



Representative and Chief Executive
Officer Yuichi Tsuji

NITTO BOSEKI CO., LTD. (3110)



Company Information

Market	TSE Prime
Industry	Glass and ceramics products (manufacturing)
Director, Representative and Chief Executive Officer	Yuichi Tsuji
HQ Address	Kojimachi-odori Bldg., 2-4-1, Kojimachi, Chiyoda-ku, Tokyo
Year-end	March
Homepage	https://www.nittobo.co.jp/eng/index.html

Stock Information

Share Price	Shares Outstanding	Total market cap	ROE Act.	Trading Unit	
¥2,243	39,935,512 shares	¥89,575million	6.4%	100 shares	
DPS Est.	Dividend yield Est.	EPS Est.	PER Est.	BPS Act.	PBR Act.
¥45.00	2.0%	¥193.31	11.6 x	¥2,727.58	0.8 x

*The share price is the closing price on May 24. Each value is based on the financial results of the Fiscal Year ended March 2022.

Earnings Trend

Fiscal Year	Net Sales	Operating Profit	Ordinary Profit	Net Profit	EPS	DPS
2019/Mar Act.	82,292	8,198	8,934	7,984	205.76	40.00
2020/Mar Act.	85,722	8,160	8,202	5,771	148.73	45.00
2021/Mar Act.	78,727	5,964	6,274	8,100	208.77	45.00
2022/Mar Act.	84,051	7,268	8,065	6,519	168.04	45.00
2023/Mar Est.	96,000	7,300	8,000	7,500	193.31	45.00

*Unit: million yen, yen. Net profit is net profit attributable to shareholders of the parent company. The same as below. Units are rounded down.

This report introduces an overview of earnings results for Fiscal Year 2021 etc. of NITTO BOSEKI CO., LTD.

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(※)The amounts (100 million yen) and percentages in the text are rounded to the nearest unit.

Key Points

- **In the Fiscal Year 2021, sales increased 6.8% year on year to 84.1 billion yen. Although the impact of the COVID-19 remained, sales increased except for glass fiber for industrial materials. Operating profit increased 21.9% year on year to 7.3 billion yen. The company continued to invest in strengthening the foundation, and the increased sales of flat fibers, Special Glass, and in vitro diagnostic reagents as well as the structural reforms in the composite materials and Textiles Businesses contributed to the overall sales growth. Net profit decreased 19.5% year on year to 6.5 billion yen. Profit decreased due to the reaction to the gain on sales of noncurrent assets and investment securities in the previous fiscal year. Both sales and profit exceeded the forecasts announced in February 2022. On a quarterly basis, sales are recovering steadily, but operating profit is flat.**
- **In the Fiscal Year 2022, sales are expected to rise 14.2% year on year to 96 billion yen, operating profit to increase 0.4% year on year to 7.3 billion yen, and ordinary profit to decrease 0.8% year on year to 8 billion yen. Amidst the uncertain outlook for global energy prices due to the Russia/Ukraine issue, lockdowns in China, semiconductor shortages, and supply chain disruptions, the company expects to see the full impact of higher electric fuel costs in composite materials and Glass Fiber for Industrial Materials Businesses. Sales of Special Glass and in vitro diagnostic reagents are forecasted to contribute to operating profit. Despite the full-scale rise in raw fuel costs, due to cost reductions, sales price adjustment, and the yen depreciation, overall operating profit is predicted to be almost the same level as that in the previous fiscal year. The company plans to pay a dividend of 45.00 yen/share like in the previous fiscal year. The expected dividend payout ratio is 23.3%.**
- **Although the business environment had many negative factors, such as the shortage of semiconductors and soaring prices of raw materials, the company's earnings in Fiscal Year 2021 exceeded the forecasts. Net sales and operating profit are expected to increase in the Fiscal Year 2022, and the company plans to grow sales into the second half. Although there are still many uncertainties, Investment Bridge would like to keep an eye on whether the company can steadily achieve the forecasted figures. Investment Bridge would also like to pay attention to the progress of the Mid-Term Business Plan.**

1. Company Overview

The company succeeded in the first industrialization of glass fiber in Japan through technologies of the textiles business which is its original business. It provides products for a wide range of applications, such as electronic materials and industrial materials, with consistent coverage from yarn manufacturing to glass fiber cloth processing.

Among them, Special Glass (NE-glass, T-glass) which achieves low dielectric and low thermal expansion by special composition is used in server base station and precision material for electronic devices such as smartphone and has high competitiveness. Furthermore, for “in vitro diagnostic reagents” in the Life Science Business, have the top share in more than 10 items in Japan.

1-1 Corporate History

“*Koriyama Kenshi Boseki Co., Ltd*” founded in Koriyama, Fukushima Prefecture in 1898, is the predecessor. The company has a history of 120 years.

Nitto Boseki Co., Ltd. was established in 1923 when Fukushima Boshoku Co., Ltd. (formerly Fukushima Seiren Seishi Co., Ltd.) acquired the ownership of the Iwashiro Spinning Plant of Katakura Seishi (formerly *Koriyama Kenshi Boseki Co., Ltd*) in 1918.

In 1938, it succeeded in industrialization (mass production) of glass fiber for the first time in Japan. In the world, Owens Coming Glass Fiber of the United States has achieved the industrialization of glass fiber around the same time.

In 1949, it began manufacturing glass wool for the first time in Japan.

In 1969, the company began manufacturing glass fiber cloth for printed wiring board. In 1982, it began manufacturing test reagents for blood coagulation factors. And in 1983, it succeeded in industrializing functional polymers “PAA®” for the first time in the world. As such, the company has continued to challenge new fields and expanded its business fields.

In February 2021, the company announced the ideal way that Nittobo Group aspires to be in 2030 [Big VISION 2030] and the “New Mid-Term Business Plan (FY 2021 to 2023)” for achieving sustainable growth, and engages in various activities, including business strategies, to attain environmental goals.

1-2 Management Philosophy

Its management philosophy is as follows.

“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.”

Furthermore, under the following Nittobo Declaration, it is aiming to be society’s “best partner” in collaboration with all stakeholders.

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>



(From the company’s website)

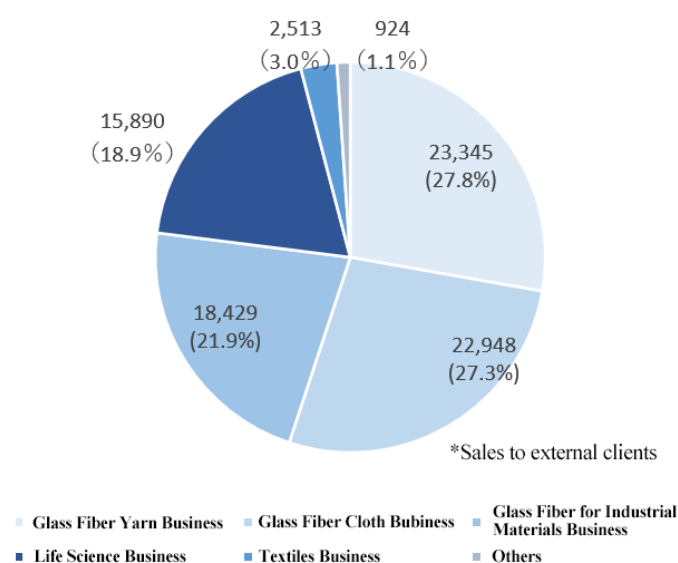
1-3 Business Description

(1) Business description

The company’s business can be largely divided into three categories, namely, the “Glass Fiber Business” which manufactures and sells various products using glass fiber, Life Science Business,” which is composed of the Medical business for manufacturing and selling in-vitro diagnostic reagents and the Beverage business for producing and bottling beverages, “Textiles Business”, which manufactures and sells textile products for clothing.

As for the reporting segments, the “Glass Fiber Business” is divided into three categories, namely, the “Glass Fiber Yarn Business,” “Glass Fiber Cloth Business,” and “Glass Fiber for Industrial Materials Business.” Together with the “Life Science Business” and “Textiles Business,” there are a total of 5 reporting segments. In addition, there is a category called “Others” which consists of the service business that are not included in the reporting segment.

Sales Composition by Segment(FY2021,Unit:Million yen)



① Glass Fiber Business

The company succeeded in the first industrialization of glass fiber in Japan. It provides products for a wide range of applications with consistent coverage from yarn manufacturing to glass fiber cloth processing.

Especially, Special Glass (NE-glass, T-glass) has low dielectric and low thermal expansion characteristics due to its special composition. It is employed as a precision material for electronic devices such as base stations, high-performance servers and smartphones, and is highly competitive.

In addition, micron-level super ultra-thin glass fiber cloth is used in smartphones and other devices that are becoming smaller, lighter, and more sophisticated, and is highly regarded for its quality.

The company also spearheaded the manufacturing of glass wool in Japan to be used as insulation for housing and is regarded as the pioneer of heat insulation materials with its unique technologies. In particular, high performance glass wool contributes to an energy-saving society as heat insulation materials for very airtight and highly heated insulating houses.

(Major uses)

High function electronic substrate	NE-glass has low dielectric characteristics that reduce transmission loss and is used in electronic substrates for servers in data centers and base stations. T-glass has low thermal expansion characteristics and high tensile elasticity and is used in electronic substrates for semiconductor packages that are mounted on smartphones and high-performance servers.
Glass fiber for composite material of smartphone body (FF)	With its unique technology, the company succeeded in making the cross section of glass fiber an oblong shape, instead of an ordinary circular shape. When used as a composite

	material, it helps avoid warpage and twist of molded products. It is used in the body of small electronic devices such as smartphones for which even a small distortion cannot be allowed.
Automobile	“FRP (fiber reinforced plastic)” is widely used in various parts of automobiles as a light weight and high strength material. The company's glass fiber not only has high shape stability and workability, but also has high impact and heat resistance. The company provide new value to vehicles as they evolve toward automation and advanced driving support.
Resin coating film material	Glass fiber cloth for membrane materials made with super ultrafine glass fiber is widely used for multipurpose stadiums, soccer fields, indoor tennis courts, membrane materials for tent warehouse, and various events.
Residential insulation (glass wool)	Glass wool exerts high insulation performance and is excellent in airtightness and soundproofing. Hence, it is used as heat insulation materials for houses and buildings to enhance the energy-saving effect. It is an environmentally friendly product since it uses 80% recycled glass and is recyclable after use.

<What is glass fiber?>

Glass fiber is a product for which glass raw material is melted at a high temperature of 1,300°C or higher and stretched to be fibrous. The company succeeded in the industrialization of glass fiber for the first time in 1938 in Japan, and it developed rapidly thereafter. Its characteristics include strength, heat resistance, non-flammability, electrical insulation and chemical resistance, and it is used for various purposes such as printed wiring boards, FRP, and building materials. For its excellent characteristics, it is being used in a wide range of industries.

(Composition, property)

As described earlier, it has characteristics such as strength, heat resistance, non-flammability, and electrical insulation. Especially for electronic materials related to high-speed high-volume communications, the product needs to have high levels of strength, elasticity, low-dielectric property, etc.

(Manufacturing method)

After raw materials of glass are melted at a high temperature of 1,300 to 1,600°C, they pass through a spinning nozzle and are reeled up to form a filament. A very precise control technique is required.

The thinness of the glass fiber, which is a glass base pulled out from the machine at high speed, is 3.5 to 24 μm in diameter. (*The thinness of a human hair is about 50 to 100 μm.)

The spun glass fiber is processed into product forms according to the application.

(Major product forms)

◎Glass fiber yarn

Glass fiber yarns (twisted yarns) include a single yarn which is a strand composed of several hundred filaments that are simultaneously spun and twisted in the same direction and a twisted yarn which is made by twisting several single yarns.

The “E-glass yarn,” a single yarn made of twisted strands mainly composed of filaments of 3.5 to 7.4μm, has excellent electrical insulation, heat resistance, tensile strength, and dimensional stability, and is generally used for printed wiring boards. In addition, it is highly compatible with resins due to its unique surface treatment technology for industrial materials. It is highly evaluated as a base material with good workability.

◎Glass fiber cloth

Glass fiber cloth, which is fabric (cloth form) made of glass fiber yarns, is used for a wide range of applications such as printed wiring boards, damping materials, tent films, and road reinforcement materials.

Among them, the glass fiber cloth used for printed wiring boards and electronic parts is the company’s flagship product that it boasts worldwide.

【Glass fiber cloth for printed wiring boards】

A printed wiring board is formed of the fine wiring of metals such as copper on the surface of a base body such as resin, and components including resistors, capacitors and IC chips are fixed by soldering on the wiring. It is an important part that influence the performance of all electronic facility, including PC, smartphones, servers, medical facility, industrial robots, automobiles, and aircraft.



Glass fiber cloth, which has characteristics of high insulation, high strength, heat resistance, and dimensional stability, is thought to be the most suitable material for a printed wiring board.

Along with remarkable development of digital technologies, electronic devices such as PC and smartphones are becoming lighter, thinner, smaller and more sophisticated, and the need for the improvement of glass fiber cloth performance is increasing.

In response to such needs, the company developed highly functional glass fiber cloth products, such as “**low dielectric glass cloth (NE-glass)**,” “**Low thermal expansion glass cloth (T-glass)**,” and “**ultra-thin glass fiber cloth**,” by utilizing the forte of the maker that manufactures yarns and even cloth based on its original technologies for glass composition development, glass fiberization, and weaving, and has a significant market share.

“Low dielectric glass fiber cloth (NE-glass)”

Higher speed transmission with higher frequency is becoming more common, and low dielectric materials that reduce transmission loss is required for printed wiring boards.

To address the need, the company has developed the “NE-glass” that is excellent in low dielectric constant and dissipation factor with the same characteristics as “E-glass” by lowering the component ratio of alkaline-earth elements (CaO, MgO) as compared with the conventional “E-glass” while enhancing the component ratio of boric acid (B₂O₃).

It is mainly used for electronic boards for data centers and base station servers.

“Low thermal expansion glass fiber cloth (T-glass)”






“T-glass” has the higher component ratio of silica (SiO₂) and alumina (Al₂O₃) compared with the standard “E-glass” and provides significantly advanced mechanical and thermal performance of glass fiber.

Utilizing its low thermal expansion characteristics and high tensile elasticity, it realizes excellent dimensional stability and increased rigidity, and it is used as an electronic substrate for semiconductor packages mainly mounted on smartphones, high-performance servers as a high-performance electronic material. Like carbon fiber and aramid fiber, it also works well as a reinforcing material for advanced composite materials, so it is used by itself or as a hybrid material with carbon fiber in the fields of aviation, space and sports.

“Ultra-thin glass fiber cloth”

Demand for thinner glass fiber cloth is increasing as a material to respond to the trend of making lighter, thinner and smaller printed wiring boards with high density packaging. In addition to its thinness, the company’s ultra-thin glass fiber cloth has superb capacities to process fine holes both for laser and drill processing and offers great dimensional stability and surface smoothness as a laminated plate.

The product forms and uses by segment in the glass fiber business are as follows.

Business	Principal product category	Characteristics	Product photograph	Main uses
Glass fiber yarn	Roving	A product consisting of strands of untwisted glass fiber.		Prefabricated bath unit Septic tank
	Chopped Strand	A product made by chopping glass fiber into fine pieces		Body of smartphone and PC Composite materials for automobile
	Yarn	A product made of twisted glass fiber		Glass cloth
Glass fiber cloth	Glass cloth	A product made by turning yarn into cloth		Printed circuit board
Glass fiber for industrial materials	Glass cloth	A product made by turning yarn into cloth		Anti-vibration materials Tent film Road reinforcement materials
	Glass wool	A product made by turning short glass fiber wool		Homes and non-residential buildings

(Source: the company)

② Life Science Business

It is composed of the Medical business, the Specialty chemicals business, and the Beverage business.

The Medical business manufactures and sells in vitro diagnostics reagents used for blood and urine tests and specialty chemicals products centered on functional polymers.

The company is achieving high quality and stable supply of the “**in vitro diagnostic reagents**” that are used in health checkups and thorough physical examinations to examine health status using blood or urine, by integrally manufacturing them from the antisera as the raw material to the diagnostic reagents as the final product within the Group.

The products’ high quality has been recognized, and they are supplied in medical fields globally. In Japan, the company is winning the top share with more than 10 items.

As for the Specialty chemicals business, the company develops products, and sells unique functional polymers (polyallylamine and polyamine series). The characteristics of this business are R&D together with chemical products/pharmaceutical manufacturers and research institutes and product proposals that capture customer needs. The company is strong in niche markets and is actively expanding the business not only in Japan but also in the global market.

In the Beverage business, centered on the private brands, it is working on development of plastic bottles, beverage production and bottling, using the technologies that have been cultivated over many years.

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Segment	Characteristics	Product photograph	Main uses
Medical	Provides in-vitro diagnostic drugs in biochemistry, hematology and serum-immunology areas, and excels in immunological reagents and osteoporosis.		<ul style="list-style-type: none"> • Measurement of liver function, cholesterol and neutral lipid • Measurement of inflammation, autoimmune disorders and nutrition conditions
Specialty chemicals (SC)	Develops new polymer materials by using special polymerization techniques, expanding various uses such as for metal scavenger.		<ul style="list-style-type: none"> • Metal processing aid agent • Pharmaceutical raw materials • Water processing agent • Paper making aid agent • Deodorant • Hard coat and surface protection agent
Beverage	Produces soft drink products and plastic bottle-based beverage items. Excels in high-mix low-volume production mainly for private-brand names.		<ul style="list-style-type: none"> • Tea-based beverages • Sports drinks • Fruit juice-containing beverage • Baby drinks <ul style="list-style-type: none"> • Leading supermarkets • Drug stores

(Source: the company)

③ Textiles Business

The company provides products utilizing its unique technologies to meet the diversifying needs of customers, such as Dan-Reine, an adhesive interlining for women that has been boasting a high market share, and Nittobo New Dishcloth, which won the Good Design Long Life Design Award 2015.

Business	Principal product category	Characteristics	Product photograph
Interlining	Interlining	Nittobo Interlining is a low-profile function material product that is intended to be attached to the inner side of a garment to keep its shape and size stability. This product accentuates the stylish look of the silhouette by tapping the texture of the outer fabric of the garment. Nittobo Interlining boasts the top market share in Japan, among domestic female interlining products.	
	Adhesive tape	Nittobo's adhesive tape products are used for reinforcing garment connection parts such as collar, sleeve and pocket, spots that are difficult to be attached with interlining, and for raising stitching work efficiency. The Company's adhesive tape product lineup caters for any shape and is composed of tapes made of fabric identical to each outer garment fabric.	
	Liner material (liner)	Nittobo's liner material, being a product made by applying its ultra-thin fabric attachment technique of excellence, is enabled to be used as a liner as well. For example, this product was adopted as the material for a sports wear item using a moisture-permeation laminated waterproof film.	
	Dishcloth	<ul style="list-style-type: none"> • The Nittobo DishclothThe Nittobo Dishcloth, being superior in water absorption and quick drying features and not prone to picking up fluff, is a long-seller item, which the Company developed over five decades ago, jointly with kurashi-no-techo co., ltd. • The Nittobo Dishcloth was honored with the Good Design Long Life Design Award 2015. 	

(Source: the company)

(2) Research and development (R&D)

Since its founding, the Group has been actively promoting R&D and delivering unique products to the world. R&D will continue to be a source of enhancing the company's competitiveness and corporate value.

In recent years, while the needs of customers are becoming more sophisticated and diversified, global competition is intensifying. Under these circumstances, the company established new research and development site in 2017 to provide products and services with

high value-added and strong originality in a timely manner with its characteristics and strengths, and to promote R&D toward the future.

The Group will continuously work on R&D from the viewpoint of expertise in each business division. At the same time, it will promote cross-sectional management by the research laboratory to pursue synergy among businesses with a focus on speed. Furthermore, in each field, in order to accelerate research speed and expand the perspectives, the company is actively promoting joint research on industry, government and academia from the viewpoint of open innovation.

In July 2018, the satellite laboratory “NI-Tech” was opened at the Innovation Center of Nano Medicine in Kawasaki City as a new research and development site to strengthen the Life Sciences Business.

In order to further strengthen company-wide R&D capabilities, the company decided to construct a new building called “NI-CoLabo,” in Koriyama City, Fukushima Prefecture, and the construction was completed in April 2020. In addition to consolidating R&D divisions of each business segment into one location, it will enhance collaboration with external users. The building will be a symbol of the company’s R&D system.

1-4 Characteristics and Strengths

◎ Supply products by accurately grasping needs of the times

In addition to succeeding in the industrialization of glass fiber for the first time in Japan, the company began manufacturing glass wool for the first time in Japan. As such, the company has been always leading the global and Japanese markets in the field of glass fiber. In the history of over ninety years, it has always been capturing the changes and needs of the world accurately and developing and supplying various products centered on glass fiber.

Since the company’s product is not the final product, people do not see the company’s products directly. However, it supplies many materials that are indispensable to the world and supports our lives behind the scenes.

◎ High competitiveness by unique technologies

Among many manufacturers of glass fiber in the world, it is almost the only company that realized excellent low dielectric constant and low dielectric loss tangent (NE-glass) and high dimensional stability and higher rigidity (T-glass) in the field of glass fiber cloth for electronic materials and has established a system that can stably supply sufficient volume.

In addition, having acquired the top share in Japan for more than 10 items with in vitro diagnostic reagents in the Medical Division also shows its high competitiveness with its unique technologies.

1-5 ROE Analysis

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
ROE(%)	6.8	7.6	9.8	12.5	9.1	6.3	8.4	6.4
Net Profit margin (%)	5.09	6.49	8.98	12.13	9.70	6.73	10.29	7.76
Total asset turnover [times]	0.64	0.60	0.59	0.59	0.55	0.53	0.44	0.45
Leverage [times]	2.09	1.96	1.86	1.75	1.69	1.77	1.85	1.81

*Rounded to the nearest unit.

The rise in ROE in the Fiscal Year 2020 is attributable to the increase in net profit due to the posting of a gain on the sale of investment securities of 6.5 billion yen and an insurance amount received of 2.7 billion yen as extraordinary profit. As a result, ROE declined in the Fiscal Year 2021. It is hoped that the ROE will continue to improve.

2. Results for the Fiscal Year 2021

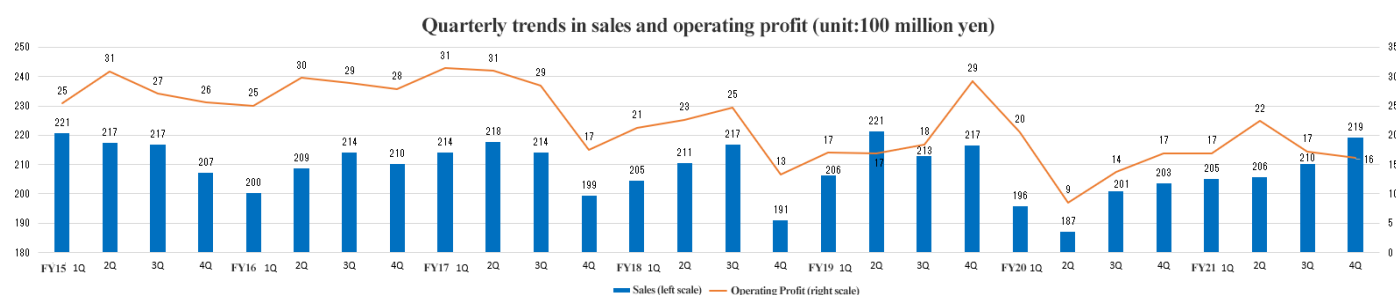
(1) Consolidated business results

	FY 2020	Ratio to sales	FY 2021	Ratio to sales	YoY	Revision forecast ratio
Net Sales	78,727	100.0%	84,051	100.0%	+6.8%	+0.1%
Gross profit	25,661	32.6%	28,228	33.6%	+10.0%	-
SG&A	19,697	25.0%	20,959	24.9%	+6.4%	-
Operating Profit	5,964	7.6%	7,268	8.6%	+21.9%	+3.8%
Ordinary Profit	6,274	8.0%	8,065	9.6%	+28.5%	+12.0%
Net Profit	8,100	10.3%	6,519	7.8%	-19.5%	+8.7%

*Unit: million yen. Revision forecast ratio is the increase/decrease of actual results compared to the forecasts announced in February 2022.

Sales and profit grew, exceeding the forecast.

Sales increased 6.8% year on year to 84.1 billion yen. Although the impact of the COVID-19 remained, sales increased except for glass fiber for industrial materials. Operating profit increased 21.9% year on year to 7.3 billion yen. The company continued to invest in strengthening the foundation, and the increased sales of flat fibers, Special Glass, and in vitro diagnostic reagents as well as the structural reforms in the composite materials and Textiles Businesses contributed to the overall sales growth. Net profit decreased 19.5% year on year to 6.5 billion yen due to the reaction to the gain on sales of noncurrent assets and investment securities in the previous fiscal year. Both net sales and operating profit exceeded the forecasts announced in February 2022. On a quarterly basis, net sales are recovering steadily, but operating profit is flat.



(2) Trend by segments

	FY 2020	Ratio to sales	FY 2021	Ratio to sales	YoY
Total Sales	78,727	100.0%	84,051	100.0%	+6.8%
Glass Fiber Yarn	23,124	29.4%	23,345	27.8%	+1.0%
Glass Fiber Cloth	20,371	25.9%	22,948	27.3%	+12.7%
Glass Fiber for Industrial Materials	18,559	23.6%	18,429	21.9%	-0.7%
Life Science	13,500	17.1%	15,890	18.9%	+17.7%
Textiles	2,254	2.9%	2,513	3.0%	+11.5%
Others	917	1.2%	924	1.1%	+0.8%
Total Operating Profit	5,964	7.6%	7,268	8.6%	+21.9%
Glass Fiber Yarn	2,368	10.2%	1,733	7.4%	-26.8%
Glass Fiber Cloth	2,626	12.9%	3,065	13.4%	+16.7%
Glass Fiber for Industrial Materials	307	1.7%	255	1.4%	-17.1%
Life Science	2,147	15.9%	2,560	16.2%	+19.2%
Textiles	-718	-	-131	-	-
Others Adjustments	-768	-	-214	-	-

*Unit: million yen. Total sales mean sales to external clients.

*Ratio to sales: For sales, ratio in total sales. For profit, operating profit margin.

①Glass Fiber Yarn Business

Sales grew, but profit declined.

Composite materials for reinforced plastics, such as those for PCs and automobiles, sold well.

Profit decreased due to transient factors such as periodic repairs of large scale melting furnaces in Japan.

②Glass Fiber Cloth Business

Sales grew, and profit increased.

The sales of Special Glass fiber cloth for electronic materials grew year on year due to strong sales of those for data centers and semiconductor packaging. Profit increased despite the rise in foundation enhancement costs, such as an increase in head office expenses.

③Glass Fiber for Industrial Materials Business

Sales and profit declined.

The sales of insulation materials for residential use increased steadily year on year, but the sales of glass fiber cloth for equipment and construction materials declined due to the COVID-19.

④Life Science Business

Sales and profit increased.

*Medical

Sales of in vitro diagnostic reagent recovered to levels exceeding those before the COVID-19 pandemic, both in Japan and overseas

*Beverages

Although the effects of changes in consumer purchasing practices such as the establishment of telework remained, consigned production of beverages improved.

⑤Textiles Business

Sales grew, and loss shrank.

The harsh environment continues, but market conditions are improving with the increasing opportunities to go out. Interlining sales increased year on year. Nittobo Advantex Co., Ltd., a new subsidiary that integrally manages the development, manufacture, and sales

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of adhesive interlinings, started business operations in July 2021, and structural reforms progressed as planned. As a result, profits improved.

(3) Financial standing and cash flows**◎Balance Sheet**

	End of 2021/Mar	End of 2022/Mar	Increase/ decrease		End of 2021/Mar	End of 2022/Mar	Increase/ decrease
Current Assets	93,887	85,838	-8,049	Current liabilities	33,875	36,864	+2,989
Cash	30,320	18,537	-11,783	Payables	6,570	6,523	-47
Receivables	23,985	25,957	+1,972	ST Interest Bearing Liabilities	12,770	19,455	+6,685
Inventories	34,345	37,739	+3,394	Noncurrent liabilities	46,387	39,787	-6,600
Noncurrent Assets	90,764	101,450	+10,686	LT Interest Bearing Liabilities	29,322	24,891	-4,431
Tangible Assets	65,506	77,270	+11,764	Total Liabilities	80,262	76,651	-3,611
Intangible Assets	2,595	3,082	+487	Net Assets	104,389	110,638	+6,249
Investment, Others	22,661	21,097	-1,564	Retained earnings	61,831	66,619	+4,788
Total assets	184,652	187,289	+2,637	Total Liabilities and Net Assets	184,652	187,289	+2,637
				Total Interest-Bearing Liabilities	42,092	44,346	+2,254

*Unit: million yen

Total assets increased 2.6 billion yen from the end of the previous fiscal year to 187.3 billion yen, due to the increase in tangible assets. Total liabilities decreased 3.6 billion yen from the end of the previous fiscal year to 76.7 billion yen, due to the decline in income taxes payable. Net assets rose 6.2 billion yen from the end of the previous fiscal year to 110.6 billion yen, as retained earnings increased. As a result, capital-to-asset ratio rose 2.8 points from the end of the previous fiscal year to 56.5%.

◎Cash Flows

	FY 2020	FY 2021	Increase/decrease
Operating CF	7,815	6,965	-850
Investing CF	-1,867	-17,305	-15,438
Free CF	5,948	-10,340	-16,288
Financing CF	1,862	-1,530	-3,392
Term End Cash and Equivalents	30,163	18,453	-11,710

*Unit: million yen

Operating CF shrank year on year due to a decrease in net profit before taxes and other adjustments. The revenues from sale of investment securities and non-current assets decreased, and investing CF and free CF turned negative. Cash position declined.

(4) Topics**◎ Complying with the TCFD recommendations**

In May 2022, the company announced its agreement with the recommendations of the TCFD (Task Force on Climate-related Financial Disclosures).

The company disclosed vital information on climate change regarding the four items recommended by TCFD as follows.

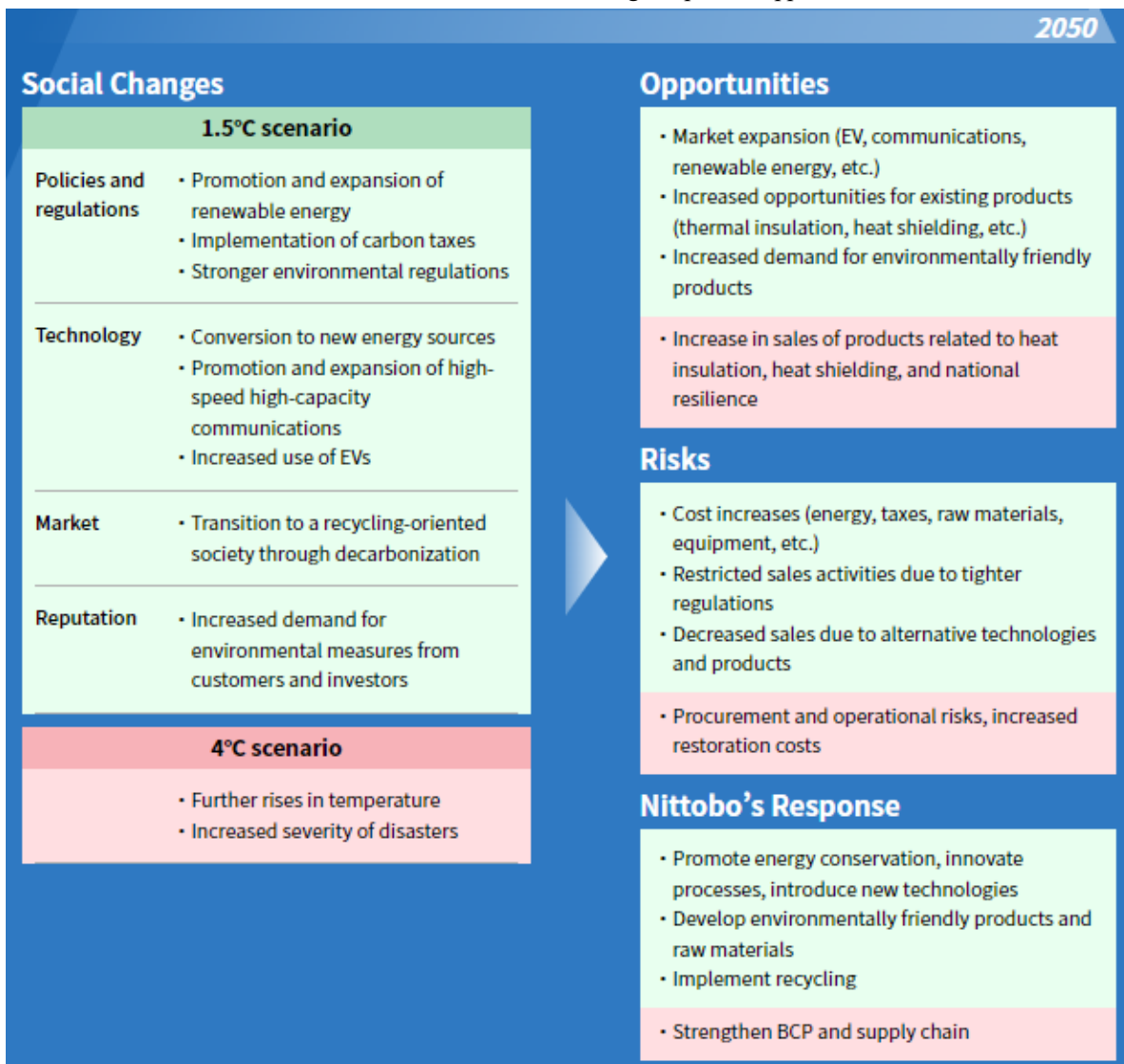
1. Governance.

In April 2021, the Nittobo Group established the Sustainability Committee, chaired by the Director, Representative and Chief Executive Officer, to promote efforts to tackle climate change. The Sustainability Committee meets quarterly to formulate activity plans and

manage their progress on gathering information on climate change issues, assessing risks, developing countermeasures, and promoting in-house education and awareness programs. Important matters discussed by the Sustainability Committee will be reported to the Board of Directors and discussed, as necessary.

2. Strategy (opportunity and risk)

The company will analyze the climate change's impact on all projects by 2030 with reference to scenarios drawn by specialized agencies such as the IPCC (Intergovernmental Panel on Climate Change) and the IEA (International Energy Agency). The risks posed by climate change can be divided into the risks associated with transitioning to a low-carbon society (transition risk) and the physical impact (physical risk). Assuming a scenario in which the earth's average temperature rise is less than 1.5°C or 4°C from the period before the Industrial Revolution, the items that are considered to have a high impact on opportunities and risks are identified.



(Source: the company)

Details of the scenario analysis can be found in "Initiatives in Support of the TCFD Recommendations" on the company's website.

Initiatives in Support of the TCFD Recommendations

<https://www.nittobo.co.jp/eng/environment/tcfd.htm>

3. Risk management

The Sustainability Committee and the Risk Management Committee formulate plans and manage the progress of CO₂ emission reduction across the group.

Opportunities and risks due to climate change are identified and analyzed to determine and assess the impact of climate change on businesses. Based on that, the Sustainability Committee and the Board of Directors take appropriate action as necessary.

4. Indicators and goals

The Nittobo Group has set "supplying products and services that help resolve energy and environmental issues" and "adapting to climate change and a resource-recycling society" as social issues that are prioritized through corporate activities and is working to reduce the business activity impact on climate change and prevent global warming by improving productivity, promoting energy-saving activities, efficiently using energy through recycling, and utilizing solar power generation. To achieve carbon neutrality in 2050, the company will promote efforts to contribute to the decarbonization of society as a whole by the supply chain through all measures.

<Reduction of CO₂ emissions>

FY2050 Goal: Achieve carbon neutrality

FY2030 Goal: Reduce CO₂ emissions by 30% (compared to FY2013)

3. Forecast for the Fiscal Year 2022

(1) Earnings forecast

	FY 2021	Ratio to sales	FY 2022 (forecast)	Ratio to sales	YoY change
Net Sales	84,051	100.0%	96,000	100.0%	+14.2%
Operating Profit	7,268	8.6%	7,300	7.6%	+0.4%
Ordinary Profit	8,065	9.6%	8,000	8.3%	-0.8%
Net Profit	6,519	7.8%	7,500	7.8%	+15.0%

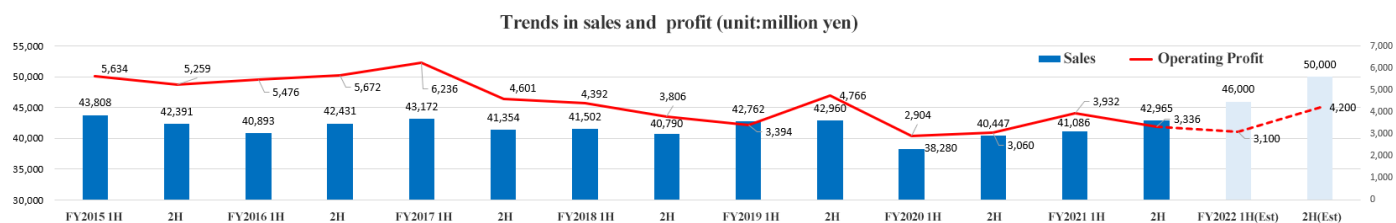
*Unit: million yen. The forecasted values were provided by the company.

Net sales and operating profit are estimated to increase

Net sales are expected to rise 14.2% year on year to 9.6 billion yen, operating profit is projected to increase 0.4% year on year to 7.3 billion yen and ordinary profit is forecast to decrease 0.8% year on year to 8.0 billion yen.

Amid uncertainties such as rising global energy prices due to the Russia/Ukraine issue, lockdowns in China, semiconductor shortages, and supply chain disruptions, the company expects the full impact of higher electric fuel costs in composite materials and Glass Fiber for Industrial Materials businesses to be felt. Operating profit is expected to remain mostly unchanged from the previous year overall, thanks to cost reductions and sales price, as well as the effect of yen depreciation in the foreign exchange market, although higher sales of Special Glass and in vitro diagnostic reagent will contribute to the full impact of higher raw material and fuel costs.

The company plans to pay a dividend of 45.00 yen per share, unchanged from the previous fiscal year. The expected payout ratio is 23.3%.



(2) Forecast by Segment

Business Environment Outlook for the FY 2022

■ Business environment outlook

- Rising global energy prices due to Russia/Ukraine issues, supply chain disruptions and as well as lockdowns in China, etc. the situation remains uncertain.

Glass Fiber		
Glass Fiber Yarn	Composite materials	<ul style="list-style-type: none"> • Despite a YoY increase in sales for the automotive, the impact of the semiconductor shortage will remain. • Number of smartphone sales will be up slightly from the previous year.
	Electronic materials	<ul style="list-style-type: none"> • Low-dielectric glass (NE) for high-end network equipment increases YoY, however the growth rate will not reach the target of the Mid-Term Business Plan due to the effects of the semiconductor shortage and the U.S.-China trade frictions. • Demand for semiconductor packaging substrates remains strong, and both low-dielectric glass (NE) and low thermal expansion glass(T) will continue to be in high demand.
Glass Fiber Cloth		
Glass Fiber for Industrial Materials		<ul style="list-style-type: none"> • Domestic housing sales will remain at the same level as the previous year, partly due to the reduction of government housing support measures. • Global events will include intensifying price competition for large projects with slow movement of overseas properties due to the impact of the COVID-19.
Life Science		
In-vitro diagnostic reagent		<ul style="list-style-type: none"> • Demand for in vitro diagnostics reagent, mainly among overseas customers, will steadily recover. • Labor market will remain tight in the U.S.
Beverage		<ul style="list-style-type: none"> • Despite online retail will increase associated with changes in consumer behaviors, soaring raw material and fuel costs, etc. will be a negative impact.
Textile		
Interlining		<ul style="list-style-type: none"> • The apparel market is on a recovery track due to the calming down of the infection and an increase in going out, but casualization of clothing is progressing.

Impact of rising electricity and fuel costs in full swing

■ Assumptions of foreign exchange rates and oil prices

	FY2021(Actual)		FY2022 (Mid-Term Business Plan)		FY2022(Forecast)	
	1H	2H	1H	2H	1H	2H
Exchange rate (JPY/USD, TTM)	110JPY	114JPY	105JPY		125JPY	
Dubai Crude (USD/barrel)	69 USD	87 USD	50 USD		100 USD	

(Source: the company)

	FY 2021	Ratio to sales	FY 2022 (forecast)	Ratio to sales	YoY change
Total Sales	84,051	100.0%	96,000	100.0%	+14.2%
Glass Fiber Yarn	23,345	27.8%	29,000	30.2%	+24.2%
Glass Fiber Cloth	22,948	27.3%	27,000	28.1%	+17.7%
Glass Fiber for Industrial Materials	18,429	21.9%	19,000	19.8%	+3.1%
Life Science	15,890	18.9%	18,000	18.8%	+13.3%
Textiles	2,513	3.0%	2,000	2.1%	-20.4%
Others	924	1.1%	1,000	1.0%	+8.2%
Total Operating Profit	7,268	8.6%	7,300	7.6%	+0.4%
Glass Fiber Yarn	1,733	7.4%	600	0.7%	-65.4%
Glass Fiber Cloth	3,065	13.4%	4,800	5.7%	+56.6%
Glass Fiber for Industrial Materials	255	1.4%	-300	-	-
Life Science	2,560	16.2%	2,600	3.1%	+1.6%
Textiles	-131	-	0	-	-
Others Adjustments	-214	-	-400	-	-

*Unit: million yen. Total sales mean sales to external clients.

*Ratio to sales: For sales, ratio in total sales. For profit, operating profit margin.

Net sales are expected to increase year on year except for textiles business.

Sales of glass fiber yarn business are predicted to improve, but profits will decrease.

Sales and profits of glass fiber cloth will increase by double digits in this term as well.

Sales and profits will also grow in the life science business.

(3) Progress of the Mid-Term Business Plan

① Initiatives for the Fiscal Year 2021

The following are the Mid-Term Business Plan's priority strategies and initiatives.

Priority strategy	Main initiatives
Growth Strategy Implementation -Create further business growth through high value-added products	<ul style="list-style-type: none"> * Increase revenue from Special Glass * Expand sales channels in vitro diagnostic reagents * Reinforce development capabilities of new products (Focus on the planning/developing further high value-added products) * Strengthen solution sales force to enhance customer values
Management Foundation Reinforcement -Evolve into a lean business entity (secure resiliency)	<ul style="list-style-type: none"> * Lean management that can does not give in the economic changes (Strengthen cost competitiveness/renovate production process/Asset Compression) Optimize the business portfolio; review unprofitable businesses * Encourage technological development by introducing IT/DX /renovation of production technology
Actions for Environment Issues -Make efforts to address environmental issues for a sustainable society	<ul style="list-style-type: none"> * Reduction of CO₂ emissions * Promotion of recycling and reuse * Develop new eco-friendly products
Human Resources Development -Foster human resources/organizations/work environment that bring about changes	<ul style="list-style-type: none"> * Foster human resources for innovation * Facilitate diversity and inclusion * Workstyle reform and operation reform (use of digital tools/IT) * Enhance employees' engagement

In Fiscal Year 2021, the following progress was made in each of the key strategies.

*Growth Strategy Implementation

Steady progress is being made in laying the groundwork for high value-added products, with the new NE-glass Yarn factory in Taiwan began operations in 2021, and plans to increase glass fiber's capacity for semiconductor package substrates in Japan, as well as to expand the U.S. base for medical products in 2022.

In terms of strengthening the development of next-generation Special Glass, customers are currently conducting final evaluations of next-generation low-dielectric glass, and mass production is scheduled to begin in the near future.

Customer solution activities were promoted, including the expansion of regular technical meetings.

*Management Foundation Reinforcement

Structural reforms are yielding results. In the composite materials business, while the Fukushima Factory's facilities were downsized, the Fuji Fiber Glass facilities were expanded, resulting in improved productivity and cost reductions. In Textiles Business, the company promoted cost structure reforms, including the withdrawal from the Niigata Factory and the spin-off of the Itami Factory.

Task force activities were promoted to reinforce cost reduction.

In the area of DX promotion, the company started literacy training mainly for young engineers, and also began preparations for implementation in electric furnaces.

BRIDGE REPORT

***Actions for Environment Issues**

The promotion system was strengthened.

The Sustainability Committee, chaired by the Director, Representative and Chief Executive Officer has begun its activities. The committee has centralized the planning and formulation of initiatives to solve environmental issues and their progress management. The TCFD will work on specific themes such as reducing CO₂ emissions, promoting recycling and reuse, and developing environmentally friendly products.

The committee expressed its support for the TCFD recommendations.

***Human Resources Development**

With regard to human resource development, efforts were made to improve internal communication, including the institutionalization of monthly 1-on-1 meetings between supervisors and subordinates.

Regarding the promotion of diversity and inclusion, the ratio of female managers increased.

In addition, the company promoted work-life balance by introducing telework.

(2) Major Growth Investments

Major growth investments from the previous fiscal year to the current fiscal year are as follows.

*Increased production of T-glass yarn at factories in Fukushima City and Koriyama City. Conversion of composite gas furnace to Special Glass electric furnace.

*Expansion of Special Glass production capacity by launching a new plant at NITTOBO ASIA Glass Fiber Co. Ltd.

Expanded ultra-thin and Special Glass weaving capacity at Baotek, Taiwan, and promoted value-added production.

Constructed a new building at Nittobo America Inc. in the U.S.

③ Segment Profit Outlook

As a result of the implementation of these growth strategies and structural reforms, the company aims to achieve an overall operating profit of 14 billion yen in the Fiscal Year 2023.

	FY 2020 (actual)	FY 2021 (actual)	FY 2022 (Est.)	Goal for FY 2023	Increase/Decrease	CAGR
Total Sales	60	73	73	140	+80	+32.6%
Glass Fiber Yarn	24	17	6	50	+26	+27.7%
Glass Fiber Cloth	26	31	48	60	+34	+32.1%
Glass Fiber for Industrial Materials	3	3	-3	5	+2	+18.6%
Life Science	21	26	26	30	+9	+12.6%
Textiles	-7	-1	0	3	+10	-
Others* adjustments	-8	-2	-4	-8	0	-

*Unit: billion yen. Change and CAGR are comparisons between FY2020 actual and FY2023 target. CAGR was calculated by Investment Bridge Co., Ltd.

④ Future Initiatives

Future initiatives and policies are as follows.

-As the sophistication of communication infrastructure and edge equipment accelerates, the company will continue to grow the fields where it can utilize the Nittobo Group's strengths in the medium to long term.

-Will be flexible on the priority of measures according to the current business environment, but the policy for establishing a medium- to long-term growth base remains unchanged.

-The Nittobo Group will strive to have the largest share in the global niche market to achieve medium- to long-term growth.

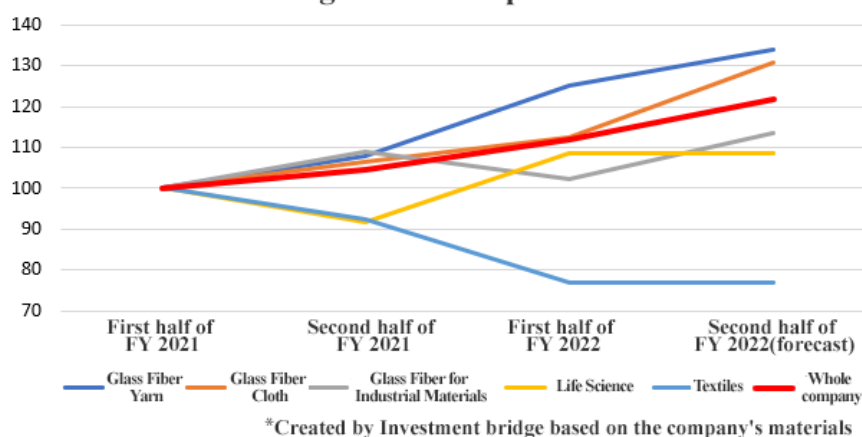
4. Conclusion

Although the business environment was characterized by many negative factors, such as a shortage of semiconductors and soaring raw material prices, the company achieved better-than-expected results in Fiscal Year 2021.

In Fiscal Year 2022, the company expects both sales and profit to increase for the full year, and plans to increase sales in the second half of the year.

Although there are still many uncertainties, we will keep a close eye on the company's ability to steadily achieve these figures. We would like to keep an eye on the Mid-Term Business Plan initiative progress in this field, too.

Segment sales up/down



<Reference 1: [Big VISION 2030] and The New Mid-Term Business Plan (FY 2021-FY 2023)>

[1 Big VISION 2030]

Aiming for sustainable growth and the realization of a prosperous society as a corporate group that creates a healthy and comfortable living culture for the next 100 years while responding to the rapid changes in the business environment, Nittobo Group set the [Big VISION 2030], which defines the group's vision for 2030.

Nittobo Group's vision in 2030 [Big VISION 2030]

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

Addressing various issues relating to the business environment, such as global warming, the aggravation of environmental problems, the arrival of an ultra-smart society (acceleration in communication and evolution of AI technology), and problems relating to social structure (decreasing birthrate, aging population, and other population problems), they offer products and services that contribute to "Environment/Energy," "Digital Society," and "Healthy/Security/Safety," which help realize a sustainable society. They aim to continue to produce No.1 products in the global niche market, so that the group will be recognized as worthwhile by all stakeholders.

The No.1 positions the company aims to achieve are as follows.

- * To be the No. 1 sensitive company by listening to, grasping and responding swiftly to the demands of the market
- * To be the No. 1 company providing high value-added products that match the market needs by refining and tempering its own technology

In detail, they have refined their core competence regarding each business and set the following goals.

Glass Fiber	<p>In the electronic materials, which supports a super smart society, refine technology/product capability, and become the global No. 1 company in the area of ultrafine/ultra-thin/Special Glasses.</p> <p>In the composite materials and industrial materials, contribute to customers' value creation, and become the global No. 1 company in terms of client satisfaction with proposition/response capabilities (speed)/quality.</p>
Life Science	Become the global No. 1 company for immunochemistry IVD (in vitro diagnostic) products in plasma protein, through global vertical integration from manufacturing of antisera to sales of finished IVD reagents.
Textiles	Become the global No.1 company in the area of high-function materials that use adhesive technology.

【2 New Mid-Term Business Plan (FY 2021 – FY 2023)】

(1) Positioning

The New Mid-Term Business Plan will be the first stage for executing long-term strategies for actualizing the ideal state in 2030 [Big VISION 2030], while following the policy set in the previous Mid-Term Business Plan for the Fiscal Year 2023, which will mark the 100th anniversary of business start-up. As a milestone, the company disclosed concrete measures and financial goals for 3 years from FY 2021 to FY 2023.

In addition, they announced measures for addressing environmental issues as social issues and set environmental goals toward 2030.

(2) Basic strategies for 2030

Basic strategies for each stage leading up to [Big VISION 2030] are as follows.

Stage	Previous Mid-Term Business Plan (FY 2017 to FY 2020)	New Mid-Term Business Plan (FY 2021 to FY 2023)
Theme	Challenges for Change and Creation	Realization of Change and Creation
Basic strategies/ Ideal state	<ul style="list-style-type: none"> * Building the foundation for growth * Capital expenditure (including M&A, 56.8 billion yen/4 years) 	<ul style="list-style-type: none"> * Growth Strategy Implementation * Management Foundation Reinforcement * Actions for Environment Issues * Human Resources Development

(3) Priority strategies and initiatives in the New Mid-Term Business Plan

The following four items were stated.

Priority strategy	Main initiatives
Growth Strategy Implementation -Create further business growth through high value-added products	<ul style="list-style-type: none"> * Increase revenue from Special Glass * Expand sales channels in vitro diagnostic reagents * Reinforce development capabilities of new products (Focus on the planning/developing further high value-added products) * Strengthen solution sales force to enhance customer values
Management Foundation Reinforcement -Evolve into a lean business entity (secure resiliency)	<ul style="list-style-type: none"> * Lean management that can does not give in the economic changes (Strengthen cost competitiveness/renovate production process/Asset Compression) Optimize the business portfolio; review unprofitable businesses * Encourage technological development by introducing IT/DX /renovation of production technology

BRIDGE REPORT



Actions for Environment Issues -Make efforts to address environmental issues for a sustainable society	* Reduction of CO ₂ emissions * Promotion of recycling and reuse * Develop new eco-friendly products
Human Resources Development -Foster human resources/organizations/work environment that bring about changes	* Foster human resources for innovation * Facilitate diversity and inclusion * Workstyle reform and operation reform (use of digital tools/IT) * Enhance employees' engagement

(4) Financial goals

◎Overall

	FY 2020 (actual)	Goal for FY 2023	CAGR Increase/Decrease
Net Sales	787	1,000	+8.3%
Operating Profit	60	140	+32.6%
EBITDA	123	250	+26.7%
EBITDA Margin	15.6%	25%	+9.4pt
ROE	8.4%	10%	+1.6pt
ROIC	2.9%	6%	+3.1pt
Shareholders' equity ratio	53.7%	55%	+1.3pt
D/E Ratio	0.4x	0.4x	0pt

* Unit: billion yen. CAGR was calculated by Investment Bridge Co., Ltd.

* Figures were rounded to the closest unit.

◎Segments

	FY 2020 (actual)	Goal for FY 2023	Increase/Decrease	CAGR
Total Net Sales	787	1,000	+213	+8.3%
Glass Fiber Yarn	231	260	+29	+4.0%
Glass Fiber Cloth	204	330	+126	+17.4%
Glass Fiber for Industrial Materials	186	200	+14	+2.4%
Life Science	135	170	+35	+8.0%
Textiles	23	30	+7	+9.3%
Others	9	10	+1	+3.6%
Total Operating Profit	60	140	+80	+32.6%
Glass Fiber Yarn	24	50	+26	+27.7%
Glass Fiber Cloth	26	60	+34	+32.1%
Glass Fiber for Industrial Materials	3	5	+2	+18.6%
Life Science	21	30	+9	+12.6%
Textiles	-7	3	+10	-
Others	-8	-8	0	-

* Unit: billion yen. CAGR was calculated by Investment Bridge Co., Ltd.

(5) Detailed Strategies in the New Mid-Term Business Plan

① Growth Strategy Implementation

【Glass Fiber】

◎ Growth Strategy

In response to the expanding 5G market, the company aims to expand the sales for glass fiber, which is its leading high value-added product.

With the rise in demand for 5G, the demand for NE-glass (with low dielectric properties) is increasing.

Currently, facility for infrastructures such as data centers, NE-glass cloth has been adopted for antenna modules of 5G terminals, and it has also begun to be deployed in edge devices connected to the Internet, such as smartphones and tablets.

Furthermore, the demand for T-glass (with low thermal expansion properties) cross is increasing for semiconductor packages such as CPUs for servers and GPUs for AI, and the company will rigorously take in these demands related to high-speed communications.

◎ Responding to 5G Roadmap

With the growing needs for the high-speed communications from cellphones to cars and industrial fields, 5G devices are expected to become even more high-functioning.

The company is one of the few self-contained manufacturers in the world that designs and develops glass compositions, and manufactures yarns and cloths all by itself. By taking advantage of this strength, the company can continuously develop the next-generation products that are needed to advance the communication technologies.

The New Mid-Term Business Plan aims to develop these next-generation low-dielectric glass and put it in mass production.

◎ Adding higher values to production bases

The company expects demands to remain high during the New Mid-Term Business Plans, and will continue to expand its production capacity of Special Glass. The company will increase the production ratio of high value-added products by adding the Special Glass melting furnaces and installing mass production facilities for the next-generation Special Glass to the surplus spaces generated by optimizing the production systems as part of the structural reforms of composite materials. In addition, by establishing an integrated yarn-to-cloth production system of Special Glass in Taiwan – the hub for electronic materials – and establishing the Special Glass production sites in Japan and Taiwan, the company plans to enhance the value-added product composition in Taiwan while strengthening its response capacity to risks such as natural disasters and improving competitiveness.

◎ Boosting sales for high value-added products

The company plans to increase the production capacity of Special Glass (NE-glass yarn, T-glass yarn) by about 90% over three years compared to the end of Fiscal Year 2020, and increase the ratio of high value-added products such as Special Glass, ultrafine, ultra-thin, and flat fibers in the Glass Fiber Yarn Business and Glass Fiber Cloth Business.

The company plans to double the sales for the Special Glass yarn and cloth products compared with Fiscal Year 2020.

In addition, the New Mid-Term Business Plan will witness the input from the next-generation Special Glass to begin, which will contribute to the expansion of high value-added products.

【Life Science (in-vitro diagnostic reagents)】

As a long-term goal, the company plan to make this area the second pillar after glass fiber.

On the back of its aggressive investments over the past four years, the company aims to become the world No. 1 company in the field of immune system plasma protein diagnostics, taking advantage of global vertical integration from antisera to reagent manufacturing and sales.

The company's specific development and sales strategies are as follows.

Development Strategy	<ul style="list-style-type: none"> * Facilitate the generalization of highly sensitive reagents by strengthening our latex technology * Globally roll out bone metabolism marker business with a No.1 domestic market share * Enrich immunochemistry IVD products lineup, and reinforce the development of raw materials (antigen/antisera)
Sales Strategy	(Domestic) Further expand the share of immunochemistry reagents

	(Overseas) Expand business with global majors Develop Chinese/Indian/Southeast Asian markets Promotion of awareness-raising activities
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In order to strengthen its global marketing strategies, the company set up the Marketing Strategy Department under the direct control of the General Manager of the Medical Division on January 1, 2021. The new department's key mission is to promote sales in the growing Asian market, and specifically, the company will strengthen its capacities to find new themes, create strategic business growth opportunities, and build new business models.

【R&D System】

The digital and environmental technologies are the main pillars of R&D in the New Mid-Term Business Plan.

The company will strengthen its company-wide and long-term initiatives with its new research site Ni-CoLabo completed in April 2020 at the core.

The “DX-Strategy Office” was established to promote the use of digital technology through the company.

Its aim is to analyze the big data obtained from the company operations as well as improving productivity through AI utilization and the company plans to implement them in the operation of glass melting furnaces within three years

The “Environment Technology Strategy Office”, established to adopt and evaluate environmental technologies, provides technical support mainly under the “Sustainability Committee” chaired by the CEO, including the introduction of new technologies and the search for the use of external technologies, with the aim of achieving the goals of CO₂ reduction and recycling promotion.

The company also set up the “Medical SC Newtech Strategy Office” to explore the new regions in the medical field.

Other areas on which the company will focus include: the development of company-wide technical human resources, intellectual property strategies utilizing IP (intellectual property) landscapes, and the promotion of science and technology to the local youths.

The company plans to spend a total of 7.2 billion yen over three years on R&D during the New Mid-Term Business Plan, mainly for Glass Fiber and Life Sciences.

② Management Foundation Reinforcement

◎ Structural reforms in the composite materials business

The company's basic strategies are “optimizing the production structure and improving cost competitiveness” and “Develop the use of high value-added products and focus on developing new product development (upgrading product composition).”

• Optimizing production structure and improving cost competitiveness

The company will reduce its composite materials facilities at the Fukushima Factory and expand the production system at the Fuji Fiber Glass in order to streamline the business management based on the appropriate capacity of its composite materials business. The company is considering adding a Special Glass melting furnace to the surplus space generated at the Fukushima Factory.

• Develop the use of high value-added products and focus on new product development (upgrading product composition)

The company will focus on expanding the use of high value-added products (FF etc.) through the utilization of external marketing organizations and the expansion of its product lineup, and drive market expansion.

As for specific product applications, the company believes that this is an area where the opportunities will increase as the weight-reduction trend of cars and aircrafts continues from the global environmental perspectives such as energy saving and CO₂ emissions reduction, and the company will push on with developing its unique new products and expansion of applications of existing high value-added products by accurately grasping the market's needs.

The company will also accelerate R&D for the development of high-function resins (super engineering plastics).

◎ Structural reforms in the Textiles Business

The company's basic strategies are "restructure the interlining business" and "withdraw from the raw yarn business."

• Restructure the interlining business

Since the company owns the unique, core technical capabilities in its interlining business and currently has a relatively high domestic market share, it was deemed that the business can continue if the company can establish the system which can respond positively and flexibly to customer needs. The company will convert its adhesive interlining business into the "adhesive materials business" and develop products for industrial and living materials as well as clothing utilizing its own adhesive technologies.

In order to give management even more mobility, the interlining business was separated from the Nittobo main body and transferred to "Nittobo Advantex Co., Ltd. (NAT)", a subsidiary established in April 2021. The employees in the interlining business were transferred to a new subsidiary accordingly.

• Withdraw from the raw yarn business

The company made the decision to withdraw from this business area as it had become increasingly difficult to generate profits due to the intensified competition from overseas products as well as the aging factory buildings and facility. Accordingly, Nittobo Niigata Co., Ltd. (NNK) was dissolved at the end of Fiscal Year 2021.

The manufacturing and sales for "Nittobo's dishcloth" will be transferred to the newly established subsidiary that inherits the interlining business.

◎ Improving capital efficiency

The company aims to improve capital efficiency by using ROE and ROIC as KPIs, while working to "improving profitability/efficiency" and "securing financial soundness."

To "improving profitability and efficiency," the company will increase operating profit/EBITDA, earn operating CF that can cover investments, generate CF from past investments, and reduce costs and working capital. The company is looking to achieve a surplus in the 3-year total of Free CF. By "improving profitability and efficiency," the company will create further business growth through high value-added products.

To "securing financial soundness," the company focuses on financial discipline, reduce assets, and strengthening its cash management capabilities, thereby suppressing in interest-bearing debts.

The company aims to evolve into a lean business entity (secure resiliency) by "securing financial soundness."

③ Shareholder Return Policy

Currently, the company is implementing shareholder returns with an emphasis on stable growth, but in the medium term, the company will move to a payout rate of 30% as a guide on steady earnings from Fiscal Year 2023, when the company are on a profit growth trajectory.

④ Actions for Environment Issues

The company takes its responsibility to address environmental issues seriously.

To ensure its environmental targets are being met, the company will set up the Sustainability Committee in order to understand and promote its initiatives to solve environmental issues and make decisions quickly as a whole.

Specific initiatives and goals are as follows.

Goals	Efforts
CO ₂ emissions reduction	Target for FY2050: Achieve carbon neutrality Target for FY2030: Reduce CO ₂ emissions by 30% (compared to FY 2013)
Waste glass reduction	By 2030, the company aims to achieve virtually zero waste glass volume with its new slogan "Utilize all, turn all into products."
Development of new environmentally responsive products	The company is developing highly insulated glass wool, biosoluble yarn/cloth, bioplastic chopped strands, etc. (Examples of products compatible with the global environment) * Glass wool

	<p>An insulation material that contributes to improving the energy efficiency of houses, and contributes to resource recycling as it uses recycled glass.</p> <p>* Composite materials Contributes to the weight reduction of various parts such as cars and aircrafts by utilizing lightweight, high-strength glass fiber.</p> <p>* Textiles & sustainability products The company will promote the development of products such as recycled products using recycled raw materials and interlining that are friendly to the global environment.</p>
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⑤ Human Resources Development

The company will “improve employee engagement” by fostering an organizational culture in which employees can work in a positive environment and achieve results through “foster human resources for innovation” and “facilitate diversity and inclusion,” which are the foundations to secure technological innovations and business growths.

Foster human resources for innovation : strengthening professional skills	<p>Cultivate:</p> <ul style="list-style-type: none"> - professional human resources - next-generation leaders - global human resources
Facilitate diversity and inclusion : use diverse human resources regardless of gender, their career at Nittobo, etc.	<p><2030 targets for women’s participation></p> <ul style="list-style-type: none"> * Ratio of female managers (section managers and above): 10% * Aiming for a ratio of female assistant managers and above of 20%
Work style reform (new ways of working) : improving both productivity and employee QOL	<ul style="list-style-type: none"> * Facilitate work-style innovation * Facilitate the enhancement of indirect productivity (RPA utilization, paperless, <i>hanko-less</i>)

The company aims to improve employee engagement by more than 30% in the 2023 score index compared to 2019.

⑥ Corporate Governance

The form of organization is a company with nominating committees, which comprises seven persons, including four external directors. In addition to holding a prior reporting session of the Board of Directors to deepen the understanding of pressing issues and further enhance deliberations, the company is further improving the oversight function of the Board of Directors and strengthening its corporate governance system by introducing an effectiveness evaluation of the Board of Directors.

The Board of Directors is composed of internal directors with the knowledge of individual businesses and the general management, and the majority external directors who can offer discussions from multifaceted perspectives. One of the four external directors is female. They are respectively a person with management experience, a public accountant, a tax accountant and a lawyer, whose choice reflects the diversity awareness of the company, and helps to deepen their discussions on management policies, long-term strategies, and other issues from wider perspectives.

<Reference2: Regarding Corporate Governance>

◎Organization type, Directors, and Auditors

Organization type	Company with audit and supervisory committee
Directors	7 directors, including 4 external ones

◎Corporate Governance Report

Updated on October 4, 2021

<Basic Policy>

Our Group aims to establish a fair and transparent management system in order to conduct business activities that put importance onto social trust from our stakeholders including shareholders and investors and undertake constant review of corporate governance.

Our company introduced an executive officer system in June 2003 with the intention to make the Board of Directors more effective and expedite decision-making. As a result, a system which maximizes the effect of consolidated management has been established. Since June 2008, the business has been operated with further clarification of functions and responsibilities for business administration and business execution. Having received an approval at the ordinary general meeting of shareholders on June 26, 2014, our company has shifted to a company with committees (currently, a company with nominating committee, etc.). In the new form, our company clearly separates supervising and business execution even further and aims at “supervisory functions reinforcement and transparent business administration” and “swift execution of business and improvement of management mobility.” Our company has also built functional systems, which allow us to respond more effectively to expectations of our stakeholders including our customers, shareholders, business partners, and employees and promotes further improvement of the corporate value.

<Reasons for Non-compliance with the Principles of the Corporate Governance Code>

All Principles of the Corporate Governance Code that were revised in June 2021 are implemented.

<Disclosure Based on the Principles of the Corporate Governance Code (Excerpts)>

Principle	Disclosure contents
Principle 1-4 The so-called cross-shareholdings	<p>[Policy concerning cross-shareholdings]</p> <p>Our company may hold shares of listed companies as cross-shareholdings when we determine that it will contribute to the establishment of good relationships with the Group’s important business partners for sale, material procurement, finance, etc., facilitation of smooth business activities of the Group, and maintenance and improvement of the corporate value of the Group. Meanwhile, the share of the companies that do not contribute to the maintenance and improvement of the corporate value of the Group and are judged to have little significance in holding their shares will be sold while considering the impact on the market.</p> <p>[Method to validate rationality of possession]</p> <p>Concerning holding listed stocks, for each stock, the Board of Directors regularly verifies the holding policy, which comprehensively takes into account qualitative factors such as importance of transactions, existence of technical cooperation and joint investment, and implementation of joint ventures as well as quantitative assessments that compare the overall return on investment calculated based on the dividend yield and the business profit with capital cost.</p> <p>Based on this examination, the company sold four listed stocks worth 8.665 billion yen in the fiscal year 2020 and 17 listed stocks worth 12.804 billion yen in the four years since the fiscal year 2017.</p> <p>[Exercise of voting rights of cross-shareholdings]</p> <p>With regard to the exercise of voting rights of cross-shareholdings, our company will decide on the matter based on the factors such as whether the issuing company has an appropriate governance system and makes appropriate decisions that lead to enhancing its corporate value over the medium- and long-term, as well as whether it contributes to the enhancement of corporate value of the Group, and exercise the voting right appropriately.</p>
Supplementary Principle 2-4-1 [Ensuring Diversity]	<p><Regarding Diversity></p> <p>Our corporate group believes that it is important to value the individuality,</p>

	<p>abilities, and ways of thinking of each employee and make the most of them, and is taking initiatives to create an environment and organizational culture in which everyone can recognize differences and all employees can be actively engaged, regardless of personal identities such as gender, age, SOGI, or disabilities. We also consider human resources to be the driving force behind our company's sustainable growth, and will promote the utilization of diverse human resources, including the promotion to managerial positions, regardless of gender, nationality, and mid-career recruitment.</p> <p>The company puts particular importance in the creation of an environment and organizational culture in which women play an active role. In addition to actively recruiting new female graduates, the company aims to systematically train and promote the next generation of women to managerial positions, with the aim of achieving a ratio of female managers of 10% in 2030 (4.1% in the fiscal year 2020). At present, the positions of president and general manager of two major overseas subsidiaries are held by local personnel, and the company will continue the appointment of foreign personnel. In addition, a significant number of mid-career employees currently hold management positions and are demonstrating their skills and experience in the company. In the future, our company will continue to hire mid-career staff to revitalize the organization and secure specialized skills.</p> <p><Human Resources Development Policy and Internal Environment Development Policy for Ensuring Diversity, and Status of the Policies> For each employee to enhance his or her abilities and demonstrate them to the fullest, it is necessary to have a system or organization that enables employees to create their own careers regardless of gender or nationality. From this perspective, our company is working to develop its personnel while supporting the growth of its employees by building systems that enable diverse personnel to achieve results in diverse ways, providing opportunities for learning, improving the quality of management, and fostering an organizational culture.</p> <p>At the same time, to make the workplace attractive for employees, our company is actively working to allow flexible working styles, such as flexible working hours and telecommuting, to improve the quality of life and engagement of employees, and to expand the support system for work-life balance to support employees in child-rearing, nursing care, and other related issues. Regarding childcare leave, we started to allow two weeks of paid leave this fiscal year.</p> <p>The details of the human resource development policy are disclosed in the Integrated Report. https://www.nittobo.co.jp/eng/ir/library/integrated_report.htm</p>
Supplementary Principle 3-1-3 [Disclosure of Sustainability Initiatives]	<p>As sustainability initiatives, our company is promoting (i) strengthening activities for solving environmental issues and (ii) fostering personnel who will bring about transformation as priority measures. Details are provided in the Mid-Term Business Plan and the Integrated Report.</p> <p>Mid-Term Business Plan https://ssl4.eir-parts.net/doc/3110/ir_material_for_fiscal_ym3/94830/00.pdf</p> <p>Integrated Report https://www.nittobo.co.jp/eng/ir/library/integrated_report.htm</p>

Principle 5-1 Policy for promoting constructive dialogue with shareholders

<<Policy for developing systems and implementing measures for promoting constructive dialogue with shareholders>

(1) The executive officer responsible for corporate communication is assigned to supervise overall dialogue with our shareholders, and the Corporate Communication Department is a responsible department for assisting it. Being led by the executive officer, our group endeavors to create opportunities for dialogue with our shareholders, which should contribute to the continuous growth and mid/long-term improvement of the corporate value. In addition, together with the Corporate Communication Department, other departments associated with IR activities promote ongoing collaboration among departments.

(2) The Group strives to continuously disclose information in a timely and appropriate manner so that parties including our customers, shareholders and investors will accurately be informed of and understand the state of the Group. To achieve this, we comply with laws and regulations related to information disclosure, stock exchange rules, etc. as well as establishing and operating appropriate systems for information disclosure.

a) The Group publishes information that needs to be disclosed in accordance with domestic and international laws and regulations, stock exchange rules, etc. through our business reports, annual securities reports and annual reports for shareholders as well as making an announcement through information transmission systems at the stock exchange and press releases.

b) The Group seeks to engage in fairer and broader information disclosure through our website, etc. in principle.

c) Briefings for analysts and institutional investors are held immediately after announcement of half-yearly and final financial statements.

d) The company issues an integrated report that integrates financial information and non-financial information, including CSR, so that the Group's medium- to long-term value creation mechanism can be better understood.

(3) Feedback including opinions and concerns from shareholders and investors received through dialogue with them is collected at the Corporate Communication Department. The Department then reports to the responsible executive officer while feeding it back to the management team and Board of Directors by reporting at executive meetings when necessary.

(4) The Group deals with individual inquiries and dialogue by paying sufficient attention to insider information and using only previously published and publicly known information.

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