



1H FY2022 Presentation Material

- Results for 1H FY2022 & Full-Year Forecast -

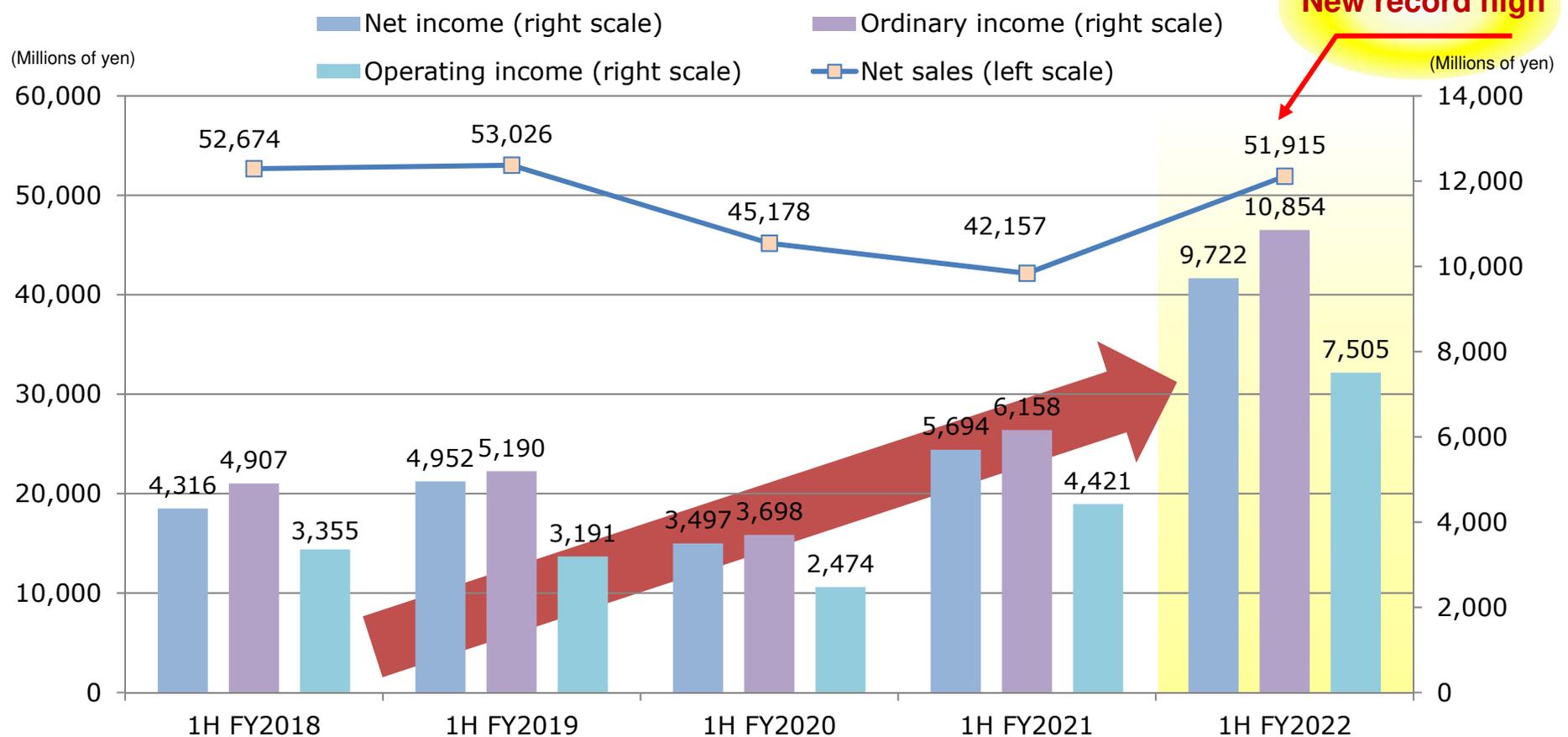
OSAKA SODA CO., LTD.

1 December, 2022

Results for 1H FY2022

Earnings Trends

- Achieved major increase in sales and record highs by significant margin at each stage of profit
- Each stage of profit has doubled in five years



* Adopted the "Accounting Standard for Revenue Recognition," etc., from FY2021

Overview of Consolidated Financial Results

- All results exceeded performance targets revised upward on 5 August
- High-value-added products such as Allyl Ethers and Healthcare drove performance

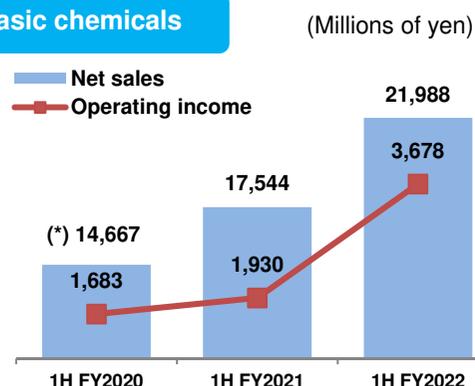
| (Millions of yen) | 1H FY2021 | | 1H FY2022 | | %Change (YoY) | Change (YoY) | Revised target * (B) | Achievement rate | Change (A)-(B) |
|--------------------------|-----------|----------|-----------|----------|---------------|--------------|----------------------|------------------|----------------|
| | | to sales | (A) | to sales | | | | | |
| Net sales | 42,157 | - | 51,915 | - | 23.1 | 9,758 | 51,000 | 101.8% | 915 |
| Operating income | 5,694 | 13.5% | 9,722 | 18.7% | 70.7 | 4,028 | 9,200 | 105.7% | 522 |
| Ordinary income | 6,158 | 14.6% | 10,854 | 20.9% | 76.3 | 4,696 | 10,100 | 107.5% | 754 |
| Net income | 4,421 | 10.5% | 7,505 | 14.4% | 69.8 | 3,084 | 7,000 | 107.2% | 505 |
| Earnings per share (yen) | 189.55 | - | 314.73 | - | - | - | - | - | - |
| Overseas sales | 14,137 | 33.5% | 20,299 | 39.1% | - | - | - | - | - |

* Announced on 5 August

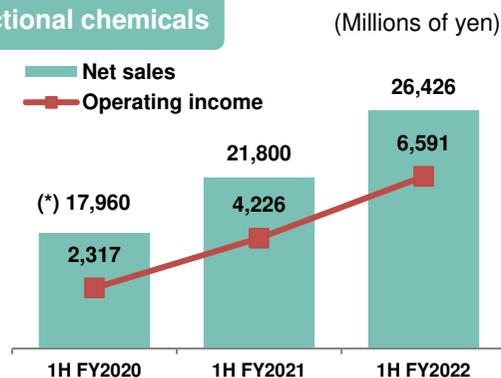
| | | 1H FY2021 | 1H FY2022 |
|--------------------------|------------|------------|------------|
| Average exchange rate | Yen / USD | 110 Yen | 130 Yen |
| | Yen / Euro | 131 Yen | 137 Yen |
| Naphtha price (Yen / KL) | | 49,500 Yen | 83,750 Yen |

1H FY2022 Results by Segment

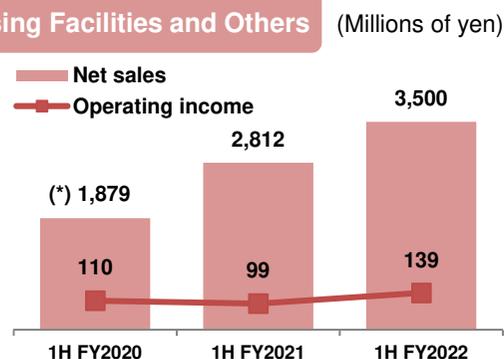
Basic chemicals



Functional chemicals



Housing Facilities and Others



* 1H FY2020 is calculated by assuming the adoption of the "Accounting Standard for Revenue Recognition"

Demand for main products was robust

Conducted price revisions in response to rising raw material and fuel prices

- Chlor-Alkali
Reached early resolution on price revisions centered on Caustic Soda
- Epichlorohydrin(EP)
Expanded sales mainly in electronic materials.
Sales prices have been maintained, thanks partly to market prices remaining high, as well as price revisions

Demand grew for main products and export prices increased

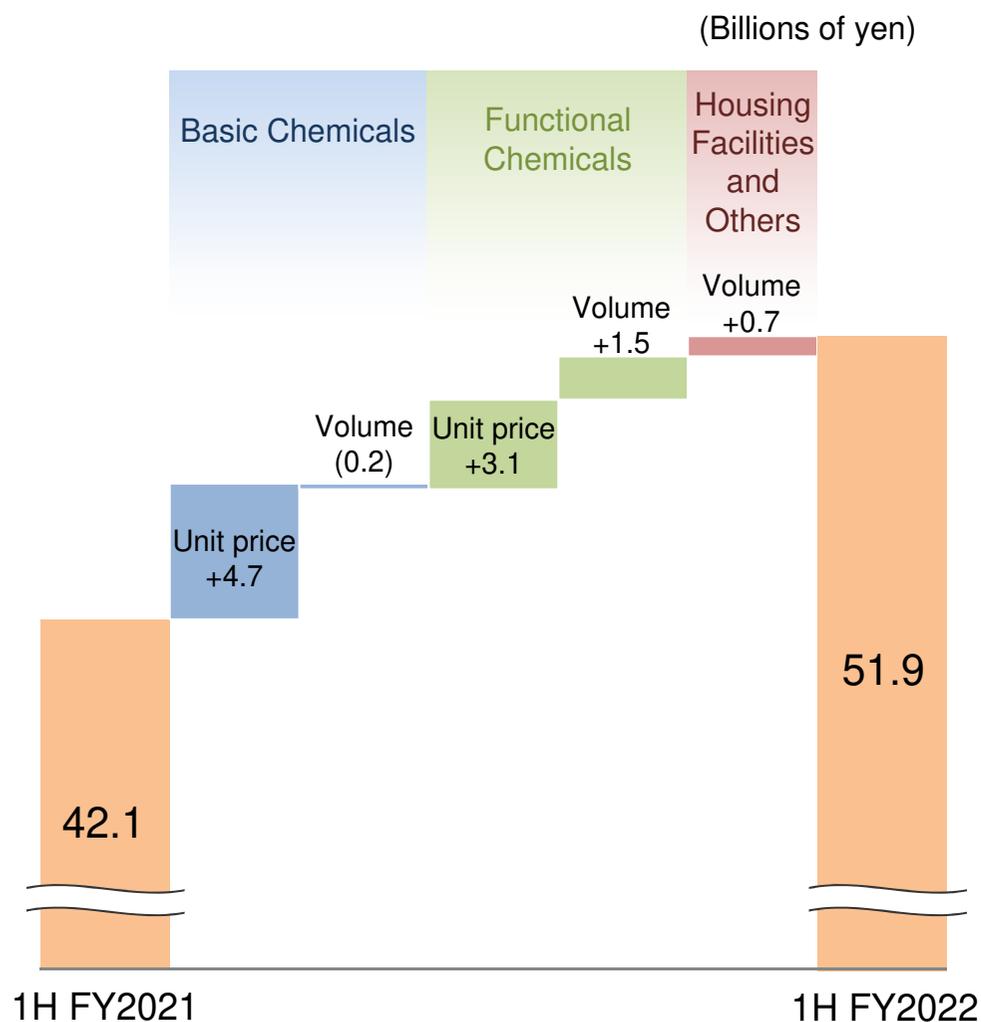
Allyl Ethers and Healthcare sales remained strong, as in FY2021

- Synthetic Rubber
Epichlorohydrin Rubber : Automotive applications were affected by production adjustments by automakers, but our share of the OA applications market increased
Acrylic Rubber : Growth in sales for new users in Japan and Asia
- Synthetic Resin
Increased demand in Europe and China for insulating varnish applications
- Allyl Ethers
Sales of silane coupling agents were strong for functional paint and electronic material applications, mainly in Europe and the U.S.
- Healthcare
Chromatography : Demand grew in Europe, the U.S., and Asia for applications in diabetes drugs
APIs and intermediates : Increased sales for diabetes complications and insomnia drugs, osteoporosis drugs

- Increased as sales of Lifestyle-related products, etc.

Variance Analysis (Net sales, YoY)

Net Sales by Segment



Changes by Main Products

(Billions of yen)

| Basic Chemicals | | +4.5 |
|----------------------|--------|------|
| Main Products | Change | |
| Chlor-Alkali | +3.0 | |
| Epichlorohydrin (EP) | +1.8 | |
| Others | (0.3) | |

| Functional Chemicals | | +4.6 |
|-------------------------------------|--------|------|
| Main Products | Change | |
| Allyl Ethers | +2.1 | |
| Healthcare *1 | +0.7 | |
| Synthetic Rubber/Synthetic Resin *2 | +0.7 | |
| Electrode | +0.6 | |
| Others | +0.5 | |

* 1 Healthcare: Chromatography (Pharmaceutical Purification Materials), Active Pharmaceutical Ingredients and intermediates, etc.

* 2 Synthetic Rubber/Synthetic Resin : Epichlorohydrin Rubber, Acrylic Rubber, DAP Resin, etc.

| Housing Facilities and Others | | +0.7 |
|----------------------------------|--------|------|
| Main Products | Change | |
| Lifestyle-related products, etc. | +0.7 | |

Variance Analysis (Operating income, YoY)

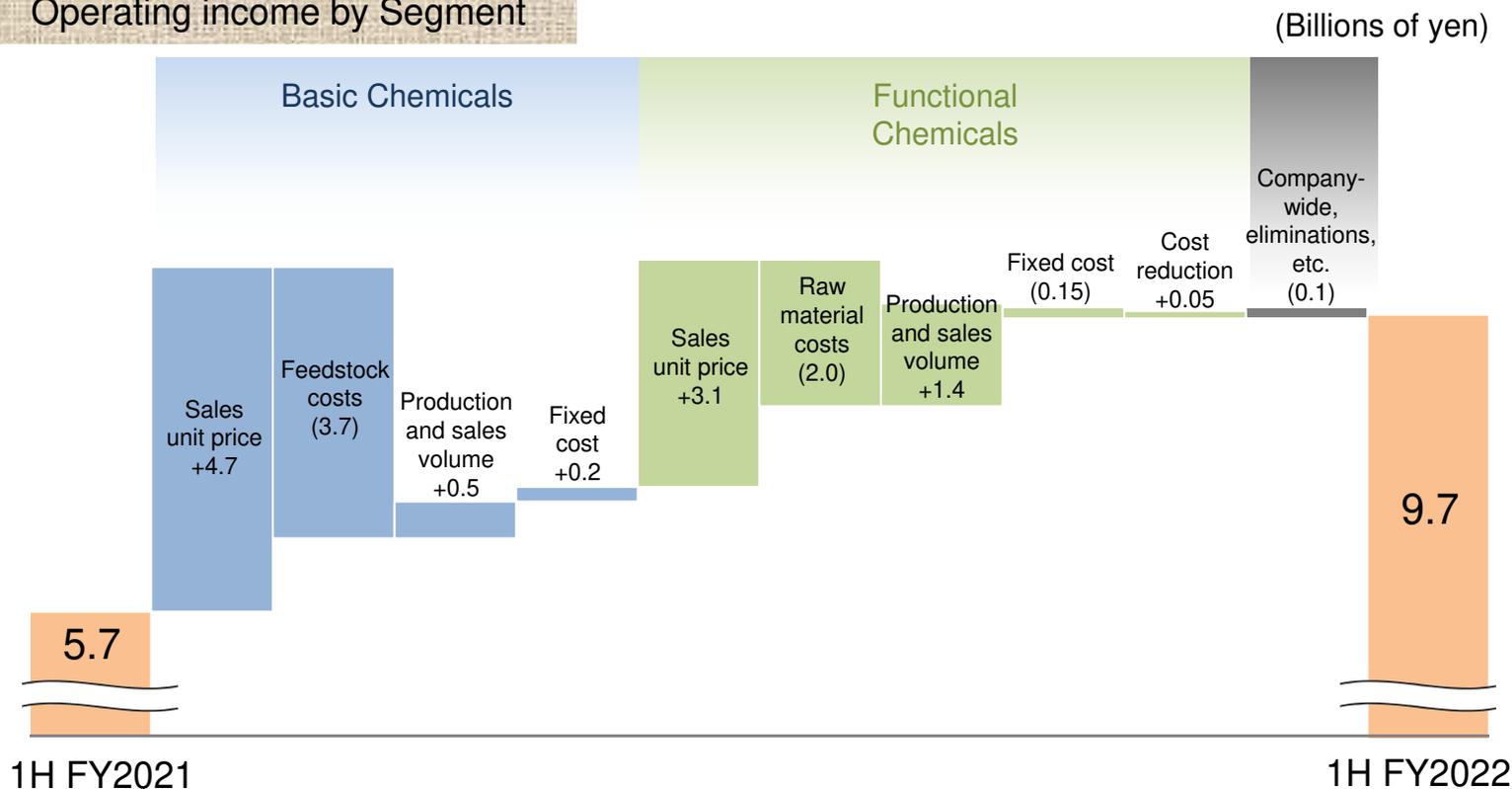
Basic Chemicals:

- Price revisions mainly for Chlor-Alkali covering the impact of rising raw material and fuel prices

Functional Chemicals:

- Price revisions, mainly for Allyl Ethers, Synthetic Rubber, and Synthetic Resins
- Increase in sales volume for Healthcare contributed to significant profit growth

Operating income by Segment



Balance Sheet, Statement of Cash Flows

- Further enhanced financial stability, making it possible to fully support M&A and investment for future growth
- Shareholder's equity ratio increased to over 70% thanks to an increase in net assets as a result of CB conversion
- Maintained R&I credit rating of A- (Stable) for FY2022

| (Millions of yen) | 1H FY2021 | FY2021 | 1H FY2022 | Change from FY2021 |
|----------------------------|-----------|---------|-----------|--------------------|
| Total assets | 126,302 | 129,159 | 138,018 | 8,859 |
| Net assets | 80,485 | 83,896 | 99,750 | 15,854 |
| Shareholder's equity ratio | 63.7% | 64.9% | 72.3% | 7.4% |
| Interest-bearing debt | 15,907 | 15,905 | 7,172 | (8,733) |

| (Millions of yen) | 1H FY2021 | FY2021 | 1H FY2022 | Change (YoY) |
|-------------------------------------|-----------|---------|-----------|--------------|
| Cash flow from operating activities | 7,277 | 13,378 | 5,922 | (1,355) |
| Cash flow from investing activities | (2,322) | (6,961) | (3,005) | (683) |
| Cash flow from financing activities | (795) | (1,646) | (1,339) | (544) |
| Cash and cash equivalents | 36,194 | 37,016 | 39,288 | 3,094 |

Forecast for FY2022

Forecast for FY2022

- Although the economic outlook is uncertain, demand is expected to remain firm, except for electronic materials
- Plan to set new record highs for each stage of profit for the second period in a row

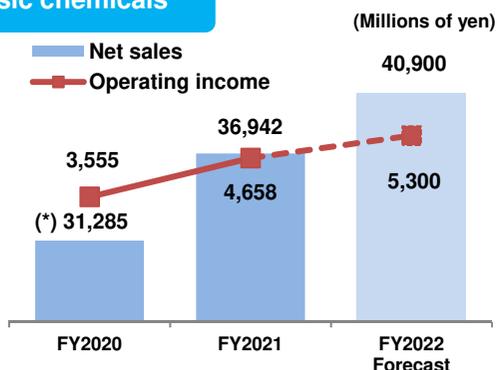
| (Millions of yen) | FY2021 | | FY2022 Revised Forecast | | %Change (YoY) | Change (YoY) |
|--------------------------|--------|----------|-------------------------|----------|---------------|--------------|
| | | to sales | | to sales | | |
| Net sales | 88,084 | - | 98,000 | - | 11.3% | 9,916 |
| Operating income | 12,401 | 14.1% | 15,700 | 16.0% | 26.6% | 3,299 |
| Ordinary income | 13,435 | 15.3% | 16,900 | 17.2% | 25.8% | 3,465 |
| Net income | 9,442 | 10.7% | 11,700 | 11.9% | 23.9% | 2,258 |
| Earnings per share (yen) | 404.73 | - | 501.97 | - | - | - |

| | | |
|----------------|-------|-------|
| Overseas sales | 36.1% | 38.0% |
|----------------|-------|-------|

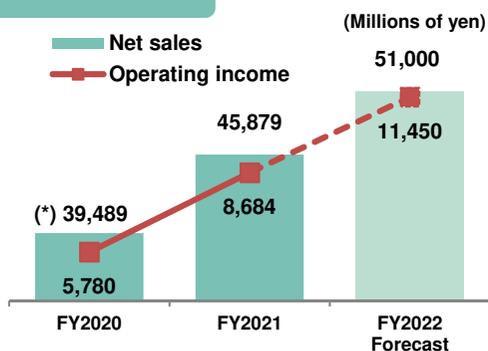
| [Assumptions] Forecast for FY2022 | |
|--------------------------------------|------------|
| Yen / USD | 130 Yen |
| Yen / Euro | 140 Yen |
| Naphtha price (Yen / KL) | 78,000 Yen |

FY2022 Forecast by Segment

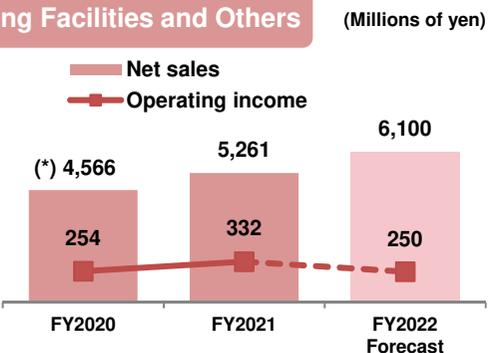
Basic chemicals



Functional chemicals



Housing Facilities and Others



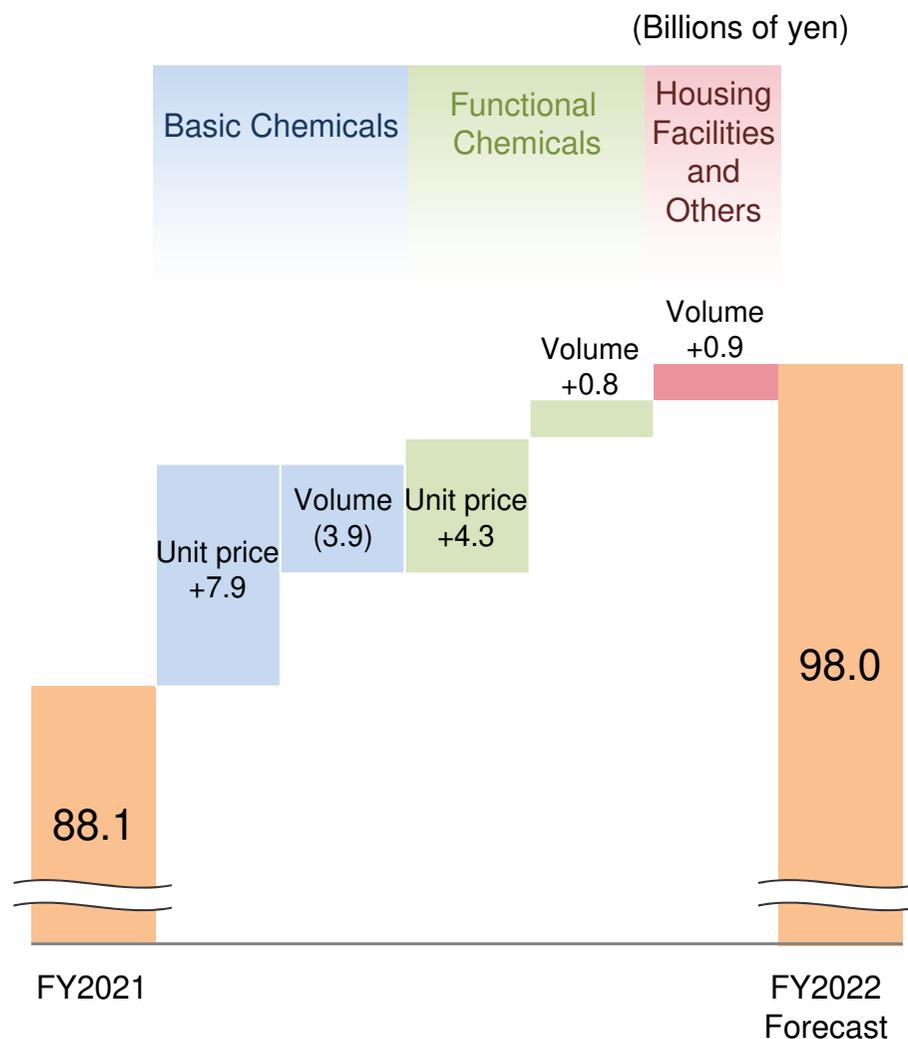
* FY2020 is calculated by assuming the adoption of the "Accounting Standard for Revenue Recognition"

Action plan for FY2022

- Chlor-Alkali
Implementation of price revisions in response to rising raw material and fuel prices
 - Epichlorohydrin(EP)
Address demand fluctuations and strengthen the stable supply system
 - Production cost reduction
Introduction of high-efficiency electrolyzers (Matsuyama Plant), etc.
-
- Synthetic Rubber
Epichlorohydrin Rubber : Expand sales by switching from other types of rubber
Strengthen the development of new applications
Acrylic Rubber : Expand new adoption
Promote the launch of ultra-high heat-resistant grades
Expand rubber compound business in cooperation with group companies
 - Synthetic Resin
DAP Resin : Expand sales for varnish applications
Non-phthalate allyl resin : Expand new adoption in food packaging in Europe and the U.S.
 - Allyl Ethers
Expand sales for silane coupling agent applications, where demand is growing
 - Healthcare
Expand manufacturing capacity of main facilities (scheduled for completion March 2023)
Chromatography : Increase market share in Europe, the U.S., and emerging markets
APIs and intermediate : Acquire new projects
Establish production systems after expansion
Acquire new projects in High Potency APIs and intermediates
-
- Lifestyle-related products
Strengthen sales of in-house planned products

Variance Analysis (Net sales, forecast)

Net Sales by Segment



Changes by Main Products

(Billions of yen)

| Basic Chemicals | | +4.0 |
|----------------------|--------|------|
| Main Products | Change | |
| Chlor-Alkali | +7.6 | |
| Epichlorohydrin (EP) | (1.3) | |
| Others | (2.3) | |

| Functional Chemicals | | +5.1 |
|-------------------------------------|--------|------|
| Main Products | Change | |
| Allyl Ethers | +3.0 | |
| Synthetic Rubber/Synthetic Resin *1 | +1.5 | |
| Healthcare *2 | +1.4 | |
| Electrode | +0.4 | |
| Others | (1.2) | |

* 1 Synthetic Rubber/Synthetic Resin : Epichlorohydrin Rubber, Acrylic Rubber, DAP Resin, etc.

* 2 Healthcare: Chromatography (Pharmaceutical Purification Materials), Active Pharmaceutical Ingredients and intermediates, etc.

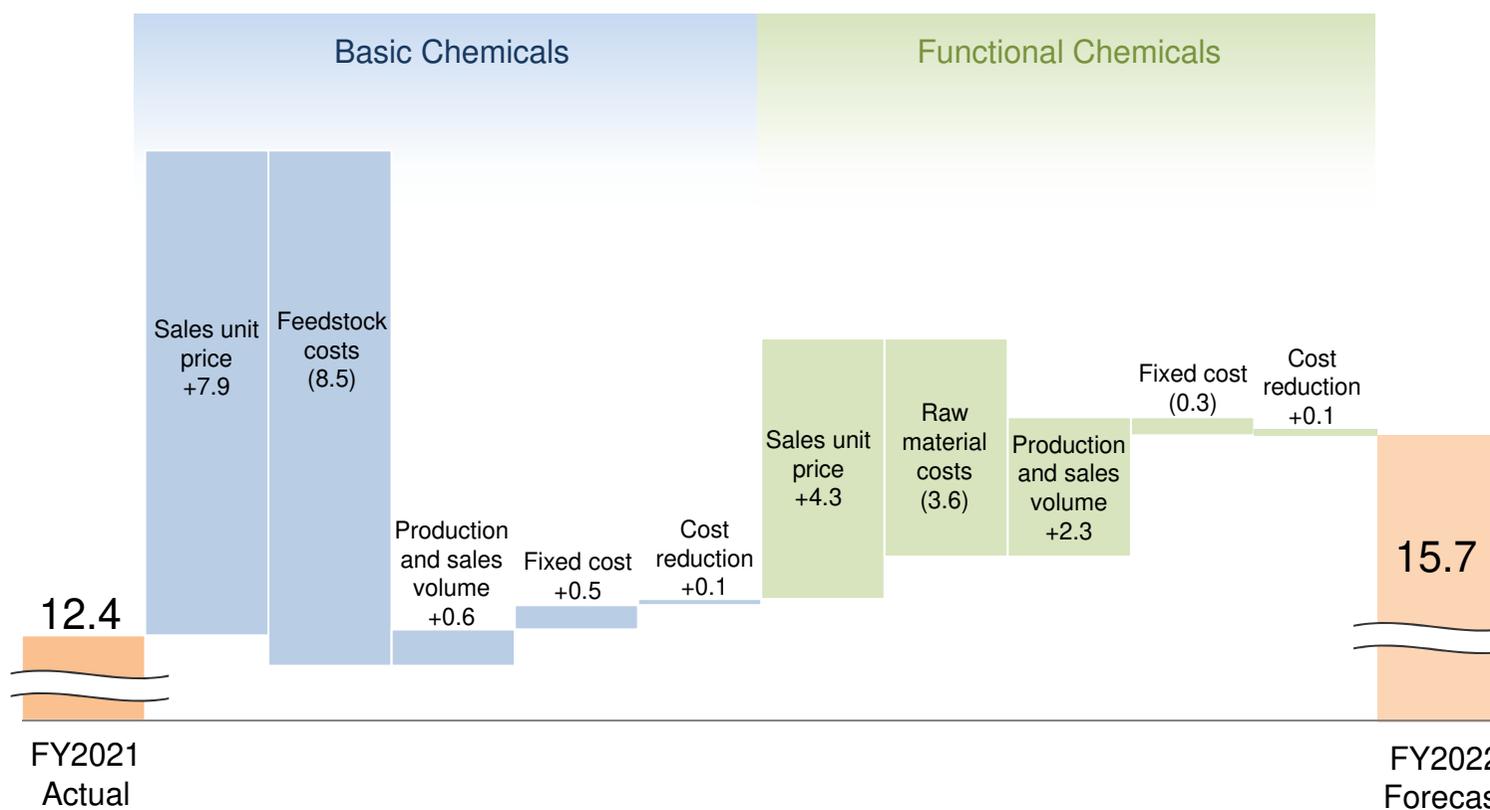
| Housing Facilities and Others | | +0.9 |
|----------------------------------|--------|------|
| Main Products | Change | |
| Lifestyle-related products, etc. | +0.9 | |

Variance Analysis (Operating income, forecast)

- Earnings increased in basic chemicals, as higher raw material and electricity prices were offset by price revisions.
- Functional Chemicals expected to benefit from expanded sales of Healthcare and the absorption of higher raw material prices by price revisions for all products

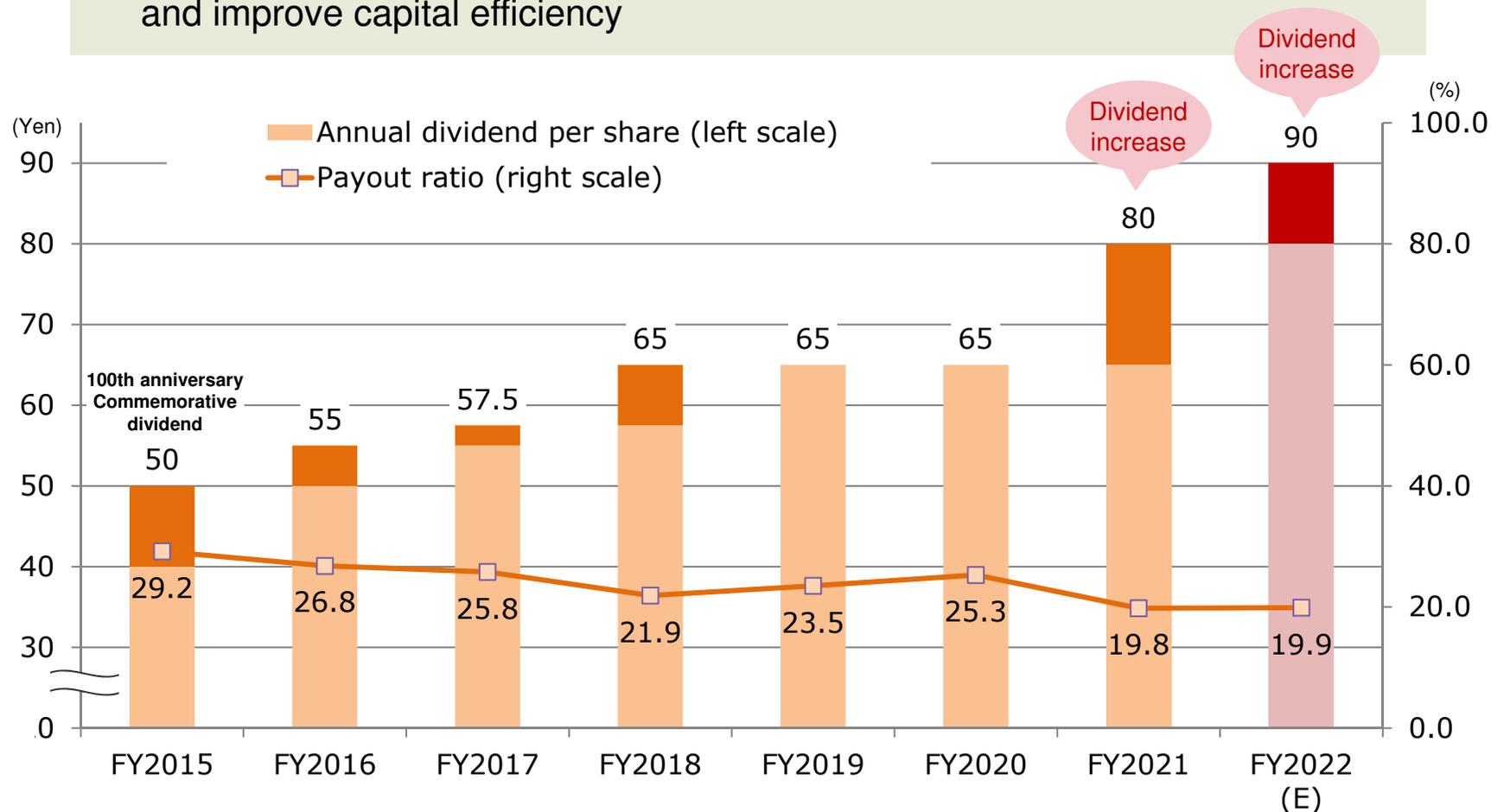
Operating income by Segment

(Billions of yen)



Shareholder Returns

- Based on our forecast of higher earnings, the interim dividend will be increased by ¥10, for an annual dividend of ¥90
- Decided to repurchase 2 billion yen of shares to return profits to shareholders and improve capital efficiency



* Dividends per share before FY2017 are converted to figures after the reverse stock split in October 2017

Progress of Medium-Term Management Plan and R&D

Mid-Term Management Plan (Topics)

Building a resilient business foundation

▶ Strengthening production systems

- Start of operations at Kitakyushu Plant (November 2021)
- Enhancement of manufacturing capacity for Allyl Ethers (February 2022)
- Expansion of manufacturing facilities for main products in the Healthcare business (scheduled for March 2023)

Promotion of market-in-type development

▶ Acceleration of product launches

- Development of ultra-high heat-resistant grades of Acrylic Rubber
- Enhancement of trial production facilities for Sinterable Silver Nanoparticles
- Adopted for NEDO Green Innovation Fund (materials for all-solid batteries)
- Discovery and functional development of NMN-producing lactic acid bacteria

Initiatives for the SDGs

▶ Development of systems for company-wide promotion

- Identification of materiality
- Setting of non-financial targets
 - (Reduction of greenhouse gas emissions)
 - (Reduction of industrial waste landfill rate, etc.)
- Establishment of Sustainability Committee (1 October, 2022)

Reforming corporate culture and organizational culture

▶ Promotion of business reforms

- Form teams: organizational management, business processes, and human resources management
- Organizational structure based on business divisions (July 2021)
- Renovation of personnel system for managers (April 2022)
- Rebuilding of core systems and information utilization systems, etc.

R&D : Low-temperature Sinterable Silver Nanoparticles (Fine Silver Particles)

Background and progress

- Doubled production capacity of trial production facilities in February 2022

Point

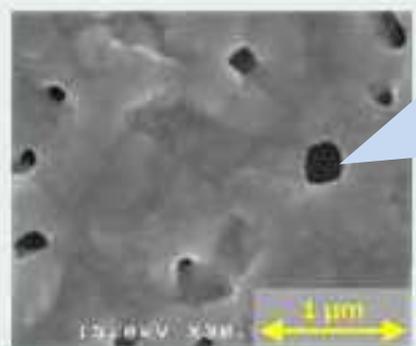
- ✓ Developing silver sintering (bonding) raw materials needed for innovation in power semiconductors
- ✓ Balancing larger particle size with low-temperature sinterability, providing a dense and low-shrinkage sintering bonding layer
- ✓ Aim to use in non-pressure sintering materials suitable for the mounting of next-generation power semiconductors



Next-generation power semiconductors
High voltage resistance / high heat resistance
/low loss (energy saving) / miniaturization

Conventional soldering is unsatisfactory because significant heat is generated
Requirements for new bonding materials
Balance between high heat resistance, high heat dissipation, and high reliability

Fine silver particles after sintering



Osaka Soda fine silver particles

Fine silver powder

Achieves high density

Main target

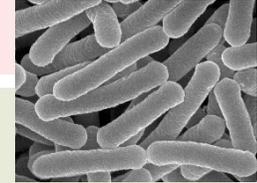
- (1) Die bonding materials for wireless communication semiconductor (power amplifiers for mmWave 5G base stations, etc.)**
High frequency mmWave 5G generates increased heat due to increased communication volume
Expected to be used for GaN
- (2) Semiconductor chip bonding materials for automotive inverters, etc. (Power control units for xEVs, etc.)**
It is expected to be promoted for adoption in SiCs for high efficiency and miniaturization

Future development

- Aim to use in bonding materials for communications semiconductor chips by FY2025
- Aim to establish mass production technology, and the creation of a mass production system in line with the establishment of the market

R&D : “OS-1010 Strain” of NMN-Producing Lactic Acid Bacteria

Background and progress



- World’s first discovery of the “OS-1010 strain,” an NMN-producing lactic acid bacteria, and clarification of its functions

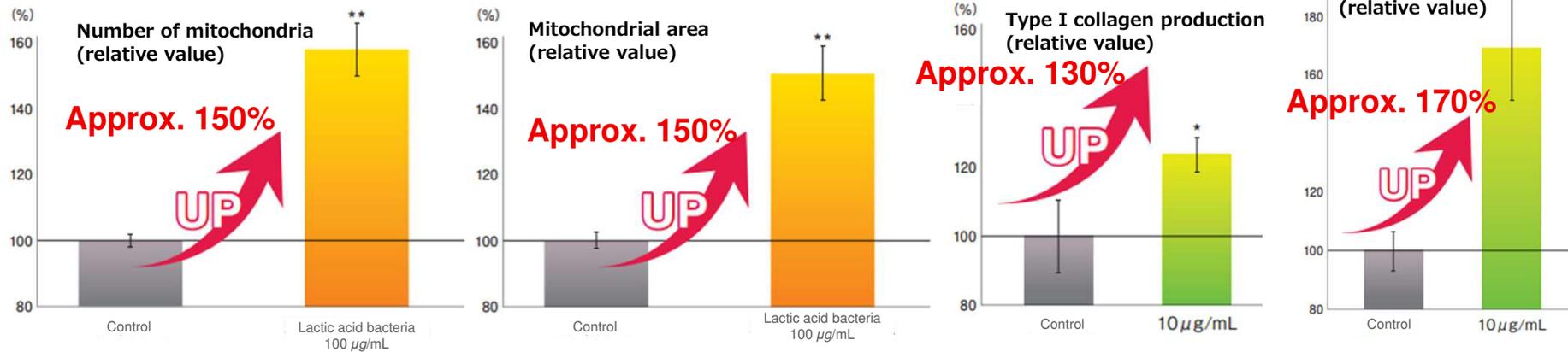
Point

- ✓ Discovered mitochondrial enhancement and activation function (anti-aging effect)
- ✓ Discovered the function to produce collagen and hyaluronic acid in skin cells (skin function improvement)
- ✓ Established mass production process with Osaka Soda’s original fermentation technology

What is NMN?

- NMN (Nicotinamide Mononucleotide) is converted to the coenzyme NAD in the body and activates the sirtuin gene (longevity gene)^{*1}
- A substance that is attracting attention for its use in anti-aging and extending healthy life expectancy

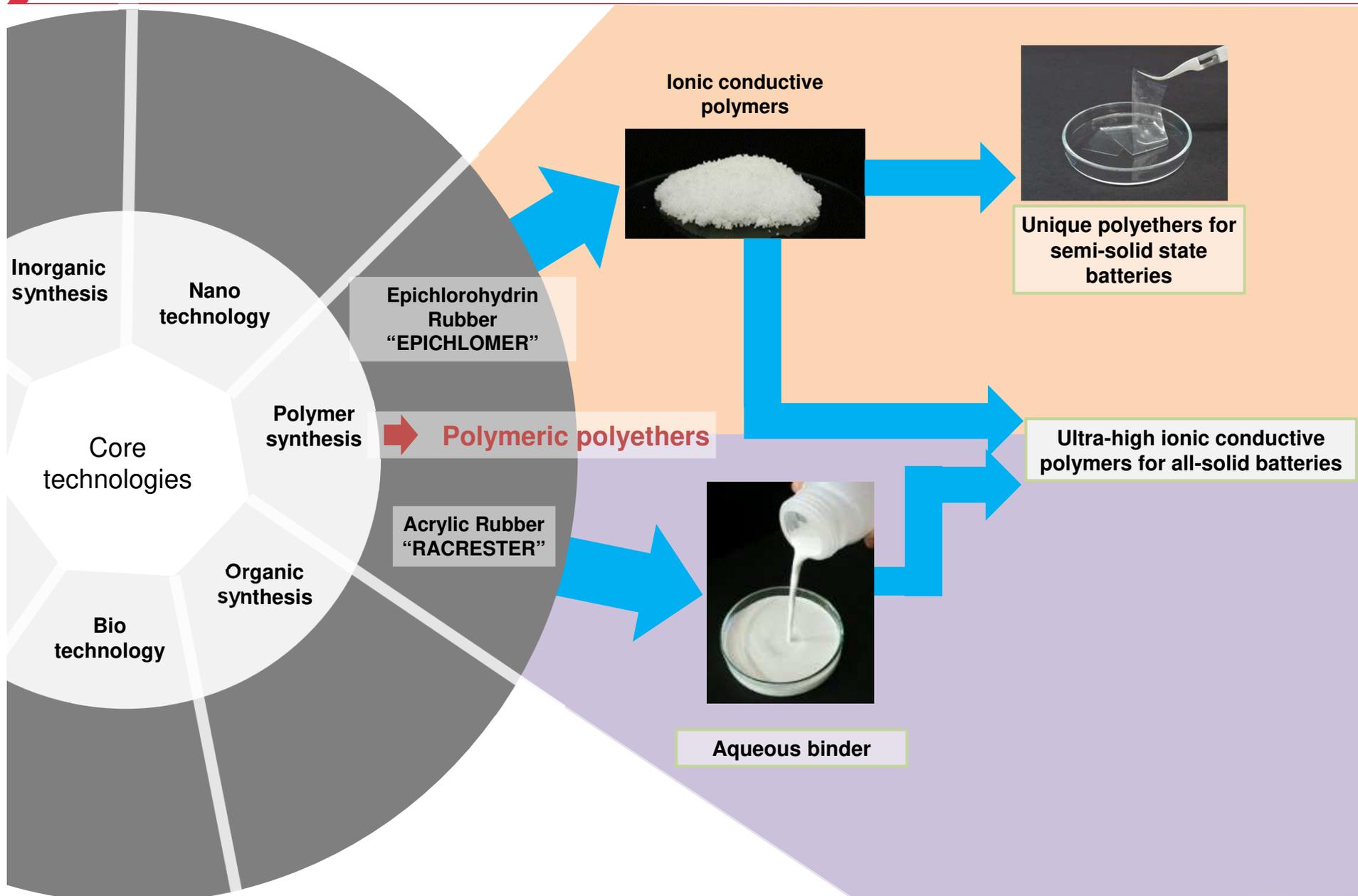
*1 Reference: Journal of Japanese Biochemical Society 87 (2): 239-244 (2015)



Future development

- Aim to supply raw materials for cosmetics and health foods as a new “lactic acid bacteria” that exhibits comprehensive anti-aging functions
- Reinforce functional evidence in cooperation with research institutions and promote early market launch

Development of Battery Materials Using Innovative Technologies



R&D : Ultra-high ionic conductive polymers for all-solid batteries

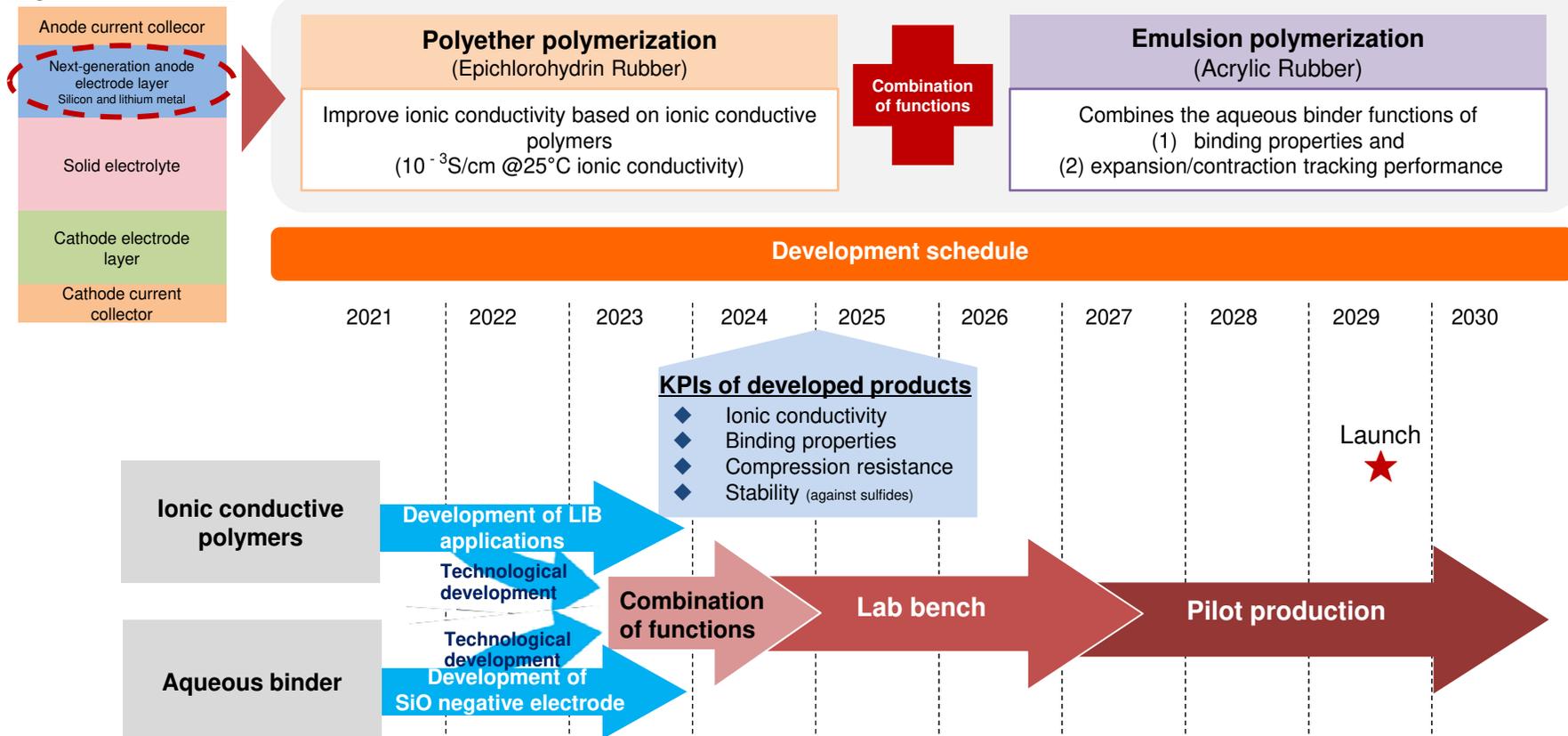
Background and progress

- Adopted for NEDO Green Innovation Fund Project in April 2022

Point

- ✓ Achieves simultaneous high ionic conductivity with buffering the volume change of the next-generation negative polar
- ✓ Promotes the development of materials that combine functions based on Osaka Soda's unique synthetic rubber manufacturing technology
- ✓ Plan to invest around 1 billion yen over the next three years, including the establishment of an in-house environment for battery performance evaluations

Diagram of all-solid batteries





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