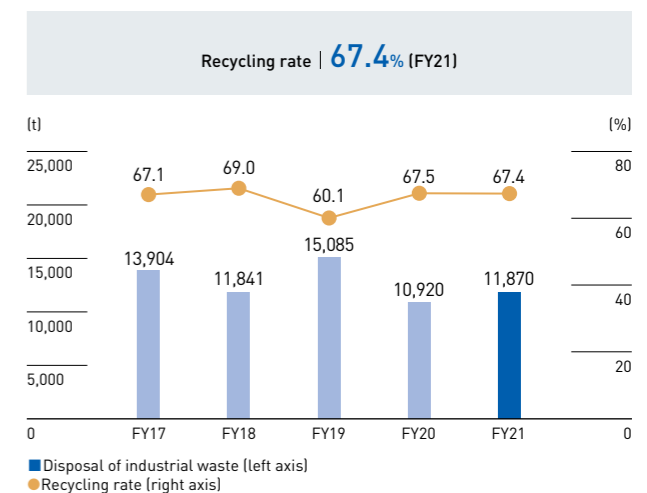
- Improve transportation efficiency through collaboration with suppliers and transporters
- Reduce CO<sub>2</sub> emissions through glass waste recycling

### Air pollutant emissions



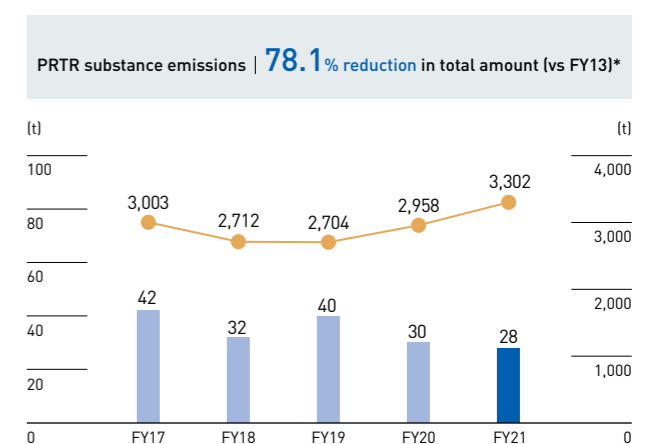
\*FY2013 NO<sub>x</sub> emissions: 852 tons; SO<sub>x</sub> emissions: 43 tons; dust emissions: 95 tons

### Industrial waste disposal and the recycling rate



■ Disposal of industrial waste (left axis)  
● Recycling rate (right axis)

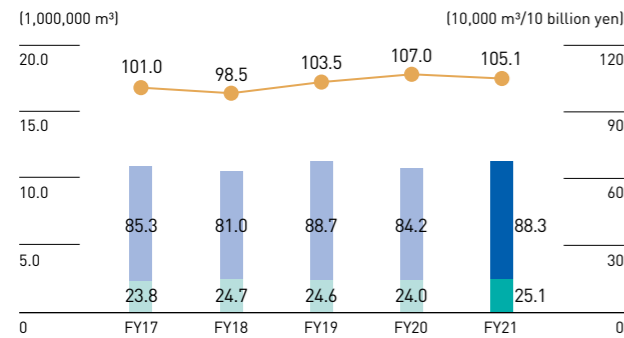
### PRTR substances emitted and handled



\*FY2013 PRTR emissions: 128 tons; PRTR volume handled: 2,881 tons

Withdrawal water

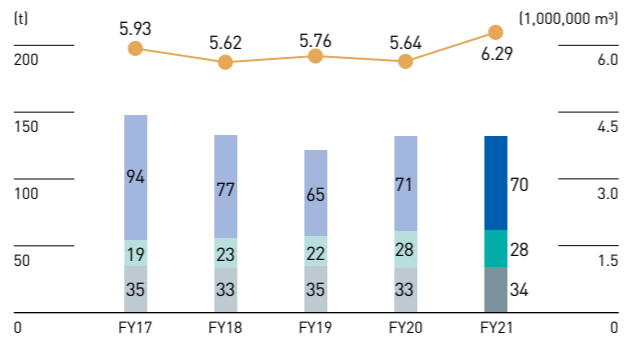
Withdrawal water | **1.4% increase** per unit of sales (vs FY13)\*



\*FY2013 withdrawal water: 8.83 million m³; withdrawal water by Nitto Beverage Co., Ltd.: 2.27 million m³; consolidated sales per unit: 1,037,000 m³ / million yen

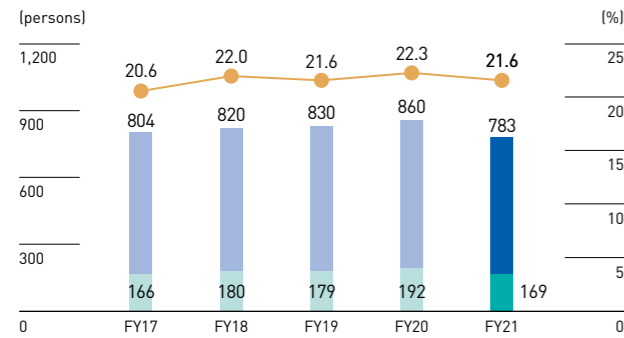
Water pollutants and drainage

Water pollutants | **33.7% reduction** in total amount (vs FY13)\*1



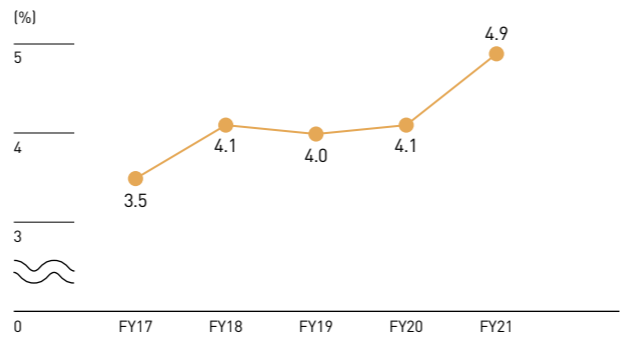
\*1 FY2013 COD: 116t; BOD: 35t; SS: 48t; drainage volume: 5.31 million m³  
 \*2 COD (chemical oxygen demand): Amount of oxygen required to chemically oxidize organic matter in water with an oxidant  
 \*3 BOD (biochemical oxygen demand): Amount of oxygen required for organisms to decompose organic matter in water  
 \*4 SS (suspended solids): Amount of insoluble substances in water

Workforce (non-consolidated)/ratio of female employees



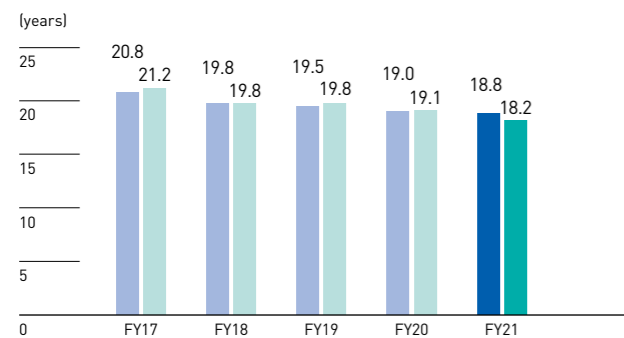
Workforce (left axis), Female workforce (left axis), Percentage of female employees (right axis)

Ratio of females in management positions (non-consolidated)



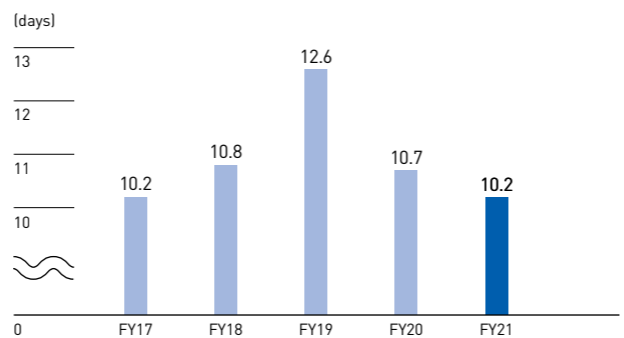
Ratio of females in management positions

Average career years of male/female employees (non-consolidated)



Average career years of male employees, Average career years of female employees

Number of annual paid leave days taken (non-consolidated)



Number of annual paid leave days taken

# Feature Special Glass Technology and Market Trends

This feature was prepared under the supervision of Hideyuki Hatanaka, Senior Technical Supervisor and the Research & Development Headquarters.

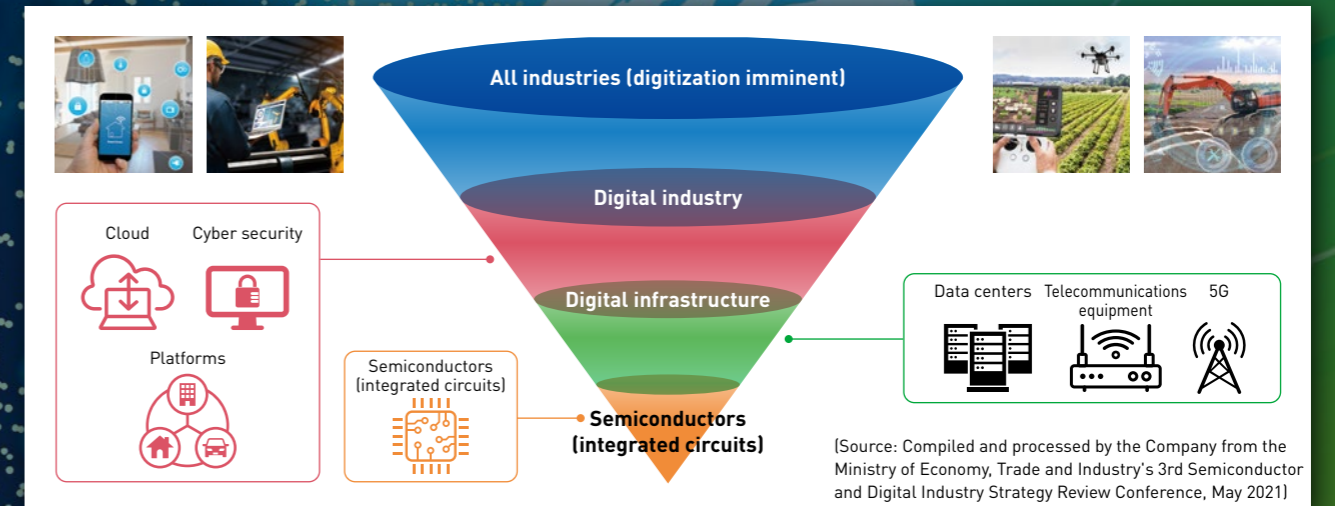
## Contributing to Digital Infrastructure Evolution with Two Types of Special Glass

The Nittobo Group offers a wide range of glass fibers for electronic materials with high strength, high elasticity, and low-dielectric properties. As electronic devices continue to become more advanced and compact, needs are becoming more sophisticated and diverse. With consistent quality, the Group is responding by producing the finest yarns in the world.

As special composition glass based on our proprietary technology, we offer two types of Special Glass. The first is NE-glass (low-dielectric and low dielectric tangent glass), which supports 5G high-speed and large-capacity communications and high-speed processing packages. The second is T-glass (high elasticity and low

thermal expansion glass), which is essential for high-density package substrates.

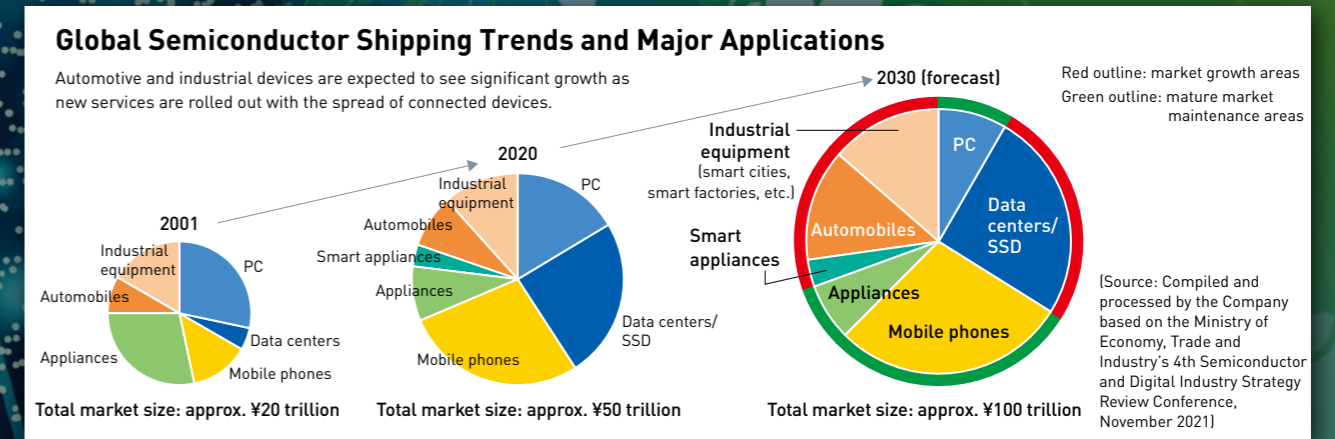
As we move toward the realization of a high-speed, large-capacity communications society, including 5G, the demand for cutting-edge, high-performance glass cloth to support the advancement of semiconductors and printed wiring boards is increasing further. We will continue to develop high-performance Special Glass with low-dielectric and low dielectric tangent, high elasticity, and low coefficient of thermal expansion (low CTE) to further accelerate the evolution of digital infrastructure.



## Semiconductor Market Growth by Major Application

Until recently, the semiconductor market was driven by growth in PCs and smartphones. Going forward, given the progress of digital transformation, the semiconductor market is expected to grow for data centers, the automotive field where EVs and automated driving

are becoming more widespread, smart cities, and industrial equipment markets related to smart factories, with the market expected to grow to approximately ¥100 trillion by 2030.



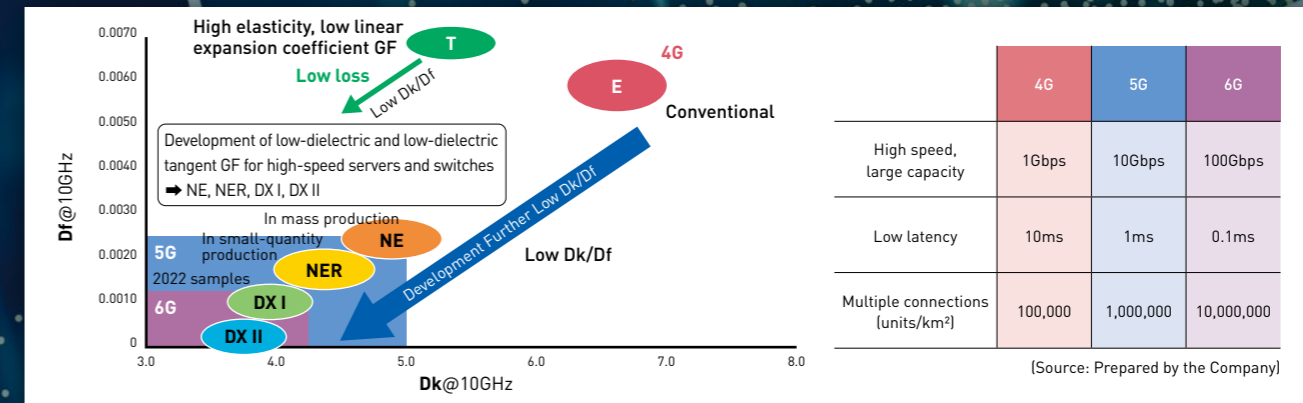
### Expanding the Applications of Special Glass

Applications are expanding for the Nittobo Group's Special Glass. This material is indispensable for logic and memory semiconductors, with significant growth expected for these mainstream areas of the semiconductor market.

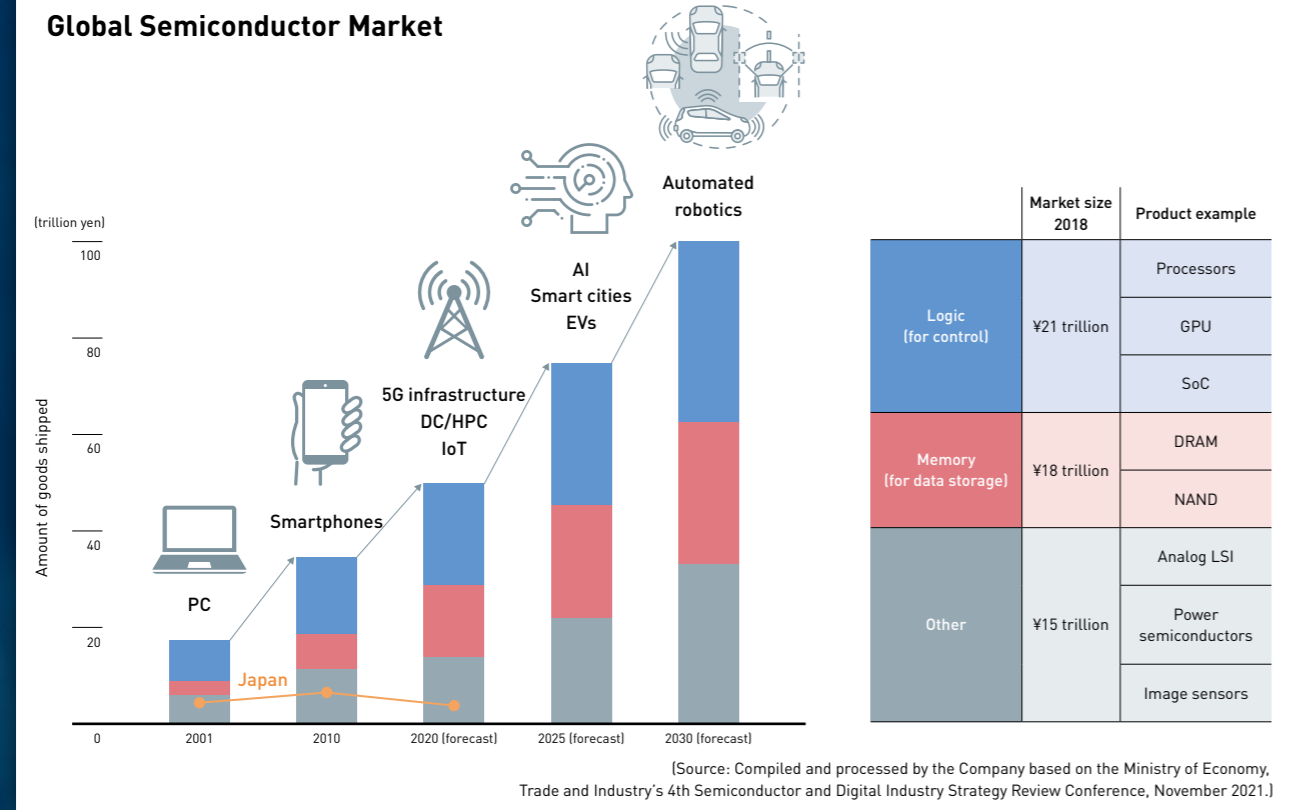
In the logic field, we are expanding into the fields of central processing units (CPUs) and graphics processing units (GPUs), which are becoming increasingly sophisticated in PCs and data center

servers, as well as digital communication modules required for the further development of 5G/6G and advanced SoCs (integrated circuits) that incorporate AI, which controls advanced driver assistance systems (ADAS) for autonomous vehicles.

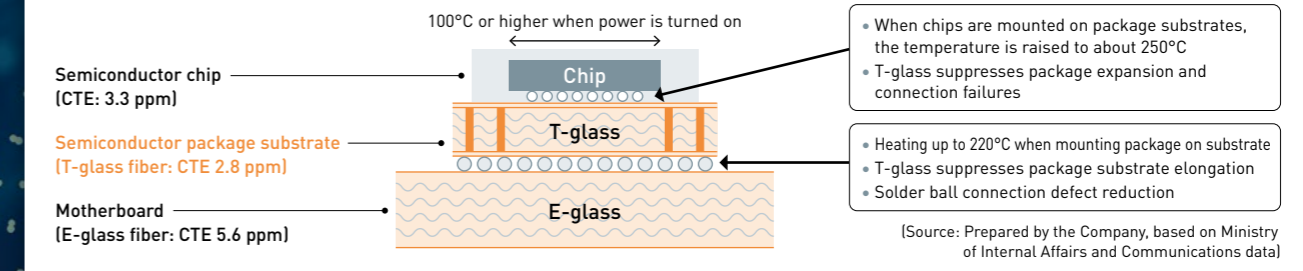
In the memory field, DRAM is being increasingly adopted, for use with CPUs and GPUs, along with NAND memory, which stores information even when the power is turned off.



### Global Semiconductor Market



### Glass Cloth Development Challenges



### Ultra-Thin Glass Cloth Development Roadmap

Finally, technology is trending towards thinner devices, which require super ultra-thin glass cloth. In all electronic devices, glass cloth must be super ultra-thin to the utmost limit. The Group is now mass producing 10- $\mu$ m cloths, as we work to further development of super ultra-thin glass cloth.

We are leading the semiconductor packaging field by adding super ultra-thin specifications that accelerate the miniaturization and high functionality of electronic devices to Special Glass, which

has the features of low CTE and low loss. The source of this strength is our integrated yarn and cloth production and our cooperative development system that integrates yarn and cloth research, development, technology, and production units.

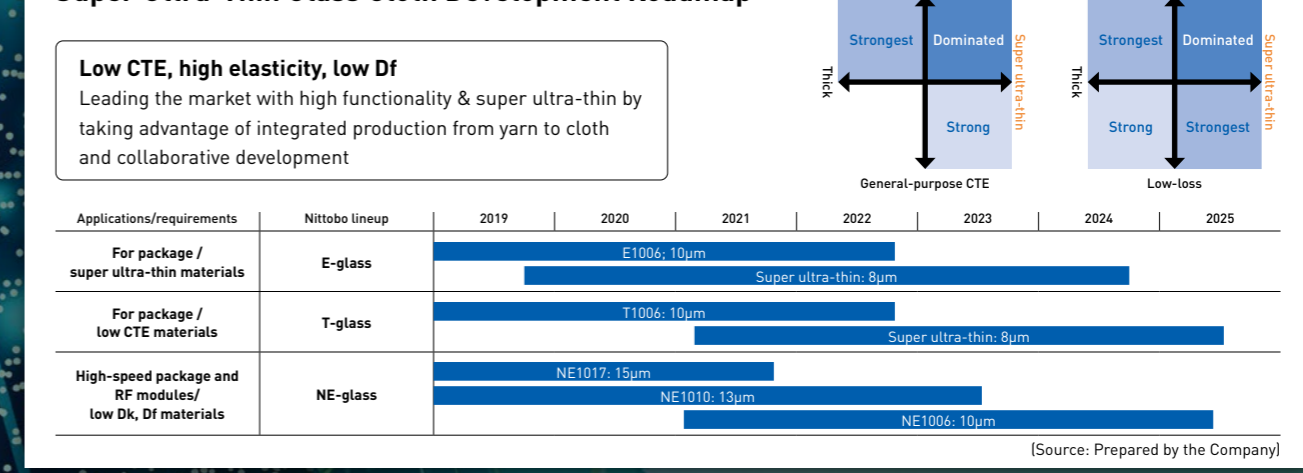
To realize ultra-thin glass cloth at the fastest speed in the world for the field while maintaining low CTE and low loss, we will advance R&D that will lead to market superiority while identifying growth areas from a long-term perspective.

### Special Glass Research and Development Roadmap

The Nittobo Group first developed NE-glass in the 1990s and has continued leading the industry as a pioneer in low-dielectric glass. High-speed telecommunications are now fundamental to supporting the Internet of Everything (IoE) in the 5G era. The growth of the motherboard market for network equipment requires support for 800GbE (112Gbps), which is twice the current speed. We have begun production of next-generation low-dielectric glass fiber to meet the 112Gbps speed. As transmission speeds continue to increase, we are developing state-of-the-art low-dielectric glass fiber with a low dielectric and a low dielectric tangent, and we plan to begin shipping small-batch samples of the next generation of low-dielectric glass fiber in 2022.

Demand for T-glass is growing as the characteristics required for semiconductor packages change. Semiconductor packages have been increasing in size, partly due to chipletization (a technique in which logic components are individually designed and manufactured as separate chips and combined like block toys to operate as if they were a single chip). The increasing size consumes more power, creating growing need for even lower CTE. In order to reduce transmission loss due to faster processing speeds, low dielectric tangent characteristics are also required to reduce transmission loss. The Group is embarking on research and development for the demand for low-dielectric loss in CPUs for high-performance servers such as AI servers and other ultra-high-speed processing.

### Super Ultra-Thin Glass Cloth Development Roadmap



## Glass Fiber Business



Pursuing global niche No. 1 through a corporate culture of proactive action and challenge

**Hisanobu Hayashi**  
Managing Executive Officer  
General Manager of the Glass Fiber Division

### Looking Back at Fiscal 2021

We recognize that fiscal 2021 was a year in which the market is returning to normal, compared to fiscal 2020, when the market was very disrupted by the COVID-19 pandemic. I think it is commendable that we were able to increase the sales volume of Special Glass, which is targeted for expansion in the medium term, and of some value-added products among composite materials. I think that profitability was depressed due to factors such as cost increases, rising logistics costs and energy price hikes that resulted in a slight decrease in the profit compared to the previous year.

We initially assumed that demand for Special Glass would pick up a little earlier, and we went about making the necessary preparations for production. Ultimately, however, demand failed to rebound as quickly as we had hoped.

### Aspirations since Becoming Division Head

I have been in charge of the Glass Fiber Division since April 2022. Since the medium-term direction of the Glass Fiber Division has already been clearly defined by the Company, I believe that what I need to do is to decisively move forward in that direction and speedily implement the various measures.

In the Mid-Term Business Plan, the Group's goal is to become a global niche No. 1 company and the world's No. 1 company with high sensitivity and value-added products. The Glass Fiber Division is developing specific initiatives to achieve these goals.

To remain No. 1 in our niche area, we must do the footwork to

obtain essential information and provide focused plans to customers based on the information gathered. It is not enough for us to passively listen to the market and our customers—we need to actively engage in a variety of activities with our customers and the market. In order to achieve this, each department within the Company must actively encourage other departments.

Nittobo must maintain a proactive attitude as an entire organization, not just in sales, but also in manufacturing and development as a whole. We will establish awareness and mechanisms that enable us to act with sensitivity to demand and customer requests, and to set priorities and act quickly in a consistent manner.

Demand for products for electronic materials tends to fluctuate widely, and when demand recovers, we often receive large orders from customers in a short period of time. The Nittobo Group has many niche and unique products, and if we cannot offer our products and solutions to our customers throughout such fluctuations, achieving our goal of being a Global Niche No. 1 company will not be possible.

We have been executing Special Glass growth investments for the past several years. One such example is the new factory of NITTOBO ASIA Glass Fiber Co., Ltd. (NAG). Although there were some difficulties in starting up the factory during the COVID-19 pandemic, we were able to start production with the warm support of the Taiwanese authorities and the local community, and by efficiently incorporating the technology and know-how that we cultivated in Japan. We will continue to make the necessary preparations for the future without being swayed back and forth by short-term waves of demand.

### Next-Generation Special Glass Development Status

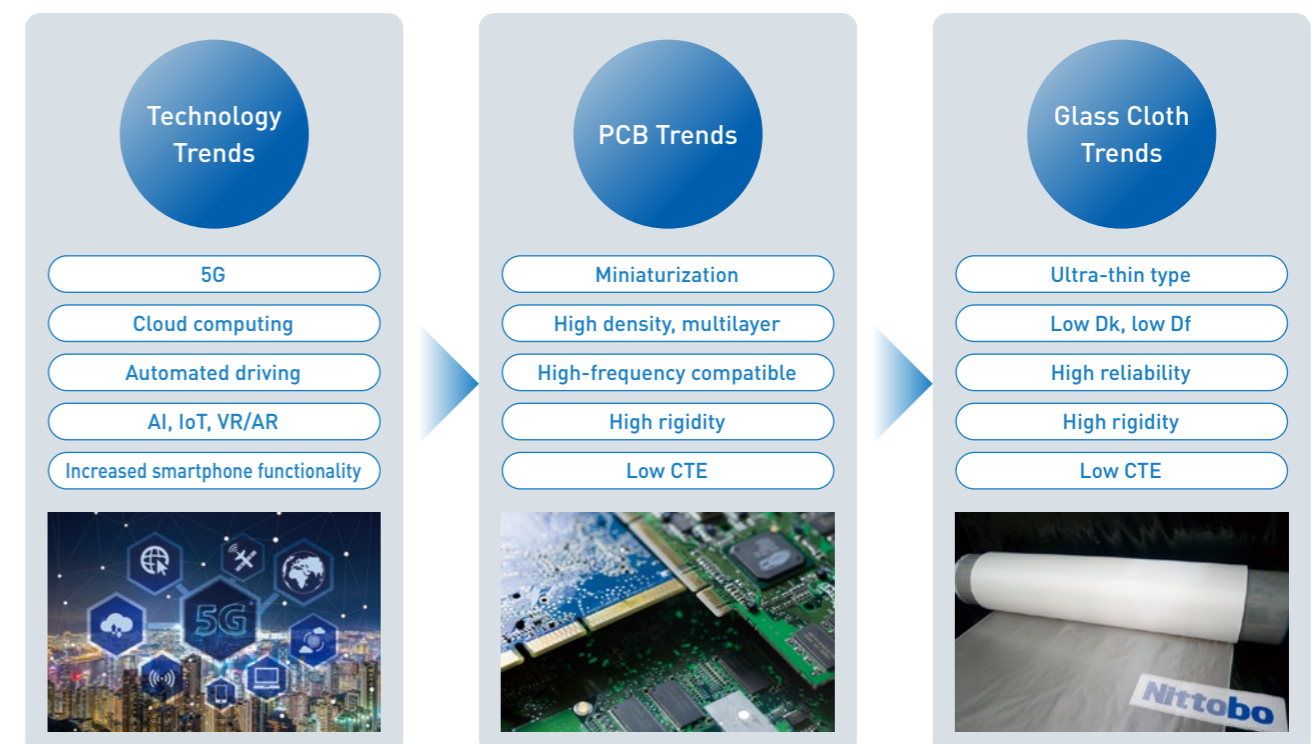
To create new products, we will work with the Research & Development Headquarters to accelerate our ongoing product development. In next-generation low-dielectric glass, we are proceeding in line with customer evaluations and the establishment of mass-production technology within the Group. The specifications for the next generation of Special Glass products are gradually becoming clearer as an issue for the Group to address as we receive customer feedback and understand market demand. We have decided to further integrate and merge the functions of the business divisions and the research institute through a change in structure in July 2022. In the future, we will create high value-added products by accelerating integrated operations with the Research & Development Headquarters.

### Efforts to Develop Human Resources Who Initiate Change as Set by the Mid-Term Business Plan

As I mentioned previously, I truly believe that proactive human resources are a fundamental ingredient for change. We need people who think for themselves and take action. Rather than a top-down culture, I believe that such human resources are best cultivated through the practice of taking on many new challenges in which each individual will gain new insights, and as a result, become someone who can initiate change. Since assuming office, President Tsuji has been committed to fostering an open corporate culture and, in addition to this, I would also like to work to foster this atmosphere of taking on new challenges.

I would like to allow young employees to try out their proposals even if this requires risk taking. Furthermore, we need to actively and intentionally develop our personnel rotation system for young and mid-career employees. By integrating diverse human resources in a thought-out manner, we can succeed systematically, step-by-step, in creating a mechanism and culture that allow individuals to take on challenges beyond their comfort zone.

### ▼ Glass Fiber Business Growth Opportunities (Electronic Materials Field)



Life Science Business



## Passionately creating a strong value chain by fostering human resources and promoting exchange

**Tatsuo Sakae**  
 Managing Executive Officer  
 General Manager of the Medical Business Division  
 President and Representative Director of NITTOBO MEDICAL CO., LTD.  
 Chairman and CEO of Nittobo America Inc.

### Focus on Strengthening the Value Chain and Localizing Operations

The Nittobo Group has developed in vitro diagnostic (IVD) reagents with one hundred testing parameters to determine health status from blood and urine. We have established a significant presence in immunological in vitro diagnostic reagents, and we are recognized in the industry as “Nittobo the Immunology Specialists.”

The most significant feature of the business model is the vertical integration of Nittobo America Inc. which develops, manufactures, and markets antisera, and Japan-based NITTOBO MEDICAL CO., LTD. (NMD) which develops, manufactures, and markets IVD products. In the diagnostics business, uniform

quality from lot to lot and ongoing quality control are key because the products are biologically derived. The Nittobo Group has built an integrated value chain starting from upstream processes, thus gaining the overwhelming trust of its customers. The expansion of the Life Science Business in a short period of time is thanks to this successful vertical integration.

To further strengthen vertical integration, we have invested in Rimco Corporation, which conducts research on genetically modified silkworms in the area of antigen development and antigen purification, the most upstream area of this business. We also acquired Frontier Institute Co. Ltd. for bioassay system development and antibody research. These acquisitions strengthened our antigen and antibody R&D capabilities. In order to further broaden the scope of IVD and accelerate the

speed of research and development, we established FAN Co., Ltd., a joint venture with FUJIKURA KASEI CO., LTD., a company which has strong research and development of raw materials for in vitro diagnostics, including latex.

In the upstream production of antisera, Nittobo acquired Capricorn Products, LLC on the East Coast of the United States (Maine), adding it to Nittobo America Inc.’s existing bases on the West Coast (California) and in the Midwest (Iowa), giving it three bases and an overwhelming share of the global market for goat-derived antisera. In addition, a factory is under construction in California that will expand the production space by 150% when it is completed in the second half of 2022. Downstream, we acquired Kamiya Biomedical Company, LLC, which has global regulatory approval know-how and a sales network in the U.S. IVD market, the largest in the world.

Antisera manufactured in the U.S. is made into final products at NMD’s factory in Fukuyama (Koriyama City, Fukushima Prefecture) and delivered to customers in the U.S. and Europe. Currently, plans are underway to establish a new diagnostic agent production facility in the U.S. We believe that establishing a system that can supply products of the same quality as in Japan will serve as an effective BCP measure against COVID-19 lockdowns and the situation in Ukraine. By strengthening our value chain and localizing our operations, we seek to become an indispensable presence for our customers.

In fiscal 2021, Nittobo’s Japan and U.S. businesses achieved results by collaborating on antigen purification. The U.S. has the capability to generate native antigens and the ability to do very patient, analog work. In contrast, Japan has the technology to do this digitally through genetic modification. This time, NMD’s R&D supported the antigen development conducted by Nittobo America Inc.

### Review of FY2021 and Forecast for FY2022

The IVD business has traditionally been considered resistant to changes in the state of the economy. However, the COVID-19 pandemic has significantly reduced the number of people visiting hospitals. This was particularly noticeable in the first quarter of fiscal 2020, when the number of visitors dropped by 50 to 70 percent from the previous year, leading to a severe performance result for fiscal 2020.

In fiscal 2021, sales in both domestic and overseas markets recovered to a level higher than before the COVID-19 pandemic. Overseas, in particular, we received orders exceeding actual demand as global companies moved to secure a stable supply of IVD in anticipation of a recovery in the market.

On the other hand, the tight labor market in the U.S. has led to a decline in the retention rate of factory workers and other field operators, while rising labor costs have been a concern

since fiscal 2021. Not confined to the Nittobo Group, the tight labor market is broadly impacting the U.S. manufacturing industry. In terms of raw material costs and logistics, prices of chemicals and other products are rising, and there are various negative factors to consider, such as the potential fallout from the situation between Russia and Ukraine on the entire European region. In fiscal 2022, we will accelerate the achievement of the goals set forth in the Mid-Term Business Plan and take on the challenge of further building the Nittobo brand to create a business model for independent sales in emerging countries while strengthening partnerships with major global players.

### Taking on the Challenge to Further Enhance Strengths of the Supply Chain

Human resources are the backbone of a strong value chain. We have started human resource exchanges to link management in Japan and the U.S. and bring the value chain closer together by fostering the human resources that will lead the future. With our vision for 2030, we will rotate human resources through the development, production, and sales areas based on backcasting, and build a system to cultivate the next generation.

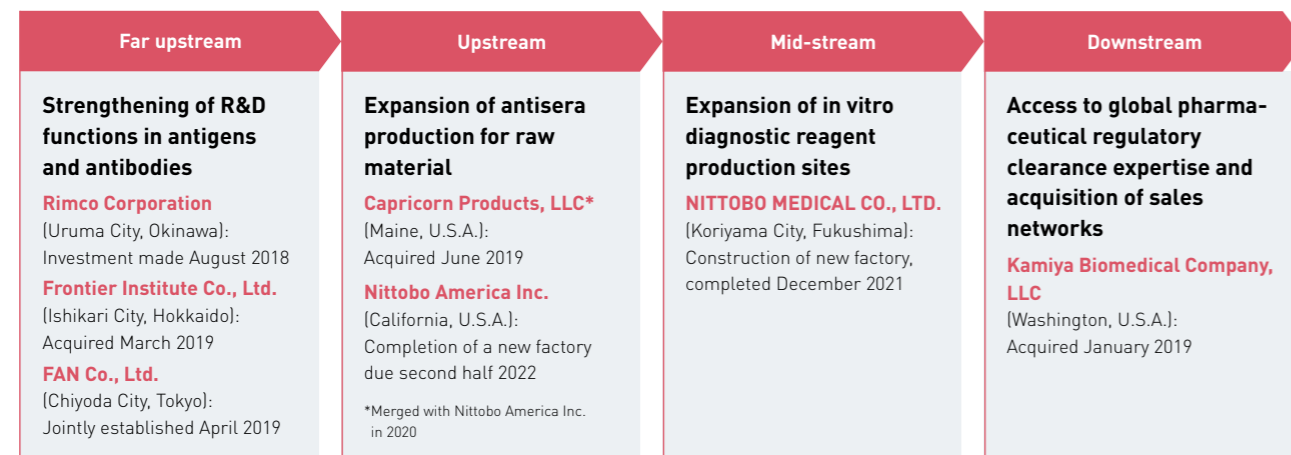
As part of these efforts, under the theme of proposals for the future, we have designed an event in which multiple teams of young employees make business proposals. I am very interested in seeing what kind of proposals will emerge, and we are considering incorporating the best proposals into the Mid-Term Business Plan. If we can achieve this, I believe our employees will become even more motivated, and I hope that the young employees who participate will grow into global human resources.

As a first step toward Japan-U.S. collaboration in the manufacturing field, we sent people from the factory in Fukuyama, Japan to Nittobo America Inc. to experience the manufacturing process in the U.S. We are now examining how to integrate and optimize the manufacturing of IVD in Japan with our understanding of antisera manufacturing in the U.S.

We have been building a value chain that leverages the strengths of vertical integration, and I believe that we are finally at the stage where we can start experiencing the benefits. We expect this to result in a very unique business model, even compared to the rest of the world.

The value of the Life Science Business has expanded dramatically. On its own, NMD was essentially regarded as an assembly company. Then we added Nittobo America Inc., which manufactures raw materials upstream, and these are refined and antigens are developed further downstream. By providing global distribution, Nittobo now extends throughout the entire supply chain. I believe our next challenge is to further solidify Nittobo’s supply chain strength.

#### ▼ Glass Fiber Division Growth Opportunities (Electronic Materials Field)



## Research & Development Headquarters



Create technologies that contribute to the realization of a society of symbiosis and coexistence by harnessing synergies across the entire Nittobo Group

### Kazuhiko Igarashi

Director, Managing Executive Officer,  
President of Research & Development Headquarters  
Head of Digital Transformation Strategy Office,  
Environment Technology Strategy Office

### A Vision for R&D Close to the Heart

I joined the company in 1990 and my first assignment was in a research center. Just a year later, however, as a result of structural reform following the burst of the bubble economy, that research center was temporarily dissolved, and I was assigned to the manufacturing division from my second year onward.

Manufacturing can build and optimize existing products, but I always felt the dilemma that new development and creation should be handled by research centers. After a while, I assumed the position of President of the Research & Development Headquarters in April 2022, and I feel that I am now at the starting line where I can actually realize what I have envisioned R&D should be.

R&D is now in a very difficult phase. One of the challenges we recognize is that the world is changing at a very rapid pace. The needs and demands on companies are changing dramatically from what they used to be. Another challenge is that it is becoming increasingly difficult for companies to meet these demands alone. Collaboration with other companies, academia, and government is becoming increasingly important.

For the Nittobo Group to fully realize its potential in this environment, we must promote research and development across business divisions. In line with this, the Research & Development Headquarters was established in 2017 as one of the pillars of the previous Mid-Term Business Plan. Then, in 2020, research and development began in the new NI-CoLabo building where researchers in three business fields can come together. However, I believe that creating synergies across business divisions remains a major issue to address in the future.

Little by little, changes are being made, and we will work on how to continue our progress in the future.

For example, in the specialty chemicals business, we were the first in the world to establish an industrial manufacturing process for polyallylamine (PAA®) and this sort of polymer technology is now being used in the medical in vitro diagnostic reagents business. In the glass fiber business, it is also applied to surface treatment agents for coating glass surfaces. In addition, through collaboration between the textiles and glass fiber business, we have started to develop the dot adhesive technology cultivated in interlinings into the Glass Fiber Cloth Business for industrial applications that could not be developed by the textile unit. We will continue to further activate and expand these efforts.

At the time of its establishment, the Research & Development Headquarters had a staff of 70, which has since grown to more than 130. The purpose of the expansion is to strengthen basic research and development for the next five to ten years. As one of our most important business, glass fiber is devoting resources to researching the composition of next-generation glass and fundamentally reviewing surface treatment agents, as well as to Materials Informatics (MI)\*, which is indispensable in advancing these efforts.

In the medical field, we aim to increase product variation so that we can expand the number of items tested by in vitro diagnostics for the immune system. In an unconventional approach to in vitro diagnostics, we are sending Group researchers to overseas university laboratories to conduct joint research. Currently, we are collaborating with more than 20 laboratories.

\*Materials Informatics: Efforts to improve the efficiency of materials development using informatics (information science) methods that utilize statistical analysis, etc.

### Special Glass Market Trends and Development of Glass Fiber

Special Glass will undoubtedly support the social infrastructure of 5G and 6G high-speed, large-capacity communications in the information society of the future. When I was head of the Glass Fiber Division, I predicted that demand would grow a bit faster. Progress has been slower than expected due to external factors such as the COVID-19 pandemic and trade friction between the U.S. and China. Furthermore, at this time, 5G is dominated by Sub6, a communication method using frequency bands below 6 GHz, an area where conventional 4G can be improved. NE-glass (a type of low-dielectric glass Special Glass), a Nittobo Group specialty, will become indispensable when millimeter waves in the 28 GHz band are used for 5G in Japan, and we believe that demand will grow at an increasing pace.

Customers have already started requesting samples for 6G. The Nittobo Group has developed NER, the next generation of NE-glass products, and is in the process of providing samples for certification. In addition, we have developed a series of next-generation products under the code names DX1 and DX2, and are simultaneously working on composition and development of glass with even lower dielectric and lower dielectric dissipation factor.

The direction of future development will be to seek the characteristics of glass plus the limits of thinness. In fact, glass cloths of less than 10 microns in diameter are starting to be used. Glass fiber has superior insulating properties, strength, ease of use, and cost. It is unlikely to be replaced by alternatives in the short term. As an effort to go above and beyond, we are conducting research and development through breakthroughs based on bio-solubility and an approach that integrates our pioneering flat fiber technology with irregular cross section fibers.

### Implementing Efforts to Embed DX in the Field

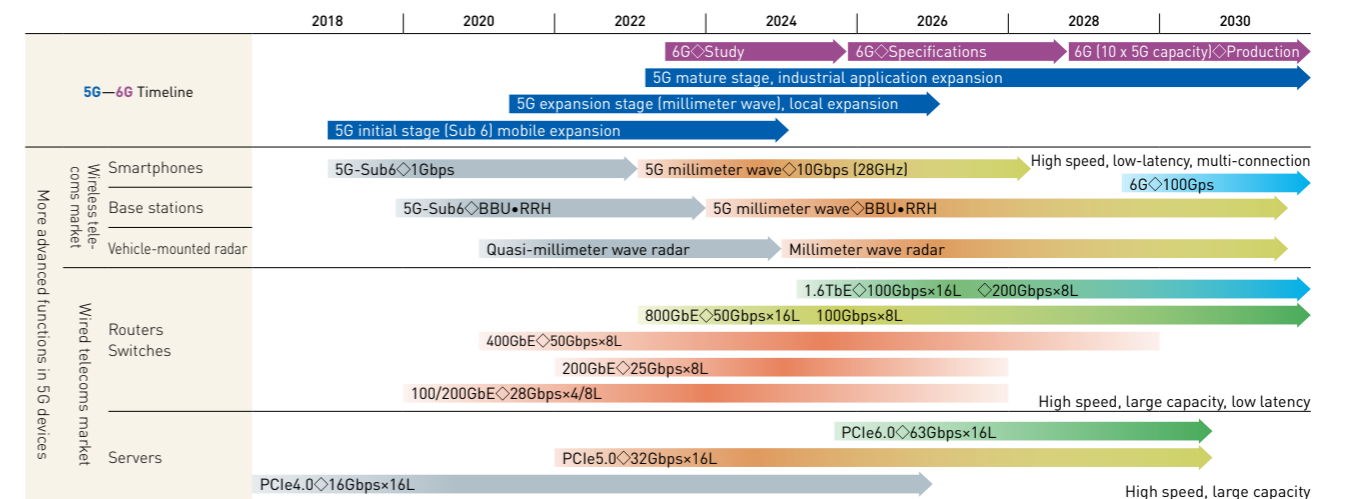
In 2021, the Digital Transformation Strategy Office was established under the umbrella of the Research & Development Headquarters to begin the use of digital transformation (DX) initiatives. In the first year, we undertook various educational activities to raise awareness of DX among employees, and training to develop data scientists and business translators as the first step in promoting DX. In fiscal 2022, we have designated model factories and assigned DX ambassadors to optimize the melting of glass melting furnaces as a DX-based improvement activity. By quantifying the craftsman-like instincts and wisdom of those in the field, the results of DX can be visualized and its effects realized.

### Realizing Big VISION 2030

Big VISION 2030 sets forth "Environment/Energy," "Digital Society," and "Health/Security/Safety" as the themes to which the Nittobo Group should contribute. The Nittobo Group's core competencies in glass fiber, medical, textiles, and other fields will make this possible. We will continue to promote research and development in the belief that the future of the Nittobo Group depends on how successfully we can combine our core competencies, which our customers rely on and value, to create further synergies.

We would also like to more fully transform into a company that coexists with the global environment and local communities by providing materials that improve the environment, by developing diagnostics that lead to healthy lives and contribute to early detection of signs of illness, and by being actively involved in social issues and the SDGs.

### ▼ Implementing the 5G-6G Roadmap



#### Products Supplied/Under Development by Nittobo

Low transmission loss (in mass production) → NE Ultra-low transmission loss → NER Next-generation super-low loss I → DXI Next-generation super-low loss II → DXII

[Source: Compiled by the Company based on Ministry of Internal Affairs and Communications materials]



# Glass Fiber Business

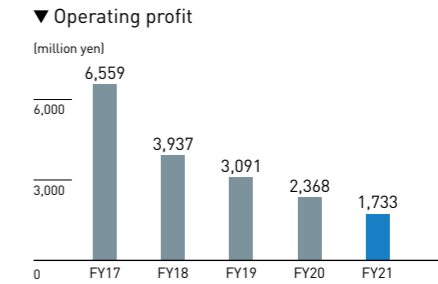
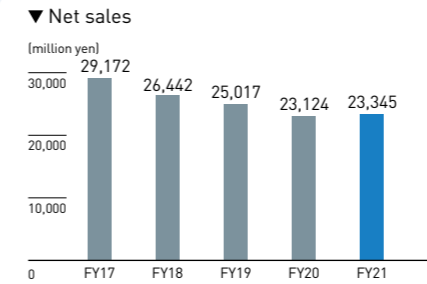
## Glass Fiber Yarn Business

**Business Description** The Glass Fiber Yarn Business manufactures and sells glass fiber yarn, as well as roving and chopped strands used as base materials of composite materials.

**Social and Environmental Contributions** The Nittobo Group's glass fiber contributes to thinner and more compact dimensions in electronic devices such as smartphones and to lighter weight in automobiles and aircraft.

### FY2021 Business Results

Although sales of composite materials for reinforced plastics were firm, profit decreased due to periodic repair of large-scale melting furnace in Japan and soaring raw material and fuel prices.



## Glass fibers for composite materials

### Strength

- Flat fibers (FF) are made with an oval shape cross-section to contain the warping and twisting of molded products.

Rovings and chopped strands are used in plastic reinforcement for a wide range of products, including casings for smartphones, tablets, and notebook PCs, along with helmets, automotive parts, bathtubs, and other consumer products.

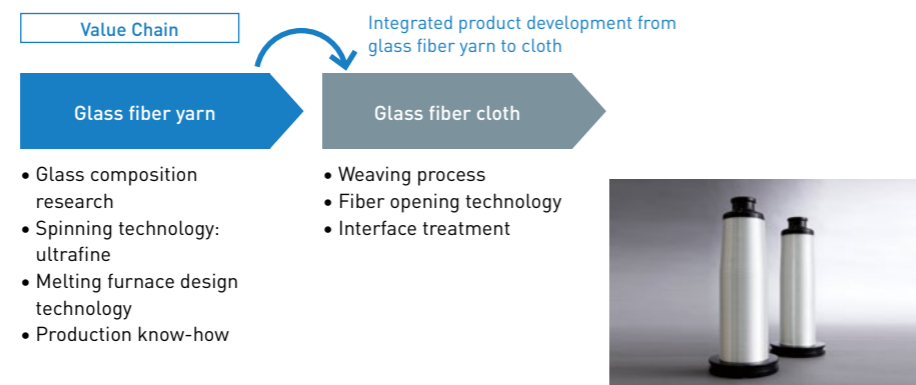


## Glass fiber yarns

### Strength

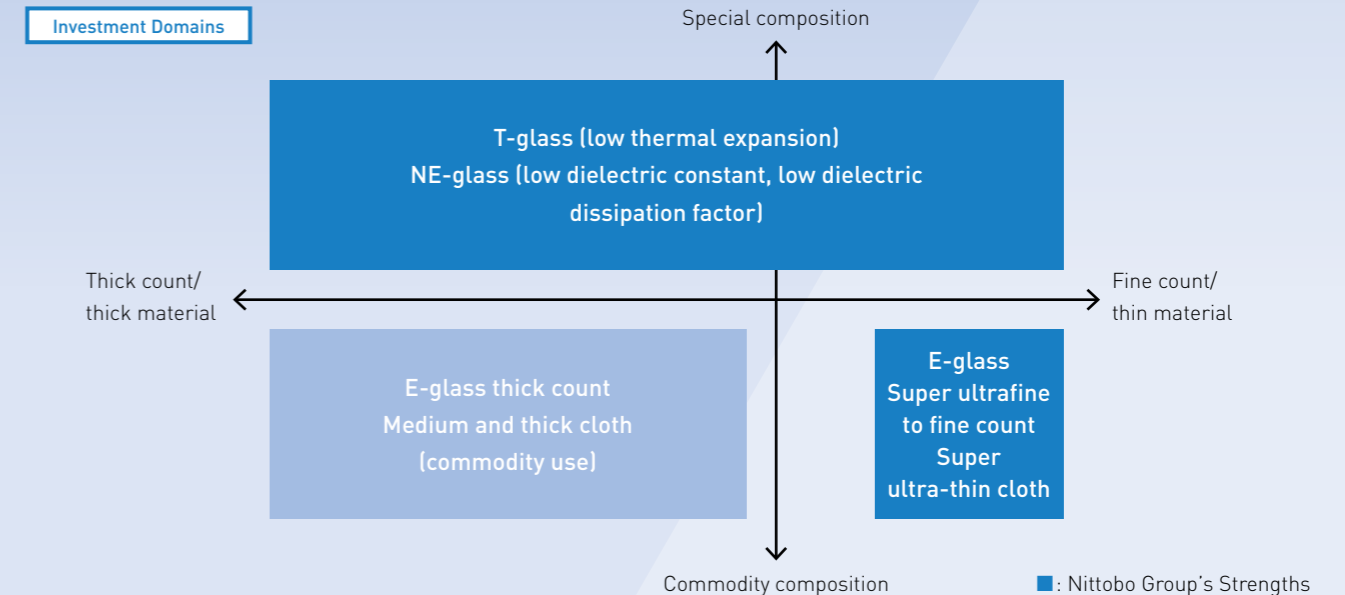
- Manufacturing technology for the world's most precise yarns (3.5µm)
- Development and manufacturing of special composition low-dielectric and low thermal expansion Special Glass

Two important properties of glass are insulation and heat-resistance. Glass fiber yarns processed into cloth have become indispensable as an electrical insulating material for printed wiring boards.



## Implementing Growth Strategies

We are focusing on increasing the production capacity and expanding the applications of high value-added products such as E-glass ultrafine yarn, T-glass, and NE-glass with special compositions by utilizing our technological strengths to meet the increasingly sophisticated needs of the market.



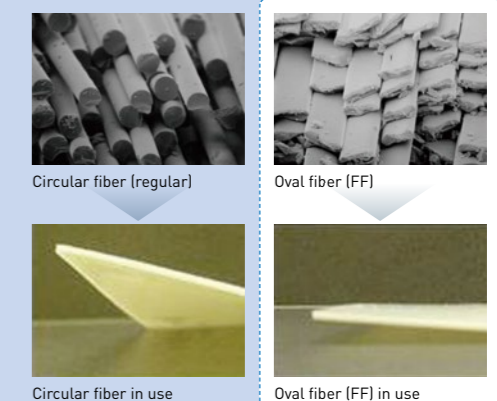
### FOCUS ON

## High Value-added Glass Fiber for Composite Materials: Flat Fiber

Chopped strands used in plastic reinforcing materials are glass fiber cut into small pieces, usually circular when viewed cross-sectionally. The Nittobo Group's Flat Fiber (FF) is a high-performance chopped strand with an oval-shaped cross-section developed with Nittobo's proprietary technology. Its cross-sectional shape forms a molding material that helps exhibit various useful properties as improving flowability, dimensional stability, and tensile strength. In terms of dimensional stability, it is effective in preventing warping and torsion of molded products, and is used for smartphone housings and automotive components.

Flat Fiber Characteristics	High flowability
High strength	Impact resistance
Surface smoothness	Dimensional stability

### Different Warp Levels of Composite Panels with Flat Fiber



# Glass Fiber Business

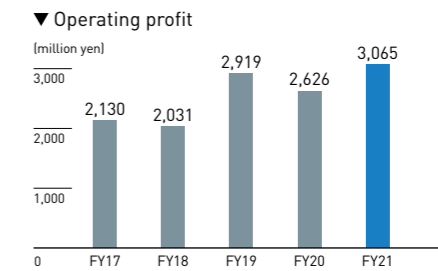
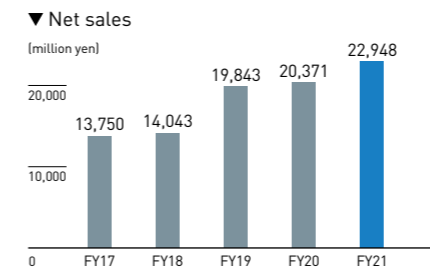
## Glass Fiber Cloth Business

**Business Description** The Glass Fiber Cloth Business produces glass cloth used as electronic materials.

**Social and Environmental Contributions** The Nittobo Group's Special Glass cloth is used as a low-dielectric substrate for electronic components, helping to realize high-speed, large capacity communications through 5G.

### FY2021 Business Results

Both sales and profits increased due to growth in sales of Special Glass cloth for electronic materials.

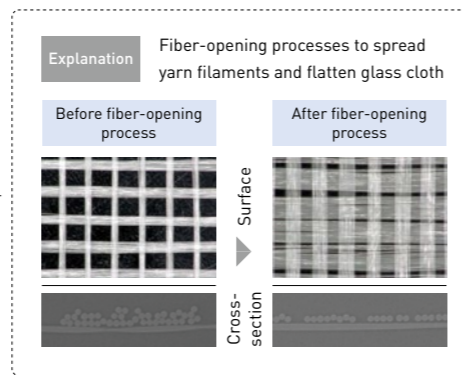


## Glass cloth for printed wiring boards

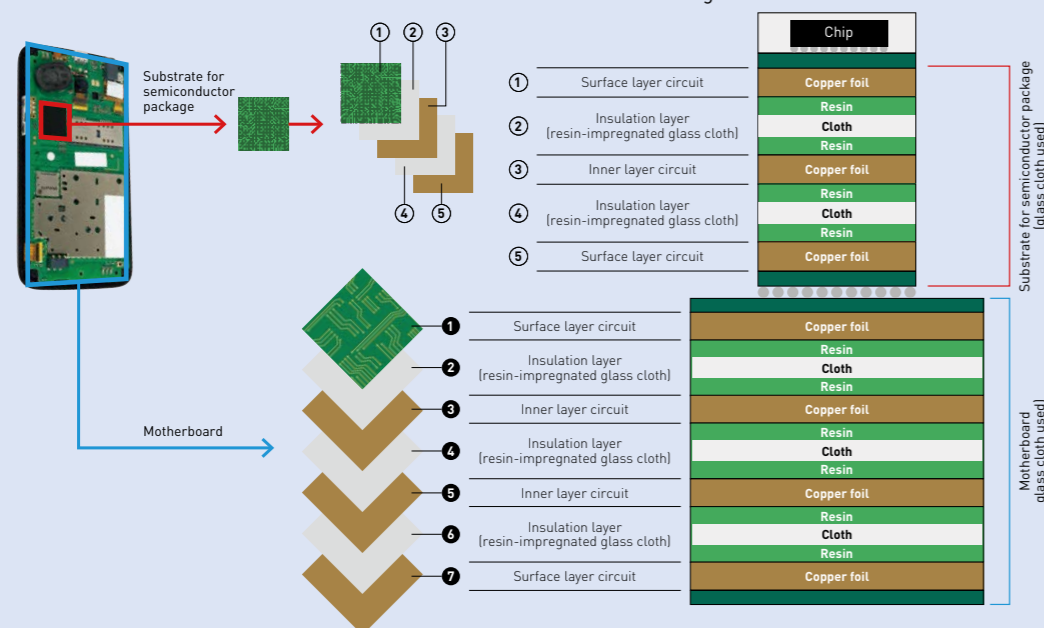
### Strength

- Technology for making ultra-thin glass cloth
- Spread-out technology to unravel strands in woven glass cloth
- High-performance binder technology

Glass cloth is widely used as material for printed wiring boards because of its superior electric insulation, heat resistance, and dimensional stability. Nittobo's ultra-thin glass cloth provides superior thinness and fiber distribution consistency, making it ideal for compact but highly functional electronic devices. Our Special Glass cloths are developed using unique compositions and feature low-dielectric constant and low-dielectric dissipation factor required in broadband communications, as well as low thermal expansion. These properties make our cloth a vital component of data center equipment, base stations, high frequency components, and semiconductor packages for servers and smartphones.



### Image of Glass Fiber Cloth Application



- Basic Requirements**
- Insulation
  - Reinforced substrate strength
  - Easy processing
  - Chemical resistance
- High-end Requirements**
- Low thermal expansion
  - Low dielectric constant/low dielectric dissipation factor

### Nittobo Special Glass

Progress is being made in the shift to 5G for high-speed telecommunications and in the expansion of data centers to handle ever-increasing data traffic. Nittobo's Special Glass contributes to the speed and functionality of electronic devices required for high-speed processing of vast amounts of data. With speed increases in consumer devices like smartphones and tablets in line with the improvement of global infrastructure, such as the expansion of data centers and installation of 5G base stations, we can expect increasing demand for low-dielectric NE-glass and high-strength, low thermal expansion T-glass.

**NE-glass/ No. 1**  
Reduce Transmission Losses with Low-Dielectric Properties

Used in data centers and base station switches and routers that process large amounts of information at high speeds, and in antenna in package (AiP) technology for 5G smartphones

	E-glass	NE-glass
Dielectric constant (1 GHz)	6.8	4.8
Dielectric dissipation factor (1 GHz)	0.0035	0.0015

**T-glass/ Only 1**  
High Strength, Low Thermal Expansion

Used in the semiconductor package substrate of high-performance servers and smartphones, which require high-speed processing and high reliability

	E-glass	T-glass
Thermal expansion coefficient ( $\times 10^{-4}/^{\circ}\text{C}$ )	5.6	2.8
Tensile elasticity (GPa)	75	86

### Types of Glass Fiber by Application

Applications	Equipment & parts	Substrate types	Material requirements	Glass fiber models		
				High-end models	Middle-end models	
Telecom/ infrastructure	Base stations Data centers Switches Routers Servers	Semiconductor package substrate	CPU/GPU	Low thermal expansion	T	E
			Memory	Low thermal expansion	T	E
		Motherboards	Motherboard substrate	Low dielectric, low dielectric tangent	NE	E
				Low dielectric, low dielectric tangent	NE/NER	E
Edge equipment	Smartphones Tablets Mobile PCs	Semiconductor package substrate	AP/CPU	Low thermal expansion	Ultra-thin T/T	Ultra-thin E
			Memory	Low thermal expansion	Ultra-thin T	Super ultra-thin E
			Low dielectric, low dielectric tangent	NE		
	Motherboards	Motherboard substrate	Low dielectric, low dielectric tangent	Ultra-thin NE	Ultra-thin E	
			Low dielectric, low dielectric tangent	Ultra-thin NE	Ultra-thin E	
	Wireless communications	RF package substrate	Low dielectric, low dielectric tangent	Ultra-thin NE	Ultra-thin E	
Desktop, laptop PCs	CPU Memory	Semiconductor package substrate	CPU/GPU	Low thermal expansion	T	E
			Memory	Low dielectric, low dielectric tangent	NE	E
Automobiles	Advanced driver assistance systems (ADAS)	Advanced system-on-chip	Semiconductor package substrate	Low thermal expansion	T	E
	Millimeter wave radar	Module board	Semiconductor package substrate	Low dielectric, low dielectric tangent	Ultra-thin NE	E

# Glass Fiber Business

## Glass Fiber for Industrial Materials Business

### Business Description

The Glass Fiber for Industrial Materials Business manufactures and sells glass wool as a residential heat-insulating material for industrial applications and glass fiber in the form of glass cloth and braided glass cloth for industrial and construction materials.

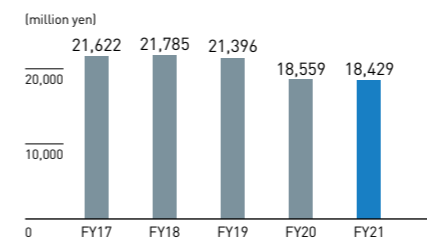
### Social and Environmental Contributions

Glass wool's use as a heat-insulating material contributes to the creation of an energy-efficient society, while its use of recycled glass as a raw material contributes to resource saving. Glass fiber is also helping to meet fuel efficiency and weight reduction needs in automobiles and aircraft.

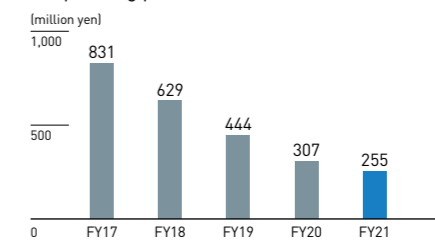
### FY2021 Business Results

Sales of heat-insulating materials for residence were firm, but sales of glass cloth for equipment and construction materials declined and were affected by soaring raw material and fuel prices.

#### Net sales



#### Operating profit



## Glass wool

### Strength

- Proprietary precision fiber technology for high insulating effect and energy-efficient housing
- Formaldehyde-free insulation for human-friendly housing

In 1949, the Nittobo Group became the first Japanese company to manufacture glass wool. Today, we remain a pioneer in the field with an extensive portfolio of proprietary technology. Glass wool is used widely as insulation material in residences and buildings, contributing to energy efficiency. Moreover, we make environmentally friendly products that contribute to resource recycling, as the raw materials include discarded bottles and glass windows.



Glass wool insulation



Glass wool board for interior finish

## Industrial-use glass fiber

### Strength

- High-strength, weather-resistant membranes using superfine glass fiber
- World-class broad-cut membranes

Industrial-use glass fiber has a wide range of applications, from membranes for large-scale buildings to vibration-damping materials for automobiles. Leveraging the lightness and fireproof properties of glass fiber, we continue to develop new applications in the automobile and aircraft industries to serve the demand for energy efficiency and lightweight materials.



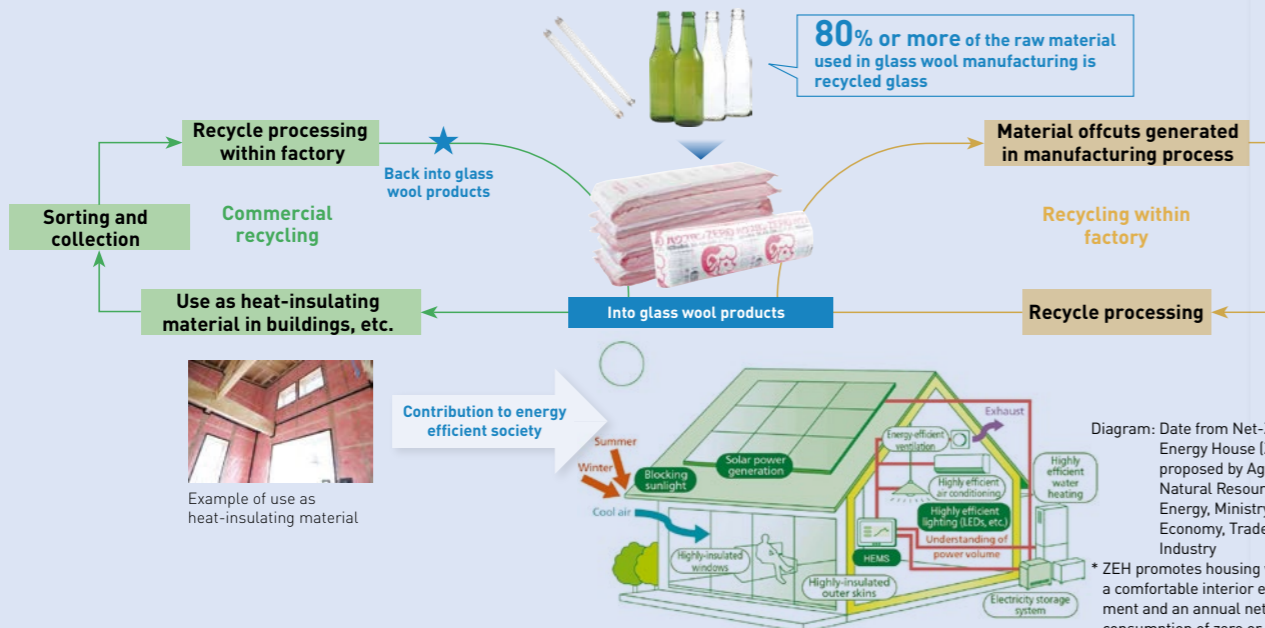
Industrial-use glass fiber (braided glass cloth)



Industrial-use glass fiber (broad-cut membrane)

### Recycling in the Manufacturing Process

Glass wool is a CFC-free heat-insulating material that does not use a CFC alternative. It is made with environmentally-friendly recycled glass using advanced technology and is a designated item under Japanese green purchasing legislation.



### Main Product Groups and Applications

Interior furnishings	Exterior furnishings
<p>Roll-up blinds</p> <ul style="list-style-type: none"> <li>• Light shades (illumination covers)</li> <li>• Surface cloths</li> <li>• Roll-up blinds</li> </ul>	<p>Tent films</p> <ul style="list-style-type: none"> <li>• Tent films</li> <li>• Back-lit signboards</li> </ul>
Automobiles and aircraft	Construction
<p>Vibration-damping materials</p> <ul style="list-style-type: none"> <li>• Automobiles</li> <li>• Aircraft</li> </ul>	<p>Coating film waterproofing</p> <ul style="list-style-type: none"> <li>• Concrete corrosion-proofing and reinforcement</li> <li>• External wall reinforcement</li> <li>• Coating film waterproofing</li> </ul>

### Application Examples

Membranes
<p>Transcosmos Stadium Nagasaki</p> <p>The translucence of the material allows for streamlined designs that are difficult to achieve with molded products</p>
<p>Other Major Applications</p> <ul style="list-style-type: none"> <li>• Bankwest Stadium (Australia)</li> <li>• Pacific Fair Shopping Centre (Australia)</li> <li>• Suvarnabhumi Airport (Thailand)</li> </ul>

## Life Science Business

### Business Description

Life Science Business manufactures and supplies in vitro diagnostic reagents and anti-sera, specialty chemicals products, and beverages.

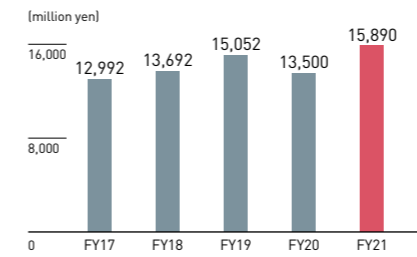
### Social and Environmental Contributions

The Nittobo Group promotes healthy and comfortable lifestyles for people around the world through the supply of in vitro diagnostic reagents, specialty chemicals products, and beverages.

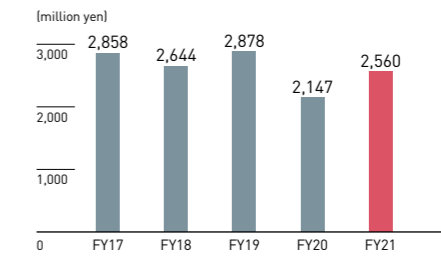
### FY2021 Business Results

The Medical business reported higher sales both in Japan and overseas, while the Beverage business posted improved sales and profits due to steady growth in volume of contracted beverage production.

#### ▼ Net sales



#### ▼ Operating profit



## Medical (In vitro diagnostic reagents)

### Strength

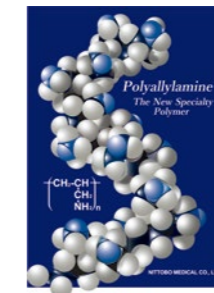
- An integrated production system from raw materials to finished products allows the Nittobo Group to stably supply a variety of high quality products
- The Nittobo Group has the top market share in Japan for a variety of items, such as inflammation biomarkers and an osteoporosis biomarker, while distributing more than 100 types of diagnostic reagent kits

In vitro diagnostic reagents are used for tests done on samples such as blood and urine that have been taken from the body to diagnose illnesses at health checkups and visits to doctors. These reagents are used to measure the levels of certain substances in the samples and are not used directly on the human body. Doctors refer to the results of these tests, performed in hospitals and commercial laboratories, to help determine courses of treatment.



## Specialty chemicals products

In the specialty chemicals products business, the Group engages in the development and sale of highly unique functional polymers such as polyallylamine and the polyamine series. We research, develop, manufacture, and sell highly unique products to customers with high entry barriers in a wide range of industry sectors, such as toiletries, papermaking, metals, electronic materials, and generic drugs.



### • Major Product Groups and Applications

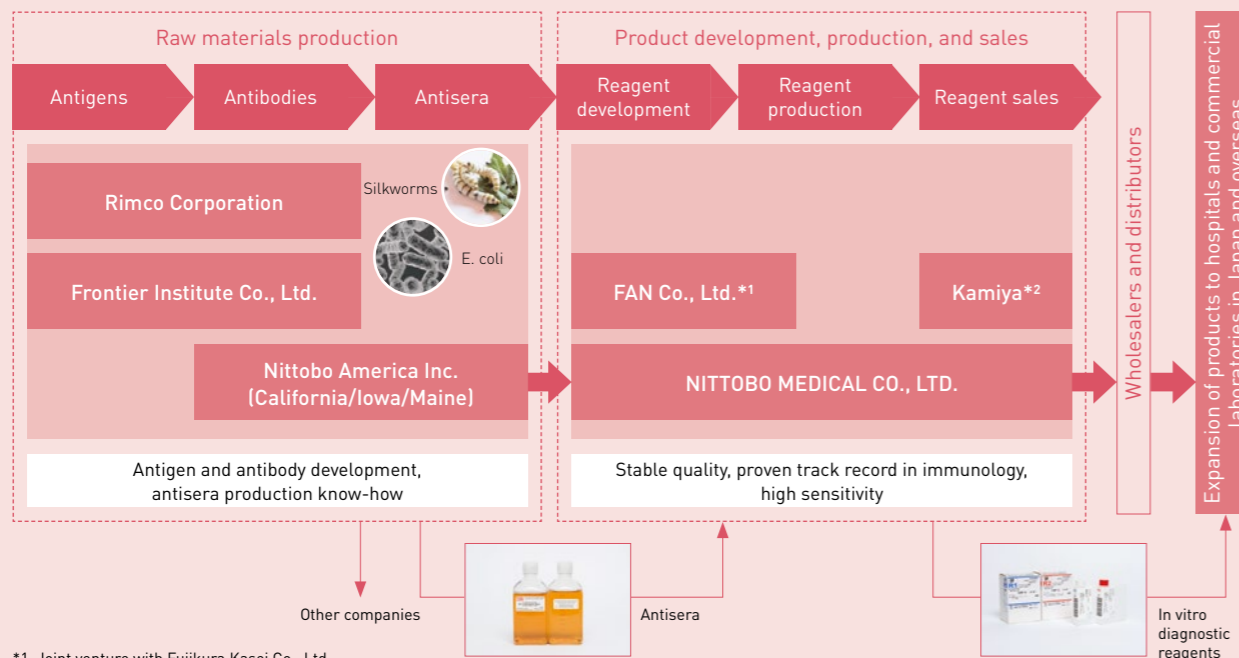
Auxiliary agents for metal processing	Surface-protective agent SSG®	Water treatment agents	Auxiliary agents for textile processing
<ul style="list-style-type: none"> <li>• Electrolytic plating</li> <li>• Acid corrosion inhibitor</li> <li>• Metal processing cutting oil additive</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-fouling</li> <li>• Anti-corrosion coating</li> <li>• Solid natural wood protection</li> </ul>	<ul style="list-style-type: none"> <li>• Wastewater treatment</li> <li>• Metal scavenger</li> <li>• Decoloring</li> </ul>	<ul style="list-style-type: none"> <li>• Dye-fixing</li> <li>• Friction fastness improver</li> <li>• Deep-coloring</li> </ul>

## Beverages

In the beverage business, we specialize in high-variety, small lot production to meet the needs of individual brand owners through OEM production of private brands. We pursue differentiation from competitors by meticulously following recipes and rapidly switching between product types.



### • Value Chain of In Vitro Diagnostic Reagents



\*1 Joint venture with Fujikura Kasei Co., Ltd.  
\*2 Kamiya Biomedical Company, LLC

# Textile Business

### Business Description

In the Textile Business, Nittobo manufactures and sells products closely connected to our daily lifestyles, including auxiliary materials for clothing, and more. Our adhesive interlining products command a large share in the high-end ladies' apparel market, and our Nittobo Dishcloth™ has been a consumer favorite for more than sixty years.

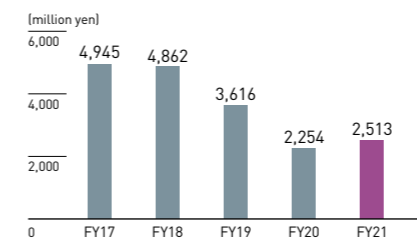
### Social and Environmental Contributions

In the Textile Business, we have enhanced the range of interlining products that are friendly to the global environment. The main items contributing to reduction of environmental burden are formalin- and fluorine-free interlining and sustainably produced interlining made with recycled polyester yarn and solution-dyed yarn.

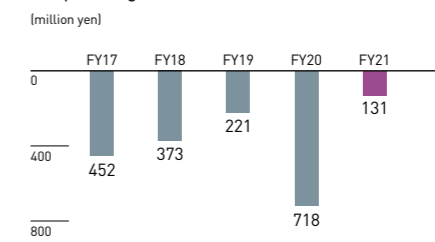
### FY2021 Business Results

Earnings improved as a result of higher sales due to increased outings and progress in structural reforms.

#### Net sales



#### Operating loss



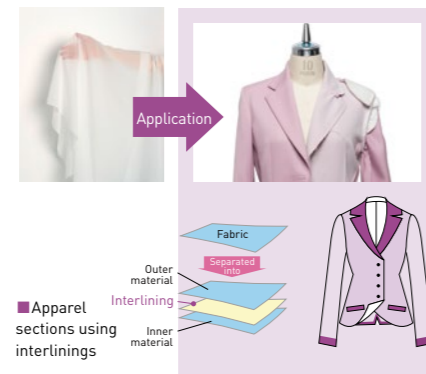
## Interlinings

### Strength

- Processing and adhesive technology to produce the world's thinnest, lightest interlinings
- Development of products with deodorizing, anti-bacterial and other functions, along with products reducing the environmental burden

Interlinings are an auxiliary material for clothing used between the outer and inner materials to retain and adjust clothing shape

#### Adhesive Interlinings

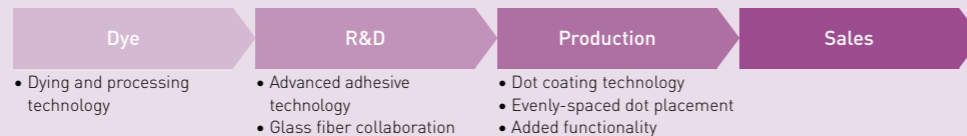


#### Innovative Fabric™

Innovative materials using adhesive technology



### Interlinings value chain



New

Bunkyo Seiren Co., Ltd.

Nittobo Advantex Co., Ltd.

### Developing New Applications

By utilizing adhesive technology, we will expand into both products for living- and industrial-materials.

#### Features of Adhesive Technology

Adhesion between different materials	Dot coating	Functional dots
Adheres to a wide variety of materials and firmly bonds different materials together	Small amounts of resin placed to achieve high adhesive strength 1g/m <sup>2</sup> of adhesive resin	Dot coating on functional agents. A variety of functions can be added at a high level. Can be coated with functional agents

Unique adhesive technology + Glass fiber & specialty chemicals collaboration = Market development and enhanced technologies to enter the fields of both living- and industrial- materials

## Nittobo Dishcloth™

### Strength

- Absorbent, smooth, and fuzz-free drying cloth
- No visible lint even after wiping clear glasses

Created through joint research with Kurashi-no-techo Co., Ltd., this is a long-selling product whose popularity stretches back over 60 years. In 2015, it received the Good Design Long Life Design Award.

The product meets the strictest requirements of Product Class I (for babies) under STANDARD 100 by OEKO-TEX®, Europe's most authoritative global standard for safety and security to certify the absence of regulated substances harmful to the human body. This product is recognized by international standards as safe for use on infant skin.



### FOCUS ON

## Environmental Response Connected by the Supply Chain: Achieved RCS Certification

Nittobo Advantex Co., Ltd. handles interlinings, everything from development to production and sales. In 2021, it received the Recycled Claim Standard (RCS) certification from Control Union Certifications, an international certification organization. RCS is an international certification established to promote and educate the public about environmentally-friendly textile materials. In addition to meeting the criteria of whether a certain percentage of recycled materials are used, the supply chain must be proven to be fully traceable and managed from the virgin or recycled materials to finished product.

After obtaining RCS certification, we are working with our raw material suppliers to obtain Global Recycled Standard (GRS) certification, which has even more stringent requirements. GRS sets higher standards for recycled raw material content, and also includes environmental and social considerations such as minimizing environmentally harmful substances, controlling working hours, and maintaining appropriate working conditions. Through our supply chain, Nittobo will provide products that our customers can use confidently, with transparency and proof of safety.

# Nittobo's Sustainability Management

The Nittobo Group is aware of its responsibilities as a corporate citizen and addresses ESG issues with the aim of "contributing to the realization of prosperous communities," a principle embodied in our corporate philosophy. We will contribute to society and continue our efforts to improve our environmental, social and governance (ESG) performance in order to enhance our corporate value and achieve sustainable growth.

## Sustainability Management Structure

The Sustainability Committee, established in April 2021, is chaired by the Representative and Chief Executive Officer and consists of the heads of business units, the President of the Research & Development Headquarters, the Executive Officer in charge of the Risk Management Department, the Executive Officer in charge of the Accounting & Finance Department, and the heads of major business locations. The Sustainability Committee meets quarterly, and important matters discussed and decided are reported to the Board of Directors for active discussion.



## Key Initiatives for Fiscal 2022

At the fourth meeting of the Sustainability Committee in fiscal 2021, the committee discussed the activity policy and priority initiatives for fiscal 2022 and decided on specific actions to be taken.

<b>Energy efficiency</b>	<b>Promote thorough energy saving</b> <ul style="list-style-type: none"> <li>Improve yield, strengthen technology, consider introduction of high-efficiency combustion equipment, etc.</li> <li>Company-wide expansion from glass fiber business to an all-employee initiative</li> </ul>	<b>Mindset reform</b> <ul style="list-style-type: none"> <li>Foster understanding and awareness of sustainability activities</li> <li>Increased sensitivity to detect business opportunities</li> </ul> <b>System creation</b> <ul style="list-style-type: none"> <li>Promote energy saving capital investment by introducing internal carbon pricing</li> <li>Active external communication to enhance corporate value</li> </ul> <b>Collaboration and cooperation</b> <ul style="list-style-type: none"> <li>Promote collaboration with local governments and other companies</li> </ul>
<b>Electrification and changing fuel</b>	<b>Electrification of gas furnaces and consideration of next generation furnaces</b> <ul style="list-style-type: none"> <li>Expansion of electric furnaces</li> <li>Implement electrification of gas furnaces</li> <li>Technical study of new furnaces with a view to fuel conversion</li> </ul>	
<b>Introduction of renewable energy</b>	<b>Installation of solar power systems</b> <ul style="list-style-type: none"> <li>PPA to install solar power generation at Fukuyama Enterprise Center</li> <li>Switching to renewable energy</li> </ul>	
<b>Product development</b>	<b>Developing environmentally-friendly products</b> <ul style="list-style-type: none"> <li>Further strengthen product planning and development</li> <li>Strengthen collaboration with customers to verify product strength</li> </ul>	

### Efforts to Address Environmental Issues

The Nittobo Group is addressing environmental issues in all its corporate activities and business development based on its philosophy of passing on the irreplaceable global environment to the next generation and developing it sustainably through the provision of environmentally friendly products and services and actions.

### Social Contribution, Human Resource Success, and Respect for Human Rights in the Supply Chain

The Nittobo Group respects the diversity and human rights of all stakeholders, including those in its supply chain. Through contribution to society, we will continue to be the "Best Partner" of all stakeholders and contribute to the realization of a prosperous society.

## Sustainability Committee Agenda for Fiscal 2021

1st Meeting	2nd Meeting	3rd Meeting	4th Meeting
<ul style="list-style-type: none"> <li>Set 5 task forces</li> <li>Shared basic information on decarbonization</li> </ul>	<ul style="list-style-type: none"> <li>Determined basic policy for CO<sub>2</sub> emissions reduction</li> <li>Considered endorsement of TCFD recommendations</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of a basic roadmap for CO<sub>2</sub> emission reduction</li> <li>Shared ideas on proposed CO<sub>2</sub> emission reductions</li> </ul>	<ul style="list-style-type: none"> <li>Summarized the year's activities and policies for fiscal 2022 activities</li> <li>Determined priority initiatives for each task force</li> </ul>

- The Sustainability Committee was newly established in April 2021 to share the vision and issues that the Nittobo Group should aim for throughout the Company and to start specific actions.
- We revised our CO<sub>2</sub> emission reduction targets for fiscal 2030, identified issues at our glass fiber production sites, and developed specific activities to reduce CO<sub>2</sub> emissions.
- In May 2022, we endorsed the TCFD recommendations and examined the risks and opportunities posed by climate change in all of the Group's operations.

## Basic Stance on Human Rights

The Nittobo Group recognizes the importance of international agreements such as the Universal Declaration of Human Rights, the United Nations Global Compact and the United Nations Guiding Principles on Business and Human Rights, and agrees with their concepts and respects human rights. Furthermore, we understand that we are required to fulfill our responsibility to respect human rights in all our business activities.

In light of this, we require our officers and employees to comply with international norms, local laws and regulations regarding respect for human rights in the countries and regions where we

do business. They must also refrain from any kind of harassment that violates rights; unfairly discriminates against any person in regard to gender, age, nationality, ethnicity, race, origin, religion, creed, social status, physical disability, sexual orientation or any other reason; or that gives offense to individual dignity.

In addition, we do not engage in child labor or forced labor for children who are not of working age as defined by the laws and regulations of the countries and regions in which we operate. We provide appropriate training to all employees in order to disseminate the above concepts.

# Initiatives in Support of the TCFD Recommendations

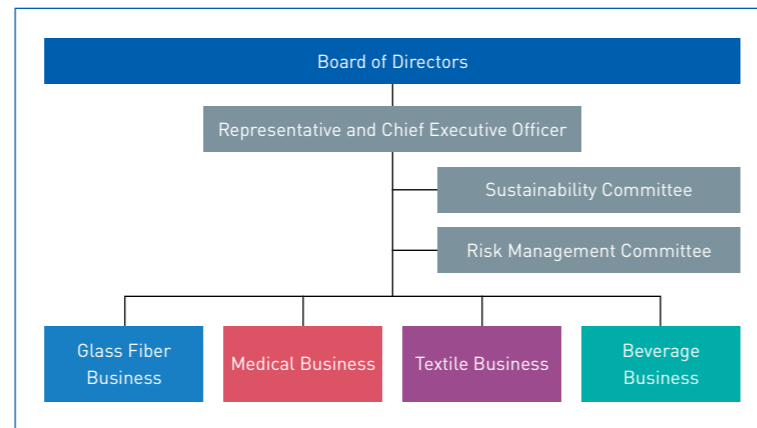
In May 2022, the Nittobo Group has endorsed the recommendations made by the Task Force on Climate-related Financial Disclosure (TCFD).

In line with the TCFD's recommendations, the Nittobo Group will disclose material information on climate change as follows.



## Governance

The Sustainability Committee, chaired by the Representative and Chief Executive Officer, was established in April 2021 as a body to implement the Nittobo Group's initiatives to address climate change. The Sustainability Committee meets every quarter to plan and manage the progress of activities, such as gathering information on climate change issues, assuming risks, formulating countermeasures, and promoting internal education and awareness programs. Important matters discussed and decided by the Sustainability Committee are reported to the Board of Directors for deliberation as necessary.



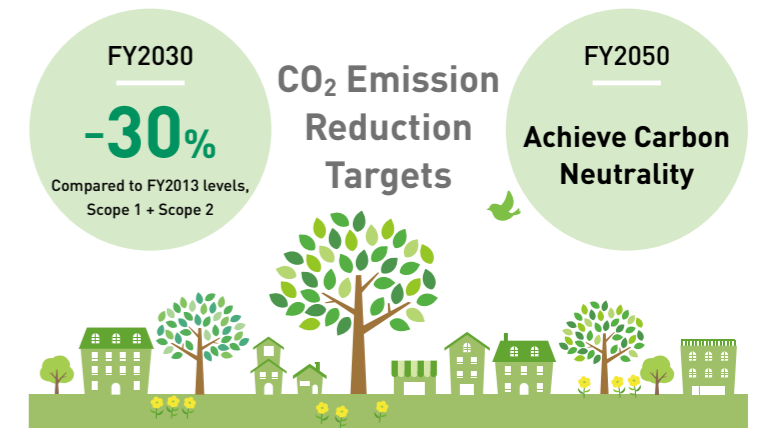
## Risk Management

The Nittobo Group's Sustainability Committee and Risk Management Committee are responsible for the planning and progress management of CO<sub>2</sub> emission reductions across the Group. In order to identify and assess the impact of climate

change on the Group's operations, climate change opportunities and risks are identified, analyzed, and addressed appropriately by the Sustainability Committee and Board of Directors, as necessary.

## Metrics and Targets

The Group has identified "supplying products and services that help resolve energy and environmental issues" and "adapting to climate change and a resource-recycling society" as important material issues. These are society-wide issues that we will focus on through our corporate activities, and we are working to reduce the burden of climate change and prevent global warming by improving productivity, carrying out energy-saving activities, using energy efficiently through recycling, and utilizing solar power. In order to achieve carbon neutrality by fiscal 2050, we will advance initiatives towards decarbonization through our supply chain through all possible measures.



## Strategy

We analyzed the impact of all Nittobo Group operations on climate change for the year 2030, with reference to scenarios drawn up by the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA), and other expert organizations.

The risks posed by climate change can be divided into those associated with transitioning to a low-carbon society (transition risks) and physical impacts (physical risks). Assuming a scenario

in which the average global temperature increase is less than 1.5 degrees Celsius or 4 degrees Celsius above pre-industrial levels, we have identified items that are likely to have a high impact with respect to each opportunity and risk. We will continue to review our action plans as appropriate in response to changes in the external environment and reflect them in such plans.

2050

### Social Changes

1.5°C scenario	
<b>Policies and regulations</b>	<ul style="list-style-type: none"> <li>Promotion and expansion of renewable energy</li> <li>Implementation of carbon taxes</li> <li>Stronger environmental regulations</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>Conversion to new energy sources</li> <li>Promotion and expansion of high-speed large-capacity communications</li> <li>Increased use of EVs</li> </ul>
<b>Market</b>	<ul style="list-style-type: none"> <li>Transition to a recycling-oriented society through decarbonization</li> </ul>
<b>Reputation</b>	<ul style="list-style-type: none"> <li>Increased demand for environmental measures from customers and investors</li> </ul>
4°C scenario	
	<ul style="list-style-type: none"> <li>Further rises in temperature</li> <li>Increased severity of disasters</li> </ul>

### Opportunities

- Market expansion (EV, communications, renewable energy, etc.)
- Increased opportunities for existing products (thermal insulation, heat shielding, etc.)
- Increased demand for environmentally friendly products
- Increase in sales of products related to thermal insulation, heat shielding, and national resilience

### Risks

- Cost increases (energy, taxes, raw materials, equipment, etc.)
- Restricted sales activities due to tighter regulations
- Decreased sales due to alternative technologies and products
- Procurement and operational risks, increased restoration costs

### Nittobo's Response

- Promote energy conservation, innovate processes, introduce new technologies
- Develop environmentally friendly products and raw materials
- Implement recycling
- Strengthen BCP and supply chain

## Scenario Analysis (Details)

Risk Scenario	Classification	Social Change	Major Opportunities	Major Risks	Nittobo's Response		
1.5°C	Transition	Policies and regulations	Expanded use of renewable energy	Increased demand for products for renewable energy-related businesses	Increased energy procurement costs	Develop environmentally friendly products Improve energy efficiency through energy conservation, process improvements, etc.	
			Introduction of carbon tax	Increased demand for environmentally friendly products Increased demand for existing products such as high thermal insulation and thermal barrier products	Increased costs due to carbon tax	Improve energy efficiency through energy conservation, process improvements, etc.	
		Technology	Stronger environmental regulations	Increased demand for environmentally friendly products	Usage restrictions due to tighter regulations	Develop environmentally friendly products Replace raw materials with environmentally friendly versions	
			Spread of low-carbon and decarbonization technologies	Reduction of CO <sub>2</sub> emissions and improvement of production efficiency through the use of new technologies	Increased costs from capital investment	Develop low-carbon and decarbonization technologies	
	Market	Market	Expanding use of high-speed, large-capacity communications	Increased demand for products that reduce CO <sub>2</sub> emissions	Intensifying competition due to alternative technologies and products, declining market share	Create higher value-added low-dielectric glass cloth Develop new technologies and products	
			Increased use of EVs and acceleration of fuel-efficiency	Increased demand for EV-related and lightweight products	Costs increase due to low-carbon and decarbonization measures	Create higher value-added glass fiber for vehicles Develop new technologies and products	
	Reputation	Reputation	Low-carbon society, decarbonization Transition to a recycling-oriented society	Increased demand for environmentally friendly products Increased demand for existing products such as high-insulation and thermal shielding products	Costs increase due to recycling implementation	Develop of bio-soluble glass fiber products Expand sales of insulation materials, roll screens, SSG, etc. and develop new products Utilize recycled yarn and develop of biodegradable fiber products Reduce waste through recycling Reduce raw material costs	
			Increased demand for environmental measures from customers and investors	Expand businesses that contribute to environmental responsiveness and improve reputation among investors	Cost increases due to environmental response requirements	Develop environmentally friendly products Promote environmental measures such as CO <sub>2</sub> emission reduction, recycling, etc.	
	4°C	Physical	Acute	Intensification of climate disasters (cyclones, floods, etc.) due to rising temperatures	Increased demand for products related to thermal insulation, heat shielding, and national land development	Difficulty in maintaining operations at manufacturing sites and increased disaster recovery costs	Strengthen BCP and supply chain, expand sales of products related to heat resistance, heat shielding, and national resilience, and develop new products
				Expansion of existing diseases and prevalence of new diseases due to rising temperatures	Increased demand for in vitro diagnostic reagents		High-value-added existing products/development of new products
Chronic			Intensification of disasters	Increased demand for products related to thermal insulation, heat shielding, and national land development	Impact on raw material procurement, plant operations, etc.	Strengthen BCP and supply chain	

# Environment

## Environmental Initiatives

The Nittobo Group is aware of the importance of global environmental problems, and we have developed a code of conduct specifying voluntary, proactive engagement in energy conservation, effective use of resources, pollution prevention, and other environmental conservation activities for the purpose of creating and maintaining a better environment, a requirement for business continuity. In accordance with this philosophy, we have established the Nittobo Environmental Charter and Company-Wide Environmental Policy and are striving for continuous improvement of the environment.

### Nittobo Environmental Charter

#### Guiding Principle

In all our corporate activities and business development efforts, we, the Nittobo Group, will contribute to handing down the irreplaceable global environment to the next generation and ensuring sustainable development by providing environmentally conscious products and services and taking the needs of the environment into consideration in our activities.

#### Action Guidelines

##### 1 Environmental protection

Aim at improving the environment continuously and coexisting with the local community by striving to reduce environmental impacts in a systematic way.

##### 2 Environmentally conscious corporate activities

Promote energy-saving, resource-saving, recycling-oriented, and environmentally conscious operations in all business domains in Japan and abroad.

##### 3 Compliance with environmental policy and voluntary management

Conform to laws and regulations in addition to other requirements and principles as well as stipulate voluntary environmental policy and management standards and work toward achieving them.

##### 4 Periodic audits

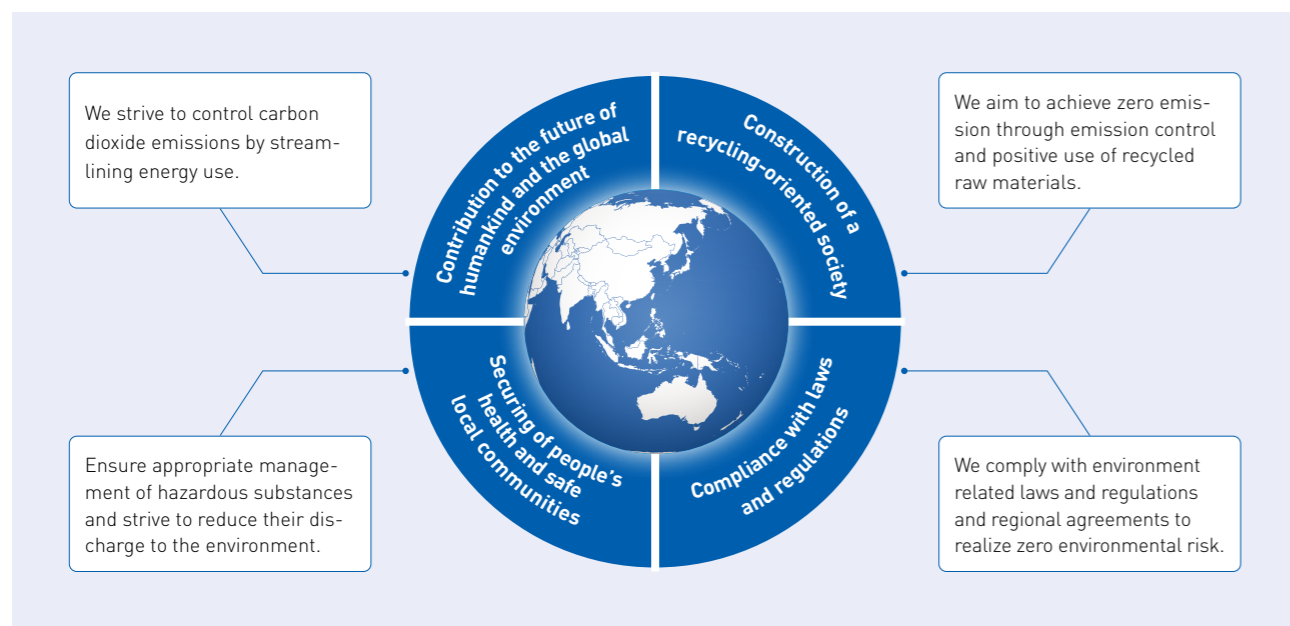
Conduct periodic environmental audits to verify the appropriateness of management standards and improve environmental and safety management to raise such standards.

##### 5 Training and education

Provide all employees with thorough environmental and safety training and raise their environmental and safety awareness levels mainly by making environmental and safety policies known to them, and strive to hand down the global environment to posterity

Established on October 1, 1998  
Revised on July 1, 2005

### Company-Wide Environmental Policy



### Environmental Impacts of the Nittobo Group

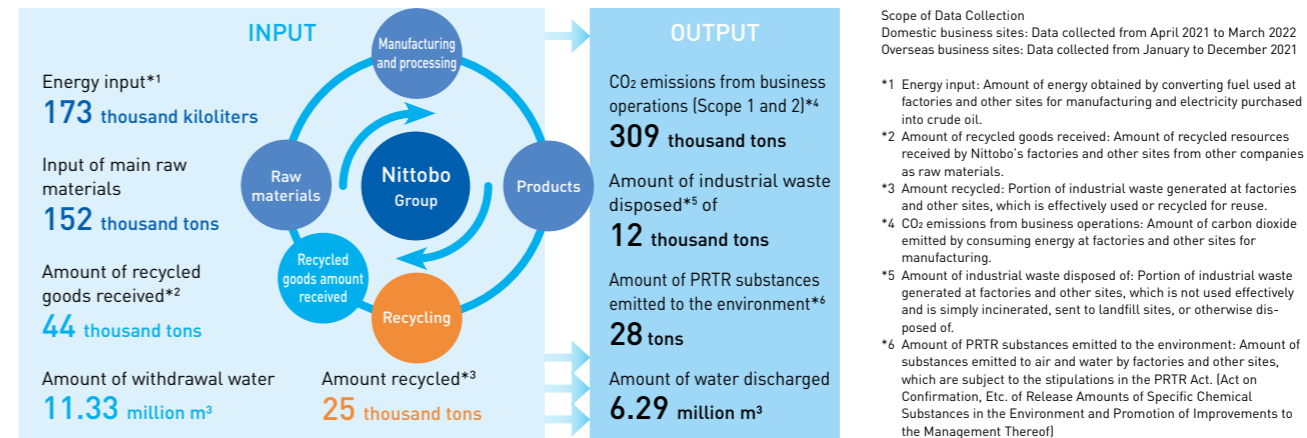
The Nittobo Group consumes fuel and electric energy to manufacture a wide range of products with natural resources and chemical substances as raw materials. Major environmental impacts include carbon dioxide generated as a result of energy consumption, chemical substances that are discharged to the

environment without being collected, and industrial waste. The Nittobo Group is striving to reduce environmental impacts by using resources in a reasonable way while taking the needs of the environment into consideration.

#### ▼ Results for Fiscal 2021

The Nittobo Group conducts an environmental protection survey for its consolidated subsidiaries once a year.

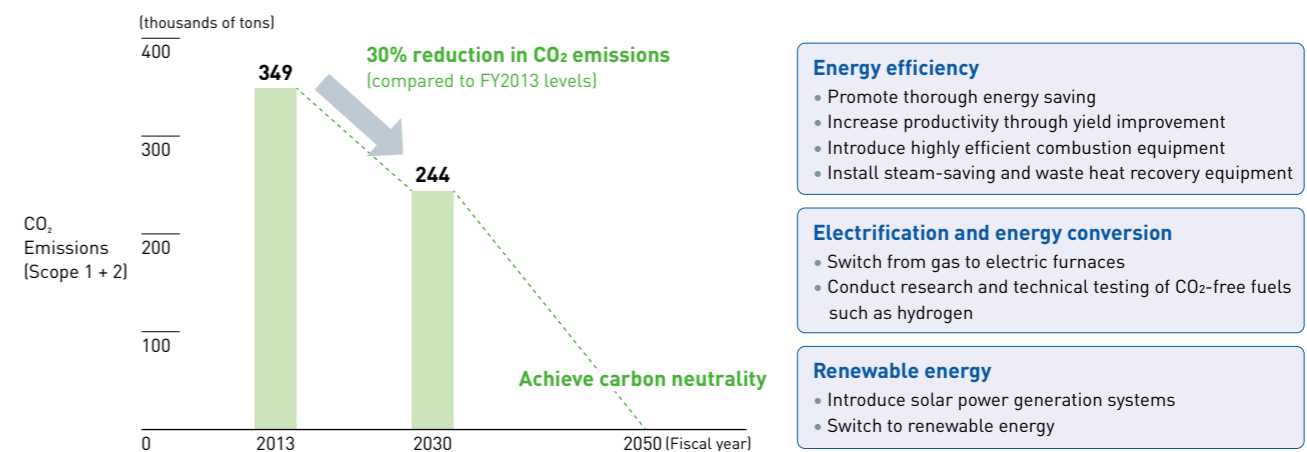
The material balance shown in the figure below has been obtained by collecting data from Nittobo and its consolidated subsidiaries in Japan and abroad on environmental impacts. (Data on certain items are not collected from some overseas business sites.)



### Initiatives to Reduce CO<sub>2</sub> Emissions

When the Nittobo Group formulated Big VISION 2030 and the Mid-Term Business Plan (FY2021–2023), we set a total CO<sub>2</sub> emission reduction target of 8% (compared to fiscal 2013). Since then, we decided to raise the target to 30% in light of the subsequent COP26 and the Japanese government's new reduction

target for fiscal 2030. The decision was based on discussions undertaken by the Sustainability Committee. In addition, we have set the new target of achieving carbon neutrality by fiscal 2050, and are implementing initiatives to contribute to decarbonization throughout our supply chain.



#### FOCUS ON

### Introducing Renewable Energy

The Sustainability Committee has formed a task force to study the introduction of renewable energy sources in order to become carbon neutral by fiscal 2050. In fiscal 2021, we installed a solar power generation system at the Naganuma Factory of our wholly owned subsidiary, Paramount Glass Manufacturing Co., Ltd. The new system is capable of generating 621 MWh of electricity per year, and all the energy generated is used at the factory. As a result, an annual reduction of 325 tons of CO<sub>2</sub> emissions is expected. This switchover also helps reduce energy costs. The Group will gradually install solar power systems at other factories to achieve its goal of reducing CO<sub>2</sub> emissions.







### Development of New Environmentally Friendly Products

We will contribute to the reduction of environmental impacts through our business by making full use of the Nittobo Group's technological capabilities and product knowledge.

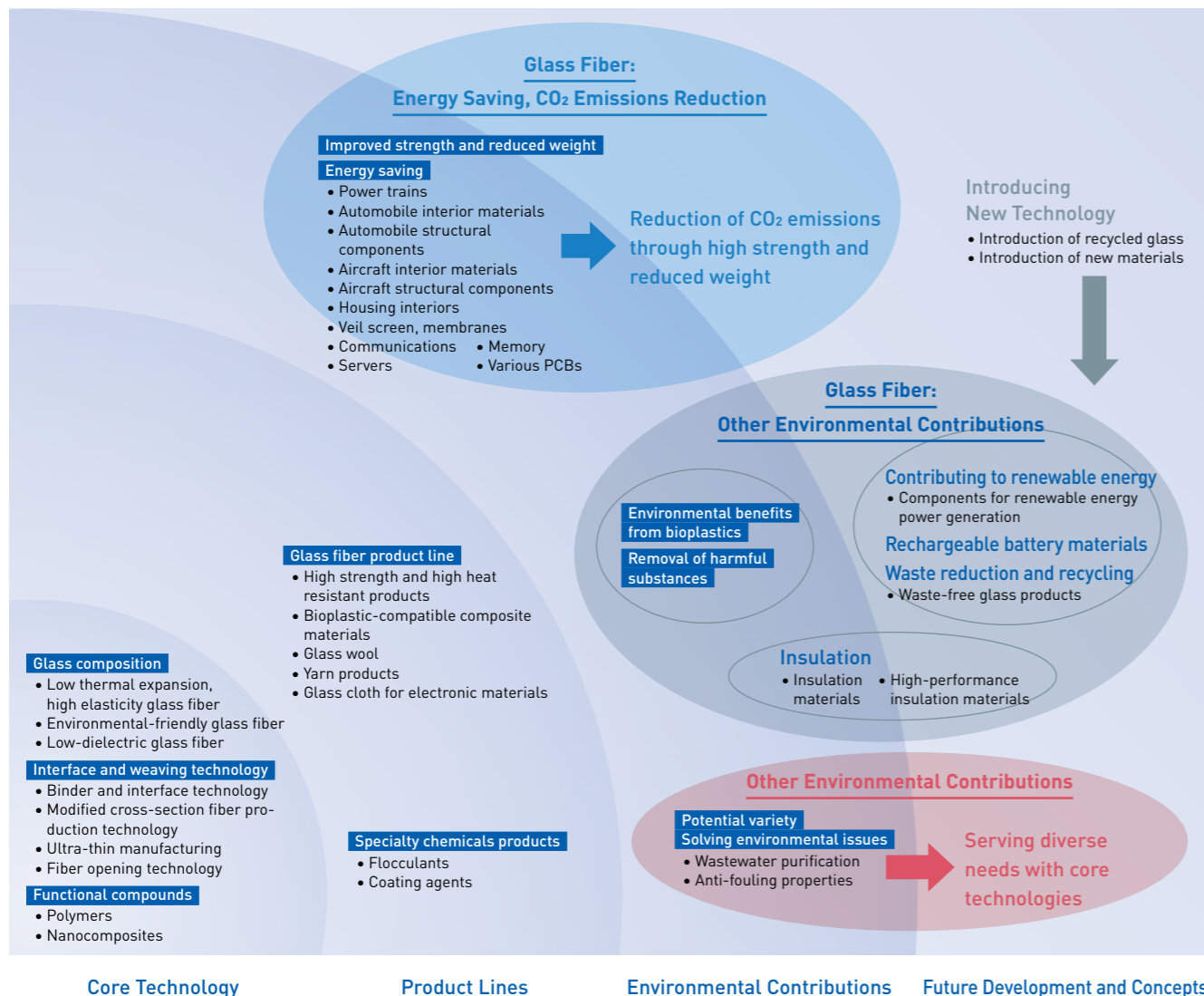
#### Environmentally Friendly Products: High-Performance Insulation

Paramount Glass Manufacturing Co., Ltd., a Nittobo Group company, manufactures and sells glass wool insulation used in homes and other buildings. Insulation is a material that contributes to energy saving by preventing outdoor heat and cold from flowing into rooms and by improving the effectiveness of indoor heating and cooling.

To strengthen measures to prevent global warming, the Act on the Improvement of Energy Consumption Performance of Buildings (Building Energy Efficiency Act) was enacted in 2015. Since then, revisions have been made to expand and add content. As of 2022, all new home construction must conform to the highest conventional insulation grade by 2025. Thus, there is an

increasing need for insulation with improved performance and even higher thermal insulation ratings have been established.

To address this situation, we are pursuing high-performance insulation materials. While maintaining the inherent fireproofing, high durability, and low CO<sub>2</sub> emissions qualities found in the life cycle assessment (LCA) of glass wool insulation, we have developed products with insulation performance superior to that of other materials that will meet the newly established high thermal insulation ratings. High-performance insulation materials can be expected to improve insulation performance by approximately 30% compared to conventional glass wool insulation.



## Social Harmonious Coexistence with Communities

Each of the Nittobo Group's business sites seeks harmony with society and engages in various activities with the aim of growing and developing together with its host community.

### Community Beautification Activities



Omori River bank weeding



Beautification of the Kuroiwa area

The Nittobo Group's business sites regularly participate in community beautification activities such as weeding and flower planting organized by the community.

### Support for Regional Vitalization and Sports



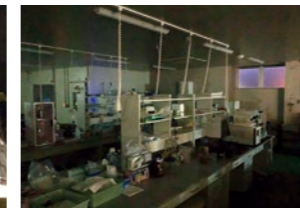
Image courtesy of Fukushima United Football Club

The Nittobo Group serves as an official club partner of Fukushima United Football Club, a J.League football team that is active around the country with the aim of supporting the development and regional vitalization of Fukushima through sports.

### Resource and Energy Saving Activities



Lights turned off at the NI-CoLabo Research & Development Headquarters and Nittobo Medical Laboratory



The Fukushima Prefecture 2050 Carbon Neutral Map was formulated by the prefecture to work together with local residents and businesses to conserve energy and resources. The Nittobo Group participated in the Fukushima Lights Down Challenge, an event to reduce usage during the summer season when demand for electricity increases, by turning off lights whenever possible at its business sites in Fukushima Prefecture. The program is designed to raise awareness of the need to save energy and reduce greenhouse gas emissions by encouraging employees and households to turn off the lights.

### Community Contribution



Directing traffic in front of the main gate for elementary students on their way to school



Green pavement in front of the main gate

Once a month, the Fukuyama Enterprise Center provides traffic guidance to employees and nearby elementary school students on their way to school. The area in front of the main gate is a pedestrian route for elementary and junior high school students, and green pavement has been installed to contribute to the community.

### Support for Education



On site environmental course (Fukushima Factory)



Children's science class (Fukuyama Enterprise Center)

The Fukushima Factory holds on site environmental learning every year to increase interest in science and the environment among the children who will become tomorrow's leaders. The Fukuyama Enterprise Center has held children's science classes since fiscal 2012. Other factories have hosted plant tours for students and other visitors as well.

### Community Contribution



Illumination of the main gate of Fukuyama Enterprise Center

In Koriyama City, Fukushima Prefecture, an illumination event is held during the year-end and New Year's season to brighten up the city. Illuminations are not only a beautiful winter tradition, but also help to prevent crime, so the front gate of the Fukuyama Enterprise Center is festively decorated with lights, making it a source of enjoyment for local residents.

Nittobo Group will comply with all laws and regulations and will establish safe and pleasant working environments based on the understanding that the safety and health of its employees is the foundation of its business operations.

Course of Action

- 1 Establishment of a Safe Workplace Environment**  
Perform a risk assessment to remove and decrease hazardous and harmful factors and invest in necessary management resources to maintain and improve our safe and healthy working environment.
- 2 Promote Health Maintenance**  
Proactively assist in the maintenance and promotion of the health of our employees both mentally and physically by establishing a pleasant workplace in which they freely and willingly exchange opinions, and prevent harassment or excessive workload at the workplace.
- 3 Compliance and Management of Labor Policy**  
Comply with laws, regulations and other standards regarding safety and health and to set our own environmental policies and management standards.
- 4 Implementation of Periodic Inspection**  
Seek to examine and improve safety and health control systems and to enhance such control standards through the implementation of periodic safety and health inspections.
- 5 Education/Enlightenment**  
Create safe and healthy working environments across our organization by thoroughly providing all of our employees with safety and health education and to understand safety and health guidelines.

Established on July 1, 2017

Examples of Safety Initiatives

Response to Major Disasters

The Nittobo Group manages risks to mitigate the potential impact of disasters, accidents and other events. To ensure the safety and health of employees is the basis of business management,

committees at each business site conduct activities to promote legal compliance and to create safe and pleasant working environments. BCP training attended by Officers and earthquake and fire response drills are also conducted on a regular basis.

Basic Policy on Responding to Major Disasters

- 1** Prioritize the safety and wellbeing of employees and their families.
- 2** Where possible, continue to conduct critical business operations, such as supplying useful products, technologies and services. If business operations are halted, aim to restart as soon as possible.
- 3** Appropriately manage the risk of business disruption and minimize the impact on business management.
- 4** Cooperate with local residents and surrounding local governments as a good corporate citizen.
- 5** Regularly update BCPs and conduct drills to verify effectiveness (annually).



BCP training drill

Safety and Health

To create a safer and more secure workplace, the Nittobo Group is implementing initiatives such as safety and health inspections and fire risk assessments at every business site, as well as making information on safety activities and disaster examples available within the Group.

Major Initiatives for FY2021

Initiative	Description
Workplace Safety and Health Assessment	Business divisions and headquarters departments conduct objective evaluations of health and safety activities in terms of condition, behavior, and awareness. By working to improve the indicated items, the business sites are taking steps to standardize and improve safety management across the Group.
Business Site Fire Risk Assessment	We are working to prevent fires by assessing fire risks from a third-party perspective and receiving advice on risk reduction from the perspective of management systems and facilities through evaluation by outside experts, issue identification, and making improvements.
Groupwide Information Dissemination	We share the results of health and safety assessments and fire risk assessments, good examples of health and safety activities, and reports on disaster countermeasures in a standard Groupwide format, to reflect the experience and knowledge of the Group in the activities of each business site.

The Nittobo Group places utmost priority on compliance with domestic and foreign laws, regulations, and social norms, as well as on appropriate management and prevention of risks surrounding its business.

Compliance System

System for Ensuring that the Execution of Duties of the Group's Officers and Employees is in Compliance with Laws, Regulations and the Articles of Incorporation

- The Representative and Chief Executive Officer sets an example and ensures that the Group's officers and employees are aware of the Group's Corporate Philosophy, Nittobo Declaration which espouses shared values, and Nittobo Behavior Program and Code of Conduct, both of which provide a set of action guidelines, and also endeavors to make them known to all officers and employees in the Group.
- Executive Officers and employees foster a healthy corporate culture that forms the basis for compliance by spreading and implementing the Nittobo Declaration.
- Executive Officers and employees comply with laws, regulations, the articles of incorporation and internal rules, etc., based on the Nittobo Behavior Program and Code of Conduct, and the departments responsible for compliance strive to raise awareness of compliance to increase their effectiveness.
- Violations of laws and regulations are prevented, quickly discovered and appropriately addressed through a Corporate Ethics Help Line, which is a

- whistleblowing program with an internal and external contact points.
- The officer in charge of the Risk Management Department periodically reviews the state of establishment of the Nittobo Group's internal control system to ensure the current conditions are consistent with the Group's basic policy. The results of the review are reported to the Representative and Chief Executive Officer, who reports to the Board of Directors, which passes resolutions if any revisions to the basic policy are required.
- The Audit Committee reports the results of operational audits and compliance audits, etc., to the Board of Directors as appropriate.

Other Systems for Ensuring Appropriate Operations by the Nittobo Group

- The Nittobo Declaration, the Nittobo Behavior Program, the Code of Conduct and the Corporate Ethics Help Line apply to the entire Group, and efforts are made to raise awareness of these.
- Auditing offices are established in major subsidiaries to ensure appropriate operations, and the Company's Audit Office also conducts internal audits with a view to the entire Nittobo Group.

Internal Whistleblowing Contact

The Nittobo Group has established a whistleblowing program, the Corporate Ethics Helpline, to prevent and detect violations of laws and regulations at an early stage and to take appropriate corrective actions.

This provides a secure point of contact for reporting and consulting on potential problems such as violations of laws and regulations, violations of Company rules, misconduct at work that cannot be resolved within the workplace, or matters where it is impractical to consult with superiors, colleagues, or others in the workplace.

The reporting and consultation office is available not only within the Company but also externally through an outside law

firm, which allows for anonymous reporting and consultation. Whistleblower privacy and confidentiality is securely protected, and measures are taken to prevent disadvantageous treatment as a result of making a report.

The Audit Committee also ensures independence from the executive side by handling reports and consultations that may involve directors and officers under the committee's supervision. We are committed to making a system in which whistleblowers can use the system with greater peace of mind by, for example, responding to reports and consultations in good faith, confirming the facts and taking corrective measures, and reporting the results of the investigation to the whistleblower.

Risk Management

The Company has established the Nittobo Group's basic risk management policy and system in the Rules for Risk Management as a corporate group including subsidiaries. Based on the basic policy and system, the Risk Management Committee chaired by the Representative and Chief Executive Officer appropriately manages various risks surrounding our business and prevents

such risks from occurring. Furthermore, the Company is also striving to strengthen its legal risk management system by putting in place a system that enables it to receive various kinds of guidance as the occasion demands, such as opinions and advice from corporate attorneys and specialized lawyers regarding corporate management and daily operations.

Information Management and Security

The Nittobo Group discloses information on its business activities in a timely and appropriate manner to enhance corporate transparency and properly manage the information it holds.

manage information held by the Group, and manages such information after specifying management methods and managers.

Information Management

The Nittobo Group has established rules for the management of trade secrets, document management, personal information handling, and information system management in order to appropriately

Information Security

As information networking advances, the danger of information leaking outside the Company and the threat of cyber-attacks is also increasing. The Nittobo Group is continuously strengthening preventive measures against potential risks, along with countermeasures against viruses, etc., with Head of IT and in charge of information security.

Information Management Education

- 1** Appropriate management of information held by the Company in accordance with the provisions of various regulations (annual self-inspection and monitoring, implementation of workplace education)
- 2** In addition to training at the time of hiring, special training is provided at the time law and similar provisions come into effect, and the intranet is used to ensure timely and appropriate internal awareness of the law
- 3** Provide education on information security
- 4** Conduct unannounced, targeted e-mail drills for all employees, including officers

# Active Roles of Diverse Talent

To ensure the Nittobo Group remains the “Best Partner” for all stakeholders and continues to contribute to the creation of prosperous communities, we believe it is important to value and harness the capabilities, thinking, and views of every employee in the Group. In line with that thinking, the whole Nittobo Group strives to create an environment and organizational culture that is motivating for all employees based on respect for different people, regardless of gender, age, SOGI\*, nationality, disability and other individual identities.

Using the Nittobo Declaration as the basic policy, management and the Human Resources Department work together to actively identify and resolve any issues through direct dialogue with frontline sites and employee awareness surveys. Targets for improving employee engagement are one of the outcomes to be measured by the Mid-Term Business Plan.

\*SOGI: Sexual Orientation and Gender Identity

## Diversity and Inclusion

Discussion by employees with different perspectives and personalities can lead to success in meeting diverse customer needs and delivering peace of mind and confidence. Employees are the driving force that supports the Nittobo Group’s sustained growth, and each member of our diverse workforce is a valuable

asset. Nittobo considers it important to create an organization accepting of diversity in which each individual can fully demonstrate his or her capabilities. One way of laying the foundation for such a diverse organization is to respect and promote diversity and inclusion.

### 1 Initiatives for Women’s Advancement

Maintaining and promoting a workplace environment in which women play active roles is an important issue for the growth of employees, regardless of gender. We are addressing this matter. The ratio of female in manager positions in the Company is

gradually increasing and stood at 4.9% at the end of fiscal 2021. We have set a target of 10% for the future, and are systematically training and promoting the next generation of executives.

### 2 Initiatives to Support Balancing Childcare and Nursing Care

It’s important to create an environment where employees can overcome the difficulty of balancing work with childcare and nursing care, and continue to demonstrate their abilities. We are working on support for balancing childcare and nursing care of diverse human resources.

of daycare waiting lists. We have also introduced a flexible working system for childcare, which can be combined with the shorter working hours system.

Specifically, we have a childbirth leave system, childcare leave system, shorter working hours system, and nursing care leave systems. All applicable female employees take maternity leave and childcare leave, and many male employees can take advantage of the paternity leave system when their spouse gives birth. In addition, for employees working in the Tokyo metropolitan area, we offer the use of a nanny service to counter the problem

Most recently in July 2021, we introduced a system that allows employees to take up to two weeks as paid leave of absence after concluding childcare leave, and a system that allows employees to take up to two separate leaves of absence. These efforts resulted in a 27.7-point increase in the rate of male employees taking paternity leave in fiscal 2021 compared to the previous year. We will continue to enhance the system and further encourage male employees to take advantage of it.

### 3 Employment of People with Disabilities

It is becoming increasingly important for companies to employ people with disabilities. The Company has already met the legally required employment rate of 2.3%. As part of our efforts to employ more people with disabilities, we are striving to create

safe working environments at our plants. In 2018, we established a work support office at our Tokyo Headquarters, and we are promoting stable employment under the supervision and support of permanent employees.

### 4 Work After the Age of 60

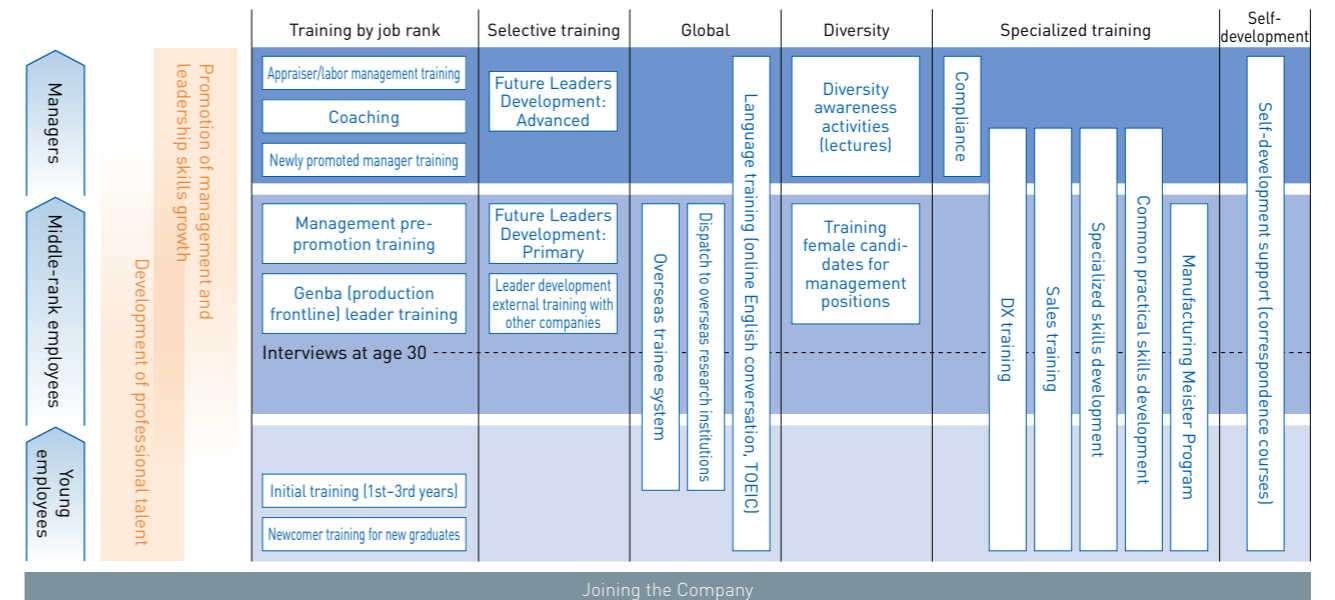
A declining working population is a major social issue in Japan, which has a declining birthrate and aging population, and competition to secure human resources is likely to become increasingly intense. Against that backdrop, we will enhance programs and mechanisms that encourage employees to pursue careers at Nittobo for as long as possible. We are focusing particularly

on enhancing HR programs and benefits, and developing a working environment to enable employees to continue working with high levels of motivation after the age of 60. We will also implement initiatives to make Nittobo a company that employees will be glad they chose throughout the entirety of their careers.

## Human Resource Development

To utilize the maximum potential of the Company’s diverse human resources, we have been carefully implementing human resource management tailored to each individual, including measures such as continuously improving both the personnel system to increase individual motivation and the training system to foster growth. In our vision for 2030, Big VISION 2030, we will

work to cultivate the next generation of leaders, global human resources, and professional human resources. We will actively work to expand management measures to promote individual motivation, self-driven learning, and career development under the theme of fostering human resources for innovation, which is the foundation for creating business growth and driving reform.



### 1 Development of the Next Generation of Leaders

Conventional stratified training for personnel is provided for new graduate entrants, young employees and newly promoted management personnel through to department and division managers. To complement this standard training, Nittobo launched its Successor Development Programs in fiscal 2018. These programs are designed to match the growth stage of each employee, focusing on young employees and middle-rank employees, in order to develop future leaders. These programs consist of

intensive training for business skills and action learning using practical cases we need to resolve. Through the training, these programs develop understanding about the role of senior managers and improve managerial qualifications. In today’s unprecedented business environment, developing business persons who can overcome preconditions is an indispensable activity. We believe it leads to an essential pillar for business strategies. Nittobo will systematically develop the leaders who drive our businesses.

### 2 Development of Global Talent

To prepare for further globalization of the Company’s business, it is essential that Nittobo develops human resources and creates a corporate culture that enables diverse human resources to fulfill their potential. We are enhancing mechanisms that support the voluntary efforts of individuals to become who they want

to be, such as providing opportunities and systems for employees to engage in online English classes, and also to travel overseas to study foreign languages, participate in internships, take MBA courses, and work at research institutes.

### 3 Development of Professional Talent

Before becoming managers, Nittobo employees pursue development as specialized professionals in their areas of specialization and work to establish their core skills. We introduced the Meister Program in fiscal 2018 at manufacturing sites and are systematically promoting skills transfer. For sales representatives and diagnostics medical representatives (DMRs), who have frequent contact with customers, we provide solutions-based training in

solving problems facing customers and link this training to improvement of professional skills that enable these employees to further enhance customer satisfaction. We also provide wide-ranging support for individual skills development, offering a program to assist employees in obtaining public qualifications necessary for work and a distance learning assistance program that includes e-learning.

4 Expansion of Management Measures to Foster Human Resource Growth

Training courses are important for any human resources development policy, but it is also important to encourage individuals to be motivated to learn, to carefully consider their career aspirations, and to implement development measures that match their ideas and expectations. Therefore, we have systematically implemented one-on-one meetings between superiors and subordinates as an important communication tool. In addition, we are implementing management measures to promote growth, such as the creation of the Career Development Committee,

which includes supervisors, management, and the Human Resources Department. The new committee will discuss future training measures and career development for employees. We have also instituted interviews with employees at age 30, after they have experienced a range of work tasks, to reflect on their careers and discuss future career development. In addition, we are also in the process of expanding our management training for employees who will be responsible for these activities.

Human Resource Development Committee

This committee deliberates on how to match the needs of the organization with the unique skills and future career aspirations of each individual by utilizing self-assessments and the age 30 interviews. It also considers future human resource development plans and allocations.

**Putting the right people in the right places**  
Human Resource Development Committee

Interview at age 30

At the age of 30, when an employee has had a full range of work experience, they are asked to identify their career goals. Then, they reflect on the relationship between their career goals and development plan based on the direction they intend to pursue.

	Join Nittobo	3rd year	Age 30	Age 35	Key position
Entry training	1-3 years of training for young employees	Departmental OJT/specialized education	Interview	Development plan A	Career goal A
	Departmental OJT/specialized education	Proficient, professional human resources		Development plan B	Career goal B

Measures to strengthen communication

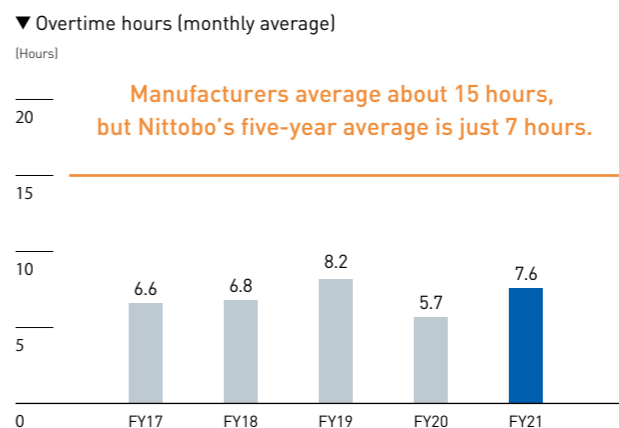


Workstyle Reform and Health Management

1 Promotion of Work-Life Balance

Average monthly overtime per employee at Nittobo in fiscal 2021 was 7.6 hours, much lower than the manufacturing industry average. To enable employees to experience job satisfaction and demonstrate their best performance, while simultaneously maintaining an appropriate work-life balance, we will continue to develop an environment in which people pursue long careers. Also, in Japan, which has a declining birthrate and aging population, it is important to prepare a worker-friendly environment for employees with childcare or nursing care responsibilities. We are enhancing programs that allow employees to respond flexibly to those kinds of life events, such as an annual paid leave system

and a flextime system that eliminates core hours. Also, amid the COVID-19 pandemic, a work-from-home system is in place. With work practices in general expected to undergo far-reaching changes, we are continuing to embed and improve new work practices that achieve both a high-quality work-life balance and significant improvements in productivity, including our recently-launched project to improve the productivity of internal departments (NICO-WORK Project). We are also revising regulations and systems, employing robotization, utilizing workflow systems, and shifting to paperless methods that don't require hanko seals.



2 Health management

Health in mind and body is the cornerstone of employee job satisfaction. In cooperation with the Nittobo Health Insurance Association, we strive to promote employee health by providing opportunities for physical and mental refreshment, such as free-

of-charge use of a sports gym, health checkups administered by post, and support for family enjoyment of recreation. We have also taken out comprehensive medical expense insurance to alleviate the expense burden on employees when injury or sickness occurs.

MESSAGE

**From an Employee who Utilized the Childcare Leave System**

I utilized the childcare leave system for six months from June to November 2021. I utilized the leave system because I believed in the importance of sharing childcare and housework during the day to reduce the burden on my wife and allow her to be present for the growth of our child. Taking the leave allowed me to realize the hardships and difficulties my wife was having, to witness the various firsts of my child... those days were greatly fulfilling.

I am deeply grateful that I was able to use the extended childcare leave system because my supervisor and colleagues willingly supported me and followed up with me before, during and after my leave. I hope that my experience will set a precedent and, if only in a small way, help encourage my fellow male employees who are hesitating to take childcare leave.

Glass Fiber Division, Production Headquarters,  
Fukushima Factory, Electronic Materials Manufacturing Dept.,  
DX Technology Section and Technology Div., Technology Dept.

**Keita Okazaki**

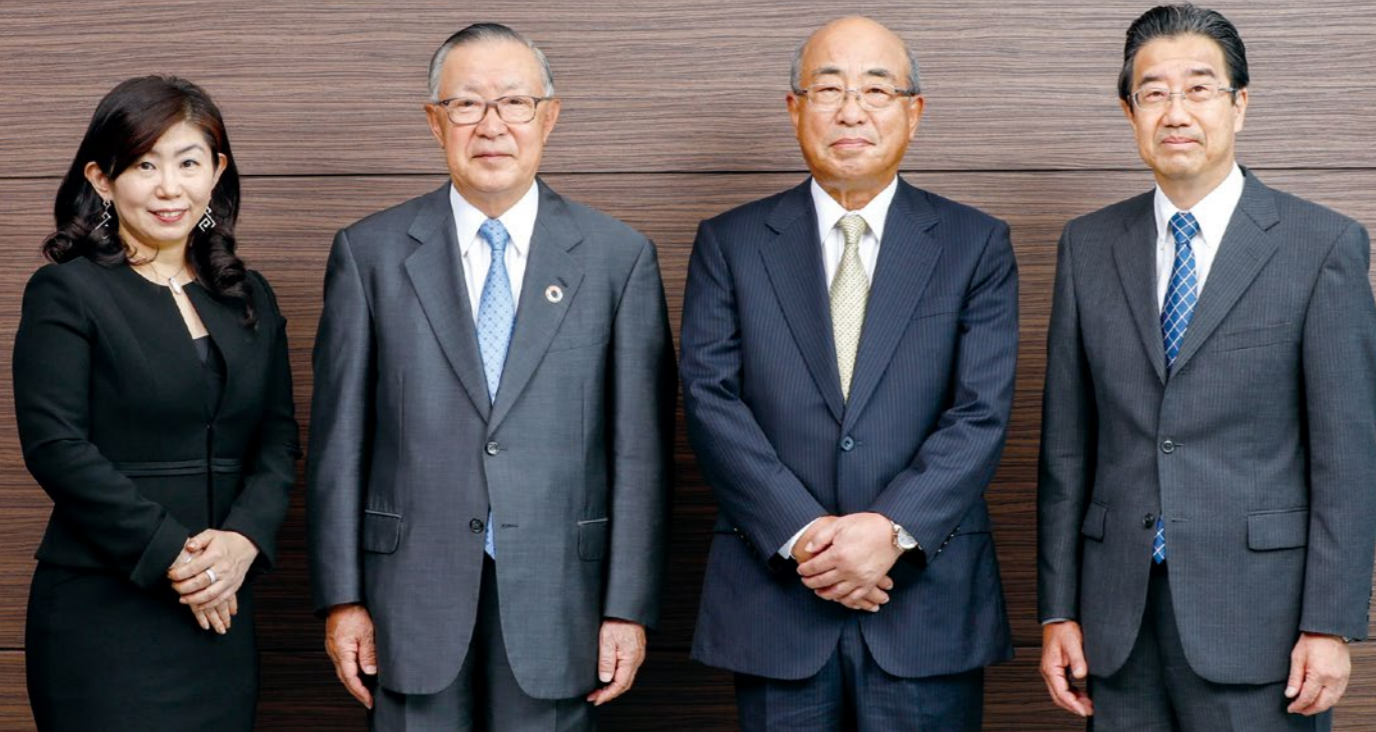
## External Directors' Roundtable Discussion

**Agasa Naito**  
Director

**Sadayoshi Fujishige**  
Director

**Hiroshi Kagechika**  
Director

**Yasuharu Nakajima**  
Director



## The Nittobo Group's unique innovation lies in the power of its human resources, who have created evolving innovation from continuous management resources.

### Please discuss your evaluation of our corporate governance and the topics and areas in which experience and skills are demonstrated.

**Fujishige** Nittobo's Board of Directors is composed of three internal directors and four external directors. This makes

it fair and impartial, allowing the Board to fulfill the function of supervising the Company from the shareholders' perspective. The Board also leverages the respective areas of expertise each external director brings to the table.

Prior to Board of Directors meetings, an advance briefing with a very lively discussion based on the meeting's agenda is held to enhance the actual functioning of the Board of Directors.

From a management perspective, I hope to play a role in overseeing the priorities and direction of the Company's medium- to long-term management strategies, primarily. I have experience managing a general consumer goods company, so I think I have more information from the perspective of understanding customer needs and the direction in which trends in the world are heading.

As chair of the Nomination Committee, I am also involved in the Company's succession planning, and I see that we are making steady progress.

**Kagechika** The Board of Directors' pre-briefing is very rich in content, and the executive side provides very sincere and detailed explanations. I believe this creates a very conducive environment for discussion.

Of the external directors, I am the only member with a technical background. Since I have experience in the R&D department, especially in the materials industry, I am able to offer my opinions as appropriate on the state of R&D for companies, like Nittobo, that make materials. I took office in 2020 when the current Mid-Term Business Plan was being considered and had some input. Specifically, it is the research and development system and organizational structure of the Research & Development Headquarters. In April 2020, a new research site, NI-CoLabo, was completed at the Research & Development Headquarters, and we proposed that the corporate laboratory function be properly positioned within the Research & Development Headquarters, and that a research unit for the Glass Fiber Business and a research unit for the medical business be created and staffed as a division laboratory under the Research & Development Headquarters. We have been discussing President Tsuji's thoughts in an attempt to reflect them in the Mid-Term Business Plan.

**Naito** As Mr. Fujishige mentioned, I think our Board of Directors has a well-balanced composition in terms of governance. Of the seven directors, four are independent external directors, including experts in management, research and development, accounting, and law, so that there are gatekeepers on both the offensive and defensive sides of corporate management. Even with a diverse composition, it still must actually function, but I feel that opinions are freely and openly expressed at Board meetings, and I think that the pre-briefing sessions that

you both mentioned are not just a place to explain agenda items, but also play a very important role as a forum for informal exchange of opinions, such as bringing awareness to issues or concerns.

**Nakajima** I have experience as a CPA and now that I have been appointed as chair of the Audit Committee, I'm looking forward to managing it well.

First, we will listen carefully to the way the Audit Office conducts the audit, and then we will proceed with the audit while making various judgments ourselves. Specifically, we will focus on whether the organization has good risk management, and since on-site audits are also conducted remotely, especially overseas with the COVID-19 pandemic, we will focus our supervision on internal controls in place.

### How would you evaluate the progress in the first year of the Mid-Term Business Plan?

**Fujishige** In terms of progress on the Mid-Term Business Plan, we have met our targets for the first year and are doing well in a market environment that has fluctuated greatly due to the COVID-19 pandemic. Now, we are aiming to improve on the following two points.

The first is that we have a very strong ability to develop advanced technologies, but this is an ever-evolving world. New technologies are being developed one after another. We need to have a much stronger sense of touch with the cutting edge, and moreover, we need to be proactive in collaborating with other research institutions.

The second is to become highly market-sensitive. Traditionally, suppliers have been the main source of market information, but from now on, we must collect a wider range of information with greater sensitivity. I am willing to actively support these two goals.

**Kagechika** In a manufacturing company such as ours, manufacturing technology remains fundamental. We must further

strengthen the development technologies related to process. In fiscal 2022, the second year of the Mid-Term Business Plan, we are working to strengthen the process development system at the Research & Development Headquarters by consolidating some of the development functions at the factories into the R&D center, and we expect to see positive results in the future. For example, the Research & Development Headquarters can now take the lead in addressing pressing issues such as improving yields and increasing customer satisfaction with the quality of next-generation products.

I recently discussed with the President of the Research & Development Headquarters how it has started to experiment with original ideas and thoughts, apart from themes already being worked on, under the "20% rule," in which 20% of each staff member's capacity is being allocated for this purpose. We are especially trying to provide young people with opportunities for trial and error and an environment in which they can demonstrate new technological ideas without fear of error. I hope that this 20% rule will be the catalyst for this.

**Naito** Of the four pillars of the Mid-Term Business Plan, I am focusing on human resource development. We have a feeling that in the future, organizations that have not made progress in diversity and inclusion will not be able to recruit talented people. The ratio of females in management position at the end of fiscal 2021 was 4.9%, less than 5%, still short of the goal of 10% by 2030. Of course, our goal is not only to increase the ratio of female managers, but also to create an organization in which diverse human resources can play an active role in their own right, which we believe will lead to innovation and attract talented people. By doing so, employee engagement will naturally increase. This won't move forward overnight, but we intend to follow it carefully. **Nakajima** Since the Mid-Term Business Plan was formulated, very significant changes have taken place. One is the

COVID-19 pandemic and the other is the trend towards decarbonization. Both the principles of corporate behavior and the direction of development must change in response to these changes. This is a costly issue, and further structural reform may be necessary depending on changes in the world. We will look at how to respond to changes in the world from a financial and accounting standpoint.

### How should we foster human resources for innovation?

**Fujishige** This is very simple: encourage young people to make the most of their abilities. We will consider financial allowances, treatment, and opportunities to do the kind of inspired things that they want to do. Or, as Ms. Naito mentioned, it is essential to nurture the seeds of new innovation through serendipity, or so-called chance encounters, by combining diverse human resources. Since there is no right answer to innovation, I think it is important to have the courage to try anyway and take up the good things in the process. And we must firmly support those who are predisposed to change. Such a management mindset is necessary.

**Kagechika** I believe that we must be sure to create an environment that nurtures our human resources. The key there is good pride, that is, confidence in one's skills and sense of mission. There are expectations for each position and the Company should provide an environment

where this is properly recognized.

When new graduates join the Company as researchers, in order to develop them into full-fledged professionals in a certain technical field at an early stage, they need to recognize how much they have improved as technicians through discussions with customers, activities at external academic conferences, interactions with external researchers, and presentations of their own achievements. We should make sure to create such opportunities and develop individual communication skills from time to time.

Furthermore, as the mission of the organization, the executives must focus their wisdom, accurately set themes, and draw out the abilities of the researchers who are working hard there. If each young researcher can develop his or her career and grow in the process of working on a theme, the output of the Research & Development Headquarters will increase and become more active.

**Naito** I agree with both of you about how to develop human resources. However, the significance of the human resources that you invest in developing will be reduced by half if they do not function effectively. We believe that it is extremely important for the human resources developed in each department to be able to work effectively in our organization, and we believe that good communication between departments is essential.

I understand and am very excited about the fact that this point was also recognized in the discussion of the Mid-Term Business Plan and led to the



introduction of the Customer Success Task Force, a mechanism to share customer needs and product ideas more efficiently and to link marketing, product planning, and product development to strengthen customer solution capabilities.

In this volatile business environment, the key to success is how many customers we can attract who love Nittobo products. In order to draw out the full potential of our human resources, it is essential that we work together organically, flexibly responding to each situation as needed with the appropriate team, without putting up barriers.

**Nakajima** When someone who has the courage to bring about change joins an organization, I believe it is up to the organization to make the most of that person. My point is that I wonder if there is a way to incorporate transformational human resources into the organization as a team force.

As you all said, by improving openness and communication, once a team or organization makes the most of human resources with courage, they will be drawn to it and bring in more human resources with courage. When change starts, it is positive in many ways, but when it starts to turn the other way, the good people quit. The first step is to get the rotation going in the forward direction.

### What kind of efforts should be made in the future to realize Big VISION 2030?

**Fujishige** Becoming a global niche No. 1 company is a very important theme, and it means always having a perspective on how to be No. 1 in the world. To this end, we will send people with a mindset of change and young people to train in the world market. I think it is very important to screen people who will survive and thrive in a tough environment, because people cannot grow in an easy environment. Again, it is important to switch to a highly market-sensitive structure.

**Kagechika** The goals of Big VISION 2030 are high, including decarbonization, and are not easily met by extending current technologies. Basically, the problem solving is technology-driven, but since the technological development capability must also achieve one or two levels of innovation, it is necessary to review the theme from the beginning.

We have advanced technologies and human resources that have been accumulated in Group companies over our long history, so now is the time to strengthen the system in which the entire Group works together for development. This will come up in discussions for the next mid-term business plan, but I would like to focus on how to consolidate and increase the power of the technical human resources dispersed throughout the Group, including governance.

**Naito** The niche is constantly changing and becoming more sophisticated as



time goes on. In other words, the key point is how to develop professional human resources and global human resources who can stay abreast of the most advanced niche in the world.

Sustainability management is another globally important key term. We have established a Sustainability Committee to focus on environmental issues, but sustainability management issues and environmental challenges tend to become an end in themselves if we make them a specific goal. The question is how to incorporate them in conjunction with medium- and long-term corporate value and how to appeal to multiple stakeholders.

I believe that we must backcast from where we want the Company to be and constantly look back to where we are today, periodically reviewing our goals and striving to substantially improve our corporate value, while also making efforts to showcase this to the world.

**Nakajima** "Global niche No. 1" is a phrase that fits the Company perfectly, and we understand that we are truly a company that competes in a niche market in the form of No. 1 in quality. I believe that growth is a steady accumulation, so I agree with the global niche, but the key point is to find ways to realize Big VISION 2030 in our continuous daily activities.

**Fujishige** In our case, our core management resources, such as glass fiber and in vitro diagnostic reagents, are continuous, but our target market is evolving. In business diversification, the core management resources are contin-

uous, but the markets and products can be varied, which is efficient diversification.

**Kagechika** That's exactly right. Historically, glass fiber was created by applying basic fiber technology, and has also grown business significantly by discovering new materials for medical testing. Core technologies are indeed connected, but they are evolving in each particular instance and moment. In other words, it depends on our ability to continue to grow and find new business and opportunities while nurturing our core technologies.

My impression is that the goals of Big VISION 2030 look like the sales and profits levels that are expected to be reached when the current business base has grown much larger. The market environment has changed dramatically and the hurdles are certainly getting higher, so we think it would be best if Big VISION 2030 includes a scenario in which new businesses are created and grown.

**Naito** There is a continuum in what the Company is working on and in its technology, but when it has found new markets, it has transformed itself. There is no easy answer to how to find new areas for future major expansion, and I believe it is partly luck.

We can't find them if we don't move, so we expect that by making efforts in both directions, such as communicating that this kind of technology exists or asking customers about it, we can expand into these unexpected areas.



The Nittobo Group constantly revises corporate governance with the aim of creating a fair and highly transparent management organization in order to conduct business activities with emphasis on social trust from our shareholders, investors and other stakeholders.

### Overview of the Corporate Governance System and Reasons for Employing the System

The Company introduced an executive officer system in June 2003 and has created a system able to maximize the effect of consolidated management by invigorating the Board of Directors and speeding up decision making. Since June 2008, management has been conducted by further clarifying the functions and roles of management and business execution.

In addition, with the approval of the Ordinary General Meeting of Shareholders on June 26, 2014, Nittobo shifted to a company with

Nomination Committee, etc. By doing so, the Company further clarified the separation of supervision from execution and aims to strengthen supervisory functions, ensure highly transparent management, execute business swiftly, and increase the flexibility of management. Furthermore, by establishing a system that enables it to more precisely meet the expectations of stakeholders, such as customers, shareholders, suppliers, and employees, the Company will work to further enhance its corporate value.

### Corporate Governance System

#### Board of Directors

The Company's basic policy is to constitute the Board of Directors with directors from within the Company with capabilities and knowledge on each business and management in general, and at least the same number of External Directors as internal directors, who are able to express opinions beneficial for the enhancement of governance from the perspectives of diverse stakeholders and society, in order to ensure a system enabling appropriate supervision of the Company's business execution by the Board of Directors as a whole, and has specified that the Board of Directors shall have no more than 12 members in its Articles of Incorporation.

At the time of publication of this report, the Company's Board of Directors was made up of seven members including four External Directors.

The Board of Directors is responsible for supervision of business execution through selection of directors making up the Nomination,

Remuneration and Audit Committees; election and dismissal of Executive Officers and delegation of business to them; approval of matters related to operations that have an impact on basic management policy such as mid-term business plans and annual budgets; and approval of matters that could have a significant impact on Group management such as investments exceeding a certain amount. The term of office of directors is one year, and a vote of confidence in directors is obtained in the Ordinary General Meeting of Shareholders held annually. The Company's Executive Officers are determined by the Board of Directors. People suitable for the execution of the Company's business are elected from the perspective of enhancement of business execution and corporate value by adopting the approach of putting the right people in the right place.



First row, from left: Agasa Naito, Sadayoshi Fujishige, Hiroshi Kagechika, Yasuharu Nakajima  
Second row, from left: Toyoshi Nishizaka, Yuichi Tsuji, Kazuhiko Igarashi

#### Nomination, Remuneration and Audit Committees

As a company with Nomination Committee, etc., the Company has established a Nomination Committee, a Remuneration Committee, and an Audit Committee. The roles of the committees and overviews of the members of the committees as of the date of the publication of this report are as follows.

##### Nomination Committee

The Nomination Committee determines the content of proposals to elect and dismiss directors to be submitted to the General Meeting of Shareholders. It is made up of five directors (four of whom are External Directors), and is chaired by External Director Sadayoshi Fujishige. Meetings of the Nomination Committee are held as needed. The Nomination Committee selects the Company's director candidates who are believed to be the most suitable based on factors such as their character and insight.

##### Remuneration Committee

The Remuneration Committee determines the content of individual remuneration, etc., of Directors and Executive Officers. It is made up of five Directors (four of whom are External Directors), and is chaired by External Director Hiroshi Kagechika. Meetings of the Remuneration Committee are held as needed.

##### Audit Committee

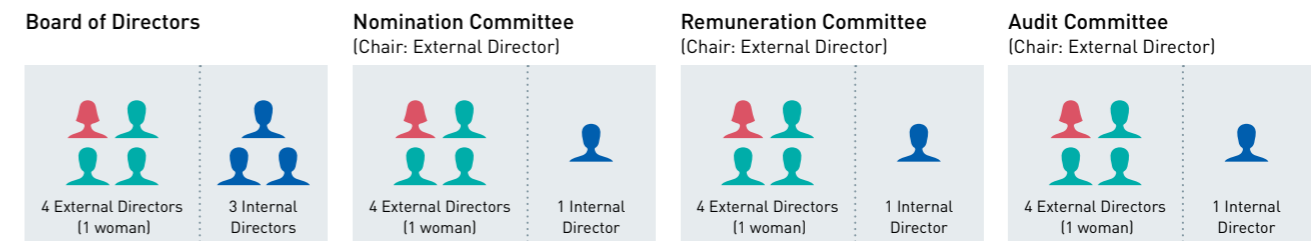
The Audit Committee's responsibilities include auditing the state of execution of duties of Directors and Executive

Officers, and the preparation of audit reports. Working with accounting auditors and the Audit Office, audits, etc., are conducted based on audit plans approved in the Audit Committee. It is made up of five Directors (four of whom are External Directors), and is chaired by External Director Yasuharu Nakajima. An Audit Committee Secretariat has been established as an organization for assisting the duties of the Audit Committee. In principle, the Audit Committee holds meetings at least once every three months.

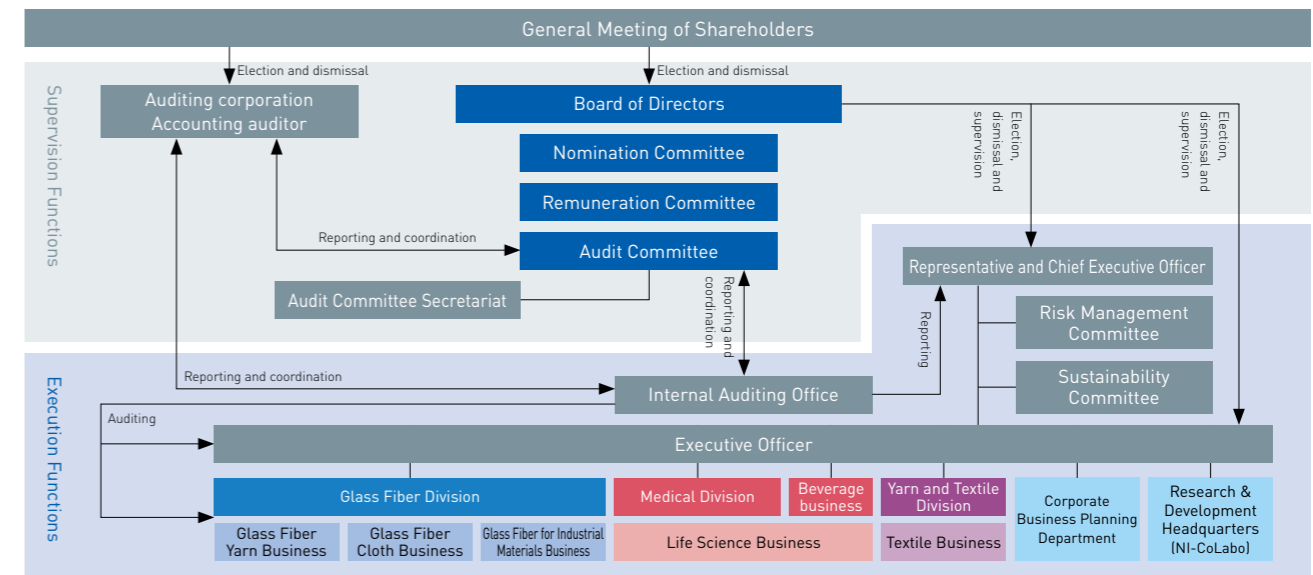
#### Execution of Business

As of the date of the publication of this report, the Company has 11 Executive Officers, of which one has been selected as Representative and Chief Executive Officer. An Executive Meeting has been established as an organ to deliberate matters related to the execution of business delegated by the Board of Directors, and it endeavors to ensure efficient business execution by holding meetings twice a month.

#### ▼ Composition of Board of Directors and Three Committees



#### ▼ Diagram of Corporate Governance System



### Self-evaluation Concerning the Effectiveness of the Board of Directors

The Board of Directors analyzes and evaluates its composition, operation, supervision, support system, and dialogue with shareholders, etc., based on a survey conducted by outside attorneys and the evaluation of each director.

In the self-evaluation concerning the effectiveness of the Board of Directors in fiscal 2020, the opinion was expressed that further improvements need to be made to matters such as further improvement of risk management; creation of a feedback mechanism for past Board of Directors resolutions; promotion of sustainability activities; and consideration of a management succession plan. In response to these opinions, the following

initiatives were adopted in fiscal 2021.

In the survey covering fiscal 2021, about 80% of the questionnaire responses improved from fiscal 2020, and the results were overall very positive. However, there were comments that the directors did not have sufficient opportunities to visit each business site and factory to understand the situation on the ground due to the COVID-19 pandemic, as well as a desire to continue the constant review of the Group's governance.

We will continue to make ongoing improvements so that the Board of Directors can fulfill its supervisory function effectively.

#### Initiatives in Fiscal 2021

- In addition to identifying and assessing business risks associated with changes in the market environment on a regular basis, the Board of Directors promoted risk mitigation initiatives by conducting its own risk inspections with reference to examples of disasters and scandals at other companies, and reported and discussed the status of these initiatives at Board of Directors and other meetings.
- In addition to major capital investment projects and annual budgets, executive officers provided feedback on the progress and issues of the Mid-Term Business Plan at Board of Directors meetings and other meetings to deepen discussions on management strategies, including responses to changes in the market environment and competitive environment.
- In April 2021, the Sustainability Committee was established, chaired by the Representative and Chief Executive Officer, to discuss specific action policies and achievement targets, including CO<sub>2</sub> emissions reduction, recycling and reuse activities, and development of new environmentally friendly products, as well as to report and discuss the status of these efforts at Board of Directors meetings, etc.
- The Nomination Committee discussed and will continue to discuss the management succession plan.

### Corporate Governance Highlights

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Corporate Governance System	Company with Board of Directors			Company with Nomination Committee, etc. (from June 2014)								
Committees	—			Nomination Committee (Chair: External Director)								
	—			Remuneration Committee (Chair: External Director)								
Directors	7			8								
	Of which, External Directors: 1			Of which, External Directors: 3								
	Of which, women: 1			Of which, women: 1								
Operation of Board of Directors	Briefings before Board of Directors meetings											
	Board of Directors Evaluation of effectiveness											
Revisions to systems, regulations	Executive Meeting regulations formulated											
	Introduction of performance-linked stock remuneration plan											

### Key Director Expertise and Experience (Skills Matrix)

The knowledge, experience, and abilities of directors that are considered important to the Company from the perspective of corporate management are defined as business management, technology, research and development, sales, marketing, global business, finance, accounting, legal affairs, risk management,

human resources, labor relations, and human resources development. We ensure that the Board of Directors is composed of people with appropriate knowledge and abundant experience in each field.

Name	Business Management	Technology/R&D	Sales/Marketing	Global Business	Finance/Accounting	Legal/Risk Management	Human Resources/Labor Relations/Human Resource Development
Yuichi Tsuji	●			●	●	●	
Toyoshi Nishizaka	●		●	●		●	●
Kazuhiko Igarashi	●	●		●			
Sadayoshi Fujishige	External Director		●	●			
Hiroshi Kagechika	External Director	●		●			
Agasa Naito	External Director			●		●	
Yasuharu Nakajima	External Director				●	●	

[Note] The above table does not represent all knowledge, experience, etc. possessed by each person.

### Meeting Attendance (FY2021)

Name	Position	Attendance/Number of meetings			
		Board of Directors Meetings	Nomination Committee Meetings	Remuneration Committee Meetings	Audit Committee Meetings
Yuichi Tsuji	Representative Director and Chief Executive Officer	13/13	3/3	6/6	
Toyoshi Nishizaka	Director	13/13			13/13
Yu Nozaki	Director	13/13			13/13
Masamichi Ouchi	External Director	13/13	3/3	6/6	12/13
Sadayoshi Fujishige	External Director	13/13	3/3	6/6	
Hiroshi Kagechika	External Director	13/13	3/3	6/6	13/13
Agasa Naito	External Director	13/13	3/3	6/6	13/13

[Note] Mr. Yu Nozaki and Mr. Masamichi Ouchi resigned from their positions as directors at the conclusion of the 161st Ordinary General Meeting of Shareholders held on June 28, 2022.



## Executive Remuneration

### Executive Remuneration

#### ① Matters pertaining to policy the determination of the amount of executive remuneration, etc., and the method of calculation thereof

##### (a) Deciding policy

The Company determines policy related to the determination of individual remuneration of Directors and Executive Officers on the basis of objective data, etc., from external consultants in the Remuneration Committee made up of a majority of External Directors and chaired by an External Director, based on the provisions of the Companies Act related to a Company with Nomination Committee, etc.

Furthermore, the policy is based on the approach of providing strong motivation for officers to achieve their performance targets with secure transparency and rationality, fostering awareness for medium- to long-term management, and conforming with the interests of stakeholders including shareholders and investors, and the performance targets used for calculating remuneration also reflect this approach.

##### (b) Outline of the policy

The Company's executive remuneration (excluding External Directors) is structured by basic remuneration determined by the state of competency expected of each position (behavior evaluation) and the state of performance (performance evaluation), and performance-linked remuneration that varies within a range of 0% to 150% according to the level of achievement of individual performance targets based on company performance targets from the previous fiscal year and the activities and performance of the responsible divisions, and the current fiscal year's remuneration is based on a combination of these. Performance-linked remuneration has not been applied for External Directors due to the role of supervising management from an independent and objective perspective.

#### Percentage of Remuneration by Position

Percentage composition of executive remuneration (if the achievement ratio of company and individual targets is 100%)

Position	Performance-linked remuneration*		
	Basic remuneration	Company performance	Individual performance
Representative and Chief Executive Officer	67%	16.5%	16.5%
Managing Executive Officer	71%	14.5%	14.5%
Other officers (excluding External Directors)	71%	14.5%	14.5%
External Directors	100%	—	—

\*Performance-linked remuneration (company performance + individual performance) is set at 50% of basic remuneration for the Representative and Chief Executive Officer, 40% of basic remuneration for the Managing Executive Officer, and 40% of basic remuneration for other officers (excluding External Directors)

#### Performance-linked Remuneration Indicators and Percentage Reflection in Performance-linked Remuneration

	Operating profit (compared to budget)	Operating profit (year on year)	ROE (year on year)	Dividends (year on year)
① Company performance	25%	25%	25%	25%
	Operating profit of responsible division (compared to budget)		Status of initiatives to address issues in mid-term business plan for responsible division	
② Individual performance	40%		60%	

#### Indicator Selection

##### ① Company performance

The selected indicators are operating profit to demonstrate earning power and enhanced growth potential, ROE to show capital efficiency improvement, and dividends to promote further provision of value to our shareholders.

##### ② Individual performance

This indicator clarifies the performance responsibilities of each Executive Officer (excluding External Directors) and evaluates the status of efforts to address issues in the operating profit and Mid-Term Business Plan of their responsible business unit separately from the Company's performance.

#### Process of Determining Remuneration

The Remuneration Committee, chaired by an External Director, checks the exhibition of competencies and the level of achievement of the Company's performance targets, along with individual performance targets, and then calculates and determines individual amounts based on the aforementioned remuneration percentages and percentages of reflection in performance-linked remuneration.

#### Calculation Rules

##### Basic remuneration

This is determined using a basic remuneration table that is a matrix based on four levels of behavior evaluation and nine levels of performance evaluation.

##### Performance-linked remuneration

- Company performance = amount of basic remuneration for each prior fiscal year x percentage of Company performance for each position x level of achievement of company performance for the previous fiscal year
  - Individual performance = amount of basic remuneration for each prior fiscal year x percentage of individual performance for each position x level of achievement of individual performance for the previous fiscal year
- Performance-linked remuneration is determined by combining the Company performance and the individual performance calculated as shown above.

The remuneration of directors and Executive Officers for fiscal 2021 was also determined by the above method. Furthermore, the Remuneration Committee believes that the content of the remuneration is in line with the above policy, as it confirms the appropriateness of the level based on the executive compensation data provided by external consultants on a regular basis.

Reference
Targets and actual values of company performance for fiscal 2020 used in the calculation of performance-linked remuneration in fiscal 2021
Operating profit (compared to budget) Target: 10,000 million yen*/Actual: 5,964 million yen
Operating profit (year on year) Target: 8,160 million yen/Actual: 5,964 million yen
ROE (year on year) Target: 6.2%/Actual: 4.5%
Dividends (year on year) Target: 45 yen per share/Actual: 45 yen per share
* Individual performance targets are set using individual quantitative and qualitative targets, and in general, approximately 75% of the targets are achieved.

#### ② Total amount of remuneration, etc., by category of executive, total amount by category of remuneration, etc., and number of officers who are recipients thereof

Category		Total amount of remuneration, etc. (million yen)	Total amount by category of remuneration, etc. (million yen)			Number of recipients
			Fixed remuneration	Performance-linked remuneration	Retirement benefits	
Directors	Directors (excluding External Directors)	78	58	19	—	3
	External Directors	76	76	—	—	4
	Subtotal	155	135	19	—	7
Executive Officers	Subtotal	189	141	47	—	12
	Total	344	277	67	—	19

[Notes] 1. The amount paid to Executive Officers does not include the wages paid for employment as an Executive Officer for those who also serve as employees.  
2. The Company's performance-linked remuneration is calculated based on the previous fiscal year's performance, and the amount combined with fixed remuneration (basic remuneration) is defined as remuneration for the current fiscal year, and this is paid as a regular equal wage.

#### Introduction of Performance-linked Stock Remuneration Plan

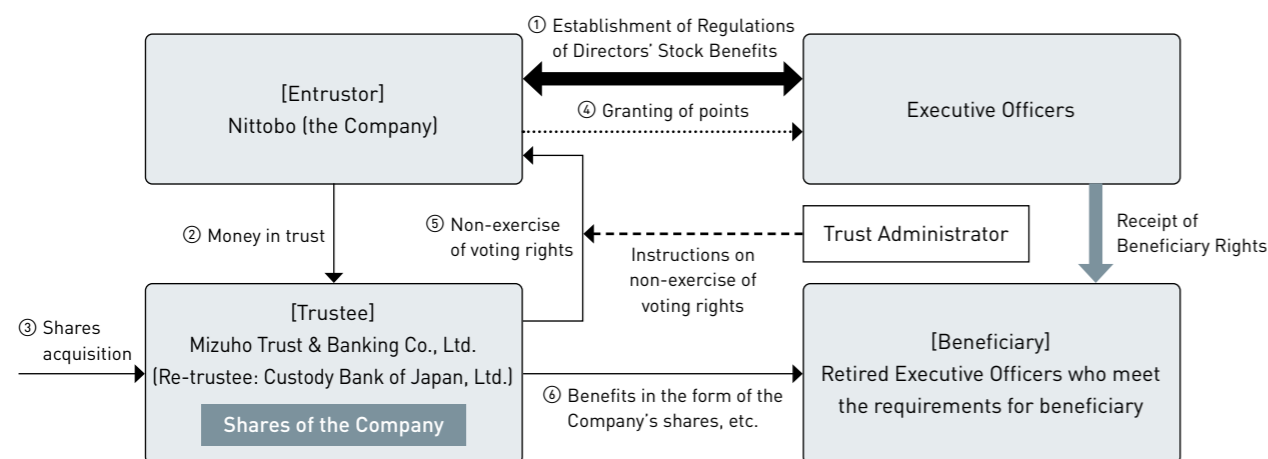
The Company has clarified the relationship between the remuneration of Executive Officers (including those who concurrently serve as Directors) and the Company's business performance and market capitalization, so that Executive Officers will not only benefit from an increase in stock price but also share the risk of a decline in stock price with shareholders. To this end, the Company introduced a new performance-linked stock remuneration plan, the Board Benefit Trust (hereinafter, "the Plan"), in fiscal 2022 to raise Executive Officer awareness of the need to increase corporate value by contributing to medium- and long-term improvement in business performance, and to more tightly align their interests with shareholders.

#### ① System Outline

Under the Plan, Company shares were acquired through a trust (hereinafter, "the Trust") with money contributed by the Company as its source of funds. This is a performance-linked stock remuneration plan under which the Company's shares and money

equivalent to the amount obtained by converting the shares to market value (hereinafter, "the Company's shares, etc.") are paid to the Executive Officers through the trust in accordance with the Regulations of Directors' Stock Benefits established by the Company. In principle, the Executive Officers shall receive the Company's shares and other benefits at the time of their retirement.

▼ Structure of the Plan



- ① The Company shall establish the Regulations of Directors' Stock Benefits by resolution of the Remuneration Committee.
- ② The Company will hold money in trust to the extent approved by resolution of the Remuneration Committee.
- ③ The Trust will acquire the Company's shares using the money entrusted in ② as the source of funds, either through the stock exchange market or by disposal of the Company's treasury stock.
- ④ The Company grants Executive Officers points determined in accordance with their position in the Company and linked to the degree of achievement of the Mid-Term Business Plan in accordance with the Regulations of Directors' Stock Benefits.
- ⑤ The Trust shall not exercise voting rights with respect to the Company's shares in the Trust account in accordance with the instructions of the Trust Administrator, who is independent from the Company.
- ⑥ The Trust shall pay shares of the Company's stock in proportion to the number of points granted to such beneficiaries to those who have retired as Executive Officers and meet the requirements for beneficiaries as stipulated in the Regulations of Directors' Stock Benefits (hereinafter, "the Beneficiaries"). However, if the Executive Officer satisfies the requirements stipulated in the Regulations of Directors' Stock Benefits, they will receive a cash payment equivalent to the market value of the Company's shares for a certain percentage of the points.

② Eligibility for the Plan

The eligible persons for the Plan shall be the Executive Officers of the Company (including those who concurrently serve as Directors). Directors and external Directors who do not concurrently serve as Executive Officers are not eligible for the Plan.

③ Amount to be Contributed to the Trust by the Company

The Company will contribute to the Trust the funds reasonably expected to be required to acquire up to 174,500 shares, taking into consideration the market price of the Company's common stock in regular trading on the Tokyo Stock Exchange immediately prior to the establishment of the Trust, as the necessary funds for five fiscal years (hereinafter, "Initial Relevant Period") spanning the fiscal year ending on March 31, 2023 to the fiscal year ending on March 31, 2027, and also for each of the three-year periods beginning after the Initial Relevant Period ("Subsequent Relevant Periods.") Collectively, the Initial Relevant Period and Subsequent Relevant Periods are referred to as the "Relevant Periods."

After the Initial Relevant Period has elapsed and until the termination of the Plan, the Company shall, in principle, continue to

make additional contributions to the Trust for each Subsequent Relevant Period, based on a reasonable estimate of the number of shares necessary to provide benefits to Executive Officers under the Plan, and the funds deemed necessary for the Trust to acquire such shares in advance.

When, however, there are any remaining shares of the Company—excluding the Company shares equivalent to the number of points granted to the Executive Officers for each of the immediately preceding eligible periods for which the Executive Officers have not yet received benefits—or money (hereinafter, the "Remaining Shares, etc.") in the trust assets, the additional contribution amount shall be calculated after taking into account the Remaining Shares, etc.

④ Other

With the introduction of the Plan, the Company has decided to increase the percentage of performance-linked remuneration for Executive Officers. Specifically, the ratio of basic remuneration, variable remuneration, and share remuneration for achieving performance goals was set at 60%:25%:15% in the case of the Representative and Chief Executive Officer.

Dialogue with Stakeholders

The Corporate Communication Officer is responsible for general dialogue with shareholders, and the Corporate Communication Department is the internal department responsible for providing assistance thereto. The Company endeavors to have opportunities for dialogue with shareholders that contribute to the sustained growth and enhancement of medium- to long-term corporate value of the Company centered on Executive Officers. Furthermore, departments involved in IR activities centered on the Corporate Communication Department work to coordinate among departments on a daily basis.

We will continue to endeavor to disclose information in a timely and appropriate manner to enable the Nittobo Group's customers, shareholders and investors to accurately recognize and judge the actual state of the Nittobo Group. In order to achieve this, we comply with laws, regulations and securities exchange rules on disclosure, and are engaged in the creation and operation of an appropriate disclosure system.

- ① We publish items specified for disclosure in Japanese and foreign laws, regulations and securities exchange rules in business reports, annual securities reports and communications to shareholders, and announce them in securities exchange communication systems and press releases.
- ② In principle, we publish information being disclosed on the Nittobo Group's website, and also endeavor to provide fairer and broader disclosure.
- ③ We conduct briefings for analysts and institutional investors promptly after the announcement of quarterly financial results.
- ④ We publish an integrated report that incorporates financial and non-financial information, including CSR, in order to provide a better understanding of the Group's medium- to long-term value creation framework.

Opinions and concerns, etc., about the Company that are learned through dialogue with shareholders and investors are collated by the Corporate Communication Department, reported to the Corporate Communication Officer and the Board of Directors on a quarterly basis, and appropriately provided as feedback to management executives.

Adequate care is given to insider information in individual inquiries and dialogue with the Nittobo Group, and explanations are limited to information that has already been published and facts that are well known.

Cross-shareholdings

Policy Regarding Cross-shareholdings

The Company holds shares of listed companies under its policy on cross-shareholding in cases where it deems such shareholding to be beneficial for building favorable trading relationships with important trading partners of the Nittobo Group in fields including sales, raw material procurement and finance, smoothly advancing business activities of the Nittobo Group, and enhancing corporate value in the Nittobo Group. However, from the perspective of improving the Group's corporate value, the Company will sell shares that are deemed to be of little holding significance, while paying attention to the effect on the market, and so forth.

Method for Assessing Rationale for Holding Shares

The Company reviews the holding policy for listed shares individually at a meeting of the Board of Directors on a periodic basis, comprehensively considering qualitative factors such as sales and

procurement, the existence of any technological cooperation or joint capital investment, whether there are any joint ventures underway, financing, the maintenance and establishment of good business relationships, and a quantitative evaluation that compares the total return on investment, calculated by considering dividend yield and business profit, against the cost of capital, as well as the comprehensively considered policy on cross-shareholding.

Exercise of Voting Rights Associated with Cross-shareholdings

The Company will appropriately exercise its voting rights associated with cross-shareholdings after consideration of whether such issuing company has established an effective governance structure and is making appropriate decisions to improve its corporate value over the medium to long term, as well as whether such shareholdings will contribute to enhancing the Group's corporate value.

▼ Changes in Cross-Shareholdings

			FY2017	FY2018	FY2019	FY2020	FY2021
Sold during the period	Unlisted stocks	Number of shares	—	—	2	1	1
		Amount (million yen)	—	—	32	24	0
	Listed stocks	Number of shares	2	13	3	4	—
		Amount (million yen)	1,305	2,050	783	8,665	—
	Total	Number of shares	2	13	5	5	1
		Amount (million yen)	1,305	2,050	815	8,689	1
Capitalization at end of period (including unlisted stocks)	Number of shares	64	53	51	49	47	
	Amount (million yen)	25,291	20,604	20,694	16,625	15,243	

Directors (as of June 28, 2022)




Director  
**Sadayoshi Fujishige**

Reason for Appointment

Mr. Fujishige has a wealth of experience and a high level of insight as a top manager of listed companies. The Company expects that he will appropriately fulfill his role as an External Director by contributing to the decision-making of the Board of Directors and supervising business execution from the standpoint of promoting sustainable growth and improving the Company's mid- and long-term corporate value, resulting in his appointment.

Career Summary

Mar. 1969 Joined Lion Fat & Oil Co., Ltd. (currently: Lion Corporation)  
Mar. 1996 Director, Executive General Manager of International Division of Lion Corporation  
Mar. 2000 Executive Director, Executive General Manager of Home Products Sales Headquarters of Lion Corporation  
Mar. 2002 Representative Director, Senior Executive Director, Responsible for Home Products Business, Executive General Manager of Home Products Sales Headquarters of Lion Corporation  
Mar. 2004 Representative Director, President and CEO of Lion Corporation  
Mar. 2006 Representative Director, President and CEO, Chairman of the Board of Directors, Responsible for Home Products Business of Lion Corporation  
Jan. 2012 Representative Director, Chairman and CEO, Chairman of the Board of Directors of Lion Corporation  
Jan. 2014 Representative Director, Chairman, Chairman of the Board of Directors of Lion Corporation  
Mar. 2016 Advisor of Lion Corporation  
Jun. 2020 External Director of SATO HOLDINGS CORPORATION (current)  
Jun. 2020 External Director of the Company (current)  
Mar. 2021 Special Consultant of Lion Corporation (current)  
Jun. 2021 Outside Member of the Board (Member of the Audit and Supervisory Committee) of TV Asahi Holdings Corporation (current)



Director Representative and Chief Executive Officer  
**Yuichi Tsuji**

Reason for Appointment

Mr. Tsuji assumed his office as Executive Officer in 2014 and was responsible for overall headquarters functions, including the Corporate Business Planning Dept. and Human Resources Dept. Since 2016, he has presided over the entire Nittobo Group as Representative and Chief Executive Officer. He has ample business experience befitting a Director of the Company, and has a broad range of knowledge and deep insight into the Company's business, resulting in his appointment.

Career Summary

Oct. 2013 Joined the Company General Manager of Accounting and Finance Dept.  
Apr. 2014 Operating Officer and General Manager of Accounting and Finance Dept.  
Jun. 2014 Executive Officer, General Manager of Corporate Business Planning Dept. and Responsible for Corporate Risk Management  
Nov. 2014 Executive Officer, General Manager of Corporate Business Planning Dept., Responsible for Corporate Risk Management, Human Resources Dept., Information System Dept., Compliance Management Dept., Purchasing Dept., Osaka Branch and Nagoya Branch  
Jun. 2015 Director and Executive Officer (current)  
Feb. 2016 Representative Executive Officer  
Jun. 2016 Representative and Chief Executive Officer (current)




Director  
**Hiroshi Kagechika**

Reason for Appointment

Mr. Kagechika has specialist insight and a wealth of experience in corporate business and the field of research and development in the manufacturing sector. The Company expects that he will appropriately fulfill his role as an External Director by contributing to the decision-making of the Board of Directors and supervising business execution from the standpoint of promoting sustainable growth and improving the Company's mid- and long-term corporate value, resulting in his appointment.

Career Summary

Apr. 1972 Joined NKK Corporation (currently: JFE Holdings, Inc.)  
Feb. 2002 Vice President of NKK Corporation  
Apr. 2003 Vice President of JFE Steel Corporation  
Apr. 2005 Senior Vice President (Director of Steel Research Laboratory) of JFE Steel Corporation  
Apr. 2009 President and Representative Director of JFE Techno-Research Corporation  
Apr. 2015 Advisor of JFE Techno-Research Corporation  
Jun. 2020 External Director of the Company (current)



Director  
**Toyoshi Nishizaka**

Reason for Appointment

Mr. Nishizaka served as General Manager of Human Resources Dept. and President of Environmental Division and has experience in starting up overseas subsidiaries. He has ample business experience befitting a Director of the Company, and has a broad range of knowledge and deep insight into the Company's business, resulting in his appointment.

Career Summary

Apr. 1981 Joined the Company  
Jun. 2003 General Manager of Planning & Administration Dept., Glass Fiber Division  
Feb. 2007 General Manager of Human Resources Dept.  
Jun. 2008 Director and General Manager of Human Resources Dept.  
Oct. 2008 Operating Officer and President of Building Materials Division  
Apr. 2010 Managing Operating Officer and President of Environmental Division  
Jan. 2011 Managing Operating Officer and stationed at Main Branch (Fukushima)  
May 2012 President, Representative Director of Nittobo Allied Service Co., Ltd.  
Apr. 2013 Advisor and Head of Fukuyama Enterprise Center  
Jun. 2014 Director (current)




Director  
**Agasa Naito**

Reason for Appointment

Ms. Naito has a wealth of experience and a high level of insight as an expert in law and as an outside officer of other companies. The Company expects that she will appropriately fulfill her role as an External Director by contributing to the decision-making of the Board of Directors and supervising business execution from the standpoint of promoting sustainable growth and improving the Company's mid- and long-term corporate value, resulting in her appointment.

Career Summary

Oct. 2001 Registered as an attorney Joined Nagashima Ohno & Tsunematsu  
May 2008 Registered as an attorney at New York State Bar Association  
Jun. 2011 Joined TANABE & PARTNERS  
Apr. 2013 Partner of TANABE & PARTNERS (current)  
Jun. 2015 Outside Audit & Supervisory Board Member of BOOKOFF CORPORATION LIMITED  
Oct. 2018 Outside Audit & Supervisory Board Member of BOOKOFF GROUP HOLDINGS LIMITED  
Jun. 2020 External Director of the Company (current)  
Aug. 2021 Outside Director (Audit & Supervisory Board Member) of BOOKOFF GROUP HOLDINGS LIMITED (current)




Director  
**Yasuharu Nakajima**

Reason for Appointment

Mr. Yasuharu Nakajima has engaged in corporate audit work for many years as a certified public accountant. He brings specialized knowledge and abundant experience in finance and accounting. He has been appointed to the Board of Directors of the Company to play an appropriate role in its decision making and supervision of business execution from the viewpoint of promoting the sustainable growth and medium- to long-term increase in corporate value of the Company.

Career Summary

Oct. 1983 Joined Tetsuzo Ota & Co. (currently Ernst & Young ShinNihon LLC)  
Apr. 1987 Registered as a certified public accountant  
May 1998 Partner of Showa Ota & Co. (currently Ernst & Young ShinNihon LLC)  
May 2004 Senior Partner of ShinNihon & Co. (currently Ernst & Young ShinNihon LLC)  
Sep. 2008 General Manager of 6th Audit Department of Ernst & Young ShinNihon LLC  
Sep. 2010 Managing Director, General Manager of 2nd Audit Business Division, and General Manager of Knowledge Headquarters of Ernst & Young ShinNihon LLC  
Jul. 2021 Partner of Ernst & Young ShinNihon LLC  
Jun. 2022 External Director of the Company (current)



Director  
**Kazuhiko Igarashi**

Reason for Appointment

Mr. Igarashi has worked for many years in the production and technical areas of the Glass Fiber Division, and since 2017 has overseen it as the General Manager of the Division. Since April 2022, he serves as Managing Executive Officer and the President of the Research and Development Headquarters. He is appointed as a Director of the Company because of his extensive business experience, breadth and depth of knowledge, and insight into the Company's production, technology and research and development fields.

Career Summary

Apr. 1990 Joined the Company  
Mar. 2007 General Manager of the Glass Fiber Yarn Production Department  
Apr. 2011 General Manager of the Glass Fiber Division Manufacturing Control Department  
Apr. 2013 General Manager of the Glass Fiber Division Technology and Production Headquarters  
Apr. 2014 General Manager of the Glass Fiber Division Production Headquarters and Deputy General Manager of Fukushima Factory  
Apr. 2015 Executive Officer, General Manager of the Glass Fiber Division Production Headquarters and Deputy, General Manager of Fukushima Factory  
Feb. 2016 Executive Officer, General Manager of the Glass Fiber Division Production Headquarters and General Manager of Fukushima Factory  
Apr. 2020 Managing Executive Officer, President of Glass Fiber Division  
Apr. 2021 Managing Executive Officer, President of Glass Fiber Division and General Manager of Technology Headquarters  
Apr. 2022 Managing Executive Officer, President of Research and Development Headquarters, Head of DX Strategy Office and Environment Technology Strategy Office (current)  
Jun. 2022 Director (current)

- External Director
- Directors who meet the Company's criteria for independence and have submitted an "Independent Directors/Auditors Notification" to the Tokyo Stock Exchange
- Director not concurrently serving as an Executive Officer
- Member of Nomination Committee
- Member of Remuneration Committee
- Member of Audit Committee

Executive Officers (as of July 1, 2022)

Name	Position	Main Responsibilities
Yuichi Tsuji*	Representative and Chief Executive Officer	CEO
Hiroyuki Tada	Managing Executive Officer	Responsible for the Corporate Management Division, General Manager of the Corporate Business Planning Division, Purchasing Department, and the Textile Division, and President and Representative Director of Nittobo Advantex Co., Ltd.
Kazuhiko Igarashi*	Managing Executive Officer	President of Research & Development Headquarters, Head of Digital Transformation Strategy Office, and Environment Technology Strategy Office
Tatsuo Sakae	Managing Executive Officer	General Manager of the Medical Division, President and Representative Director of NITTOBO MEDICAL CO., Ltd., and Chairman and CEO of Nittobo America Inc.
Hisanobu Hayashi	Managing Executive Officer	General Manager of the Glass Fiber Division and Chairman of Baotek Industrial Materials Ltd.
Takanobu Matsunaga	Senior Executive Officer	Deputy General Manager of the Glass Fiber Division, Responsible for Sales Division, and General Manager of Product Planning and Development Division, and President and Representative Director of Paramount Glass Manufacturing Co., Ltd.

Name	Position	Main Responsibilities
Yuji Sugama	Executive Officer	Responsible for Regulatory Affairs and Academics, Vice President of Research & Development Headquarters (Head of Medical SC Technology), Head of the Medical R&D Center
Akimasa Kajita	Executive Officer	General Manager of the Glass Fiber Division Production Headquarters, and President and Representative Director of Nitto Glass Fiber Manufacturing Co., Ltd.
Hiroki Kajikawa	Executive Officer	Responsible for the Human Resources Dept., Corporate Communication Dept., Accounting and Finance Dept., and Information Systems Dept., and General Manager of Accounting and Finance Dept.
Katsuya Hatanaka	Executive Officer	Responsible for the Corporate Business Planning Dept., General Affairs Dept., 100-year Anniversary Project, Risk Management Dept., Legal Dept., Osaka Branch, Nagoya Branch and General Manager of the Corporate Business Planning Dept.
Masaki Ito	Executive Officer	President of NITTOBO ASIA Glass Fiber Co., Ltd.

\*Concurrently serving as Director

# 11-Year Financial Data

(Millions of yen)

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
<b>Operating results</b>											
Net sales	82,638	82,103	85,104	90,223	86,199	83,324	84,526	82,292	85,722	78,727	84,051
Operating profit	5,929	6,619	6,476	8,885	10,893	11,148	10,837	8,198	8,160	5,964	7,268
Ordinary profit	5,496	6,413	6,511	8,658	10,974	11,396	11,071	8,934	8,202	6,274	8,065
Profit attributable to owners of parent	1,433	2,840	3,858	4,588	5,598	7,479	10,253	7,984	5,771	8,100	6,519
EBITDA*1	11,411	11,974	11,190	13,578	15,497	15,278	15,001	12,279	13,548	12,296	14,351
Depreciation	5,481	5,354	4,713	4,692	4,603	4,130	4,164	4,080	5,388	6,332	7,082
Capital investment	5,236	5,903	5,104	4,814	4,422	2,043	7,024	11,949	16,717	14,709	15,820
R&D expenses	1,704	1,626	1,495	1,290	1,255	1,429	1,590	1,477	1,698	2,097	2,577
<b>Cash flows</b>											
Cash flows from operating activities/ Net cash provided by (used in) operating activities	4,634	6,223	12,152	14,745	16,677	11,034	7,791	5,317	10,614	7,815	6,965
Cash flows from investing activities/ Net cash provided by (used in) investing activities	(8,245)	(7,006)	(4,267)	(5,318)	(12,294)	(2,271)	2,524	(11,389)	(16,917)	(1,867)	(17,305)
Cash flows from financing activities/ Net cash provided by (used in) financing activities	(2,604)	(1,432)	(4,351)	(4,388)	(2,276)	(8,826)	(9,467)	3,948	12,628	1,862	(1,530)
Free cash flows	(3,610)	(783)	7,884	9,426	4,382	8,762	10,316	(6,071)	(6,302)	5,948	(10,339)
<b>Financial position (at end of fiscal year)</b>											
Total assets*2	131,040	132,555	136,294	145,956	142,719	140,064	147,160	151,000	172,824	184,652	187,289
Net assets	55,811	60,135	63,371	73,228	75,455	78,281	87,548	90,740	98,704	104,389	110,638
Interest-bearing debt	35,096	35,976	35,408	34,016	32,673	27,358	20,225	25,589	40,315	44,162	46,211
<b>Stock information*3</b>											
Number of shares issued (thousand shares)	247,677	247,677	247,677	247,677	247,677	199,677	39,935	39,935	39,935	39,935	39,935
Earnings per share (EPS) (yen)*4	7.19	14.25	19.36	23.03	28.10	37.71	263.97	205.76	148.73	208.77	168.04
Book-value per share (BPS) (yen)*4	276.11	297.69	313.91	363.32	374.50	396.00	2,232.43	2,312.06	2,413.82	2,555.06	2,727.58
Dividends per share (yen)*5	5.00	5.00	5.00	5.00	6.00	7.00	26.00	40.00	45.00	45.00	45.00
Dividend payout ratio (%)*6	69.5	35.1	25.8	21.7	21.4	18.6	15.2	19.4	30.3	21.6	26.8
<b>Management indicators</b>											
Operating profit ratio (%)	7.2	8.1	7.6	9.8	12.6	13.4	12.8	10.0	9.5	7.6	8.6
EBITDA margin (%)	13.8	14.6	13.1	15.0	18.0	18.3	17.7	14.9	15.8	15.6	17.1
Return on equity (ROE) (%)*7	2.6	5.0	6.3	6.8	7.6	9.8	12.5	9.1	6.3	8.4	6.4
Equity ratio (%)*8	42.0	44.8	45.9	49.6	52.3	55.3	58.9	59.4	54.2	53.7	56.5
Debt-to-equity ratio (time)*9	0.64	0.61	0.57	0.47	0.44	0.35	0.23	0.29	0.43	0.45	0.44

\*1 EBITDA: Operating profit + depreciation

\*2 The Partial Amendments to Accounting Standard for Tax Effect Accounting (ASBJ Guidance No. 28, February 16, 2018) and others have been applied from the beginning of fiscal 2018, and the figures for fiscal years 2014 through 2017 are shown after retroactive application of such accounting standards.

\*3 On October 1, 2017, a reverse stock split was implemented at a ratio of 1 share for every 5 shares of common stock.

\*4 Earnings per share is calculated based on the average number of issued shares during the period excluding treasury stock, and book value per share is calculated based on the number of shares issued at the end of the period excluding treasury stock.

\*5 The fiscal 2017 dividend of ¥26 per share is the sum of the interim dividend of ¥3.5 before the reverse stock split and the year-end dividend of ¥22.5 after the reverse stock split. The dividend per share for fiscal 2017, converted on a post-reverse stock split basis, would be ¥40.

\*6 The consolidated dividend payout ratio is calculated based on the average number of issued shares outstanding during the period excluding treasury shares.

\*7 Return on equity (ROE): Profit attributable to owners of the parent / (Net assets [average of beginning and ending amounts] - Non-controlling interests [average of beginning and ending amounts])

\*8 Equity ratio: (Net assets - Non-controlling interests) / Total assets

\*9 Debt-to-equity ratio: Interest-bearing debt / (Net assets - Non-controlling interests)

Consolidated Balance Sheet

(Millions of yen)

	As of March 31, 2021	As of March 31, 2022
<b>Assets</b>		
<b>Current assets</b>		
Cash and deposits	30,320	18,537
Notes and accounts receivable - trade	23,985	—
Notes receivable - trade	—	5,364
Accounts receivable - trade	—	20,593
Merchandise and finished goods	8,598	10,817
Work in process	4,296	4,625
Raw materials and supplies	21,451	22,297
Other	5,237	3,605
Allowance for doubtful accounts	(1)	(1)
<b>Total current assets</b>	<b>93,887</b>	<b>85,838</b>
<b>Non-current assets</b>		
<b>Property, plant and equipment</b>		
Buildings and structures, net	15,886	19,909
Machinery, equipment and vehicles, net	21,246	32,807
Land	14,983	15,334
Leased assets, net	1,451	1,241
Construction in progress	10,035	6,048
Other, net	1,902	1,928
<b>Total property, plant and equipment</b>	<b>65,506</b>	<b>77,270</b>
<b>Intangible assets</b>	<b>2,595</b>	<b>3,082</b>
<b>Investments and other assets</b>		
Investment securities	17,282	15,771
Retirement benefit asset	377	591
Deferred tax assets	3,356	3,048
Other	1,664	1,706
Allowance for doubtful accounts	(20)	(20)
<b>Total investments and other assets</b>	<b>22,661</b>	<b>21,097</b>
<b>Total non-current assets</b>	<b>90,764</b>	<b>101,450</b>
<b>Total assets</b>	<b>184,652</b>	<b>187,289</b>

(Millions of yen)

	As of March 31, 2021	As of March 31, 2022
<b>Liabilities</b>		
<b>Current liabilities</b>		
Notes and accounts payable - trade	6,570	6,523
Short-term borrowings	7,252	14,354
Current portion of long-term borrowings	5,518	5,101
Lease liabilities	378	337
Income taxes payable	2,528	555
Provision for bonuses	1,080	1,059
Provision for business restructuring	710	195
Other	9,836	8,737
<b>Total current liabilities</b>	<b>33,875</b>	<b>36,864</b>
<b>Non-current liabilities</b>		
Bonds payable	10,000	10,000
Long-term borrowings	19,322	14,891
Lease liabilities	1,690	1,528
Provision for repairs	5,652	4,371
Retirement benefit liability	7,976	6,919
Other	1,746	2,076
<b>Total non-current liabilities</b>	<b>46,387</b>	<b>39,787</b>
<b>Total liabilities</b>	<b>80,262</b>	<b>76,651</b>
<b>Net assets</b>		
<b>Shareholders' equity</b>		
Share capital	19,699	19,699
Capital surplus	19,037	19,373
Retained earnings	61,831	66,619
Treasury shares	(2,559)	(2,563)
<b>Total shareholders' equity</b>	<b>98,008</b>	<b>103,129</b>
<b>Accumulated other comprehensive income</b>		
Valuation difference on available-for-sale securities	2,714	1,754
Foreign currency translation adjustment	(371)	1,995
Remeasurements of defined benefit plans	(1,220)	(1,056)
<b>Total accumulated other comprehensive income</b>	<b>1,123</b>	<b>2,692</b>
<b>Non-controlling interests</b>	<b>5,257</b>	<b>4,815</b>
<b>Total net assets</b>	<b>104,389</b>	<b>110,638</b>
<b>Total liabilities and net assets</b>	<b>184,652</b>	<b>187,289</b>

## Consolidated Statement of Income

(Millions of yen)

	For the fiscal year ended March 31, 2021	For the fiscal year ended March 31, 2022
<b>Net sales</b>	<b>78,727</b>	<b>84,051</b>
<b>Cost of sales</b>	<b>53,065</b>	<b>55,823</b>
<b>Gross profit</b>	<b>25,661</b>	<b>28,228</b>
<b>Selling, general and administrative expenses</b>	<b>19,697</b>	<b>20,959</b>
<b>Operating profit</b>	<b>5,964</b>	<b>7,268</b>
<b>Non-operating income</b>		
Interest income	15	2
Dividend income	446	459
Rental income	97	91
Foreign exchange gains	278	714
Other	343	327
<b>Total non-operating income</b>	<b>1,181</b>	<b>1,594</b>
<b>Non-operating expenses</b>		
Interest expenses	250	219
Expenses related to inactive real estate for rent	332	293
Inactive facilities expenses	34	162
Other	253	122
<b>Total non-operating expenses</b>	<b>871</b>	<b>798</b>
<b>Ordinary profit</b>	<b>6,274</b>	<b>8,065</b>
<b>Extraordinary income</b>		
Gain on sale of non-current assets	3,091	14
Gain on sale of investment securities	6,590	37
Reversal of provision for repairs	808	—
Insurance claim income	2,671	437
Subsidy income	826	332
Compensation income	—	1,062
Other	19	—
<b>Total extraordinary income</b>	<b>14,008</b>	<b>1,884</b>
<b>Extraordinary losses</b>		
Loss on disposal of non-current assets	165	290
Impairment losses	1,838	286
Business restructuring expenses	3,946	35
Loss on disaster	2,235	336
Loss on tax purpose reduction entry of non-current assets	825	302
Other	56	18
<b>Total extraordinary losses</b>	<b>9,069</b>	<b>1,270</b>
<b>Profit before income taxes</b>	<b>11,213</b>	<b>8,679</b>
Income taxes - current	3,023	1,275
Income taxes - deferred	[88]	722
<b>Total income taxes</b>	<b>2,935</b>	<b>1,998</b>
<b>Profit</b>	<b>8,278</b>	<b>6,681</b>
<b>Profit attributable to non-controlling interests</b>	<b>178</b>	<b>161</b>
<b>Profit attributable to owners of parent</b>	<b>8,100</b>	<b>6,519</b>

## Consolidated Statement of Comprehensive Income

(Millions of yen)

	For the fiscal year ended March 31, 2021	For the fiscal year ended March 31, 2022
<b>Profit</b>	<b>8,278</b>	<b>6,681</b>
<b>Other comprehensive income</b>		
Valuation difference on available-for-sale securities	(1,264)	(869)
Foreign currency translation adjustment	(446)	2,934
Remeasurements of defined benefit plans, net of tax	992	169
<b>Total other comprehensive income</b>	<b>(718)</b>	<b>2,233</b>
<b>Comprehensive income</b>	<b>7,559</b>	<b>8,915</b>
Comprehensive income attributable to		
Comprehensive income attributable to owners of parent	7,325	8,089
Comprehensive income attributable to non-controlling interests	233	825

### Consolidated Statement of Changes in Equity

For the fiscal year ended March 31, 2021

(Millions of yen)

	Shareholders' equity					Accumulated other comprehensive income					Non-controlling interests	Total net assets
	Share capital	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income			
<b>Balance at beginning of period</b>	<b>19,699</b>	<b>19,037</b>	<b>55,574</b>	<b>(2,554)</b>	<b>91,757</b>	<b>3,998</b>	<b>117</b>	<b>(2,219)</b>	<b>1,897</b>	<b>5,049</b>	<b>98,704</b>	
Cumulative effects of changes in accounting policies					—						—	
Restated balance	19,699	19,037	55,574	(2,554)	91,757	3,998	117	(2,219)	1,897	5,049	98,704	
Changes during period												
Dividends of surplus			(1,842)		(1,842)						(1,842)	
Profit attributable to owners of parent			8,100		8,100						8,100	
Purchase of treasury shares				(5)	(5)						(5)	
Change in ownership interest of parent due to transactions with non-controlling interests					—						—	
Net changes in items other than shareholders' equity						(1,284)	(489)	998	(774)	208	(566)	
<b>Total changes during period</b>	<b>—</b>	<b>—</b>	<b>6,257</b>	<b>(5)</b>	<b>6,251</b>	<b>(1,284)</b>	<b>(489)</b>	<b>998</b>	<b>(774)</b>	<b>208</b>	<b>5,684</b>	
<b>Balance at end of period</b>	<b>19,699</b>	<b>19,037</b>	<b>61,831</b>	<b>(2,559)</b>	<b>98,008</b>	<b>2,714</b>	<b>(371)</b>	<b>(1,220)</b>	<b>1,123</b>	<b>5,257</b>	<b>104,389</b>	

For the fiscal year ended March 31, 2022

(Millions of yen)

	Shareholders' equity					Accumulated other comprehensive income					Non-controlling interests	Total net assets
	Share capital	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income			
<b>Balance at beginning of period</b>	<b>19,699</b>	<b>19,037</b>	<b>61,831</b>	<b>(2,559)</b>	<b>98,008</b>	<b>2,714</b>	<b>(371)</b>	<b>(1,220)</b>	<b>1,123</b>	<b>5,257</b>	<b>104,389</b>	
Cumulative effects of changes in accounting policies			14		14						14	
Restated balance	19,699	19,037	61,846	(2,559)	98,023	2,714	(371)	(1,220)	1,123	5,257	104,404	
Changes during period												
Dividends of surplus			(1,745)		(1,745)						(1,745)	
Profit attributable to owners of parent			6,519		6,519						6,519	
Purchase of treasury shares				(3)	(3)						(3)	
Change in ownership interest of parent due to transactions with non-controlling interests		336			336						336	
Net changes in items other than shareholders' equity						(960)	2,366	163	1,569	(441)	1,128	
<b>Total changes during period</b>	<b>—</b>	<b>336</b>	<b>4,773</b>	<b>(3)</b>	<b>5,106</b>	<b>(960)</b>	<b>2,366</b>	<b>163</b>	<b>1,569</b>	<b>(441)</b>	<b>6,234</b>	
<b>Balance at end of period</b>	<b>19,699</b>	<b>19,373</b>	<b>66,619</b>	<b>(2,563)</b>	<b>103,129</b>	<b>1,754</b>	<b>1,995</b>	<b>(1,056)</b>	<b>2,692</b>	<b>4,815</b>	<b>110,638</b>	

### Consolidated Statement of Cash Flows

(Millions of yen)

	For the fiscal year ended March 31, 2021	For the fiscal year ended March 31, 2022
<b>Cash flows from operating activities</b>		
Profit before income taxes	11,213	8,679
Depreciation	6,332	7,082
Impairment losses	1,838	286
Increase (decrease) in retirement benefit liability	(492)	(824)
Increase (decrease) in provision for repairs	68	(1,280)
Interest and dividend income	(462)	(461)
Interest expenses	250	219
Loss (gain) on sale and valuation of investment securities	(6,533)	(37)
Loss (gain) on sale and retirement of non-current assets	(2,923)	276
Insurance claim income	(2,671)	(437)
Subsidy income	(826)	(332)
Compensation income	—	(1,062)
Business restructuring expenses	3,946	35
Decrease (increase) in trade receivables	1,173	(1,750)
Decrease (increase) in inventories	(5,258)	(2,938)
Increase (decrease) in trade payables	294	(175)
Other, net	(966)	1,876
<b>Subtotal</b>	<b>4,982</b>	<b>9,154</b>
Interest and dividends received	462	461
Interest paid	(246)	(226)
Proceeds from insurance income	2,671	437
Subsidies received	1,631	521
Proceeds from compensation	—	1,062
Business restructuring expenses paid	—	(512)
Income taxes paid	(1,686)	(3,933)
<b>Net cash provided by (used in) operating activities</b>	<b>7,815</b>	<b>6,965</b>
<b>Cash flows from investing activities</b>		
Purchase of non-current assets	(13,840)	(17,326)
Proceeds from sale of non-current assets	3,276	10
Proceeds from sale of investment securities	8,806	225
Purchase of shares of subsidiaries	—	(469)
Other, net	(110)	256
<b>Net cash provided by (used in) investing activities</b>	<b>(1,867)</b>	<b>(17,305)</b>
<b>Cash flows from financing activities</b>		
Net increase (decrease) in short-term borrowings	(373)	6,220
Proceeds from long-term borrowings	11,274	670
Repayments of long-term borrowings	(6,702)	(5,518)
Dividends paid	(1,842)	(1,745)
Purchase of shares of subsidiaries not resulting in change in scope of consolidation	—	(732)
Other, net	(492)	(424)
<b>Net cash provided by (used in) financing activities</b>	<b>1,862</b>	<b>(1,530)</b>
<b>Effect of exchange rate change on cash and cash equivalents</b>	<b>(342)</b>	<b>159</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>7,468</b>	<b>(11,710)</b>
<b>Cash and cash equivalents at beginning of period</b>	<b>22,695</b>	<b>30,163</b>
<b>Cash and cash equivalents at end of period</b>	<b>30,163</b>	<b>18,453</b>

# Company Profile

<b>Dates of establishment:</b>	February 1898 Koriyama Kenshi Boseki Co., Ltd. (Koriyama)
	April 1918 Fukushima Seiren Seishi Co., Ltd. (Fukushima)
	April 1923 NITTO BOSEKI CO., LTD.
<b>Head Office:</b>	Aza Higashi 1, Gonome, Fukushima-shi, Fukushima, 960-8161, Japan
<b>Headquarters:</b>	2-4-1, Kojimachi, Chiyoda-ku, Tokyo, 102-8489, Japan
<b>Paid-in capital:</b>	19.6 billion yen
<b>Representative and Chief Executive Officer:</b>	Yuichi Tsuji

<b>Employees:</b>	2,729 (Consolidated), 783 (Parent company) (as of March 31, 2022)
<b>Business operations:</b>	<ul style="list-style-type: none"> <li>• Manufacture, processing, and sale of textile products</li> <li>• Manufacture, processing, and sale of glass fiber products</li> <li>• Manufacture, processing, and sale of chemical products and pharmaceutical products</li> <li>• Manufacture and sale of soft drinks</li> <li>• Planning, supervision, and contracting for construction</li> <li>• Design, manufacture, and sale of machinery and equipment, etc.</li> </ul>

## Business Locations

<b>Tokyo Headquarters</b>	2-4-1, Kojimachi, Chiyoda-ku, Tokyo, 102-8489, Japan	Administration Division Telephone: +81-3-4582-5111 Glass Fiber Division Telephone: +81-3-4582-5170 Medical Division Telephone: +81-3-4582-5450 Textile Division Telephone: +81-3-4582-5160 Beverage Business Department Telephone: +81-3-4582-5480
<b>Osaka Branch</b>	4-3-10, Kourabashi, Chuo-ku, Osaka-shi, Osaka, 541-0043, Japan (Nissei Fushimicho Building New Building)	Telephone: +81-6-6208-5015
<b>Nagoya Branch</b>	2-14-21, Nishiki, Naka-ku, Nagoya-shi, Aichi, 460-0003, Japan (Maruyama Nissei Building)	Telephone: +81-52-231-5131
<b>Fukushima Factory</b>	1, Aza Higashi, Gonome, Fukushima-shi, Fukushima, 960-8581, Japan	Telephone: +81-24-546-3131 Fiber R&D Center Telephone: +81-24-546-3138
<b>Fukushima No. 2 Factory</b>	20, Ipponsugi, Sakurashimo, Fukushima-shi, Fukushima, 960-2154, Japan	Telephone: +81-24-593-1231
<b>Fukuyama Enterprise Center</b>	1, Aza Shiojima, Fukuhara, Fukuyama-cho, Koriyama-shi, Fukushima, 963-8061, Japan	Telephone: +81-24-932-6011 Research & Development Headquarters Telephone: +81-24-932-6110 Medical R&D Center Telephone: +81-24-932-6261
<b>Tomari Enterprise Center</b>	500, Hirayanagi, Asahi-machi, Shimoniikawa-gun, Toyama, 939-0744, Japan	Telephone: +81-765-82-1133
<b>Itami Enterprise Center</b>	1-6-1, Kuwazu, Itami-shi, Hyogo, 664-8501, Japan	Telephone: +81-72-782-2621

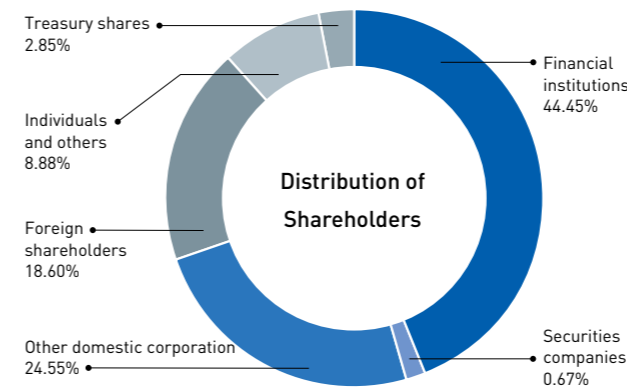
## Consolidated Subsidiaries (as of June 30, 2022)

<b>■ Glass Fiber Yarn</b>		
<b>Nitto Glass Fiber Manufacturing Co., Ltd.</b>	Koriyama-shi, Fukushima	Production and sale of glass fiber products
<b>Fuji Fiber Glass Co., Ltd.</b>	Moka-shi, Tochigi	Production and sale of glass fiber products
<b>NITTOBO ASIA Glass Fiber Co., Ltd.</b>	Chiayi County, Taiwan	Production and sale of glass fiber products
<b>■ Glass Fiber Cloth</b>		
<b>Soyo Co., Ltd.</b>	Chiyoda-ku, Tokyo	Sale of glass fiber products, etc.
<b>Shinwa Denzai Co., Ltd.</b>	Chiyoda-ku, Tokyo	Sale of electronic materials, etc.
<b>Baotek Industrial Materials Ltd.</b>	Taoyuan, Taiwan	Production and sale of glass fiber products
<b>Nittobo Taiwan Co., Ltd.</b>	Taoyuan, Taiwan	Sale of glass fiber products
<b>■ Glass Fiber for Industrial Materials</b>		
<b>Nitto Glasstex Co., Ltd.</b>	Oizumi-machi, Oura-gun, Gunma	Production and sale of glass fiber products
<b>Paramount Glass Manufacturing Co., Ltd.</b>	Sukagawa-shi, Fukushima; Ebetsu-shi, Hokkaido; Suzuka-shi, Mie	Production and sale of glass wool products
<b>Nittobo FRP Laboratory Co., Ltd.</b>	Koriyama-shi, Fukushima	Production and sale of glass fiber products, etc.
<b>Nittobo Macau Glass Weaving Co., Ltd.</b>	Macau	Production and sale of glass fiber products
<b>■ Life Science</b>		
<b>NITTOBO MEDICAL CO., LTD.</b>	Chiyoda-ku, Tokyo Koriyama-shi, Fukushima	Development, production, and sale of in vitro diagnostic reagents and specialty chemicals
<b>Frontier Institute Co., Ltd.</b>	Ishikari-shi, Hokkaido	Development, manufacturing and sale of bioassay kits and consignment of antibody production
<b>Nittobo America Inc.</b>	California, Iowa and Maine, U.S.A.	Production and sale of antisera used for in vitro diagnostic reagents
<b>Kamiya Biomedical Company, LLC</b>	Washington, U.S.A.	Production and sale of in vitro diagnostic reagents
<b>Nitto Beverage Co., Ltd.</b>	Asahi-machi, Shimoniikawa-gun Toyama	Production and sale of soft drinks
<b>■ Textiles</b>		
<b>Nittobo Advantex Co., Ltd.</b>	Itami-shi, Hyogo	Production and sale of interlignin and adhesive materials
<b>Bunkyo Seiren Co., Ltd.</b>	Fukui-shi, Fukui	Processing of textile products
<b>■ Others</b>		
<b>Nittobo Allied Service Co., Ltd.</b>	Fukushima-shi, Fukushima	Various contracted services and insurance agency
<b>Nittobo Ecology Co., Ltd.</b>	Chiyoda-ku, Tokyo	Various contracted services
<b>Nittobo Techno Co., Ltd.</b>	Koriyama-shi, Fukushima	Design, manufacture, and sale of mechanical facilities; design and construction of civil engineering work and buildings

# Stock Information (as of March 31, 2022)

## Stock Status

<b>Authorized number of shares</b>	120,000,000 shares
<b>Number of shares issued</b>	39,935,512 shares (including 1,138,347 treasury shares)
<b>Number of shareholders</b>	8,665



## Major Shareholders

Name	Number of shares held (in thousands)	Percentage of shares held* (%)
The Master Trust Bank of Japan, Ltd. (Trust account)	5,750	14.82
Custody Bank of Japan, Ltd. (Trust account)	3,176	8.19
Sumitomo Realty & Development Co., Ltd.	2,383	6.14
Nippon Life Insurance Company	1,614	4.16
The Dai-ichi Life Insurance Company, Limited	1,316	3.39
Sumitomo Life Insurance Company	1,082	2.79
AIR WATER INC.	997	2.57
TAIYO FUND, L.P.	965	2.49
Central Glass Co., Ltd	948	2.45
The Toho Bank, Ltd.	905	2.33

\*The percentage of shares held excludes treasury shares.

## Stock-related Administration

<b>Fiscal Year</b>	April 1 to March 31
<b>Ordinary General Meeting of Shareholders</b>	Late June
<b>Record Date</b>	Voting rights for Ordinary General Meeting of Shareholders March 31 Year-end Dividend March 31 Interim Dividend September 30 Other record dates are established as necessary with prior public notice.
<b>Method of Public Notice</b>	Public notices are available on the Company's website below: <a href="https://www.nittobo.co.jp/">https://www.nittobo.co.jp/</a> [Japanese only] However, if an electronic public notice cannot be posted due to an accident or other unavoidable reason, the public notice will be printed in the Nihon Keizai Shimbun.
<b>Stock Listing</b>	Prime Market of the Tokyo Stock Exchange (Securities code: 3110)
<b>Shareholder Registry Administrator and Special Account Administrator</b>	Mizuho Trust & Banking Co., Ltd. 1-3-3 Marunouchi, Chiyoda-ku, Tokyo

## IR Information Website

The Nittobo Group's detailed IR information is available on our official website.

<https://www.nittobo.co.jp/eng/ir/index.htm>

- Management policy
- Corporate governance
- Financial results-related materials (financial statements, etc.)
- News releases
- IR calendar
- Performance and financial information and more



## Message from the Corporate Communication Department

Thank you for reading the *Nittobo Group Integrated Report 2022*.

This report has been prepared to provide stakeholders with key information on the Company and our efforts to realize Big VISION 2030, our vision for 2030. We set out to convey our growth strategy in an easy-to-understand manner, as well as our commitment to the constant improvement of governance, with committed focus on the environment and social aspects in order to enhance our corporate value and achieve sustainable growth. We will continue to place importance on dialogue with our stakeholders and actively promote communication activities that will enhance our corporate value.

