

# “Co-creative Chemical Company”

- Reforms toward global top-level functional chemical company -

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President & CEO

**Resonac Holdings Corporation**

February 14, 2024

The Resonac logo, featuring a stylized blue 'R' icon followed by the word 'RESONAC' in a bold, blue, sans-serif font.

**We will lead the semiconductor materials industry by realizing sustainable growth and revolutionizing the market**

**Say & Do**

**1**



**Aggressive investment in growing semiconductor materials business**

**Say & Do**

**2**



**Accelerate creation of co-creative innovations**

**Say & Do**

**3**



**Corporate culture reform & Human resource development**

# Agenda

- 1 Resonac's ideals
- 2 Aggressive investment in growing semiconductor materials business
- 3 Accelerate creation of co-creative innovations
- 4 Corporate culture reform & Human resource development

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## **Purpose**    The meaning of Resonac's existence

### **Change society through the power of chemistry**

Contribute to the sustainable development of global society by creating functions required of the times as an advanced material partner

## **Values**    Our important values

- ▶ **Passionate & Results-Driven**
- ▶ **Agile & Flexible**
- ▶ **Open Minds & Open Connections**
- ▶ **Solid Vision & Solid Integrity**





## Resonac's ideals

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### Co-creative chemical company

As a chemical company, we shall have first-class competency, decide and act quickly and flexibly, and co-create better society together with those who share the same aims with us, ranging from key players in the industrial circles to ordinary citizens.

### Global top-level functional chemical company

We shall solve social problems by exerting our strong points we fostered as a Japanese chemical company and introducing advanced management method of global companies.

## Resonac's long-term vision: Our ideals for 2030

2030

### Our Vision

- ▶ Company that can compete on the world stage
- ▶ Company that contributes to a sustainable global society
- ▶ Company that develops co-creative human resources representing Japanese manufacturing industry

### Action 2

- ▶ **Concentrate management resources on semiconductor materials business**

### Action 1

- ▶ **Portfolio reform**
- ▶ **Establish CXO system**

- ▶ Corporate culture reform & Human resource development

## Main strategy to achieve Our Vision

**Establish world-class revenue base**

**Improve business portfolio**

**Promote innovation**

**Strengthen business foundation**

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## Approach to portfolio reform



## The road to optimum portfolio

2021

**SHOKO CO., LTD.** (Trading company: Sells chemicals, etc.)  
**Aluminum can business**  
**Food wrapping film business**  
**Aluminum rolled products business**  
**Printed wiring board business**  
**Power storage device/system business**

2022

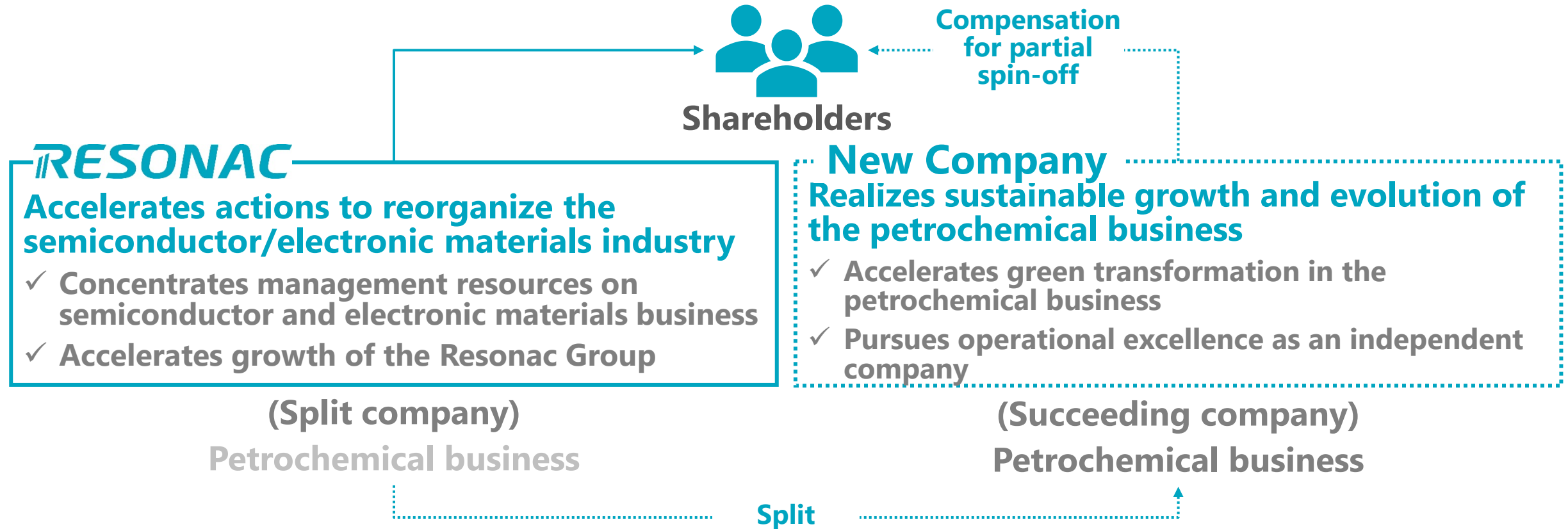
**Ceramics business**  
**ISOLITE GmbH** (Insulating parts for cars, etc.)

2023

**Diagnostic agent business**

**We have sold 9 businesses**

## Resonac Holdings has started to investigate partial spin-off of the Resonac Group's petrochemical business



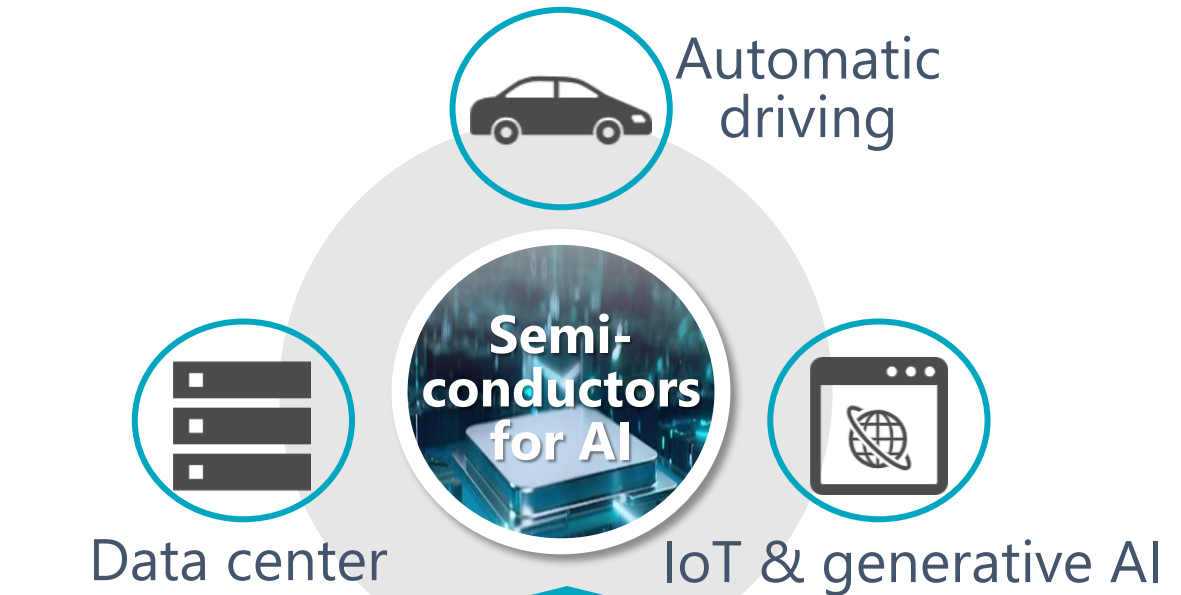
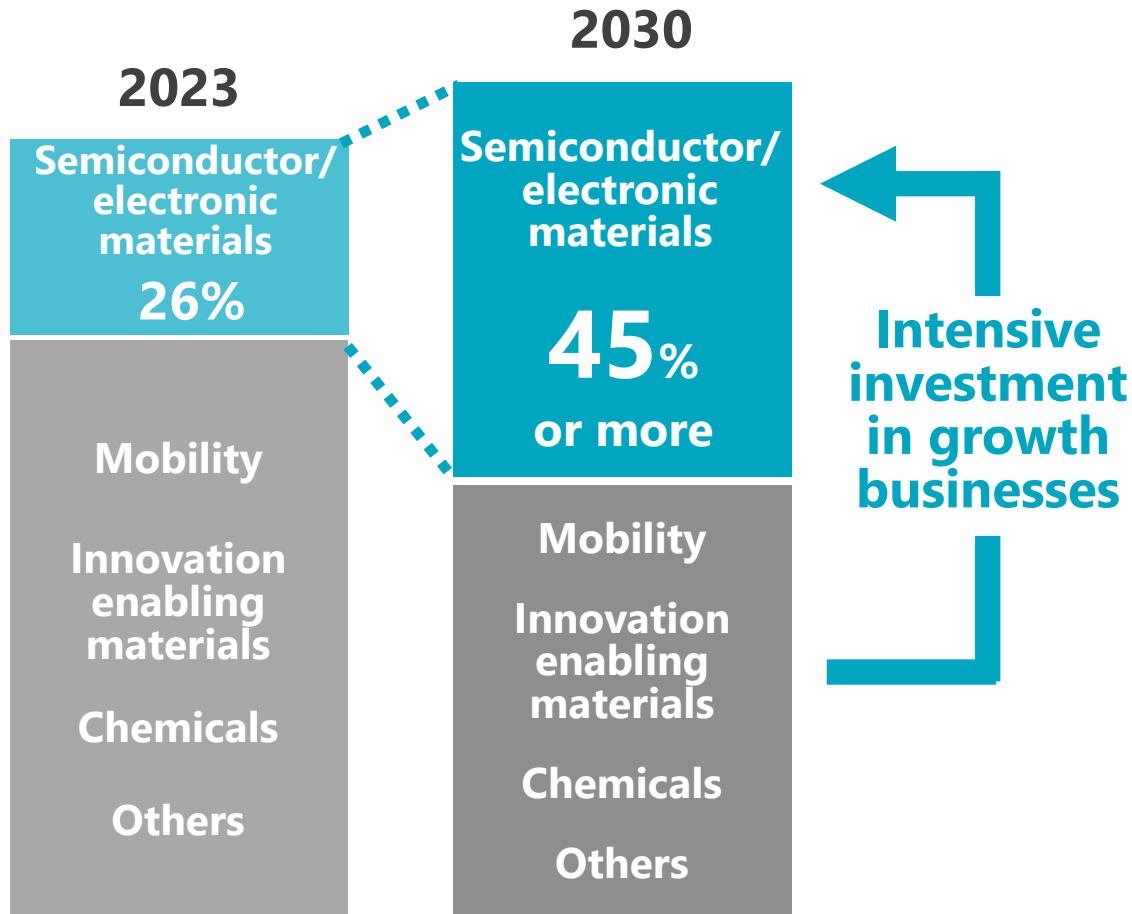
The timing of the execution of this spin-off has not been determined; however, REH will proceed with its assessment by the end of this year, giving consideration to executing this spin-off within the next two to three years. This assessment will include selection of the listing market and the possibility of satisfying relevant countries' tax-qualification conditions including those of Japan and the United States. Execution of this spin-off is subject to approval and authorization from stakeholders and relevant authorities including stock exchanges.

We will make semiconductor materials business as our core business and realize groupwide increase in profits

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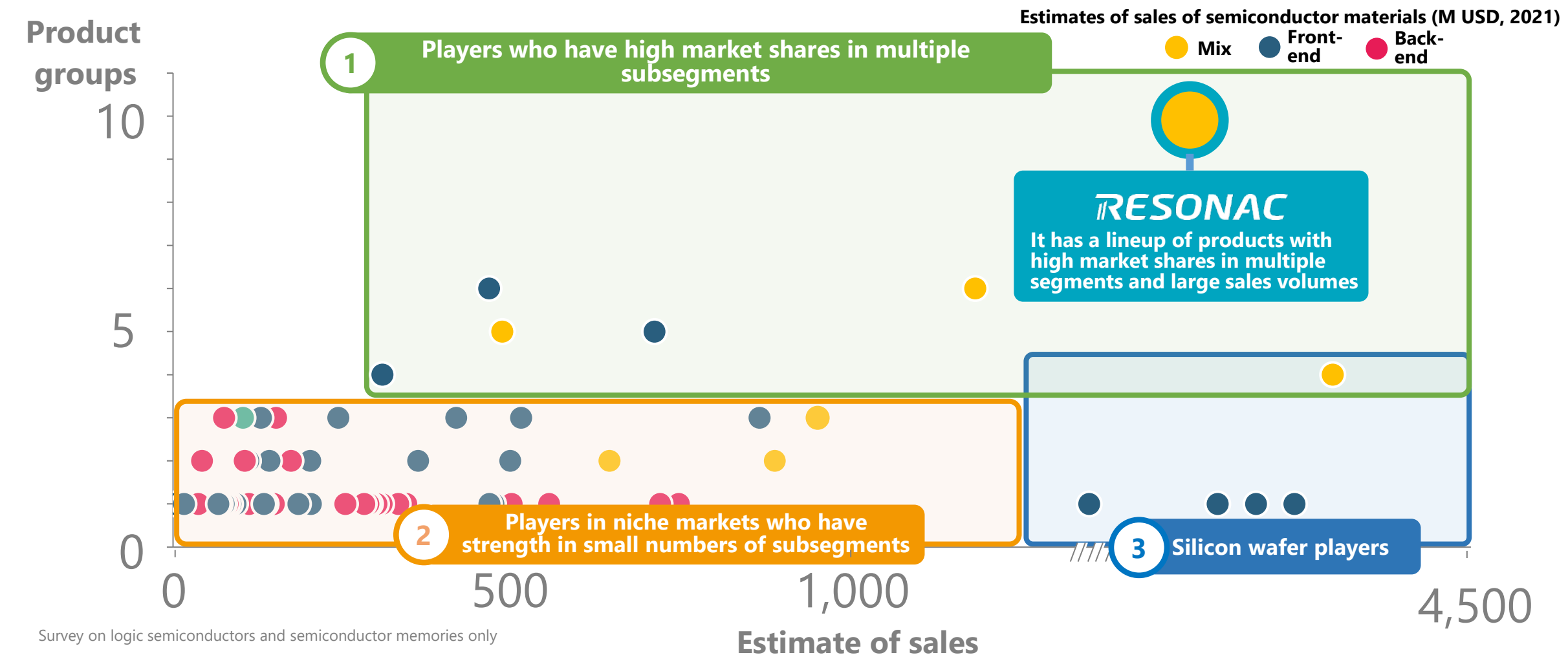
## Nicely varied management resource allocation

## Resonac will specialize in semiconductor materials business that promises growth



Resonac will be a leading revolutionizer of the semiconductor materials industry that is expected to grow with the spread of AI

Resonac has a lineup of semiconductor materials that have **high market shares in multiple segments**, and can **meet customers' needs in a flexible manner**



Survey on logic semiconductors and semiconductor memories only

Source: "Current situation of semiconductor materials market and outlook for it" published by Fuji Keizai Co., Ltd. in 2020 and 2022, BCG analysis for 2022

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Increase in data accelerates shift from independent designing of chips and parts to total package designing. **Now semiconductor materials manufacturer's competitiveness comes from its ability to propose back-end materials, rather than its ability to innovate front-end materials.**

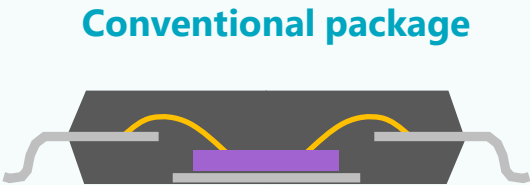
**Front-end** (Form circuits on wafers)

Formation of circuit has already miniaturized to several nanometers. Miniaturization of circuit is now reaching the limit.

**Back-end** (Packaging of semiconductor chips)

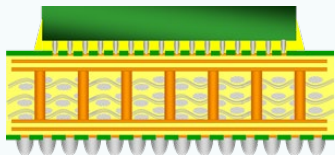
**Innovation in packaging attracts attention**

**Higher integration of semiconductor chips requires sophisticated and complicated designing process**



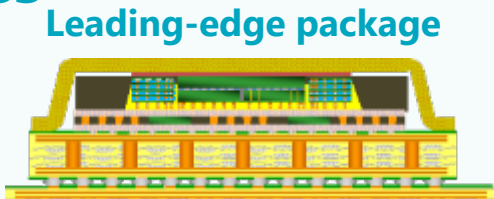
Simple chip × 1

Evaluation of single material



Highly integrated chip × 1

Evaluation of combinations



Highly integrated chips × plural numbers

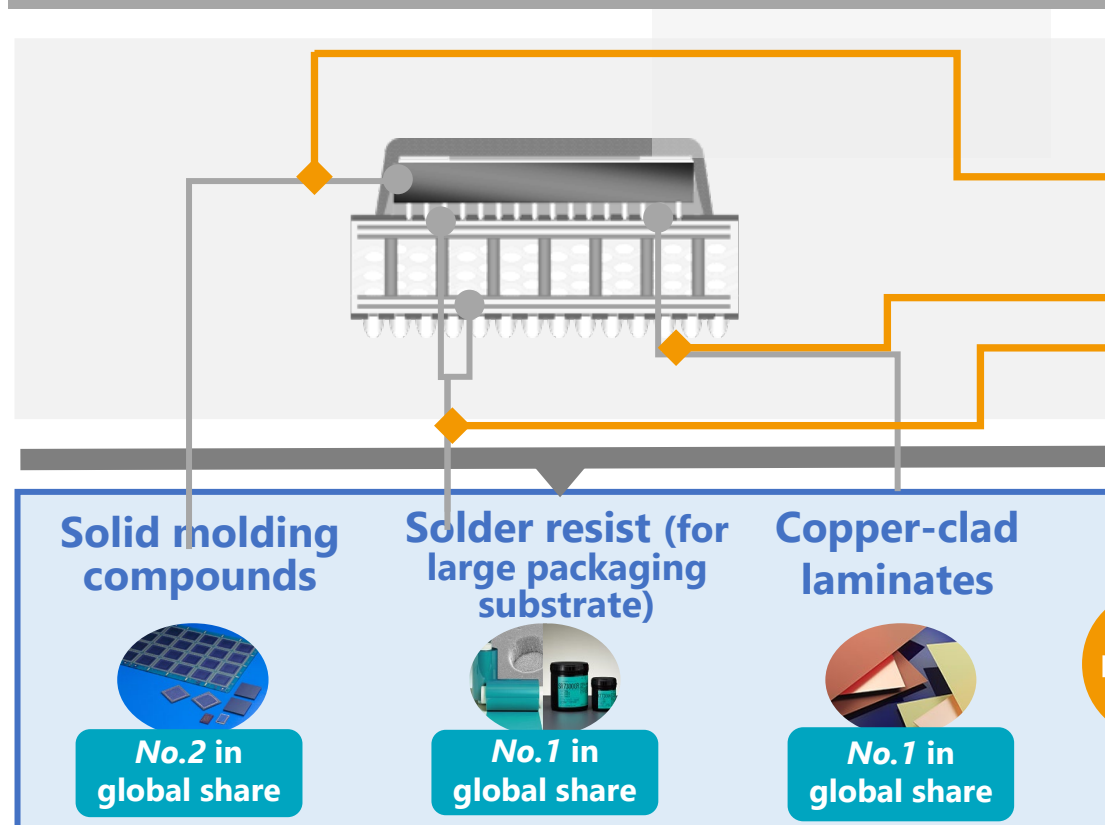
Evaluation of total package



# Resonac's semiconductor materials for AI processor and integrated solutions

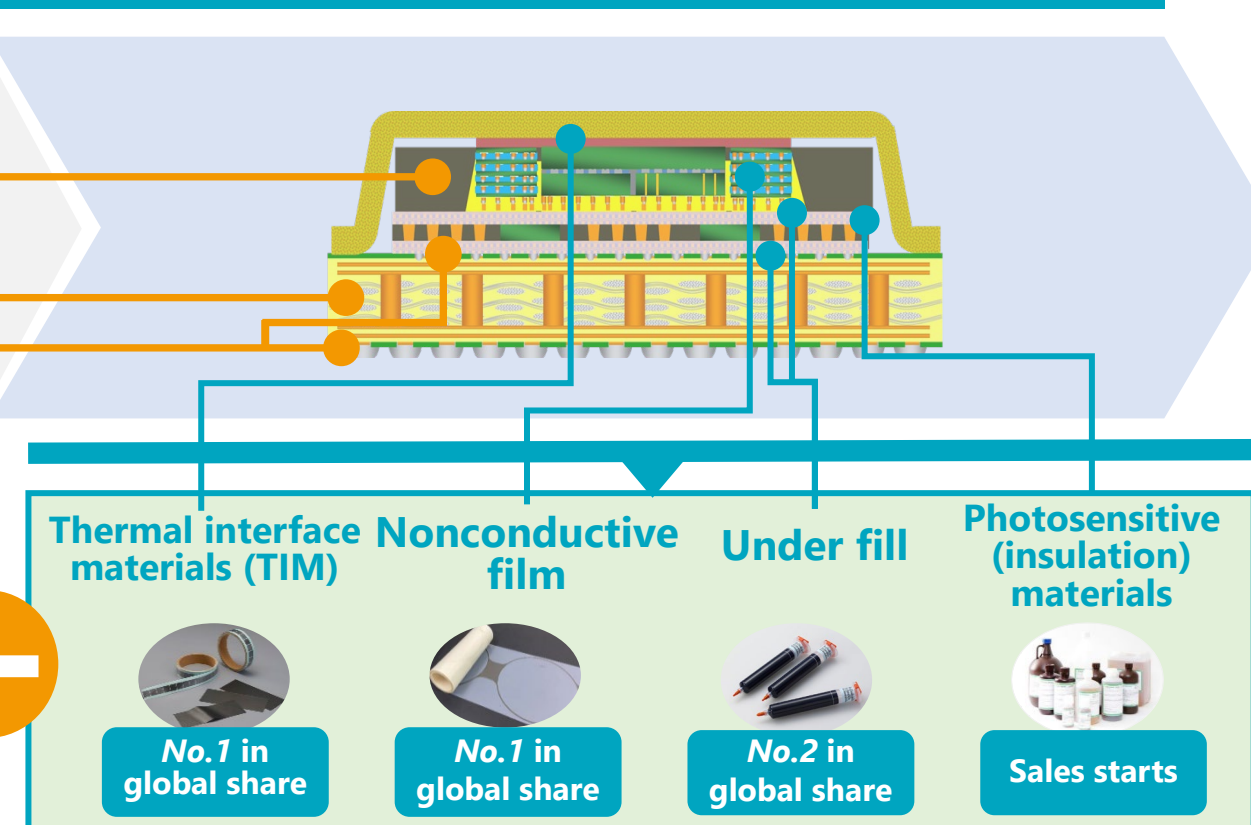
On the basis of proven semiconductor materials, Resonac's semiconductor materials business continues growing due to a major increase in the demand for materials caused by increases in number of parts and size of semiconductors

## Conventional semiconductor



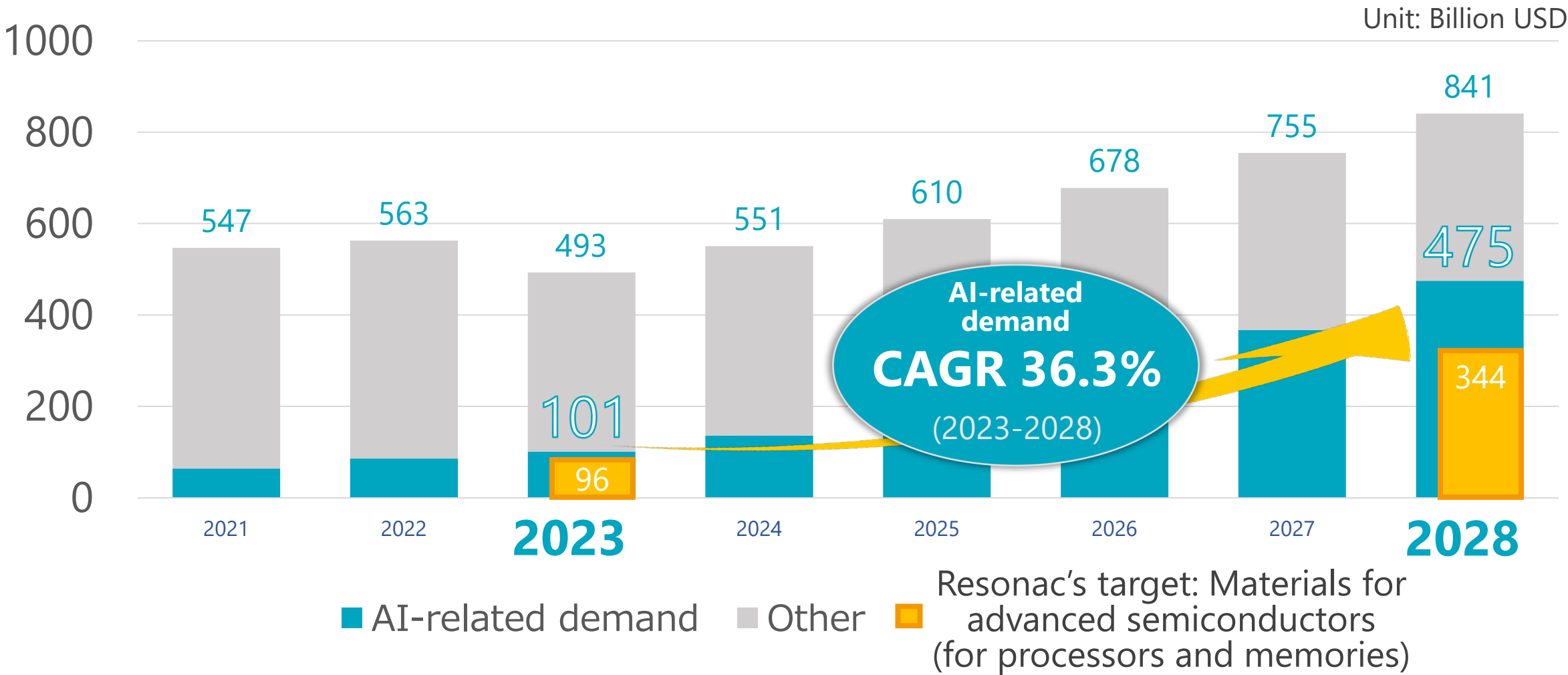
Marketed as common materials

## Processor for AI



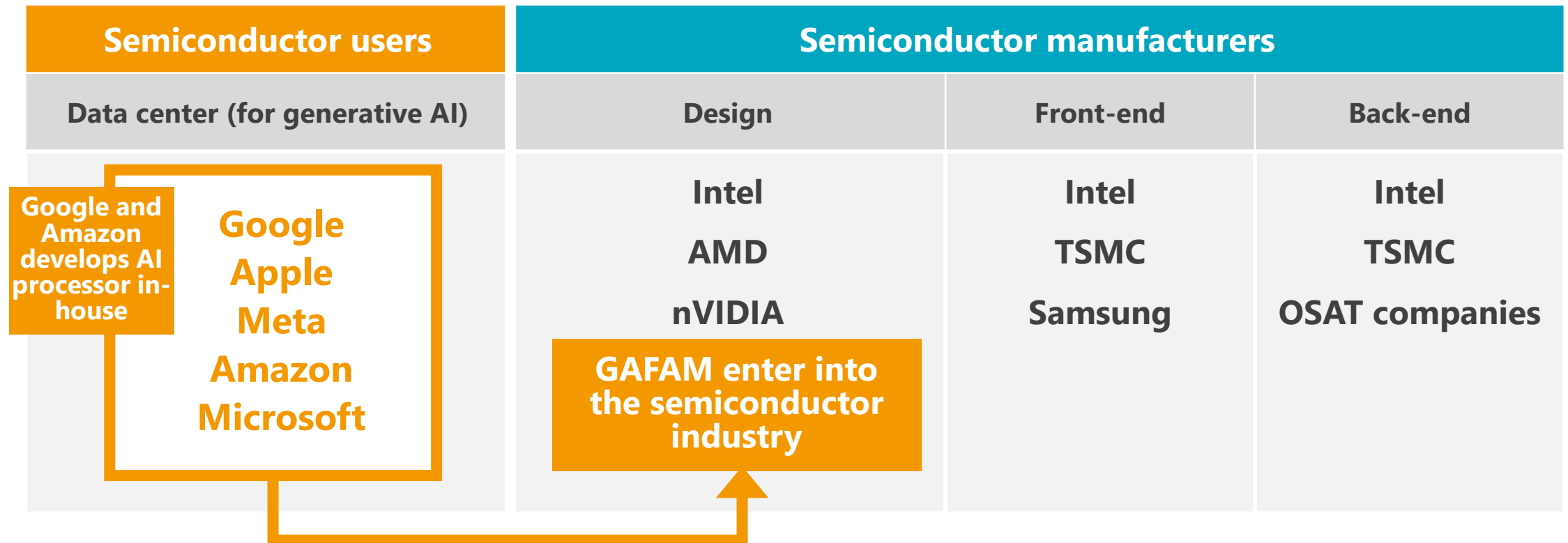
Newly released materials

Semiconductor market has exited no-growth period and restarted to grow  
Toward 2028, the demand for AI processors will lead the market growth



**Designing of leading-edge semiconductors is concentrated in Silicon Valley. GAFAM are developing original chips optimized for generative AI in-house.**

## Supply chain of semiconductors for AI servers



# Resonac plans to establish Packaging Solution Center

in Silicon Valley, USA,

where GAFAM and semiconductor manufacturers  
are concentrated

We have started preparation work  
including investigation and research on  
equipment to be introduced

**2024** Trial operation will be started

**2025** Full scale operation will be started



# Resonac participates in Texas Institute for Electronics (TIE)\*<sup>1</sup>, a consortium to develop leading-edge semiconductor

where leading semiconductor manufacturers and semiconductor production equipment manufacturers of the United States gather

Resonac is the sole board member of TIE as semiconductor materials manufacturer, and is the first non-U.S. strategic partner of the consortium.\*<sup>2</sup>

In the second half of 2024,  
prototype production line for 2.xD and 3D  
semiconductor packages will be started up

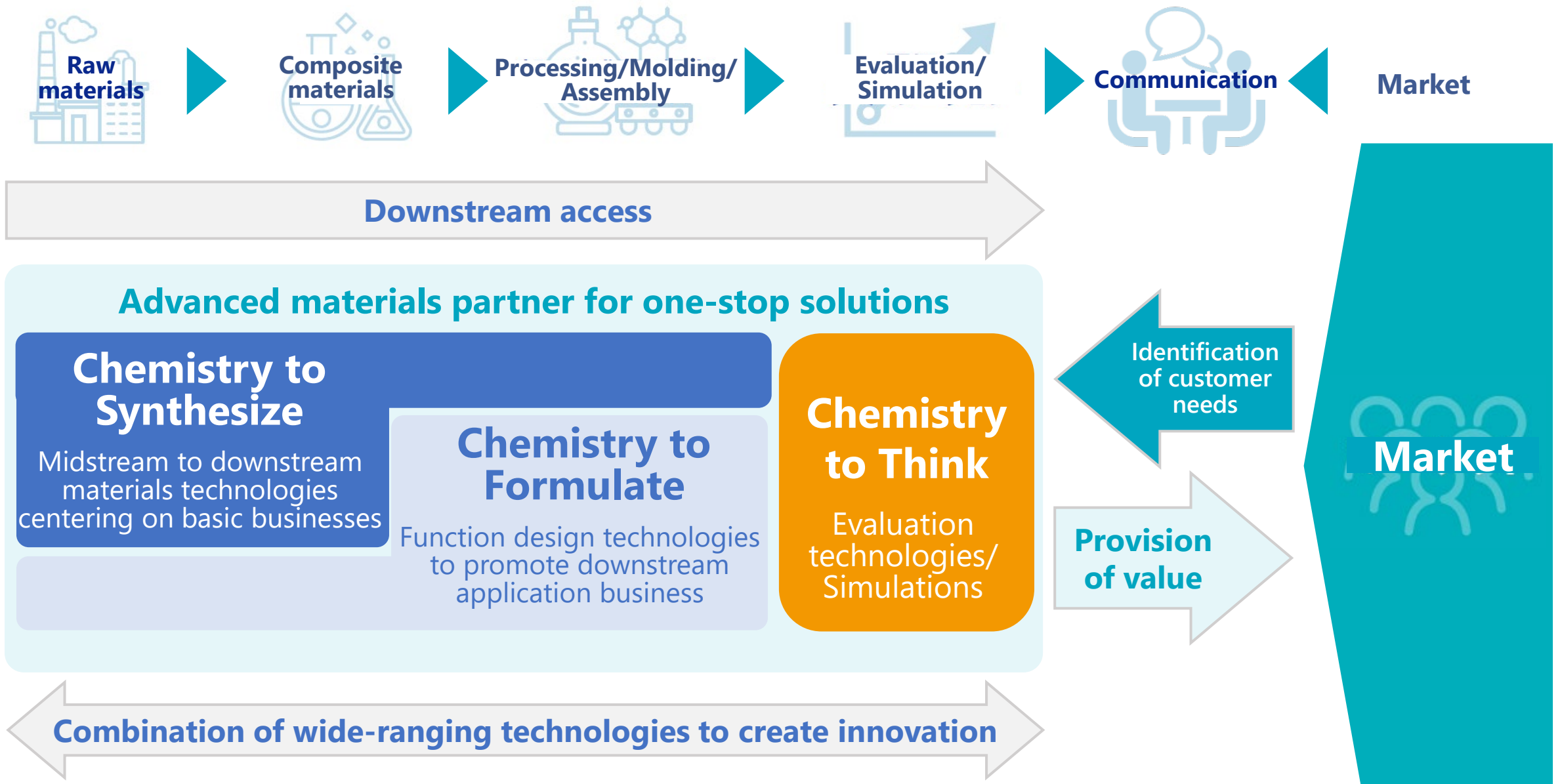




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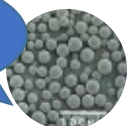
# Accelerate creation of co-creative innovation through cooperation, deepening, and strengthening

## Cooperation between “synthesize” and “formulate”

Integration of R&D sections will enhance functionality and improve efficiency

### Cooperative development of filler and composite materials

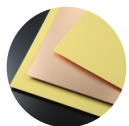
Chemistry to Synthesize



Filler



Chemistry to Formulate

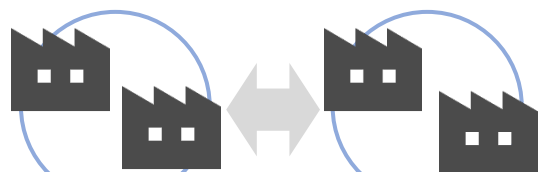


Composite materials

## Deepening “Chemistry to Synthesize”

Cooperation between plants on development and production of Monomer/Resin

### Deepening development of synthesized organic materials



Design and production of monomers

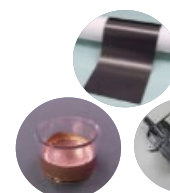
Design and production of resins

## Strengthening “Chemistry to Think”

Following customers who have leading technologies, we will develop evaluation technologies

### Power Module Integration Center

Development of evaluation technologies



Development of materials for power modules

Platform to accelerate research and development

### Research Center for Computational Science and Informatics



## Examples of cooperation to promote co-creative innovation

Functional materials



Semiconductor materials

Plant Plant

Semiconductor materials



Analysis and Evaluation

Semiconductor materials



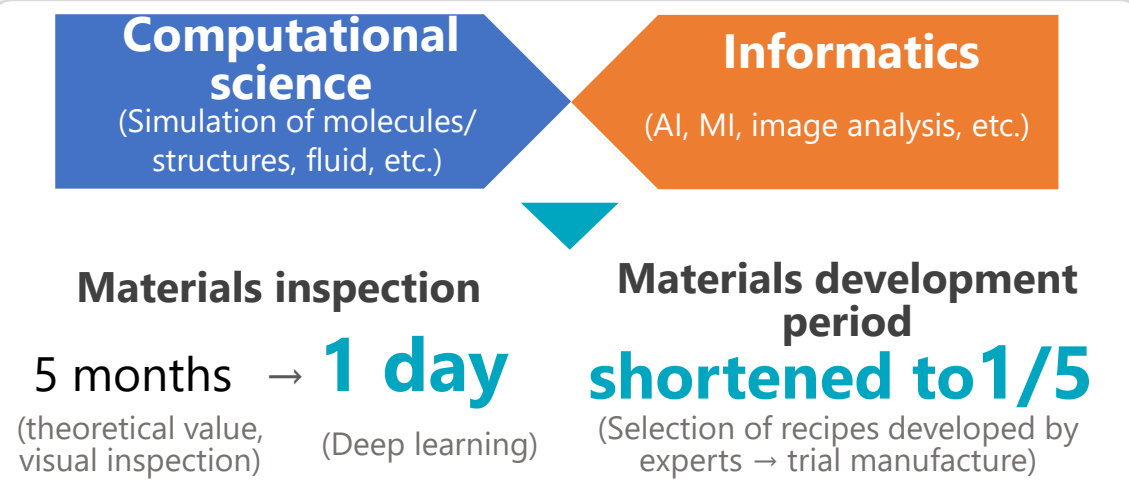
Computational science

# Innovation in technology for semiconductor materials supported by computational science and informatics

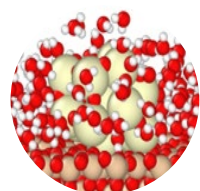
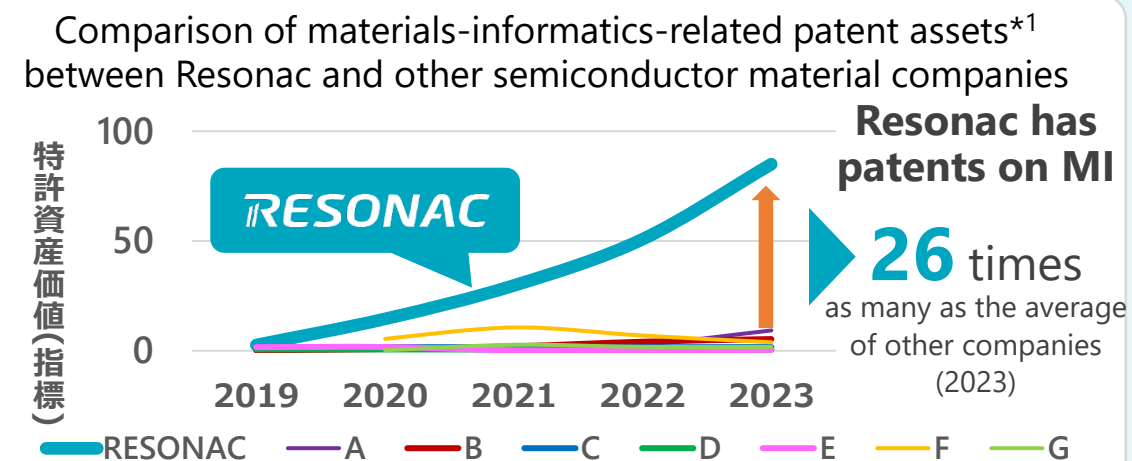
Computational science and informatics revolutionize development of semiconductor materials

**Resonac opens a new dimension of co-creative innovation through rapid product development and overwhelming intellectual-property power**

**Rapid development of various materials through merger of computational science and informatics**

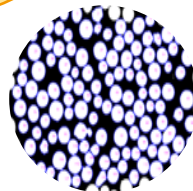


**World top-level patent assets give Resonac competitive advantage**



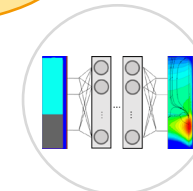
Efficient search for candidates of additives for CMP slurry (by utilizing quantum chemical calculation)

**Search efficiency improvement**



Automation in materials inspection reduces inspection time and anomalies (Image analysis)

**Quality improvement**



Simulated high-temperature process in virtual reality to combine large diameter and high quality (Thermal fluid simulation × AI)

**Shortens development period**

**CMP\*2slurry ⚙️ Molecular calculation ⚙️ AI**

**ACF\*3 ⚙️ Deep learning**

**SiC ⚙️ Simulation ⚙️ AI**

\*1 Patent assets: This amount is based on Data in LexisNexis' PatentSight® and Resonac's original estimate\*2 CMP: Chemical mechanical polish \*3 ACF: Anisotropic conductive film



## Packaging Solution Center

Seeks to make technical innovations together with other companies



## Stage for Co-creation

Base for open innovation functioning as the core of Resonac's R&D activities



## Innovation Center

Communication space that gives birth to the seeds of co-creation



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~2025

~2030

**Execute as a team**

**With the CEO himself  
taking the lead, we  
will tackle long-term  
problems**

**Establish  
CXO  
system**

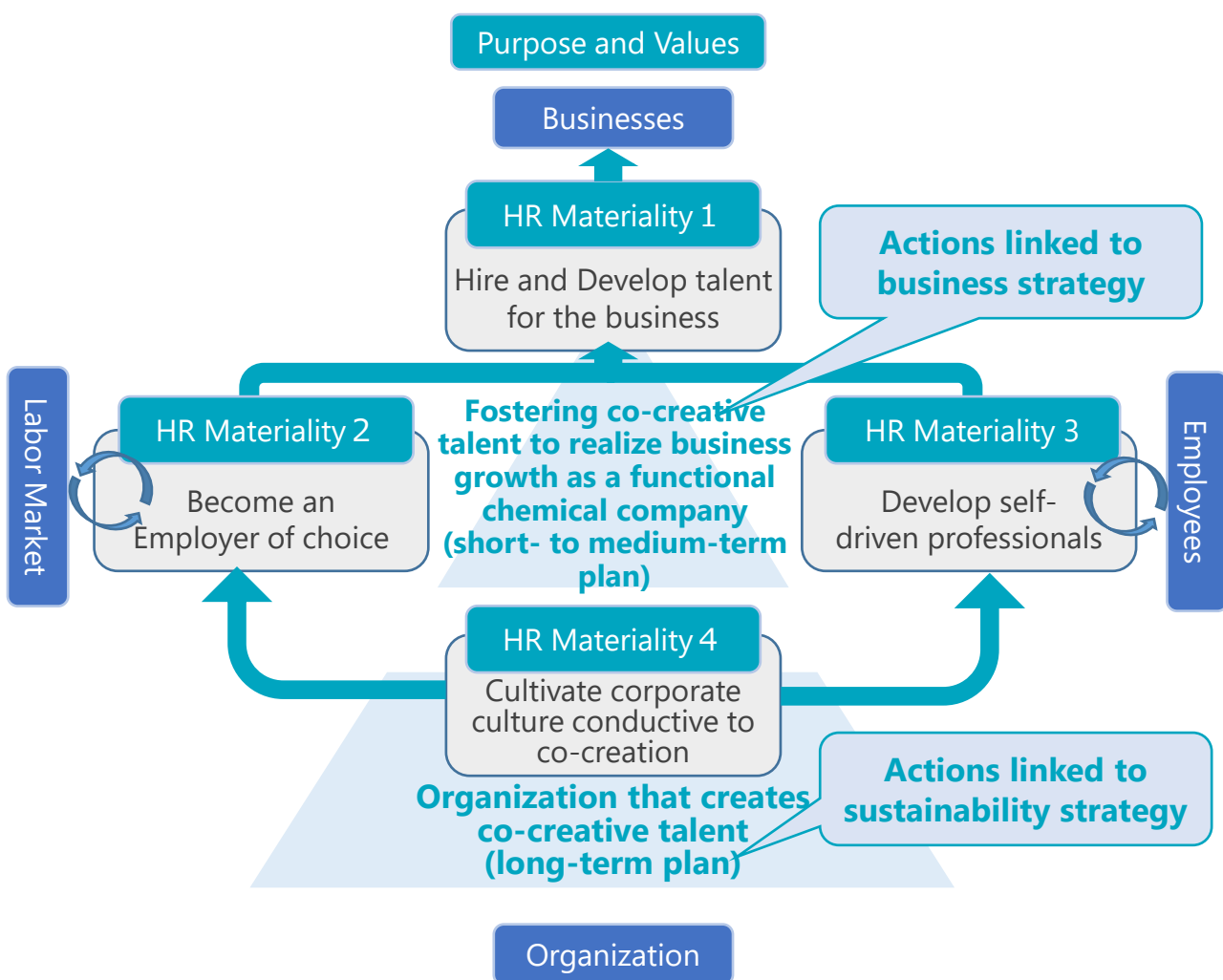
**Portfolio  
reform**

**Stable revenue  
base**

**A company where  
value sharing  
personnel execute  
reforms and work  
autonomously with a  
moderate feeling of  
tension**

**Each of us should personalize and practice  
Purpose and Values**

## Resonac's human resource strategy



## Human resource materiality and KGI

	HR materiality	KGI
1	Hire & develop talent for the business	Future talent portfolio fulfilment rate Succession planning readiness rate
2	Become an Employer of choice	Hiring plan fulfilment rate Detrimental voluntary turnover rate Engagement score
3	Develop self-driven professionals	Internal promotion rate (key positions)
4	Cultivate corporate culture conducive to co-creation	Purpose and values implementation survey score

Through construction of global human resource management system,  
**We will visualize human resources and their skills, realize dynamic human-resource portfolio management suitable for our business strategy, select core human resources early, and train them strategically.**



## Recognition of issues and results of our efforts

We are cultivating corporate culture where we can give free vent to each person's uncertain feelings ("moya-moya" in Japanese), have open discussion on them, and solve them together.

About **50%** of employees practiced **Purpose and Values in 2023** (up **16** pt from 2022)

I felt safe because others sympathized with my moya-moya

Other sector's moya-moya made me aware of new issues



I was surprised when I found that there are opportunities to say what I think frankly to Takahashi-san and Imai-san

## Specific measures (2023)



**Moya-moya Meetings**  
Two-way communication  
hosted by CEO/CHRO



**Town Hall Meetings**



**The Co-Creation at 14 Meters' Distance Workbook**  
Workbook about the concept of co-creation



**AHA!**  
(Award of Harmony)  
Global Award  
(opportunity for empathy and co-creation)



**REBLUC**  
(Resonac Blue Creators)  
Purpose driven community



**Moya-moya Meetings**



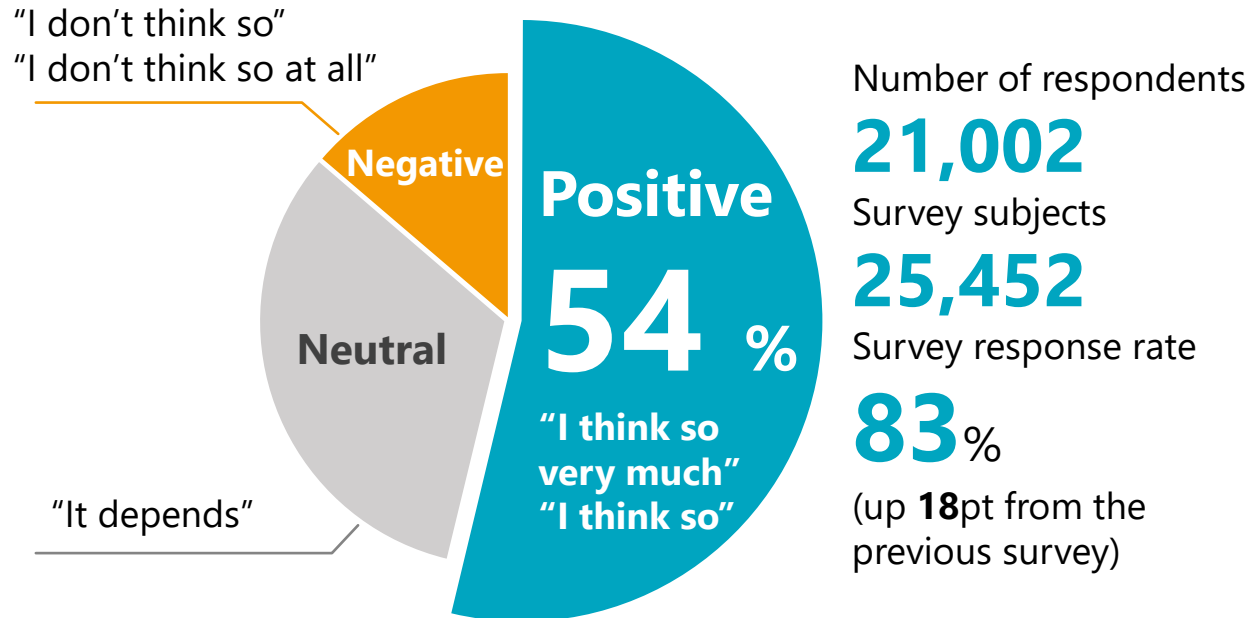
**Town Hall Meetings**

**34** sessions (**824** entrants)

**63** sessions



## Engagement score



Previous survey: Sep. 2021, Survey of this time: July 2023

## Actions to be taken

Management policy does not reflect feedback from employees

Two-way communication with employees

Existence of low-productivity business processes

We will promote **business process reform** as company-wide campaign

Career development support for employees is insufficient

We will increase provision of **career information** and **create more opportunities to have dialogue to support personal growth**

Base for **company-wide improvement in engagement**

We will secure **psychological safety**

Our target

Net sales  
over **¥1** trillion

EBITDA  
**20%**

PBR  
over **1** times

Say & Do

Active investment in growing  
semiconductor materials business

Accelerate creation of  
co-creative innovation

Corporate culture reform and  
Human resource development



Make the most of improvement in  
market conditions and opportunities

Make operations more efficient

Optimization of business portfolio

Present  
state

Net sales  
**¥1.3** trillion

EBITDA  
**8.2%**

PBR  
**0.9** times

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Chemistry for Change

### Note

Performance forecast and other statements pertaining to the future as contained in this presentation are based on the information available as of today and assumptions as of today regarding risk factors that could affect our future performance. Actual results may differ materially from the forecast due to a variety of risk factors, including, but not limited to, the global political circumstances, the global economic conditions, tightening of regulations, demand for our products, market conditions, and foreign exchange rates. We undertake no obligation to update the forward-looking statements unless required by law.