



# FY2023 Second Quarter Financial Briefing

**NAGASE&CO.,LTD.**

Stock exchange listing : Tokyo (Prime Market)  
Code number : 8012

**November 27, 2023**

# Delivering next.

“Next” connects us to the future.

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President Ueshima will now begin the presentation.

Ueshima: Good morning, everyone. I am Ueshima, Representative Director, President and CEO of NAGASE & CO.,LTD.

# Executive Summary

## FY2023 Second Quarter Results and FY2023 Earnings Projections

- Profitability of the digital print processing materials business deteriorated due to falling unit prices caused by intensifying competition
- Resin sales were sluggish due to a decline in global demand and weak market conditions
- Profit contribution by the new Utah plant (Prinova Group) delayed
- Despite the sluggish overall semiconductor market, our trading company function expanded its product lineup while the manufacturing function enjoyed strong sales for high-end server applications
- Hayashibara recovered, mainly due to completing the incorporation of utility costs in unit prices, increased demand for cosmetics materials, and the wider adoption of Functional ingredients

## ACE 2.0

- Final-year KGIs and KPIs unchanged under Medium-Term Management Plan **ACE 2.0**
- Steady progress under QUICK WIN as explained at the May 2023 presentation
- Clarification of future growth strategy

The executive summary summarizes what we would like to share with you today. Three businesses deviated significantly from our expectations, and we have revised our full-year results forecast downward.

The first is the color former business of digital print processing materials used for thermal paper in the advanced materials & processing segment. At Fukui Yamada Chemical and Sofix, both of which manufacture the products, a decline in production volume due to decreased demand and a significant drop in unit prices due to an imbalance between supply and demand resulted in an operating loss.

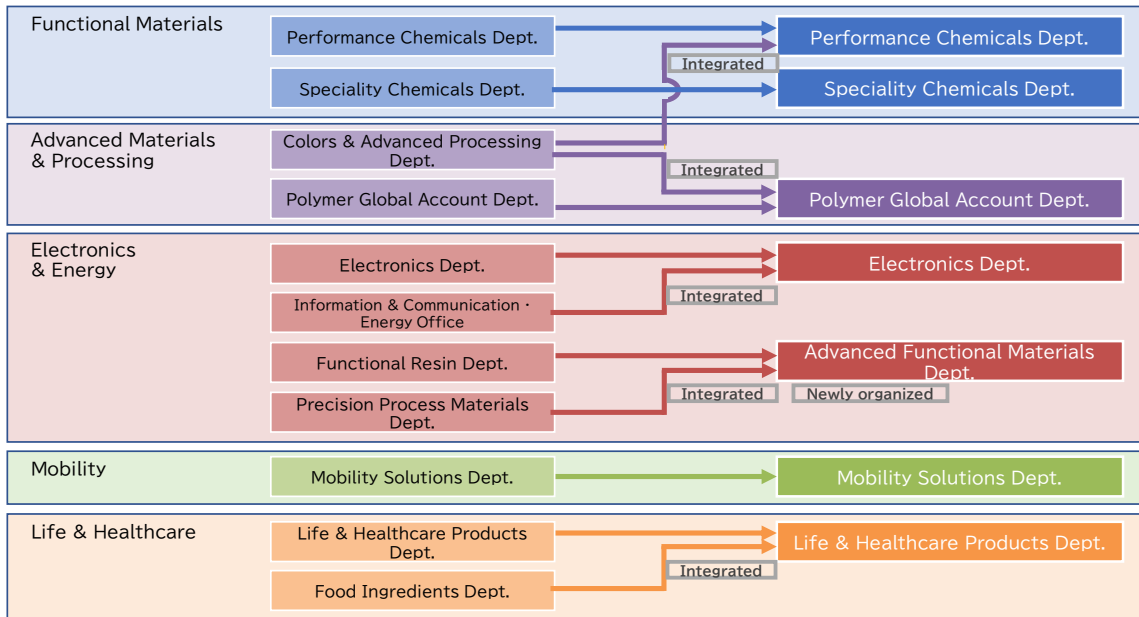
Second, resin sales, also in the advanced materials & processing segment, mainly for OA, FA and gaming applications in China and Vietnam, were down due to a decline in exports of finished products from China to Europe and the US, as well as a drop in demand due to the off-season of models. In addition, due to a drop in the unit price of resin from the market, results were significantly lower than expected.

Third, the Prinova Group, in the life & healthcare segment, was affected by the decrease in the expected production volume of major customers at its new plant in Utah, which was launched in October last year for the purpose of contract manufacturing of sports nutrition. As a result, due to the recording of personnel expenses for the prepared personnel, plant rent, and depreciation expenses, there were upfront costs, resulting in a significant decrease in profits.

These are the businesses that deviated significantly from our assumptions in a negative way. Meanwhile, in the semiconductor business, although there are signs that the bottom has been reached in February, some manufacturers have further reduced their operations, and the situation is still very uneven. Inventories of semiconductors continue to build up, and we expect the market recovery to be difficult until the summer of 2024. Among these, in liquid sealing materials, semiconductor applications for use in high-end servers for generative AI have been strong. Hayashibara's profitability recovered as a result of higher raw material prices and utility prices, which have continued since last year, being reflected in product unit prices, as well as increased demand for AA2GTM, a cosmetic material.

With regard to the **ACE 2.0** medium-term management plan, we have considered revising the KGI and KPI, but have decided to leave the targets unchanged at this time. The details will be explained in the latter part of this presentation.

# New organization in October



The purpose and details of the reorganization will be explained later, but for the purpose of explaining the pages that follow, I would like to show you the details of the new organization, which was reorganized on October 1, consolidating from 11 to 7 departments.

# Business Environment by Segment

| Segment                         | Dept.                         | Markets        | Initial Assumption   | First Half vs.   | Projections | Second-Half Projections vs.   | First Half | Full-Year Projections (vs. Initial Projections) |
|---------------------------------|-------------------------------|----------------|--|--|-------------|---|------------|---|
| Functional Materials            | Performance Chemicals         | Coatings       | Supply chain inventory adjustments resolved, automobile production recovered, etc.       | Automotive-related recovery, but construction-related slump                          | ↘           | Recovery compared to first half   | ↗          | ↘   |
|                                 |                               | Color Formers  | Demand remained weak   | Demand slumped more than expected, market conditions declined                        | ↘           | Same level as the first half  | ↔          | ↘   |
|                                 | Speciality Chemicals          | Semiconductors | Weak in the first half; expected recovery in the second half and beyond                  | In line with projections   | ↔           | Same level as the first half  | ↔          | ↘   |
|                                 |                               | Epoxy          | Logistics inventory adjustments in the first half; recovery beginning in the second half | Remained sluggish  | ↘           | Recovery due to the elimination of logistics inventories                  | ↗          | ↘   |
|                                 |                               | Industrial Oil | Steady growth due to recovery in automobile production volume, etc.                      | Weak performance in China and Japan  | ↘           | Recovery due to the elimination of logistics inventories                  | ↗          | ↘   |
| Advanced Materials & Processing | Polymer Global Account        | Resin          | Recovery in demand for office equipment, appliance, and video game devices               | Mainly weak in China   | ↘           | Recovery beginning in the first half                                      | ↗          | ↘   |
| Electronics & Energy            | Electronics                   | Semiconductors | Weak in the first half; expected recovery in the second half and beyond                  | Market was worse than expected, but expanded lineup of new commercial products       | ↔           | No market recovery; we expect a recovery to start in the next fiscal year | ↘          | ↘   |
|                                 |                               | Display        | Weak in the first half; expected recovery in the second half and beyond                  | In line with projections   | ↔           | Same level as the first half  | ↔          | ↔   |
|                                 | Advanced Functional Materials | Semiconductors | Weak in the first half; expected recovery in the second half and beyond                  | Overall market is challenging, but products for high-end applications performed well | ↗           | No market recovery, but increase in products for high-end applications    | ↗          | ↗   |
|                                 |                               | Smartphones    | Weak in the first half; expected recovery in the second half and beyond                  | Slower than projected  | ↘           | Recovery due to the elimination of logistics inventories                  | ↗          | ↔   |
| Mobility                        | Mobility Solutions            | Automobiles    | Recovery in automobile production beginning in Q1  | In line with projections   | ↔           | Increase due in part to rising automobile production                      | ↗          | ↔   |
| Life & Healthcare               | Life & Healthcare Products    | Food           | Strong sports nutrition market Europe and the Americas                                   | Decreased demand in the U.S. market, market decline                                  | ↘           | Gradual recovery in demand in the U.S. market                             | ↗          | ↘   |
|                                 |                               | Cosmetics      | Increase in demand for cosmetics products with the end of COVID-19, etc.                 | In line with projections   | ↔           | Decreased demand for seasonal merchandise                                 | ↘          | ↔   |
|                                 |                               | Pharmaceutical | Increased demand   | High utilization due to inventory buildup, etc.                                      | ↔           | Decrease compared to the first half due to rebound in the first half      | ↘          | ↔   |

\*Business classifications after reorganization effective October 1, 2023

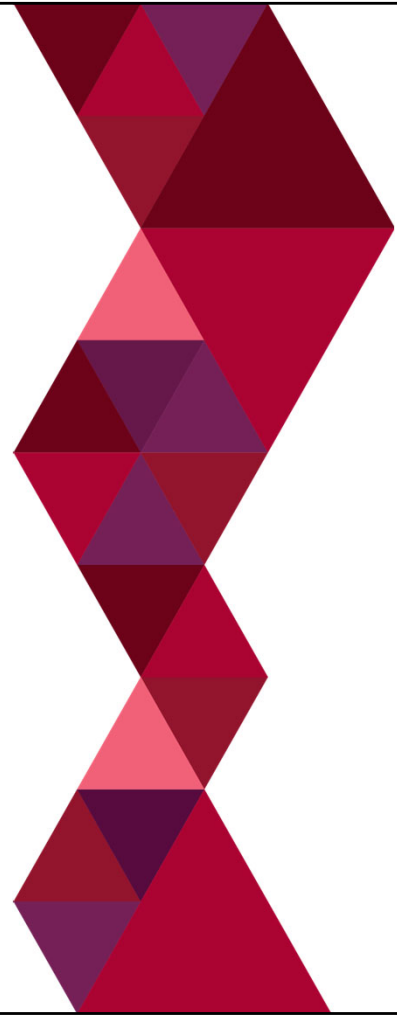
This page describes the business environment in the main markets of each of our business departments, including the assumptions made when the plan was formulated, the situation in H1 of the year, and assumptions for H2.

Overall, many markets expect H1 of the year to be slower than or in line with expectations at the time the plan was formulated, and we expect conditions to improve in H2 compared to H1 in many markets.

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- Medium-Term Management Plan **ACE 2.0** P23~P40

# FY2023 Second Quarter Results and FY2023 Earnings Projections



## Consolidated statements income

- ▶ Gross profit : Profit decreased mainly due to lower profitability of the resin sales business under Advanced Materials & Processing
- ▶ Operating income : Profit decreased due to lower gross profit and increases in selling, general and administrative expenses in connection with personnel costs, etc.
- ▶ Profit Attributable to owners of the parent : Profit decreased due to lower operating income, as well as a decrease in net income stemming from higher interest expenses, etc.

|  | FY2022 2Q | FY2023 2Q | Change | Vs.PY      | Forecast (Original) | 100 millions of yen<br>Achievement |
|--|-----------|-----------|--------|------------|---------------------|------------------------------------|
| <b>Sales</b>                                       | 4,555     | 4,501     | (53)   | 99%        | 9,580               | 47%                                |
| <b>Gross profit</b>                                | 793       | 788       | (4)    | 99%        | 1,710               | 46%                                |
| <GP ratio>   | 17.4%     | 17.5%     | 0.1ppt | -          | 17.8%               | -                                  |
| <b>SG&amp;A expenses</b>                           | 594       | 644       | 49     | 108%       | 1,365               | -                                  |
| <b>Operating income</b>                            | 198       | 144       | (54)   | 73%        | 345                 | 42%                                |
| <b>Ordinary income</b>                             | 202       | 142       | (60)   | 70%        | 326                 | 44%                                |
| <b>Profit Attributable to owners of the parent</b> | 155       | 102       | (53)   | 66%        | 240                 | 43%                                |
| US\$ Exchange rate (period average)                | @ 134.0   | @ 141.1   | @ 7.0  | Weak yen   | @ 135.0             |                                    |
| RMB Exchange rate (period average)                 | @ 19.9    | @ 19.7    | @ 0.2  | Strong yen | @ 20.0              |                                    |

※ Offset to sales and cost of sales from revenue recognition standards; FY2022 2Q -¥133 billion, FY2023 2Q -¥132 billion  
 ※ Impact from foreign exchange: Gross profit, +¥2.3 billion; Operating income, +¥0.2 billion

This is the consolidated statement of income.

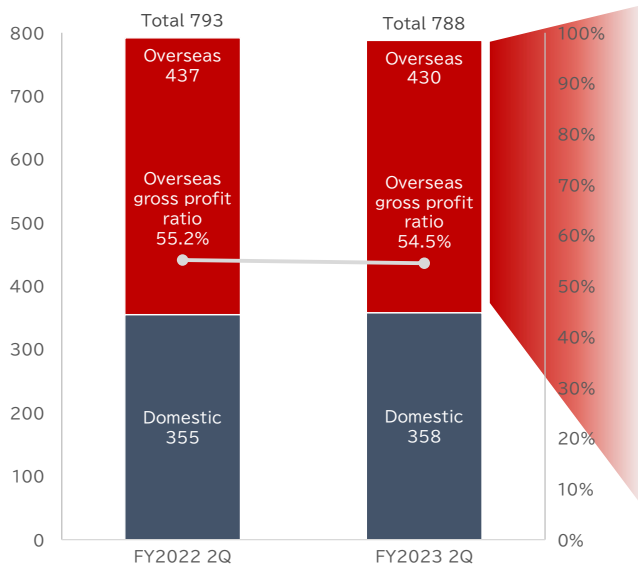
Net sales to profit attributable to owners of the parent are as stated. Net sales and gross profit remained flat YoY, but operating income and below decreased due in part to an increase in SG&A expenses.

General and administrative expenses increased significantly due to the start of recording of personnel expenses, plant rent, and depreciation for 270 employees at the Prinova Group's new Utah plant, as discussed in the summary.

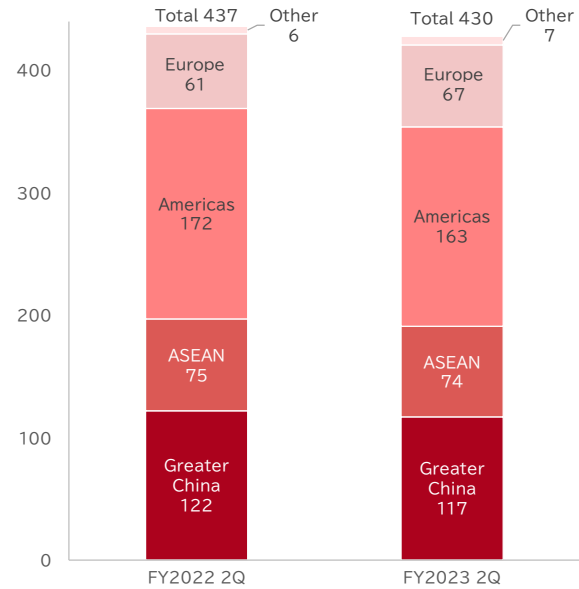
# Gross Profit By Region

- ▶ Domestic business profit increased while overseas business profit declined, resulting in an overall decrease in profit
- ▶ Increase in domestic business sales, mainly due to higher sales of cosmetic materials and formulated epoxy resins
- ▶ Despite higher profits overseas due to the weaker yen, profits decreased due to sluggish resin sales stemming from the impact of the economic slowdown

Domestic & Overseas Gross profit(100 millions of yen)



Overseas gross profit By Region(100 millions of yen)



※Domestic figures under Domestic & Overseas Gross Profit include inter-regional adjustments

This shows the gross profit by region.

Domestic profit increased slightly and overseas profit decreased slightly, with the overseas ratio at 54.5%, a slight decrease from the previous year.

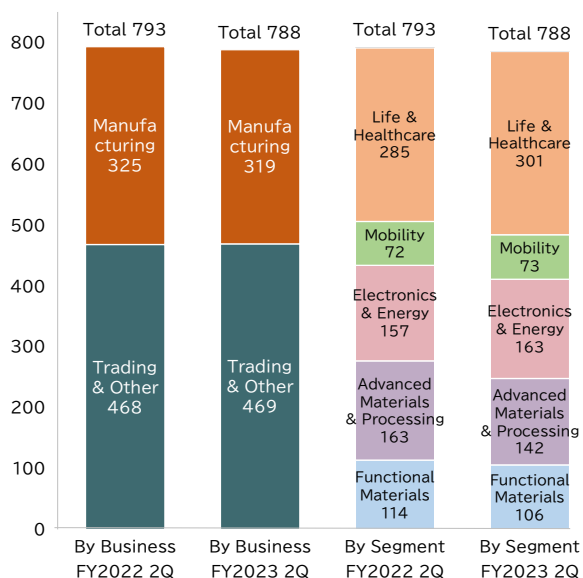
By region, Greater China, affected by the economic slowdown, and the Americas, affected by the slump in the Prinova Group and color former business, as explained in the summary, showed a decrease in profit.



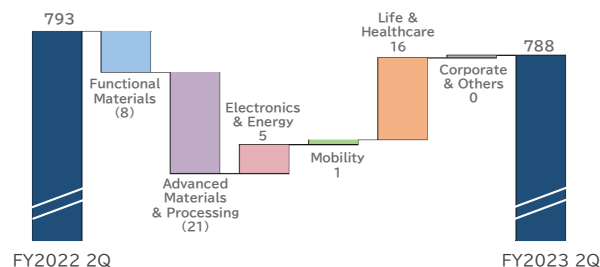
# Gross Profit By Business & Segment

- ▶ Functional Materials posted lower sales of coating raw materials and raw materials for semiconductor-related products and other electronics industry products
- ▶ Advanced Materials & Processing posted lower sales due to decreased demand for resin sales in the office equipment, appliance, and video game device market, as well as the impact of inventory adjustments by customers
- ▶ Despite a decrease in raw materials sales for semiconductor-related products in Electronics & Energy, profits rose overall with an increase in sales of formulated epoxy resins for semiconductor- and electronics-related products
- ▶ Sales of Life & Healthcare-related cosmetic material and pharmaceutical raw materials increased

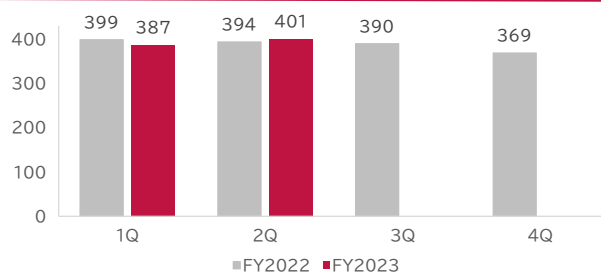
Gross Profit By Business & Segment (100 millions of yen)



Change in Gross Profit By Segment (100 millions of yen)



History of Gross Profit(100 millions of yen)



## Gross profit by business and segment.

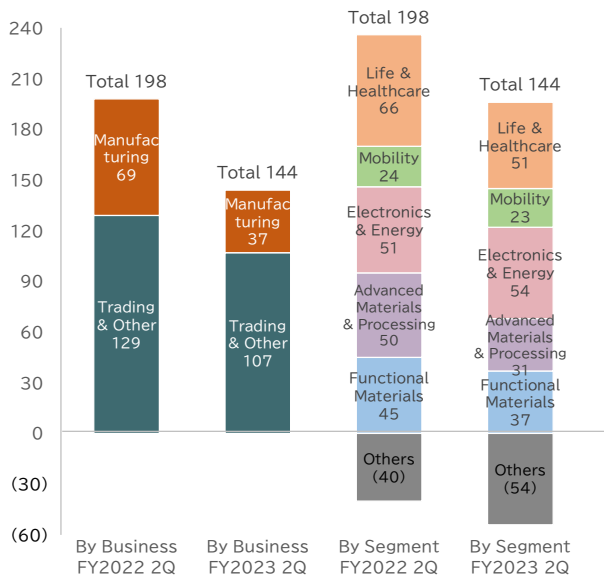
By business category, the trading business remained flat, while the manufacturing business saw a decrease in profit.

By segment, the advanced materials & processing segment saw a large decrease in profit. This was a JPY1.1 billion decrease from the previous year in the color former business, as explained in the summary, and a JPY1.3 billion decrease from the previous year in the resin sales business, due to a decline in volume and unit price. The increase in the life & healthcare segment is due to the recovery of Hayashibara's earnings as explained in the summary.

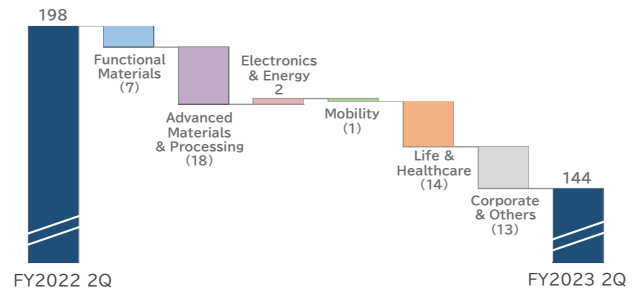
# Operating Income by Business & Segment

- ▶ Functional Materials and Advanced Materials & Processing posted lower operating income due to a decrease in gross profit
- ▶ Electronics & Energy posted higher operating income with increased gross profit
- ▶ Life & Healthcare recorded higher gross profit; however, weaker profitability at the Prinova Group, increased personnel expense, other selling, general and administrative expenses, and a delay in the profit contribution of the new Utah plant caused a decrease in operating income
- ▶ We continue to invest for sustainable future growth, including in DX-related areas

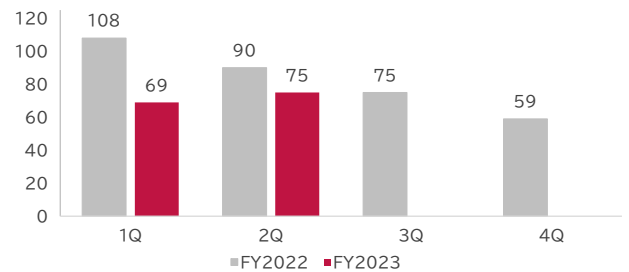
Operating Income by Business & Segment(100 millions of yen)



Change in Operating Income By Segment (100 millions of yen)



History of Operating Income(100 millions of yen)



Here is the operating income by business and segment.

Profits declined in both the trading and manufacturing businesses, but especially in the manufacturing business.

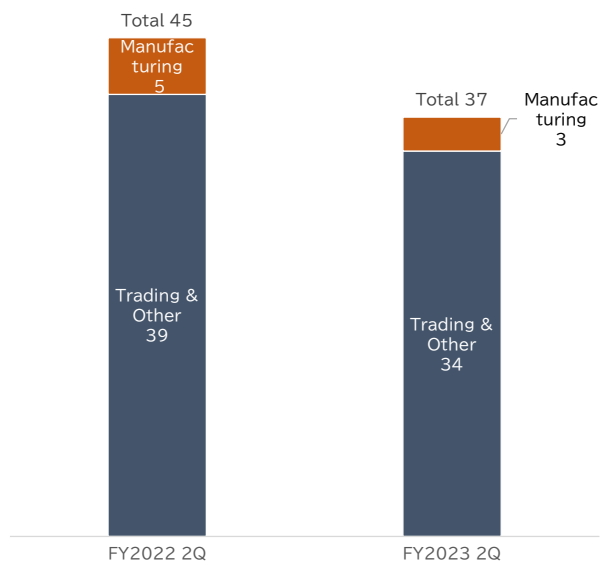
The main reasons for this are the decrease in profit in the color former business, as explained in the summary, as well as the decrease in profit of the Prinova Group in the life & healthcare segment. Corporate & others is due to expenses for DX-related investments, etc., which we have been working on for some time, and an increase in personnel expenses, including actuarial gains and losses.

Details of each business segment are explained on the following pages and beyond.

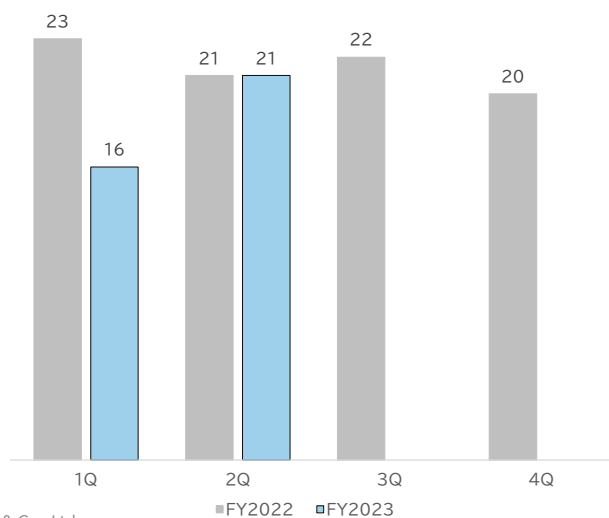
## Functional Materials Segment Operating Income Overview

- ▶ Decrease in sales of coating raw materials due to sluggish sales for architectural applications, despite recovery in sales to the automotive and other industries
- ▶ Sales decreased for raw materials for semiconductor-related products and other electronics industry products, as did sales of raw materials for industrial oil solutions and plastic materials
- ▶ Lower profit year on year as a result of overall weak performance due in part to customer inventory adjustments

Operating income by business (100 millions of yen)



History of operating income (100 millions of yen)



This is the status of operating income in the functional materials segment.

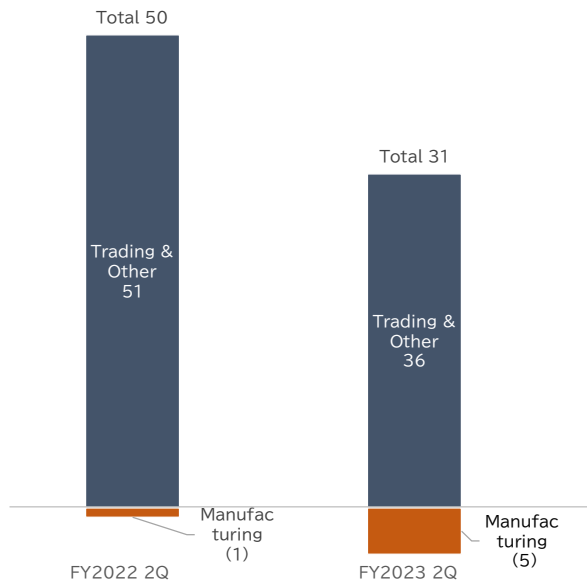
Sales of raw materials for automotive coating are recovering on the back of increased production. Sales of raw materials for process chemicals used in semiconductor front-end processing decreased, due in part to inventory buildup at customers due to the pandemic.

In the manufacturing business, Nagase ChemteX's DENACOL, which is sold to users in North America, remained sluggish, affected by customers' inventory buildups, as I mentioned earlier, but is expected to recover in H2.

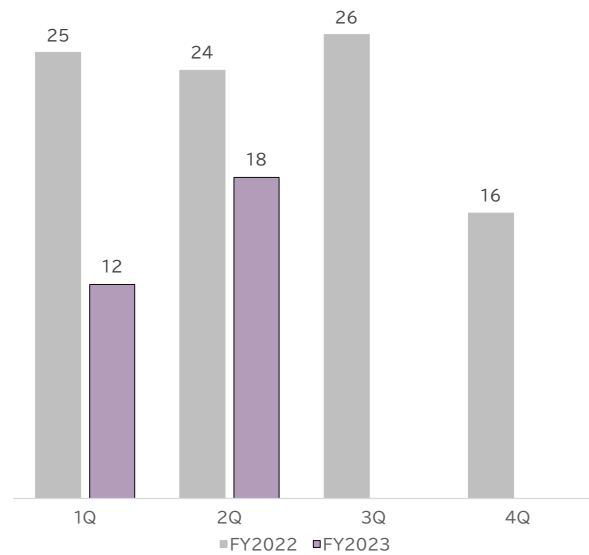
# Advanced Materials & Processing Segment Operating Income Overview

- ▶ Lower profit due to decreased demand for resin sales in the office equipment, appliance, and video game device market, as well as the impact of inventory adjustments by customers
- ▶ Lower digital print processing materials sales due to lower profitability in the manufacturing business
- ▶ Decrease in resin sales and lower profitability in the manufacturing business led to weak performance in trading company and manufacturing businesses and lower profit year on year

Operating income by business (100 millions of yen)



History of operating income (100 millions of yen)



This shows the advanced materials & processing segment.

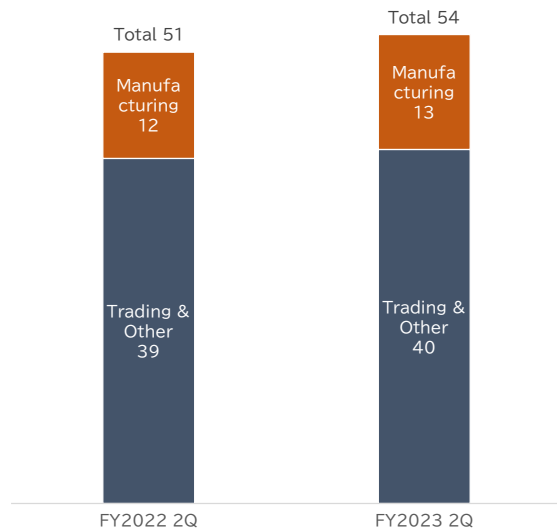
In addition to the decline in resin sales volume as explained in the summary, the trading business was affected by a drop in unit prices of resins due to the imbalance between supply and demand, resulting in a decrease in profit. While unit sales prices declined in Q1, profitability declined because of sales of inventory purchased before the unit price decline, but now that these inventories have been cleared, profit margins are leveling off.

The decrease in profit in the manufacturing business was due to the color former business as explained in the summary.

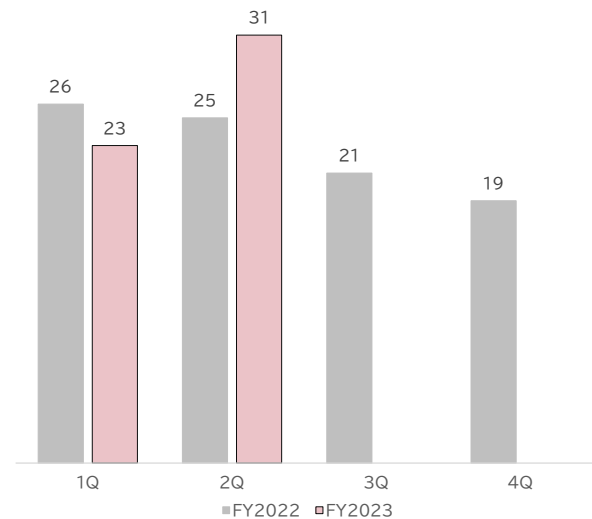
## Electronics & Energy Segment Operating Income Overview

- ▶ Despite weakening semiconductor market conditions, sales of materials to the semiconductor industry increased due to growth in product sales
- ▶ Sales of formulated epoxy resins increased mainly for server applications and mobile device applications
- ▶ Profit rose overall year on year with strong sales of formulated epoxy resins

Operating income by business(100 millions of yen)



History of operating income (100 millions of yen)



This shows the electronics & energy segment.

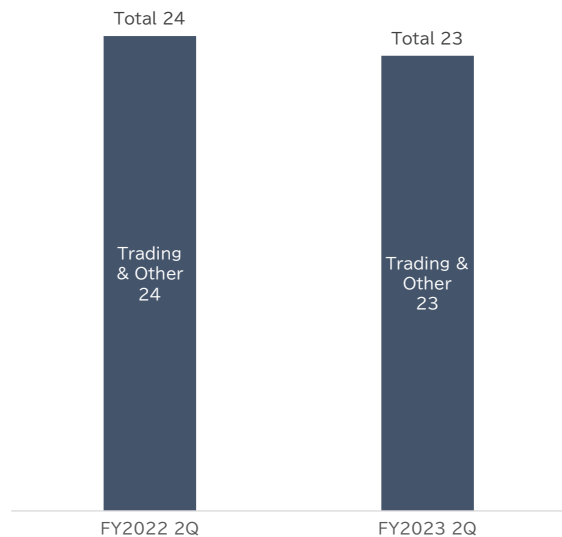
The semiconductor industry as a whole is as explained in the summary.

Although we expect market recovery to be difficult until the end of H1 of next year, we will expand sales by expanding new commercial products in our trading business. In the manufacturing business, Nagase ChemteX's liquid sealing materials for high-end servers grew and profits were strong.

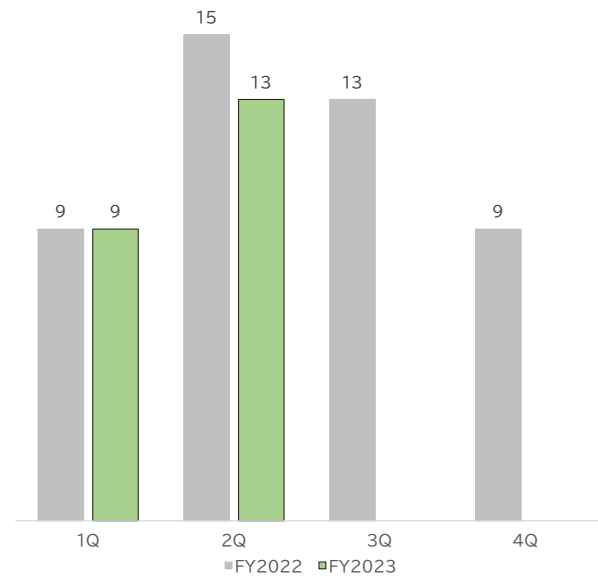
## Mobility Segment Operating Income Overview

- ▶ Sales increased for resins, mainly due to an increase in automobile production and expanded market share to existing customers
- ▶ Sales increased in functional materials and functional components for interior and exterior fittings and electrification
- ▶ Operating income decreased year on year due to an increase in selling, general and administrative expenses associated with higher activity volume, etc.

Operating income by business(100 millions of yen)



History of operating income (100 millions of yen)



This shows the mobility segment.

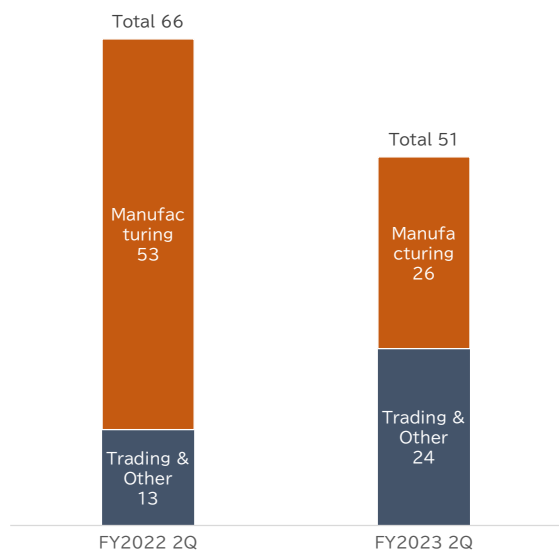
Japanese automobile manufacturers' domestic production volume in H1 was strong, up approximately 20% from the previous year, and resin sales volume increased as a result. On the other hand, unit prices fell due to the naphtha linkage, and coupled with an increase in general and administrative expenses, operating income remained flat.

Sales of functional components and electrification products for EV manufacturers in Europe and the US remained strong.

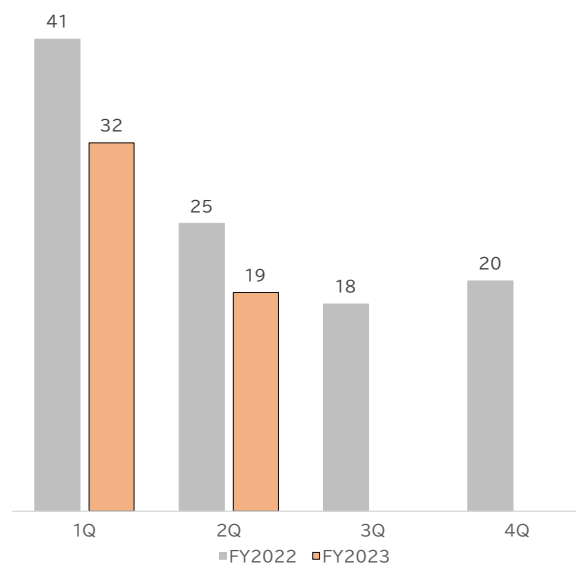
## Life & Healthcare Segment Operating Income Overview

- ▶ Overall, the Prinova Group recorded higher sales due to the impact of the weaker yen and operations at the new plant in Utah; however, food ingredient sales profitability declined due to falling market prices
- ▶ Hayashibara posted increased sales, mainly in cosmetic material
- ▶ Despite strong performance at Hayashibara, profit decreased overall year on year due to weaker in the Prinova Group and a delay in the profit contribution of the new Utah plant

Operating income by business (100 millions of yen)



History of operating income (100 millions of yen)



This shows the life & healthcare segment.

In the trading business, sales of cosmetic materials and pharmaceutical raw materials were strong. In the manufacturing business, earnings increased due to strong sales of AA2GTM, Hayashibara's cosmetic material. However, as explained in the summary, the Prinova Group's earnings declined significantly due to lower earnings at the new Utah plant and a significant drop in unit sales prices due to competition from Chinese products, despite an increase in volume due to market share growth in the material sales business. As a result, the manufacturing business as a whole was significantly negative.

Profits fell from Q1 to Q2, but this was due to a product manufacturing switch at a user of Hayashibara's cosmetic materials, and we expect a recovery in H2.

Hayashibara and Prinova Group counts are explained on the next page.

## State of Major Manufacturing Subsidiaries

- ▶ Nagase ChemteX : Despite the transfer of the biochemicals business, profit rose due to increased sales of highly profitable formulated epoxy resins
- ▶ Hayashibara : Higher profit due to the wider advancement of price increases and strong sales of cosmetic material stemming from a recovery in demand
- ▶ Prinova Group : Despite increased sales in our manufacturing and processing business, profit declined due to the impact of weaker profitability in food ingredient sales stemming from deteriorating market conditions, increased personnel expense and other selling, general and administrative expenses, and a delay in the profit contribution of the new Utah plant

100 millions of yen

|                            |  | FY2022 2Q | FY2023 2Q | Change | Vs.PY | Forecast (Original) | Achievement |
|----------------------------|--|-----------|-----------|--------|-------|---------------------|-------------|
| Nagase ChemteX Corporation | Sales                                      | 135       | 122       | (12)   | 90%   | 252                 | 49%         |
|                            | Gross profit                               | 38        | 37        | (1)    | 97%   | 71                  | 52%         |
|                            | Operating income                           | 11        | 13        | 1      | 112%  | 20                  | 66%         |
| Hayashibara Co.,Ltd.       | Sales                                      | 138       | 170       | 31     | 122%  | 367                 | 46%         |
|                            | Gross profit                               | 53        | 62        | 9      | 118%  | 131                 | 48%         |
|                            | Operating income                           | 20        | 26        | 6      | 133%  | 50                  | 53%         |
|                            | Goodwill amortization etc.                 | 15        | 15        | -      | 100%  | 30                  | 50%         |
|                            | Operating income after amortization burden | 4         | 11        | 6      | 239%  | 19                  | 58%         |
| Prinova Group              | Sales                                      | 950       | 968       | 18     | 102%  | 2,035               | 48%         |
|                            | Gross profit                               | 166       | 164       | (2)    | 98%   | 367                 | 45%         |
|                            | Operating income                           | 57        | 26        | (30)   | 47%   | 84                  | 32%         |
|                            | Goodwill amortization etc.                 | 11        | 12        | 1      | 110%  | 24                  | 50%         |
|                            | Operating income after amortization burden | 46        | 14        | (31)   | 32%   | 59                  | 24%         |

This is a summary of the business performance of our major manufacturing subsidiaries.

Sales and gross profit of Nagase ChemteX decreased due to the effect of the transfer of the enzyme business conducted at the Fukuchiyama Plant of Nagase ChemteX to Hayashibara through the integration of biotechnology businesses within the NAGASE Group effective April 1 of this fiscal year.

On the other hand, operating income increased mainly due to increased sales of epoxy resins and liquid sealing materials for high-end servers.

As explained in the summary, Hayashibara made progress in passing on higher raw material and utility costs to selling prices, which also contributed to a JPY0.6 billion increase in operating income, reflecting strong sales of cosmetic material AA2GTM.

The Prinova Group reported a JPY3 billion decrease in operating income due to the unit price decline in materials sales as explained earlier and the impact of the new plant in Utah as explained in the summary.



## Consolidated Balance Sheets

- ▶ Current assets : Decrease due to reduced inventories
- ▶ Net assets : Increase, despite dividend payments and share buybacks, as we posted a profit for the period, as well as increases in net unrealized holding gain on securities and translation adjustments due to the weaker yen

100 millions of yen

|                                   | 23/03 | 23/09 | Change | Details   |
|-----------------------------------|-------|-------|--------|---|
| Total Current Assets              | 5,301 | 5,388 | 87     |   |
| (Cash&deposits)                   | 408   | 408   | (0)    |   |
| (Trade account receivable)        | 3,021 | 3,245 | 224    |   |
| (Inventories)                     | 1,697 | 1,542 | (155)  |   |
| Total non-current assets          | 2,325 | 2,458 | 132    |   |
| (Investments in security)         | 697   | 752   | 55     |   |
| Total assets                      | 7,626 | 7,847 | 220    |   |
| Current Liab.                     | 2,862 | 2,906 | 44     | Short-term loans·CP(121)  |
| (Trade account payable)           | 1,404 | 1,567 | 163    |   |
| Non-current Liab.                 | 980   | 1,018 | 37     | Lease Obligation+35,<br>Non-Current Loan (12)                               |
| Total Liab.                       | 3,843 | 3,924 | 81     |   |
| Shareholders' equity              | 3,090 | 3,066 | (24)   | Treasury Stock(66)  |
| Accum. Other Comprehensive Income | 586   | 785   | 199    | Translation Adjustment+154,<br>Net unrealized holding gain on securities+38 |
| Non-controlling interest          | 107   | 70    | (36)   |   |
| Total net assets                  | 3,783 | 3,922 | 138    |   |
| Working capital                   | 3,313 | 3,220 | (93)   |   |
| Shareholders' equity ratio        | 48.2% | 49.1% | 0.9ppt |   |
| NET D/E ratio                     | 0.38  | 0.34  | (0.04) |   |

This shows the consolidated balance sheet.

Inventories amounted to JPY154.2 billion, down JPY15.5 billion from the end of the previous period, and working capital decreased by JPY9.3 billion. We will continue and strive to keep the amount below JPY140 billion by the end of the fiscal year.

Short-term borrowings decreased by JPY10.2 billion due to a decrease in working capital.

## Consolidated Cash Flows

- ▶ Operating CF : Net operating cash flow of ¥38.2 billion, mainly due to a decrease in working capital
- ▶ Investing CF : Net cash used of ¥6.4 billion, mainly due to purchase of property, plant and equipment and intangible assets, offset in part by proceeds from the sales of investment securities, etc.
- ▶ Financing CF : Net cash used of ¥36.6 billion, mainly due to a decrease in short-term loans and commercial paper, dividend payments, and share buybacks

100 millions of yen

|  | FY2022 2Q | FY2023 2Q |
|--|-----------|-----------|
| Operating CF   | (179)     | 382       |
| Investing CF   | (59)      | (64)      |
| Free CF  | (239)     | 318       |
| Financing CF   | 115       | (366)     |
| Effects of exchange rate                             | 47        | 50        |
| Net increase / decrease in cash and cash equivalents | (76)      | 2         |
| Depreciation of tangible and intangible assets       | 71        | 79        |
| Fixed asset investment                               | (83)      | (82)      |
| Increase / decrease in working capital               | (295)     | 233       |

This shows the consolidated cash flows.

While operating cash flow was negative in the previous fiscal year, partly due to an increase in working capital, this fiscal year's operating cash flow was JPY38.2 billion due to a reduction in working capital, including a reduction in inventories.

## FY2023 Earnings Projection(Changed)

- ▶ While certain businesses, such as the automobile-related, semiconductor-related, and Life & Healthcare have been performing solidly, we lowered our full-year earnings forecast in light of the following conditions
- ▶ Resin sales declined due to lower demand for electronic and electrical projects caused by global inflation; profitability declined due to falling market prices
- ▶ The food-related business experienced a delay in profit contribution of the Prinova Group's new Utah plant, while food ingredient sales profits declined due to falling market prices
- ▶ Smartphone demand has yet to see a full-fledged recovery in demand, which we expected to begin in the second half of the fiscal year; profits from sales of related materials and raw materials may be lower than initial forecast

100 millions of yen

|  | FY2022<br>Actual | FY2023<br>Previous forecast | FY2023<br>Revised forecast | Change | Percent<br>Change |
|--|------------------|-----------------------------|----------------------------|--------|-------------------|
| <b>Sales</b>                                       | 9,128            | 9,580                       | 9,000                      | (580)  | (6%)              |
| <b>Gross profit</b>                                | 1,554            | 1,710                       | 1,630                      | (80)   | (5%)              |
| <GP ratio>   | 17.0%            | 17.8%                       | 18.1%                      | 0.3ppt | -                 |
| <b>SG&amp;A expenses</b>                           | 1,220            | 1,365                       | 1,330                      | (35)   | (3%)              |
| <b>Operating income</b>                            | 333              | 345                         | 300                        | (45)   | (13%)             |
| <b>Ordinary income</b>                             | 325              | 326                         | 290                        | (36)   | (11%)             |
| <b>Profit attributable to owners of the parent</b> | 236              | 240                         | 225                        | (15)   | (6%)              |
| US\$ Exchange rate<br>(period average)             | @ 135.5          | @ 135.0                     | @ 143.0                    | @ 8.0  | Weak yen          |
| RMB Exchange rate<br>(period average)              | @ 19.7           | @ 20.0                      | @ 20.0                     | -      |                   |

This is the full-year earnings projection for the fiscal year ending March 2024. This has been changed.

We have revised downward our full-year forecasts due to the major factors in the digital printing-related business, the resin sales business, and the Prinova Group's business as explained in the summary.

## FY2023 Earnings Projection By segment(Changed)

- ▶ Sales of Functional Materials should increase due to a transfer of business from the Advanced Materials & Processing segment; however, we revised our forecast for operating income downward due to the negative impact of the digital print processing business, which is experiencing a decline in profitability
  - ▶ While we expect sales in the Electronics & Energy business to decrease, the decline in gross profit should be minor due to the increase in sales of high-profit products; therefore, we made an upward revision in operating income
  - ▶ We made a downward revision in operating income due to the delayed contribution of Prinova Group's new plant in Utah, despite the strong performance of Hayashibara in the Life & Healthcare-related business
  - ▶ We reduced Corporate & Others after reviewing cost effectiveness
- \*Figures for FY2023 prior to revision represent business segments before reclassification; FY2022 actual and FY2023 revised forecasts represent business segments after reclassification

|                                    |                  | 100 millions of yen |                             |                            |        |                   |
|------------------------------------|------------------|---------------------|-----------------------------|----------------------------|--------|-------------------|
|                                    |                  | FY2022<br>Actual    | FY2023<br>Previous forecast | FY2023<br>Revised forecast | Change | Percent<br>Change |
| Functional Materials               | Sales            | 1,561               | 1,150                       | 1,540                      | 390    | 34%               |
|                                    | Gross profit     | 298                 | 229                         | 275                        | 46     | 20%               |
|                                    | Operating income | 104                 | 89                          | 83                         | (6)    | (7%)              |
| Advanced Materials<br>& Processing | Sales            | 2,209               | 2,700                       | 1,970                      | (730)  | (27%)             |
|                                    | Gross profit     | 242                 | 343                         | 236                        | (107)  | (31%)             |
|                                    | Operating income | 76                  | 110                         | 69                         | (41)   | (37%)             |
| Electronics<br>& Energy            | Sales            | 1,369               | 1,500                       | 1,390                      | (110)  | (7%)              |
|                                    | Gross profit     | 307                 | 338                         | 335                        | (3)    | (1%)              |
|                                    | Operating income | 92                  | 106                         | 111                        | 5      | 5%                |
| Mobility                           | Sales            | 1,255               | 1,356                       | 1,299                      | (57)   | (4%)              |
|                                    | Gross profit     | 144                 | 156                         | 149                        | (7)    | (5%)              |
|                                    | Operating income | 47                  | 51                          | 48                         | (3)    | (6%)              |
| Life & Healthcare                  | Sales            | 2,731               | 2,873                       | 2,800                      | (73)   | (3%)              |
|                                    | Gross profit     | 559                 | 643                         | 634                        | (9)    | (1%)              |
|                                    | Operating income | 105                 | 113                         | 108                        | (5)    | (4%)              |
| Corporate&Others                   | Sales            | 0                   | 1                           | 1                          | —      | —                 |
|                                    | Gross profit     | 1                   | 1                           | 1                          | —      | —                 |
|                                    | Operating income | (94)                | (124)                       | (119)                      | 5      | 4%                |
| Total                              | Sales            | 9,128               | 9,580                       | 9,000                      | (580)  | (6%)              |
|                                    | Gross profit     | 1,554               | 1,710                       | 1,630                      | (80)   | (5%)              |
|                                    | Operating income | 333                 | 345                         | 300                        | (45)   | (13%)             |

\*Effective from October 1, 2023, NAGASE has changed the method of classifying its business segments, and the figures for the previous fiscal year have been reclassified to reflect this change

This is the forecast for each segment.

As I showed you earlier, effective October 1, 2023, we have changed the classification method of our business segments. The main change is that we have integrated the businesses other than resin sales in the advanced materials & processing segment into the functional materials segment.

On the next page, I will explain the H2 forecast by segment.

## FY2023 Earnings Projections by Segment (1st half Actual, 2nd half forecast)

- ▶ All figures below reflect organizational changes effective October 1, 2023
- ▶ We expect operating income overall to increase versus the first half in respect to a certain degree of easing in inventory adjustments by customers, which occurred during the first half. We also expect a recovery in profitability due to the sell-down of inventory for high-unit-price resin and food ingredients, which are in a declining market
- ▶ We expect Electronics & Energy sales to decrease; however, operating income should increase compared to the first half owing to strong sales, etc., of high-profit Nagase ChemteX products
- ▶ Corporate & Others: We expect expenses to decrease overall compared to initial projections; however, expenses will likely be higher in the second half compared with the first half, as there are more expense items budgeted for the second half

100 millions of yen

|                                 |                  | FY2023          | FY2023            | FY2023           | Achievement |
|---------------------------------|------------------|-----------------|-------------------|------------------|-------------|
|                                 |                  | 1st half Actual | 2nd half forecast | Revised forecast |             |
| Functional Materials            | Sales            | 721             | 818               | 1,540            | 47%         |
|                                 | Gross profit     | 132             | 142               | 275              | 48%         |
|                                 | Operating income | 36              | 46                | 83               | 44%         |
| Advanced Materials & Processing | Sales            | 1,022           | 947               | 1,970            | 52%         |
|                                 | Gross profit     | 116             | 119               | 236              | 49%         |
|                                 | Operating income | 32              | 36                | 69               | 48%         |
| Electronics & Energy            | Sales            | 712             | 677               | 1,390            | 51%         |
|                                 | Gross profit     | 163             | 171               | 335              | 49%         |
|                                 | Operating income | 54              | 56                | 111              | 49%         |
| Mobility                        | Sales            | 649             | 649               | 1,299            | 50%         |
|                                 | Gross profit     | 73              | 75                | 149              | 50%         |
|                                 | Operating income | 23              | 24                | 48               | 49%         |
| Life & Healthcare               | Sales            | 1,396           | 1,403             | 2,800            | 50%         |
|                                 | Gross profit     | 301             | 332               | 634              | 48%         |
|                                 | Operating income | 51              | 56                | 108              | 48%         |
| Corporate&Others                | Sales            | —               | 1                 | 1                | —           |
|                                 | Gross profit     | 0               | 0                 | 1                | 59%         |
|                                 | Operating income | (54)            | (64)              | (119)            | 46%         |
| Total                           | Sales            | 4,501           | 4,498             | 9,000            | 50%         |
|                                 | Gross profit     | 788             | 841               | 1,630            | 48%         |
|                                 | Operating income | 144             | 155               | 300              | 48%         |

\*We changed segment classifications on October 1, 2023. The figures above have been reclassified to reflect these changes.

Overall, sales declined in H1, mainly in the functional materials segment, the advanced materials & processing segment, and the mobility segment, due to inventory adjustments at customers. In H2, we expect inventories at customers to level off and sales to recover to a certain degree.

In the electronics & energy segment, we expect profits to increase compared to H1 due to continued strong sales of highly profitable liquid sealing materials for high-end servers by Nagase ChemteX.

## FY2023 Earnings Projection By Major Manufacturing Subsidiaries (Changed)

- ▶ Nagase ChemteX : While we expect overall sales to decrease, we made an upward revision to operating income due to strong sales of high-profit products
- ▶ Hayashibara : We made an upward revision to operating income, mainly due to strong sales of cosmetic material, reflecting the wider advancement of price increases and recovery in demand
- ▶ Prinova Group : We made a downward revision of operating income due to the delay in profit contribution from the new Utah plant and the impact of lower profitability in food ingredient sales due to falling market prices

100 millions of yen

|                               |   | FY2022<br>Actual | FY2023<br>Previous forecast | FY2023<br>Revised forecast | Change | Percent<br>Change |
|-------------------------------|---|------------------|-----------------------------|----------------------------|--------|-------------------|
| Nagase ChemteX<br>Corporation | Sales   | 253              | 252                         | 247                        | (4)    | (2%)              |
|                               | Gross profit                                  | 68               | 71                          | 77                         | 5      | 8%                |
|                               | Operating income                              | 18               | 20                          | 24                         | 4      | 23%               |
| Hayashibara<br>Co.,Ltd.       | Sales   | 281              | 367                         | 347                        | (19)   | (5%)              |
|                               | Gross profit                                  | 103              | 131                         | 128                        | (2)    | (2%)              |
|                               | Operating income                              | 37               | 50                          | 52                         | 1      | 3%                |
|                               | Goodwill amortization etc.                    | 30               | 30                          | 30                         | —      | —                 |
|                               | Operating income after<br>amortization burden | 7                | 19                          | 21                         | 1      | 8%                |
| Prinova Group                 | Sales   | 1,927            | 2,035                       | 1,943                      | (91)   | (5%)              |
|                               | Gross profit                                  | 312              | 367                         | 355                        | (12)   | (3%)              |
|                               | Operating income                              | 80               | 84                          | 62                         | (22)   | (27%)             |
|                               | Goodwill amortization etc.                    | 24               | 24                          | 25                         | 0      | 4%                |
|                               | Operating income after<br>amortization burden | 56               | 59                          | 36                         | (23)   | (39%)             |

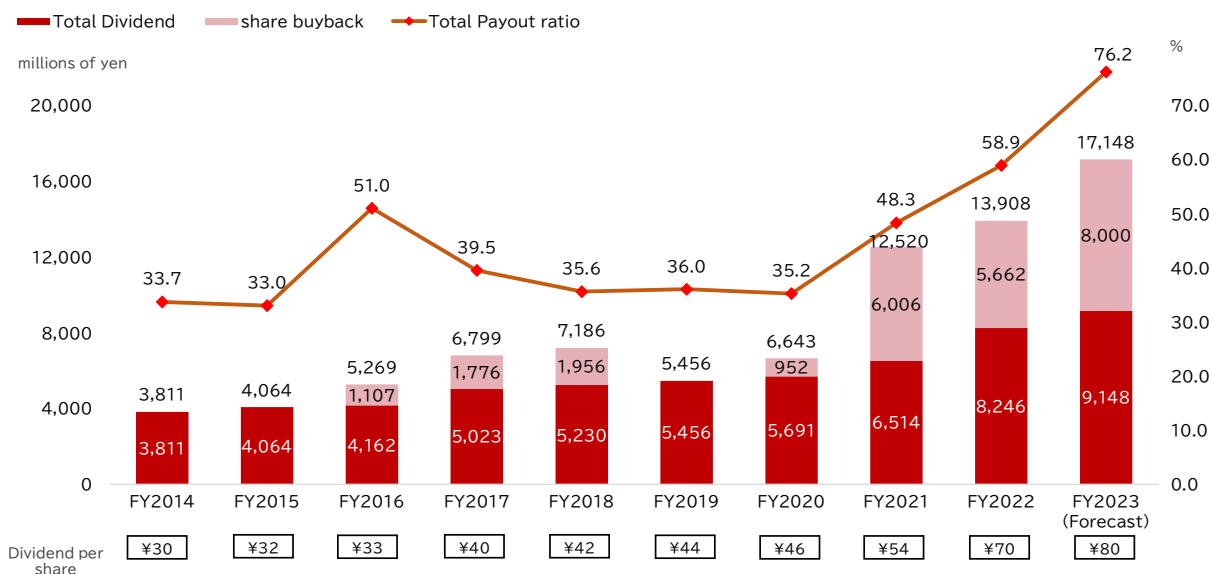
This is the earnings projection for the main manufacturing subsidiaries.

Nagase ChemteX's profit increase was explained earlier. In addition, Hayashibara is progressing as initially expected. For the Prinova Group, as I explained earlier, we have revised downward significantly due to the delay in profit contribution from the new Utah plant.

Although the start-up of the new Utah plant has been delayed, production and sales volumes have been improving in H2, and the plant is now profitable on a monthly basis. In the future, we will materialize the profit contribution by reducing costs through automation of manufacturing processes and expanding sales by acquiring new customers, aiming to double the operating income of the Prinova Group in the fiscal year ending March 2026 from that of this fiscal year ending March 2024.

# Shareholder Returns

- ▶ We plan to pay an interim dividend of ¥40 per share and a year-end dividend of ¥40 per share for an annual dividend of ¥80 per share for fiscal 2023 (expected 14th consecutive fiscal year of dividend increases)
- ▶ We are proceeding as planned with the repurchase of ¥8 billion in treasury stock, as resolved in May 2023 (repurchase period: May 2023 to December 2023), reaching cumulative purchases of ¥7.1 billion as of the end of October 2023
- ▶ We expect the total payout ratio for fiscal 2023 to be 76%, including greater shareholder returns through increased dividends and share buybacks



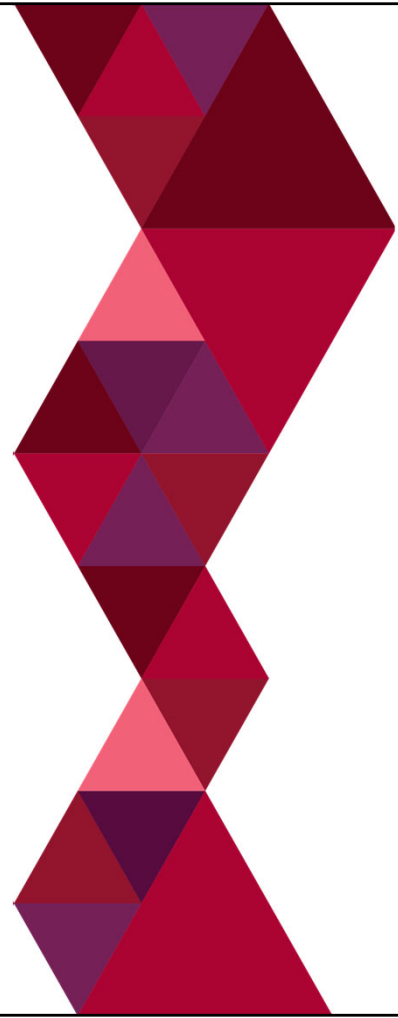
※ FY2023 year-end dividend to be submitted for approval to the 109th general meeting of shareholders scheduled for June 2024.

This shows the shareholder returns.

Although we have revised downward our full-year earnings forecast for the fiscal year ending March 2024, we have not changed our dividend forecast.

In addition, the acquisition of the Company's own shares, which was resolved in May 2023, is progressing smoothly, with JPY7.1 billion acquired as of the end of October.

## Medium-Term Management Plan **ACE 2.0**



I would like to explain Medium-Term Management plan **ACE 2.0**.



# Contents

- Medium-Term Management Plan **ACE 2.0** Progress
- Growth Strategies for the Future

## Medium-Term Management Plan **ACE 2.0** Progress

This is the progress of the **ACE 2.0** medium-term management plan.

# Medium-Term Management Plan **ACE 2.0** Quantitative Targets (No Changes)

**We made certain revisions in the third year of ACE 2.0 based on progress**

- ✓ We made no changes to quantitative targets, aiming to build a structure for growth with an ROE of 8.0% or more and operating income of 35 billion yen as the baseline for profitability
- ✓ We are leaving the basic policy unchanged and clarifying strategies for the value we offer over the medium to long term

## Key Goal Indicators (KGIs): Pursuit of Quality

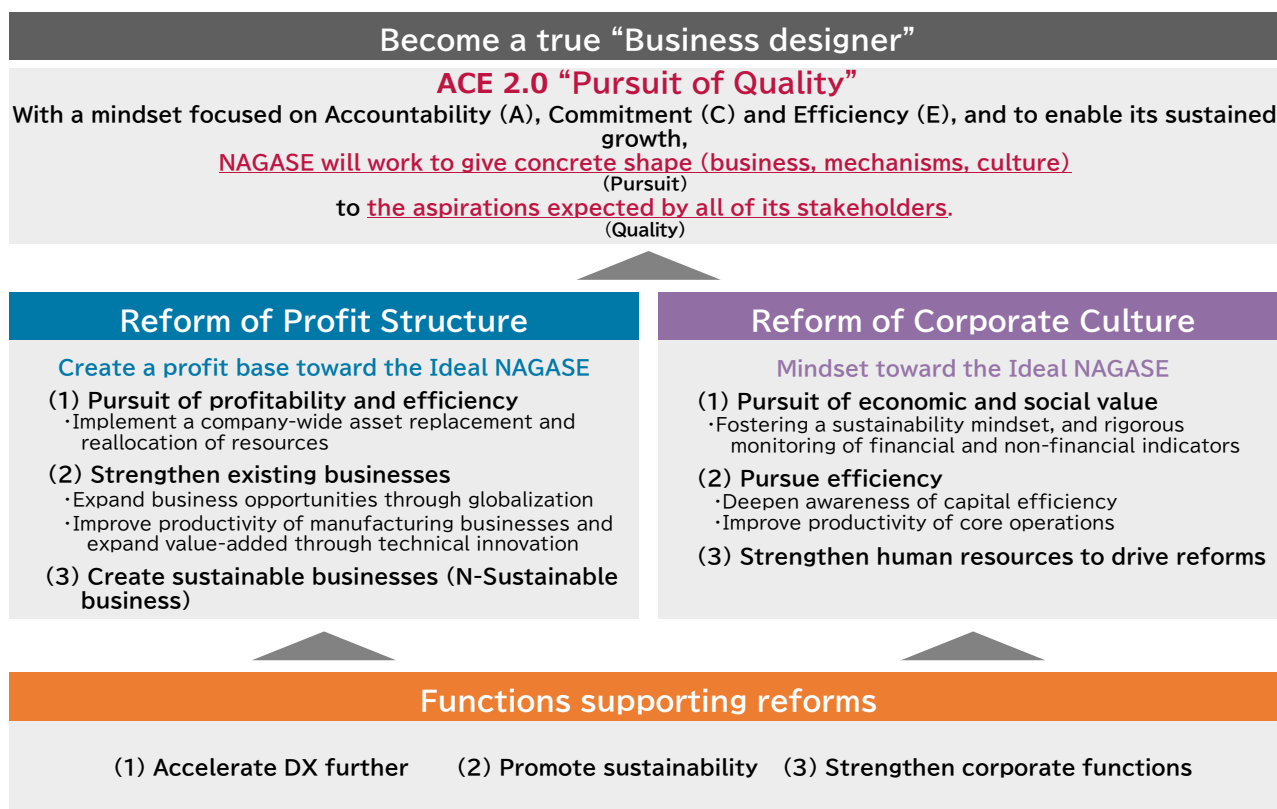
| Measures                          | Indicators       | FY2020        | FY2021        | FY2022        | FY2025         |
|-----------------------------------|------------------|---------------|---------------|---------------|----------------|
| Improvement in capital efficiency | ROE              | 5.9%          | 7.7%          | 6.6%          | 8.0% or higher |
| Increased profitability           | Operating income | ¥21.9 billion | ¥35.2 billion | ¥33.3 billion | ¥35.0 billion  |

As announced at the financial results meeting in May, we have been considering a review of the quantitative targets of the **ACE 2.0** medium-term management plan. In the first year of **ACE 2.0**, our performance exceeded expectations due in part to soaring market prices. As a result, it was close to the target KGI for the final year.

However, given the recent turnaround in the business environment, we have decided not to change our KGI and KPI targets, but to aim for our original goals of ROE of 8% or higher and operating income of JPY35 billion as our baseline, not our goal.

In the review, we have clarified our future growth strategy, which will be explained later.

## ACE 2.0 Basic Policies (No Changes)



The basic policy of **ACE 2.0**, “Pursuit of Quality,” will remain unchanged, and we will promote reforms of both the profit structure and corporate culture, and accelerate the enhancement of functions that support these reforms.

# Medium-Term Management Plan ACE 2.0 Progress

## ACE 2.0 Pursuit of Quality

### Results to Date (Through March 2023)

#### Reform of Profit Structure

- Invested capital in Focus Areas (food and semiconductors) to **expand earnings**
- Developed and began marketing new **Bio-Related materials**
- **Sold unprofitable businesses** and consolidated overseas locations

#### Reform of Corporate Culture

- **Work-style innovations** in connection with office relocation
- **Increased diversity** through mid-career hires
- **Reduced strategic cross-shareholdings**

#### Functions Supporting Reforms

- **Improved employee engagement** through more opportunities for dialogue
- **Pursued carbon neutrality** in coordination with Zeroboard
- **Improved ESG scores** from external evaluation organizations

### Issues as of April 2023

- Need for partial or complete revision of the plan (plan assumptions have changed beyond a certain scope)
- Bold growth strategy to raise our stage to a new level
- Decision-making and mechanisms that respond to the speed of environmental change
- Not making the most or best use of finite resources (foster a mentality of innovation)
- Eliminate waste
- Increase awareness of sustainability

Launch of QUICK WIN

This is the progress of the medium-term management plan.

In the reform of the profit structure, capital investment and earnings expansion in the focused areas of food and semiconductors progressed.

In the reform of corporate culture, we have been working on reforms in work styles in conjunction with office relocation, and promoting diversity through mid-career recruitment.

In the functions supporting reforms, we are also working to increase engagement by increasing dialogue between managements and employees to share values.

# QUICK WIN Status

Maximize the Use of Resources (People, Money, and Time) and Generate Greater Efficiencies

## QUICK WIN

### Evolve Our Business and Financial Portfolios

- Manage and execute business portfolio based on ROIC
- Rebuild or liquidate unprofitable businesses (including businesses at risk of impairment)
- Execute a corporate-led growth strategy
- Strengthen search and development (S&D) function
- Engage in digital marketing

### Strengthen Management Governance

- Consolidate and operate our organization in pursuit of rationality and efficiency
- Revise and systematize decision-making structures
- Delegate authority

### Restructure Our Human Resources Portfolio

- Train the next generation of human resources
- Conduct talent management (reallocate human resources)
- Establish an environment for D&I implementation; revise systems and mechanisms

## Measures Initiated Over the Past Six Months

- Established WACC for each business division to improve ROIC
- Developed action plans/made decisions on whether to withdraw
- Shifted resources (facilities, etc.) from mature markets to growth markets
- **Formulated growth strategies for the future (see P31 and later)**
- Decided to form a CVC to create new businesses

- Consolidated business Dept. from 11 to 7 to speed up decision making
- Reviewed meeting bodies to streamline business operations
- Delegated authority

- Introduced HRBP system (strengthened collaboration between business divisions and corporate)
- Reallocated human capital through the integration of business divisions
- Encouraged dialogue between management and employees
- Established women's employment ratio target of 30% or more for career-track positions and 6% or more for management positions (by fiscal 2025)

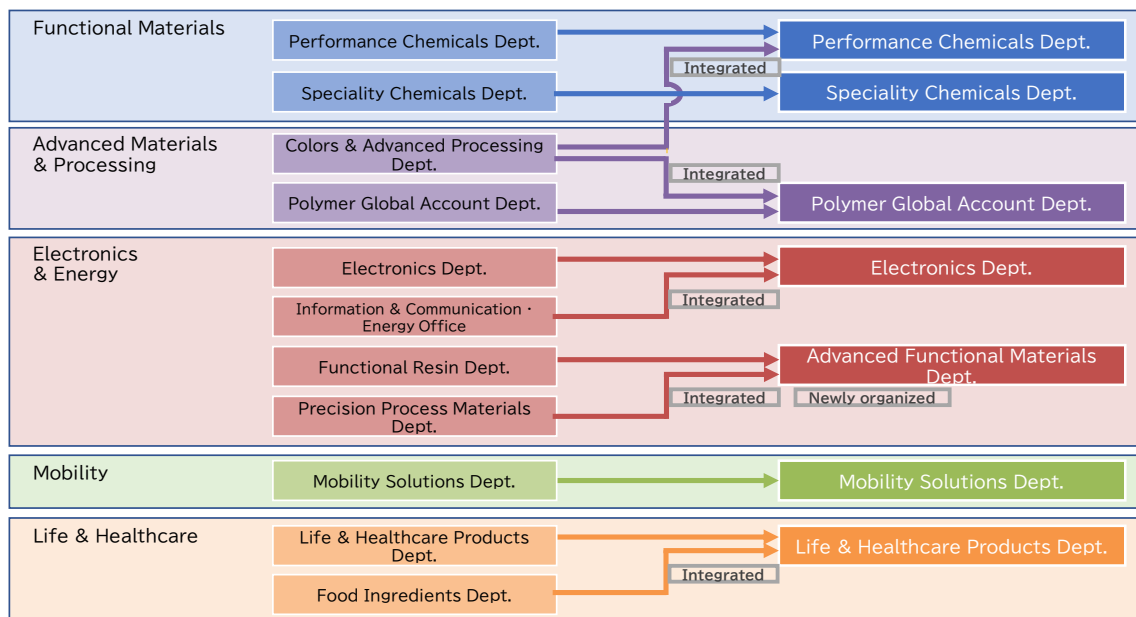
This shows the status of QUICK WIN.

The environment has changed dramatically since the medium-term management plan was formulated, and various discrepancies and issues have become apparent. The following three QUICK WINs have been implemented over the last six months: evolving our business and financial portfolios to strengthen front-line capabilities and improve capital efficiency, strengthening management governance to improve management efficiency and speed up decision-making, and restructuring our human resources portfolio to maximize human capital and improve engagement. The projects have been initiated as described on the right.

## Strengthen Management Governance

- Launched new organization in October (consolidated 11 Dept. to 7 Dept.).
- Improved decision-making speed and business productivity by streamlining organizational operations

### Creating an Organizational Structure for Rationality and Efficiency



As explained in the previous section, we have reorganized 11 business departments into seven business departments as part of the infrastructure development to execute the three QUICK WINs.

This is intended not only to improve the efficiency of organizational management and speed up decision-making, but also to liquidate unprofitable businesses, delegate authority, reallocate human resources, develop successor human resources, and conduct D&I.

## Growth Strategies for the Future

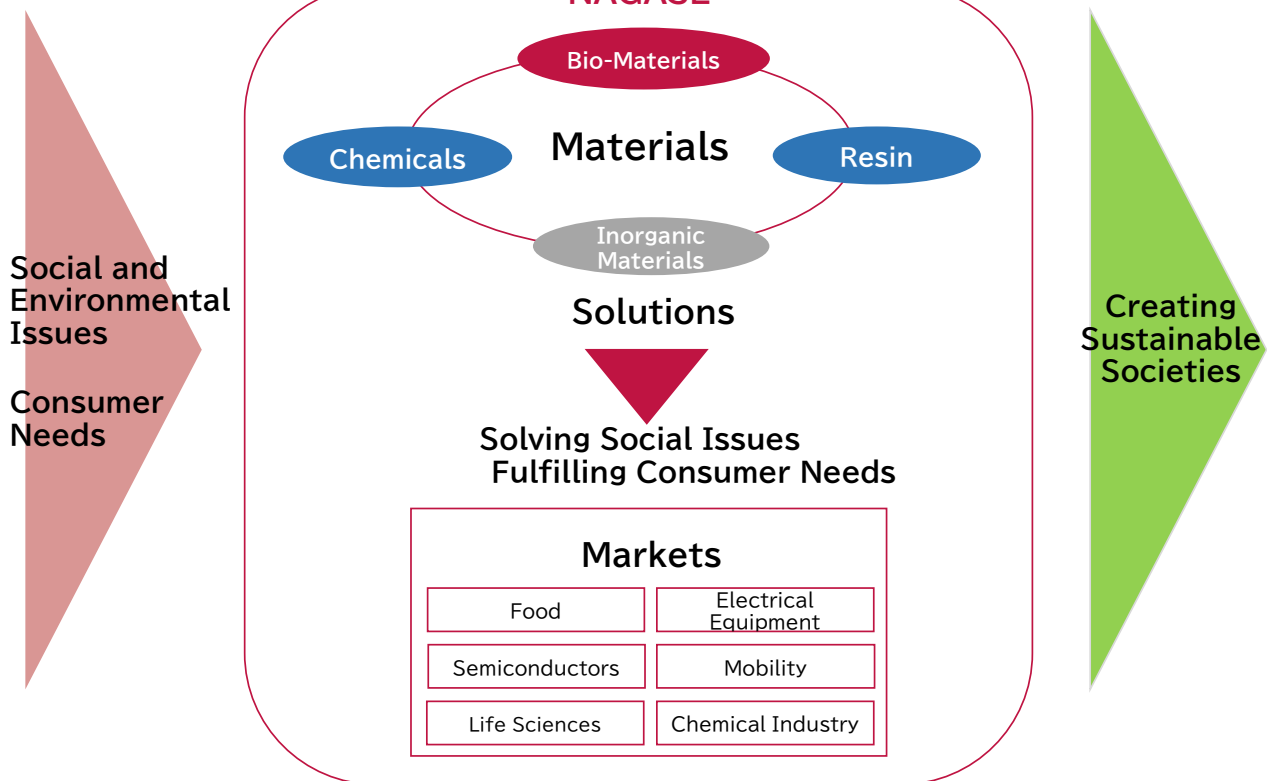
Next, I will explain the **ACE 2.0** growth strategy.



## Who is NAGASE?

A Company Whose Mission is to Solve Manufacturing Issues Through Materials

**NAGASE**



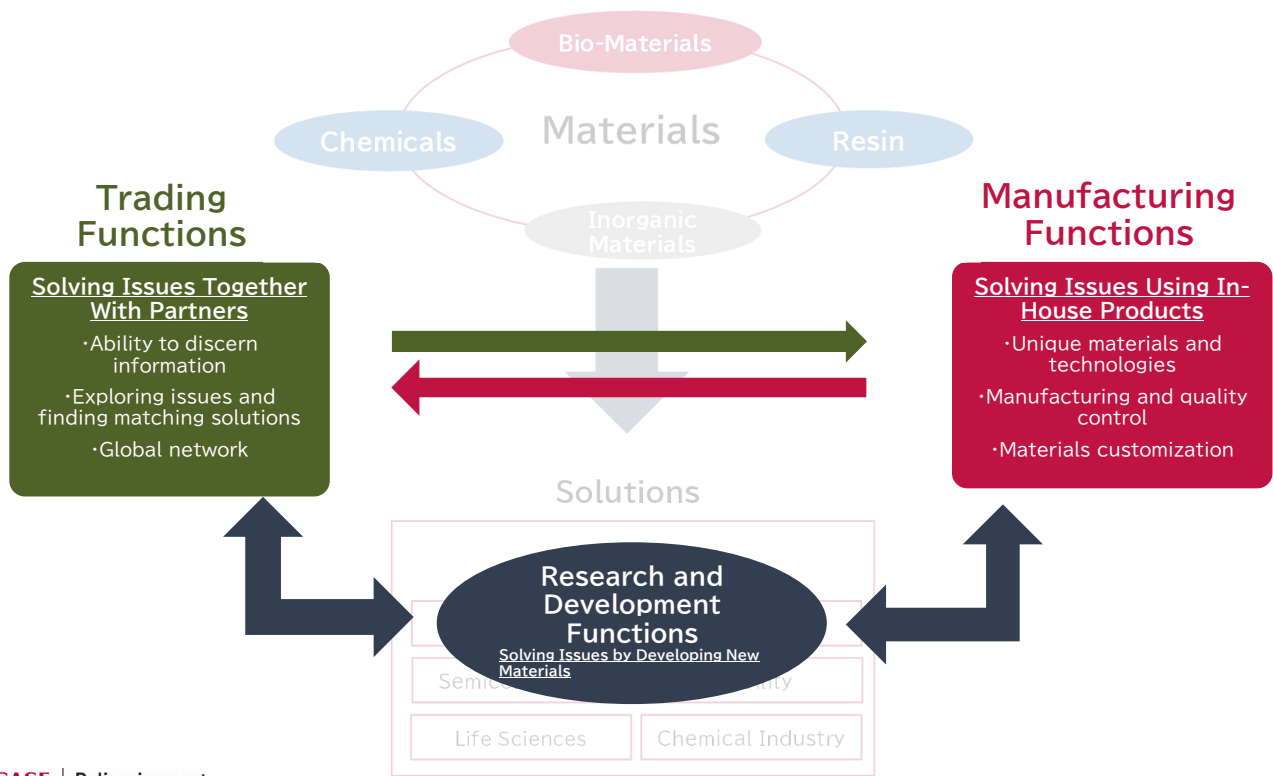
NAGASE aims to realize a sustainable society.

Our function is to solve our manufacturing customers' problems with materials, and we have the technology and knowledge related to various materials and a network that can handle materials from around the world.

Our manufacturing customers are faced with many challenges based on consumer needs arising from new social and environmental issues. We believe that we can contribute to the realization of a sustainable society by providing solutions to these issues through materials.

# NAGASE Group Strengths

## A Company Whose Mission is to Solve Manufacturing Issues Through Materials



Once again, we have organized NAGASE's strengths into three functions.

In the trading function, we search for issues and match materials that solve them, using information obtained from our global network as a connoisseur.

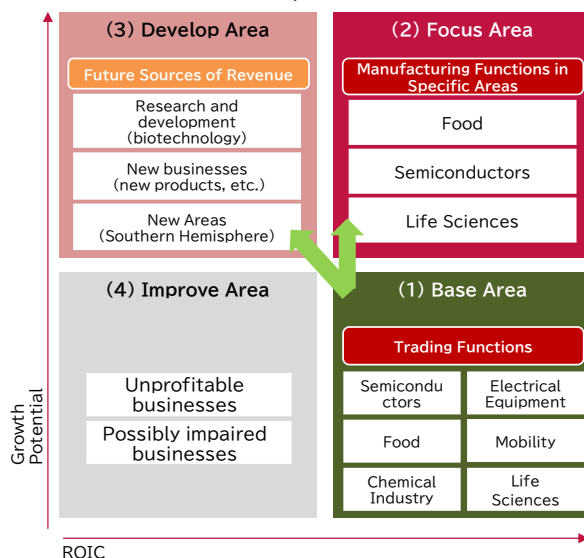
In the manufacturing function, we use our own technology and products to solve problems identified by the trading function. In addition, the R&D function, which is particularly strong in biotechnology, will promote research and development of new materials that will lead to solutions to materiality, based on information obtained from the trading function.

# Growth Strategies for the Future

Reorganize every Area based on the functional axis between trading company, manufacturing, and R&D functions.

- (1) Base Area**  
Obtain cash and information to enhance manufacturing functions in Focus and Develop Businesses
- (2) Focus Area**  
Concentrate investments in food, semiconductor, and life science manufacturing functions to make high-growth and high-profit products in-house
- (3) Develop Area**  
Accelerate R&D, increase in-house products  
Expand into the Southern Hemisphere
- (4) Improve Area**  
• Improve unprofitable businesses, etc. (see next page)

Potential investments (Approximately 80 billion yen) in Focus and Develop businesses after 2023



In the pages that follow, we will explain NAGASE's growth strategy for the future. As explained earlier, NAGASE has manufacturing and R&D functions in addition to its trading functions. The four quadrants were previously categorized along a business axis, but have now been reorganized along a functional axis in order to better clarify which function in which area cash should be allocated in the areas of development, focus, base, and improvement.

First, let us start with the base. Our base is the trading function. The trading function will pursue scale and efficiency to generate more cash and provide value-added information obtained from sales activities to focus or development areas. In the focus area, we categorize the manufacturing function, where we can utilize the trading function to accurately grasp customer needs, refine more distinctive in-house products and technologies, and improve profitability. In particular, we will concentrate our resources, including cash, on manufacturing functions in the food, semiconductor, and life science industries, where we can take advantage of our strength and growth potential.

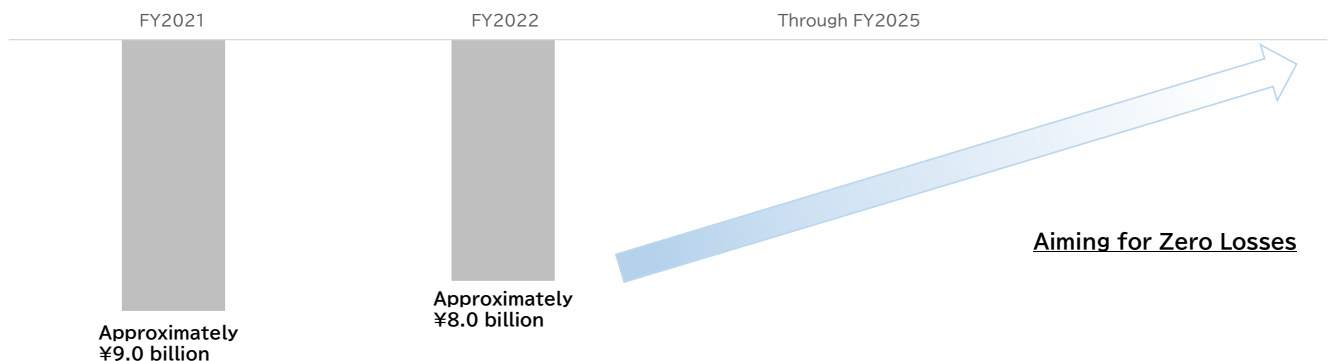
In the area of development, based on the high value-added information obtained from our base businesses, we will take on new challenges for projects that will become future revenue sources, such as research and development based on biotechnology, launching new businesses, and business development in the Global South, our area of development, assuming scenarios 5 to 10 years from now. As for the Global South, where NAGASE expects growth, we will continue to accelerate the investment of human capital in India, Mexico, Brazil, and Indonesia to strengthen the next bases.

## Reduce unprofitable and impaired businesses

### Improvement Targets

- (1) Operating loss among subsidiaries and equity in losses of affiliates  
Develop and implement improvement plans as early as possible. Study withdrawing from businesses not expected to improve.
- (2) Impairment losses  
Strengthen monitoring of assets at risk of future impairment; minimize impairments
- (3) Unprofitable transactions  
Strengthen monitoring to improve unprofitable transactions or consider withdrawing

### [Operating Loss, Loss in Equity, Impairment Loss, and Unprofitable Transactions With Operating Subsidiaries]

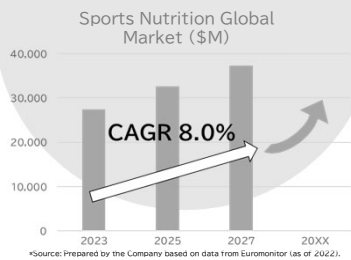


The improvement area is defined as transactions with negative gross margins to begin with, operating subsidiaries and affiliates with operating losses, and assets at risk of future impairment.

Although we have already started in the past six months, we will continue to reduce these negative figures, aiming to reduce losses from a total of approximately JPY8 billion in the fiscal year ended March 2023 to one-tenth of that in the fiscal year ending March 2026.

## [Social Issues]

- Growing global health consciousness
- Awareness of food loss issues



## Expand the High-Profit Manufacturing and Processing Business

## NAGASE × Prinova × Hayashibara

- Contact points with the high-growth sports nutrition market
- Diverse lineup of materials, including functional food ingredients manufactured in-house (In-house materials: TREHA™, Fibryxa™, HAYASHIBARA HESPERIDIN S, etc.)
- Sales network covering the globe
- M&A experience and expertise
- One-stop business model that encompasses everything from procurement to manufacturing

Longer Healthy Life Expectancy  
Food Loss Reduction

## &lt;Growth Strategies and Initiatives&gt;

| Strategy                                 | 2021   | 2022   | 2023  | 2024 | 2025 ~   |
|--|--|--|---|------|--|
| <u>Share/Regional Expansion</u>          | Acquired TIH (sweetener market acquisition)      | Strengthening sales structure in Asia                    |   |      |  |
| <u>Expand Production Capacity</u>        | New Utah plant (expanded contract manufacturing) |  | Acquired Flavor Tec (stabilizing raw materials procurement) |      | Study of overseas production for in-house products |
| <u>Expand Applications</u>               | Installed sealing equipment                      |  | Expanding stick packaging facilities                        |      |  |
| <u>Expand Manufacturing Technologies</u> |  | Acquired Lakeshore (expanded powder processing function) |   |      |  |

\*TIH: The Ingredient House, LLC  
\*Lakeshore: Lakeshore Technologies, LLC  
\*Flavor Tec: Flavor Tec - Aromas De Frutas Ltda

From here, I will explain our focus area.

This is a manufacturing function in the food field. The food business at NAGASE is characterized by a variety of functional materials such as trehalose, fibryxa, and hesperidin researched and developed at Hayashibara, and the Prinova Group's unique business model that can handle everything from raw material procurement to manufacturing on a global scale.

In particular, the Prinova Group's sports nutrition contract manufacturing business is expected to grow significantly in response to the growing global health consciousness, and will be expanded as a highly profitable manufacturing business. In addition, the upper left graph in the document shows the relevant global markets and their growth rates. Above is a list of investment measures, including mergers and acquisitions implemented over the past three years for business expansion, mainly in the Prinova Group. In 2021, the Company entered the sweetener market with the acquisition of TIH. In addition, a new plant in Utah was established and encapsulation equipment was installed at the Tennessee plant.

In 2022, we expanded our powder processing capabilities with the acquisition of Lakeshore. In the current fiscal year ending March 2024, we expanded our essential oil manufacturing capabilities with the acquisition of Flavor Tec and installed stick packaging equipment at our Tennessee plant.

In this field, we will make an additional investment of approximately JPY10 billion in North America to acquire new business areas and expand our manufacturing facilities.

## [Social Issues]

- Increasing demand for advanced semiconductors
- Multipolarization of production bases necessitated for reasons of economic security

Overall Semiconductor Materials Market Size (\$M)



CAGR 5.9%

Expand Sales of High-Value-Added Products in the Advanced Semiconductor Market

**NAGASE × Nagase ChemteX**

- Spec-in results in the advanced semiconductor market  
⇒\*Holds the No.1 share of liquid sealants for semiconductors for FOWLP devices
  - Planning, design, and manufacturing capabilities based on diverse elemental technologies
- \* FOWLP: Fan out wafer level package

Establishing a Presence as an Indispensable Company in the Semiconductor Industry

## Notes

Designated as a materials transportation consolidator by Rapidus Corporation

Contributing to the domestic production of advanced semiconductors

## Expanded use of sealants

Expand business in advanced semiconductors for high-end servers

## New plant built to manufacture release agents and expand business

Increasing production for the domestic market, entering and expanding in the Taiwanese market, developing a supply system including the construction of a new plant

## Commercialize recovery and recycling of developer solution at the time of production

Established a new plant in Higashi Osaka using electrolysis and refining technology (NAGASE investment: ¥2 billion)  
Most advanced example of the recovery and recycling of used developer solution in Japan

This is a manufacturing function in the semiconductor field. NAGASE's manufacturing function in the semiconductor business includes Nagase ChemteX release agents, liquid sealing materials for semiconductor packaging, and a liquid developer recovery/recycling business with Schem in the US.

Currently, Japan is in the process of launching new semiconductor plants for the next several years from an economic security perspective. First, Nagase ChemteX will raise the level of its products and promote the development of products that customers can purchase with confidence. In the area of liquid sealing materials for semiconductor packaging, we plan to establish new plants and facilities for cutting-edge semiconductor applications.

In the area of release agents, we will establish a new plant in Japan and newly expand manufacturing functions with a partner in the Taiwanese market. Next, in the recovery/recycling business that we are pursuing with Schem, we will launch a business to recover and purify waste liquids from the photolithographic development process in semiconductor manufacturing, and recycle and sell them as chemicals.

This scheme is the first of its kind in the world for the semiconductor industry, and we aim to make it the de facto standard in the world.

## [Social Issues]

- Aging society and growing health consciousness
- Rising concerns about sustainability



Provide in-house materials that meet market trends and customer needs in the life sciences market, where concerns about sustainability are rising

## NAGASE × Hayashibara × Nagase ChemteX

- Sugar stabilization technology for more stable pharmaceuticals
- Prescription suggestion, analysis, and evaluation functions
- Country-specific regulatory compliance function
- Precision organic synthesis technology
- Global presence related to sustainability

Provide Safe, Secure Bio-Derived Materials

## Pharmaceutical Materials

**PULLULAN:** Bio-derived pullulan of particularly high quality. Expansion into the capsule market.

**TREHALOSE SG:** Low endotoxin-type trehalose. Expansion into the pharmaceuticals market.

## Personal Care Materials

**AA2G™:** Stable vitamin C, a naturally derived cosmetics material. Accelerate overseas expansion based on a growing awareness of beauty and health.

**Glucosyl naringin:** Highly water-soluble naringin. Highly effective anti-aging introduced in the cosmetics market.

## Precision Organic Synthesis Technology

**Endotoxin removal:** Removal services and other solutions. Propose and provide solutions to the medical devices industry, etc.



Next is the manufacturing function in the life science field. This field is expected to grow more and more in the future due to the aging society and increasing health consciousness. We will continue to invest more resources in the business of distinctive functional materials researched and developed by Hayashibara and will continue to promote it as a business.

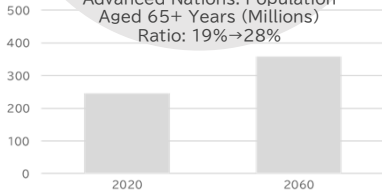
Some of the products are listed below. For Pullulan, we have entered into a partnership agreement with a major overseas company that is a leader in the healthcare and life sciences field, and will continue to jointly expand the business.

The materials manufactured at Hayashibara are bio-derived materials, and the growing awareness of sustainability is a tailwind for our life science business. By selling safe and secure bio-derived materials to our customers, we hope to contribute to solving social issues.

[Social Issues]

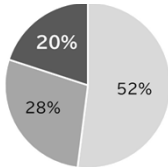
- Climate change
- Resource circulation
- Healthy life expectancy (cognitive function, sleep quality, etc.)

Expanding Needs for Presymptomatic, Disease Prevention  
Advanced Nations: Population Aged 65+ Years (Millions)  
Ratio: 19%→28%



\*Source: Annual Report on the Ageing of Society (Summary) FY2022, Cabinet Office, Government of Japan; prepared by the Company based on international aging trends

Approximately 19.3 billion disposable diapers/year  
Approximately 20% of the material is high-polymer absorbent

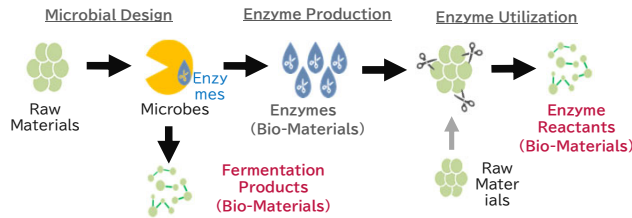


■ High-quality pulp ■ Resin ■ High-polymer absorbent  
\*Source: Prepared by the Company based Guidelines for Recycling Used Disposable Diapers, Ministry of the Environment, and statistical data from the Japan Hygiene Products Industry Association

Strengthen R&D to develop new core bio-materials

NAGASE (Nagase Bio Innovation Center) × Hayashibara

Bioprocesses Serving as the Foundation of NAGASE



Realize a sustainable world where people live with peace of mind

Well-being:

Advancement in mass production of ergothioneine via fermentation, expected to have the following effects:

- Positive effects on cognition
- Improved skin wrinkles and spots
- Comfortable sleep

Cosmetics

Functional Foods

Green:

Development of bio-based biodegradable SAP

- Reduced diaper waste (see next page)
- Greening of drought-stricken areas

Medical

Chemical Industry

Finally, I would like to explain R&D in our development area. We are one of the few companies in Japan that possess the basic technologies to create new materials through biotechnology, including the design of microorganisms, the production of enzymes, and the production of enzymatic reactions, and have the capabilities and know-how to handle everything from scale-up to mass production.

Today, I would like to give a brief explanation of the two materials we are working on to put on the market.

The first is a material called ergothioneine, a type of amino acid that is expected to have a significant effect on extending healthy life expectancy. Originally a natural ingredient found in mushrooms and other plants, it has strong antioxidant properties and a high safety profile. This feature is expected to improve cognitive function, sleep, and prevent skin wrinkles and aging. We have developed a process to produce this material using our proprietary fermentation technology, and are now in the final stages of mass production, aiming to launch the product next year. Our goal is to make it a business with sales of JPY2 billion by 2030.

Second, we are considering the commercialization of a biomass-derived biodegradable water absorbent polymer. Water absorbent polymers are used in a wide range of fields such as hygiene products, agriculture, greening, and cosmetics, but they have the issue of having a large environmental impact.

This time, NAGASE has achieved the same water absorption performance as conventional products while being biodegradable by using starch as the main ingredient and combining proprietary enzyme technology with organic synthesis technology. We believe that this has great potential as a sustainable material with little environmental impact due to biodegradation after use.



## Leveraging Materials to Take on the Social Issue of Diaper Disposal



**ナガセをさがせ。** 

**おむつ問題は、  
水に流そう。**

年間約**193億枚**\*。乳幼児用と大人用あわせて膨大な量が生産されている紙おむつは、使用後ほとんどが焼却処分されています。その際にCO<sub>2</sub>を大量に排出することから、環境への影響が懸念されてきました。  
そこでNAGASEは、でんぷんを原料に使った「**生分解性SAP**（高吸水性ポリマー）」を開発。従来と同等以上の吸水性能を実現しながら、**土壌や海水での分解を可能に**\*\*。  
実用化すれば焼却処理の量を大幅に減らせるため、環境負荷も削減できます。社会の課題をマテリアルで解決し、世界のパートナーと温もりのある未来を創造する。私たちはNAGASEです。

  
Delivering next.

① NAGASEの技術を軸で紹介！  
長瀬産業株式会社  
※1 2022年 紙おむつの製造ペース 3.2 プレーンタイプによる生産量の推定値が異なります

\*Appeared in the *Culture* section of the Nihon Keizai Shimbun, October 31, 2023

This is an advertisement we recently placed in the Nihon Keizai Shimbun regarding the biodegradable water absorbent polymer.

With that, I will conclude my explanation. Thank you for your attention.



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<https://www.nagase.co.jp/english/ir/>

These presentation materials contain projections based on forward-looking assumptions, forecasts, and plans as of November 27, 2023. Actual earnings may differ from projections due to risks and uncertainties in the future global economy, competitive landscape, currency exchange rates, etc.