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Resonac Corporation

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RESONAC REPORT 2024

English Version

RESONAC

Chemistry for Change

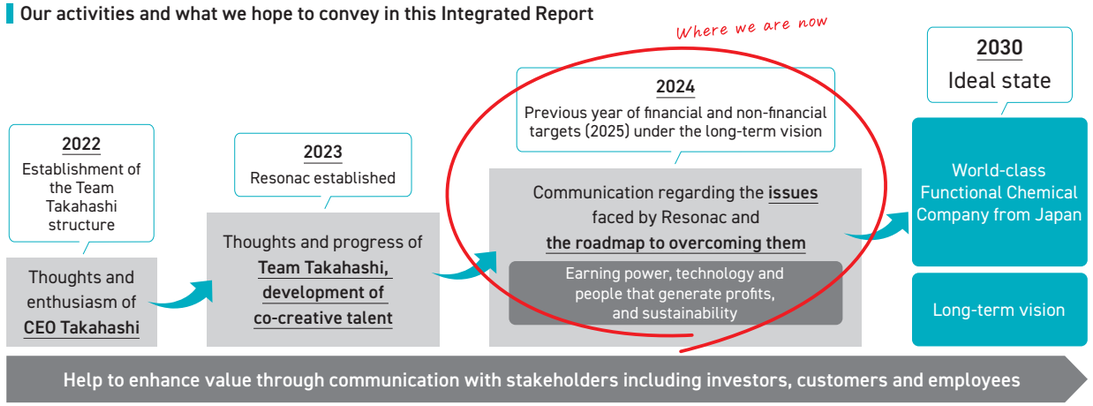
RESONAC REPORT 2024

English Version

Dear Reader,

Resonac prepares the Integrated Report every year from the position that this report is a tool for conveying to our valued stakeholders with whom we wish to have a long-lasting relationship how we have created what kind of value from the past up to the present and whether we have the structure and capabilities to create value in the future.
Resonac is a new company established by integrating the former Showa Denko and the former Hitachi Chemical. The 2022 edition, the first year of substantive integration, presented mainly CEO Hidehito Takahashi's thoughts and enthusiasm. The 2023 edition presented the thoughts of each member of the Management Committee, "Team Takahashi," whom CEO Takahashi trusts and to whom he delegates authority, as well as our strategies and initiatives for a "Co-creative Chemical Company" and for developing co-creative talent, and both financial and non-financial results and progress.
With the goal of our 2025 targets for realizing our long-term vision in sight, this year's 2024 edition focuses on the question which everyone is most interested in, namely "whether Resonac has the earning power." The special feature covers the "issues" and "requirements" for the Company's survival and growth, consisting of the business portfolio, technology and people, initiatives for sustainability through trial and error, the process of cultivating individual abilities and a corporate culture for a Co-creative Chemical Company, and the current status of risk management and governance reform.
With regard to the pursuit of the essential aspects of Resonac, we are only partway along the long journey ahead of us. The pages pertaining to our businesses and functions also detail their respective issues and the initiatives being implemented to solve these issues. We also hope that it will help facilitate dialogue and co-creation with you.

Our activities and what we hope to convey in this Integrated Report



See here for our past integrated reports

Hidehito Takahashi, CEO

We are making an effort to reform the business portfolio, develop human resources, and cultivate a corporate culture based on the idea of Corporate value = Strategy x Individual abilities x Corporate culture. We consider the Integrated Report as a very important tool for communicating to you the progress of reform. We would like to reflect your feedback in Resonac's management, so please give us your honest feedback!

About RESONAC REPORT 2024

RESONAC REPORT reports on the initiatives for enhancing the corporate value with a focus on the results of the previous fiscal year related to the Resonac Group as a whole. The 2024 edition was prepared in collaboration with Sustainability Partners of each department after the editorial policies and contents were planned at "Integrated Report planning meetings" attended by CXOs (Chief X Officers) and members across departments and the details were discussed and agreed on at the Sustainability Promotion Council meetings chaired by the CEO.

Key points to note

The intent of preparation for this year is as shown on the left page. The three major issues (themes) and matters regarding governance covered in this report were also prepared following repeated discussions with each executive in charge and related parties.

Earning Power

I held dialogues with the General Manager of the Electronics Business Headquarters and the CSO/CRO regarding the progress of business portfolio reform, the challenges of the semiconductor materials business in which we are concentrating investment as a growth business and measures therefor. Please also read the challenges and initiatives of each business and the Company's competitive edge.

Hideki Somemiya, CFO

Technology and People That Generate Profits

Resonac's source of value is its human resources. By using the Company's diverse range of technology platform as a base, these human resources combine differing technologies to create the functions required by customers and markets. We have focused on development this year, and had a dialogue with the CTO and the Deputy General Manager of the Electronics Business Headquarters regarding the product creation process and human resource development.

Nori Imai, CHRO

Sustainability

Can we generate profits through sustainability? I had a discussion on how to overcome the issues we face with those in charge of quality assurance, compliance, and PFAS issues, risk management. I also enjoyed talking with the people of Omachi City in Nagano Prefecture about the future we want to realize together.

Nami Matsuko, CSuO

Corporate Governance

Resonac's governance reform has just begun. We revised the criteria for referring matters to the Board and thoroughly shared information in advance in order to have more meaningful discussions at Board of Directors' meetings, thereby gradually raising the quality of discussions.The Board members shared frank opinions at the roundtable, and we will reflect them in our future reforms.

Tomomitsu Maoka, CSO/CRO

Process of Preparing Resonac Report 2024

1. Planning and preparation of editorial policies and contents by means of planning meetings held every two months
   Members: CFO, CSO/CRO, CHRO, CSuO, and staff from the Investor Relations Department, the Organization & Talent Development Department, the Corporate Planning Department, the Brand Communication Department, and the Sustainability Department
2. Decision of direction and message during meetings of the Sustainability Promotion Council, attended by the CEO, all other chief officers, and all general managers of business units
3. Discussion of each page with Sustainability Partners and those in charge of each department, and draft writing
4. Discussion and approval by the Management Committee and the Board of Directors

Key discussion points

What matters does current Resonac need to report to stakeholders? Discussed on measures we are working on to improve our corporate value and decided on the contents.

Members of the 2024 planning meeting

About the cover page

Resonac holds AHA!, a global award P15, as an initiative to penetrate the Company's Purpose and Values among employees. We decorated the cover of the 2024 report with the "graffiti" drawn by the team members who won the Gold Award at the 2023 award ceremony to express excitement for the future. "Change society through the power of chemistry" and "GO ANZEN NI! (Be safe!)" represent our messages.

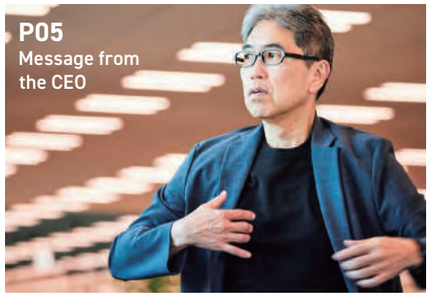
How to Navigate **this RESONAC REPORT**

If you're unsure where to start, we recommend beginning with the "How to Navigate" page. For a more traditional approach, start from the "Contents" page.

01

What kind of company is Resonac? Do you really believe that you can change society through the power of chemistry?

Yes, of course! Here you will find content that showcases our commitment, **including a message from CEO Takahashi filled with his passion**, **insights into how we cultivate a culture to become a company that drives societal change**, and **introductions to the diverse individuals on our management team**. Find the overview of our **long-term vision** here!



02

How do you intend to make money? Is there something currently lacking?

We are very much aware that in order to change society through the power of chemistry, we must hone our power more and incorporate what we need. Conversely, if we can acquire what we lack, we believe we will become much stronger! In this report, the CXOs and business leaders discuss the three powers we should hone.

- **Earning power:** Roadmap to the maximization of Resonac's earning power
- **Technology and people that generate profits:** The power to produce co-creative talent who will consistently create new technology
- **Sustainably:** The power to generate profits in good faith and to co-create with society

How do we hone and acquire the power we lack and how will we change society with the power of chemistry? We would like to share with you the vision we at Resonac see beyond our challenges, and move toward this vision together. Please also read about the challenges and progress made for each business and function.

Resonac's Earning Power: Roadmap to the Maximization —"Steering & Focusing" toward Semiconductor Materials Business

"Technologies are Created by People" Co-creative talent thrives through their connections opens up a path to the future with their earning power

Looking ahead to the next 100 years Embarking on co-creation, delight for the future

03

Can you prove effective governance?

What kind of governance does Resonac need now? We believe that we must continue to take on challenges in order to demonstrate effective governance at a global top level that can realize improved corporate value.

We have outside officers with the experience and skills Resonac currently needs. **Through a roundtable discussion with outside officers, this content offers a candid account of everything from current challenges to our ideal governance structure at Resonac**.

Starting this year, we are also **providing a clear overview of their areas of expertise**. See for yourself the effectiveness of Resonac's governance.

04

You can find basic **financial and non-financial data, company information, and stock information** all in one place. We hope you find it useful.

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YouTube
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01 Who We Are

We convey Resonac's current and past efforts in fostering a corporate culture.

05 —— Message from the CEO
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23 —— Links to Resonac's Technology and Society — History
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Message from the CEO

Transforming our people and corporate culture are the key to maximizing our corporate value

Resonac will change society and the way of Japanese corporate management

Dominance in back-end processes of semiconductor production and Cultural transformation; Two key identities of Resonac as the driving force of our management

In January 2023, Showa Denko and Hitachi Chemical were integrated to form Resonac. Showa Denko was a raw-material company that designs going all the way back to the molecular design level. Hitachi Chemical used raw-material to create functional materials. One of the main objectives of the integration was to leverage and refine their respective strengths.

While Showa Denko excelled at raw-material technologies, Hitachi Chemical was exceptionally strong in the field of semiconductor materials, possessing 10 of the 15 materials that are vital to back-end processes of semiconductor production. Resonac combined the technologies of these two companies to turn raw-materials into highly functional materials. We own a wide range of semiconductor materials, each with the highest or second-highest market share in the global market. Resonac stands head and shoulders above its competitors because it can handle everything from raw-materials to processing, providing materials with a high level of

President and CEO

functionality. We are able to decide on specifications directly in conjunction with the global top semiconductor manufacturers, develop materials, and then sell those materials. We are an important player in the semiconductor field, but we are not a semiconductor manufacturer, we are a functional chemical company. Our value chain covers a large area from midstream to downstream sectors, and we have an overwhelming market share as a supplier of semiconductor materials for back-end processes. Furthermore, we have exceptionally high technological capabilities for each material. This is one of Resonac's essential aspects, from a business portfolio perspective. In terms of profit, as well, the profit margin in selling resin used in semiconductor materials as-is, as a raw-material, is completely different from the profit margin from selling functional materials needed by semiconductor manufacturers, produced by blending resin with filler (powder). By turning raw-material into functional material, we can assure EBITDA margin of 25 to 30%.

There is another essential aspect of Resonac that I would like to emphasize: our efforts to instill our Purpose and Values throughout the Group and to foster our corporate culture.

Major, long-established Japanese companies such as former Showa Denko or former Hitachi Chemical (the kind of companies that have recently come to be called "Japanese Traditional Companies," or "JTCs" satirically) often have extremely skilled engineers and scientists, but do not allow them to reach their full potential. To unlock that potential, companies must transform their entire cultures. We are working hard to cultivate a new corporate culture, driven by a powerful desire to urgently leave behind our past as a JTC.

Ever since I was appointed CEO, we have been creating a distinctive business portfolio and refining the transformation of our corporate culture. As CEO, I am responsible for maximizing our corporate value, and I have worked diligently to do that without wavering. But where is our Group heading? That is the next thing I would like to talk.

—— "This would never have been possible without Resonac"
—— "Resonac transformed the way of Japanese corporate Management"
Striving to be a company that is a spearhead for change

Resonac's Purpose is to "change society through the power of chemistry." I truly want to change society. I have two conceptual goals I would like us to achieve. The first is that, when something becomes popular decades from now, I want people to be saying "This would never have been possible without Resonac."

For example, AI is poised to change society in major ways. To enable semiconductor packages for AI applications to rapidly process high volumes of information, it will be essential to place both logic and memory on a single substrate, or to stack up chips in 2.xD or 3D integrated packages. This will require material innovation, as well. Semiconductor manufacturers are competing against each other to achieve new package advances. We are already supplying three new materials that contribute to the evolution of these packages, and we enjoy the top market share worldwide. We have also made progress on the development of another promising material. Package materials are one of the areas in which Resonac particularly excels, and we can contribute to the evolution of AI in each manufacturer through our materials. It is like we have the same impact as Shohei Ohtani, whom every Major League team was vying to sign. If we keep contributing in this way, I believe that my dream, where people decades from now say "the great AI transformation would never have been possible without Resonac," will be an attainable one. Furthermore, as we are not a semiconductor manufacturer but a functional chemical company, even if something new and totally different from semiconductors takes the world by storm, we can provide functional materials for that. The power of chemistry is at the heart of every industry, so the range of fields where we can make people say "It would never have been possible without Resonac" is limitless. What is more, we have the combined R&D and technical strengths of Showa Denko and Hitachi Chemical, and at our Stage for Co-creation open innovation site, we are using computational science methods to develop state-of-the-art technologies. I am confident that Resonac will change society through the power of chemistry.

My other goal is for people to say "The rise of Resonac transformed the way of Japanese company management." I want to present the world with innovation so great that people think in terms of "before Resonac" and "after Resonac." The approach I believe we should use to achieve this is to take on the challenges of transforming JTCs. As I touched on earlier, companies must unleash employees to express their full potential. At the same time, employees must be able to act autonomously. We must continue to develop wonderful products and services, but we must go beyond that to show the world the potential of our employees. If we can create such an environment, I am confident that the management of Japanese companies will change. This may be an experiment of massive scale, but with Resonac, I would like to show the world an actual example of how JTC culture can be revolutionized.

—— These are my conceptual goals for how Resonac can change society. I believe that working toward these conceptual goals will also contribute to the maximization of Resonac's corporate value.

—— "Corporate Value = Strategy x Individual abilities x Corporate Culture"
Striving to raise the level of these three elements

I believe that corporate value is the synergistic product of strategy, employee's individual abilities, and corporate culture. The only way to maximize corporate value is to take these elements to the next level. Unfortunately, not all three of these have been raised to the needed level, so we are in the process of addressing them, one by one. I would like to explain what we are doing to elevate the levels of each of these elements — that is, what specific measures we are implementing to maximize corporate value.

Note: The three major management issues, "earning power" through unflagging reforms to our business portfolio; "profit-generating technological capabilities and people development" that are our sources of value; and "sustainability," the ability to progress into the future in step with society, are explained in the Sustainability special feature section.

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Building strategies for acquiring greater market share through semiconductor materials business

First, I will discuss our strategy. Our strategy for maximizing corporate value is extremely simple: become a World-class Functional Chemical Company.

P21 / Overview of the Long-Term Vision To do this, we will reshape our business portfolio from the three perspectives of (1) whether the business is a good fit for Resonac's strategy, (2) whether the profitability meets Resonac's minimum

profitability requirements, and (3) whether Resonac is the best owner for the business.

Of course, our business portfolio ideals will change with the changing demands of the world at large. Large-scale investment can lead to overestimation of unidentified risks, leading to hesitation. We need to believe in our current ideals, based on the three perspectives I mentioned earlier, and take that first step forward without delay. In other words, I believe it is important to actively invest in necessary businesses and peripheral technologies if we are to maintain sufficient mass within the semiconductor materials sector.

Until now, semiconductor performance improvements have been reliant on miniaturization in front-end processes. However, the limits of miniaturization are within sight. There is a trend of seeking greater cost performance by creating larger substrates or multi-layer substrates in back-end processes, or in connecting substrates laterally. More attention than ever is being focused on back-end processes. We have a dominant market share in this area, so we have the foundation from which we can create a greater presence. I believe we must use this as a tailwind and take advantage of this for further growth.

Our core competence in the semiconductor materials business lies in development. We especially focuse on appropriately and continuously hiring and developing R&D talents. To deal with geopolitical risks, we are also building a basic database related to our supply chain.

The Packaging Solution Center, our development site in Kawasaki, has the latest semiconductor manufacturing equipment. Through the JOINT2 consortium we established there, we are working with manufacturers of semiconductor manufacturing equipment, materials, and substrates to take on the challenges of developing new technologies. Furthermore, we will open a second consortium in Silicon Valley, U.S. We want to increase Resonac's presence and level of activity in the U.S., and we believe that it will be important to leverage the advantages of our site's location in Silicon Valley to strengthen our relationships with GAFAM and others. In recent years, major semiconductor manufacturers, fabless companies such as GAFAM, and major IT companies clustered in Silicon Valley have started designing their own semiconductors. They need sites with which they can engage in close discussions regarding their concepts, and where they can perform proofs of concept. We cannot afford to be behindhand in developments in the world of AI.

For a company such as our own, which has a wide range of business segments, minimizing conglomerate discounts is a critical business issue. Our Long-Term Vision of becoming a World-class Functional Chemical Company tackles this issue by closing the chapter of our history in which we are a comprehensive chemical manufacturer and by building a business portfolio specializing in functional chemicals.

In the process of deliberating the reshaping of our business portfolio based on this strategy, last February we announced that we were considering a partial spinoff of our petrochemical business. The petrochemical business produces few derivatives, and we have achieved little success in connecting it with our monomer production. In that sense, I'm afraid that Resonac is not the best owner of this business, but at the same time we must consider the happiness of our employees. Resonac is finally breaking away from the JTCs, and we have just started working together to carry out transformation. Simply transferring the business to or partnering with another company would be against the cause. The solution we came up with after much struggle was the partial spinoff approach. We would remain connected as a single community while eliminating conglomerate discounting. We would not be publicly listed parent/subsidiary pairs, but the strengths of each business could be leveraged to their fullest. I think this makes it a wonderful solution. This would also benefit shareholders and enable us to achieve the overarching goal of independence for the petrochemical business. That said, there is still room for additional tweaking, so we need to think further about the specific details.

Improving engagement to unleash our people's individual abilities and foster their autonomy

Next, I would like to talk about employee's individual abilities. When it comes to individual abilities, I think it is important that Resonac be a company in which the employees can enjoy their work.

As I have often discussed, a CEO's job is to maximize corporate value. Improving the numbers on financial statements is, of course, vital, but this can only be achieved if each and every person in each business unit works hard. That is why I dedicate so much time and effort to improving employee engagement. Just sitting in a chair in the President's office, brows furrowed, trying to fire people up over the phone—that will not change the numbers on financial statements. If you work upstream, thinking about what kinds of management measures should be implemented, and what needs to be done in order to implement those measures, you eventually get to improving employee engagement. This is the challenge at the heart of maximizing corporate value. Instead of using stopgap measures to boost revenue, it is ultimately more effective to focus on the root of the matter. That is what a CEO should do, and it is what I can do precisely because I am the CEO.

In the first year after the integration, I thoroughly communicated my ideas and approach throughout the company. I met with over 1,000 employees over the course of the year in town-hall meetings and roundtable discussions, in which I discussed our Purpose and Values. We had a lot of feedback that employees wanted two-way communications with management, so in the second year we started holding "Moyamoya Meetings." This program gathered junior employees to share their *moyamoya* (frustrations) and to engage in discussions with management about potential ways to use Value to solve these problems. Frustrations can provide insights and can resonate with others, and the process of searching for solutions is a small-scale example of co-creation.

Now, in our third year, employees have a base understanding of our Purpose and Values, and our culture of co-creation is beginning to take root. The next thing we wanted to do is to have employees take a good look at themselves, so we began holding our "Purpose Exploration Café." During these sessions, employees reflect on their past, examine their present state, and talk about their future ideals. At the end of these sessions, we ask them, "What is your purpose?" This question is asked to prompt participants to look inward and realize that their happiness lies in their purposes. Participants look objectively at the relationship between their own purposes and that of Resonac. What I tell them there is that Resonac is the vehicle by which they can achieve their own purposes, so I want them think of how they can use Resonac. I want our employees to be autonomous, not reliant on the company. The working styles and ways of thinking of the autonomous employees produced by these initiatives will affect many others within their workplaces.

In this way, through a series of stages, we have been developing autonomous, co-creative talent that embodies our Purpose and Values. We examine how established our Purpose and Values have become among employees through the engagement survey we conduct each year. The percentage of respondents indicating that they put our Purpose and Values into practice has increased significantly. I believe we are steadily approaching our goal of becoming a company that develops co-creative talent that represents Japan's manufacturing industry. P13 / Now! Fostering Resonac's Corporate Culture

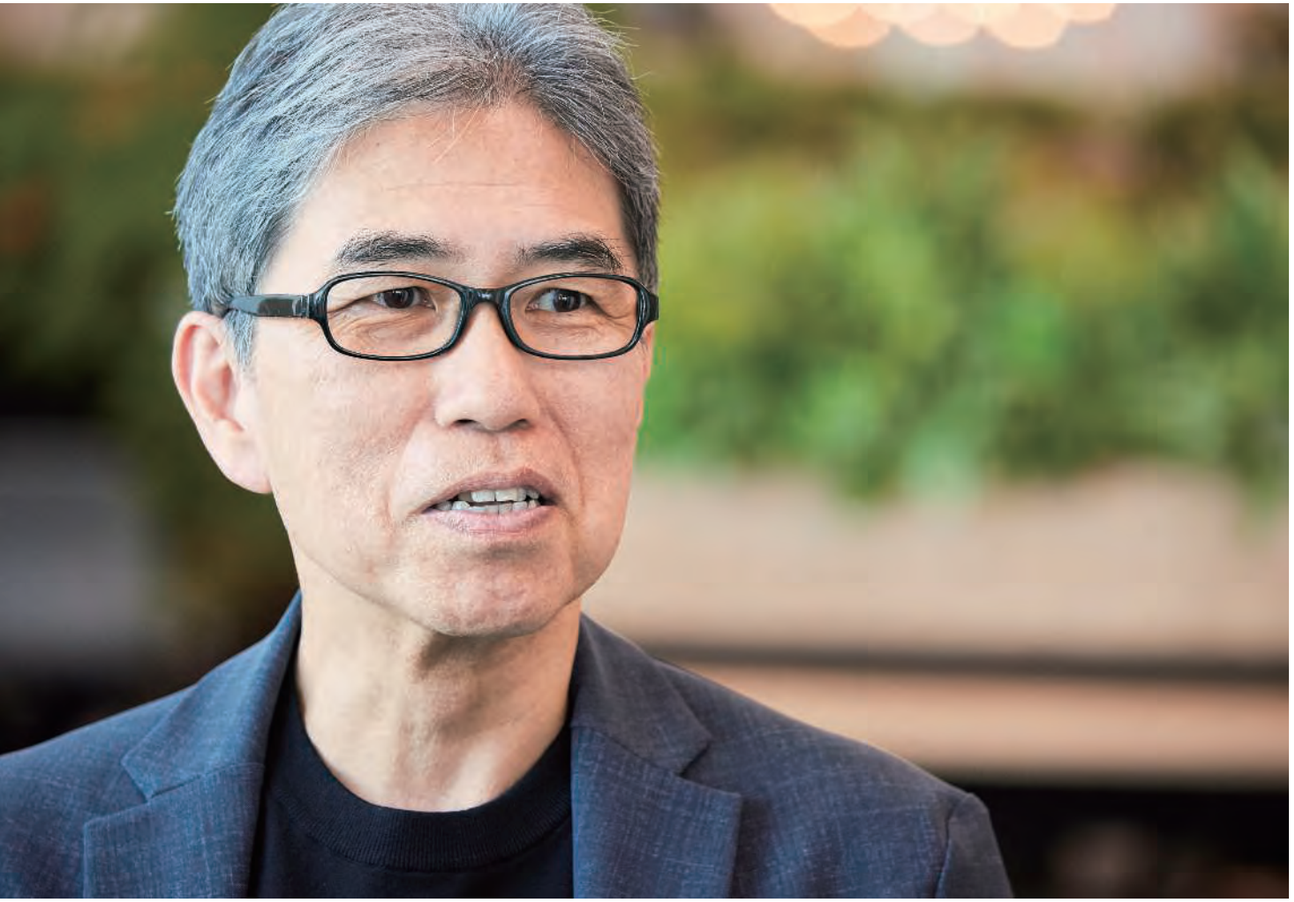
Accelerating co-creative innovation by reforming our corporate culture

With regard to the third element of corporate value, corporate culture, transforming corporate culture is an area that we have devoted special attention to, alongside people development.

No matter how we may try to promote our Purpose and Values, they will not become truly established if executives take the initiative. That is because when higher-ups change, movements come to a standstill. To institutionalize these changes, we must foster a corporate culture that spontaneously produces co-creative talent. Combining co-creative talent and cultural transformation will accelerate co-creative innovation.

For Resonac, producing synergy between Showa Denko and Hitachi Chemical is a vital challenge. For example, so far, the synergy we have produced has been limited to topical efforts, such as one site developing powder upon request from another site that manufactures semiconductor materials. We are trying to connect such synergies to produce comprehensive synergy. We are reallocating powder development scientist to sites that make materials. We are trying to produce a chemical reaction, but by mixing people, not chemicals.

The next issue will be where to place our center-of-excellence functions. We are planning to set up separate R&D sites for raw-materials and technologies such as powders, resins,



and monomers. This will take us beyond mere synergy to producing true co-creative innovation.

Furthermore, we are starting to see self-directed moves connecting marketing to development. For example, from the starting point of "what kinds of materials are necessary for 6G," we are thinking about the material properties that are needed for 6G applications and deciding which center of excellence would be the best choice for them. Such a trend is actually beginning to emerge.

There have also been some interesting movements by the Research Center for Computational Science and Informatics. The Research Center for Computational Science and Informatics brings together exceptional people. It uses computational science to perform, for example, 100 parallel simulations instead of 100 separate experiments, as would otherwise be necessary. It then selects the simulation with the most promising results. A single experiment using the most promising parameters suffices, instead of performing 100 different experiments. This can dramatically reduce development times. This is a true game changer. The Center's exceptional talents also takes the initiative, going to various worksites and asking if there are any simulations they would like carried out. The resources belonging to the Research Center for Computational Science and Informatics, which were originally used by former Showa Denko, have been reassigned to former Hitachi Chemical's semiconductor materials field, and that is where the Center currently focuses its support. I am really looking forward to seeing what kinds of results this approach will generate.

All kinds of business sites are proactively launching activities such as these, which embody our Purpose and Values. Taking concrete action also accelerates the transformation of our culture. However, I think of the transformation of our corporate culture as a decade-long project. That is why even after I step down as CEO, this transformation of our corporate culture must maintain a steady course. I am communicating closely with the Nomination Advisory Committee about selecting a successor who will carry on this Purpose and Value management, or perhaps extending my own term of office somewhat. This will be a long battle, but our people and our corporate culture are at the heart of our maximization of corporate value, so we will keep working on them, steadily and diligently.

Unswerving "Resolve and Conviction" Steadfast dedication to "Cause and Dignity" In my leadership, I strive to achieve both

As I have said countless times, a CEO's job is to maximize corporate value. As part of my efforts to do so, I have been working to raise our percentage of long-term shareholders. Twice each year, I visit long-only investors in Europe and the U.S. and urge them to invest in Resonac. I believe that one of the reasons that our stock price has been relatively solid is that we have increased the number of these long-term investors.

When long-only investors make investment decisions, they look at (1) whether or not they can trust top management's abilities, (2) whether the company is living up to its promises, and (3) the company's track record. Investors understand my commitment to maximizing corporate value, so it would appear that we have met criteria (1) and (2). Investors often ask me, "You are not going to quit, are you?" They believe in my resolve and conviction when it comes to maximizing corporate value, and I think that is what they are betting on.

That resolve and conviction are unswerving, but I also often talk about our need for unsullied cause and dignity to maximize corporate value. It is difficult to maintain resolve and conviction while also maintaining greater good and dignity. If all we were after was maximizing corporate value, the best choice might, for example, be to fully spin off our petrochemical business. But that is the approach of a capitalist, and I am a corporate manager. No matter what happens, I do not want us to abandon our cause and dignity.

With respect to the third point that long-only investors focus on, a company's track record, we are expecting to show solid numbers this year. I have started my third tour of our business sites around the world, talking directly to employees, and I can feel how the atmosphere at the sites has changed. I can see a difference in the expressions on the faces of employees at the sites. Seeing these changes, I am confident that we are building an even more solid track record. I assure you: you can look forward to seeing some great results in the future.

Lastly, let me speak a little about why I feel so confident about the future. It is because I have experienced the business transformation that is essential for maximizing corporate value, and I can conceptualize our goals. There are not that many corporate managers with a clear image of their goals.

My goal is a company in which we share the same values, working in an environment with just the right level of competition. One in which teams work together to achieve their goals. A company that feels wonderful to be a part of. A company that provides an overwhelming feeling of accomplishment. My goal is for every employee to experience this. The feeling of accomplishment I experienced while at GE* may responsible for my strength as a corporate manager. I think it would be wonderful if we could all experience forming teams to work toward our goals—if teams defined their own goals based on values shared by all of their members. Wouldn't that be a wonderful company? I am doing my utmost to make that a reality for Resonac.

*GE: GE Japan Holding Corporation

Now! Fostering Resonac's Corporate Culture

Purpose

Change society through the power of chemistry

Values

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

Change starts from our own actions.
Value ⇒ Action. That's the Resonac Way!

We are sometimes asked "Can the Purpose and Values really be inculcated?" The answer is "Yes." To Resonac, our Purpose and Values are not just for decoration. We use our values as the basis for our actions and from this year, we are reflecting them in our MBO. By taking action that is consistent with our values, these values are instilled in one's own value standards, and that awareness leads to a sense of Purpose. This is the Resonac way.

Our progress toward the inculcation of the Purpose and Values

Prior to the integration of former Showa Denko and the former Hitachi Chemical to form Resonac in 2023, we consolidated and effectively integrated our management structure in 2022, and established the Purpose and Values, our corporate philosophy.

Since the management integration, each employee has been implementing a variety of initiatives aimed at implementing our Purpose of "Change society through the power of chemistry" and our four Values.

Announced our corporate philosophy (Purpose and Values)

	2022	2023	2024	2030
① Promoting recognition and understanding Know and understand the Purpose and Values				Foster a rewarding corporate culture that offers a high degree of psychological safety, in which diverse personalities are respected and co-creation can occur
② Making them tangible and a personal concern Appreciate the Purpose and Values and autonomously implement them				Establish an organization in which co-creation culture is the corporate identity and where diverse human resources can thrive and generate innovation
③ Establishing a mechanism for the autonomous implementation Make action based on the Purpose and Values into a routine				**2025 targets**
Theme	Dissemination From understanding to empathy	Diversity and co-creation Implementation	Deeper dialogue Autonomy	
Policy	Dissemination from management Formulation and deployment of PV e.g., Roundtable	Interactive communication between management and employees e.g., Moyamoya Meeting	Learn about own origins and purpose Learn about own daily activities e.g., Purpose Exploration Café	
Change	Degree of empathy with P: 47% Degree of empathy with V: 51% Degree of P implementation: 24% Degree of V implementation: 25%	Degree of empathy with P: 63% Degree of empathy with V: 64% Degree of P implementation: 48% Degree of V implementation: 51%	PV implementation: higher than or equal to the previous year	Degree of empathy with P: 70% Degree of empathy with V: 75% Degree of P implementation: 55% Degree of V implementation: 60%

*P = Purpose, V = Values

P86 / List of Non-financial KPI Targets and Results

Specific measures for instilling Purpose and Values

1. Moyamoya Meeting – Creating an environment that facilitates psychological safety and implementation of values

Since 2023, the CEO and CHRO have been visiting business sites to hold Moyamoya Meetings where employees come together to discuss how to solve the concerns and frustrations that they face on a daily basis through our Values and co-creation. In these meetings, participants give advice to each other from the perspective of the Values, and propose practical solutions to these problems. Upper management and plant managers subsequently make decisions whether to adopt the solutions, then and there. The purpose of these meetings is to (1) ensure psychological safety so that they can openly speak their mind, and (2) encourage employees to take action based on the Values to solve problems.

Concerns / frustrations

- Concerned individuals carry out the Values themselves
- Other participants provide Value-based advice
- Decision-making based on Values by management and plant managers

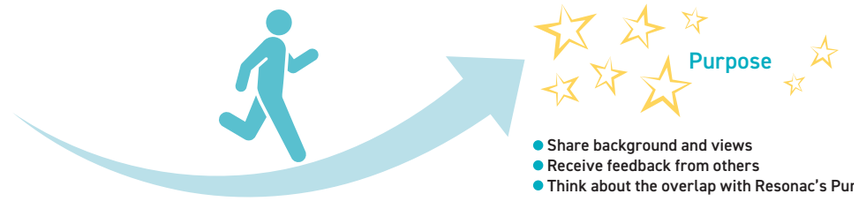
Action to resolve concerns

Example of changed behavior in employees through the Moyamoya Meeting itself	Employees participate in the Moyamoya Meeting and express their opinions and frustrations	Open communication with management Feeling that their concerns were addressed immediately	Plant volunteers started holding Moyamoya Meetings independently, enabling smoother communication within the organization
Example of changed behavior in employees from cases raised at the Moyamoya Meeting	Frustrations raised by employees Too many meetings, there are meetings one doesn't need to attend taking time away from other tasks	Management's response CEO Takahashi explained how to improve the efficiency of meetings and select participants through the employee website and other means	Changes in employee behavior Each employee was able to revise their own and subordinates' flow of routine work, including meetings

Demonstrating our Values!

2. Purpose Exploration Café – Exploring personal purpose and its connection to Resonac through dialogue

In 2023, we held Value-based discussions (in Moyamoya Meetings). In addition to this, in 2024 we have been holding "Purpose Exploration Café" in order to foster a sense of personal connection with our purpose, thereby facilitating autonomy among our employees. Participants delve more deeply into their true values by reflecting on their past and receiving feedback from others through dialogue. This helps them to gain an awareness of their own purpose as well as a deeper sense of purpose. The workshops also aim to provide an opportunity for employees to think about the overlap between Resonac's purpose and their own purpose, thereby encouraging them to take the first step toward achieving our purpose.



Specific measures for instilling Purpose and Values

3. Global Award AHA! – Promoting the implementation of Values

We are implementing AHA! (Awards of Harmony), a global award that all Resonac Group employees can submit preliminary entries to. Cross-organizational teams establish declarations of action based on our Purpose and Values, set targets and concrete initiatives, and submit entries themselves. Afterwards, during the team exchange event, screening, and the award ceremony for the winning teams, we aim to discuss our experiences of the Values practiced in the challenge and empathize with each other. This will serve as a valuable stimulus for further practicing these Values and fostering "co-creation" beyond the framework of the program. In fiscal 2023, 921 teams from 11 countries participated (totaling about 11,500 employees) in the AHA! award, sharing many experiences of implementation of values.

Point 01
Opportunities for personal growth

Point 02
A connection of equals

AHA! Meeting 2023

Screening events were carried out for the 921 participating teams, of which 13 teams were selected for Gold Awards, 36 for Silver Awards, and four for Progress Awards. The AHA! Meeting held in March brought together around 300 people, including the award-winning teams, executive officers, and other related parties to award the winning teams, praise them, and share their activities.

Entry (January to February) → Team exchange event (June to July) → First screening (September) → Final judging event (November) → AHA! Meeting (Next March)

Declaration

Gold Award winner (1)

We want to further inculcate the Values in Oita!

At the Oita Petrochemical Complex in the Olefins and Derivatives business, the team worked to improve awareness, understanding, and implementation of the Purpose and Values. Under the keywords of "Agile & Flexible" and "Open Minds & Open Connections," members from various departments of the Oita Petrochemical Complex gathered to plan and implement unique Value inculcation activities that had not been conducted at the complex before, such as broadcasting a video message from the complex representative, holding an exchange meeting attended by all departments, and creating a mascot character. The results of the post-implementation questionnaire showed that the awareness and understanding of the Purpose and Values had increased from approx. 50% to 80%.

AHA! evaluates initiatives with a focus on the process itself. The Progress Award recognizes efforts to pursue a high goal, even if these efforts failed to produce results at the time of assessment.

Declaration

Gold Award winner (2)

We want to co-create with customers and realize next-generation technology!

Resonac Korea's sales team received orders for CMP slurry for next-generation products by accelerating co-creation with customers. We need to listen to customers' needs for next-generation products and technological trends for front-end semiconductor materials, and incorporate them into the development of Resonac products. The team demonstrated the two Values of "Passionate & Results-Driven" and "Solid Vision & Solid Integrity" to listen to customer needs and also rapidly reflect them in product development. This is the result of communication activities with customers as well as the development team.

Positive evaluations from AHA! participants

2023	2024 target	2025 target
70%	Improved year on year	Improved year on year

P86 / Non-financial KPI Results and Targets

Engagement survey – Fixed-point observation of the penetration of Purpose and Values

Resonac regularly conducts engagement surveys focused on listening to employees' voices in a timely manner and utilizing them in management through various measures.

Following the engagement survey conducted before the integration of the two companies (2021), issues such as empathy with the corporate philosophy, ensuring psychological safety, and job satisfaction were raised. Therefore, we have implemented various measures to address these issues, including the following.

We listened to the voices of all employees through engagement surveys and implemented steady improvements. We also set KGIs and KPIs and carried out measures to achieve them.

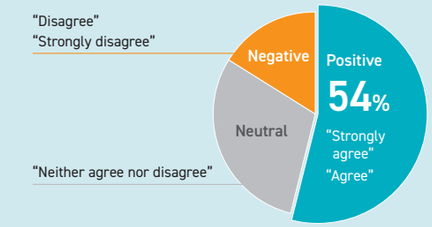
Examples of implemented measures

Town hall meeting / Roundtable	● The CEO and CHRO visit plants in person to discuss the Purpose and Values with employees. ● Carried out at 63 plants in 2023 ● The Moyamoya Meeting was also held at the same time
Training sessions to bolster the co-creative collaboration capabilities	● Training to promote behavioral changes in the necessary elements for co-creation, such as psychological safety, unconscious bias, and constructive discussion ● There were 1,172 participants in 2023 ● As a result of the training, the behavioral change rate rose from 23% in 2022 to 32% in 2023 ● For all managers
REBLUC	● A community where each member explores the kind of future they want to contribute to, their own will and sense of purpose, and then takes concrete actions to "change society through the power of chemistry" ● Members consist of volunteers ● There were 36 participants in 2023 ● 65% responded that employees who have participated in the initiative are creating a positive impact on the people around them

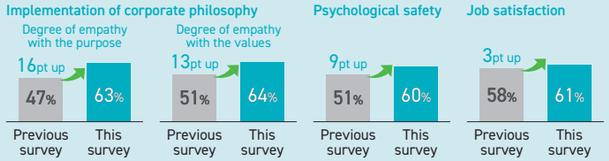
In the 2023 survey, the response rate improved from 63% to 83% compared to the 2021 survey, indicating a rise in employee interest toward the engagement survey. Furthermore, the positive response rate for psychological safety, which we are placing importance on, rose from 51% to 60%. On the other hand, the score for engagement itself remains at 50% level, the same level as the previous survey. Based on the results of our survey analysis, we have set the following four companywide priorities and plan to make continued efforts for improvement.

Regarding the inculcation of our corporate philosophy, which we consider important, degree of empathy for our purpose and our values increased significantly from 47% to 63%, and 51% to 64%, respectively. We will continue our efforts to improve the inculcation of our Purpose and Values.

Engagement score



Number of respondents
21,002
Target
25,452
Response rate
83%
(up 20pt from the previous survey)



*Previous survey: September 2021, This survey: implemented in July 2023
*Based on a comparison with 2022 figures, as our Purpose and Values were released in December 2021

Future actions

Feedback from employees is not reflected in management measures	Interactive communication between all employees
The flow of work processes with poor productivity	Promote business process reform as a company-wide activity
Inadequate career development support for employees	Provide more career information, support personal growth, create opportunities for dialogue
A foundation for greater engagement across the company and in the workplace	Ensuring psychological safety

#Team Takahashi

Committing to the leadership of Team Takahashi that has diverse talents fulfilling with their charactors, Resonac is promoting reformation that aims maximizing corporate value.

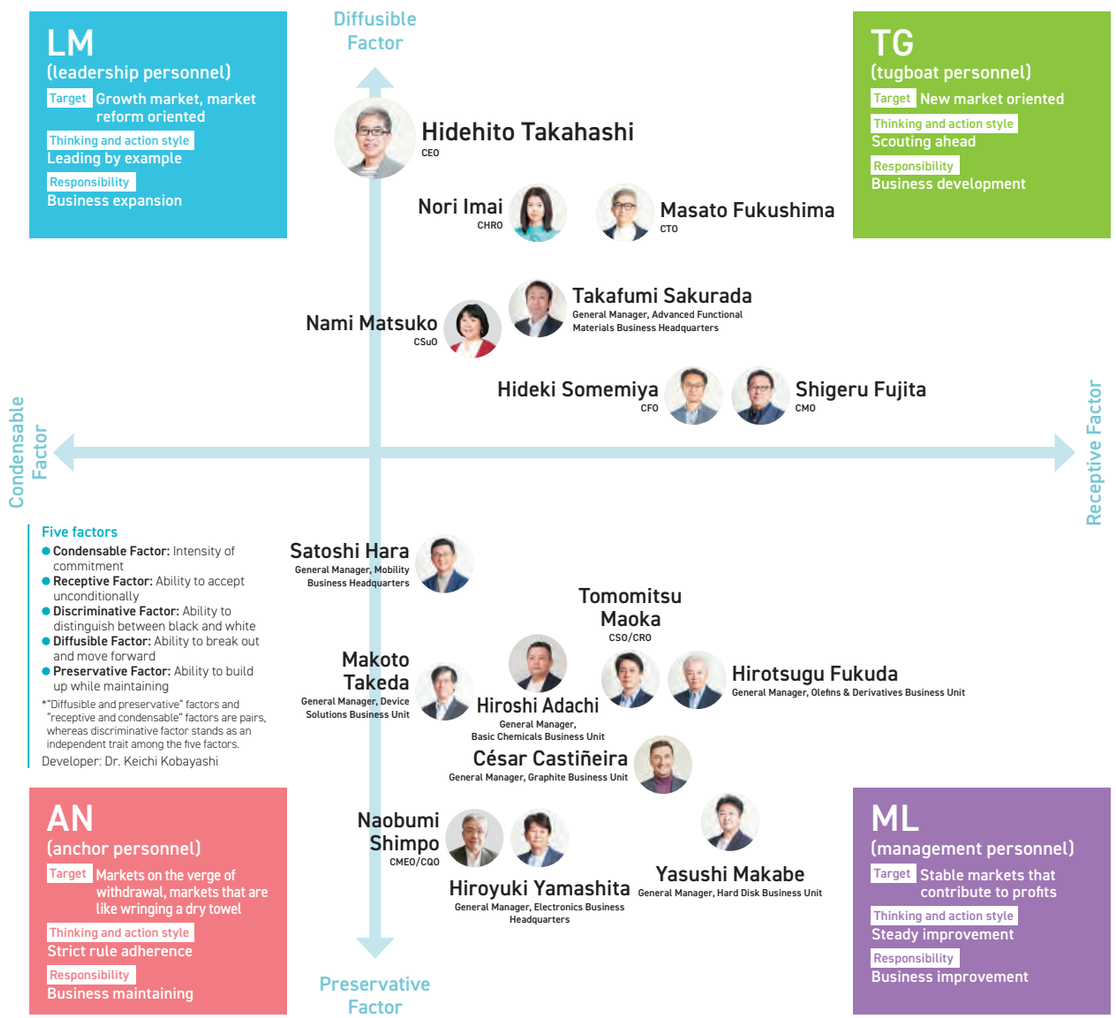
#Team Takahashi- Overhead View with FFS Theory

The Five Factors & Stress (FFS) theory was developed in the study of stress and personality. It quantifies human thought and behavioral characteristics in terms of five factors and stress values, and provides insight into whether an individual's latent strengths are being positively or negatively expressed.

Resonac uses FFS theory to deepen self-understanding and understanding of others, and promotes the creation of teams in which each individual is aware of their own role and are able to leverage their strengths while maintaining psychological safety. Resonac's management team, Team Takahashi, is structured in a manner truly suitable for a period of transformation. CEO Hidehito Takahashi leverages the characteristics of LM (leadership personnel) to lead everyone, while TG (tugboat personnel) is responsible for pioneering, and ML (management personnel) is in charge of improvements.

LM
(leadership personnel)
Target: Growth market, market reform oriented
Thinking and action style: Leading by example
Responsibility: Business expansion

TG
(tugboat personnel)
Target: New market oriented
Thinking and action style: Scouting ahead
Responsibility: Business development



Five factors
- **Condensable Factor:** Intensity of commitment
- **Receptive Factor:** Ability to accept unconditionally
- **Discriminative Factor:** Ability to distinguish between black and white
- **Diffusible Factor:** Ability to break out and move forward
- **Preservative Factor:** Ability to build up while maintaining

*"Diffusible and preservative" factors and "receptive and condensable" factors are pairs, whereas discriminative factor stands as an independent trait among the five factors.

Developer: Dr. Keichi Kobayashi

AN
(anchor personnel)
Target: Markets on the verge of withdrawal, markets that are like wringing a dry towel
Thinking and action style: Strict rule adherence
Responsibility: Business maintaining

ML
(management personnel)
Target: Stable markets that contribute to profits
Thinking and action style: Steady improvement
Responsibility: Business improvement

*As of July 1, 2024

#Team Takahashi: "This is the kind of leader I want to be"

LM **Hidehito Takahashi**
Chief Executive Officer (CEO)

I want to be a person who can ensure thorough psychological safety, and a presence that others want to support

TG **Hideki Somemiya**
Chief Financial Officer (CFO)

Passion-sharing type: I want to share a vision and enthusiasm, and ignite motivation.

ML **Tomomitsu Maoka**
Chief Strategy Officer (CSO)
Chief Risk Management Officer (CRO)

Play both defense and offense at will, while keeping a broad perspective and looking at the whole picture.

TG **Nori Imai**
Chief Human Resource Officer (CHRO)

Symphonic type: I want to change society with a team of diverse members who are connected by the same aspirations.

TG **Shigeru Fujita**
Chief Marketing Officer (CMO)

Captain type: I want to encourage free and open action among team members, deciding the course through the exchange of ideas.

TG **Nami Matsuko**
Chief Sustainability Officer (CSuO)

Shepherd type: I want to just let team members roam free and be by their side, but will let them enjoy being lost

ML **Naobumi Shimpo**
Chief Operations, Manufacturing and Engineering Officer (CMEO)
Chief Quality Officer (CQO)

"Frontline first": I want share concerns, stay close to the frontline, and always move forward.

TG **Masato Fukushima**
Chief Technology Officer (CTO)

Always listen to the concerns of team members, find solutions together, and ensure no one feels alone! (cheerful R&D environment where everyone is equal)

ML **Hiroyuki Yamashita**
General Manager, Electronics Business Headquarters

I aim to make quick decisions based on information sharing, with a constant awareness of balance.

ML **Yasushi Makabe**
General Manager, Hard Disk Business Unit

Not exactly the image of an ideal leader, but my motto is to cry together and laugh together.

ML **Makoto Takeda**
General Manager, Device Solutions Business Unit

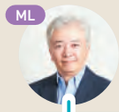
American Football head coach type: I believe in a unified team spirit and the skill of my "players."

ML **Satoshi Hara**
General Manager, Mobility Business Headquarters

I want to be a leader who can speed up tasks to achieve our long-term vision.

TG **Takafumi Sakurada**
General Manager, Advanced Functional Materials Business Headquarters

I want to be a leader who improves rules and work environments that enable everyone perform to their full potential.



ML **Hirotsugu Fukuda**
General Manager, Olefins & Derivatives Business Unit

I leave things up to team members first, elicit their opinions, and then work together to find the best solutions and direction.

ML **Hiroshi Adachi**
General Manager, Basic Chemicals Business Unit

I want to be a leader who can maximize team strength while leveraging individuality.

ML **César Castiñeira**
General Manager, Graphite Business Unit

I aspire to lead, influence, and finally transform others through example, integrity, humility, vision, and hard work.

Team building with FFS theory ~Case study of the CFO organization~

We have further expanded the area of utilization from management analysis and recommended active utilization at the organizational level since 2023. In the CFO organization, for example, workshops incorporating FFS theory were conducted during junior training to let participants personally experience differences in team discussion processes and outputs, and we received feedback such as "I understood the importance of diversity" and "It seems like our work environment will become more comfortable." There is a growing awareness that FFS is a more accessible and useful tool.

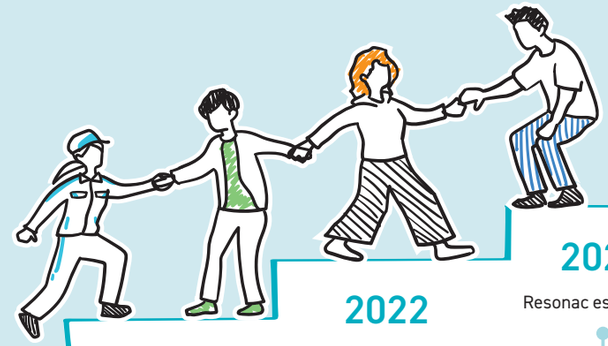
It is not about being good because one particular factor is high nor what type is superior, and we continue to promote the use of FFS theory to understand one's own and others' ways of thinking and actions and to build a strong team that can complement each other's personalities.

Workshop at the CFO organization

Overview of the Long-Term Vision

Showa Denko and Hitachi Chemical were integrated to form Resonac in 2023. We see this as our second founding, and with the stated goals of the long-term vision to transform into a world class functional chemical company from Japan by 2030, we are moving forward with our journey of value creation.

Based on the belief that sustainability is the cornerstone of its corporate strategy, Resonac has established financial and non-financial KPIs and targets linked to material issues for sustainability and its envisioned ideal state. It has established strategies for each business and function and is making progress on related initiatives.



We are here

2021
Long-term vision (2021–2030) begins

2022
Start of "Team Takahashi" management team

2023
Resonac established

2025
Establish a leading position and secure strong growth potential on a continuous basis as a materials manufacturer driving the high growth of cutting-edge semiconductors

2030
World-class functional chemical company from Japan

▶ Portfolio reform ▶ Focusing management resources on semiconductor materials business

Purpose

Change society through the power of chemistry

Material Issues for Sustainability

- Gain credibility through responsible business management
- Strengthen co-creativity & competitiveness and create social value through innovation and business
- Develop autonomous, creative, and active human resources and culture

Long-term vision Ideal state

Non-financial KPIs

- Company that can compete on the world stage — World-class competitiveness and profitability
- Company that contributes to a sustainable global society — Capability to create innovations and to develop new businesses
- Company that develops co-creative talent that represents Japan's manufacturing industry — Ability to train competitive talent with shared values

Financial KPIs

Key strategies

1. Establishment of a world-class revenue base
2. Improvement in Portfolio Management
3. Innovation (technology x business model)
4. Strengthening of management foundation (platform)

Financial and Non-financial KPIs

Results in 2023

Financial KPIs

Net sales	¥1.3 trillion
EBITDA margin	8.2%
ROIC	0.5%
Net D/E ratio	1.00

Scores of the survey on implementation of the Purpose and Values: Purpose: 48% Values: 51%

Greenhouse gas emissions (Scope 1 + Scope 2): 4,226 kt-CO_2

Serious occupational accidents: 0

Non-financial KGI / KPI targets that measure the progress of 15 components linked to material issues

P83 / Material Issues and Non-financial KPIs

Further focus!
Say & Do

- Active investment in semiconductor growth field
- Acceleration of co-creative innovation
- Cultural transformation and human resource development
- Improvement of the market environment and capitalization of opportunities
- Improvement of internal efficiency
- Portfolio optimization

Targets for 2025

Financial KPIs

Net sales	Over ¥1 trillion
EBITDA margin	20%
ROIC	10% over the medium to long term
Net D/E ratio	1.0X in a stable manner

Inculcation of Purpose and Values and cultivation of a co-creation culture

Greenhouse gas emissions (Scope 1 + Scope 2): 30% reduction from the level of 2013 (* 2030 target)

Serious occupational accidents: 0

Non-financial KGI / KPI targets that measure the progress of 15 components linked to material issues

P83 / Material Issues and Non-financial KPIs

Links to Resonac's Technology and Society — History

Please also read the "Company History" page on our website.

Here we introduce some examples of value provided through technology and products by the former Showa Denko and the former Hitachi Chemical, along with examples of co-creation born from technological synergy since the two companies merged in 2023.
As a "Co-creative Chemical Company," Resonac aims to continuously grow and improve corporate value going forward.

2023

Resonac established

RESONAC

Resonac experienced its second founding, as a functional chemical company that operates the semiconductor and electronic materials, mobility, innovation enabling materials, chemicals, and other businesses, and possesses a broad lineup of material and technology offerings spanning midstream and downstream areas.

Former Showa Denko

1930's
Worked to facilitate use of electricity as a material and foster domestic technology

Established Sobo Marine Products K.K. (later Nihon Iodine K.K.) to manufacture and sell iodine in 1908. Showa Fertilizers K.K. started production of ammonium sulfate (fertilizer) using domestic technology in 1931. Nihon Electrical Industries K.K. (former Nihon Iodine K.K.) succeeded in domestic production of aluminum and its industrialization in 1939. These two companies merged in 1939 to form Showa Denko K.K.

2003
Started chemical recycling that realizes decarbonization and resource recycling

Started the plastic chemical recycling business. Achieved 1 million cumulative tons of plastic recycled in 2022.

2006
Key device contributing to energy saving in all machines that run on electricity

Began contract manufacturing of SiC epitaxial wafers for power devices. Expanding their application in power supplies for data center servers, railcar and EV devices, etc.

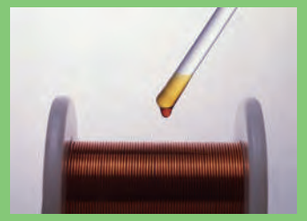
2017
Recycling steel resources with the world's highest level of electrode quality

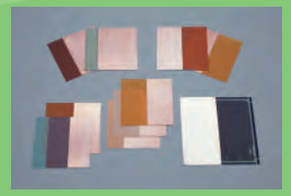
Acquired SGL GE, a graphite electrode supplier, with the aim of further global expansion.

Former Hitachi Chemical (Showa Denko Materials)

1912
Started research into insulating varnish essential for electronic goods aiming at domestic production

The company relied on imported insulating varnish for motors at the time, so it started research and succeeded in producing it domestically in 1914.





1955
Enabled mass production of electronic circuits, a key contributor to the popular-ization of commercial television.

MCL, copper clad laminates for printed circuit boards, contributed to the realization of mass production of electronic circuits using the same principles of printing.

1992
Contributed to higher density of semiconductors that raise the reliability of electronic devices

Started sale of reflow-resistance epoxy molding compounds, which prevent cracks in semiconductor molding compounds caused by heat.

1998
Achieving improved charging and energy efficiency of electronic devices and their miniaturization

Started mass production of anode materials for lithium-ion batteries that improves charging efficiency.

2001
Contributing to the future of mobility with weight reduction

Succeeded in manufacturing molded plastic rear door modules for the first time in Japan, using our resin molding technology cultivated over many years Contributed to improved efficiency and reduced CO_2 through lower weight, playing an important role in the advancement of CASE*1.

*1 CASE (Connected, Autonomous, Shared & Service, and Electric)

Co-creation Case Studies

Contributing to further miniaturization of circuits with development of photosensitive film

Through co-creation with the polymer synthesis technology of the Functional Chemicals Business Unit and the Photosensitive Materials Business Unit, a new photosensitive film was developed, enabling even finer and denser printed circuit board circuits.

Expanding the analytical column "Shodex" × "Gelpack" product lineup and strengthening its manufacturing system

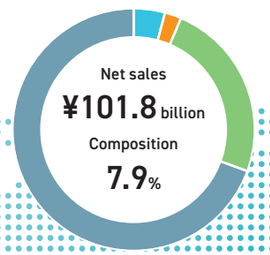
As a result of the merger, analytical columns sold by both the former Showa Denko and the former Hitachi Chemical have been added to Resonac's lineup since the merger, promoting co-creation leveraging the strength of both companies. Aims to improve analytical column perfor-mance by improving packing materials (material particles).

See the following pages for more case studies:
P39 / Co-creation Case Studies in Each Business
P68 / Co-creation Case Studies Using Computational Science

Global Business Composition / Financial and Non-financial Highlights

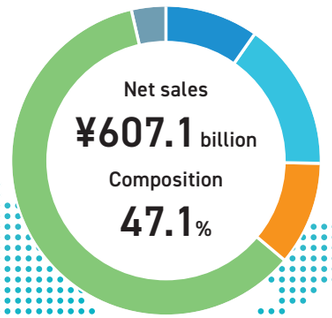
Europe

Number of employees 1,552
Number of companies 16



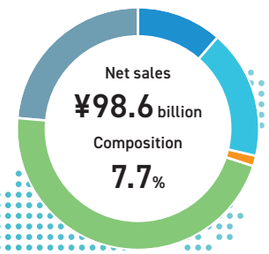
Japan

Number of employees 11,924
Number of companies 24



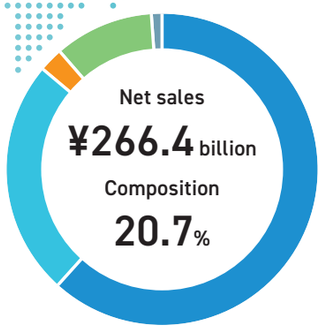
North America

Number of employees 1,229
Number of companies 8



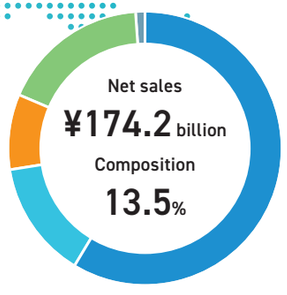
Asia

Number of employees 5,648
Number of companies 30



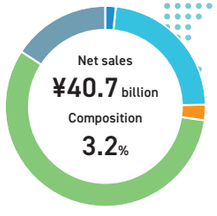
China

Number of employees 3,049
Number of companies 21



Other regions

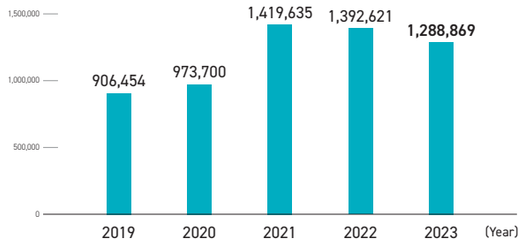
Number of employees 438
Number of companies 4



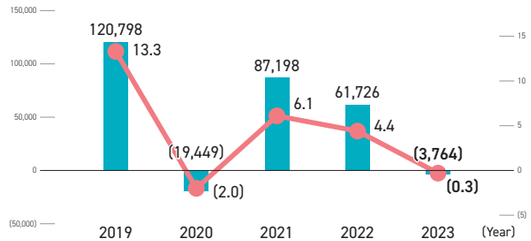
Semiconductor and Electronic Materials | Mobility | Innovation Enabling Materials | Chemicals | Others

Resonac made former Hitachi Chemical a consolidated subsidiary, and started on July 1, 2020 to incorporate Hitachi Chemical's sales figures and income/losses into its consolidated financial statements.

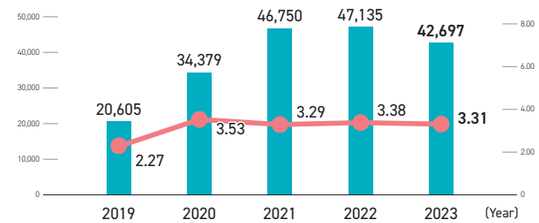
Net sales (Millions of yen)



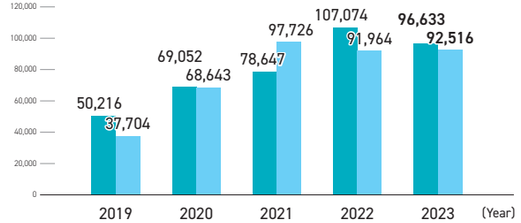
Operating income (Millions of yen)
Ratio of operating income (loss) to sales (%)



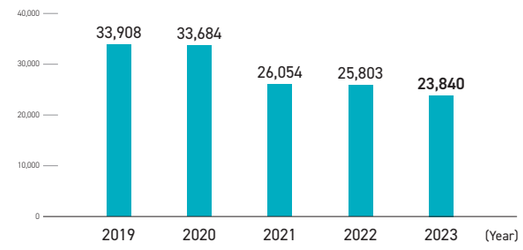
R&D expenditures (Millions of yen)
Ratio of R&D expenditures to sales (%)



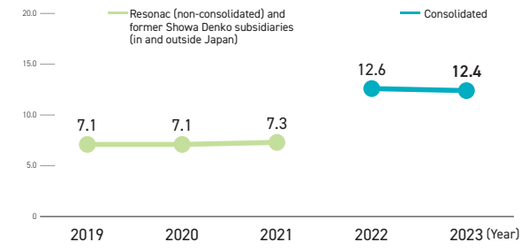
Capital expenditures (Millions of yen)
Depreciation and amortization (Millions of yen)



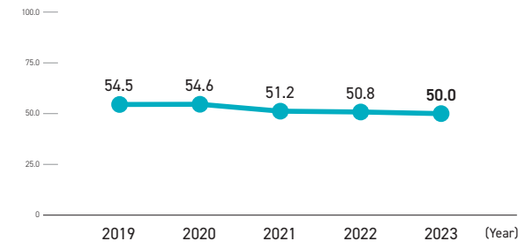
Number of employees (persons)



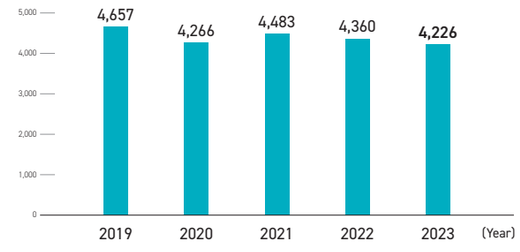
Ratio of female managers (%)



Ratio of employees working outside Japan (%)



Greenhouse gas emissions (Scope1+Scope2; kt-CO_2)



P131 / Consolidated 11-Year Summary

Overview of Resonac's Business

Please also read the "Products" page on our website.

Fiscal 2023

Business portfolio categories and investment policy		
	● Core Growth businesses	Growth investment appropriate for market expansion and sales expansion
	■ Fundamental Technologies ◉ Stable Earnings businesses	Investment within the scope of depreciation and amortization centering on investment for maintenance, BCP, and profit improvement
	★ Next-Generation businesses	Upfront investment to ensure sales potential in addition to market expansion

Semiconductor and Electronic Materials

Net sales **¥338.1 billion**

Operating income **¥(9.4 billion)**

Mobility

Net sales **¥216.1 billion**

Operating income **¥5.4 billion**

Innovation Enabling Materials

Net sales **¥93.0 billion**

Operating income **¥7.9 billion**

Chemicals

Net sales **¥516.3 billion**

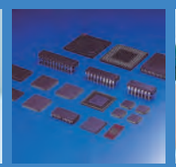
Operating income **¥7.7 billion**

Portfolio attributes

● Semiconductor Materials (front-end/back-end processes)
◉ Device Solutions (Hard disk media)
★ Device Solutions (SiC epitaxial wafers)

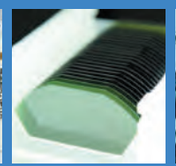
EBITDA margin (2025 target) **30% or more**

CMP slurry


Epoxy molding compounds

Copper clad laminates

High purity gases, etc.


SiC epitaxial wafers

Hard disk media

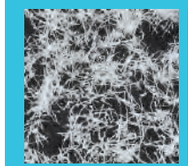
● Automotive Products
● Lithium-ion Battery Materials
■ Aluminum Specialty Components

EBITDA margin (2025 target) **20% or more**

Resin rear door modules

Powdered metal products

Disk brake pads


VGCF high-crystalline, high-purity carbon nanotube

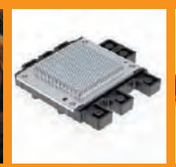
Anode materials for lithium-ion batteries

Aluminum radiators

■ Ceramics
■ Functional Chemicals (resins, etc.)
■ Coating Materials

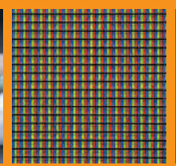
EBITDA margin (2025 target) **15% or more**

Electrical insulating varnishes


Pin fins

Coating materials

Titanium oxide for multilayer ceramic capacitors


Resins for color filters

Functional resins and monomers

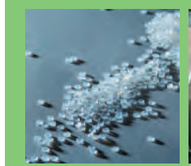
◉ Olefins and Derivatives
◉ Basic Chemicals
◉ Graphite Electrodes

EBITDA margin (2025 target) **15% or more**

Dry ice

Sodium hypochlorite

Ammonia


Polypropylene

Graphite electrodes

Biostimulant material KROPICO

Resonac's technologies and products are used in various aspects of our daily lives

Wind/solar power generation | Data centers | Wearable devices | Vehicles, EVs, mobility | Recycling (steel, plastics, etc.) | Fertilizer | PCs, smartphones | Plastic bottles, TVs | Steelworks, power generation plants | Cooling, tap water

Value Creation Process

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

Material issues	Source of value creation
Strengthen co-creativity & competitiveness and create social value through innovation and business	Material technologies, function engineering technologies, assessment technologies, and a wealth of expertise related to organic chemicals, inorganic chemicals, and aluminum **Results in 2023** Number of patent filings (in Japan) 671 Number of patent filings (outside Japan) 1,602 Percentage of patents related to SDGs 29.5%
Gain credibility through responsible business management	Base of long-term customers and trusting relations built through co-creation with a range of stakeholders **Results in 2023** Energy consumption (crude oil equivalent) 1,526,000 kl Environmental capital expenditures ¥11,225 million (As of March 2024)
Develop autonomous, creative, and active human resources and culture	Number of employees 23,840 (As of December 31, 2023) Total number of locations worldwide (Number of consolidated subsidiaries) 102 (As of December 2023)

Value creation model: "Co-creative Chemical Company"

Provision of customer value by identifying downstream customer needs and producing innovation through the adaptation of multiple technologies as made possible by possessing a broad lineup of material and technology offerings spanning midstream and downstream areas

Raw materials > Composite materials > Processing, molding, assembly > Evaluation, simulation > Dialogue < Market

Downstream access

Advanced materials partner for one-stop solutions

Chemistry to Synthesize
Midstream materials technologies to promote Fundamental Technologies/ Materials businesses that lead to various businesses

Chemistry to Formulate
Function design technologies to promote downstream application business

Evaluation technologies and Simulations Chemistry to Think

Identification of customer needs

Value provision

Market

Combination of broad-ranging technologies to create innovation

×

Develop corporate culture & human resources conducive to co-creation
Co-creation with stakeholders

Future we seek to realize through the power of chemistry

For example...

Harmony with the global environment

Plastic has made our lives richer and more convenient. While its easy-to-use nature makes it an ideal material for disposable products, most ends up in the sea. Our chemical recycling technology can break down marine plastic waste that poses a threat to the marine ecosystem to the molecular level, and convert it into recyclable resources of hydrogen and carbon dioxide gas.

P92 / Kawasaki Plastic Chemical Recycling Business

Happiness and prosperity of people

The advancement of semiconductors has enabled AI to reach a practical level, enriching our lives in many aspects including logistics, smart farming, demand forecasting, finance/insurance, office work, automated driving, shopping, and beauty. We seek to extend our effort to solutions to social issues including increased food production in response to environmental problems and food and water shortages, and the advancement of the medical field in response to the declining birthrate and aging population.

P33 / Roundtable Conversation "Earning Power"

Focus our investment on this segment

Semiconductor and Electronic Materials

Semiconductor materials | Hard disk media | SiC

Mobility

Automotive products | Lithium-ion battery materials | Aluminum specialty components

Innovation Enabling Materials

Functional chemicals | Resin materials | Coating | Ceramics

Chemicals

Olefins and Derivatives | Basic chemicals | Graphite electrodes

Ideal State (long-term vision)

World-class Functional Chemical Company

Company that can compete on the world stage
World-class competitiveness and profitability

Company that contributes to a sustainable global society
Capability to create innovations and to develop new businesses

Company that develops co-creative talent that represents Japan's manufacturing industry
Ability to train competitive talent with co-creation values

2030 targets

TSR: Aim to rank among the chemicals industry's top **25%** over the medium to long term

Achieving Sustainability Vision

Values: Passionate & Results-Driven | Agile & Flexible | Open Minds & Open Connections | Solid Vision & Solid Integrity

Foundation: Safety | Compliance

Co-creation with Stakeholders

In order to realize our Purpose and create and provide new value to society, Resonac is committed to co-creation with our employees, customers, shareholders and investors, local communities and governments, business partners, and the next generation and students. By implementing activities from an inclusive perspective and reflecting constructive dialogue in management, we aim to achieve further growth as a Co-creative Chemical Company.

We held Sustainability Meeting, where Team Takahashi talked passionately about the Company as it is now.

We create forums for dialogue on human capital management, evolving our governance, and other topics, through which we openly deliver the current state of our Company, both the good and the bad. This meeting also facilitates dialogue with investors.

P.58 / Communication with Shareholders and Investors

Investor dialogue by the management
60 (2023)

See here for details on Sustainability Meeting

Feedback from suppliers is re ected in sustainable procurement measures

We conduct questionnaire surveys of the roughly 450 suppliers we do business with each year, and engage in dialogue based on the results. The survey results and supplier feedback are also reported to the management and reflected in procurement measures.

P.105 / Sustainable Procurement

Promoting projects through various forms of co-creation with local communities and collaboration with the government

See P.89 for co-creation initiative in Omachi City, Nagano Prefecture

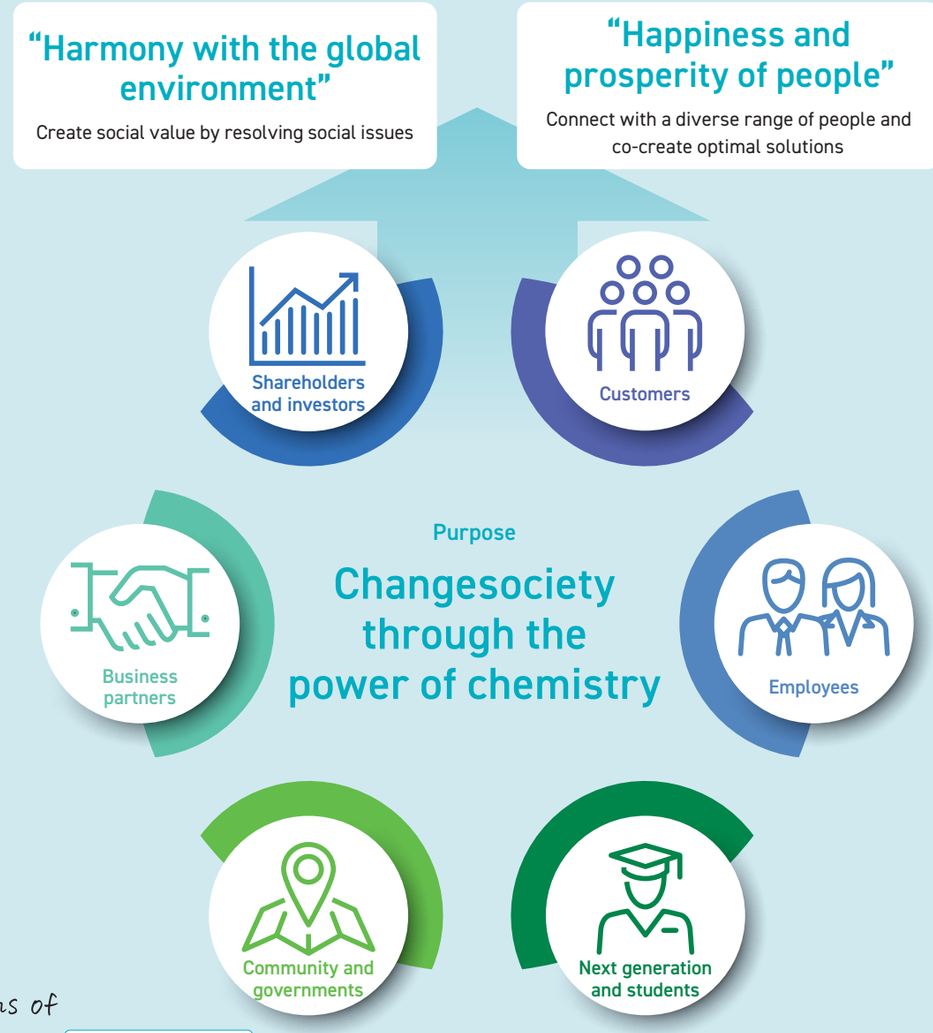
Implementation of awareness activities for plastic chemical recycling (KPR)

In cooperation with the elementary schools attended by the children of our employees, we implemented activities in which we transported plastic waste collected at the schools to the Kawasaki Plant for recycling as part of our SDGs activities. We communicate the importance of a circular economy to these children.

Participation in the Ministry of the Environment's "Decarbonization × Reconstruction Town Development Platform"

In the 12 municipalities of Fukushima Prefecture affected by the Great East Japan Earthquake, we are participating in a long-term partnership aimed at achieving both decarbonization and reconstruction. We have three production and logistics bases in Fukushima Prefecture. As such, we will continue to contribute to the reconstruction of disaster-stricken areas, such as by participating in the exchange of information and the establishment of networks to realize the decarbonization and reconstruction of these communities, as well as participating in individual themes that we can contribute to.

WEB Click here for more information on our participation in the Ministry of the Environment's Decarbonization × Reconstruction Town Development Platform (in Japanese only)



Creating innovation in the semiconductor industry through co-creation with customers and business partners

Leading JOINT2, a consortium aimed at developing next-generation semiconductor packaging technology

JOINT2 was launched by 12 participating companies in 2021 with the aim of developing next-generation semiconductor packaging and evaluation technologies through collaboration with other companies. The combination of the member companies' materials and equipment will allow materials and equipment to be evaluated under conditions similar to the semiconductor evaluation tests conducted by customers, thereby helping to shorten development times.

P.39 / Front-end / Back-end Semiconductor Materials

See P.15 for the detail of Global award "AHA!"

Employee autonomy projects that embody our Values are underway

REBLUC (Resonac Blue Creators)

REBLUC is a purpose-driven thinking community that was started to elicit mutual understanding, where the passions and sense of purpose of each and every employee overlap. From April 2024, we also started joint research with JAXA on a cosmic materials project started by REBLUC.

P.67 for details on joint research with JAXA

Number of participants
66

Resonac Pride Award

In 2023, we launched a system to honor employees and teams that embody our Purpose and Values through their involvement in social contribution, cultural, sporting, and other activities, both within and outside the company. We have received nominations for various activities carried out in Japan and overseas.

Number of entries
115

Reflecting feedback from the next generation and students in our sustainability initiatives

Creating new value through joint research and development with students of the Tokyo Institute of Technology

Students at the Tokyo Institute of Technology and our engineers are conducting joint research into fields such as new materials for semiconductors. With computational science utilizing AI and other technologies becoming increasingly important in improving the efficiency of material development, we will work to create new value through close communication with students.

Studying our integrated reports at university seminars as a form of industry-academia collaboration education

We held seminars studying our integrated reports at Hitotsubashi University, Meiji University, and Tokyo Metropolitan University. In addition to promoting an understanding of Resonac's views, reality and our value creation process, the feedback obtained from Gen Z students is reflected in our sustainability initiatives and disclosure.

02 Our Goals and Challenges

We delve into the themes of business, technology and people, and sustainability from the perspective of generating profits.

33 —— Roundtable Conversation "Earning Power"
39 —— Business Strategies Semiconductor and Electronic Materials (Front-end / Back-end Semiconductor Materials / Hard disk media / SiC epitaxial wafers)
45 —— Mobility
47 —— Innovation Enabling Materials
49 —— Chemicals segments (Olefins and Derivatives / Basic Chemicals / Graphite electrodes)
55 —— Financial and Capital Strategies

02-1 Earning Power

Resonac's Earning Power: Roadmap to the Maximization

— "Steering & Focusing" toward Semiconductor Materials Business

Resonac has chosen to advance its portfolio reform and steer toward semiconductor materials business. General Manager of Electronics Business Headquarters, CFO, and CSO/CRO share their views from their respective positions and roles, on why this move is necessary, the revenue generation strategy, and perceived risks as well as their determination to overcome those risks.

Focusing on Semiconductor Materials and Portfolio Reform

Somemiya: First off, I would like to talk about portfolio reform with respect to creating overall "earning power." We are resolute in our desire to really focus our efforts on our core growth business of semiconductor materials. I believe that the progress we have made on our portfolio reform over the last two and a half years since 2022, when our companies effectively merged, demonstrates this resolve. We have steered away from the old management approach by the former Showa Denko, where the role and purpose of each business was unclear. We have categorized our business portfolio, based on business attributes, into the four categories of Core Growth, Stable Earnings, Fundamental Technologies/Materials, and Next-Generation businesses, clearly defining roles and requirements for each. There have been many changes in our business environment in the intervening time, but we have speedily carried out structural reforms and implemented measures to ensure that each business can perform its part.

P55 / Financial and Capital Strategies

Maoka: Based on our portfolio management strategy, we have performed business divestitures where appropriate. Over the past two and a half years, we have sold off a total of nine businesses, but when you take into account the market environment and internal factors, I don't think it would really be fair to say that we have handled all the essential projects at a drastic speed. There are still a lot of things left for us to take care of. For example, we are yet to complete our petrochemical business reorganization or our deliberations regarding strategic options for Life Science business.

Portfolio management policy

Somemiya: I think it is also important to look at Resonac's portfolio reforms and the value of its portfolio itself in terms

of how they are evaluated by the capital market. Since fiscal 2022, we have clearly defined our Semiconductor and Electronic Materials Segment, one of our segments for disclosure, and we have reorganized our disclosure segments so that we can share our equity story even more clearly. The combination of the product and technology innovations of your Business Headquarters led by you, Mr. Yamashita, your media strategies, Mr. Maoka, and the appeals that the IR team and I are making to investors are finally starting to create a greater recognition that Resonac is not simply a chemical manufacturer or a graphite electrode company, but a company that makes semiconductor materials, primarily for back-end processes. It seems that our portfolio reforms are beginning to be accepted by those outside the company.

P58 / Communication with Shareholders and Investors

Mr. Maoka mentioned that there are things we still have to take care of. One of those is a partial spin-off of our petrochemical business, which we have decided to begin exploring this year. Our goal is to promote accurate market evaluations of our semiconductor materials and our petrochemical businesses, each of which has its own distinct business characteristics. Although we recognize the need to assign some resources to making these business portfolio reforms, we will assign resources to the strategic development of our semiconductor materials business at the earliest possible time.

P05 / Message from the CEO

Maoka: I think it is safe to say that we have managed to establish a much stronger image of Resonac as a semiconductor materials manufacturer than we had in the past. At the same time, I don't think we have reached the same level of recognition as major semiconductor equipment manufactures for example. We are still on our way to becoming a company whose name immediately gives away where we are from and what we do. That is where we truly need to be, and I think it will also help reduce conglomerate discounting.

Yamashita: There is a great deal of interest in semiconductor materials, and technological progress is rapid. It is not easy for one company alone to continuously meet the needs of society and customers. From the perspective of actively creating a collaborative consortium and leading the industry, I feel the importance of clearly communicating with stakeholders, as you two discussed.

Maoka: So, reflecting again on why we have gone with semiconductors, I think it is because our Purpose is to "change society through the power of chemistry," and with Resonac's technology, the power of chemistry, as our core, we are capable of generating profits by applying that to semiconductor applications. Doing so requires outlets other than just semiconductor materials, fundamental technologies, and shared infrastructure such as the Research Center for Computational Science and Informatics.

Yamashita: Semiconductors are said to be the staple of the industry, and there will be demand not only from AI, which is currently very strong, but also from various industries such as IoT, medical care, and autonomous driving. We cannot go wrong betting on semiconductor materials for the time being. Generally, the semiconductor market is said to have a CAGR of 6 to 7%. I believe that we already have a product lineup and position that will produce growth that surpasses that.

Maoka: Unlike the equipment and device industry which has many big players, the semiconductor materials industry is spread out between many small companies. Among those, we are the first to go out and try to really expand our scale, and I think we can lead the restructuring of the industry.

Co-creation: Semiconductor Materials Business Strategies for Achieving Sustained Success

Yamashita: I would now like to delve a little deeper into the "earning power" of the semiconductor materials business. I think an absolutely vital part of our strategy will be to achieve sustained success with advanced semiconductor materials. To realize an EBITDA margin of 30% or more in 2025, we need to manufacture products with high added value. Every product eventually becomes a commodity, so what I think will be truly important is how to build a development structure that can keep producing new products. Specifically, I think we need to speedily identify the needs of society and our customers, reflect those in our development, and bring high quality products to market faster than any other company.

Maoka: In terms of customer needs, I feel like there is a voracious appetite for AI, a technology that will change the world. Hardware capabilities are not keeping up with the growing capabilities of software. Hardware is not satisfying the needs of those wishing to roll out AI services—neither in terms of volume or quality. GAFAM, so-called hyperscalers, are moving to create their own hardware, such as their own GPUs and CPUs. The industry's tides are changing.

Yamashita: In that sense, I see new technological processes being shaped, starting in the U.S. I think our strategy of setting up a Packaging Solution Center (PSC) in Silicon Valley following the setup in Kawasaki City and launching the US-JOINT consortium, enables us to rapidly identify our customers' needs. Through the JOINT2 consortium at the PSC (Kawasaki City) that we are already leading as well as the TIE and SATAS consortia that we have decided to join, we will co-create with other companies, achieving what would have been difficult if not impossible on our own. With respect to competition on the information front, we believe that these initiatives will prove advantageous to us, as we will receive an overwhelming amount of information from our customers and our co-creation partners.

P40 / Participation in TIE, the Cutting-edge Semiconductor Consortium, and Establishment of US-JOINT

Maoka: Our co-creation activities through PSC and JOINT2 can also be seen as proactive efforts for making us the de facto choice. Being the first choice is important, due to switching costs. Through our consortium activities, I want to go from a situation in which each company is making their own separate specifications to one in which they can feel confident knowing that they will be able to meet market demands by using our materials.

Yamashita: We also expect to see an increase in the volume of material demanded by customers. Substrates will become larger as manufacturers shift to making chiplets. This will result in an increase in the surface area of copper clad laminate boards. Due to the issue of substrate warping, substrates will also become thicker. The more layers used in 3D-NANDs, the more CMP slurry will be used. As the number of HBM chip layers rises, the amount of NCF that is used will also rise. In this way, the amount of our material that is used will grow faster than the amount of chips that are produced.

This means that, in addition to development, it will also be important to prepare a supply system that can meet growing customer demand. Customers are expressing concerns about the ability for supply to keep up with the dramatic rise in demand for AI-related products. That is why we think it is vital that we take the lead in increasing our production capacity. Specifically, we are considering increasing our production capabilities for NCF and TIM (thermal conductive sheets), materials used in AI-related devices, which have recently been seeing tremendous growth.

At the same time, we also believe it is important to hire and train human resources to handle this development and production. Major semiconductor manufacturers are setting up research and development sites in Japan, so we need to take steps to recruit new personnel while preventing the loss of our personnel at the same time. By leveraging the locations of our Stage for Co-creation (Yokohama) and our Packaging Solution Center (Kawasaki), two of our research and development sites, and widely showcasing the results of their R&D activities, we will recruit diverse personnel and focus on developing them.

Maoka: I think that is a key point. Device manufacturers are headhunting personnel from material manufacturers like ourselves and from equipment manufacturers. This is not just happening in Japan, but across the world. We need to redefine who we are competing against in recruiting personnel, and we need to develop personnel retention measures.

P111 / Companywide Key Risks Themes

Somemiya: Now that Resonac is finally gaining recognition as a semiconductor brand, I think another urgent issue is to establish a stock-based compensation system in line with Mr. Yamashita's strategy.

Yamashita: The semiconductor industry used to consist of device manufacturers at the top, equipment manufacturers underneath, and then material manufacturers, right at the bottom. This structure may have been the result of the fact that the materials used in back-end processes had little impact on the performance of semiconductors in the past. However, technological innovations in back-end processes are now making major contributions to improving semiconductor performance.

Maoka: There is now this desire to spur innovation in semiconductor back-end processes, but there are many problems that cannot really be addressed using the conventional approach of achieving front-end process innovation through devices. Packages themselves have become extremely small, so multiple problems, such as heat, vibration, and electrical properties, must be tackled together. There are high hopes that materials will be able to address all of these problems at once. We see this as an opportunity for material manufacturers, such as Resonac, to gain a greater presence.

Somemiya: We supply a diverse lineup of back-end process materials, and it is becoming clear that we are increasingly being recognized as a leader in the back-end process area, including the JOINT2 consortium. The US-JOINT consortium you discussed earlier, Mr. Yamashita, are being supported and joined by numerous companies, including TOK*1 and Namics*2. By having Resonac present a future roadmap for package designs through PSC and JOINT initiatives, material manufacturers, including Resonac, will be able to add further value proportionate not only to the volume and the number of products they supply, but also to the technology they use. I believe that over the coming decade, material manufacturers will create a new era in which they can provide even greater added value.

I believe we should take the reins in the back-end process-focused technological innovation that is currently in progress. To do that, we need to keep an eye on overall trends, taking a bird's eye view of the industry as a whole, in addition to the areas focused on by those in the field. We recognize that there are some "missing pieces" with respect to materials, and we need to think about how to fill in those missing pieces if we are to aim to achieve a fairly large market share. We must also anticipate the introduction of new technologies that could present a threat to us and think about future approaches that are not just extensions of our current approach.

*1 TOKYO OHKA KOGYO CO., LTD.
*2 NAMICS Corporation

Recognizing and Dealing with Risks

Maoka: Turning to geopolitical risks, there has been a recent trend of building domestic semiconductor plants, and I would like for us to take a measured and careful look at whether this would be effective for achieving economic security when taking entire supply chains into consideration. We then need to think about what measures Resonac should implement. There is an especially high likelihood of U.S. and Chinese supply chains becoming decoupled. This is probably not a matter of simply building plants in the U.S. This will require careful handling, with thorough consideration for the cost of business operation.

Yamashita: We need to determine how much these risks will manifest themselves. Various customers are stepping up their requests regarding supply chains, such as their demands for BCP measures. The effects of this U.S.-China decoupling are emerging, and we are engaging in scenario planning in preparation for unexpected situations. That said, if these scenarios occur, I think it will also test the abilities of those in the field to take action based on the current circumstances.

Somemiya: The topic of geopolitical risk comes up in dialogues with investors, too. There are also often questions about volatility in the semiconductor cycle. When market conditions are deteriorating, we need to minimize the damage it causes to us. When market conditions are improving, we need to follow the market on that upward trajectory. So we need to further strengthen our resilient structure.

Yamashita: That is why we are working on ensuring that our sales force identifies what is happening on the customer side in a timely fashion, considers multiple scenarios based on minor changes in ordering information, and shares the results with production sites without delay. There is only so much you can do to curb volatility on your own. We are working to improve manufacturing SCM, including how much we can reduce production lead times and how we should devise ways to maintain inventory.

I think that we also need to review and revise our contracts with customers. We need to change the dynamic which has been so common until now in which material manufacturers are responsible for absorbing all the damage caused by the deterioration of the semiconductor production cycle.

Maoka: On the other hand, there is an aspect of a business cycle that arises because it is a growth industry, and when market participants simultaneously hold inventories to take advantage of growth opportunities, it can lead to a recession all at once. A recent example is when the semiconductor industry suffered a tremendous slump from 2022 to 2023 due to factors such as the data center bubble. In the past, semiconductors were almost exclusively for computers and home appliances, but now they are used in smartphones, servers, IoT devices, and more. The range of applications for semiconductors has grown, so I think that the industry will move away from the extreme changes we have seen with the silicon cycle, instead gradually stabilizing.

Yamashita: Lastly, regarding sustainability, demands from important customers for carbon neutrality (CN, hereinafter) have been rapidly increasing and intensifying, making it an unavoidable issue. For example, when our customers apply for SBTi, they require their suppliers including Resonac to reduce GHG emission to meet SBTi request. By acknowledging our customers' commitment and viewing CN investments as growth investments, I feel that the time when such investments will lead to business continuity and expansion is surprisingly close.

This will also strengthen our presence in the industry, and we need to keep this in mind as we carry out initiatives as one of the founding members of SEMI's Semiconductor Climate Consortium. We also carry out initiatives we are uniquely positioned to conduct, including deliberations regarding resource circulation by using our proprietary chemical recycling technologies to convert waste from our production processes into hydrogen and carbon dioxide resources. We will share information about these efforts with society as appropriate.

P95 / Climate Change Strategies

WEB Participation in Semiconductor Climate Consortium (SCC)

WEB Resonac Starts to Consider Recycling Plastic Waste Emitted from Semiconductor Manufacturing Process and Reusing It as Gases for Semiconductor Manufacturing

Somemiya: The capital market also has high expectations for carbon neutrality investment, so we can't afford to hesitate. We need to work hard to leverage subsidies and sustainable finance. We will consider every method that is open to us, while also taking into consideration balancing carbon neutrality investment with our core business.

Maoka: In the semiconductor industry, carbon neutrality business opportunities and risks have been a hot topic as sustainability issues. In addition to that, there has been a lot of global discussion about the risks presented by the forthcoming PFAS regulations. There is quite a gap between Japan and other countries in the level of focus being paid to this issue, so one task that will need to be addressed is how to reduce this gap.

P87 / Cross-talk Between the CSuO and On-site Staff in Charge

Yamashita: It is true that, in terms of overall investment, we have been focusing heavily on the semiconductor materials field. While we were unable to generate cash in 2023, we are fully aware of the high expectations placed on us, and we are committed to fulfilling our accountability by ensuring that this business generates tangible results. I feel strongly that I must ask the members of the Electronics Business what we should do essentially without being complacent.

Business Strategies

Semiconductor and Electronic Materials

Front-end / Back-end Semiconductor Materials

Please visit our website for information on our key contributions to social issues through our business.

Through our strengths, which include a wide range of products and co-creation with industry peers, we are able to quickly catch up with changes in the industry to create high-value-added products that meet customer needs. This contributes to continuous business expansion, which drives Resonac's growth into a world-class functional chemical company.

Hiroyuki Yamashita
General Manager, Electronics Business Headquarters

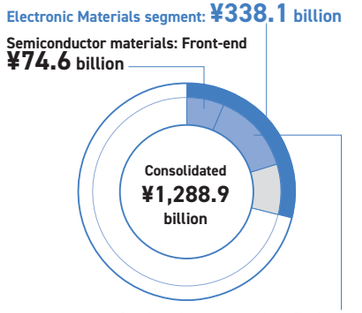
Vision for the future (2030)	Supply advanced semiconductor materials to support the advancement of the digital society, such as the rapidly growing AI demand, and realize a sustainable society by contributing to energy conservation and reducing environmental impacts

Issues to Be Addressed

- **Driving the industry and become a leader in co-creation as the No. 1 manufacturer of back-end semiconductor materials**
  It has become apparent that there is a limit to the increase in density of integrated circuits (IC) in front-end process. As such, in recent years, attention has been turning to moves aiming for higher integration through the evolution of back-end technologies, such as chiplets and 3D mounting. This is also an opportunity for us as the No. 1 global supplier of back-end materials. We will thus strive to drive the semiconductor materials industry as a leader in co-creation.
- **Strengthening product capabilities centered on advanced semiconductor materials**
  New materials are being developed and adopted amid expectations for packages for next-generation semiconductors, including AI semiconductors, to witness dramatic growth. The adoption of our back-end products is also on the rise, and we aim to gain an overwhelming position in next-generation semiconductors by strengthening our product capabilities.
- **Building a robust supply chain management system immune to geopolitical risks**
  Various countries are rolling out initiatives and regulations to secure semiconductors and establish supply chains from the standpoint of economic security. Amid geopolitical risks such as soaring raw material, energy, and logistics costs and supply chain disruptions, we are working to further strengthen our supply chain management system.

Fiscal 2023 Net Sales

Net sales for Semiconductor and Electronic Materials segment: ¥338.1 billion



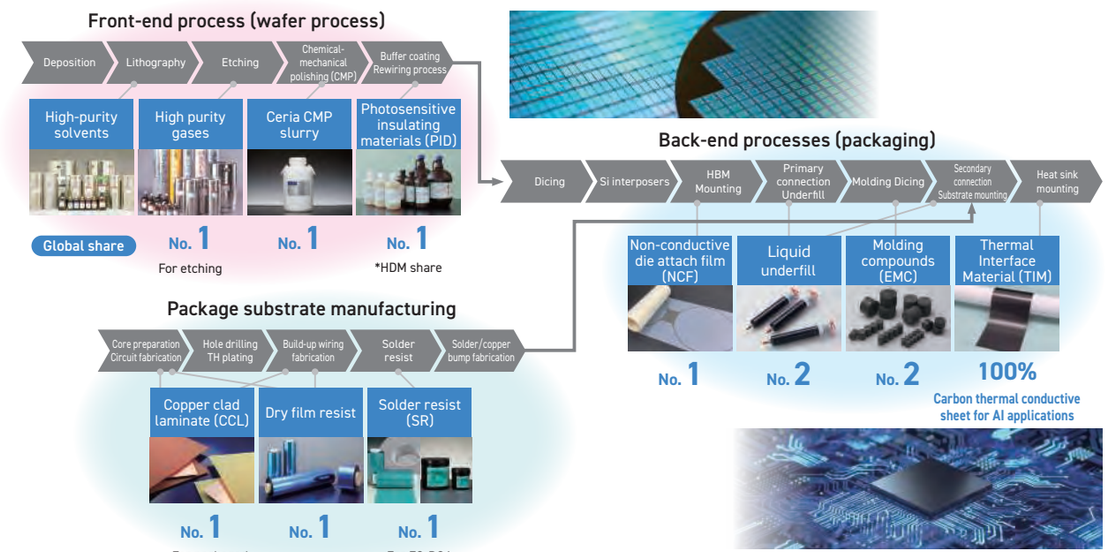
P27 / Overview of Resonac's Business

Results in 2023	Plans for 2024
● Net sales and income decreased year-on-year due to continued weakness in the semiconductor market from the second half of 2022 ● Adopted by the Ministry of Economy, Trade and Industry's "Project to Support the Advancement of Supply Chains using Digital Technology" ● Participated in the Texas Institute for Electronics (TIE), a U.S.-based consortium for semiconductor innovation ● Completed the introduction of our domestic SCM reinforcement system for major products ● Started preparations for the establishment of an R&D base in Silicon Valley, U.S.,a hub for prominent semiconductor manufacturers	● Strengthen the revenue base by revamping our product portfolio and working for speedy fruition of our investment efforts to increase production ● Decide on investments to increase domestic production of new materials such as NCF insulating adhesive films for HBM and TIM heat dissipation sheets for 2.xD packages ● Implement specific measures against climate change and geopolitical risks ● Strengthen and implement our global R&D and key account strategies, and marketing capabilities ● Place further focus on fostering our organizational culture and developing human resources through workplace environment development and workshops, etc. ● Introduction of global supply chain management enhancement system

Resonac's Strengths

- Because we have a lineup of products that cover a wide range of materials from front-end to back-end semiconductor materials and we own several products that command the top market share, we can anticipate growth exceeding the increase in the number of chips as the number of components used rises with the higher integration of semiconductors
- With data volume increasing as demand for semiconductors for AI rises, the semiconductor design process is becoming even more sophisticated and complex. Against this backdrop, our strong ability to propose back-end materials enables us to respond flexibly to customer requirements
- Japan and the U.S. lead JOINT, a consortium of material, equipment, and substrate manufacturers aimed at establishing next-generation semiconductor packaging and evaluation technologies. We use our expansive network to quickly grasp changes and create high-value-added products that meet the needs of our customers

Resonac products for semiconductor manufacturing processes



*The above share figures for products are based on Resonac's estimates.
*HDM: HD Microsystems, a joint venture between Resonac and DuPont

Co-creation Case Study

Participation in TIE, the cutting-edge semiconductor consortium

In 2023, we became the first Japanese manufacturer and material manufacturer to participate in the consortium of semiconductor manufacturers "Texas Institute for Electronics" (hereinafter "TIE") based in Texas, U.S. TIE is a non-profit organization consisting of public- and private-sector companies that aims to advance the roadmap of cutting-edge semiconductor technology by five years. We were invited to participate due to our strengths being recognized. By participating in TIE, we aim to co-create with other companies and contribute to solving problems through the research and development of cutting-edge technologies.

Establishment of US-JOINT, a consortium for the development of next-generation semiconductor packaging technology in the U.S.

We plan to establish a consortium in Silicon Valley, U.S., in which ten materials- and equipment-related companies from Japan and the U.S. will collaborate on next-generation semiconductor packaging. In next-generation semiconductors, packaging technology for back-end processes is gaining attention, resulting in the rapid advancement of packaging technologies such as 2.5D and 3D.

Through US-JOINT, Resonac will co-create with customers and participating companies to verify the latest semiconductor package concepts and accelerate the R&D of materials and evaluation/mounting technologies by gaining insight into market needs in real time.

Other case studies are available on our website

- Plan to establish a new R&D base in Silicon Valley for semiconductor back-end processes
- Participation in the Semiconductor Assembly Test Automation and Standardization Research Association (SATAS)

Business Strategies

Semiconductor and Electronic Materials
Hard Disk Media

Please visit our website for information on our key contributions to social issues through our business.

We will increase capacity and improve quality of HDD*1s by developing and launching the latest technologies ahead of our industry peers. In doing so, we will enable HDDs to maintain their superiority in large-capacity data storage for data centers, thereby contributing to the development of a highly digitalized society.

Yasushi Makabe
General Manager, Hard Disk Business Unit

Vision for the future (2030)

- **Contribution to storage demand that supports increased data traffic volume and transmission speed as a large-capacity media technology leader**
- **Contribution to a sustainable society by reducing GHG emissions in production processes and at customers' data centers**

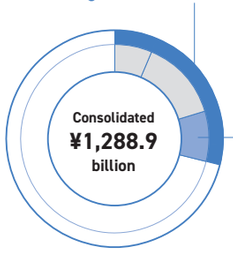
Issues to Be Addressed

- **Maximizing HDD's advantage over SSD*2**
  - Through the development of our proprietary technology, achieve a thinner substrate with the aim of accelerating the increase in recording density and increasing the number of media in the drive for MAMR*3 and HAMR*4, thereby contributing to a further increase in the data-storage capacity of HDDs
- **Restructuring the earnings model to transform into a business structure capable of responding to fluctuations in demand**
  - Speed up decision-making to respond to structural reforms and market growth
  - Respond flexibly to fluctuations in demand

*1 HDD : Hard Disk Drive
*2 SSD : Solid State Drive
*3 MAMR : Microwave Assisted Magnetic Recording
*4 HAMR : Heat-Assisted Magnetic Recording

Fiscal 2023 Net Sales

Net sales for Semiconductor and Electronic Materials segment: ¥338.1 billion



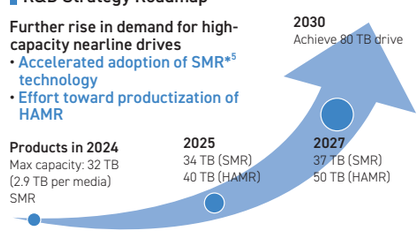
Device Solutions ¥66.2 billion
(HD media, SiC epitaxial wafers, Compound semiconductors (LEDs))

P27 / Overview of Resonac's Business

Results in 2023	Plans for 2024
● Carried out business restructuring (site consolidation and organizational downsizing) in response to the drastic fluctuations in HDD demand, which expanded rapidly until 2022, with the aim of speeding up decision-making and strengthening competitiveness ahead of anticipated fluctuations in HDD demand down the line	● Continuation of industry-leading development and mass production of world-class HD media to lead technological innovation in media for large capacity near-line servers ● Further increase revenue by ensuring the realization of last year's structural reforms, developing a production system that can swiftly respond to a demand recovery, and expanding sales

R&D Strategy Roadmap

Further rise in demand for high-capacity nearline drives
- **Accelerated adoption of SMR*5 technology**
- **Effort toward productization of HAMR**



Action taken to meet customer requirements
- Differentiate our products by combining SMR drive technology and our media
- Continue joint development for HAMR and produce results
- Strengthen development systems at multiple bases and accelerate development through parallel development
- Enhance reliability and mechanical characteristic evaluation

*5 SMR: Shingled Magnetic Recording

Resonac's Strengths

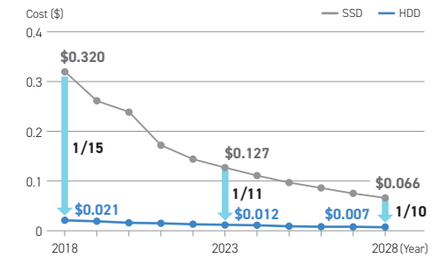
- HDDs remain superior to SSDs in terms of cost and energy consumption (CO_2 emissions) for large-capacity data storage used in data centers, thus continuing to play a central role in storage (our estimate)

Advantages of HDDs

① Low cost
When it comes to cost per GB of storage capacity, HDDs will continue to have a sufficient cost advantage over SSDs for differentiation in the future. Maintaining this difference is key for HDDs to maintain an overwhelming superiority in data center applications.

② Low environmental impact
Embodied CO_2 per storage capacity during the lifetime of a HDD from its manufacturing to data center operation is said to be roughly 50% less compared to that of a SSD.
Additionally, SSDs generate more heat in data centers than HDDs. If the electricity needed for cooling is also factored in, HDDs reduce CO_2 emissions even further.

Comparison of Manufacturing Costs between HDDs and SSDs (per GB of storage; for data centers)



- We possess the technological capabilities to develop and mass produce the world's most advanced media ahead of the rest of the industry
- We are able to develop collaboration technology through co-creation with all three HDD customers, enabling the provision of Best Fit products
- We are able to make proprietary development and improvement of our production facilities to achieve the industry's highest level of productivity and production quality that our peer companies cannot imitate
- We possess an integrated production system for aluminum substrates and aluminum HD media, and manufacturing technology for high-rigidity thin aluminum substrates
- We have production sites in Japan, Singapore and Malaysia with good access to customer locations in Southeast Asia, thereby reducing BCP-related risks
- We conduct proactive recruitment and mobilization of excellent human resources from overseas, enabling the operation of a diverse and highly internationally competitive organization

Changes in technology

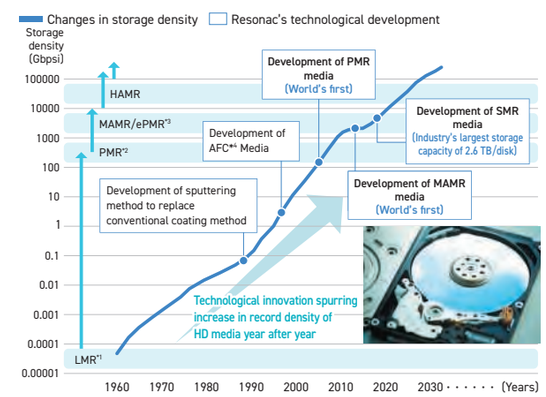
Significantly contributing to data economy with rapidly providing for markets of cutting-edge hard disk media technology

With the spread of cloud services and the increase in video content, the amount of data generated and stored continues to increase dramatically worldwide, and data centers to store data require larger-capacity hard disk drives (HDDs). Resonac is a supplier of HD media, key components that determine the storage capacity of HDDs. For 35 years since we started our business in the late 1980s, we have continued to lead the world in providing and mass producing HD media while always co-creating new technologies with our customers.

Resonac will continue pursuing further technological innovation to realize higher-capacity HDDs and support the growing data economy.

*1 LMR :Longitudinal Magnetic Recording
*2 PMR :Perpendicular Magnetic Recording
*3 ePMR :Energy-assisted PMR
*4 AFC :Antiferromagnetically Coupled

Resonac's revolutionary technological development in HD media



Notice

In July 2024, we transferred our hard disk media business through a company split with the aim of speeding up the decision-making of the global hard disk media business, thereby stabilizing, optimizing, and further strengthening business operations.

Business Strategies

Semiconductor and Electronic Materials

SiC Epitaxial Wafers

Please visit our website for information on our key contributions to social issues through our business.

As the world's largest independent supplier and technology leader of SiC epitaxial wafers, key materials for improving the performance of the growing SiC power semiconductors, we will strive to provide solutions while co-creating with customers to help realize energy conservation around the world.

Makoto Takeda
General Manager, Device Solutions Business Unit

Vision for the future (2030)

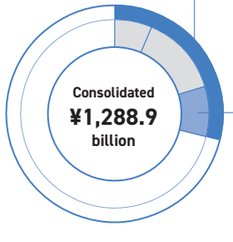
- **SiC epitaxial wafer technology leader to lead the industry's technological innovation**
- **Proactive provision of solutions in response to more sophisticated and characterized quality requirements**
- **Expansion of production of eight-inch (200 mm) SiC epitaxial wafers and productivity improvement to contribute to further expansion of the SiC device market**

Issues to Be Addressed

- Maintain and enhance technological advantages
- Expand production of eight-inch (200mm) SiC epitaxial wafers, differentiate from rivals, and ensure productivity.
- Strengthen technology collaborations and our ability to coordinate with customers

Fiscal 2023 Net Sales

Net sales for Semiconductor and Electronic Materials segment: **¥338.1 billion**



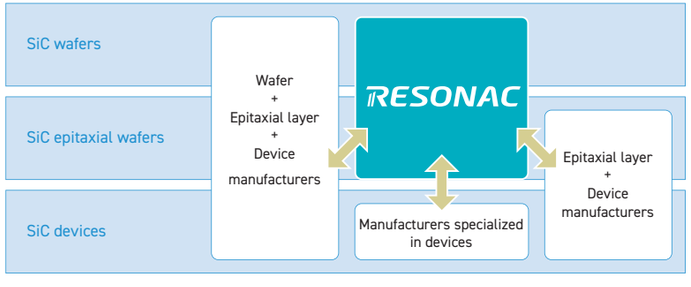
Device Solutions ¥66.2 billion
(HD media, SiC epitaxial wafers, Compound semiconductors (LEDs))

P27 / Overview of Resonac's Business

Results in 2023	Plans for 2024
● Sales grew due to increased shipments of SiC epitaxial wafers ● Our six-inch (150 mm) SiC single crystal substrates received the Awards for Excellence in the 2022 Nikkei Excellent Products and Services Awards (sponsored by Nikkei Inc.) ● We received the Excellence Award in the semiconductor electronic materials category of the 2023 Semiconductor of the Year Award (sponsored by Sangyo Times, Inc.) for our accomplishments in the development and mass production of third-generation high-grade SiC epitaxial products ● Used in the Denso inverter installed in the Lexus RZ, Toyota's new EV model ● Strengthened partnership with Infineon Technologies	● Expand our supply capacity by capitalizing on market growth of SiC epitaxial wafers, which is driven by the rapid expansion of the SiC power semiconductor market stimulated by the advancement of decarbonization and electrification ● Accelerate research and development of eight-inch (200 mm) SiC epitaxial wafers

Resonac's business model as a manufacturer specialized in epitaxial wafers

As a manufacturer specialized in epitaxial wafers that does not handle SiC devices, attract device manufacturers that manufacture wafers and epitaxial wafers in-house as customers



Resonac's Strengths

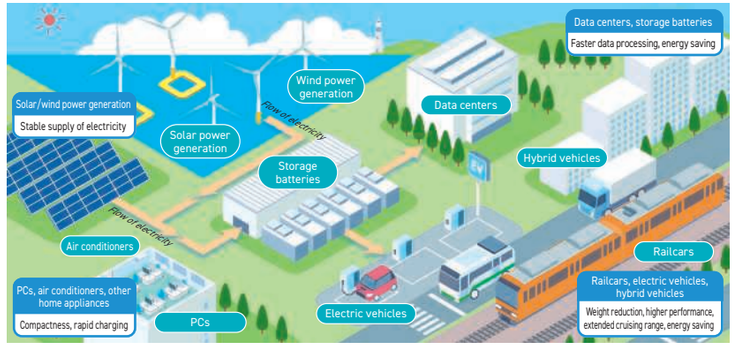
- We are the world's largest distributor of SiC epitaxial wafers with strengths in technology that reduces defects in SiC wafers with epitaxial layers
- As a specialized manufacturer of SiC epitaxial wafers, we focus solely on the production of SiC wafers and SiC epitaxial wafers. This enables the provision of SiC epitaxial wafers that meet the needs of device makers, who are our customers, by coordinating with them
- Our SiC epitaxial wafers have been used for various applications owing to their high quality, including industry-leading low levels of surface-defect density and basal-plane dislocation
- Possession of knowledge in DX, production management, and manufacturing that supports our technological advantages
- Advantages in intellectual assets (based on research by France-based KnowMade)
- Amid growing expectations for an increase in the number of chips per wafer due to a larger wafer diameter, we started shipping samples of eight-inch (200 mm) SiC epitaxial wafers in 2022 with the aim of starting early mass production

Topics

What are SiC Power Semiconductors

Power semiconductors control and convert electric power and are used in all types of devices that are powered by electricity, everything from industrial equipment to familiar home appliances. With less power loss and heat generation than conventional silicon-based power semiconductors, SiC power semiconductors are key devices that contribute to energy conservation, achieving both voltage characteristics and conversion efficiency. The market for SiC power semiconductors is expanding as they are widely used in various applications, such as xEVs including electric vehicles (EVs), renewable energy, high-speed charging stations for xEVs, and railcars.

Power semiconductors used in everyday life



Attractiveness of SiC Power Semiconductors

1 **Compactness and weight reduction** SiC power semiconductors have high withstand voltage and excellent thermal characteristics. Compared to conventional silicon-based power semiconductors, SiC power semiconductors enable compacter design and contribute greatly to weight reduction of electric units.

2 **Extended cruising range** It is known that the cruising range of vehicles using SiC power semiconductors is extended due to the combined effect of weight reduction and battery performance improvement (loss reduction), making SiC power semiconductors key devices for the diffusion of electric vehicles.

Co-creation Case Study

Green Innovation Fund project
Initiatives in "Development of Eight-Inch SiC Wafers for Next-Generation Green Power Semiconductors"

We proposed the "SiC Wafer Technology Development for Next-generation Green Power Semiconductors" (hereinafter the "Project") as one of the R&D items in the Green Innovation Fund Project for constructing next-generation digital infrastructure. The New Energy and Industrial Technology Development Organization (hereinafter "NEDO") publicly solicited applicants for this project, and our proposal was adopted in 2022.

This Project aims to reduce costs of SiC power semiconductors by increasing the diameter of SiC epitaxial wafers and reducing the density of deficiencies in SiC epitaxial wafers and SiC wafers, which are used as a raw material in producing them. This Project is a long-term R&D project to be carried out from fiscal 2022 to 2030, in which we are developing technology to accelerate the growth of SiC bulk single crystal in cooperation with NEDO. The results of our R&D activities will be evaluated by multiple device manufacturers. With the aim of social implementation of the outcomes, we will strive to contribute to the further spread of high-performance and highly-reliable SiC power semiconductors.

Business Strategies

Mobility

Please visit our website for information on our key contributions to social issues through our business.

In response to rising technological needs associated with CASE, particularly those related to the shift to electrified vehicles, we develop products that utilize Resonac's weight reduction, electrification, and heat control technologies. We will transform ourselves into a proposal-based solution business and achieve sustainable growth with profitability.

Satoshi Hara
General Manager, Mobility Business Headquarters

Vision for the future (2030)

Automotive products:
- Achieve the top share of the global market by actively investing in niche markets for composite materials, a heat control technology
- Create new value through the combination of aluminum specialty components with other materials

Lithium-ion battery materials:
- Capture markets with rising needs associated with the advancement of electrification and the pursuit of carbon neutrality

Issues to Be Addressed

Automotive products:
- Response to the rapid progress in vehicle electrification
- Structural reforms and strengthening of price negotiation capabilities

Lithium-ion battery materials:
- Establishment of mass production technology for new anode materials made from artificial graphite
- Stable supply of products through supply chain management

Fiscal 2023 Net Sales

Net sales for Mobility segment: **¥216.1 billion**

P27 / Overview of Resonac's Business

Results in 2023

Automotive products:
- Negotiated price revision or withdrawals with customers for 32 of our 48 key products. Achieved price revision for roughly 80% of products, resulting in a year-on-year rise in profit (profitability improvement totaled ¥3.4 billion in fiscal 2023)
- Accelerated development of EV components by utilizing the Power Module Integration Center (PMiC)
  P68 / R&D and Intellectual Property Strategies
- Started construction of a second brake pad plant in India. Also developed and started production of brake pads for EV manufacturers in North America

Lithium-ion battery materials:
- Acquired a large-scale project for EVs with our new artificial graphite anode material with fast charging performance, etc.
- Following China's introduction of export permit requirement for natural graphite, we made a prompt application and are currently building up inventory
- Sales increased due to the expansion of VGCF production capacity

Plans for 2024

Automotive products:
- Moderate year-on-year growth of the automobile market expected as pullbacks in demand ease in various areas
- Development of new foam molded products and new products for the provision of heat control solutions
- Establishment of a solid revenue base by reaping the benefits of structural reforms
- Acceleration of co-creation with the aluminum specialty components business in weight reduction and heat control solutions

Lithium-ion battery materials:
- Immediate full-scale mass production of acquired projects and development of products with even better performance
- Multi-source search for graphite, a raw material, aimed at avoiding impact from the U.S.-China conflict
- Construction of a pilot plant for anode materials in Europe to respond to market expansion and local production needs in Europe and the U.S.

Resonac's Strengths

Automotive products:
- Molded plastic exterior products (resin rear door modules and resin foam molded products), whose strengths lie in weight reduction and design flexibility required for electric vehicles (BEVs)
- In composite materials, maintenance of our leading domestic share for mainstay plastic gears while developing heat control products, such as radiators, for which demand is expected to increase in line with the spread of EVs
- Unique aluminum alloy design technology that provides durability and wear resistance not found in general-purpose aluminum alloy
- High-level aluminum manufacturing technology that enables the extrusion, joint brazing, horizontal continuous casting, etc., of large complex shapes that are difficult to manufacture
- Provision of high-performance, wear-resistant brake pads that comply with European environmental regulations (EURO7)

Lithium-ion battery materials:
- Provision of anode materials that realize lithium-ion batteries with greater capacity and superior charge-discharge load characteristics
- VGCF that contributes to increased capacity and battery lifespan

Growth strategy for the mobility business

Rising technical needs due to the advancement of CASE technologies including the spread of electrified vehicles

Business opportunities

Weight reduction	Electrification	Heat control
Countermeasures against weight increases caused by heavier batteries required in light of the spread of electrified vehicles	Countermeasures against spread of 5G and increases in network connection creating a need to address battery depletion	Heat management measures required in response to increased performance burdens as vehicles become smaller and lighter in weight

Value provided by Resonac

Resin rear door modules
Contributions to improved efficiency and reduced CO_2 emissions through lower weight

Plastic gears
Contributions to reduced weight, vibration, and noise with high-durability and heat-resistant gears

Anode materials for lithium-ion batteries
Contributions to realization of lithium-ion batteries with greater capacity and superior charge-discharge load characteristics

Advanced battery materials (SPALF, VGCF)
SPALF: High-insulation, anti-erosive pouch-style container for lithium-ion batteries
VGCF: Lithium-ion battery conduction additive contributing to increased capacity and battery lifespan

Water jacket
Contributions to weight reduction by allowing consolidation of functions through an integrated structure as well as relaxing design constraints for ducts

Aluminum radiators
Precise, low-profile, and highly reliable radiators realized by applying heat design technologies accumulated for aluminum products

Contributions to Sustainability

Controlling Physical Properties of Aluminum Alloy and Visualizing CO_2 Emission Flow through Computational Science

As part of our efforts to achieve carbon neutrality, we are focusing on the development of aluminum alloy, which is seeing an increase in demand from the automotive industry, with the help of computational science. Aluminum is lightweight and consumes less energy during the recycling process, which can significantly reduce CO_2 emissions. In aluminum recycling, it is crucial to better preserve the properties of aluminum while increasing the utilization of scrap containing impurity elements.

The key to obtaining the properties of aluminum alloy and other metallic materials, which change as the raw materials undergo various processes, is controlling the material structure. By controlling the behaviors of impurity elements derived from scrap in a sub-micron order, we have successfully developed aluminum alloy that contributes to carbon neutrality. By collaborating with respective analytical technologies, using computational science simulations that enable us to understand physical phenomena in detail, we are working to clarify the mechanisms of property expression and obtain guidelines for mass production processes.

We are also actively working on the calculation and reduction of CO_2 emissions associated with aluminum alloy production at manufacturing sites. In addition to building a CO_2 emission simulator based on manufacturing processes using computational science, we are establishing a workflow that anticipates fluctuations in CO_2 emissions and the possibility of resource recycling throughout the supply chain. We believe that this adds to the significance of us providing recycled aluminum alloys to our customers, and contributes to optimizing CO_2 reductions with an eye to achieving carbon neutrality across the entire supply chain.

Business Strategies

Innovation Enabling Materials

Please visit our website for information on our key contributions to social issues through our business.

As a platform that contributes to innovation in next-generation businesses and the creation of competitive products, we will continue to be a business that provides unique technologies and materials by creating innovation enabling materials with new functions through in-house co-creation.

Takafumi Sakurada
General Manager, Advanced Functional Materials Business Headquarters

Vision for the future (2030)

- **Consistently create new materials and technologies as a vessel that supports the Group's innovation and enhanced competitiveness**
- **Consistently maintain profitability with an EBITDA margin of 15% or more as a leader in specific sectors**

Functional chemicals: Be a leader in specific sectors of the global market that provides value to society
Resin materials: Contribute to solving social issues by evolving our functional materials and technologies in various ways
Coating: Create new products and businesses that capitalize on our insight into proprietary formulations
Ceramics: Provide ceramic products and services that solve social issues and are chosen by customers

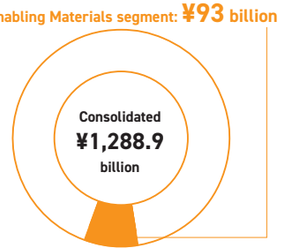
Issues to Be Addressed

- **In next-generation semiconductor materials and promising domains, strengthen our development and manufacturing capabilities for organic and inorganic materials to be used as components in these domains**
- **Initiatives to improve profitability, such as the optimization of production lines and fixed costs, and portfolio revision with an eye to business growth backed by our competitive edge**

Functional chemicals: Enhancement of our ability to aggregate individual abilities to provide social value
Resin materials: Enhancement of our ability to identify changes in social needs and match them with our existing technologies
Coating: Enhancement and evolution of our capabilities for proprietary formulations in consideration of environmental regulations, etc.
Ceramics: Launch of new products for electronic devices and productivity improvement

Fiscal 2023 Net Sales

Net sales for Innovation Enabling Materials segment: **¥93 billion**

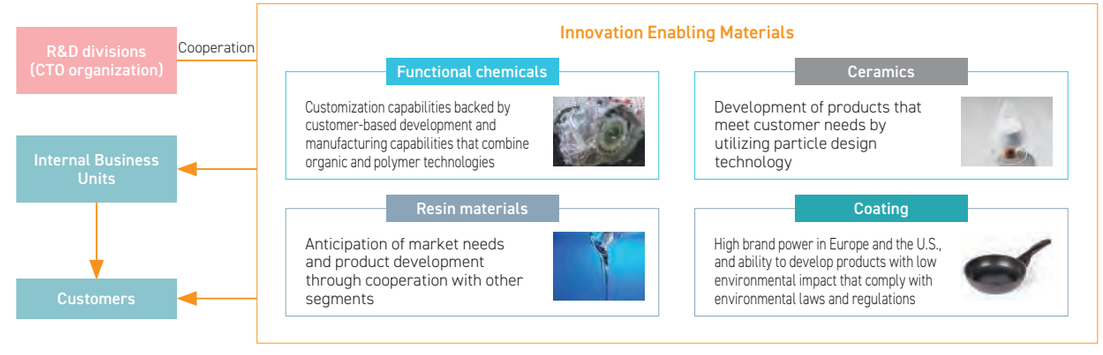


P27 / Overview of Resonac's Business

Results in 2023	Plans for 2024
● Developed organic and inorganic core materials and supplied them to other Businesses in the Group ● Implemented price revisions in response to declining profitability caused by delays in market recovery and rising costs Functional chemicals: Promoted in-house co-creation of resins for ACF and insulating varnishes Resin materials: Increased the profit margin through product mix improvement, such as by starting mass production of new next-generation products (low-melting glass and sew-free adhesives) and reviewing low-profit transactions Coating: Promoted the development and sales expansion of PFAS-free and environmentally friendly products, and implemented reform of the earnings structure to ensure resilience to changes in the business environment Ceramics: CMP slurry and fillers are used in products of other business units. Securing of profit spread through flexible pricing according to the market trend	● Maximize value creation through co-creation with other businesses (develop technology and supply products for innovation enabling materials) ● Maintain and improve profitability through thorough profit spread management linked to raw material prices Functional chemicals: Expand sales of high-value-added products such as specialty monomers for semiconductors and LIB anode binders Resin materials: Launch new high-value-added products such as low-melting glass and establish their full-scale mass production, and continue to improve profit margins through product mix improvement Coating: Capture demand for PFAS-free products/products with low environmental impact, reap the benefits of earnings structure reforms, and optimize the global production system Ceramics: Launch new products for electronic devices and improve productivity

Resonac's Strengths

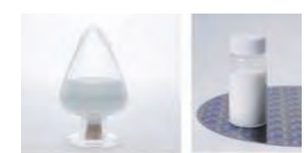
- Possession of a wide-range of product lineup and material and production technologies, such as for organic materials, polymers, and ceramics, which have produced unrivaled and competitive products
- Provision of products and services customized to meet customer needs for a wide variety of applications
- Anticipation of market needs through our abundant customer base and reflecting them in development
- Creation of innovation enabling materials with new functions through integration of core in-house technologies in upstream and downstream materials, turning information into collective intelligence, and in-house co-creation



Co-creation Case Study

Creation of Semiconductor Materials Technology using Ceramic Technology (Next-generation CMP Slurry)

Following the merger of the former Showa Denko and the former Hitachi Chemical, Resonac has been creating new technologies and value through the fusion of technologies and human resources. By combining the abrasive particle technology of Resonac Ceramics (former Showa Denko Ceramics) with the semiconductor and electronic material technologies of the Yamazaki Plant (former Hitachi Chemical), we are currently working to develop next-generation CMP slurry for semiconductor front-end processes. We are creating new value, including polishing technology compatible with multi-layered semiconductors and finer line pitches.



Mass Production of Nanoparticle Titanium Oxide through Co-creation with Customers

Resonac Ceramics Corporation manufactures titanium oxide for MLCCs (multilayered ceramic capacitors) used in electronic devices such as smartphones and computers, and commands the top global share of this market (based on Company research).

MLCCs play an important role in stabilizing power supply voltages and data signals in electronic circuits. These electronic components are vital to the normal operation of all semiconductor devices used in IoT, AI, EV, and other applications. With regards to titanium oxide for electronic devices, the smaller the particles, the thinner the laminated layer of the capacitor itself can be. This makes it possible to produce smaller electronic devices. Through co-creation with our customers, we resolved the issues faced in producing nanoparticle titanium oxide to successfully achieve mass production.

Business Strategies

Chemicals segments
Olefins and Derivatives

Please visit our website for information on our key contributions to social issues through our business.

We will promote green transformation (GX) to achieve carbon neutrality by 2050, and become a green industrial complex that coexists with the community. We will establish a sustainable business that consistently generates high profits, and provide chemicals and solutions that are safe and enrich people's lives.

Hirotsugu Fukuda
General Manager, Petrochemicals Division

Vision for the future (2030)

- **Improved profitability and controlled volatility in earnings**
- **Reduction of 30% in CO_2 emissions from the Oita Complex in comparison to 2013**

Issues to Be Addressed

- Earnings structure of businesses and products that is resilient to international market conditions
- Improvement in the competitiveness of cracker and utility equipment
- Shift to low-carbon fuels and technological innovation aimed at achieving carbon neutrality

Gain appropriate market evaluation

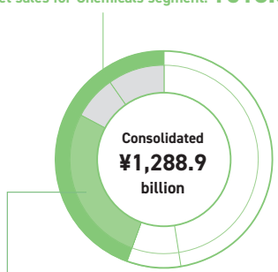
▶ See here for details on progress with the partial spin-off

P09 / Message from the CEO
P35 / Roundtable Conversation "Earning Power"

Results in 2023	Plans for 2024
● Year-on-year decrease in sales due to lower sales prices in line with the price drop for naphtha ● Year-on-year increase in operating income due to a rise in sales volume and spread improvement, etc. ● Acquisition of ISCC PLUS certification, and promotion of the effort to replace a portion of raw materials with biomass raw materials	● Improve profitability by optimizing plant operations in line with supply/demand trends and promoting the sales growth of high-value-added products ● Build a stable source of revenue by expanding technology licenses and implementing other measures to curb revenue volatility ● Promote initiatives to reduce CO_2 emissions (energy conservation, raw materials/fuels conversion, promotion of green innovation fund projects) ● Initiate deliberation on a partial spin-off geared toward the establishment of a new petrochemical company

Fiscal 2023 Net Sales

Net sales for Chemicals segment: **¥516.3 billion**



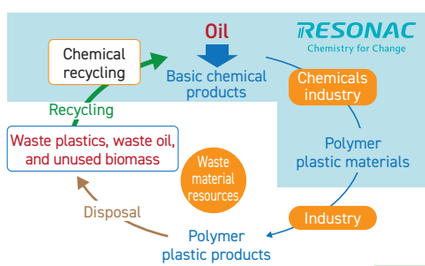
Olefins and Derivatives **¥316.3 billion**

P27 / Overview of Resonac's Business

Co-creation Case Study

Building a Circular Economy Model in Kyushu

Together with Kyushu University, Marubeni Corporation, and Sumitomo Mitsui Trust Bank, Limited, we have established a "knowledge hub" in Kyushu aimed at building a circular economy model. By collecting and recycling waste plastics from the Kyushu region and converting them into basic chemical products through a local production for local consumption process, we will contribute to the establishment of a circular economy model in Kyushu and the realization of carbon neutrality by 2050.



P67 / R&D and Intellectual Property Strategies

Resonac's Strengths

- The highest-level capacities of our equipment and our operating track record in the country that enable us to accommodate a diverse range of raw materials for crackers. Stable operation with high equipment reliability
- A lineup of unique acetyl derivatives (ethyl acetate, vinyl acetate monomer, allyl alcohol, and n-Propyl acetate) that take advantage of proprietary catalysts and processes
  *Resonac holds the top domestic market share of both ethyl acetate and n-Propyl acetate, and the top global share as an independent allyl alcohol supplier
- Competitiveness in high-value-added fields represented by our stable lineup of olefin derivatives (polyethylene, polypropylene, etc.)
- Efforts to develop a low-concentration CO_2 separation system employing an innovative separation agent to further our quest toward carbon neutrality in 2050

Contribution to Sustainability

Participated in a Study for a Carbon Recycling Project —Exploring the Possibility of Recycling CO_2 into Chemical Products in Collaboration with Oita City and Neighboring Companies

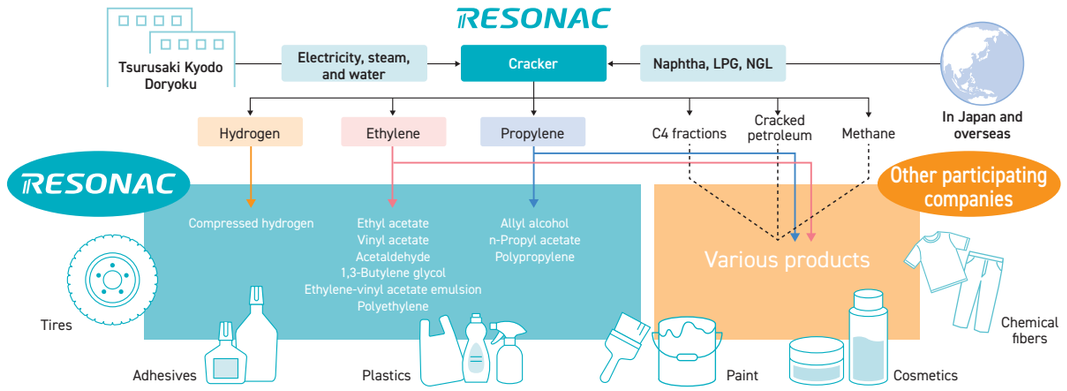
We participated in a feasibility study exploring the possibility of a carbon recycling project at the Oita Complex. We will start considering ways to contribute to the reduction of CO_2 emissions from the perspective of chemical manufacturing using CO_2 as a raw material by utilizing our knowledge and technologies as a chemical manufacturer.

This feasibility study was adopted on March 11, 2024 by the New Energy and Industrial Technology Development Organization (NEDO) as a "Feasibility Study on a Carbon Recycling Project Utilizing Cross-industry Collaboration at the Oita Complex" (hereinafter "the Study"). In cross-industry collaboration with Oita city and neighboring companies, we will participate in the Study aimed at reducing CO_2 emissions. Our responsibilities mainly involve selecting carbon recycling products and manufacturing technologies. The Oita Complex is the only petrochemical complex in Kyushu. We will examine possible options based on the characteristics of the complex, which is a large-scale industrial cluster including steel manufacturers, power generation companies, petroleum refiners, and chemical manufacturers.

The Flow of Goods at the Oita Petrochemical Complex

At the Oita Petrochemical Complex, naphtha is decomposed at a high temperature of about 800°C in a naphtha cracking furnace, the main facility in the complex, to manufacture ethylene propylene and other basic petrochemical products.

These products are supplied via pipelines to various derivative plants in the complex, and are used as raw materials for products that can be found in various parts in our daily lives.



See here for CO_2 capture at Oita Petrochemical Complex and storage off the coast of Malaysia P98
See here for details on the value instillation activities carried out by employees of the Oita Complex P15

Business Strategies

Chemicals segments
Basic Chemicals

Please visit our website for information on our key contributions to social issues through our business.

We will continue to contribute to society by providing a stable supply of high-quality and safe products.
We aim to co-create new technologies with stakeholders at Kawasaki Chemical Park for the happiness and prosperity of people and to create harmony with the global environment.

Hiroshi Adachi
General Manager, Basic Chemicals Business Unit

Vision for the future (2030)

- Stably supply products that support social infrastructure in the Tokyo metropolitan area
- Contribute to regional development as an urban chemical park that serves as a model for a decarbonized society (formation of a hydrogen use network with companies near the coastal area of Kawasaki city, fuel conversion of power generation facilities, etc.)
- Contribute to the realization of a circular economy and promoting SDG initiatives (significant reduction of CO_2 emissions, 100% use of KPR raw materials)

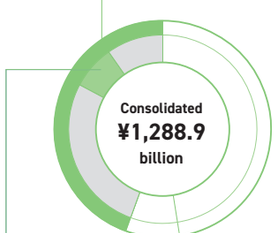
*KPR is an acronym for Kawasaki Plastic Chemical Recycling. A plastic recycling business operated at the Kawasaki Plant

Issues to Be Addressed

- Thorough implementation of measures to strengthen our supply system with the aim of ensuring the stable supply of products that support social infrastructure
- Acceleration of cutting-edge initiatives utilizing our technologies geared toward achieving a decarbonized society
- Expansion of our contribution to realizing a circular economy through plastic chemical recycling

Fiscal 2023 Net Sales

Net sales for Chemicals segment: **¥516.3 billion**



Basic chemical products **¥86.9 billion**

P27 / Overview of Resonac's Business

Results in 2023	Plans for 2024
● In production, capacity utilization remained high, and operating income also remained robust ● Raw material and fuel prices continued to rise, but we passed price increases onto product prices ● We acquired ISCC PLUS certification, an international certification for sustainable products for three products, namely, hydrogen, ammonia, and acrylonitrile, made from raw materials derived from used plastics	● Demand expected to remain strong ● Raw material and fuel prices expected to remain at the current levels, logistics costs to rise ● Promotion of new initiatives for plastic chemical recycling (collect marine plastics with Kawasaki city and recycle them at Resonac's KPR plant, etc.) ● Plan to expand facilities for sodium hypochlorite for tap water and liquefied carbon dioxide, which support the infrastructure vital to people's daily lives

Related page

Kawasaki Plastic Chemical Recycling (KPR) was certified as the first Resonac Pride product and service

In order to "change society through the power of chemistry," it is important to visualize what value our products and service we have managed to provide to customers and society, and to what extent. Resonac Pride products and services certification was introduced as an initiative to visualize our Purpose and Values.

KPR was certified as the first example on the basis that it has reduced GHG emissions by about 80% compared to the conventional ammonia manufacturing method, and that it recycles approximately 60,000 tons of used plastics per year (equivalent to approximately 20% of Japan's chemical recycling).

P91 / Resonac Pride Products & Services

Resonac's Strengths

- Capitalizing on the advantageous location of the Kawasaki Plant, we provide a timely and stable supply of social infrastructure products that support lifelines predominantly in the Tokyo metropolitan area, such as sodium hypochlorite for tap water and dry ice
- The Kawasaki Chemical Park enables us to meet the needs for a diverse range of chemical products, from basic chemical products used in various industrial fields inside and outside the industrial complex to functional chemicals
- It is the only gasification recycling plant in the world with a track record of stable operation spanning over 20 years, and produces hydrogen, ammonia, and acrylonitrile from used plastics using chemical recycling technologies
- Production of low-carbon ammonia with 80% reduction in GHG emissions compared to conventional production methods

Vision and competitiveness of Kawasaki Chemical Park

Sustainability to **inspire the world** | Sustainability to **transform society** | Sustainability to **compete in the world**

Business development capabilities to respond to needs of the times

- Development and commercialization of new derivatives
- Development and commercialization of high-value-added products

Production foundations / manufacturing capabilities

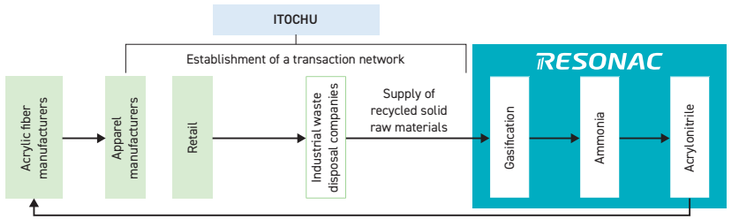
[Hardware aspect] Strong infrastructure, including electricity, gas, and water supply, to support chemical plants

[Software aspect] Procurement and logistics, security and disaster prevention, maintenance design, and human resource development accumulated through many years of experience

Co-creation Case Study

Collaboration with ITOCHU Corporation in Textile Recycling in the Chemical Recycling Business

Resonac concluded a memorandum of understanding with ITOCHU regarding the ARChemia recycling project in 2023. The objective is to include used textiles, such as clothing, as raw materials for the plastic chemical recycling business at the Kawasaki Plant (KPR), in addition to used plastics. Resonac transforms recycled solid raw materials, a mixture of used plastics and textiles, into raw materials for textiles, such as acrylonitrile, leading to resolution of waste-related social issues and contributing to realization of a fiber-to-fiber recycling society.



Supply of Low-Carbon Hydrogen for a Hotel's Fuel Cells

In November 2023, we began the commercial supply of low-carbon hydrogen derived from used plastics produced at the Kawasaki Plant. At the Kawasaki King Skyfront Tokyu REI Hotel, hydrogen supplied through a pipeline is converted into electricity using fuel cells, providing about 20% of the electricity used by the entire hotel.

Kawasaki King Skyfront Tokyu REI Hotel

See here for "KROPIKO, thar contribute to biodiversity products P99

See here for chemical recycling technology that reusing used plastic which from semiconductor materials manufacturing processes P101

Business Strategies

Chemicals segments
Graphite Electrodes

Please visit our website for information on our key contributions to social issues through our business.

See here for the Graphite Business Unit's sustainability concept movie "Sparking Truth."

Resonac Graphite Business Unit delivers world-class graphite products and technologies with a strong focus on sustainability. We play a vital role in the efficient and environmentally friendly recycling of steel. We believe our people are our strongest asset, and our mission is to drive the sustainable advancement of society across multiple global graphite markets through talented people, strong partnerships, and innovative technologies.

César Castiñeira
General Manager, Graphite Business Unit

Vision for the future (2030)

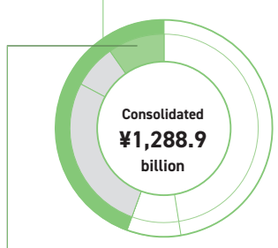
- We supply industry-leading graphite electrodes and electric arc furnace (EAF) optimization services to steelmakers around the world, supporting the transformation to sustainable steel production and economic growth
- We promote decarbonization in the manufacturing process and supply synthetic graphite products for use in multiple industrial applications

Issues to Be Addressed

- **Achieving a stable profit structure**
  Transforming our traditionally cyclical business model by concluding win-win Strategic Supply Partnership (SSP) contracts
- **Optimizing product mix in response to expansion of electric furnace market**
  Plans for new electric arc furnaces are increasing worldwide and those furnaces typically require larger diameter electrodes. Resonac Graphite is uniquely positioned to meet this growing demand
- **Evolution to a business model of providing electric furnace optimization services**
  By combining Resonac's industry-leading graphite electrodes with AMI's EAF optimization solutions, opportunities exist to create win-win partnerships and replace the traditional buyer/seller relationship

Fiscal 2023 Net Sales

Net sales for Chemicals segment: **¥516.3 billion**



Graphite electrodes **¥112.9 billion**

P27 / Overview of Resonac's Business

Results in 2023	Plans for 2024
• Due to the impact of the global economic downturn, demand for steel and graphite electrodes softened • Successfully promoted ladle furnace offerings (ΩMEGA), increased the number of SSPs, and further decarbonized our manufacturing processes • Completed acquisition of 100% of AMI shares to accelerate the transformation toward a solutions business	• Continue business transformation to ensure stability despite industry cyclicality • Promote end-to-end (E2E) strategic partnerships with customers & suppliers • Achieve cost reductions and diversify raw material sources • Expand solutions that package Resonac products with AMI optimization services

Topics

Evolving value proposition through synergies with AMI

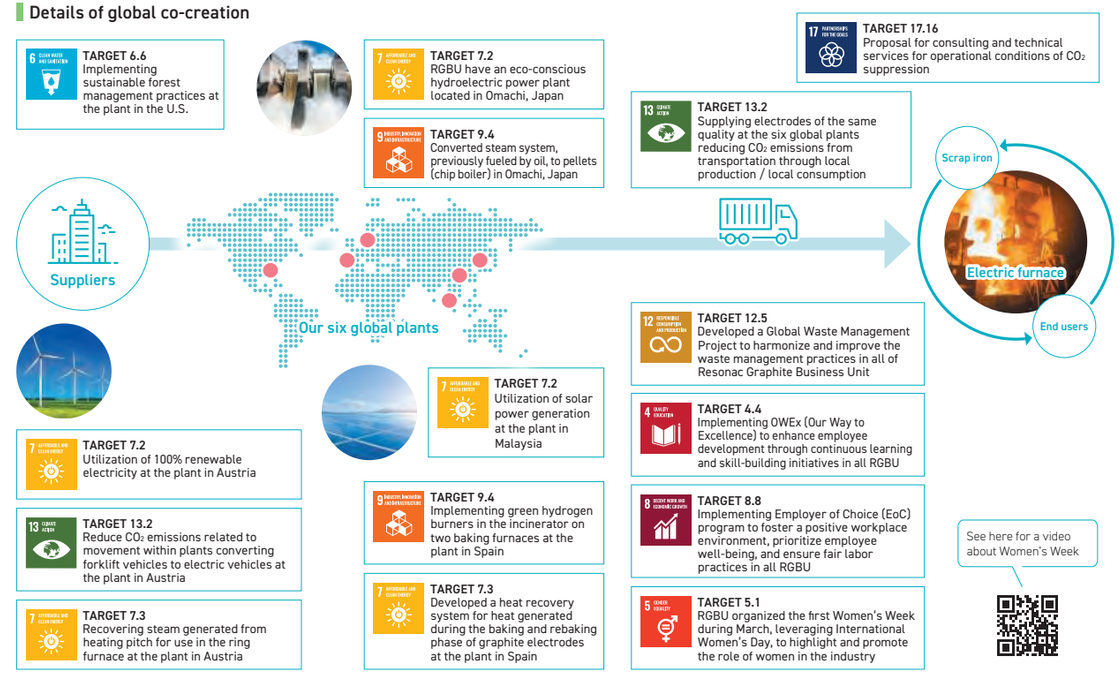
AMI Automation is an international automation and control solutions company. Recognized as a world leader in EAF automation technology, the combination of Resonac products and AMI services can provide value-added solutions to unique customer needs.

Examples of added value provided
- Reduction of energy consumption
- Reduction of waste and GHG emissions
- Increased productivity
- Improved profitability, etc.

Resonac's Strengths

- Global decarbonization will continue to drive increases in electric arc furnace (EAF) steelmaking, which will also increase the demand for larger diameter graphite electrodes
- Our global production platform has six sites and a business continuity framework where we keep significant inventories of key components and raw materials to ensure we can always fulfill our commitments
- To maximize supply chain reliability, minimize our carbon footprint, and achieve shorter lead times, Resonac Graphite produces "in the region, for the region"
- Resonac Graphite's recent acquisition of AMI Automation underscores its dedication to technological advancement and industry leadership. This strategic move enables Resonac to accelerate its internal digital transformation initiatives, while offering technological solutions to enhance customer optimization
- Resonac Graphite has been a partner to the electric steelmaking community for more than 80 years. As the first company to produce 750mm and 800mm electrodes, Resonac has grown side by side with the sustainable steel industry
- Our business plan and production facilities have achieved the status of "Highly Protected Risk" from our regional insurance providers based on our strategy to reduce or eliminate the probability of a business interruption

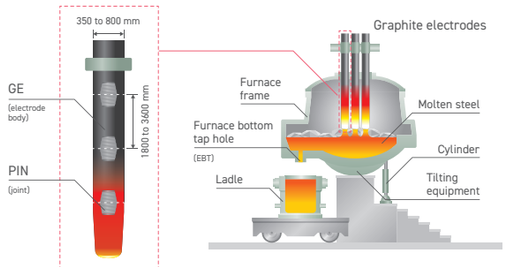
Details of global co-creation



See here for a video about Women's Week

What are graphite electrodes?

Steel is familiar and indispensable in our lives. It is used to make appliances, cars, machinery, bridges, and buildings. It is also the most reused material in the world and can be recycled infinitely without losing its properties. Graphite electrodes are an integral part of this recycling process. To do this, an electric arc furnace (EAF) transfers electric current through the graphite electrode to the scrap steel inside. The current creates an arc that melts the solid steel into reusable liquid steel. The molten steel temperature in the furnace reaches temperatures of 1600°C, and the tip of the electrode reaches more than 3000°C.



Graphite electrodes

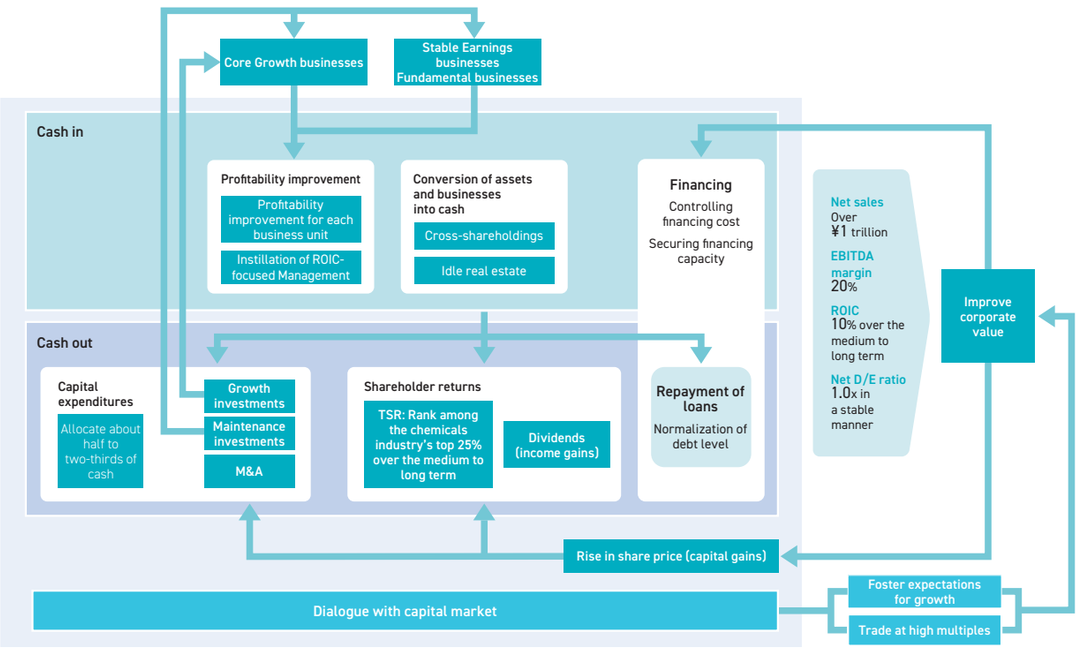
Three-phase AC electric steelmaking furnace

Financial and Capital Strategies

Please also read the "For Investors" page on our website.

In order to realize our long-term vision, which calls for the realization of our growth strategy by concentrating management resources on the semiconductor materials business, we will continue to pursue capital efficiency to solidify our profitability and cash generation foundations, allocate cash to growth investments, raise funds with an eye to controlling financial costs and securing financial flexibility, and improving the quality of dialogue to ensure the capital market has an appropriate understanding of these measures.

Financial and capital strategies overview



Pursuit of Capital Efficiency

Until now, our management hasn't focused enough on generating cash flow, and our efforts to maximize profits through efficient use of capital have been insufficient. Following the integration of the two companies, we changed our financial target from ROE to ROIC. At the same time, we have been pursuing capital efficiency in order to further strengthen our profitability and cash generation foundations.

Conversion of assets and businesses into cash

Amid efforts to convert assets with low return on capital into cash, since 2020 we have been working to reduce cross-shareholdings to reduce debt inflated by the integration. In 2021, we agreed on a policy to sell all of our cross-shareholdings, in principle. In the process of reducing cross-shareholdings, we interviewed each business unit about their reasons for holding them, and worked together to assess the appropriateness and necessity of these shareholdings. As part of these efforts, the CFO suggested conducting dialogue with business partners himself as an option. We accelerated companywide activities by veering away from the mindset of business units that we cannot successfully do business without cross-shareholdings. As a result, while we previously held cross-shareholdings with a market value in excess of ¥50.0 billion, by the end of 2023, we were able to sell almost all of these shares.

With regard to the sale of businesses and converting them into cash, we sold a total of nine businesses for approximately ¥200.0 billion as part of our portfolio reform efforts following the integration. These businesses were sold to the best owners in a manner that fully utilized existing technologies, customer relationships, and other strengths. Amid our portfolio reform efforts, we still have several businesses that do not conform with our policy but are difficult to sell. We will implement appropriate turnaround measures for these businesses with an aim of maximizing their business value, and then work diligently to find the best owners.

In addition, with regard to sale of idle real estates, we transferred part of the land of Yokohama Plant in 2022, and land and building of former Daimon Head Office in 2024 after the consolidation of our Head Office, etc., which generated cash of approximately ¥50 billion in total.

Improving profitability to achieve EBITDA margin of 20%

We aim to achieve a companywide EBITDA margin of 20%, and have set EBITDA margin targets for each business. To achieve these targets, we are taking measures to expand sales and improve profitability.

In the semiconductor materials business, we will make aggressive capital investments in the advanced materials field, which is poised for high growth and high profitability, to expand sales and lead the improvement of the EBITDA margin on a companywide basis.

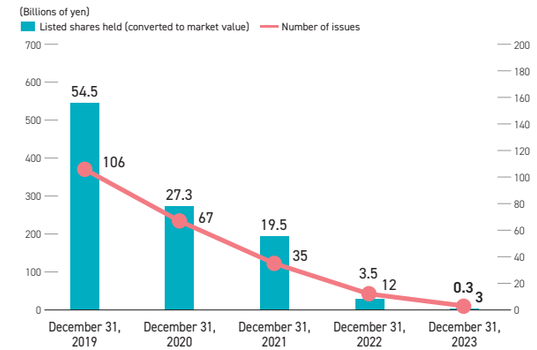
P33 / Roundtable Conversation "Earning Power"

In other businesses, we aim to reach EBITDA margin targets for each segment by concentrating resources on high-profit products and improving profitability and returns on capital rather than scale expansion. Specifically, each business unit calculates the maximum profit margin for each customer and product and implements specific action plans, such as negotiating price increase for low-margin products, withdrawal from products for which price increases are difficult, review of raw material suppliers, and cost and staff reduction through improved production efficiency. The progress of these initiatives is managed quarterly and by the end of 2023, 75% of all measures were already completed.

In addition, we are carrying out individual business revitalization projects for several businesses that urgently required profitability improvement. In 2023, we optimized capacity and reduced fixed costs in the HD media business by closing our Taiwan site and significantly lowering the break-even point. In the Mobility segment, we tenaciously continued negotiations with customers for 48 unprofitable products subject to emergency measures, which led to 80% of negotiations being successful. As a result, we achieved a total improvement in profitability of ¥3.4 billion, which helped move the segment back into profit.

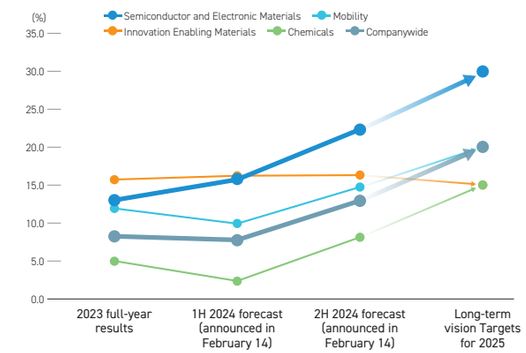
In order to improve the companywide EBITDA margin through business portfolio reform, we will continue to steadily consider business sales, including difficult projects. We are also considering a partial spin-off of the Olefins and Derivatives business under the Chemicals segment. We plan to clarify the schedule and business strategy for this going forward, and disclose the progress as appropriate.

Cross-shareholdings (listed shares)

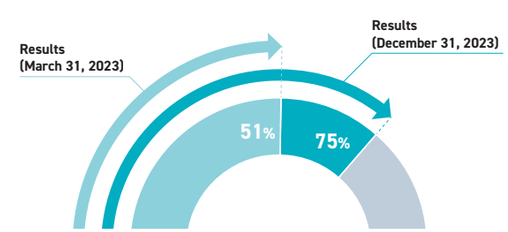


*Listed shares held by Group companies are included. The figure as of December 31, 2019 includes shares held by former Hitachi Chemical.

Improvement of EBITDA margin



Status of completion of the measures to improve profit



*The Mobility Segment, and the Olefins and Derivatives business which is largely affected by market conditions, are excluded.
*Completion of measures and their impact on revenue are not necessarily simultaneous.

Cash Allocation to Support Growth Investments

In order to realize growth investments, we have set a cash allocation policy in which half to two-thirds of operating cash flow is allocated to capital expenditure as a priority, with the remainder allocated to shareholder returns and debt repayments. As for the results for fiscal 2022 and 2023, we compensated for the decrease in operating cash flow caused by deterioration in market conditions and earnings performance by converting businesses and assets into cash. While avoiding excessive upfront investments, we have steadily made step-by-step investments to keep up with the increase in demand with an eye to the next peak of the semiconductor cycle.

We have introduced rules for investment policies based on the portfolio attributes of each business to concentrate management resources on the semiconductor materials business, which seeks to realize high profit margins in the future.

P27 / Overview of Resonac's Business

For Stable Earnings businesses, in which we focus on stable cash generation, we will, in principle, limit investment for maintenance (including investments for BCP and profit improvement) within the scope of depreciation, and allocate surplus cash to investments geared toward expanding growth businesses. At the internal Investment Committee, CFO will serve as the chairman and members from a management strategy perspective (CSO), engineering perspective (CMEO), risk management perspective (CRO), and technical strategy perspective (CTO) also participate, and have in-depth discussions at each meeting. We ask the owners of each investment project to make a commitment to ensuring returns, in addition to verifying the appropriateness of investments via numerical analysis.

As for investment discount rates (hurdle rates), whereas previously we used the same discount rate throughout the Company, in 2023 we introduced hurdle rates based on risk premiums for each business segment and investee country in an effort to appropriately assess investment risk, improve investment efficiency, and to improve portfolio management. Moreover, in order to identify risks at an early stage and maximize the benefits of capital expenditure, we monitor progress after investment decisions have been made. Before facilities come on stream, we check whether we are exceeding our budget and if there are any delays with receiving orders, construction completion, or the start of operations. After facilities come on stream, we check whether there are any discrepancies between actual earnings and our business plan. We have made investments in the past that resulted in impairment losses due to returns that did not exceed the cost of capital. By reflecting on these mistakes, we will continuously review and improve the effectiveness of our operations so that similar situations do not occur in post-integration projects in the future.

Focusing on TSR for Shareholder Returns

We place importance on total shareholder return (TSR), and as such, have adopted a shareholder returns policy that takes into account the balance between capital gains from medium- to long-term improvement in corporate value and growth in our stock price, and income gains from dividend payments. For TSR, we aim to achieve a yield that exceeds those of industry rivals, and have set a medium- to long-term target of being ranked at mid-range or higher, which would mean being in the top 25% of 22 domestic chemical companies (we selected 22 companies in the chemical and other materials industries of the same size or larger that have close business models to ours and have competing businesses). In 2023, due to the rise in our stock price and the payout of dividends, we achieved a TSR of 142.3% over the past year, which places us in the top 20% of the 22 domestic chemical companies. Going forward, we aim to achieve our TSR target over an even longer span. As such, in addition to maintaining stable dividends, we will link business growth achieved through growth investments to capital gains, and reduce the conglomerate discount to ensure an appropriate stock price and corporate value. To this end, we will engage in attentive dialogue with investors.

Total shareholder return (TSR)

TSR	Past year	Past 3 years	Past 5 years	Past 10 years
Resonac Holdings	142.3%	136.8%	97.9%	232.2%
TOPIX	128.3%	141.1%	178.9%	227.8%

*As of the end of 2023
*TSR: Total shareholder return. The total rate of return on investments, consisting of capital gains and dividend payouts.
*TSR for Resonac is calculated based on accumulated dividends and stock price fluctuations. TSR for TOPIX is calculated based on dividend included stock index (see Japan Exchange Group's monthly statistics report data).

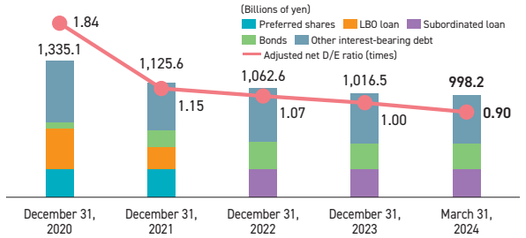
P138 / Stock Information

Financing with a View to Curbing Financial Costs and Securing Financial Flexibility

Our interest-bearing debt increased to ¥1,335.1 billion (including preferred shares) as of December 31, 2020 due to acquisition financing in 2020. In order to respond to the increase in financing costs associated with higher interest-bearing debt, we have been working to reduce total debt from 2021 onward, implementing measures such as the early repayment of LBO loans by issuing large-scale corporate bonds, switching from preferred shares, which are more costly than other funding sources, to subordinated loans, and converting loans to fixed interest rates. In doing so, we have diversified maturity dates, reduced financial costs, and prepared for possible future interest rate increases down the line. We have also taken measures to improve our capital structure, including equity procurement, with an awareness of the cost of equity, such as raising ¥83.2 billion through a public offering in 2021, and issuing zero-coupon convertible bonds worth ¥100.0 billion in 2024.

We have set a net D/E ratio target of 1.0 as part of our fiscal discipline efforts in financing activities. In 2023, even amid the weak financial performance, we sold businesses and assets such as the diagnostic reagent business and reduced working capital and inventories at each business headquarter/unit to secure funds to repay borrowings. As a result, we reduced interest-bearing debt to ¥1,016.5 billion by the end of December 2023. The net D/E ratio improved to 1.0, owing partly to an increase in shareholders' equity and an increase in foreign currency translation adjustments resulting from yen depreciation. Going forward, alongside moves to prepare for future investment opportunities, we will continue our efforts to reduce interest-bearing debt and improve our financial structure in order to maintain a stable net D/E ratio of 1.0.

Post-adjustment Net D/E Ratio*, interest-bearing debt, and preferred shares



*December 31, 2020 and 2021: {(Loans payable + Commercial papers + Bonds payable + Lease liabilities) - Cash and deposits + 50% of preferred shares} / (Total shareholders' equity + 50% of preferred shares)
December 31, 2022 and later: {(Loans payable + Commercial papers + Bonds payable + Lease liabilities) - Cash and deposits - 50% of subordinated loan} / (Total shareholders' equity + 50% of subordinated loan)
50% of preferred shares and 50% of subordinated loan (included in loans payable) are evaluated as equity capital based on the credit rating by Japan Credit Rating Agency, Ltd. on April 21, 2020 and April 27, 2020, respectively.

Communication with Shareholders and Investors

Our management team proactively creates opportunities for direct communication with shareholders and investors, and utilizes the feedback we receive in management. In terms of direct communication, we resumed overseas IR activities by the CEO and CFO in 2022. And also, our managemnt have engaged in numerous discussions on sustainability (ESG). We are also actively engaged in non-financial information disclosure and dialogue aimed at enhancing corporate value. In 2023, we held our first sustainability meeting (a hybrid in-person/online meeting).

P31 / Co-creation with Stakeholders

In order to have a place to conduct dialogue with as many people as possible, we are increasing the number of speakers on the IR team, establishing a system that allows for consistent information provision, and working to increase opportunities for small-group meetings with investors. As part of these efforts, we have repeatedly communicated our focus on the Semiconductor and Electronic Materials segment, the key to our growth story, and revised our disclosure content in an effort to raise awareness as a player in the semiconductor industry and minimize the conglomerate discount applied to our shares, including making changes to our disclosure segments in 2022.

Opinions and requests from shareholders and investors, and topics related to the stock price, are continuously addressed and quarterly discussed at Management Committee meetings attended by CXOs and business unit heads. They are also addressed and discussed at biannual forums for exchange of opinions with executives including outside executives. In the discussion, we also consider the difference between the theoretical stock price and the market price based on the results of correlation analysis with other company stocks and SOTP (sum of the parts) analysis, which incorporates the perspectives of shareholders and investors.

We will continue to disclose the Group's vision, strategies, and corporate information in an easy-to-understand, timely, and appropriate manner, have proactive dialogues with shareholders and investors, and reflect their feedback in management in order to further enhance corporate value.

The reforms we have implemented to date have been at the stage of steadily implementing necessary measures, such as converting low-return assets into cash, adjusting product pricing that does not match the value provided, and replacing high-cost funds. The current stage involves implementing more difficult measures, such as the revitalization and termination of non-core businesses that are hard to sell, the withdrawal from customer relationships with constraints, the complete overhaul of the capital structure, which is used to deal with emergency situations arising from leveraged buyouts, and the partial spin-off of the Olefins and Derivatives business. Overcoming these challenges is a prerequisite for Resonac to become a company that can compete on the world stage. I am determined and ready to complete this stage.

And people are the foundation of our business. As such, the CFO organization, which supports our financial and capital strategies, also promotes the mobility of human resources based on its own human resource development policy. CFO organization actively implements department-wide job rotation, and in 2023, transferred approximately 25 finance and accounting employees. Meanwhile, there were many cases where it was difficult for the employee's original department to make decisions on the matter. As such, we will continue to address personnel allocation challenges, including measures to fill the gaps in the original departments that arise due to job rotations. In addition, we will improve the motivation and engagement of members by sharing career trees in the CFO area, encourage proactive career interviews and one-on-one meetings with superiors, holding the in-house MBA program "Some Lab" for three consecutive years (2022-2024), and creating communication opportunities across departments through the launch of the mentor-mentee system. Going forward, we will continue to give it our all in these endeavors.

Hideki Somemiya
CFO

02-2 Technology and People That Generate Profits

59 —— Roundtable Conversation "Technology and People That Generate Profits"
65 —— R&D and Intellectual Property Strategies
71 —— Corporate Marketing Strategies
73 —— Digital Strategies
75 —— Human Resource Strategies

"Technologies are Created by People"
Co-creative talent thriving through their connections opens up a path to the future with their earning power

To continuously create new technologies and functional materials that society demands.
That is a vital task for Resonac, and at the heart of it lies fostering co-creative talent with borderless connections.
Resonac's CHRO, CTO and Deputy General Manager of Electronics Business Unit discuss the prospects for raising the base level of earning power brought about by talent development efforts.

Generating the earning power of the future through simultaneous co-creation in the research, development, and manufacturing fields

Imai: As a company with the goal to become a world-class functional chemical company by 2030, its earning power is essential. The sources of our value are our broad-ranging material technology platform and our research and development strengths. That said, sophisticated technologies don't lead to earning power unless we provide the functions that customers demand. It is vital that the people who talk directly to customers—those on the frontlines—can understand customers' needs and that those in the field can respond to those needs. Each and every person on the frontlines and in the field must

possess a passion to create and work going beyond boundaries of departments and companies to think, together, about how to produce solutions. We believe that personnel who can generate values by integrating diverse knowledge through such alignment is what we call co-creative talent.

One of the challenges of co-creation is dealing with the differing timelines of areas and departments. The speed of R&D varies tremendously from one business sector to another. For semiconductor materials, it is extremely fast. To keep up with such speed, research, development, and manufacturing must all keep in step.

Abe: The former Hitachi Chemical has passed on its DNA in the form of the processes used to customize materials in conjunction with customers in a speedy manner. On the other hand, it lacks research and development processes focused on raw materials or designs. Those are the strengths of the former Showa Denko. Through our business integration, we have connected upstream and downstream processes, so we are starting to see the synergistic results of co-creation. Taking into consideration cross-company collaborative creation such as co-creation with other equipment and material manufacturers, I think we still have a lot of room for growth.

Fukushima: Our frontline members need to be able to adapt to the dizzying speed at which customer demands change and to continuously improve our products. Prioritizing the issues at hand may improve final product quality without advancing core technologies. However, there is a limit to what can be achieved through this cycle, so researcher need to get ahead of these changes and work on core technologies. In this way, different talent are assigned to different tasks, but their efforts will come to naught unless they are all working on the same timeline. Creating revenue-earning technologies requires making improvements to existing products, having frontline staff identify customer needs, and carrying out research to develop new core technologies, all at the same time. Of course, in this co-creation, it is absolutely vital that everyone is working on the same timeline, with a shared understanding of by when new core technologies are needed.

Co-creation through a new site that brings together professionals from inside and outside the company

Imai: We also focus on coordination with outside parties in our development of co-creative talent. We should be able to generate greater synergy by bringing in knowledge from other equipment manufacturers, material manufacturers, and universities.

Fukushima: Indeed. Resonac has been developing spaces for co-creation with a wide range of stakeholders. The first of these was the Innovation Center, which we opened in 2017 with the aim of promoting interdisciplinary dialogue and discussion. Then, in 2023, we opened the Stage for Co-creation. This is a core site for long-term R&D through collaboration with venture companies, universities, and other organizations, both inside and outside of Japan. In the process of expanding our network to create new future business, our own talents will also be able to learn open innovation methods and strategies, including what they can create with which partners. This establishment of co-creation spaces is also part of our efforts to build new connections, and I think it will secure us a sturdy foundation a decade or two from now.

The co-creative ability to deal with pressing issues is also essential. We put this into practice in our Packaging Solution Center, which we opened in 2019, and in our Power Module Integration Center (PMiC), which began full-fledged operations in 2023. These sites enable us to deeply understand and respond to our customers' needs. They have semiconductor production equipment equivalent to that of our manufacturing customers, which we use to pre-emptively perform evaluations and simulations. This makes it possible for us to speedily provide high quality products.

Abe: At the Packaging Solution Center, we have launched the JOINT2 consortium, joined by 12 manufacturers in the fields of semiconductor packaging materials, substrates, and equipment. We have prepared an environment that fuses the diverse knowledge of the consortium's participants to tackle research themes. Normally, semiconductor manufacturers see material manufacturers as suppliers, but by sharing the same new technology development goals, our relationships are becoming more like partnerships. This represents tremendous progress.

P39 / Front-end / Back-end Semiconductor Materials
P65 / R&D and Intellectual Property Strategies

The capabilities essential for our frontline employee who connect customers with the field

Imai: Meeting all of our customers' needs is the very foundation of Resonac's business. Market competition is fierce, so developing products through co-creation with customers is vital to Resonac's survival. One could even say that our customers and their markets are nurturing us.

Abe: Electronics Business Unit has been rolling out products with a high global market share. At the heart of this strong market share is our motivation—we want to work hard for our customers and to contribute to the world. In that sense, earning power ultimately boils down to added value. Our customers pay for the value that we add, and that added value varies from project to project. It includes functionality, originality, development speed, and technical service, to name a few.

True co-creation doesn't consist of simply taking all customer requests at face value. Instead, for each project, we must understand our customers' true intentions and lead them to solutions. To achieve this, I believe our frontline personnel need to have attentive listening ability, predictive ability, and problem-solving ability.

Fukushima: If you focus on frontline communication alone, you won't be able to build relationships of trust with busy colleagues at Gemba, ultimately leading to precarious, day-to-day company operation. A person at the frontline is required to possess a sense of assurance that makes customers and internal engineers think, "If they say so, it must be true." A human touch that conveys the passion they feel for their projects is also vital. I believe that we are able to develop co-creative talent thanks to the number of communication sites we have that connect customers and the field.

Strengthening the Technical Management Department as a development and manufacturing hub

Abe: For our manufacturing customers, too, industry-wide needs are evolving at a dizzying speed. Even the products currently under mass production are subjected to frequent requests for quality improvement and specification changes. Speedily accommodating this requires teams that specialize in the product improvement phase. The Technical Management Section directly under the Manufacturing Department was responsible for this in the past, but to enhance these functions and to secure new technology development resources, in 2023 we promoted the Technical Management Section into the Technical Management Department. It brings together people with various backgrounds including development, manufacturing, and quality assurance, serving as a hub for different departments. Its coordination activities promote improvements to mass production products.

Imai: The process of transitioning from development to manufacturing, in particular, is prone to various errors. The Technical Management Department's role is to use co-creation to facilitate this transition and prevent mistakes. When transferring technology to overseas sites, as well, the Technical Management Department can make use of their storehouse of expertise and take charge of what was previously handled by the development division. This alleviates the resource demands placed on development.

Fukushima: The world's product specification demands have climbed far higher than they once were. Our development division listens to customer demands and

consistently raise to meet them, but the higher the level of the products we create, the greater the demands placed on the manufacturing department. To reduce this burden on the manufacturing department, we need to develop products with designs that make the manufacturing process as easy as possible. If, despite these efforts, manufacturing involves an unreasonable burden, errors will be inevitable. Strengthening our Technical Management Department enables communication in the form of consulting with manufacturing departments in the midst of development work and pro-actively promoting the preparation of production facilities and evaluation conditions. If we provide proper support in areas where problem-free manufacturing is taken as a given, we can set up smooth, safe production lines. This will ultimately increase our products' value and Resonac's earning power.

Striking the balance: assigning resources to highly profitable products and developing products that lead the way to the future

Fukushima: The further semiconductor technology advances, the greater our opportunities to compete will be. The harder development and manufacturing become, the less room there is for competition. Resonac has used the power of teamwork to tackle the issues before it, expanding market share worldwide.
Abe: Right. Our NCF non-conductive film is a great example of that. When we launched the program, people out in the field combined their efforts to achieve the world's highest levels of technologies such as coating and dispersion technologies. We increased sales of NCF as a material for use in AI semiconductors and other products, and we now have a 100% market share.
Imai: At the same time, one of my concerns is that there is less free time—less "play time"—that can be used to try out new things that aren't directly linked to operations. I think that new products are the product of technologies developed during that kind of "play time." When we announced the results of our research on TIM thermal conductive sheets, roughly 15 years ago, many people were skeptical of their potential for commercialization. However, now we see that their properties are an excellent fit for the rapidly growing AI semiconductor segment, and they have become one of our core products. If we are to increase our corporate value over the long term, we also need to turn our attention to people who are carrying out research based on new perspectives and creating environments based on innovative ideas.
Fukushima: Those engineers who have come up with the concepts that underlie new products must have had some ideas in mind before they even announced the results of their research. If nobody had alighted on these concepts, we wouldn't have the exceptional products we do today. Of course, we need to devote resources to highly profitable businesses, as well, so balancing these two is always a challenge. One possible way forward is through our talent portfolio. For example, there are people who excel at creating a seed out of nothing, and there are people who is good at turning seeds into giant trees. I think they have fundamentally different attributes. Going forward, we will need to keep a close eye on that as we assign talent and shape our organization.

Experience, diversity, and management strengths will raise the baseline of our organization's co-creation capabilities

Imai: There are two things we are currently focusing on in our co-creative talent strategies.

The first is providing individuals with greater experience. There are a lot of types of experience available to employees in our company. They can refine their expertise, diversify their perspectives, and collaborate with others. Strategic job rotation will significantly boost the growth of individual employees.

The other thing we are focusing on is fostering management skills that enable co-creative workstyles. Diversity is essential to engaging in discussions with people from different backgrounds and advancing projects. We have defined five skills that are essential for diversity: the ability to provide psychological safety, the ability to eliminate unconscious bias, communication skills, active listening skills, and facilitation skills. We deliver training sessions for all management personnel up to Officer level to bolster their co-creative collaboration capabilities and their skills in these areas. At the same time, we also provide co-creative leadership training across the organization so that participants can gain the talent development skills they need as leaders.

Furthermore, in the R&D field, we are placing particular focus on improving our talent portfolio. Reflecting these individual attributes in our role assignments requires a system for visualizing skills and aptitudes by data and for developing strategies based on quantitative judgments. We are currently in the stage of attempting data-driven team creation while leveraging FFS theory.
Fukushima: Managers at Gemba hold the key to all of these initiatives. Our organization can grow as a whole when managers have a deep understanding of the aptitudes of those they manage and give consideration to the most beneficial career paths. Managers need to refine their abilities through training, leveraging interviews and FFS theory while understanding Resonac's purpose and succession plans. From the perspective of the company's CTO, I would say that the key lies in building up experience looking at both technologies and business. If technologies aren't capable of generating profits, they can't be called innovation in a true sense.
Imai: Self-understanding of each employee is also important. In recent years, a certain expression has come into widespread use in Japan: career autonomy. This means consciously developing your own career and taking an active approach to learning in the midst of the ever-changing environment. We are holding events called "Purpose Exploration Café," whose theme is to promote autonomy and to take another step forward. In these events, employees reflect on their own purposes.

P14 / Purpose Exploration Café

Resonac's Purpose, improving and contributing to the world through the power of chemistry, resonates with many of our employees. These employees also happen to be highly motivated. Employees each thinking autonomously and choosing Resonac as their ideal environment such a partnership may even be the foundation of co-creation.

In the past, "career advancement" consisted solely of being promoted to management positions. But we introduced a dual ladder career structure that also makes it possible for employees to strive to become exceptional research and development professionals. We are promoting career autonomy and creating systems that allow people to work toward diverse career plans. From here onwards we will be working on better establishing those systems.

The future vision Resonac seeks to achieve through its human resource strategies

Imai: My vision, through our human resource strategies, is to create an organization that provides everyone with a sense of excitement. Being able to experience growth while enjoying yourself directly contributes to productivity and corporate value. That is why it is important to keep on contributing to society, to customers, and to ones' teams. The heartfelt desire to make the world a better place is, I believe, our driving force as one of the world-class functional chemical company.
Abe: Furthermore, I want Resonac to be "the first company to turn to when people need help with semiconductor materials." In the semiconductor industry, co-creating with customers from the very start provides us with a tremendous advantage. Our ideal is to generate and build up trust while expanding our technologies and network. Achieving this ideal is the mission of our co-creative talent.
Fukushima: Ultimately, we truly believe that technology will lead the way to a brighter future. To continue to be an organization where new technologies are constantly being created means that we are also being needed by society. And we need engineers and technologist, and the people who want to become them, to admire the environment we offer, making them want to work with us or join us as employees.
Imai: I want us to dedicate ourselves to creating talents who generate earning power so that Resonac remains a company needed and sought out by society and technical personnel in the years to come.

R&D and Intellectual Property Strategies

Please also read the "R&D" page on our website.

Mission

We will continue to create world-leading technologies and products through co-creative R&D via "Chemistry to Synthesize," "Chemistry to Formulate," and "Chemistry to Think."

We will strive to accomplish our missions of broadening of technology portfolios to create innovation, promotion of technology development across business headquarters, and changing society through long-term R&D projects.

Vision for the future (2030)

- Be a provider of technology and solutions attuned to the needs of society, the market, and customers
- Be a driving force of unceasing innovation by addressing and resolving technological issues inside and outside the Company
- Be the source of a stream of technologies contributing to a truly sustainable society by enhancing R&D activities from a long-term perspective
- Be the source of a stream of leaders and professional-minded human resources for the R&D activities

Issues to Be Addressed

- Promote co-creative R&D through internal and external open innovation
- Establish and operate a R&D system aimed at discovering and verifying new technologies
- Advance and step-up utilization of companywide common fundamental technologies
- Co-create and enhance aggressive IP activities that contribute to management and business

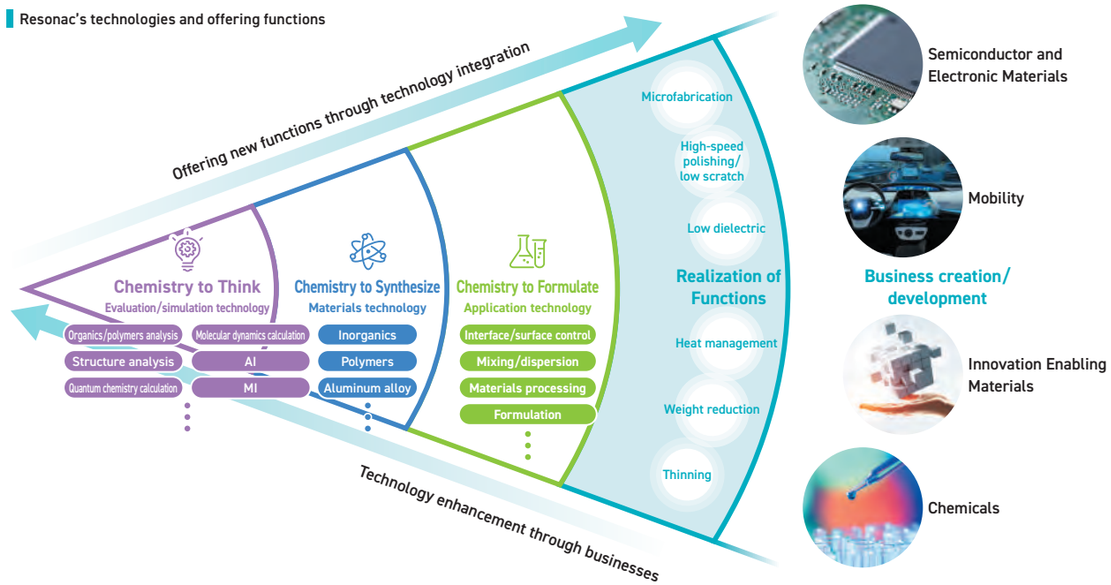
Non-financial KPIs

- Co-creation with internal and external parties
- Strengthening of R&D and intellectual property strategies
- Human resource development

P84 / Non-financial KPI Results and Targets

Results in 2023	Plans for 2024
Collaboration (vertical and cross-divisional) among business units: ● Promoted the development of advanced materials in the semiconductor field and turned multiple themes into business unit projects to foster co-creative innovation	● Promote integrated R&D management and cross-business headquarters co-creation, and accelerate, expand and conduct vertical collaboration of material development for the semiconductor field
Companywide common infrastructure technology: ● Through deep-level digital transformation, accelerated R&D utilizing computational science and data-driven R&D	● Promote digital transformation by utilizing computational science/generative AI and data-driven R&D
New technology search: ● Established a dedicated team on the Stage for Co-creation to actively utilize open innovation inside and outside the Company ● Ramped up search activities for research seeds and established liaison meetings between business units as part of efforts to achieve carbon neutrality	● Revitalize the Stage for Co-Creation ● Establish and start operation of "Research Gate Island" and "Technology Landmarks" for research centers ● Strengthen collaboration between business units that carry out R&D in the carbon neutral field and accelerate R&D activities
Co-creation and enhancement of aggressive IP activities: ● Collaborated with business units to visualize and strengthen the intellectual property portfolio of each business and to actively utilize rights to secure a competitive business edge	● Create a global intellectual property network highly effective in deterring other companies through cooperation with business units, improve the quality of our intellectual property portfolio, and actively utilize it
Human resource development: ● Formulate a plan to develop leaders who will drive R&D activities and professional-minded human resources to develop core technology	● Give 360-degree feedback to certain managers that are part of the CTO organization to identify whether their actions are in line with company values, thus providing an opportunity for self-awareness and behavioral change

Resonac's technologies and offering functions

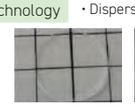
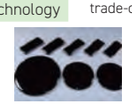
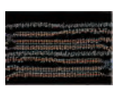


Examples of Areas of Focus in New Materials and Technologies

In the creation of new materials and technologies, we will focus on high-speed communications, power semiconductors, and innovative materials in fiscal 2024 as we conduct R&D for innovative technologies in fields such as photoelectric fusion, next-generation communications, bonding technology, and environmental protection.

We will also steadily refine our elemental technologies such as dielectric reduction, dispersion and mixing, heat management, the evaluation processes for these technologies, and our technology for resolving trade-off characteristics, thereby streamlining our product development cycle.

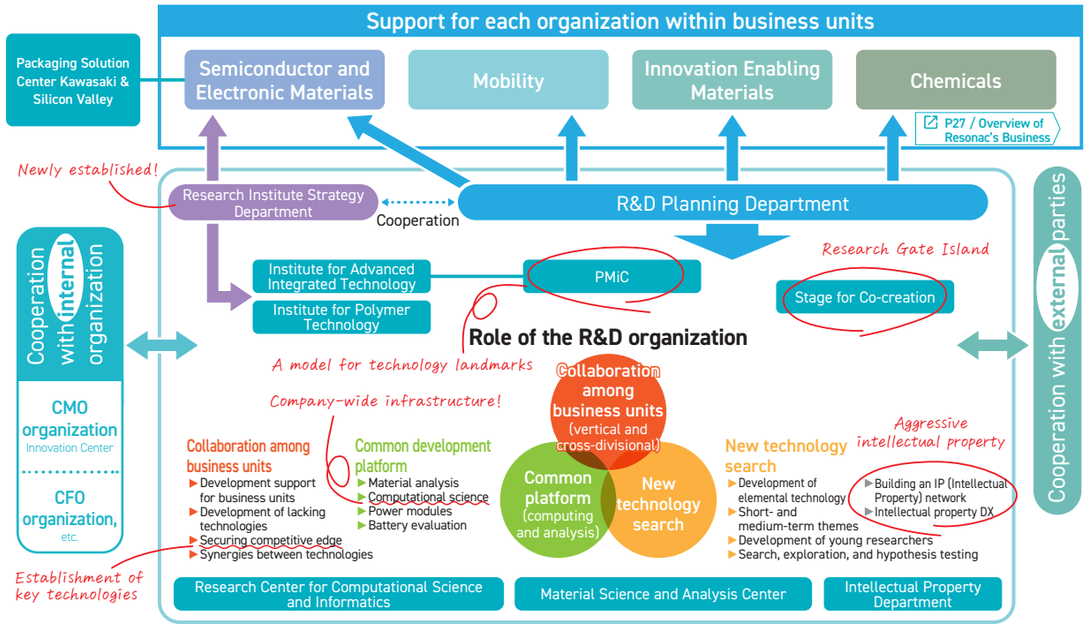
Creating new materials and technologies in high-speed communications, power semiconductors, and innovative materials as focus areas in 2024

	High-speed communications	Power semiconductors	Innovative materials
Field			
Technology	Innovative technology: ・Photoelectric fusion materials ・Next-generation communications materials Elemental technology: ・Low-dielectric technology ・Dispersion/mixing technology	Innovative technology: ・Low-cost bonding technology ・Technology for bonding different materials Elemental technology: ・Heat management technology ・Evaluation processes	Innovative technology: ・Environmentally-friendly technology Elemental technology: ・Technology for resolving trade-off characteristics
Examples	 Adhesives for photoelectric fusion New highly thermal-conductive filler	Sintering copper Technology for bonding different materials	 Low-melting glass  Low-elasticity, low-shrinkage resin

R&D and Intellectual Property Strategies

Co-creation with internal and external parties

We are carrying out co-creation efforts in cooperation with each organization within business units, internal organizations, and external stakeholders with the aim of increasing the probability of achieving results with our research. In 2024, we established the Research Institute Strategy Department with the aim of further collaboration between the Semiconductor and Electronic Materials Segment and the R&D divisions, the two areas on which we are focusing our efforts. The department is responsible for formulating strategies related to semiconductor power electronics, new themes, and the development of new products and elemental technologies.



Topics

Creating Technologies for Use in Space through Voluntary Employee Activities

The Japan Aerospace Exploration Agency (JAXA) invited applications for research on "Open Innovation Hub for Expanding Humanosphere and Domain of Human Activity through Solar System Frontier Development." We made a proposal for research into a heat storage and utilization system for use on the lunar surface that utilizes moon sand, which was accepted as a "Challenge Type" research program. This research was proposed by our employees participating in REBLUC*. We started joint research with JAXA in April 2024.

* REBLUC: Resonac Blue Creators, an in-house community aimed at nurturing young influencers

Scenario for Achieving Carbon Neutrality

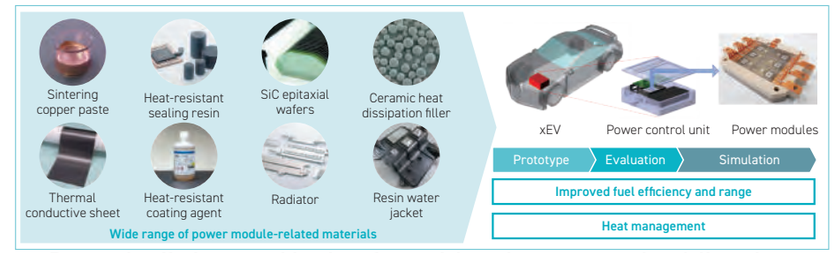
We have formulated a technology development scenario for achieving carbon neutrality by 2050, and are moving forward with innovative technology development starting with the petrochemicals and chemicals businesses. In CO_2 separation and capture technologies, we are carrying out efforts to reduce separation costs by adopting separation agents that have CO_2 absorption characteristics different from those of existing materials. By spreading the outcome of these efforts in society ahead of the rest of the world, we will secure an advantageous position in the generalization and standardization of these technologies, push forward with our intellectual property strategy, and promote the superiority of our technologies that cannot be imitated by other companies.

Place for Co-creation

Enhancing the Development of Materials Related to EV Power Semiconductors Power Module Integration Center (PMiC) proposes optimal materials for customers

At PMiC (in Oyama City, Tochigi Prefecture), which we established in 2023, we have a lineup of materials, such as high-heat-resistant coating materials for power modules and high-heat-dissipation coolers, and conduct material evaluations based on customer requirements. By sharing verification details, we propose the most suitable materials for our customers, thereby providing support for technological innovation from the material development stage and helping to shorten development time. We plan to expand the space for co-creation with customers and introduce new equipment by the middle of 2024.

PMiC is a platform for co-creation from an application perspective. PMiC is a platform for co-creation from an application perspective. We are strengthening cooperation with the relevant business units with a focus on power modules, battery evaluation, simulation-centric computational science, material element technology, and analysis. PMiC will support the business units from a research and development perspective by carrying out proactive proposals to strengthen module sales, such as for carbon footprint reduction.



Proposals offering a combination of materials and components that deliver the required performance
Shortening the time taken from power module material development to customer adoption

Examples of co-creation using computational science and infomatics

The Research Center for Computational Science and Informatics is an organization that integrates computational science (molecular simulation, structural and fluid simulation) and informatics (AI, MI*, image analysis, natural language processing, and development of the infrastructure for data utilization) technologies at a single location. The Center's mission, as an infrastructure for all business segments, is to position Resonac as a world-class functional chemical company. Here, we introduce examples and results of co-creation both inside and outside the Company.

Achieved automated material inspection by utilizing deep learning-based image analysis
Through co-creation between the Research Center for Computational Science and Informatics' image analysis team and manufacturing sites, who actually perform the inspection, we have achieved the automation of material inspection and significant reduction of inspection times.
(In Japanese only)

First semiconductor materials company in Japan to apply virtual reality (VR) in product development
Experiencing analysis at the molecular level facilitates communication between material development experts and computational science experts, leading to the acceleration of R&D.
(In Japanese only)

Utilizing AI and deep learning to significantly shorten material development time
Using deep learning technology that utilizes computational and experimental data accumulated from past material development made it possible to predict physical properties thousands of times faster than quantum chemistry calculation.

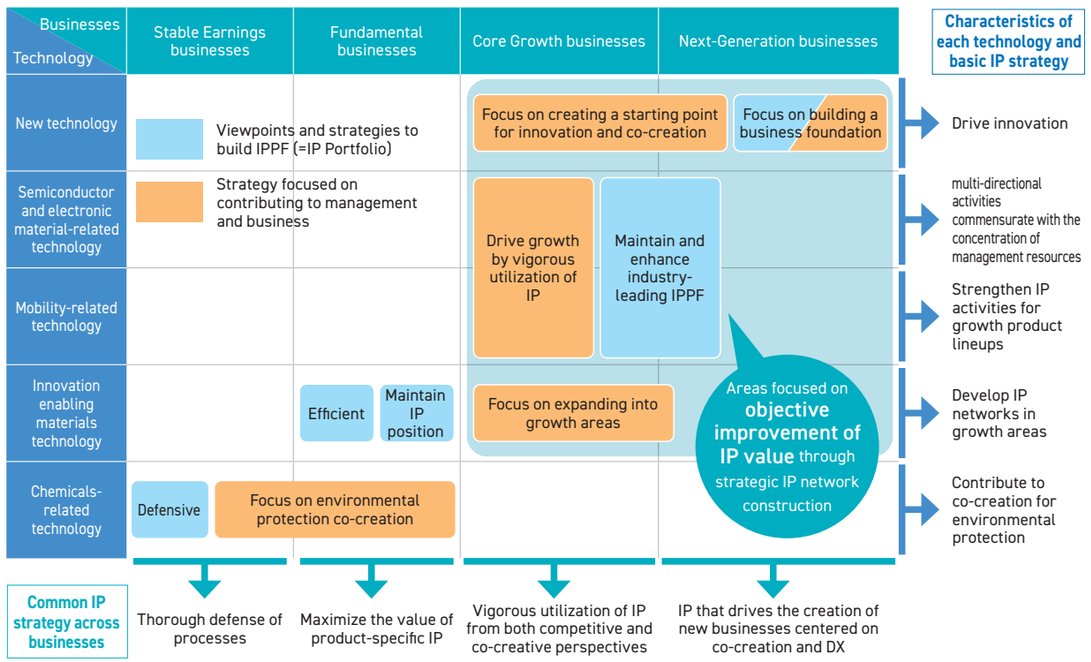
Materials informatics co-creation: Matmerize and Enthought
Since 2023, we have been collaborating with two startups in the U.S. to carry out co-creation aimed at expediting material development by focusing on the use of computational science, AI, and MI.

* MI: Materials Informatics

Initiatives to Enhance the Value of IP

Intellectual Property Strategies

We are striving to build the most suitable intellectual property portfolio for each business by taking an all-encompassing view of the Company's entire business portfolio and filing for global patents, among other means. We also formulate and implement intellectual property strategies that contribute to our management and business, enhance our competitiveness, and achieve sustainable growth, such as the vigorous utilization of intellectual property.



For Core Growth and Next-Generation businesses, including new technologies and semiconductors and electronic material-related technology, we have built a strong portfolio of industry-leading intellectual property and are working to objectively improve the value of this intellectual property. In addition, we have adopted "aggressive intellectual property" as a policy to vigorously utilize our intellectual property in a bid to drive the growth of our business, and are striving to increase earnings in a sustainable manner. In 2023, we filed a lawsuit against four overseas companies seeking an injunction and compensation for damages based on our patent rights for photosensitive dry films. We are also developing an intellectual property strategy with a view to promoting co-creation to drive Resonac's growth (see Topics for details).

Meanwhile, for Stable Earnings and Fundamental businesses, we are implementing intellectual property strategies that contribute to the stabilization of business operations. In Chemicals-related technologies, in addition to defensive activities to protect processes and know-how through the appropriate acquisition of intellectual property rights and thorough information management, we are also building an intellectual property portfolio that contributes to co-creation in environmental protection activities such as KPR (business that turns used plastics into raw materials). With regard to Innovation enabling materials technology, we are carrying out activities to maintain the position of our intellectual properties, such as filing for improvement invention patents, as well as an intellectual property strategy that supports our entry into growth areas from an intellectual property perspective.

Through these initiatives aligned with our business strategy, we will endeavor to maximize our technological value and corporate value.

Utilization of IP Landscape in our Businesses and Evaluation of Intellectual Property Value

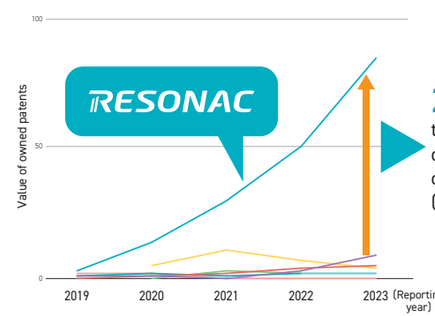
At Resonac, the intellectual property department, business units, and R&D organizations collaborate and utilize the IP landscape to visualize the patents held by Resonac and clarify Resonac's position in each technological field. In addition to efforts in the R&D field, we are also exploring new market needs by utilizing the IP landscape to develop applications and expand functions for Resonac and customer products. Furthermore, purchasing and procurement departments also utilize the IP landscape to find new suppliers and evaluate the technological capabilities of each company.

Our interim goal is to have intellectual property value equal to that of top-class Japanese companies, with the ultimate goal being possessing value on par with leading global companies.

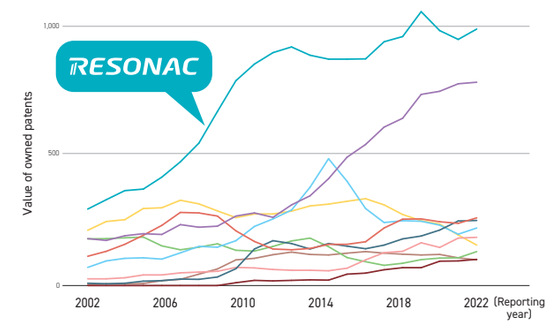
The value of our patents (PAI = Patent Asset Index*; registered trademark of Lexis Nexis) in the field of materials informatics in computational information science, one of our core themes, has been increasing significantly in recent years. In 2023, the value of our intellectual property was 26 times higher than that of rivals, indicating our competitive advantage (chart on left below).

In addition, the value of our patents of next-generation semiconductor packages has increased since 2002, and has maintained a certain level of value since the 2010s (chart on right below). Going forward, we will work to increase our market value by refining our global patent filing strategy, in addition to efforts to further improve our IP portfolio by quickly filing key R&D results in a multifaceted and multilayered approach.

Comparison of the value of materials informatics patent assets versus rival companies



Comparison of the value of Next-Generation Semiconductor PKG patent assets versus rival companies



*Evaluation of valid patents using Lexis Nexis' PatentSight+ patent database; PAI is calculated based on Technology Relevance of each patent and Market Coverage.

Topics

Establishing an Intellectual Property Portfolio from a Multi-directional Co-creation Perspective

We are committed to conducting intellectual property activities that lead to the establishment of a wide-ranging intellectual property portfolio that contributes to co-creation from the conception stage of a new business. Thus far, our focus has been on the establishment and utilization of an intellectual property portfolio with the aim of eliminating competition and generating earnings. Going forward, in addition to these efforts, we will develop and utilize our intellectual property portfolio from a multi-directional co-creation perspective, including various companies, regions, customers, suppliers, startups, and academia. The establishment of an all-encompassing intellectual property portfolio will not only attract co-creation with various stakeholders involved in new businesses, but will also enable us to discover new opportunities such as standardization.

In terms of specific initiatives, in 2023 we joined and became a Partner of WIPO GREEN, a global platform for environmental technologies operated by the World Intellectual Property Organization (WIPO), with the aim of promoting co-creation through the registration of intellectual property related to environmental technologies.

Corporate Marketing Strategies

Mission

We will help build a sustainable society alongside the growth of our customers by identifying issues faced by society and our customers, and proposing solutions using our technological strengths. To this end, we will lead the development of skills and human resources related to internal marketing and business creation.

Vision for the future (2030)

- Creating next-generation businesses through co-creation inside and outside the Company
- Utilizing digital technology to carry out efficient marketing activities
- Strengthening human resources and organizational capabilities through cross-organizational rotation

Our value is in proposals that can solve the problems of the market and our customers. We will drive activities that create technologies, products, and services, and strengthen proposals that focus on the needs of our customers and those beyond them.

Shigeru Fujita
CMO

Issues to Be Addressed

- **Achievement of sustainable growth through the penetration of problem-solving marketing activities**
- **Creation of internal and external collaborative projects that connect customers (markets), technologies, and businesses**
  The corporate marketing departments will provide support to strengthen the marketing activities of each business unit, and carry out cross-divisional marketing activities including the promotion of cooperation between business units.
  It will also propose value by stepping up collaboration with R&D departments, thereby strengthening the matching of potential market needs with R&D seeds as a function that connects businesses and technologies.
- **Development of marketers with business development skills that understand customer needs, market trends, and our proprietary technologies**
  Improve business development capabilities by implementing marketing and sales development programs in marketing and sales departments and developing human resources with an understanding of the value chain

Non-financial KPIs

- Create large-scale projects through the penetration of problem-solving marketing
- Digital platform utilization

P84 / Non-financial KPI Results and Targets

Results in 2023	Plans for 2024
Market development ● Promote co-creation activities with customers ● Promote commercialization of new themes ● Review processes for creating new large-scale themes	● Offer proposals for next-generation themes through co-creation with customers ● Commercialize new themes ● Begin operation of new theme creation processes ● Implement marketer development programs
Digital platform ● Utilize digital marketing in cooperation with business units ● Widespread adoption of CRM* tools	● Globally roll out digital marketing and CRM tools

*CRM: Customer Relationship Management

Place for Co-creation

As a venue for triggering co-creation and relationship building with stakeholders, the Innovation Center is established on the 29th floor of Pacific Century Place Marunouchi, just a two-minute walk from the Yaesu South Exit of Tokyo Station.

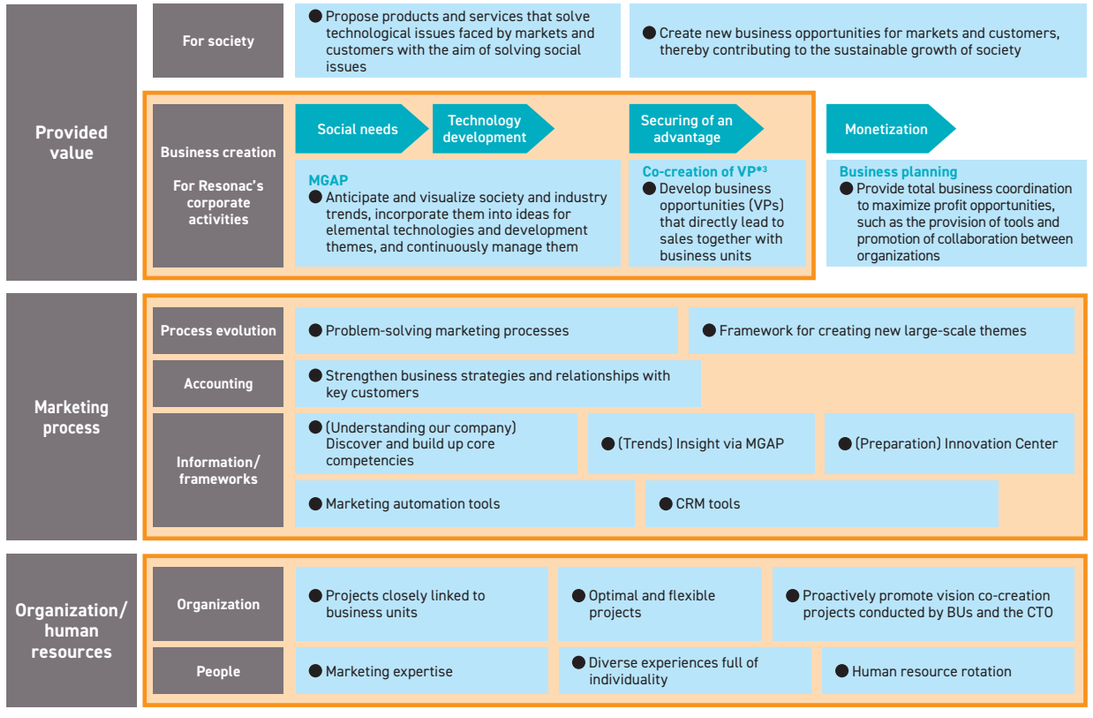
The Innovation Center aims to explore new themes through interactive communication. Hands-on exhibits enable visitors to experience some of our core technologies, thus facilitating achievement of our goal of engaging in co-creation with customers, business partners, and all of our other stakeholders.

Innovation Center (Chiyoda-ku, Tokyo)

Promotion of Problem-solving Marketing Processes

Through the promotion of problem-solving marketing processes that identify technological issues faced by customers by anticipating social and market trends, we aim to develop elemental technologies and create businesses that contribute to solving these issues. We use MGAP*1 to identify technological issues faced by customers, and carry out proposal activities by organizing them in relation to the value provided by the features of our products, differentiation from competing technologies, and benefits to be gained by customers. We are also working to improve the efficiency of marketing activities and visualize the results through the increased operation of digital tools such as MA*2 and CRM.

In addition, we are focusing on developing human resources that can autonomously carry out a series of proposal activities, alongside efforts to build a process foundation that enables the continuous proposal of solutions.



*1: MGAP: Multi Generation Application Planning *2: MA: Marketing Automation *3:VP: Value Propotision

Topics

Co-Creation with Customers: Promoting Proposals with an Eye to Next-Generation Power Modules

We endeavor to solve customer-oriented issues. For example, we are working to strengthen our ability to propose power module-related materials with the aim of developing next-generation power module technology. In order to solve such issues, we carry out co-creation with major customers, and also utilize the Power Module Integration Center (PMiC), which possesses material development capabilities and power module evaluation technology, to conduct module evaluations quickly and efficiently. Through these efforts, the Corporate Marketing Department, PMiC, and business units work together to solve issues through co-creation by making proposals to customers on the enhancement of individual materials, selecting from a wide range of materials, and combining materials.

P68 / R&D and Intellectual Property Strategies

Digital Strategies

Mission

We will evolve and refine our business processes both internally and externally through advanced and thorough utilization of digital technologies and data and lead the transformation of our organizational culture. In addition, through the development of core digital-proficient human resources and their optimum assignment, we will continue improving and transforming our businesses and contribute to society together with stakeholders.

Vision for the future (2030)

- Digital transformation is promoted in all businesses and operations, and resources are concentrated on core operations that are the source of our competitiveness by 2030. We promote co-creation with stakeholders and contribute to the creation of high social value. The automation of routine and back-office work is also progressing.

Issues to Be Addressed

Short term (2024 to 2025)
- Optimization of TCO*1 and reconstruction of IT/DX infrastructure
- Strengthening of cooperation with business units and plants
- Promotion of advanced digital tools usage

Long term (2026 to 2030)
- Review of core systems
- Increased sophistication of operations through data utilization
- Co-creation of new business models

Non-financial KPIs

- Data-driven management
- Promotion of digital transformation and development of professional-minded human resources
- Enhancement of IT and digital literacy

P84 / Non-financial KPI Results and Targets

Results in 2023

- Started using data visualization tools (BI tools) to visualize and analyze management figures at the Management Committee
- Started process planning to visualize and reduce GHG emissions
- Completed defining role of IT/digital human resources based on the i Competency Dictionary advocated by IPA*2 for human resources within the CDO organization
- Utilized AMI's AI-based image recognition technology and digital-proficient human resources with skills in simulation technology as company assets

Plans for 2024

- Develop infrastructure and enhance systems aimed at realizing IT/digital utilization
- Strengthen cooperation with business units and plants through IT/DX business partners
- Support the use of advanced digital tools (create synergies with AMI, promote the use of digital tools such as ChatGPT)

*1: TCO: Total Cost of Ownership *2: IPA: Information-technology Promotion Agency

Also focusing on developing digital-proficient human resources!

Human resource development for all employees
In order to develop human resources who can utilize IT/digital technology, we have categorized IT/digital literacy into four levels. In fiscal 2023, we provided a basic IT training program for all employees as Level 1 (entry level). In fiscal 2024, we will focus on Level 2 (daily use) and Level 3 (business use), and conduct a training program that focuses on the utilization of the IT and digital tools that have already been introduced. We will also focus on training and human resource development for employees that are leading the use of IT and digital technology in the field.

Human resource development for specialist personnel
For IT/digital professionals, we conduct assessments to visualize their skills. In addition, we provide advanced IT/digital training programs tailored to their expertise to support further growth. We also create a talent portfolio and formulate plans to develop the specialist human resources needed for our businesses.

Strategies and Steps to Achieve Digital Innovation

By updating our business systems to an open and secure architecture, we aim to enable efficient data management. First, we will develop infrastructure and strengthen systems geared toward utilizing IT and digital technology. We will also strive to improve our data-based competitiveness.

In order to achieve the goals above, we will allocate IT/DX business partners, connect IT/digital technology with work sites, and make efforts to solve issues by conceptualizing and planning, introducing systems, and improving work processes.

	2024-2025		2026-2030	
CDO Organization Vision	Infrastructure development and system enhancement to support IT/digital technology		Increase competitive edge through data-driven operations	
Steps/Action for Achievement	❶ **Review infrastructure** ・Identify optimal costs and optimize costs ・Develop system infrastructure ・Strengthen collaboration with IT/DX business partners, etc.	❷ **Strengthen infrastructure and business structure** ・Optimize lifecycle costs, management ・Enhance sophistication of security measures ・Expand the use of digital tools such as generative AI, etc.	❸ **Enhance sophistication of businesses and operation** ・Update core systems ・Increased sophistication of operations through data utilization ・Shift to high value-added operations	❹ **Create differentiation and competitiveness** ・Transform existing business ・Co-create new business models ・Create new business services using advanced technologies

Co-creation Case Study

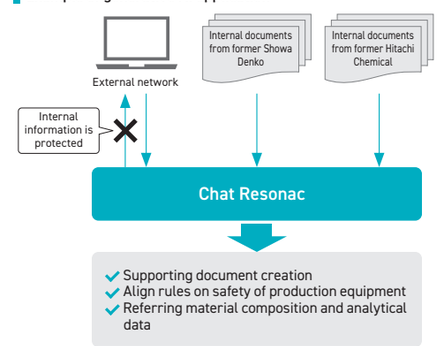
Development of Generative AI "Chat Resonac"

We have developed a generative AI system called "Chat Resonac," an exclusive environment for ChatGPT that allows us to easily retrieve necessary information from a vast amount of data, including handwritten notes related to development and manufacturing. Since it is an in-house system, there is no risk of information leaking outside the company, enabling employees to use it safely and securely. We also provide appropriate support, such as conducting training on how to use it and sharing information on utilization, so that employees can use it efficiently in their day-to-day work.

The close exchange of information and mutual understanding between the development staff and on-site employees also contributed greatly in establishing this system. In addition to this companywide system, the Research Center for Computational Science and Informatics is taking the lead in conducting a demonstration experiment for specialized Chat Resonac that can also utilize internal documents.

In order to maximize the benefits of generative AI and realize more efficient and creative work, we plan to actively promote the spread and use of Chat Resonac.

Example of generative AI application



Applied an AI model to Refine Quality Anomaly Analysis and Started Verification of Production Yield Improvement

At business units, with the growing quality demands from our customers, faster and more detailed customer support are being required. For example, one business unit faced the challenge of reducing and refining the time needed to analyze the causes of product quality issues. To tackle this issue, we are leveraging digital technology to co-create with business units in solving problems. This includes developing AI models that accurately predict product quality by analyzing process, material, and inspection data using machine learning. This model has the ability to identify parameters that contributed to predicted quality (interpretability), and by providing humans with knowledge, it can contribute to shortening the time required for factor analysis. At this stage, we have completed a prototype based on this model, enabling us to achieve high accuracy. We plan to continue verification efforts and determine its usefulness in 2024.

Human Resource Strategies

Please visit our website for more details on our policies, promotion system, and activities.

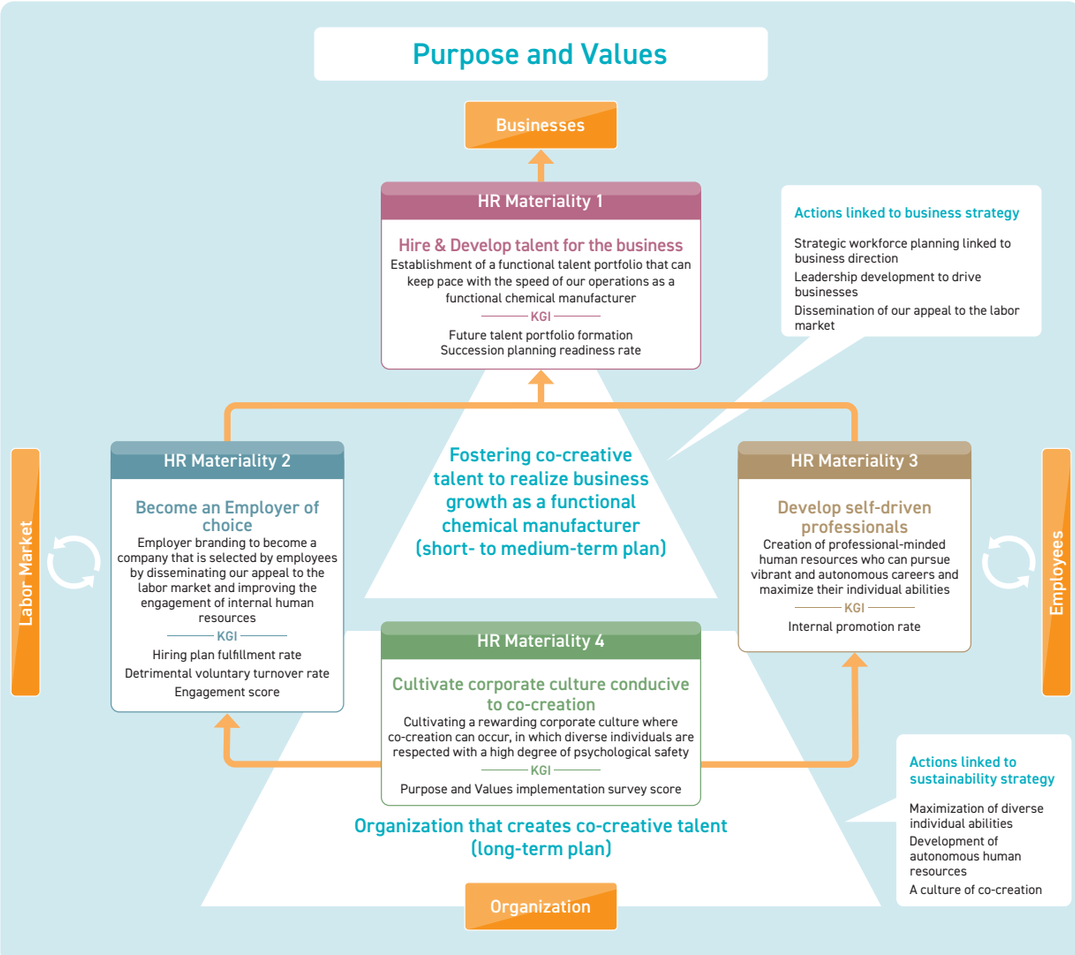
Mission

To enhance our corporate value, it is essential that we fully align our business strategies (portfolio strategy) with our human resource strategies. We will strive to foster a culture of co-creation unique to Resonac through the implementation of our Purpose and Values, thereby achieving further growth of our business by creating "co-creative talent*."

*Co-creative talent: Human resources that can innovate and solve problems creatively through co-creation founded on autonomous bonds with people inside and outside the company in the pursuit of resolving social issues

Issues to Be Addressed (Material Issues for Human Resources) and KGIs

Four issues are linked to our material issues of "fostering autonomous and creative human resources and cultivating the associated corporate culture" and our business strategy. Based on these four Material Issues for Human Resources that fosters co-creative human resources talent over the long term, and in the short to medium term, we will promote measures to enable co-creative talent to achieve business growth as a functional chemical manufacturer.



▶ See here for KGIs/KPIs of HR materiality P86 / Non-financial KPI Results and Targets

Resonac's source of value is its human resources. By using the Company's diverse range of technology platform as a base, these human resources combine differing technologies to create functions. In this section, we introduce the human resource portfolio strategy for the Electronics Business Headquarters, which is particularly focused on efforts to develop co-creative talent.

Nori Imai
CHRO

Human Resource Portfolio Strategy Linked to Business Strategy

In order to realize each of our business vision for the future, we will organize and define the skills and competencies required for each position and establish a staffing plan based on the status of fulfillment of the required human resources.

For example, in the Electronics Business Headquarters, which is responsible for the semiconductor materials business, a Core Growth business, the roles of development engineers have been subdivided to formulate a unique human resource portfolio model. Based on this, we determined the staff structure of the business we should work to achieve in five years' time, clarified the current gaps, and implemented measures in each of the areas of recruitment, shifting resources, retention/ engagement, and engineer development.

Examples of Electronics Business Headquarters

Business strategies ⟷ Financial strategies

Human resource portfolio strategies
(establishment of human resource portfolio model)

Personnel vision: Increase the number of R&D staff by 10% or more in 2028 compared to 2023

Human resource initiatives aimed at realizing our ideal human resource portfolio

Recruitment	Shifting resources / Strategic rotation	Retention / Engagement	Engineer development
● Recruitment of top talent with highly specialized skills from outside the Company ● Recruitment of new graduates, mainly those specialized in the chemical and IT fields	● Proactive acceptance of highly motivated engineers from other departments (internal recruitment) ● Strategic rotation of human resources to core growth areas in specific areas of expertise	● Onboarding program for new employees ● Mentoring of personnel transferred from other departments	● Fostering a corporate culture of mutual training and co-creation in a wide range of technical fields within the Company ● Improvement of problem-solving skills through participation in external co-creation activities ● MOT (Management of Technology) selection and recurrent education

Strategic rotation with the CTO organization

We are implementing mutual rotation measures between CTO organization's researchers and the developers at the Electronics Business Headquarters' development center. Researchers gain experience at the development center to acquire a deeper understanding of materials and customer needs, leading to the improvement of research at the CTO organization. Meanwhile, developers at development center share more practical knowledge and experience regarding semiconductor materials within the CTO organization, leading to more efficient and practical research.

Fostering a culture of co-creation within business units

Since combining and aligning laminate materials until they become products is an extremely complex process, they are difficult to manufacture without cooperation between the responsible personnel in business units. To enable prompt action in these processes, we have been rotating personnel between departments. A corporate culture of co-creation has already taken root, in which business unit leaders are constantly taking the lead in communication within the organization.

Skill improvement through co-creation with external partners

JOINT2, a consortium for evaluating next-generation semiconductor packaging, evaluates and examines semiconductor processes in cooperation with professionals from many companies. This consortium enables us to obtain knowledge about facilities and processes that we could not obtain independently, helping to greatly improve our ability to propose materials to customers.

Masato Fukushima
CTO

Even in R&D, this experience, which has brought us closer to our customers, will help us realize our Purpose: "Change society through the power of chemistry." Please see P59 **to read the roundtable discussion on these initiatives.**
In addition to Business Headquarters, we are also planning for training to gain marketing and other experience.

Human Resource Strategies

We have been speeding up the implementation of various human resource initiatives aimed at optimizing human resource management on a global scale. In particular, from 2022 to 2023, we carried out major reforms to key human resource initiatives, such as the integration of personnel systems, the establishment of the talent management system, and the introduction of a new human resource system. In line with the business integration, the entire system was completely revamped in a very short period of time, and operations have already begun.

With regard to measures such as the development of core management personnel, talent reviews, and succession planning, we have introduced a human resource management system that meets global standards to establish a digital foundation for human resources. We are also building a system that enables data utilization in accordance with these measures.

From 2024, we started rolling out these measures, which had been implemented mainly in Japan until 2023, on a global scale across the Group.

Schedule for the implementation of personnel measures

2022	2023	2024	Vision for the future
■ Preparations for introducing new human resource system ■ Consideration of framework for early selection of core management personnel ■ Start the introduction of talent review ■ Creation of CXO/BU leader succession plan (implemented outside the system) ■ Start the introduction of co-creative leadership training ■ Start the introduction of training sessions to bolster the co-creative collaboration capabilities	■ Integration of personnel systems (Japan) ■ Introduction of new human resource system (mainly in Japan) ■ Selection and development of candidates for core management personnel (Japan) ■ Implementation of succession planning / talent review (Japan) ■ Implementation of co-creative leadership training (Japan) ■ Implementation of training sessions to bolster the co-creative collaboration capabilities (Japan)	■ Global development ・Introduction of global grades ・MBO unification ・Selection and development of candidates for core management personnel ・Succession planning / talent review ・Co-creative leadership training ・Implementation of training sessions to bolster the co-creative collaboration capabilities	■ Realization of a dynamic portfolio that aligns with our business strategies ■ Recruitment and strategic development of candidates for core management personnel, and establishment of a diverse pool of talent ■ Realization of autonomous career development through internal recruitment on a global scale, etc.

Business integration

Priority Measure (1) To develop leaders that foster co-creative talent: Co-creative leadership training

We have been conducting co-creative leadership training since October 2022 with the aim of becoming an organization with high human resource development capabilities. As of May 31, 2024, 1,448 employees were enrolled in the program. Many managers with subordinates and employees in non-managerial positions responsible for training the next generation through on-the-job training (OJT) are also taking this program.

Co-creative leadership training involves re-learning and practicing basic knowledge and skills in people management based on the results of the engagement survey carried out prior to Resonac's establishment. Employees learn about MBO, key points for effective on-the-job training, and giving appropriate feedback and coaching.

Through the extensive group work and role-play activities provided in the training program, participants not only gain knowledge, but are also given the opportunity to review practical situations. Training is carried out by in-house instructors.

In a survey we conducted among training participants, 92% were satisfied with the content, 95% found it useful, and 96% said they could see how they would immediately apply what they learned in the workplace.

We started working on global development in 2024, and are training in-house instructors in Europe, China, the U.S., and Southeast Asia, and implementing the leadership training.

Going forward, we will continue to implement these measures as a foundation for the Resonac Group's human resource development.

Training being carried out in Europe

Feedback from participants

"There were many training exercises and it was a very meaningful training."
"I experienced coaching on a 1-on-1 basis, which reminded me how useful it is."
"The training reaffirmed the importance of communication and how difficult they can be."

KGIs/KPIs	Results in 2023	Targets for 2024	Targets for 2025
Percentage of line managers who participated in management enhancement training	70%	85%	90%

Priority Measure (2) To implement our unique human resource strategy on a global scale: Global grading and evaluation system

As part of efforts to globally develop various personnel systems, particularly grading and evaluation systems, we have been taking measures to unify grades of management staff (global grades) and evaluation systems (MBO) across the entire Group.

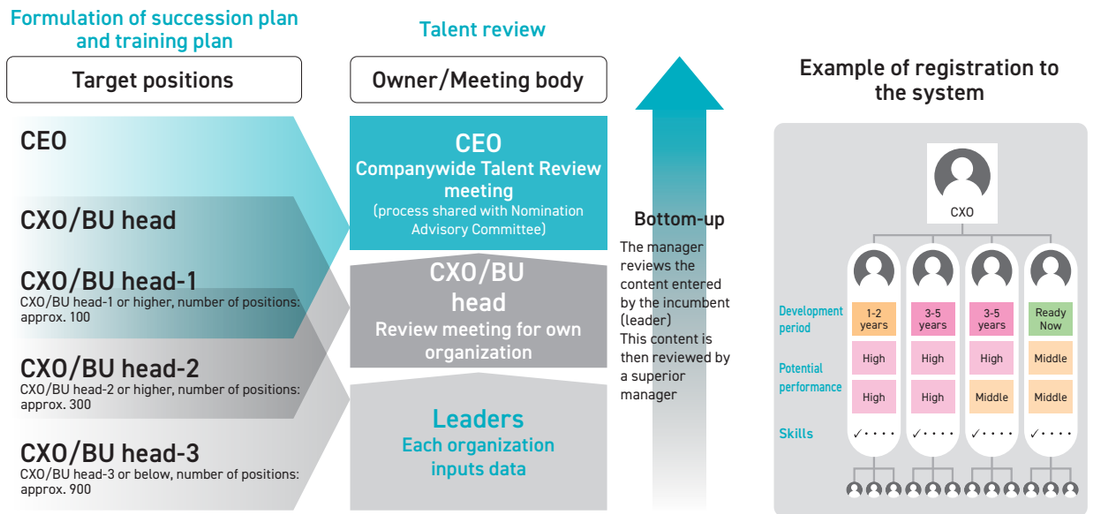
By unifying these grade and evaluation systems, we not only established common standards for roles and evaluations across the Group, but this has also led to the global development of other personnel measures, such as talent management including succession planning and training. Furthermore, our MBO not only evaluates "results against performance targets," but also emphasizes "action and growth," and evaluates the degree to which values are put into practice.

This has made it possible for us to promote the permeation and practice of values across the entire Resonac Group, realize human resource/performance management on a common global metric, and to establish a common foundation for human resource systems.

Going forward, we will take further measures to ensure that the right person is in the right position on a Group-wide basis.

Priority Measure (3) To develop the next generation of leaders: Talent management

We launched a "company-wide talent review" meeting to give the management team an opportunity to openly talk about organizational issues, as well as about succession candidates and the next generation of leaders. In addition to holding discussions on the succession plans and the human resource development policies formulated by business units, we have also been working to build a talent pool (candidates to serve as the next generation of leaders) managed by the entire Resonac Group. In 2023, we conducted a bottom-up talent review of all leadership positions in Japan (approximately 1,300), with the CEO as the owner. As a result, more than 90% of the eligible positions have formulated succession plans and completed system registration, and discussions on human resource development have begun at each workplace. Going forward, we will expand the scope of this review globally, and start considering the visualization of high-potential talent from overseas and the adoption of cross-border job assignments. In addition, the status of talent reviews is regularly reported to the Nomination Advisory Committee to confirm the appropriateness of the process.



KGIs/KPIs	Results in 2023	Targets for 2024	Targets for 2025
Succession planning readiness rate (KGIs)	135%	150%	180%

02-3 Sustainability

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109 Risk Management
111 Identifying and Prioritizing "Companywide Key Risks Themes"

Nami Matsuko
Chief Sustainability Officer (CSuO)

How We Change Society

Aiming to make sustainability "everyone's business"

1 Why does Resonac work on sustainability?

Resonac changes society through the power of chemistry Sustainability is always at the core of our management

"Sustainability is what companies that are already generating good profits do, after they establish a system for doing so." Such view may be the majority in the world. However, Resonac is currently working on sustainability so that we can generate more profits. Resonac is a company that is committed to "changing society through the power of chemistry." In order to develop our power to generate profits in good faith and create the future we all hope to realize based on our stated Purpose, it is essential to place sustainability at the core of management.

While chemistry has a bright side that solves various social issues, it also has a dark side that burdens the environment and society. As such, Resonac cannot address sustainability with just high-sounding talk. We believe that generating profits and changing society for the better, and the bright side and dark side of chemistry, are not counterparts that conflict with one another but rather factors that can be brought into agreement across time and space. When those factors align, both the improvement of corporate value and the state of the society and environment surrounding us are sure to follow as a result. With this belief, we engage in our sustainability activities on a daily basis.

On the topic of sustainability, I believe that what our valued stakeholders are currently keen to know most about is not the quantitative results, such as the absolute value of CO_2 emissions or the ratio of female managers, or proof which non-financial efforts have led to financial results, but rather the background of the issues, how we are trying to overcome them, and whether they can be linked to our earning power.

In the next section, together with our colleagues, we will convey our current situation in response to your questions and the path of our efforts with an eye to the future.

2 How to promote sustainability and the role of the Sustainability Promotion Council

Creating a forum for trial and error in finding ways to overcome challenges

The first step we took in 2022, one year before the official launch of Resonac, was to identify materialities. From this, we set non-financial KPIs, aligned them with our long-term vision and linked sustainability with management.

Non-financial KPIs tend to be dry, top-down figures from management that must be achieved. We set aside the textbook model for the moment and discussed the vision for the future each department has for 2030. We then compiled qualitative and quantitative non-financial targets from the perspective of what needs to be achieved by 2025. We are monitoring our progress regularly and reflecting on whether the content is what employees can agree to and work on, whether the KPIs are in line with what we originally wanted to do, what initiatives will strengthen management and allow Resonac to generate profits, and whether we are responding to prevent sudden value impairment.

P87 / Cross-talk: "How We Overcome Our Challenges"

The Sustainability Promotion Council is a forum for discussing such themes that should be addressed on a Group-wide basis. In order to create a common language for sustainability, from 2022, the CEO, all CXOs, BU heads, and sustainability partners from each department discuss a wide range of themes every month. Starting in 2023, we began attaching "frustrating (MOYAMOYA)" or "exciting but nervous (DOKIDOKI)" marks to each theme. Our idea is to take the opportunities and risks that have not yet become apparent due to the barriers between department and make them "everyone's business" rather than feeling frustrated alone about them, by discussing them in an open forum about who should take the lead, how to set priorities among them and how far they should be addressed currently while looking to the future. "Exciting" marks a proposal to share the requests of advanced customers and leading international regulatory trends, in order to understand the current situation in which addressing sustainability is directly linked to business competitiveness, and move forward to the next step.

To begin with, sustainability is not about achieving a perfect score under some predetermined criteria. It is a moving target that should change according to society, the times, and our own company's circumstances. Work ing on this also means pursuing the "Resonac style," which has no correct answer. In order for Resonac to generate profits in good faith on a permanent basis and have the power to change society for the better, we will continue to work through trial and error to find better methods with our management team, sustainability partners in each department, and all of our colleagues who aspire to work on sustainability.

As for organizations, in 2022 we established a Sustainability Department under the Strategy Division, and took an aggressive stance which includes communicating information. We started by changing what we do, who does it, and how we do it, from the traditional organization that merely complies with laws and regulations and responds to timely disclosure.

In 2024, we started the CSuO Division with the aim of further integrating sustainability with management and business strategies, rather than separating them. As the Chief Sustainability Officer (CSuO) and a member of the Management Committee, I believe that we must draw on the wisdom of our colleagues in each role in as we consider measures to change society and generate profits through sustainability, including proposing changes to the presuppositions of the question itself, in response to the tough challenge of "generating profits vs. sustainability."

3 The future we seek to realize together

Become Resonac of Choice

One of the two pillars of Sustainability Vision 2030 for Resonac is to be "a company with like-minded partners throughout the world."

We aspire to be a company that is chosen by like-minded people, customers, and business partners all over the world, and for Resonac itself to choose such like-minded partners. The integrated report and the first sustainability meeting held in December 2023 were intended to widely share this concept with our stakeholders.

We are also focusing on "fostering a sustainability mindset" within the company. We will connect and support the many colleagues who aspire to change society to be sustainability-oriented, and take action with them to make it a reality. I am certain that these efforts will eventually bear fruit in the form of products and services such as "Resonac Pride," thereby further strengthening Resonac's earning power.

P89 / Roundtable Discussion: Toward the Future - Co-creation with Omachi City, Nagano Prefecture
P91 / Resonac Pride Products & Services

Resonac's goal of sustainability is one that we promote as "everyone's business." We hope to increase the number of people who are able to see sustainability as their own issue, and together we can overcome organizational and revenue barriers that one person or department cannot overcome alone. I am sure that an uplifting and delightful society will await us beyond the frustration and excitement we currently face. Please join us in the journey as we strive to realize our aspirations.

Promoting Sustainability

Resonac positions sustainability at the core of our management. In order to "change society through the power of chemistry" and to become a "Co-creative Chemical Company," we have established "Sustainability Vision 2030," identified material issues for sustainability, and we are promoting initiatives linked to these materialities.

P83 / Non-financial KPI Results and Targets

Sustainability Vision 2030

Achieve corporate growth through the resolution of social issues
Develop into a company that realizes its own continuous growth and corporate value improvement, by solving social issues and offering value to society through its technologies and businesses

A company with like-minded partners throughout the world
Become a "Co-creative Chemical Company" that is the first choice of, and can choose, partners in creating a sustainable and better society, including future generations of customers, employees, investors, and stakeholders

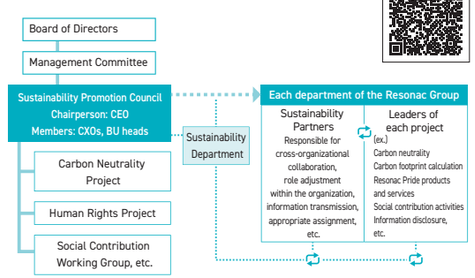
Sustainability management

The CEO supervises Resonac's sustainability and the CSuO is responsible for the promotion of sustainability. The Management Committee deliberates and decides on important items such as policies and plans and then consults with and reports to the Board of Directors.

The Sustainability Promotion Council convenes a monthly meeting that Group CXOs, including the CEO, attend, and quarterly expanded meetings, which is also attended by the business managers (BU heads), as forums for discussing wide-ranging agenda items of sustainability-related topics and fostering a common understanding. In addition, to address specific issues with agility and on a cross-organizational basis, several projects have been established, which report to the council.

In order to link the discussions in the council to organizational operations and share them with employees, we have appointed sustainability partners (promotion managers) in the business units and CXO organizations, and we are promoting sustainability initiatives in each department while understanding the current status, issues, and interests of each unit. Moreover, by creating opportunities for horizontal communication among Sustainability Partners, we encourage active exchange of information on changes in customer requirements and other issues that transcend differences among the industries we serve.

See here for 2023 Sustainability Promotion Council agenda



Sustainability evaluation in executive compensation

We have included sustainability evaluation items in the short-term performance-linked items for executive compensation, and linked them to compensation. Based on discussions on the roadmap to achieving non-financial KPIs linked to materialities, we evaluate each executive by setting different evaluation items for their respective areas of responsibility.

At the same time, we also set common items such as safety and successor training, and these items are designed to link with employee evaluation through management by objective (MBO).

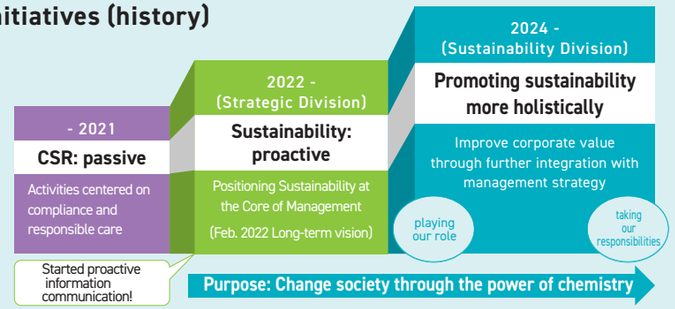
Positioning linkage with compensation as an important measure for promoting sustainability, we will continue to consider how best to incorporate sustainability evaluation in executive performance evaluation.

Cultivation of a sustainability mindset among employees

We implement various programs to support employees in gaining the power and perspective to achieve our purpose of "change society through the power of chemistry." We set the necessary information and communication for each level and organization, and are measuring the effectiveness of whether it leads to behavioral change. Starting in 2024, we launched the "Matsuko Channel," in which the CSuO will broadcast monthly videos for all employees detailing the contents of the Sustainability Promotion Council and other events. Our aim is to make the current sustainability initiatives more familiar to employees by speaking directly to them in both Japanese and English. In addition, we hold "social issue meetings" and "workshops to understand Resonac through the integrated report" across departments, so that we can explore seeds of business and points of contact with society.

Resonac's sustainability initiatives (history)

In January 2022, when the former Showa Denko and the former Hitachi Chemical effectively merged, we established the Sustainability Department and have been promoting our sustainability strategies ever since. Starting in 2024, under the leadership of the Chief Sustainability Officer (CSuO), we have been working on various initiatives to achieve our Purpose.



Major progress and plans

Preparation and Launch

2022

We started monthly Sustainability Promotion Council meetings (attended by CEO and other executives), set materialities and non-financial KPIs, and began organizing data within the Group. We began strategic information communication, including the integrated report.

Nikkei Integrated Report Awards
Won 2022 Grand Prix and 2023 Grand Prix S Award!

- Established the Sustainability Department in the Strategy Division
- Launched the Sustainability Promotion Council
- Set the Sustainability Vision 2030
- Identified materialities
- Set company-wide non-financial KPIs
- Established "Our Code of Conduct"

Trial and Error Period (- 2025)

2023

We positioned the year as the first year of carbon neutrality and launched a company-wide project. We brushed up on non-financial initiatives. We appointed sustainability partners in each departments. We held the first sustainability meeting.

Frustration (MOYAMOYA) and exciting but nervous (DOKIDOKI) begins!

See here for materials and videos from the sustainability meeting.

- Strengthened environmental initiatives
- Set HR materiality, KGI, and KPI
- Appointed sustainability partners
- Incorporated sustainability evaluation items into executive compensation
- Started global human rights training
- Released Sustainable Procurement Guidelines
- Held first sustainability meeting for investors and stakeholders

2024

Business Units: Promote carbon neutrality, human rights initiatives, Resonac Pride products and services certification, etc.
Functions Divisions: Promote initiatives through non-financial KPI management, launch projects in new domains that require lateral responses
Environmental field: Started initiatives toward a circular economy and biodiversity
Communication: Continue to improve stakeholder evaluation through strategic communication and engagement, and strive to foster employee mindsets and motivation

P91 / Resonac Pride Products & Services

- Newly appointed CSuO, started to take holistic approach, joined by Compliance and Administration Department (community contribution, environmental risk response, etc.)
- Launch of Resonac Pride products and services certification
- Registered as a TNFD Adopter, participated in the Ministry of the Environment's 30by30 alliance
- Launch of "Sustainability Day," a mindset-building program at business sites, etc.
- Identified important company-wide risks through collaboration with Risk Management
- Accelerating governance reforms

2026 - : Blossoming of "Resonac Style" (WAKUWAKU) (UKIUKI)

Material Issues and Non-financial KPIs

Resonac's material issues consist of management issues that contribute to realizing its long-term vision in terms of both society's expectations and degree of importance to the Company, with the Purpose as a starting point. Material issues, the opportunities and risks associated with them, and non-financial KPIs, are determined by reflecting the intent of the frontlines in each CXO area (function) and feedback from the entire management team at the Sustainability Promotion Council. Material issues are reported to the Board of Directors and continually reviewed while exchanging opinions with internal and external stakeholders. We will work to maximize corporate value by developing an environment that fuels long-term growth while contributing to the sustainability of society and the environment.

Material issues	Gain credibility through responsible business management	Strengthen co-creativity & competitiveness and create social value through innovation and business		Develop autonomous, creative, and active human resources and culture
Economic value	Improvement of motivation, raising of productivity, reduction of costs, and enhancement of brand value through eradication of all types of accidents and other incidents and increased efficiency of internal processes	Enhancement of corporate value by achieving business growth through the provision of social and environmental value	Enhancement of employee motivation by helping employees to gain a solid sense that we are realizing our purpose through our businesses	Active involvement of employees and higher employee motivation through strategic job rotations and development of leaders from the perspective of Companywide optimization and realization of high productivity
Social value	Balancing of our contribution to the resolution of social issues and duty as a chemical manufacturer through responsible business management	Maximization of our positive impact and minimization of our negative impact on society and the environment through the thorough implementation of responsible consumption and production as a chemical manufacturer that serves as the basis for a variety of industries		Resolution of social issues by co-creation and innovation through the growth and active involvement of autonomous and creative co-creative talent and the nurturing of a corporate culture conducive to the attainment of such objectives
Environmental value	Reduction of environmental impact through reduction of GHG emissions, waste reduction, and improved recycling rates			

Opportunities and risks

Risks	● Loss of trust in society due to environmental, safety, quality incidents and compliance violations ● Weakening of the management foundation due to lack of understanding of potential risks and lack of appropriate risk-taking ● Decline in co-creation capabilities and competitiveness due to delayed response to regional and national laws and regulations and soft law, including international norms	● Obsolescence of material manufacturers' technologies due to development of digital and AI technologies ● Decline in co-creation capabilities and competitiveness due to delayed response to environmental and social issues ● Decline in co-creation capabilities and competitiveness due to delays in industry restructuring and portfolio reform	● Personnel retention risk due to inability to cultivate and maintain organizational culture and engagement ● Stagnation of innovation due to lack of psychological safety
Opportunities	● Helping customers ensure quality by offering safe and secure products and services ● Increased added value through realization and maintenance of advanced manufacturing processes	● Creation of social value based on applicability to resolution of wide-ranging social issues ● Enhancement of corporate value by flexibly responding to changes in customers and capital markets and to their expectations	● Facilitation of innovation through development and creation of co-creative human resources

Strengthen co-creativity & competitiveness and create social value through innovation and business

Constituent elements	Key items (KPIs)	2025 Targets	2023 Results	
Creation of social value through our businesses	Resonac Pride Products and Services (Achievement of our purpose = Accreditation of products and services that change society)	● Accreditation for major products by open process at each business unit	● Renewal of SDGs-contributing products as Resonac Pride Products and Services, and review of the concept and selection criteria/ conducted discussions with experts	P91
	CFP*1-related initiatives	● Calculation of CFP of major products	● We established systems for each business unit and carried out calculations. About half of the calculations progressed as planned	
Marketing	Create large-scale projects through the penetration of problem-solving marketing	● Enhancement of product pipeline that contributes to customer value	● Received demand prospects for multiple new projects	
	Use of digital platforms	● Strengthening of overseas and regional information dissemination using digital marketing ● Centralized Companywide pipeline management	● Started to automate digital marketing in cooperation with business units	P71
		● Strengthening of customer strategies of businesses, utilizing customer database	● Widespread adoption of CRM*2 tools (Salesforce) and start of operation	
Open innovation	Co-creation with internal and external parties ● Promotion of open innovation and increase of the ratio of external cooperation themes ● Number of papers and external presentations ● Increase in the number of cross-organizational theme	● Promotion of open innovation and increase of the ratio of external themes / year on year increase in the number of papers and external presentations, and the number of cross-organizational themes	● Promotion of open innovation / Cooperation outside the Company: 59 ● Number of papers and external presentations: 192 ● Number of cross-organizational themes: 317	
R&D and Intellectual Property Strategies	Strengthening of R&D and intellectual property strategies ● Increase of the ratio of introduction of LCA*3 ● MC (market value) ● TR (technological value)	● Increase of the ratio of introduction of LCA (50% or more) ● Enhancement of intellectual property indicators, such as Market Coverage (MC), which indicates market value, and Technology Relevance (TR), which indicates technological value	● LCA introduction 31% ● MC:0.75, TR:1.02	P65
	Human resource development ● Assignment of leaders and professional-minded human resources at an appropriate ratio / Completion of a venue for co-creation	● Assignment of leaders and professional-minded human resources at an appropriate ratio / Completion of a venue for co-creation	● Completion of guidelines for appointing professional position ● Stage for Co-Creation / Activities to foster a culture of co-creation / Opening ceremony for the Stage of Co-creation, the launch of working group activities, and the creation of opportunities for in-house and external visitation and use	
Digital transformation	Data-driven management	● Completion of preparations for level-one master data for financial KPIs that can be automatically accumulated ● Completion of creation of GHG visualization and data acquisition process	● Realization of Management Committee dashboard via BI tools ● Start of process design for the visualization and reduction of GHG (greenhouse gases)	
	Promotion of digital transformation and development of professional-minded human resources	● Horizontal deployment of IT/DX business partners' activity knowledge and start of business units' self-led BPR project promotion activities ● Optimization of personnel allocation by utilizing the skills and competencies of talent in the CDO organization	● Strengthening of the pool of human resources by hiring personnel who can work effectively to promote IT/digital transformation right away ● Assignment of IT/DX business partners at plants and business units	P73
	Enhancement of IT and digital literacy	● Entrenched use of IT and digital tools in operations	● IT training program rolled out to and completed by Resonac Group employees in Japan and overseas	

*1 Carbon Footprint of Products (CFP): Calculated by converting the amount of GHG emissions emitted across the entire lifecycle of a product or the GHG emissions associated with it into the equivalent amount of CO_2
*2 CRM: Customer Relationship Management
*3 Life Cycle Assessment (LCA): a means of quantitative assessment of the environmental impacts of products and services throughout their entire life cycle, or within a specified portion of the life cycle.

Material Issues and Non-financial KPIs

Gain credibility through responsible business management

Constituent elements	Key items (KPIs)	2025 Targets	2023 Results	
Safety	Fostering of a culture emphasizing safety	● Establishment of a culture emphasizing safety to eliminate occupational accidents	● Implementation of Safety Communication Program (SCP) at all domestic plants and locations in China as a program aimed at nurturing a safety culture of mutual enlightenment ● Incorporating safety activities into evaluation system ● Sharing of good practices and presenting awards at the Global Safety Activities Presentation	P102
	Number of occupational accidents	● Serious occupational accidents (consolidated, including partner companies): 0	● Serious occupational accident (consolidated, including partner companies): 1	
	Lost time incident rate	● 0.1 or less (consolidated in Japan)	● 0.36 (consolidated in Japan)	
	Number of equipment-related accidents	● Serious equipment-related accidents: 0 (consolidated)	● Serious equipment-related accidents: 1 (consolidated)	
Quality Assurance	Number of product-related accidents*1	● Zero product-related accidents (consolidated)	● 0 (consolidated)	P103
	Number of quality compliance violations	● Zero quality compliance violations (consolidated)	● 0 (consolidated)	
Chemicals Management	Product stewardship	● 100% execution of risk assessment*2 of priority risk assessment substances (consolidated in Japan)	● 100% execution of risk assessment of 21 priority risk assessment substances (non-consolidated)	P104
Environment	Reduction of greenhouse gas emissions	● 30% reduction (Scope 1 + Scope 2) from fiscal 2013 (consolidated) (2030 target)	● 8.8% reduction from the level of 2013 (consolidated)	P93
	Reduction of waste sent to landfills	● Reduction of waste sent to landfills compared to 2024 (consolidated)	● 0.1% of industrial waste generated (consolidated in Japan)	
	Number of environmental accidents	● Zero environmental accidents (consolidated)	● 1 (consolidated)	
Human rights	Respect for human rights	● Establishment of a human rights due diligence process and operational structure	● Implementation of global awareness surveys and training for employees ● Conducted an investigation into overseas human rights risks, including within our supply chain	P106
Procurement	Improvement of quality of communication with suppliers	● Maintain a response rate of at least 90% for CSR questionnaires ● Improvement of the ratio of suppliers above the satisfactory threshold 85% or more (2028 target: 90% or more)	● Introduction of a new survey tool to promote communication with suppliers ● Questionnaire response rate: 91% ● Suppliers above the satisfactory threshold: 89%	P105
Compliance	Inculcation of "Our Code of Conduct"	● Increase the degree of inculcation (survey)	● Start of survey	P107
	Thorough implementation of Group global compliance standards	● Reduction in number of serious legal breaches	● Zero serious legal breaches (consolidated)	
	Increase in number of whistleblowing reports	● Increase in number of reports through the whistleblowing system	● Increase in the number of whistleblowing cases through raising awareness of the system (81 in 2022 → 97 in 2023)	
Risk management	Operation of comprehensive risk management systems	● Development of a new comprehensive risk management system	● Development of policies for handling overall risks, including methods for assessing strategic risks	P109
	Reinforcement of the second line of defense	● Expansion of the Group's internal control framework ● Launch of expansion outside Japan and centralization of risk data	● Establishment of Risk Control Standards, and performance of checks and assessments of the status of control implementation in the implementing departments	

*1 Definitions are based on the Company's accident standards.
*2 Assess substances stipulated by the Company by issuing safety summary reports

Develop autonomous, creative, and active human resources and culture

Constituent elements		Key items (KGI/KPI)	2025 Targets	2023 Results	
Hire & Develop talent for the business	KGI	Future talent portfolio formation	● Portfolio formation for target divisions	● First target division formation	
	KGI	Succession planning readiness rate *Calculated by (the number of people in succession pool/the number of general managers of business units/CXO-1 and higher positions) x 100	● 180%	● 135%	
		Establish portfolio role models, positions, and development plans	● Formulate role models for target divisions	● First target division formation	
Become an Employer of choice	KGI	Employee engagement score	● Improved year on year	● 54%	
		Engagement survey response rate	● Improved year on year	● 83%	
		Rate of male employees taking childcare leave and number of days taken	● Acquisition rate: 100% (non-consolidated) ● Number of days: Target of 60 days or more by 2030, with no annual targets set	● Acquisition rate: 100% (non-consolidated) ● Number of days: 29.9 days	
Develop self-driven professionals		Percentage of line managers who participated in co-creative leadership training	● 90%	● 70%	P13 P75
Cultivation of corporate culture conducive to co-creation	KGI	Purpose and Values implementation survey score	● Purpose implementation:55% ● Values implementation:60%	● Purpose implementation:48% ● Values implementation:51%	
		Purpose and Values empathy survey score	● Purpose empathy:70% ● Values empathy:75%	● Purpose empathy:63% ● Values empathy:64%	
		Positive evaluations from global award AHA! participants	● Improved year on year	● 70%	
		Psychological safety survey score	● 64% (up 2% year on year)	● 59.5%	
		Inclusion safety survey score	● 63% (up 3% year on year)	● 57.1%	
		Ratio of female managers	● Consolidated in Japan: 7% ● Consolidated: 13%	● Non-consolidated: 6.5% ● Consolidated in Japan: 5.7% ● Consolidated: 12.4%	
		Diversity at the decision-making level	● Under consideration	● 9.8%	
		Employment rate of persons with disabilities	● 2.70% (non-consolidated)	● 2.50% (non-consolidated)	

*KGI and KPI are excerpts (actual figures for other items are not disclosed externally and progress is managed internally)

Diversity Equity & Inclusion (DE&I) Initiatives

Resonac is implementing the following DE&I initiatives to create a working environment where a diverse human resources can demonstrate their abilities and individuality.

Establishment of KPI for ratio of female managers and development of female leaders

We use the percentage of female managers as a KPI and promote the hiring and promotion according to ability and without regard to gender. We also manage and develop female candidates for leadership positions through talent management, which is designed to develop future leaders.

Career development support project for female engineers

Since 2022 supporters transcending organizational boundaries have been working to support the career development of female managers in technical fields. In an effort to resolve career concerns and answer questions, we hold roundtable discussions among female engineers and support the use of external career consulting interviews.

Internal community activities

We promote internal community activities to "cultivate a corporate culture conducive to co-creation." This year, the department promoting DE&I has established new internal communities focusing on "career," "childcare," and "nursing care." The department also implements projects in collaboration with the internal community.

Photo taken at "Diversity Cafe," an employee networking event at our head office in Shiodome. We introduced the "Femtech Project" activities, an in-house community focusing on women's health issues

Cross-talk Between the CSuO and On-site Staff in Charge - How We Overcome Our Challenges

One of the materialities, "Gain credibility through responsible business management," conveys the belief that a company that cannot gain the trust of its customers or investors and society cannot "change society" (purpose), much less "compete on the world stage" (long-term vision). So, does gaining credibility contribute to "earning power"? We consider non-financial initiatives to be the minimum condition for generating profits and have also identified them as our A-ranked risks (compliance, environmental/human rights regulations) P112 If we can turn risks into strengths and opportunities, then trust will directly lead to "earning power." In order to grow sustainably by generating profits in good faith, we will solve the issues we face one by one while demonstrating our value.

Cross-talk Between the CSuO and On-site Staff in Charge

Issues of product stewardship

- Corporate planning staff: **Takahiro Tokuyasu and Kensuke Sato**
- Chemical managements staff: **Takashi Kumaki and Tomoaki Aoki**

⇒Related KPI: **Promoting product stewardship**

Demonstrating Our Values
- Open Minds & Open Connections
- Solid Vision & Solid Integrity

PFAS are organic fluorine compounds widely used in everyday items such as non-stick frying pans, automotive parts, and semiconductor materials. While PFAS are suitable for industrial use, they have attracted attention for their harmful properties, and strengthening of international regulations is expected to have a major impact on business.

Tokuyasu

Responding to PFAS regulations is different from past experiences such as the conventional REACH regulations. While it is difficult to determine the harmfulness of PFAS and the scope of the regulations may be broad, it is difficult to receive direct requests from end customers, and our response has been delayed. We also lacked horizontal cooperation amidst the company integration. Last year, we accelerated initiatives by having each department bring their situation to the Sustainability Promotion Council, and creating a common understanding. With the Corporate Planning Department serving as the secretariat, we are monitoring and taking response measures from a company-wide perspective, such as by investigating the actual use of PFAS in the Group, estimating the approximate scale of the impact, collecting and analyzing information on customer trends and regulatory trends, and also developing and searching for alternatives.

Kumaki

The importance of responding to this issue has increased with the reform of our business portfolio after the merger. There is not only risk, but also businesses such as coating materials that can turn PFAS regulations into future profit opportunities. There should still be plenty of room for the entire Group to share elemental technologies and strengthen synergies.

Sato

Currently, we have not been able to fully utilize the region- and business-specific technologies, know-how, and experience of our 24,000 global employees as collective knowledge. Corporate departments must work together to establish a system that visualizes internal information, controls risks, and connects them to opportunities.

Tokuyasu

This sort of global regulatory compliance is the minimum condition for generating profits. If we remain passive about regulations that could be a game changer, we will lose both the expectations of investors and opportunities for co-creation with customers. We will approach it from both the business risk and opportunity perspective.

Matsuko

While PFAS are suitable for industrial use, they remain mostly undecomposed when released into the natural environment, accumulating in the bodies of living organisms. As such, there are concerns about their impact on biodiversity. There are potential health and environmental risks, and it is our responsibility as a chemical company to view them as a human rights issue in the value chain.

Aoki

Resonac is gradually working on standardizing safety labeling for chemicals. We are also undertaking the technical challenge to screen for harmfulness in collaboration with the Research Center for Computational Science and Informatics, and we are engaged in a process of trial and error with a future-oriented approach to product stewardship.

Focus here!

- Gain credibility through responsible business management
- Strengthen co-creativity & competitiveness and create social value through innovation and business
- Develop autonomous, creative, and active human resources and culture

Cross-talk Between the CSuO and On-site Staff in Charge:
We have posted "Taking on the challenges of comprehensive risk management" on the web.

Cross-talk Between the CSuO and On-site Staff in Charge

Issues on compliance

- Quality Assurance Department: **Tomoaki Aoki and Kazuyuki Kasamaki**
  ⇒Related KPI: **Zero quality compliance violations**
- Sustainability Department Compliance Group: **Daisuke Yoshida, Hiroshi Ukita and Mariko Isota**
  ⇒Related KPIs: **Instilling compliance-related regulations, number of whistleblowing reports**

Demonstrating Our Values
- Passionate & Results-Driven
- Solid Vision & Solid Integrity

Six years have passed since the former Hitachi Chemical's inappropriate product testing issue in 2018. We discussed the current status of recurrence prevention measures, current initiatives, the post-merger structure, and how compliance should be promoted in the future.

Aoki

The inappropriate inspection incident cost us the trust of our customers. We have implemented the recurrence prevention measures almost as planned, and are currently focusing on the ongoing challenge of building an automated system P103, as well as education and audits. It is important to continue to prepare systems and mechanisms that allow us to say, "It is 100% secure," and to keep moving forward. Even in this process, we must always ask ourselves, "Are there any risks?" and keep a vigilant stance to never let the incident fade away.

Kasamaki

Through education and training, we thoroughly emphasize quality compliance throughout the Group. In 2023, we conducted our first employee awareness survey after the merger. While we were able to confirm that employees are proactively working to ensure quality on a daily basis, the results showed that there is room for improvement in some departments with regard to resources such as systems and human resources. We are currently exploring the ideal state of our system after the merger.

Aoki

It is important that each department on the value chain strive as a team to achieve the quality that customers require, including development, manufacturing, and quality assurance, which are the keys to manufacturing, as well as sales and procurement SCM. The perspectives of business units, production technology, and head office members are also essential. I am keenly aware of the importance of career paths that allow experience in multiple functions, team diversity, and the necessity of ensuring an open organization. We are now building a system that ensures both internal cooperation for rapid response to customers and the independence of our quality assurance function. I believe that we can build earning power by restoring and further strengthening the trust of our customers.

Yoshida

It is self-evident that we cannot continue business if we lose the trust of our stakeholders. Rather than responding after a problem occurs, we must prevent it from occurring in the first place by not only complying with laws and regulations, but also making appropriate judgments with foresight and ethics, even if we are not violating current laws. If we cannot act based on this concept of soft law, we will not be able to prevent future damage to our corporate value. As with quality assurance, we must constantly ask ourselves, "Are there any risks?" and foster a culture where we can point them out to each other. Our company-wide effort to "ensure psychological safety" is a prerequisite for strengthening whistleblowing functions and eliminating compliance violations.

Ukita

"Our Code of Conduct" clearly states the soft laws that the Company must follow. The instilling activity of it needs to be repeated until it becomes corporate culture, and there is no end to it. After the integration, we established a Global Compliance Committee. We will continue to communicate and make improvements to the rules in order to implement them in a manner that suits each organization, region, and country.

Isota

It is also necessary for each department to stay vigilant of the latest rules and legal reforms, to prevent unintentional violations due to a lack of understanding of work-related rules or the ignorant belief that it will be okay because we are following precedent cases. We must also not be confined to traditional methods and come up with educational methods that get information across.

Toward a future 100 years from now

The Beginning of Co-creation and the Delight that Awaits Us

Resonac Graphite Japan and Omachi City, Nagano Prefecture

Omachi City in Nagano Prefecture and Resonac Graphite Japan have forged a close bond for over half a century, focused on the hydroelectric power plant and a water supply system built by Nobuteru Mori, the founder of the former Showa Denko. Today, new co-creation projects are being launched, including projects aimed at utilizing unused local materials (branches and leaves) for boilers and collaborating on SDGs education.

Key points of the co-creation with Resonac Graphite Japan

- One point is that we visited the mountains for survey and observed the actual situation firsthand while developing the proposal for utilizing unused wood. We were able to create a sustainable initiative that was meaningful to all stakeholders by deepening our understanding together with our co-creation partners from the same perspective.
- Another point was that we established the SDGs Promotion section. We valued the ideas that emerged in the field and supported their initiatives under the supervision of the superiors. The creation of an environment where opinions could be shared openly gave rise to more ideas, and brought us closer to solving social issues through co-creation with the local community.

Another delight of co-creation at play!

Semiconductor materials that change society

Semiconductors are becoming increasingly sophisticated and functional. The rapid expansion of generative AI, logistics, smart agriculture, demand forecasting, finance/insurance, office work, autonomous driving, shopping and beauty are some of the dramatic changes our lives are undergoing. This is where semiconductor materials play an essential role. With a high market share particularly in post-processing materials, Resonac is involved in co-creation activities represented by the Packaging Solution Center and JOINT2, and has also launched US-JOINT in Silicon Valley. Wherever there are semiconductors, in every scene, Resonac will contribute to people's happiness and prosperity.

1 Resonac and regional issues

Q What issues are you working to solve with Omachi City and Nagano Prefecture, our partners with whom we have been working to change society together?

Resonac Graphite Japan "We want to support the iron recycling using the electric furnace method, which is a clean, highly energy efficient, and environmentally friendly manner of manufacturing, while creating new value through co-creation with the local community."

Yamashigoto Sozosha "With the people involved in forestry getting older, we are committed to developing forests with the cooperation of various stakeholders in order to make sure the rich forest land remains protected. "

Omachi City, Nagano Prefecture "Amid population decline due to the low birthrate and aging population, we want to promote the management of the natural environment and spread the appeal of our unique water resources as an SDGs Future City, in order to realize a sustainable local community. We want the government and companies to work together to contribute to the development of the region."

2 The beginning of co-creation and its expansion

In the production of graphite electrodes at our Omachi Plant, the reduction of CO2 has been an issue. To resolve this, we started considering the introduction of a boiler that uses wood chips in 2022. Aiming for local production and consumption of unused wood in the region, we held many discussions with Mr. Harada of Yamashigoto Sozosha and local residents, and gradually came up with concrete proposals which included resolving technical issues related to turning unused wood into fuel.

Hayate Murakami
Engineering Section and SDGs Promotion Section
Resonac Graphite Japan

Above all, I was happy that a company that leads Omachi turned its attention to the mountains. Mr. Murakami has visited the mountains countless times, and with a keen attitude to grasp our situation, he proposed to turn unused, dumped wood into value. Forestry is posed by many challenges, but we feel very encouraged to be able to collaborate with a company that has such a flexible mindset.

Mr. Harada
Yamashigoto Sozosha

Inspired by Murakami's proposal, we considered further initiatives beyond using wood chips that contributes to the mountains themselves. As such, we participated in the Forestry Foster Parent Promotion Project. We have been engaging in deeper communication with local residents through information sessions and other events, and are currently undertaking an initiative to develop the forest owned by the Company near the Tokiwa Power Station and make it a place that everyone in the community can enjoy.

Hiroshi Ohta
Human Resources & General Affairs Section
Resonac Graphite Japan

Omachi City was the first municipality in Nagano Prefecture to be certified as a nationally recognized SDGs Future City. The hydroelectric power generation and water supply system that Resonac has provided for nearly 80 years are essential to the development of the region. The Aoki Power Station and water intake facility have been cooperating with us in our effort to promote SDGs Exploration Educational Trips related to water. We ask for the continued cooperation in promoting our city plan "SDGs Future City Plan: Shinano Omachi, where water is born."

Mr. Sakai
Planning and Finance Division, General Affairs Department, Omachi City, Nagano Prefecture

We find Resonac's shared water supply system for power generation and for agricultural use very unique. With the declining birthrate and aging population in rural areas nationwide, and the agricultural population also decreasing, it is very difficult for farmers to maintain such water systems. As such, we are very grateful for the support, but we are also concerned about what might happen in the future. In order to increase the appeal of the region, it is very important that people connect with each other and spread the efforts to promote the appeal of local water facilities.

Mr. Okamoto
Agricultural Land Management Division, Northern Alps Regional Promotion Bureau, Nagano Prefecture

Mr. Ome
Forestry Division, Northern Alps Regional Promotion Bureau, Nagano Prefecture

3 Future of co-creation

Resonac Graphite Japan "We hope to go beyond using wood chip boilers that utilize local forest resources, and create a place of co-creation, such as for working with the locals to conserve the local forest green spaces, and share these efforts with the world, along with Omachi's remarkable water supply system. We would also like to increase interactions with young people who will lead the next generation, and support them in taking action."

Yamashigoto Sozosha "We would also like support in ensuring the forests' multifaceted functions beyond timber production, in order to continue creating strong, rich forests. We dream of beautiful forests that soothe and relax people wherever they look in this region."

Omachi City, Nagano Prefecture "We have launched the Shinano Omachi Mizunowa Project, a collaboration between Industry-Academia-Government and Finance, and have begun urban development centered on water. We would like to create a place where we can exchange ideas with various partners and build together our future 100 years from now."

Shinano Omachi Mizunowa Project (In Japanese only)

Omachi "Water School SDGs Exploration Educational Trip" (In Japanese only)

Nagano Prefecture "Forestry Foster Parent Promotion Project" (In Japanese only)

Yamashigoto Sozosha A group of forestry professionals (In Japanese only)

Resonac Graphite Japan Corporation

Contributing to Society and Customers by Fulfilling Our Purpose through Resonac Pride Products and Services

Resonac Pride Products and Services are initiatives to demonstrate our Purpose and Values through our business. In order to achieve our Purpose "Change society through the power of chemistry," it is important to visualize how much value our products and services, which we provide in a wide range of areas from upstream to downstream in the value chain, have provided to customers and society. These initiatives are positioned as a KPI and efforts are being made to achieve the material issue "Strengthen co-creativity & competitiveness and create social value through innovation and business."

P84 / Non-financial KPI Results and Targets

Main items of confirmation for certification		Points of certification
Implementation of Purpose and Values	What is the value provided to customers and society? (quantified as much as possible)	Appropriateness
	What kind of Values are demonstrated?	
Risk assessment	What kind of risks are there when evaluated from various perspectives such as product environmental assessment and reputation?	Risk perspectives from third party points of view
Sales plans	Sales plans and market share	Future potential and impact
Relevance to SDGs	How does it contribute to the 17 goals and 169 targets, and is it related to the essence of the SDGs?	Relevance to shared global goals (including future potential)

Points of screening

In terms of certification, we aim to integrate the points of view of third parties in evaluation from the perspectives of value provided to customers and society by changing society based on our Purpose as well as the appropriateness of Resonac's four Values, risk assessment such as product environmental assessment and reputation, future potential and impact such as sales plans and market share, and relevance to shared global goals (SDGs).

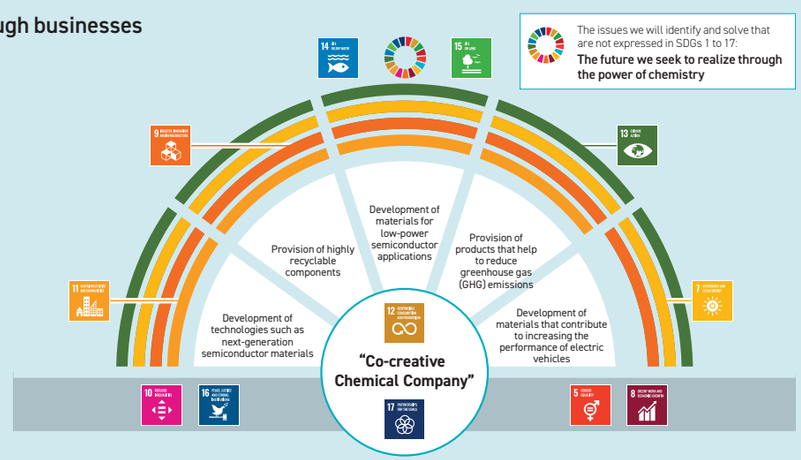
Steps of screening

Until 2023, product and service certification was carried out in-house, but from 2024, we included third party participation such as government bodies, business partners, investors and experts, customers, and next-generation members to increase objectivity and transparency.

STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
Application for certification by business units	Initial screening conducted by the secretariat	Comments from witnesses and advisors	Internal screening	Certification as Resonac Pride Products and Services	Report to witnesses and advisors and disclose to stakeholders

Contribution to the SDGs through businesses

As a Co-creative Chemical Company that seeks to create a recycling-oriented society, we have made contributing to SDGs 12 and 17 the focus of our corporate activities, and positioned goals that we contribute to through businesses and products as well as goals that we contribute to through our business foundation as shown on the right. In addition to the areas we are already working on, we are looking ahead with the aim to contributing to the creation of a future that we seek to realize through the power of chemistry.



The first certified Resonac Pride Product and Service

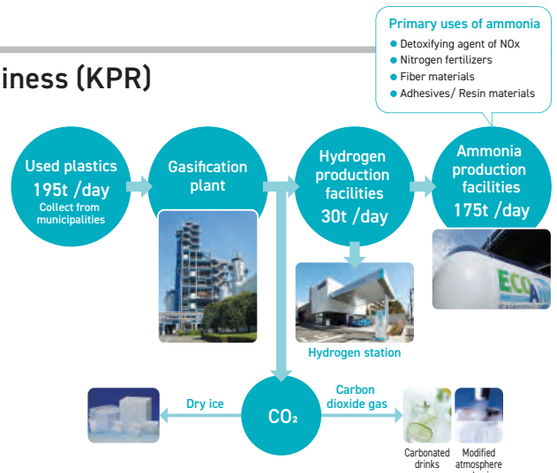
Kawasaki Plastic Chemical Recycling Business (KPR)

Kawasaki Plastic Chemical Recycling Business (KPR) was certified as the first Resonac Pride Products and Services.

KPR is a gasification chemical recycling plant that started operation in 2003, and it gasifies used plastics at high temperatures and breaks them down to the molecular level to extract hydrogen and CO_2.

Points of certification (excerpt)

- Since it does not use fossil fuels or fossil-fuel-derived energy even in the manufacturing process, the GHG emissions is approximately 80% less compared to conventional ammonia production methods
- Recycles about 60,000 tons of used plastic per year (equivalent to about 20% of Japan's chemical recycling)



Comments from stakeholders

Through the questionnaires before the internal screening and the screening report held after the certification, we received comments from a wide range of stakeholders about contributions to the community and society, points for improvement, and expectations and encouragement for the Company in the future. We will further develop chemical recycling for society based on this feedback.

Supplier: JGC HOLDINGS CORPORATION
Currently, KPR is the only plant in the world that has achieved this level of commercial operation in chemical recycling. Good example where foresight, the power of chemistry, and technical capabilities are utilized

Government agency: Official from Kawasaki City
The pillars of the Carbon Neutral Industrial Complex Concept promoted by Kawasaki City are hydrogen, carbon cycle, and regional optimization of energy. KPR is involved in all of these pillars.

Customer: TOKYU HOTELS & RESORTS CO., LTD.
As power generation using hydrogen supplied by KPR of Resonac is at the core of hotel operations, we will continue spreading awareness of this in society, including overseas.

Local resident: Neighborhood association
Resonac contributes to raising awareness of recycling through factory tours and explanations about recycling for local residents and children. We request continued development of new technologies to solve environmental and other problems, and the ensured safe operation of plants

A scene from the screening report

Customer: JERA Co., Inc.
We have been able to receive a stable supply of ammonia because the KPR Plant has been able to operate stably for a long time. I am very thankful to the efforts of Resonac employees.

Investment fund: Mr. Matsubara of Resona Asset Management Co., Ltd.
It is still not large enough to meet the fundamental demands of society. If we have a world view to expand the adoption of chemical recycling, it should be a good example of sustainability for both the company and society.

Next Generation: Students
It's great that this business has continued for 20 years. If we could demonstrate more that plastic leads to chemical recycling, it would promote municipal sorting and improve the collection rate.

Expert: Professor Itsubo of WASEDA University
It would be better to clarify and simplify the screening criteria further, and to present a future vision of KPR that matches the actual conditions of each region 20 years from now.

Expert: Professor Hasegawa of HOSEI University
It's important to communicate information together with stakeholders you are co-creating with to gain the understanding of investors. Resonac Pride should work toward becoming Social Pride and Japan's Pride.

Expert: Professor Nakatani of the University of Tokyo
I hope that items that are diffcult to dispose of, such as textile waste, are also recycled in the future. In addition, I look forward to future developments such as the effective use of carbon as a raw material.

Please visit our website for more details on our policies, promotion system, and activities.

P95/Climate Change Strategies
P99/Biodiversity Strategies
P100/Toward Circular Economy
P101/Response to Environmental Risks

Environment

Mission

Although we use fossil raw materials and fuels in our product manufacturing processes and emit greenhouse gases (GHG), we have many products and services that contribute to energy conservation, resource recycling and biodiversity. To this end, we regard addressing the environment as a crucial management issue in terms of both opportunity and risk, and under the supervision of the Board of Directors, we will make medium- to long-term efforts to enhance our corporate value.

Approach to Initiatives

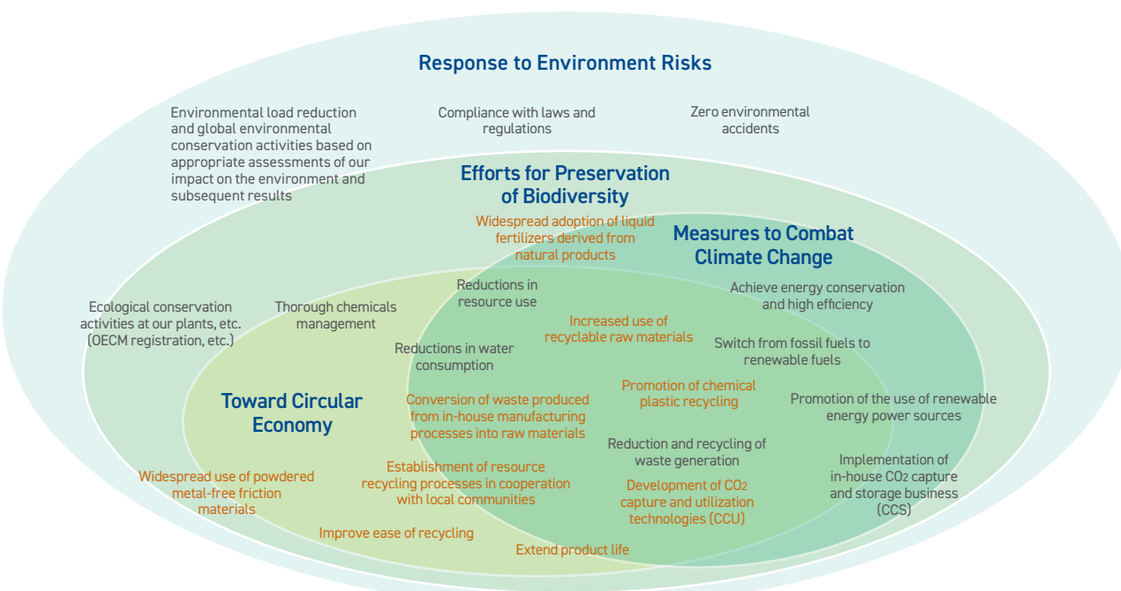
In June 2024, we established a new Environmental Policy Web as the Resonac Group, which outlines the key environmental issues that warrant addressing and action guidelines for solving these issues.

With regard to climate change, we endorsed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in May 2019. As for biodiversity, we were registered in June 2024 as a TNFD Adopter of the disclosure recommendations published by TNFD* in September 2023. Accordingly, we are conducting information disclosure in alignment with the TCFD and TNFD and holding dialogue with stakeholders.

*TNFD (Taskforce on Nature-Related Financial Disclosures): A task force established in June 2021 to provide a framework for nature-related risk management and disclosure. In September 2023, as its final recommendations (v1.0), the TNFD released a framework for companies and financial institutions to identify, assess, manage, and disclose nature-related issues.

Overview of Resonac's environmental initiatives

The four pillars of our environmental initiatives are "Measures to Combat Climate Change," "Efforts for Preservation of Biodiversity," "Toward Circular Economy" and "Response to Environmental Risks." As each of these initiatives relate, "Efforts for Preservation of Biodiversity" and "Toward Circular Economy" must be addressed simultaneously in order to implement "Measures to Combat Climate Change," which is an urgent matter. We will view the entire environment as a social issue more than ever, and as such, we will take on the challenge of changing society through the power of chemistry. We will strengthen our efforts to manage risks and seize opportunities through "Response to Environmental Risks" spanning across all of our environmental initiatives.



*Orange: Business opportunities
*Avoid trade-offs: For example, we will not adversely affect the ecosystem in order to install solar panels

Issues to Be Addressed

Short to medium term (2024-2026)
- Improved data preparation and accuracy through consolidation and portfolio changes
- Calculation of Scope 3 emissions/exploration of reduction measures on a global scale
- Re-verification of target levels (evidence-based target level verification)

Short to long term (2024-2030)
- Development of technologies for carbon neutrality and increase in reduction measures
- Promotion and disclosure of biodiversity initiatives based on TNFD recommendations
- Shift to businesses and corporate value that contribute to a circular economy
- Consistent response to and disclosure of environmental risks

Non-financial KPIs

- **Reduction of greenhouse gas emissions**
  2030: 30% reduction from the level of 2013 (Scope 1 and 2) (consolidated)
- **Reduction of industrial waste sent to landfills**
  2025: Reduction compared to 2024 (consolidated)
- **Zero environmental accidents**
  2025: Zero environmental accidents (consolidated)

P85 / Non-financial KPI Results and Targets

Governance

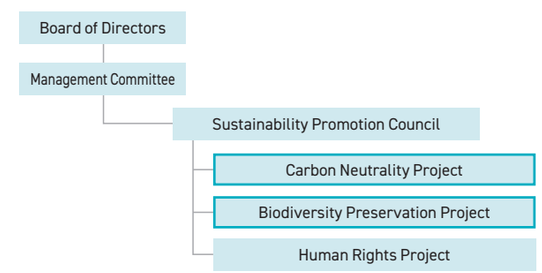
Role of the Board of Directors and monitoring system

The CEO supervises the risks and business opportunities, targets, and specific initiatives associated with the environment including climate change, while the CSuO takes responsibility for promoting actions. These issues are deliberated at the Sustainability Promotion Council and the Management Committee. The progress of each initiative is regularly monitored, and remedial measures are discussed when needed.

The Board of Directors receives periodic reports of what the Sustainability Promotion Council and the Management Committee discussed, and on which points they made decisions and deliberates and supervises them from the perspective of maximizing corporate value. From 2022, we have aligned the evaluation indexes for inside directors and executive officers with the initiatives in the long-term vision and countermeasures against sustainability issues, including climate change, with the aim to strongly incentivize them to manage the Group from a long-term perspective and promote the sustainable growth of the Group. In March 2024, we revised our Corporate Governance Basic Policies to clarify the role of the Board of Directors in addressing climate change and protecting biodiversity.

The Carbon Neutrality Project is led by the Sustainability Department and involves all CXOs and business units.

Monitoring system for environmental initiatives by the Board of Directors (as of June 30, 2024)



etc.

Risk Management

Process to assess, identify, and manage risks

The Group conducts climate change and biodiversity risk assessments for each business, assesses "transition risks" and "physical risks" arising from climate change, as well as dependency, impact, and risks related to nature. We then identify material risks for the Group and develop countermeasures against them. Material issues in identifying risks and developing countermeasures are reported to the Board of Directors. We will continue to conduct the risk assessments to update risks and countermeasures, along with monitoring the progress of the existing countermeasures.

Integration into enterprise risk management

Given the importance of building an enterprise risk management system, the Group pursues integrated risk management using a common framework across the Group. Information on climate change, biodiversity and other risks with the potential to impact the Group's management is registered in an integrated manner into our risk management system via companywide risk identification activities (as part of risk assessment procedures). Key risks, which are deemed to have a particularly high frequency or degree of impact, are deliberated by a dedicated committee (Risk Management Committee). Important matters examined by the Sustainability Promotion Council and the Risk Management Committee are submitted to the Management Committee for deliberation and decision before being reported to the Board of Directors.

Environment

Climate Change Strategies (Disclosure in Line With the TCFD Recommendations)

Short-, medium- to long-term climate change-related risks and opportunities and responses to them

Amid the successful transition to a carbon-neutral society, the Group sees climate change as both a risk and opportunity. The Group will exercise its social responsibility as a company and build further competitive advantages to reduce GHG emissions across the value chain by providing products and services that contribute to decarbonization, achieving co-creation with partners, improving energy efficiency, and increasing usage of renewable energy. Given the above, the Group analyzes risks and opportunities to evaluate the impact of climate change on the Group businesses under the following two scenarios: (1) The average global temperature will increase by 4°C or more and (2) The average global temperature rise can be kept well below 2°C and continue efforts to limit it to 1.5°C based on the Paris Agreement, which were released by the Intergovernmental Panel on Climate Change (IPCC) or the International Energy Agency (IEA). Based on the analysis, we determine the necessary countermeasures. Business impact assessments were conducted in the Semiconductor and Electronic Materials segments in 2023, followed by the Mobility and Innovation Enabling Materials segments in 2024. Assessments are scheduled to be completed for all businesses by 2025. We will make disclosures on this front starting with the segments for which impact assessments have been completed.

Transition risks affecting the Group businesses include increased operating costs due to a rise in energy taxes including carbon pricing. We aim to reduce CO_2 emissions to about 3.24 million t-CO_2 by 2030, or a 30% reduction from 4.63 million t-CO_2 in 2013. Assuming that Scope 1 and 2 emissions in fiscal 2030 resulting from sales growth are estimated to be about 5 million t-CO_2, the carbon pricing is set at ¥10,000/t-CO_2 based on the IEA's 2°C scenario (SDS)* and others, and we need to offset the portion that falls short of reduction target through emission trading. In that case, if we fail to reduce emissions by 30%, the operating cost will increase by about ¥18 billion per year, implying that hitting the reduction target will lead to reducing operating costs. As a company that interrelates with society, we will continue to use other scenario analyses to contribute to realization of a carbon-neutral society in various ways, take measures against climate risks, and achieve a sustainable growth.

*2°C scenario (SDS): Sustainable development scenario

Assumptions for scenario analysis

- Estimated Duration: Until fiscal 2030
- Adopted scenarios: 4°C scenario: IPCC/RCP8.5, IEA/STEPS 1.5/2°C scenario: IPCC/RCP2.6, IEA/SDS (partly IEA/NZE)
- Timeline definition: Short-term = less than three years, medium-term = three to less than ten years, long-term = ten to thirty years
- Scenario analysis target: Existing businesses

Impact Assessment of Electronics Business Headquarters

Although we recognize the importance of taking on the challenge of achieving carbon neutrality, we were grasping at straws to see how we could visualize business opportunities and risks, and whether our current measures were able to sufficiently cover all opportunities and risks. The Electronics Business Headquarters conducted an in-depth analysis of the TCFD scenario, which I think produced three good points. First, we were able to quantitatively grasp the impact of opportunities and risks on our businesses. Second, we were able to reaffirm that our strategy sufficiently addresses opportunities and risks. And third, we now think even more about whether the strategy we formulated can be an effective measure against climate change, making it easier to link them and explain to members of the Electronics Business Headquarters. In cooperation with the Sustainability Department, we would like to continue our efforts to regularly scrutinize our strategies and measures based on TCFD scenario analysis.

Mayumi Hatakeda
Sustainability Partner,
General Manager,
Business Strategy Department,
Electronics Business Headquarters

Climate-related risks and opportunities and main response

Opportunity/ Risk category		Domain	Time frame	Impacts on the Company	Response measures	Impact*1 1.5/2°C	Impact*1 4°C
Transition opportunities and risks	Risks	All businesses	Medium term	Increase in tax (cost) due to the introduction of carbon pricing (ICP)	● Revision of GHG emission reduction targets for 2030 and establishment of the roadmap ● Set targets and implement reduction initiatives for each business ● Expand the introduction of renewable energy ● Raw materials/fuels conversion ● Participation in the GX League	Large	Large
Transition opportunities and risks	Risks	All businesses	Short to medium term	Shift to renewable energy due to tighter regulations on GHG emissions / Increase in procurement costs	● Introduction of solar power generation and utilization of hydroelectric power generation facilities	Small	None
Transition opportunities and risks	Opportunities and risks	All businesses	Short to medium term	Government support under the policies for decarbonization initiatives of companies	● Development of eight-inch SiC wafers for next-generation green power semiconductors (adopted as part of the NEDO Green Innovation Fund project) ● Development of a low-concentration CO_2 separation system employing an innovative separation agent (adopted as part of the NEDO Green Innovation Fund project) ● Reinforcement of the global semiconductor material supply chain (adopted under the Ministry of Economy, Trade and Industry subsidiary program for overseas market survey projects for building resilient supply chains in the Indo-Pacific area)	—	—
Transition opportunities and risks	Opportunities and risks	All businesses	Short to medium term	Increases/decreases in sales due to changes in consumer behavior and awareness	● Promotion of products, development of new products, and improvement of competitiveness in response to the needs of a decarbonized society ● Advancement of R&D based on long-term themes at the Stage for Co-creation	—	—
Transition opportunities and risks	Risks	All businesses	Short term	Greater request for ini tiatives and disclosure related to decarbonization from customers	● Establishment of life cycle assessment (LCA) and carbon footprint of products (CFP) calculation frameworks, tracking of CO_2 emissions, and formulation of reduction plans	—	—
Transition opportunities and risks	Opportunities and risks	All businesses	Short to medium term	Re-evaluation by investors depending on how effectively the Group captures needs from society and customers to solve environmental issues	● Adding value to our products/services (Resonac Pride products/services) to help solve the problems that society and customers face ● Attracting investments through proactive measures against climate change and promotion of a circular economy	—	—
Transition opportunities and risks	Risks	Semiconductor and Electronic Materials	Short to medium term	Increase in procurement costs due to soaring prices of raw materials and switching materials	● Diversification of raw material suppliers and resources ● Consideration of using recycled raw materials ● Shift to in-house production and local production for local consumption of raw materials with unstable supply ● Collaboration with upstream supply chains to reduce GHG emissions ● Set standards for BCP measures for when new raw materials are adopted ● Adoption of a formula system to respond to fluctuations in major raw material prices (changes in raw material prices are automatically reflected in product prices)	Small	Small
Transition opportunities and risks	Risks	Semiconductor and Electronic Materials	Short to medium term	Decrease in sales due to changes in consumer behavior and awareness	● Reduce GHG emissions in manufacturing processes and information disclosure to customers ● Quantitatively and scientifically calculate the amount of GHG reduced by society through the utilization of our products and technologies (calculate avoided GHG emissions/CFP) ● Participate in working groups of the Semiconductor Climate Consortium (SCC) ● Explore environmentally friendly manufacturing processes ● Conduct customer satisfaction surveys ● Strengthen cooperation with sales departments to understand customers' environmental needs ● Strengthen systems for sales/marketing and new product development in anticipation of demand changes in our target markets ● Strengthen customer response management to immediately reflect customer requests in products and services	Medium to large	None
Transition opportunities and risks	Opportunities	Semiconductor and Electronic Materials	Short to medium term	Increase in sales due to growing demand for EVs/ autonomous driving	● Response to increased demand for SiC power semiconductors ● Develop materials that contribute to smaller and lighter parts	Large	Medium
Transition opportunities and risks	Opportunities	Semiconductor and Electronic Materials	Short to medium term	Increase in sales due to growing demand for low-power semiconductors and environmentally friendly products	● Assess the environmental standard conformity of product designs ● Develop etching gas for semiconductors with low GWP ● Develop sealing materials that contribute to GHG-reducing processes ● Take measures to produce thinner adhesive film for memory applications ● Participate in working groups of the Semiconductor Climate Consortium (SCC) ● Packaging Solution Center in Silicon Valley, U.S. (scheduled to be established in 2025) ● Participate in the Texas Institute for Electronics (TIE), a consortium for advanced semiconductor	Large	None
Transition opportunities and risks	Opportunities	Semiconductor and Electronic Materials	Short to medium term	Increase in sales due to decarbonization of server-related facilities and data centers through the spread of remote work, automation, and data usage		Large	None
Physical risks	Risks	All business domains	Short term	Suspended operation of manufacturing sites due to natural disasters caused by climate change, and decrease in profit caused by an increase in the equipment repair cost	● Analysis of flood risks at manufacturing sites ● Regular risk identification and reduction activities, and enhancement of business continuity planning	Small*2	Small*2

*1: The financial impact of climate-related opportunities and risks is being calculated sequentially, and will thus be disclosed in stages. Impact indicates the scale of impact on the Group should we address the identified climate change opportunities and risks.
Large: We expect regulations and policies to tackle climate change to continue impacting the Group going forward. As a result, we estimate the annual impact on our operating income to be ¥10.0 billion or higher.
Medium: Moves to address climate change are already underway, and we expect this to continue impacting the Group going forward. As a result, we estimate the annual impact on our operating income to range from ¥3.0 billion to less than ¥10.0 billion.
Small: There are moves to address climate change. As a result, we estimate the annual impact on our annual operating income to be less than ¥3.0 billion.
*2: Physical risks were analyzed using hazard maps and AQUEDUCT at 36 major sites in Japan. In the event of a once-in-a-century disaster, it was discovered that 13 sites are exposed to risks. However, we set the impact as "small" because the annual impact taking into account the recurrence interval is small for both the 1.5/2°C and 4°C scenarios. Going forward, we will gradually move forward with the analysis of overseas sites and supply chains.

Environment

Indicators and Targets Related to Climate Change

GHG emissions reduction targets and results

We are pursuing carbon neutrality leading up to 2050, to accomplish the goal of becoming a company that contributes to a sustainable global society as put forth by our long-term vision. We have also set a milestone target of reducing Scope 1 and 2 GHG emissions by 30% (compared to 2013) by 2030.

In 2023, Resonac Graphite Austria GmbH switched 100% of its electricity usage to electricity derived from wind power, and the entire Resonac Group purchased 115MWh of electricity derived from renewable energy. We reduced GHG emissions by 8.8% compared to 2013 by switching to non-fossil fuel energy sources such as solar power generation.

Going forward, we will accelerate our efforts to achieve our targets and further promote information disclosure. For Scope 3, we are gradually disclosing figures on our website for categories where calculations have been completed.

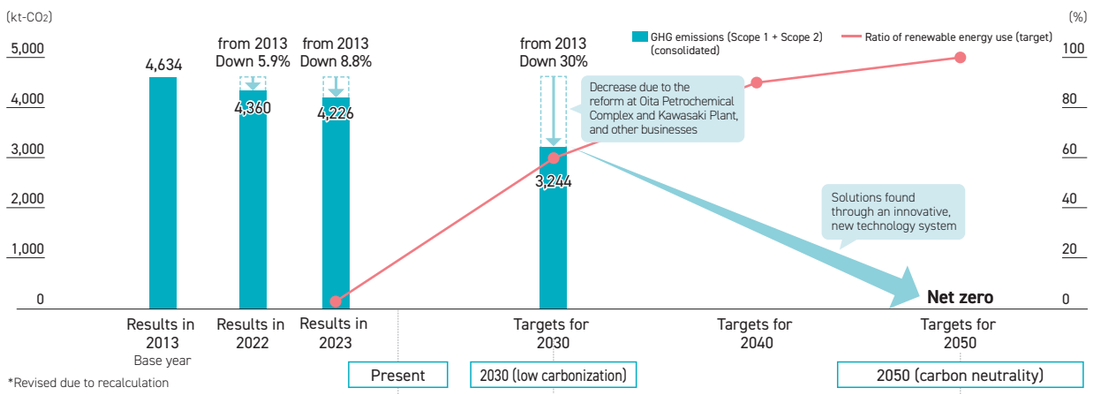
We will continue to improve the accuracy of these calculations while working to reduce our GHG emissions.

Roadmap to GHG emissions reduction

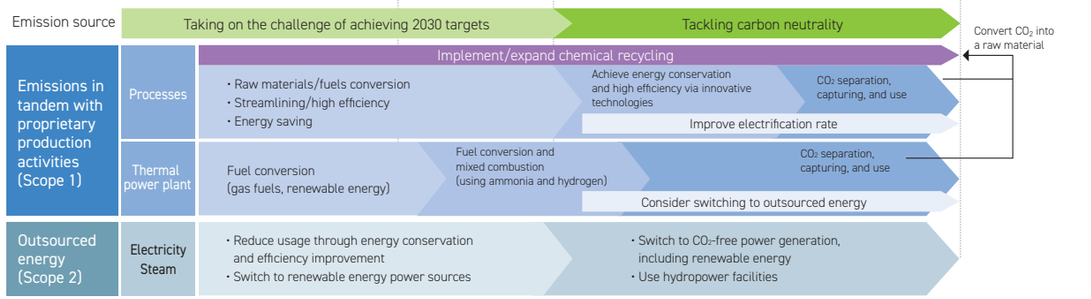
Toward carbon neutrality in 2050, we will streamline our businesses, increase efficiency, save energy, switch to gas fuels (high-efficiency co-generation system), and product manufacturing that utilizes our own hydroelectric power generation and renewable energy until 2030. From 2030 onward, we plan to actively promote fuel conversion and mixed combustion to ammonia and hydrogen, aiming toward 2050. To achieve these targets, we will set targets and formulate and implement reduction measures in each business unit. We will also implement company-wide measures led by the Carbon Neutrality Project, and set reduction targets based on scientific evidence. In addition, we have created a new roadmap for switching to renewable energy, with the goal of covering 100% of the electricity used in our businesses with renewable energy. In addition, we will achieve carbon neutrality through CO_2 separation and capture technologies and the use of recovered CO_2 as raw materials for chemical products.

Road to carbon neutrality

● Non-financial KPI Results and Targets **Reduction of GHG Emissions** : 30% reduction from the level of 2013 (Scope 1 and 2) (2030 target)



*Revised due to recalculation



*We consider starting the calculation and disclosure of Scope 3 emissions from upstream activities before setting a reduction target.

Examples of Initiatives Aimed at Achieving Carbon Neutrality

Exploration of CO_2 capture at Oita Petrochemical Complex and storage off the coast of Malaysia

Resonac and MITSUI & CO., LTD. ("Mitsui") signed a memorandum of understanding (MOU) regarding the joint study of CCS*1, in which Resonac and Mitsui will conduct a joint study on the capture of CO_2 emitted from the Oita Petrochemical Complex and underground storage off the coast of Malaysia. Mitsui has been jointly working on a CCS project in Malaysia with Malaysia's state-owned oil company and others. The signing of this MOU will allow the said project to be explored as a storage site. Through this project, we aim to build a value chain that includes CO_2 capture and storage (CCS) at CO_2 storage sites*2 and CO_2 transportation.

Resonac will be responsible for the separation, capture, liquefaction, and storage of CO_2 emitted from the Oita Petrochemical Complex, as well as the delivery of CO_2 to transportation companies, while Mitsui will be responsible for the ocean transport of liquefied CO_2 to Malaysia and the underground storage off the coast of Malaysia. We will examine the technological requirements and estimate the costs needed for each party to fulfil their role.

*1. Carbon dioxide (CO_2) Capture and Storage
*2. A CO_2 storage site off the coast of Malaysia that we have been jointly developing since June 2023 with Petronas CCS Solutions Sdn Bhd, the CCS subsidiary of Petroliam Nasional Berhad, Malaysia's state-owned oil company, and TotalEnergies Carbon Neutrality Ventures, the CCS subsidiary of TotalEnergies, a French integrated multi-energy company. Storage operations are scheduled to commence by around 2030.

Scope 3: Switch from gasoline to non-fossil fuel-powered company-owned vehicles

In addition to reducing emissions produced from our own business activities (Scope 1 and 2), we are also working to reduce GHG emissions throughout the entire supply chain, including Scope 3 emissions.

In 2023, we decided to switch all company vehicles (gas-powered cars) to eco-friendly cars. Over the next three years, we expect to complete the switch for 60% or more of the applicable vehicles in Japan.

From 2024, we will ramp up efforts to reduce the GHG emissions derived from the use of company vehicles, such as by considering the switch to fuel-cell vehicles (FCVs), and plan to work on shift to EVs/FCVs at our sites in Japan and overseas by 2030. We will also switch the forklifts used at our plants to electric vehicles and we will work to reduce our GHG emissions derived from fossil fuels.

Implementation of exchange meetings on carbon neutrality for young employees

At our Oita Petrochemical Complex, Kawasaki Plant, and Stage for Co-creation (Yokohama), we are conducting R&D on technologies that contribute to carbon neutrality (CN). As part of these efforts, we have been holding regular CN exchange meetings with young engineers in their twenties and thirties since 2023. These meetings aim to conduct CN study sessions and deepen their understanding of CN-related development activities and technologies at each location. In June 2024, we held a plant tour and poster discussion at the Oita Petrochemical Complex, where employees actively exchanged opinions on technologies for utilizing CO_2 and waste plastics, among other topics. We will continue to develop innovative technologies that contribute to CN by facilitating co-creation both inside and outside the Company through the CN exchange meetings with young employees.

Environment

Biodiversity Strategies (Information Disclosure in Line with the TNFD Recommendations)

We plan to make efforts to tackle climate change and achieve a circular economy through our business activities. At the same time, we will consider our dependence on nature and the impact this has, and carry out activities to reduce and manage our impact, and conserve nature.

In our efforts, we will be conscious not only of our own business areas but also our value chain and we will promote ecosystem conservation and considerations for raw material suppliers.

Vision for the future (2030)

- Assess impact of Group's business activities on ecosystems and partner with various stakeholders to use natural resources in a sustainable way, while preserving, restoring, and improving them

Results in 2023

Roadmap development and impact assessment

- Developed a biodiversity preservation roadmap that is aligned with our sustainability strategy roadmap based on TNFD's disclosure recommendations and approach
- Conducted impact assessments at major plants

Plans for 2024

Implement an impact assessment based on the roadmap

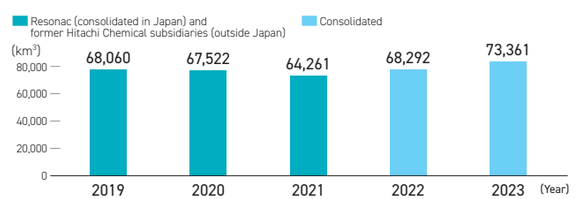
- Conduct a detailed investigation based on past investigations and a detailed risk assessment at priority sites, and explore response measures
- Organize environmental data and apply it to core global indicators
- Collaboration with social contribution activities and apply for OECM registration
- Register as a TNFD Adopter

Initiative Roadmap (excerpt)

Formulate basic policies	● Revise Corporate Governance Basic Policies ● Formulate Group environmental policies and roadmaps
Conduct simple assessment of dependency and impact	Use external reports to organize the relationship between the Group and nature
Present Assess priority regions	Organize priority regions for evaluation and response based on geographical location information and external tools
Assess dependency and impact	Identify key dependencies and impact on nature and assess this magnitude for areas subject to assessment
Assess risks and opportunities	Identify key nature-related risks and opportunities and assess this magnitude for areas subject to assessment
Explore and implement response measures	Compare the assessment results with our initiatives and explore and implement response measures

Key items and results

Water intake (excluding marine water)



Topics

Launched KROPICO, a Product that Contributes to Biodiversity

We have commenced a full-scale launch in Japan of KROPICO (*fertilizer registration number: 105862), a biostimulant material that promotes growth and alleviates stress in plants. It contains zero synthetic chemical substances, and is the first biostimulant in the world to contain several types of oligosaccharides with different functions. Using this product helps to achieve healthy crop growth and reduce the use of fertilizers and pesticides, thereby reducing CO_2 emissions related to crop production and lowering environmental pollution caused by excessive use.

Register as a TNFD Adopter

We endorsed the recommendations published by the Taskforce on Nature-related Financial Disclosures (TNFD) in September 2023, and registered as a TNFD Adopter and joined the TNFD Forum in June 2024.

Going forward, we will promote initiatives based on the recognition that the continued protection of biodiversity is important for the natural resilience of ecosystems, while also exploring the identification and assessment of nature-related issues (dependencies, impact, risks and opportunities) in accordance with the TNFD recommendations, and disclose information on this front.

Toward Circular Economy

We work hard to recycle waste and use resources efficiently. To this end, our business and R&D divisions promote their activities by paying attention to the entire product life cycle from product design and development to disposal. Toward circular economy, we focus on the agendas on the right, while considering setting specific goals and KPIs going forward.

- Design and development: Reduce consumption of minerals, fossil fuels and other resources; Use recyclable materials; Control waste generation; Improve recyclability; Extend product life; Quantify environmental impact of products through the life cycle assessment
- Manufacturing: Minimize consumption of energy, water, and other resources throughout the product life cycle
- Value chain: Pursue co-creation with diverse stakeholders such as suppliers, customers, government agencies, municipalities, and international bodies

Vision for the future (2030)

- We are implementing a number of co-creation initiatives with stakeholders in relevant supply chains to realize a circular economy through the power of chemistry (targets and KPIs currently under consideration). Improve traceability and visualization of recycling toward a circular economy

Results in 2023

Resources

- Reinforce global environment management systems

Increase product-related initiatives

- Boost up production capacity of lithium-ion battery conduction additives to contribute to extending battery lifespan and reduce CO_2 emissions
- Conduct a joint study for recycling businesses of used plastics and fibers

Plans for 2024

Resources

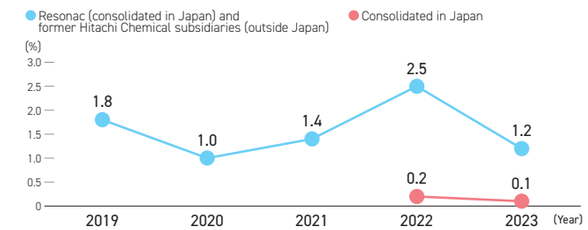
- Promote global environment management systems

Increase product-related initiatives

- Develop binders that contribute to higher input/output characteristics and longer life of lithium-ion batteries
- Provide environmentally friendly products with a view to customers' manufacturing processes, etc.

KPIs and results

Ratio of industrial waste sent to landfills



Initiatives for achieving zero emissions

By defining zero emissions as the state in which the ratio of industrial waste sent to landfills to total waste generated is 0.5% or less, we reduce the generation of waste and promote the effective use and recycling of resources. We also inspect our sub-contractors for intermediate treatment and final disposal of waste to confirm that they appropriately treat and dispose of our waste. In 2020, the government mandated companies that generate specially controlled industrial waste in the annual amount of 50 tons or more to use the electronic manifest for the reporting of their wastes. Since then, the Resonac Group's relevant sites have started producing reports using the electronic manifest.

Started demonstration experiments of marine plastic waste recycling with Kawasaki City

In cooperation with Kawasaki City, we started a demonstration experiment under "Kawasaki Plastic Chemical Recycling (KPR)" operations at the Kawasaki Plant to recycle marine plastic waste collected from the ocean surface of Kawasaki Port, and turn it into carbon dioxide gas and raw materials for chemicals such as hydrogen and ammonia. Most marine plastic waste is currently incinerated instead of being recycled. Resonac and Kawasaki City are exploring ways to recycle marine plastic waste, which is a challenging task. We are aiming to solve this problem as a first step toward plastic recycling.

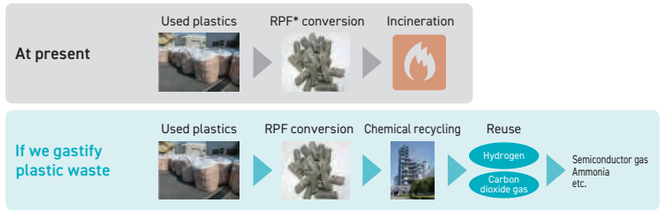
Environment

Topics

Turning Waste from Semiconductor Materials Manufacturing Processes into Raw Materials for Semiconductor Gases

—Reusing used plastic with chemical recycling technology

We have begun to consider recycling used plastic generated in the manufacturing process of semiconductor materials into hydrogen and carbon dioxide gas using our proprietary chemical recycling technology. Hydrogen is used in high-purity gases, etc. for semiconductor manufacturing as a raw material for ammonia. We conducted the first verification test at the end of January 2024 and confirmed that gasification can be achieved without any technical problems.



*Abbreviation of refuse derived paper and plastics densified fuel.
RPF is solid fuel made mainly from used plastics and other industrial waste that are difficult to be used in material recycling.

Response to Environmental Risks

We appropriately assess the impact of our business on the environment and work to reduce our environmental load and implement measures for preserving the environment based on the findings of such assessments, while contributing to achieving a sustainable society. The Group CEO is the highest authority for environmental preservation activities and environmental risk measures. Information on the environment discussed at Management Committee and other meetings is shared at each business division and site through environment & safety managers appointed for business division and site. At each site, the head of the site and the environment & safety manager lead environmental preservation activities based on their environment and safety action plans.

Vision for the future (2030)

- An integrated environment management system is in place on a global scale.
- The environment management status is visible on a global scale so that we can understand issues and take countermeasures against them promptly

Results in 2023

- Establishment of a system to manage environmental risk events
- Establishment and global rollout of Group environmental safety management regulations
- Establishment of a global legal compliance system (use of checklists for environmental laws and regulations, training sessions for environmental laws and regulations, and environmental audits)

Plans for 2024

- Establishment of guidelines for environmental risk assessments and roll them out globally
- Visualization of environmental risks at plants and consistent improvement of risk measures

Environmental measures in Kitakata City, Fukushima

At our Kitakata Plant in Fukushima, substances including fluorine attributable to our business in the past were detected in an amount exceeding the regulatory standards in the groundwater flowing beneath the premises. In response, we have implemented remediation measures in line with the Soil Contamination Countermeasures Act and the measures were completed in October 2023.

Niigata Minamata disease

Regarding the Niigata Minamata disease, the outbreak of which was officially confirmed in 1965, we acknowledge that former Showa Denko's wastewater polluted the Agano River, causing great inconvenience to victims and people living around the site. Resonac, in cooperation with the national and local governments, will continue to respond in good faith to the victims of the incident and work to solve the related problems in line with the laws and regulations that provide for compensation to be paid for the damage caused by the pollution.

Occupational Health and Safety

Mission

Safety qualifies us to remain in the manufacturing business. The Resonac Group will work as one to build a safety infrastructure and safety culture, and globally promote safety activities to eliminate occupational accidents.

We are working with our colleagues to build the foundations for improving corporate value, step by step, by putting the frontlines and people first in our safety and other manufacturing-related operations, technology, and quality assurance operations.

Naobumi Shimpo
CMEO/CQO

Strategy for Realizing the Long-Term Vision

Issues to be addressed (long term)

- Targeting zero occupational accidents and accidents by training our personnel to have high safety awareness and skills

Recent issues and problem awareness

- Establishing Resonac's safety culture and infrastructure
- Clarifying the requirements for a zero-accident and zero-disaster workplace and building the means to achieve it

Non-financial KPIs

- Fostering a culture emphasizing safety
- Number of occupational accidents
- Lost time incident rate
- Number of equipment-related accidents

P85 / Non-financial KPI Results and Targets

	Vision for the future (2030)	Results in 2023	Plans for 2024
Fostering of a culture emphasizing safety	● A mutual-enlightenment safety culture has been instilled based on leadership from the top	● Held exchange meetings and global activity presentations for learning about initiatives at other business sites ● Rolled out the Safety Communication Program (SCP*) ● Incorporated safety activities into evaluation system	● Incorporate safety performance in executive evaluations ● Implement safety declarations, bonuses for actions, and positive evaluations for performance ● Expand and enhance Safety Communication Program (SCP) activities
Establishment of safety infrastructure	● Globally consistent risk-based safety management system is working effectively to prevent accidents and disasters	● Started operation of the environmental and safety management system integrating process safety ● Clarified the requirements for the safety data management system	● Develop global safety standards and safety guidelines ● Build an environmental and safety support system
Invigoration of safety activities	● All employees maintain high safety sensitivity and skills and all sites actively carry out safety activities	● Started building safety model lines and creating guidelines for safety activities ● Conducted training sessions on our safety code of conduct and 10 safety principles	● Analyze accident-free and disaster-free sites and develop best practices ● Use safety model lines to create opportunities for improvement and learning ● Promote mutual enlightenment activities between manufacturing sites for raising safety awareness

Topics

SCP activities and regional exchange meetings

Having started SCP in 2023 in Japan, in 2024 we expanded it to the Greater China. To support this, we produced a video aimed at deepening the understanding of patrol officers and reviewed the contents of the training sessions. We also created a certification system for SCP instructors and improved the quality of patrols by training highly skilled instructors.

In 2023, we held regional exchange meetings in North and Central America, the Greater China, and the ASEAN region, where environmental and safety representatives from Resonac's headquarters and local plants gathered and talked. This initiative aims to foster a culture of mutual enlightenment based on learning from each other's safety activities. As well as getting to know each other, participants shared best practices and problems.

*SCP (Safety Communication Program): A mutual enlightenment activity where managers and supervisors carry out site patrols, flag unsafe behavior while praising good behavior, and resolve issues together.

Please visit our website for more details on our policies, promotion system, and activities.

Quality Assurance

Mission

We supply products and services that are safe and provide peace of mind through our quality assurance activities based on relationships of trust with our various stakeholders including our customers and suppliers.

Strategy for Realizing the Long-Term Vision

Issues to be addressed (long term)
- Establish global quality assurance governance and foster a culture of quality compliance
- Strengthen on-site capabilities to respond to changes and increased sophistication in customer requirements

Recent issues and problem awareness
- Strengthen global governance functions (audit/quality risk diagnosis)
- Continue reinforcing mechanisms for preventing misconduct
- Strengthen education systems for global human resource development

Non-financial KPIs
- Number of product-related accidents
- Number of quality compliance violations

P85 / Non-financial KPI Results and Targets

Vision for the future (2030)
- Quality assurance governance and quality-focused culture are established globally, earning high levels of trust from stakeholders
- Through the safe and secure products and services we provide, we contribute to continuous business growth and the sustainability of society

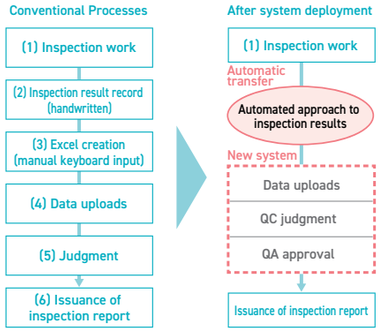
Results in 2023
- Established a foundation for global quality assurance governance (implementation in Japan of unified rules, centralized management of quality-related information)
- Implemented quality compliance culture development measures (awareness surveys in Japan, quality education)

Plans for 2024
- Globally expand unified regulations, quality education, and quality compliance awareness surveys
- Standardize assessment of on-site capabilities in quality assurance and quality control
- Systematically rotate personnel to prevent misconduct

Topics

Automated inspection system

To prevent quality compliance violations, Resonac is introducing a system that automatically issues shipment inspection reports based on inspection instructions, quality standards, inspection result information, and the results of their judgments. The system is being rolled out sequentially to each business site. Until now, depending on the inspection item, the measured inspection data was recorded on a handwritten document and then manually entered into the system. At one business site, an average of 40,000 pieces of data were being entered manually each month. This situation meant that transcription or data entry errors could arise, as could improper work. To improve this, inspection equipment was connected directly to the system, enabling inspection data to be automatically transferred. This minimizes human involvement in the judgments of inspection results and all other data, preventing human error and misconduct while saving labor.



Implementation of quality compliance awareness survey

In August 2023, we conducted a quality compliance awareness survey of over 13,300 all employees of the Resonac Group in Japan.

Through questions about the Company as a whole, employees' own workplaces, and individuals, the survey examined employees' attitudes to and psychological states about quality compliance. Questions included whether the climate, system, and resources were adequate for ensuring quality and attitudes to learning without hiding mistakes, communication, and open discussion, etc.

Although there were many positive responses noting the thorough status and culture of quality compliance at an individual or department level, the overall result was a call for improvements in enterprise-wide system development and resource allocation. With our two companies having merged and expanded in scale, we have identified the need to promote integrated Group measures, and will further strengthen these efforts.

Please visit our website for more details on our policies, promotion system, and activities.

Chemicals Management

Mission

We are dedicated to ensuring chemicals management compliance and providing safety and peace of mind throughout the entire product lifecycle. We will strive to create new value through safety and contribute to the realization of a sustainable society and the enrichment of people's lives.

Strategy for Realizing the Long-Term Vision

Issues to be addressed (long term)
- Unification of global management standards and establishment of a legal compliance system
- Development of global human resources that can carry out the above measures amid the ever-changing demands of society

Recent issues and problem awareness
- Global governance: Establishment of an RHQ structure and unified regulations
- Chemicals management systems: Data preparation for the thorough utilization of existing systems
- Recruitment/development of human resources: Enhance training content and programs for the development of global human resources

*RHQ: Regional Headquarters (regional oversight companies)

Non-financial KPIs
- Promotion of product stewardship

P85 / Non-financial KPI Results and Targets

Vision for the future (2030)
- Establish a global chemicals management system and governance to compete internationally and earn high credibility among stakeholders
- Contributing to enhancing the competitiveness of our business by providing safety and peace of mind through co-creation with stakeholders

Results in 2023
- Maintained and enhanced legal compliance and chemicals management systems at domestic sites by conducting audits and launching a portal site
- Selected priority risk assessment substances and issued safety summary reports

Plans for 2024
- Start early operation of RHQs in China and Europe. Consider starting the operation of RHQs in the U.S. and Southeast Asia from 2025
- Expand cooperation with overseas sites through multilingual portal sites (strengthen head office support and issue educational content) to improve manager skills

P108 / Enhancement of the Group Management System

Features of Portal Site
The site provides useful information, including the latest regulatory information, various search tools, and learning materials in an easy-to-understand manner.
We have also established a system in which issues related to chemical management raised by employees can be promptly dealt with by representatives through an inquiry form.

Topics

Received the JIPS Award for the Third Consecutive Year

We have received the 2023 JIPS* Award for the third consecutive year. Continuing from the previous year, we selected priority substances, conducted risk assessments, and published 20 safety summary reports. The systematic increase in the number of our safety summary report registrations has been highly regarded.

*The JIPS award is presented by the Japan Chemical Industry Association (JCIA) to member companies that have conducted superior initiatives in disclosing their safety summary reports as part of the autonomous/self-motivated initiatives in chemicals management.

Formulation of Green Procurement Guidelines

In our material procurement activities, we have established the Green Procurement Guidelines to promote the procurement of goods and services with reduced environmental impact (i.e. green procurement). Web The guidelines select and classify the chemical substances prohibited from being included in procured products and those that require control (containment controlled substances) into two management categories (Level 1: Prohibited Substances, Level 2: Controlled Substances), and clearly outline the survey and measuring methods and reporting standards for contained substances. These guidelines accompany the items related to "3. Activities that we request our business partners to endorse and implement" of the "Resonac Group Sustainable Procurement Guidelines." We will continue to update them so that we can share our views on voluntarily controlled chemical substances with our suppliers and take action together.

Please visit our website for more details on our policies, promotion system, and activities.

Sustainable Procurement

Mission

In order to realize a sustainable society with consideration for the environment and society, we aim to conduct fair, impartial, and stable procurement activities in a responsible manner through long-term relationships of trust with our suppliers.

Strategy for Realizing the Long-Term Vision

Issues to be addressed (long term)
- Establishment of a global governance framework and management system
- Sophistication of procurement and supply chain management methods and systems based on DX

Recent issues and problem awareness
- Raising the level of fairness and transparency in procurement operations by fostering compliance awareness throughout the Group
- Enhancement of communication with suppliers to step up collaboration

Non-financial KPIs
- Improvement of quality of communication with suppliers

P85/Non-financial KPI Results and Targets

Vision for the future (2030)
- The supply chain functions efficiently, stably, and appropriately through globally controlled management frameworks and systems
- Practicing sustainable procurement in the form of responsible procurement activities based on a fair and open framework while holding high ethical standards

Results in 2023

Enhanced communication with suppliers through CSR questionnaire surveys
- Gained insight into suppliers' CSR efforts through CSR questionnaire surveys
- Set evaluation standards for suppliers
- 89% of suppliers had an overall score above the satisfactory threshold. For suppliers who did not meet this threshold, we formulated a dialogue plan aimed at improving their efforts through CSR visits and other means

Plans for 2024

Enhance communication with suppliers based on the results of CSR questionnaire survey
- Promote collaboration and improvement with suppliers facing issues
- Expand implementation of CSR questionnaire surveys to overseas suppliers

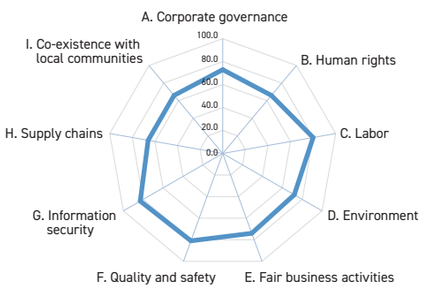
Implement audits of procurement operations at Group companies (Japan + the Greater China)

Topics

CSR Questionnaire Surveys and CSR Visits

In the Resonac Sustainable Procurement Guidelines, Web all new suppliers are asked to complete a CSR questionnaire survey when we start doing business with them, and important existing suppliers are asked to complete a CSR questionnaire survey once every three years. We also conduct "CSR visits" to around 40 companies every year to confirm the status of CSR activities and introduce good examples.

In addition to assessing the suppliers' risks, these are important activities that enable us to build close and fair cooperative relationships with suppliers.



Results of CSR questionnaires for our suppliers conducted in 2023 (average score percentage by item)

Addressing the 2024 Logistics Issue in Japan

With regulations capping overtime hours for truck drivers coming into force in April 2024, there are concerns about a shortage of transportation capacity. In June 2023, a chemicals working group was established in the Physical Internet Realization Council, comprising ministries and agencies related to the Ministry of Economy, Trade and Industry, chemical-related companies, and logistics companies in order to tackle the "2024 logistics issue." Resonac is also participating in this chemicals working group. We have formulated a concrete action plan to realize sustainable logistics (stability, safety, carbon neutrality, and efficiency), and are carrying out initiatives, including the reform, standardization, and digitalization of logistics business practices.

Please visit our website for more details on our policies, promotion system, and activities.

Respect for Human Rights

Mission

Respecting human rights and creating an environment with high psychological safety are prerequisites for employees to work autonomously and creatively.
In order to realize a society in which everyone is respected equally, we will cooperate with all stakeholders, including suppliers, and conduct business activities in consideration of human rights on a global scale.

Strategy for Realizing the Long-Term Vision

Issues to be addressed
- Furthering employee understanding and implementation of our human rights policy
- Understanding the potential and existing risks of harassment, conducting training and fostering a corporate culture to prevent harassment
- Human rights due diligence in the supply chain

Non-financial KPIs
- Respect for human rights

P85/Non-financial KPI Results and Targets

Vision for the future (2030)
- To have established a corporate culture in which all Group employees, including those overseas, respect human rights and are able to transform diversity into co-creative and competitive strengths
- To have implemented measures for prevention and mitigation against identified human rights risks, as well as established a series of processes to evaluate their effectiveness

Results in 2023
- Conducted harassment training for executives
- Identified issues to be addressed through human rights awareness surveys (human rights surveys) for employees
- Implemented human rights training on a global basis
- Conducted a preliminary investigation into overseas human rights risks, including within our supply chain

Plans for 2024
- Expand scope of harassment training to all managers
- Monitor status through continued human rights surveys
- Continue human rights training on a global basis
- Start surveys for suppliers, focusing on high-risk regions and businesses (including compliance with European Batteries Regulation)

Human Rights Awareness Survey 2023

Resonac formulated the Group human rights policy in 2021 and conducted training and awareness-raising activities, then conducted the first human rights awareness survey for employees in 2023 globally. As a result, it was found that awareness of human rights initiatives and positive sentiment among employees tended to be high in general. However, the issues listed on the right were identified as human rights issues. With regards to harassment, we will expand the scope of training to all managers in 2024.

(1) There is room for further instilling the human rights policy and the need to respect human rights among employees.
(2) Although awareness of our whistleblower system is increasing, there is room for improvement in eliminating concerns about anonymity and the disadvantageous treatment of whistleblowers P107/Compliance
(3) Identify potential and existing harassment risks as human rights issues

Human Rights Due Diligence Process for Harassment

(1) Identify the impact on human rights → (2) Prevent and mitigate adverse effects → (3) Verify that the response was effective → (4) Disclose the details of our initiatives both internally and externally

(ex.)

2023	2024	2025 onward	In a timely
● Identified harassment as a human rights risk based on the analysis of human rights survey results ● Conducted harassment training for executives	● Expanding harassment prevention training to all managers	● Plan to check the effectiveness by human rights surveys and engagement surveys in the next year and beyond	● Disclose the details and results of our initiatives both internally and externally, such as on our website

Human Rights Due Diligence in the Supply Chain

In order to identify human rights issues outside the Group, we believe it is necessary to consider the entire value chain—from raw material procurement, product design and development to production, sales, collection and disposal. We will remain aware of the unique context of a chemical company, including environmental risks and occupational safety, and will prioritize our responses based on their impact on stakeholders and the severity of the impact.

Please visit our website for more details on our policies, promotion system, and activities.

Compliance

Mission

Thorough implementation of soft-law-based compliance going beyond legal and regulatory compliance is the key principle for business continuity. We will gain the trust of international society and people involved in our business activities through thorough compliance.

Strategy for Realizing the Long-Term Vision

Issues to be addressed

- Foster a sense of ownership for a wide range of compliance areas among the management team and employees
- Further entrench and implement the Code of Conduct among employees
- Autonomous operation of Global Compliance Standards (GCS)
- Accelerate our response to whistleblower reports and foster trust from users

Non-financial KPIs

- Inculcation of Our Code of Conduct
- Penetration of Global Compliance Standards (GCS)
- Increase in number of whistleblowing reports

P85/Non-financial KPI Targets and Results

Vision for the future (2030)

- Each organization in the group acts autonomously toward compliance

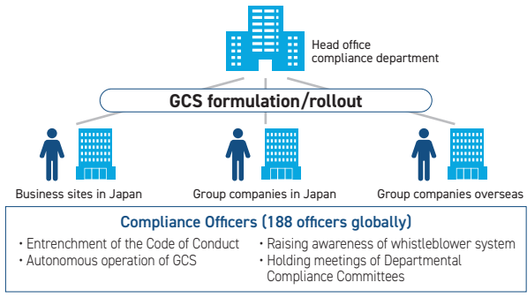
Results in 2023

- In Corporate Ethics Month, implemented e-learning and workplace discussion regarding our Code of Conduct
- Introduced GCS and related regulations to each organization, overseas bases, and major Group companies in Japan and abroad
- Assigned compliance officers to overseas bases and major Group companies in Japan and abroad, and began holding quarterly meetings of the Group Compliance Committee and Departmental Compliance Committees
- Increased in number of reports as the whistleblowing system penetrated more deeply

Plans for 2024

- Start sharing information with the management team and the entire company regarding compliance matters of the Company (response after whistleblowing and various incidents, efforts to prevent recurrence, etc.)
- Translate "Our Code of Conduct" into 14 languages to promote understanding in native languages of employees
- Start compliance self-audits in each organization
- Accelerate coordination and response with related departments, having thoroughly ensured the anonymity of whistleblowers
- Share compliance matters and stimulate discussion aimed at preventing recurrence in quarterly meetings of the Compliance Committee

Assignment of compliance managers



Actual compliance matters are wide-ranging, from manufacturing related matters such as quality and products, to sales relate matters such as Competition Law and preventing corruption, to workplace issues such as harassment. We are fostering common understanding of compliance, promoting coordination between departments to reduce occurrence of issues to zero, and making opportunities for information sharing and discussion on each level.

Daisuke Yoshida
Employee in charge of compliance

Number of whistleblowing reports

Breakdown of whistleblower reports in 2023	Number of reports
Sexual harassment, power harassment, etc.	30
Compliance violations	10
Labor relations and other matters	57
Total	97

Topics

Compliance with Competition Law

In regard to compliance with competition laws in each country, we appropriately control cartel risk in our daily operations by implementing "Rules for Interactions with Competitors." Every year we hold a "Competition Law Compliance Hearing" in which we conduct a voluntary audit of our law-compliant business, and report the results to the CSuO and CRO. With regard to the former Hitachi Chemical cartel problem which received judgment in 2016, we submitted a report to the DOJ (U.S. Department of Justice) about the Company's measures to prevent recurrence during the probation period from 2017 to 2021 under the U.S. plea agreement, and we received a notice of completion from the Probation Office in June 2021.

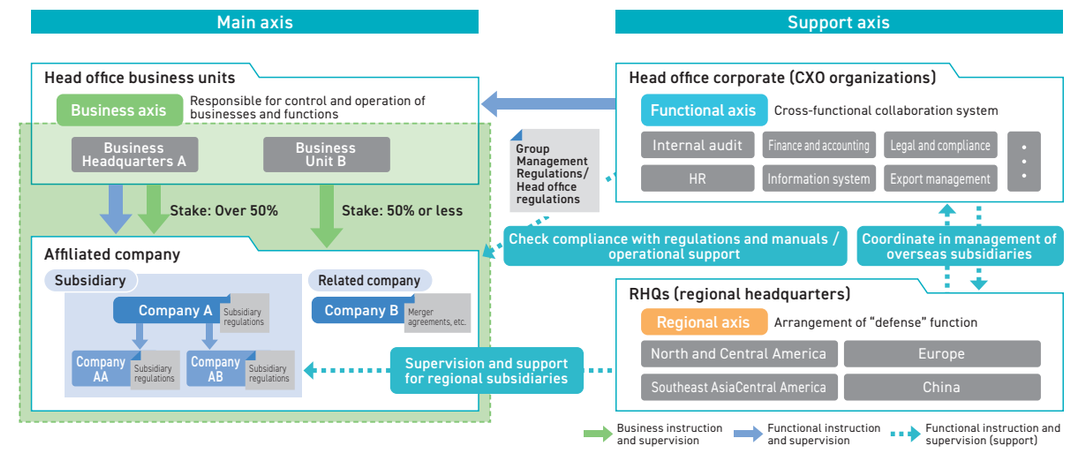
Please visit our website for more details on our policies, promotion system, and activities.

Enhancement of the Group Management System
— (RHQ [Regional Headquarters] Functional Design Initiatives)

Basic Approach to Group Management

We have established the "Rules on Group Management" as a basic policy for the management of affiliated companies, which is to be followed for maintaining control over the entire Group. Under this policy, CXO organizations have established regulations and manuals that define the rules and business operations related to each function. While business units are responsible for the control and the operation of affiliated companies under their supervision, we have also established a system that enables CXO organizations to check compliance with regulations and manuals and support operations in a cross-functional manner. As part of these efforts, we established regional headquarters (RHQ) functions in North and Central America, Europe, Southeast Asia, and China, and positioned them as the cornerstone of overseas subsidiary management. Through activities conducted by RHQs in cooperation with the head office, we will strengthen global governance by understanding the laws, regulations, and business practices of each country and region, and grasping and responding to them in a timely and comprehensive manner. At the same time, we are working to grasp the operational status of affiliated companies, establish a system for early risk detection, define the roles of directors and auditors of affiliated companies, and share information with the Internal Audit Department, among other measures. Through these efforts, we aim to stabilize the Group's management foundation.

Framework for managing affiliate companies



Roadmap for designing RHQ functions

In 2023, we built the common understanding between the CXO organizations and RHQs, adjusted the number of required personnel, and formulated a framework for recouping RHQ costs in preparation for the operation of RHQ functions in 2024 onward. After examining these measures, we started operation in January 2024, focusing on functions related to "defense." In 2024, some of the high-priority functions will be put into operation in the three regions other than China. We will then work to monitor the operation status of these RHQs and establish a management system for activity records. We aim to officially launch the four-region structure in 2025, and to have the RHQs function operate independently as regional hubs in 2026 and beyond.

2023	2024	2025	2026 onward
Function design	Partial commencement of operations	Official start	Independent operation as regional hubs

Topics

Global Kickoff Meeting 2024

We hold "Global Kickoff Meeting" every year. In 2024, a total of 191 executives from the head office and representatives of major group companies from 15 countries world-wide attended the meeting to deepen their understanding of the current priority issues faced by the entire Group.

Additionally, interactive sessions among the participants fostered lively discussions and networking, enhancing the sense of unity among the Group.

Risk Management

Please visit our website for more details on our policies, promotion system, and activities.

Mission

While recognizing the various risk factors that hinder the sustainable growth and development of the Group and society, clarify risks and opportunities in the formulation and implementation of management strategies, and help optimize the allocation of resources by connecting them to management decisions

Strategy for Realizing the Long-Term Vision

Issues to be addressed

- Conduct risk management and strengthen management systems amid high uncertainty
- Make BCP more effective and standardized

Non-financial KPIs

- Development and operation of comprehensive risk management systems
- Reinforcing the function of the second line of defense

P85 / Non-financial KPI Results and Targets

Vision for the future (2030)

- Understand and practice risk management principles and approaches (all employees)
- Achieve world-class management by establishing and improving risk management structure and system that support the three lines of defense
- Develop and operate an effective administrative structure that also covers BCM&BCP formulation

Results in 2023

- Introduced control implementation and assessment processes
- Based on BCM&BCP guidelines, fully revised and established BCPs for products for which BCPs have been established

Plans for 2024

- Identify companywide key risks and develop a monitoring (management review) process
- Advance risk plotting (visualization tools) using generative AI and more standardized risk control through the control implementation and assessment processes
- Begin preparation for overseas deployment of risk assessment
- Complete revision and establishment of product selections for which BCPs are to be established
- Start preparations for companywide deployment of simulation training to study BCP effectiveness

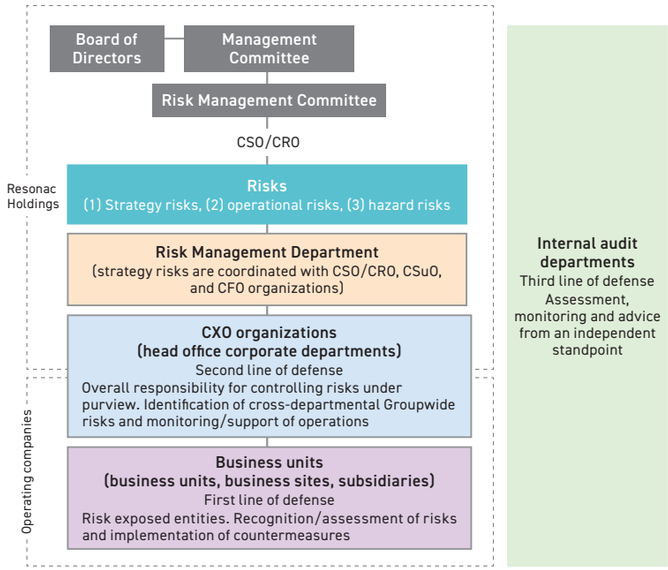
Management

Risk management system

The Group's risk management system was resolved by the Board of Directors as a key function of the internal control system, and a reporting and monitoring system is established. Our Group's Risk Management Rules are designed to comprehensively and individually address management risks affecting our business. In these rules, we have established executive bodies and responsible departments and provided for management methods that comply with ISO 31000 and other standards.

Crisis management system

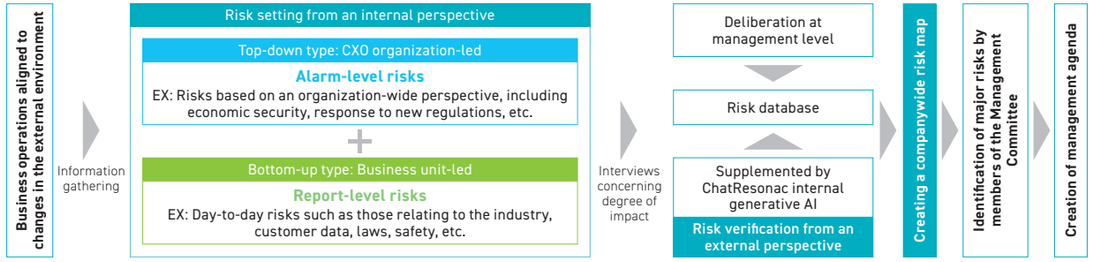
If a situation arises that could pose an existential threat to the Group, or if there is a risk of a situation developing that could seriously hinder the normal business operation of the Group, we will establish a crisis response headquarters led by the CEO. By assessing the situation and its impact on our business operations, issuing instructions to prevent any escalation of damage, and considering what information to provide to external parties, among other operations, the crisis response headquarters will ensure a swift and appropriate initial response.



Risk management processes

Our business environment is constantly evolving and increasing in complexity amid technological innovation, market changes, and changes in policy. We believe that to maximize corporate value under such circumstances it is best to combine two approaches. Through bottom-up activities, we minimize day-to-day risks by tapping into on-site wisdom and experience. Through top-down activities, senior management takes the viewpoint of the entire organization and its goals, ranking business risks in order of priority and optimizing resource allocation.

After companywide risks are identified through these two approaches, they are visualized by being entered into a heat map. After verifying and analyzin risk data using generative AI, the Risk Management Committee reports its findings as companywide key risk themes. These are later discussed intensively in a deep dive at senior executives study sessions.



Identification of bottom-up type report-level risks

The process for departments to identify and evaluate risks is implemented through a centralized data-intensive management using a standardized Enterprise Risk Management (ERM) system. Personnel in positions of manager or above throughout the Company continually share results on the system, enabling day-to-day risks to be reduced at on-site level.

The oversight divisions (CXO organizations) in charge of each risk area review the identified risk events and evaluation results from each department as well as related data such as current responses to risks and plans for addressing them. They also promote communication on matters such as the need for support. Individual risk events that are highly significant from the viewpoint of frequency of occurrence and degree of impact are positioned as top risks, and they are shared with and verified at each department, while being deliberated at management level. The total number of registered risks in 2023 was 5,976. Of these, 15 were subject to individual deliberations by the Risk Management Committee.

Identification of top-down type alarm-level risks

The outlook has become highly uncertain in recent years due to changes in the external environment that have rapidly become more diverse and complex. These include elevated country risks, changes in economic security policy in countries around the world, countries' responses to climate change, and rapid advances in digital technology.

In 2023 we launched a project to identify among these megatrends the external environmental factors and changes that the Group should focus on. The project is run as a joint initiative between the Corporate Planning Department, the Sustainability Department, and the Risk Management Department. Using a scenario-based approach that takes into account external perspectives and environmental changes, we will improve risk awareness and reflect it into our management strategies.

Visit our website to read the Cross-talk Between the CSuO and On-site Staff in Charge: Challenges for Integrated Risk Management.

BCM Promotion

In accordance with the BCM&BCP guidelines we formulated in 2023, we set target recovery times and target recovery levels using BIA (business impact analysis), and are preparing a BCP. Each year we review the products for which BCPs are to be established based not only on sales and profit, but also on whether the products are needed for social infrastructure.

We have also begun considering formulating BCPs not only for responding to conventional hazard risks and operational risks, but also for strategic risks caused by changes in the external environment, such as an incident in Taiwan.

In addition, we have begun piloting using a new method of BCP training. By 2025. we aim to prepare BCP training guidelines, with a system to support the implementation of training at each site.

We will be periodically reviewing our BIA and BCPs, while following BCM's PDCA cycle by verifying effectiveness through trainings, as we endeavor to deepen employees' understanding of BCP to make them more effective and standardized.

BCP training

Risk Management

Identifying and Prioritizing "Companywide Key Risks Themes"

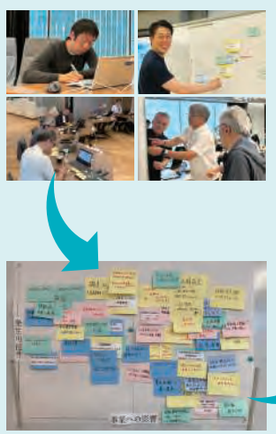
Resonac has organized the Risk Management Committee chaired by the CEO. The Committee facilitates cross-organizational deliberations by senior executives on the risk management system, key risks facing the Group, and countermeasures for addressing them. Based on the deliberations of the Risk Management Committee, at a senior executives study session held in June 2024, companywide key risk themes were identified and ranked in order of priority.

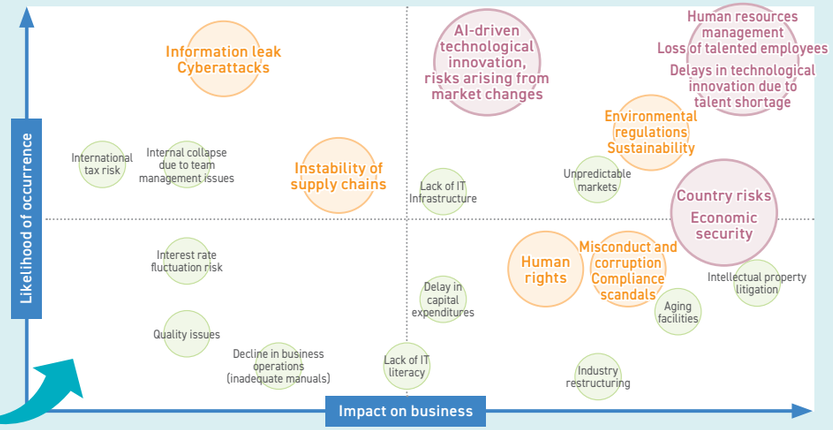
Matters discussed by senior executives (June 2024 senior executives study session)

1	Goals	✔ Understanding individual risk events arising from the external environment and examining risks and countermeasures side by side ✔ Reexamining areas of corporate support	**Implementation:** The Risk Management Committee held preliminary discussions based on its meetings with the CXO organization and with the business side. Based on these discussions, risks arising from the external environment that are significant to Resonac were identified, such as concerns about country risks, concerns about the protection of corporate secrets, and further heightened environmental awareness. The status of countermeasures and concerns about each risk were identified, and the direction of countermeasures was shared with senior executives.
	Approach	1. Method for identifying risks arising from the external environment (top-down type x bottom-up type) 2. Detailed explanatin and discussion of external environmental events 3. Confirmation of BU countermeasures status and countermeasure gaps for each risk	
2	Goals	✔ Redefined companywide key risk themes after reflecting the insights of senior executives ✔ Assessing the significance and urgency of each risk and set an appropriate level of monitoring	**Implementation:** Key risks such as operations and hazards were added. A full overview was presented again based on a tentative plot diagram of the eight key risks, and a question and answer session was held. Each member of senior executives then plotted risks of concern on a risk map. The discussion then focused on which of these risks could be incorporated and which should be eliminated. Regarding the risks left on the map, the possibility of occurrence and the impact of the business were re-examined, monitoring levels were set, and future flag bearers (CXO) were determined.
	Approach	1. Alignment discussion on the eight risks and risks arising from the external environment 2. Identifying risks related to the concerns of senior executives 3. Plotting risks on a bubble chart 4. Setting the monitoring level 5. Determining the flag-bearer for each risk	

The Resonac companywide key risk map developed through this process

Following the discussions by senior management, companywide key risks were plotted based on their likelihood of occurrence (vertical axis), impact on business (horizontal axis), and degree of impact (size of the bubble), as shown in the figure on the right.





Legend
- S rank: The most significant risk to company's operations (requires the strictest monitoring and/or immediate countermeasures)
- A rank: Key risks to the achievement of company goals (regular review and preparation of a rapid response plan)
- B rank: key risks to business operations (regular monitoring and preparation of countermeasures)

Senior executives' opinions on identified companywide key risks

S rank risks: The most significant risks to the Company's operations (requires the strictest monitoring and/or immediate countermeasures)

- Risks related to human resources management and loss of talented employees (flag bearer: CHRO)
- Country risks (flag bearer: CSO/CRO)
- AI-driven technological innovation, risks arising from market changes (flag bearer: CTO)

✔ Human resources risks are linked to everything. In particular, with regard to risk of brain drain, amid intense competition for talent around the world, we are investigating what reasons and conditions lead employees to quit, and planning to strengthen countermeasures (CHRO)

✔ Even if each business deals with country risk, preparing adequately is hard and business could be halted immediately. It should therefore be tackled one of the most significant risks (CMO)

✔ Market changes due to AI-driven technological innovations could have a dramatic and significant impact on Resonac's business. We must constantly monitor what is happening (CTO)

✔ When considering information leakage, we need to consider not only cyberattacks, but also that individual employees could be poached by other companies or other countries. Many risks have human resources at their root, so a coordinated response is necessary (CSO/CRO)

A rank risks: Key risks to the achievement of company goals (regular review and preparation of a rapid response plan)

- Risks related to supply chain instability (flag bearers: CMEO/CQO)
- Information leakage and cyberattack risks (flag bearer: CDO-IT Supervisor)
- Misconduct, corruption, compliance issues, or scandals risks (flag bearer: CSuO)
- Human rights/environmental regulations risks (flag bearer: CSuO)

✔ Supply chain risk is a critical issue that we deal with in our daily operations. While various perspectives have been included, I expect continued and coordinated responses (CEO)

✔ In terms of information leakage risks, we need to reinforce our countermeasures for human resources as well as working to prevent cyberattacks. (General Manager of the IT Department)

✔ Incidents related to misconduct or corruption, including product quality irregularities, must not be allowed to occur. In light of the product quality labeling irregularities that the Company has had in the past and recent misconduct issues at other companies, we must work together as one team to take countermeasures (General Manager)

✔ Human rights risks and environmental risks pose challenges both in terms of our future response to changes and our existing responsibilities, including the supply chain. We will make plans, and respond to both opportunities and risks at Sustainability Promotion Council meetings (CSuO)

Other opinions

✔ As times have changed, the risk events that could occur have also changed dramatically. We need to prepare by understanding the risks in advance and take countermeasures. (CSO/CRO)

✔ Risks must be assessed and dealt with at two levels: surface phenomena and their underlying causes. (CHRO)

✔ There are various reasons behind the unpredictable market changes. We will analyze the underlying factors from various angles and respond accordingly (CMO)

✔ I would like to take into account issues in areas such as reputation risk and strive to prevent them before they occur, bearing in mind that they would have immediate impact on the stock price (CFO)

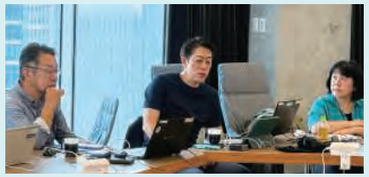
✔ We would like to collaborate with business units, business sites, and CXO organizations to manage and respond to each risk (CEO, General Manager)

Risks were identified by a bottom-up approach based on working level perceptions of risk and a top-down approach from the viewpoint of the entire organization. We were able to use generative AI for verification and analysis and conduct in-depth deliberations at management level, and I think this was one step forward in a groundbreaking initiative.

Tomomitsu Maoka
CSO/CRO

To manage business risks, the working level perspective and the management perspective are both essential. Going forward, we should use continuous monitoring to make our risk management system more effective.

Tomotaka Tsutsuzaki
General Manager, Risk Management Department



03 Corporate governance reform

Here we report on the progress of governance reforms aimed at enhancing Resonac's corporate value.

113 —— Governance Roundtable
119 —— Directors, Audit & Supervisory Board Members, Corporate Officers, Skill Matrix
124 —— Corporate Governance

Governance Roundtable

Corporate governance reform

The approach the Board of Directors will take to maximize corporate value

How is the Board of Directors meeting the challenges Resonac must overcome?
Members of the Board discussed corporate governance reforms following the company merger, and the monitoring functions that the Board must perform.

Names of speakers are shown in blue font for inside Directors and inside Audit & Supervisory Board Members.

<Reflections on discussions regarding portfolio reforms>

Resonac is entering its second year and still halfway to generating value as a new company We must step up our monitoring efforts

K. Morikawa We create action plans based on the Board of Directors' evaluation of its own effectiveness. The action plan for fiscal year 2023 includes (1) Taking specific measures to accelerate separation of execution and supervision, (2) setting an agenda for the Board of Directors in the future based on its objectives and roles, and (3) securing additional communication opportunities. The Board concluded that it was successful in devoting a greater share of its discussions to essential strategies. Revising the criteria for referring matters to the Board changed the structures of Board of Directors discussions significantly. Discussions regarding individual projects went from accounting for 39% of discussions in fiscal year 2022 to 13% in fiscal year 2023, while strategy and company-wide discussion shares rose from 41% to 63%. The Nomination Advisory Committee and the Remuneration Advisory Committee also began making corporate governance reforms, such as launching discussions regarding successors and executive compensation linked to KPI. Board members with diverse experience and expertise in specialized areas are monitoring Resonac from a range of different perspectives.

N. Morikawa I was appointed Outside Director of Showa Denko in March 2020, after the Hitachi Chemical acquisition decision was made, and joined discussions. With respect to PMI reasonableness, which was the main topic of interest at the time, I think our plan was appropriate, and I also highly regard the fact that the merger was viewed as a crisis, and that a new management system was created and Team Takahashi was formed based on this understanding.

Since becoming Resonac, we have focused on monitoring if PMI is being implemented. I have high praise for the way the portfolio reforms have gotten off to a solidly based start. In particular, I find the portfolio analysis approach of looking at whether or not Resonac is the best owner to be a highly persuasive one. However, shareholders won't wait forever. I think the next two or three years will be critical years in terms of getting results of our portfolio reforms, and we will need to monitor even more closely.

Tsuneishi Mr. Takahashi has a very clearly defined strategy for portfolio management and a straight, consistent message. I think the direction of that strategy is a valid and correct one. That said, even now Resonac has an extremely large number of business units, and I look

Noriko Morikawa
Outside Board Director

forward to greater investigation at the Board of Directors level of whether or not our plans are well-suited to increasing profitability in each business segment, along with more detailed and deeper discussions.

Miyasaka While the amount of time spent discussing individual projects has been reduced to achieve the target of transitioning to a monitoring board, one also has to recognize that discussions have grown more abstract.

Maoka That's one of the problems of separating execution and supervision: it can lead to discussions becoming too vague. In a company like ours, with such a wide-ranging business portfolio, over-abstracting discussions can result in no longer being able to see what exactly is going on. We need to keep exploring how to maintain the right balance.

Toda I have only recently been appointed Outside Audit & Supervisory Board member, in March of 2024. The impression I have based on what I have heard is that monitoring has been focused on the integration process and cultivating the corporate culture of the newly formed company. Going forward, we will perhaps enter the stage in which we discuss how to bring in revenue. One of the key points of auditing is the maximization of corporate value, but society demands that we earn money through appropriate means to the eyes of all stakeholders. We need to closely monitor to make sure that there are no factors that could harm our corporate value and that we are properly putting our decisions into practice.

Isshiki Looking at the composition of the outside directors, I am the only one with extensive expertise regarding finance and investment. I think it would be advantageous if we had a young outside director with experience in international finance, in particular.

Yasukawa I have gone through a major merger before, so I have first-hand experience with how difficult a corporate merger is. I think what Resonac needs from me as an outside director is the ability to leverage my knowledge, which I have gained through dealing with various merger-related problems. Resonac is enthusiastically striving to achieve world-class levels in every area, be it strategy, decision-making, compensation systems, or cultivating an organizational culture. However, it has a large number of business sites, and it is still in the process of achieving complete integration, including the penetration of its culture. Going forward, I hope to continue providing appropriate advice when it is needed.

<Regarding the partial spinoff of the petrochemical business>

Simply splitting off the petrochemical business wouldn't be enough
We are investigating and discussing what the new, post-spinoff company will be about

Somemiya Two major reasons that the Board of Directors has been able to shift its discussions to medium- and long-term issues are the decrease in the number of agenda items for the Board to discuss, as a result of changes to the criteria for referring matters to the Board, and the creation of spaces for sharing information in advance. In particular, the executive side viewed the matters related to the petrochemical business as challenges in business portfolio and shared that view repeatedly and clearly, which I think contributed to the speedy decision by the Board to spin the business segment off.

Tetsuo Tsuneishi
Outside Board Director

Kohei Morikawa
Board Director and Chairman of the Board

Tsuneishi Good point. The fact that information was shared in advance made it possible for the Board to have meticulous discussion in Board meetings. Under the petrochemical business partial spinoff plan, matters I raised were whether the new company would be capable of launching a new business and building up stock value, and what kind of support we would be offering to this new company. On the execution side, it was explained that we want the spin-off to play a leading role in the petrochemical industry through its technical development, which is why we went with a partial spin-off approach. Furthermore, we will continue providing support for carbon neutrality measures and personnel development, so we plan to keep under 20% of the stock. I think this is a reasonable plan,for the time being.

N. Morikawa Another noteworthy point is that preparations are being made carefully to reduce the impact on our shareholders and employees.

Isshiki The petrochemical business isn't one that you can just split off and be done with. The future shape of the industry is also important. In that sense, I think it is wonderful that the Company has really thought through the form that new company will take after the partial spinoff, through the sharing of information before Board of Directors meetings and through the meetings themselves.

Maoka I think we need to keep the discussion going, including on how the new company will contribute to society.

Somemiya This partial spinoff is unprecedented in the industry. Our stance in making portfolio reforms is causing a stir in the industry, and I think that was possible precisely because of the support offered by the Board of Directors.

<Changes to criteria for referring matters to the Board, explanations provided in advance>

The improved quality of Audit & Supervisory Board discussions made possible by sharing information in advance has enabled the Board to serve its own unique roles and function effectively

K. Morikawa You pointed out that revising the criteria for referring matters to the Board and that sharing information in advance has improved the quality of Board of Directors discussions. Going forward, I also hope for input from the perspectives of the effectiveness and the monitoring functions of the Board of Directors and the Audit & Supervisory Board.

Kato Sharing information in advance means there are no surprises in Board of Directors meetings, putting us on the same page and enabling us to start discussions straight away to really delve into the hearts of matters. This had a positive effect. Changes to the Board of Directors referral criteria have had benefits, such as enabling discussions on major topics, but at the same time, the fact remains that there are important topics that do not meet the referral criteria. The Audit & Supervisory Board reports on these important matters that do not meet criteria. This reporting includes discussions in Management Committee meetings and the contents of Committee decisions. We will leverage the information-gathering capabilities of the full-time Audit & Supervisory Board members and the solid independence and expertise of all of the Outside Audit & Supervisory Board members to improve the effectiveness of the Audit & Supervisory Board and reflect this in Board of Directors

Yasuyuki Miyasaka
Outside Member of Audit & Supervisory Board

meetings, thereby improving the Company's supervisory functions.

Yajima Outside directors and outside Audit & Supervisory Board members have different roles. While directors talk directly with management, one of the important roles of Audit & Supervisory Board members is to create opportunities for dialogue. Effective dialogue requires fresh information, so we also need to thoroughly fulfill our roles as information-gatherers. I think a good environment has been established for the Audit & Supervisory Board, but with respect to the Board of Directors, time limitations are still a pressing issue. Simply stating one's opinions is not comparable to engaging in dialogue. Sharing information in advance is an excellent step, but I feel we need to go further.

As an attorney who deals with corporate law, I focus on my role as a sensor detecting issues that could potentially negatively affect the Corporate value. In that sense, we need to have a thorough understanding of the situation in the field and what people in the field are saying. I think it is important that we have a system whereby topics can be suggested by people with a thorough understanding of the situation in the field.

Katayose Before being appointed as Audit & Supervisory Board member in March 2024, I had previous experience as a general manager of a business headquarters and as a CTO. I felt there was something of a divide between the corporate officers and the Board of Directors. It is hard for the Board of Directors alone to make judgments regarding the execution side, including their skills and experience, so I think one of the Audit & Supervisory Board's roles is to perform close monitoring.

Kiyoko Toda
Outside Member of Audit & Supervisory Board

Kozo Isshiki
Outside Board Director

Tsuneishi Discussions about how to improve the Board of Directors' monitoring functions inevitably tend to be about the Board of Directors' systems and mechanisms. Of course, these are important points to discuss, but in terms of monitoring board's fundamental significance and functions, the most important role an outside director has is to serve as a representative for shareholders and reflect their wills in the management of the Company. We need to look at the management strategies and management measures from the execution side and determine, from a shareholder's perspective, if they are appropriate and meet shareholders' expectations. We need to determine if they are solid strategies, if we have the capabilities and power needed to implement them, and if there are any invisible risks. If the executive plans are appropriate and feasible, the outside directors must serve as supervisors and, at the same time, as the plans' greatest supporters, helping guide them to fruition.

<Pressing issues Resonac must tackle now>

Portfolio management is the priority agenda toward improvement of corporate value, followed by sustainability and risk management

K. Morikawa Mr. Tsuneishi, you said that outside directors have to be supporters. Resonac aims to be a company that can compete on the world stage, so we need to achieve not only world-class business performance but also world-class governance functions, and to explain these functions to investors. What plans does execution side has for improving the effectiveness of the Board of Directors?

Imai With respect to what, overall, is demanded from Board of Directors monitoring, I think the most important aspect is the approach taken in looking at the viability of decision-making processes.

Within the monitoring performed by the Board of Directors, the most critical agenda items are portfolio management, sustainability, and risk management. I think, as was discussed earlier, that the Board of Directors is adequately monitoring the company portfolio. However, there remain challenges with sustainability and risk management.

Somemiya The question of how to have the Board of Directors engage in discussions aligned with shareholders' perspectives is an important one. Sharing feedback from shareholders, gathered through IR activities, stimulates discussions.

Maoka With respect to risk, as well, we need to clearly identify major risks from a company-wide perspective, as well as discussing risks in individual projects. I think that in our Board of Directors discussions, we are able to provide information that is even more useful than before.

Imai It's important to clearly state the scope of discussions and provide the information necessary for those discussions. For example, the Board of Directors discusses succession plans. Instead of discussions about individual succession candidates, it would be beneficial to define clear themes such as the division of roles between the Board of Directors and the Nomination Advisory Committee, and to engage in discussions about the entire framework, such as what kinds of people the Company wants to develop and what kinds of skill sets executives must have. I think this is vital.

Kenji Yasukawa
Outside Board Director

Masako Yajima
Outside Member of Audit & Supervisory Board

N. Morikawa I agree, that is extremely important. To be honest, looking back on the past two years, I feel like the Board of Directors has been a bit distant from the Nomination Advisory Committee and the Remuneration Advisory Committee. We need to clarify the roles of each of these committees, as well as their relationship to the Board of Directors, to achieve a unified personnel strategy and develop future generations. I think there is still a lot that we can, and should, do.

Takahashi Everything I do as CEO, be it developing future generations of employees or fostering our corporate culture, is done with the aim of maximizing corporate value. When I decide to work on something, I make that decision with resolve and conviction, and I make sure to always maintain cause and dignity. I would like to know whether I am maintaining a proper balance, from a shareholder perspective. I would like people to share with me whether they think I am making decisions that contribute to corporate value maximization. I have received valuable feedback about past investment projects, and in the future, as well, I am determined to provide thorough explanations about milestone investment and decisions, so I hope we can discuss these together.

K. Morikawa This discussion has really impressed on me that Resonac has taken things to the next level. Following the business merger that was Resonac's starting point, we have gone on to reinforcing the Board of Directors' functions, focusing our efforts on enhancing governance, and really taking things up a notch. There are still many issues that we have to address, so let's keep on the right path, uniting our strengths so that we can maximize Resonac's corporate value.

Directors and Audit & Supervisory Board Members

Three Perspectives for Skill Identification

Resonac's Corporate Philosophy

Medium- to long-term perspective to realize Corporate Philosophy

Major issues to be discussed at the Board of Directors' meetings

- Global business
- Innovation and fusion of technology
- ESG and sustainability
- Portfolio management
- Finance / accounting
- Personnel management / development
- Legal / risk management

Kohei Morikawa
Board Director, Chairman of the Board
President, The Society of Chemical Engineers, Japan

Term of office: 8 years

Attendance at BoD meetings in 2023: 15/15

Contribution point
Chemical technology, strategies

He joined Showa Denko K.K. (currently the Company) in 1982. After being in charge of the R&D and business units for specialty chemicals and high-purity gases for semiconductors, he was appointed as Chief Technology Officer (CTO). From 2017, he oversaw company-wide management strategy as the Chief Executive Officer (CEO). He has knowledge and experience in the technology and markets of functional chemicals that the Company focuses on. He has been promoting reform of the Board of Directors to enhance its monitoring function since 2022, as the Chairman of the Board.

Skills possessed

See our website for career summary Web

Hidehito Takahashi
Representative Director,
President and Chief Executive Officer (CEO)

Term of office: 7 years

Attendance at BoD meetings in 2023: 15/15

Contribution point
Strategies, general management

He joined the then Mitsubishi Bank, Ltd. in 1986. He has held management positions at GE Japan Holding Corporation and several other foreign companies. Having joined the Company in 2015, he has been promoting the Company's growth strategy as the Chief Strategy Officer (CSO) since 2020. Since 2022, he has overseen the company-wide management strategy as Representative Director and Chief Executive Officer (CEO) and completed the integration with Hitachi Chemical. He leads Team Takahashi with ample knowledge and practical experience in business, leadership, and execution skills.

Skills possessed

See our website for career summary Web

Hideki Somemiya
Board Director,
Chief Financial Officer (CFO)

Term of office: 2 years

Attendance at BoD meetings in 2023: 15/15

Contribution point
Finance, semiconductors

He joined Nomura Research Institute, Ltd. in 1990. He has advanced expertise and extensive practical experience in corporate finance and accounting based on his track record as a financial officer at foreign investment banks and Sony. He also led strategies and business related to semiconductors and system solutions at Sony Corporation. Since joining the former Showa Denko in 2021, he has been implementing financial and accounting strategies to improve profitability and corporate value.

Skills possessed

See our website for career summary Web

Tomomitsu Maoka
Board Director,
Chief Strategy Officer (CSO)
Chief Risk Management Officer (CRO)

Term of office: 2 years

Attendance at BoD meetings in 2023: 15/15

Contribution point
Strategies, semiconductors

He joined A.T. Kearney, Inc. in 1999. He joined Renesas Electronics Corporation in 2013 after serving as a strategy and business manager at foreign companies. He has accumulated a track record in a number of corporate planning and China business management executive positions, and possesses advanced expertise and extensive practical experience in management strategy and global management of technology companies. Since joining the Company in October 2021, he has been promoting the advancement of management strategy, risk management, and global expansion.

Skills possessed

See our website for career summary Web

Nori Imai
Board Director, Chief Human Resource Officer (CHRO)

Term of office: —

Newly appointed

Contribution point
Human resource development, strategies

She joined former Hitachi Chemical in 1995 In addition to sales experience in the US, she has experience in multiple businesses and corporate planning. She served as a leader from Hitachi Chemical during the integration of the two companies. Since 2022 after the integration, she has been leading the permeation of Purpose and Values, integration of HR systems and personnel systems, and laying the foundation for cultural transformation as the Chief Human Resource Officer (CHRO).

Skills possessed

See our website for career summary Web

Kozo Isshiki
Outside Board Director

Term of office: 5 years

Attendance at BoD meetings in 2023: 15/15

Contribution point
Finance, financial affairs, chemistry

He joined the then Japan Development Bank in 1969. He has worked in the financial industry for many years, and possesses extensive experience in long-term financial operations and commercialization of new technologies through investment funds. He has been responsible for the chemical industry and a group of chemical companies as industrial sectors, and possesses deep insights into the chemical industry. Since becoming an Outside Officer of the Company in 2019, he has been supervising overall business execution, and has provided deep understanding and useful advice on the Company's business.

Skills possessed

See our website for career summary Web

Noriko Morikawa
Outside Board Director

Term of office: 4 years

Attendance at BoD meetings in 2023: 15/15

Contribution point
General management, finance

She joined CHORI CO., LTD. in 1981. After working at a securities firm and an accounting firm in the US, she was involved in management as a head of administrative departments such as accounting, finance, and personnel in the information and communication industry and the automotive parts industry at both Japanese and foreign global companies. Since becoming an Outside Director of the Company in 2020, she has been providing valuable advice to the Company's management, especially regarding the execution of administrative department operations and global business development.

Skills possessed

See our website for career summary Web

Directors, Audit & Supervisory Board Members

Tetsuo Tsuneishi

Outside Board Director,
Corporate Director, Tokyo Electron Device Ltd.

Term of office: 1 year

Attendance at BoD meetings in 2023: 12/12

Contribution point
Governance, semiconductors

After joining the then Tokyo Electron Laboratories, Inc. in 1976 and gaining overseas business experience, he became Chairman of the Board of Directors in 2015. His track record of leading companies to growth as a manager has given him advanced expertise and extensive practical experience in global management and the semiconductor business. He was appointed Vice Chairman of the Japan Association of Corporate Directors in 2022. Since becoming an Outside Director of the Company in 2023, he has been providing important advice on corporate governance reforms aimed at by the Company, utilizing his knowledge of corporate governance.

Skills possessed

See our website for career summary Web

Kenji Yasukawa

Outside Board Director,
Representative Director, Chairman of the Board, Astellas Pharma Inc.

Term of office: —

Newly appointed

Contribution point
Strategies, general management, corporate integration

He joined the then Yamanouchi Pharmaceutical Co., Ltd. in 1986. He is currently serving as Representative Director and Chairman of the Board of the company. With a background in a top Japanese pharmaceutical firm that operates globally and has undergone corporate integration, he possesses development experience in the US, has been involved in management strategy and sales oversight, and has broad experience and insights as a manager of a leading company with diverse human resources.

Skills possessed

See our website for career summary Web

Toshiharu Kato

Full-time Audit & Supervisory Board member

Term of office: 5 years

Attendance at BoD meetings in 2023: 15/15

Attendance at A&S Board meetings: 13/13

Contribution point
Finance, accounting

He has been involved for many years in the corporate planning department as well as in the finance and accounting departments both in Japan and overseas, and since 2017, he has served as the Chief Financial Officer (CFO), overseeing the finance and accounting departments. He has ample knowledge and extensive practical experience in corporate planning, finance, and accounting.

Skills possessed

Mitsuo Katayose

Full-time Audit & Supervisory Board member

Term of office: —

Newly appointed

Contribution point
Creation of new businesses and products

He joined former Hitachi Chemical in 1987. He was involved in R&D in the electronics materials area, functional materials business planning, and the automotive parts business, and led the creation of new businesses and products as Chief Technology Officer (CTO). After integration, as General Manager of the High Performance Materials Business Headquarters, he has promoted the integration of both companies' materials businesses and the creation of technical synergies. He has the ability, knowledge, and broad experience to perform audits of business operations in an accurate and fair manner.

Skills possessed

Masako Yajima

Outside Member of Audit & Supervisory Board
Foreign Law Joint Enterprise Partner, Nishimura & Asahi

Term of office: 4 years

Attendance at BoD meetings in 2023: 15/15

Attendance at A&S Board meetings: 13/13

Contribution point
Legal, compliance

As an attorney at a law firm that focuses on corporate law, she handles cases related to crisis management and disputes. She has experience and a high level of insight as a lawyer with extensive international experience in corporate legal affairs. In addition to ensuring the appropriateness and legality of business execution in the globalization of the Company's business and M&As, she has been providing forward-looking legal advice utilizing knowledge and experience in preventive law.

Skills possessed

Yasuyuki Miyasaka

Outside Member of Audit & Supervisory Board
President, Yasuyuki Miyasaka CPA Office

Term of office: 2 years

Attendance at BoD meetings in 2023: 14/15

Attendance at A&S Board meetings: 13/13

Contribution point
Finance, accounting

As a certified public accountant involved in audits domestically and internationally for many years, he possesses advanced expertise and extensive experience in corporate finance and accounting. He has served as an Outside Audit & Supervisory Board Member of the Company since 2022 and provided advice from the perspective of ensuring the appropriateness of business execution. From his standpoint as a specialist, he provides useful advice on how the Company can earn sufficient returns that exceed its cost of capital.

Skills possessed

Kiyoko Toda

Outside Member of Audit & Supervisory Board

Term of office: —

Newly appointed

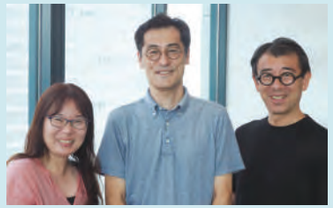
Contribution point
Compliance

She has extensive business experience and advanced expertise in corporate finance and accounting, and ethical compliance related to manufacturing and financial institutions that operate globally. She has audit experience with Japanese and multinational companies at an accounting firm in the US, and has been involved in the management of Japanese subsidiaries of foreign companies as the head of the finance and accounting department and the ethics and compliance department.

Skills possessed

Comments from the Board of Directors' Meetings Reform Secretariat

Our mission is to strengthen the relationship between execution and supervision and to facilitate communication with shareholders by assisting in ensuring and enhancing corporate governance, focusing on secretariat work of the Board of Directors' meetings, as well as secretariat work of the Management Committee and shareholders' meetings. In particular, given that increasing the effectiveness of the Board of Directors' meetings is the most effective way to enhance corporate value, as a secretariat, we have worked to reform the Board of Directors' meetings, led by the Chairperson, to enhance the operation of the Board of Directors' meetings and prepare a draft revision to the standards for bringing up matters for discussion. Following the roundtable discussion introduced here, we are forging ahead for with plans to hold further discussions in the fall of 2024. Going forward, we will continue to support the Board of Directors' meetings to help strengthen its supervisory function!



Governance Group, Legal Department
Yumiko Tsutsui, Atsushi Doi, Ken Kimura (from left)

Corporate Officers

President

Hidehito Takahashi — Chief Executive Officer (CEO)

Executive Vice President

Hiroyuki Yamashita — General Manager, Electronics Business Headquarters

Managing Corporate Officers

Hideki Somemiya — Chief Financial Officer (CFO)

Tomomitsu Maoka — Chief Strategy Officer (CSO) Chief Risk Management Officer (CRO)

Nori Imai — Chief Human Resource Officer (CHRO)

Corporate Officers

Shigeru Fujita — Chief Marketing Officer (CMO)

Nami Matsuko — Chief Sustainability Officer (CSuO)

Naobumi Shimpo — Chief Operations, Manufacturing and Engineering Officer (CMEO); Chief Quality Officer (CQO)

Masato Fukushima — Chief Technology Officer (CTO)

Satoshi Hara — General Manager, Mobility Business Headquarters

Takafumi Sakurada — General Manager, Advanced Functional Materials Business Headquarters

Executive Officers

Yasushi Makabe — General Manager, Hard Disk Media Business Unit

Makoto Takeda — General Manager, Device Solutions Business Unit

César Castiñeira — General Manager, Graphite Business Unit

Hiroshi Adachi — General Manager, Basic Chemicals Business Unit

Hirotsugu Fukuda — General Manager, Olefins & Derivatives Business Unit

Hidenori Abe — Deputy General Manager, Electronics Business Headquarters

Katsuyuki Tsuji — Deputy General Manager, Mobility Business Headquarters

Skill Matrix

Based on its fiduciary duty and accountability to shareholders, the Board of Directors strives for the sustainable growth of the Company and enhancement of its corporate value over the medium to long term through efficient and effective corporate governance. To this end, we have identified the skills necessary to improve the effectiveness of the Board of Directors and prepared the skill matrix below, which visualizes the skills and experience of our Directors and Audit & Supervisory Board members.

	Name		Global business	Innovation and fusion of technology	ESG and sustainability	Portfolio management	Finance / accounting	Personnel management / development	Legal / risk management
Directors	Kohei Morikawa		○	○	○	○			○
	Hidehito Takahashi		○		○	○	○	○	○
	Hideki Somemiya		○		○	○	○	○	
	Tomomitsu Maoka		○	○	○	○			○
	Nori Imai		○		○	○		○	
	Kozo Isshiki	Outside		○		○	○	○	
	Noriko Morikawa	Outside	○		○		○	○	
	Tetsuo Tsuneishi	Outside	○			○	○	○	
	Kenji Yasukawa	Outside	○	○		○		○	
			8	4	6	8	5	7	3
Audit & Supervisory Board Members	Toshiharu Kato		○		○		○		
	Mitsuo Katayose		○	○		○			
	Masako Yajima	Outside	○						○
	Yasuyuki Miyasaka	Outside	○				○		○
	Kiyoko Toda	Outside	○				○		○
			5	1	1	1	3	0	3

Corporate Governance

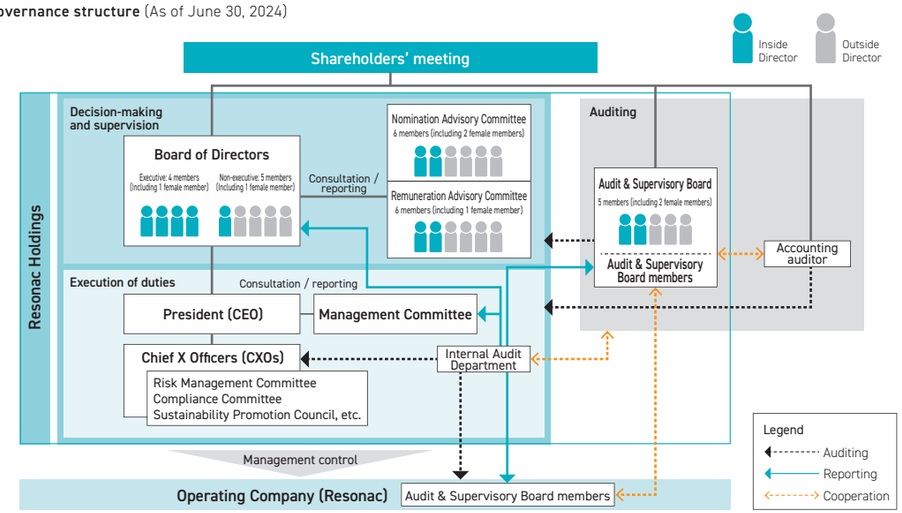
Please also read the "Corporate Governance" page on our website.

Basic Policies

Resonac believes in the importance of continuously enhancing its corporate governance in terms of supporting efforts to create the functions required of an advanced materials partner according to the times; contributing to the sustainable development of global society; and realizing the Group's Purpose of "Change society through the power of chemistry."

In order to continuously enhance our corporate value, the Company shall ensure soundness, effectiveness and transparency of management and swift decision-making. The Company shall also build a system that allows us to demonstrate our corporate value and fully take advantage of our resources, with a focus on objectives such as strengthening our management and technological foundations and improving the capabilities and motivation of our employees.

Corporate governance structure (As of June 30, 2024)



Board of Directors

Chairperson: Inside director not in charge of business execution

Meeting frequency: Once or twice a month

Nomination Advisory Committee

Priority discussion topics in fiscal 2023: Nomination of candidates for chief executive officer and other management positions

Chairperson: Outside director Meeting frequency: 3 or 4 times a year

Management Committee

President, CXOs, and division heads whose presence on the committee is deemed necessary by the president

Chairperson: President Meeting frequency: Twice a month in principle

Audit & Supervisory Board

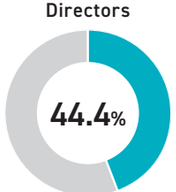
Chairperson: Inside full-time Audit & Supervisory Board member

Meeting frequency: Once or twice a month

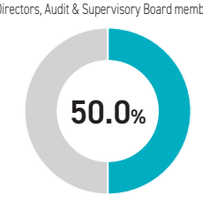
Remuneration Advisory Committee

Chairperson: Outside director Meeting frequency: Once or twice a year

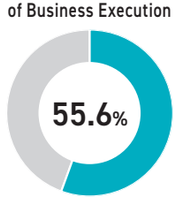
Ratio of Outside Directors



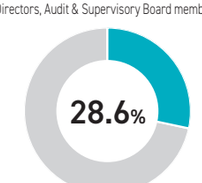
Ratio of Outside Officers
(Directors, Audit & Supervisory Board members)



Ratio of Directors Not in Charge of Business Execution



Ratio of Female Officers
(Directors, Audit & Supervisory Board members)



Evaluation of the Board of Directors' Effectiveness

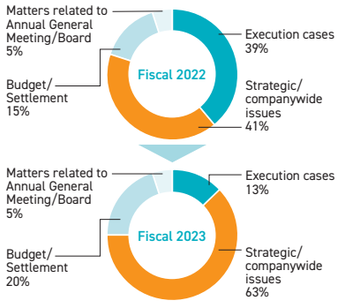
Evaluation method

The Company evaluates the effectiveness of the Board of Directors every year, aiming to strengthen corporate governance and improve effectiveness of the Board of Directors in and after the next fiscal year. To be specific, in December 2023, the Company surveyed respective Directors and Audit & Supervisory Board Members through unidentified questionnaires and free descriptions to evaluate the effectiveness of the Board of Directors in fiscal 2023. Then, in March 2024, the Board of Directors held a meeting for all directors and Audit & Supervisory Board members to discuss the collected self-evaluation results and the monitoring function of the Board of Directors deliberated upon during the trainings among directors and corporate officers held in December 2023, create a summary of the evaluation results for fiscal 2023, and formulate an action plan for fiscal 2024. Note that we have outsourced the questionnaire survey and aggregation of the results to an outside institution in order to ensure its objectivity and enhance future effectiveness of the Board of Directors.

Evaluation results (Actions taken in 2023)

Issues recognized in fiscal 2022	● The Board of Directors should examine how the Board of Directors should be in order to allocate greater percentage of discussion to that about substantial strategies and future risks. ● The Board of Directors should revise standards for bringing up matters for discussion in order to give priority medium- to long-term issues over other issues. ● The Board of Directors should continuously improve all kinds of mutual understanding and information sharing.
Action plan for fiscal 2023	● Take specific measures to accelerate separation of execution and supervision ● Set agenda for the Board of Directors in the future based on its objectives and roles ● Secure additional communication opportunities and improve the current method ● Make a new system for sharing information and improve the current method
Actions taken in fiscal 2023	● Matters discussed at the Board of Directors' meetings shifted from matters to be independently executed to strategic/important matters (since the middle of fiscal 2023). ● Discussed how the Board of Directors' meetings should be (at the end of the year), including how the institutional design should be. ● With regard to matters to be executed, at the Board of Directors' meetings, Directors received comprehensive report on matters related to lawsuits, environment, and M&A in the first half of the fiscal year, and Directors also received report on strategic matters related to sustainability, human resource development, technology, and digitalization in the second half of the fiscal year. ● Upgraded the whole process of the Board of Directors' meetings including prior explanations (sharing contents of questions and answers exchanged before the meetings, specifying risks and alternatives concerning matters to be discussed, early sharing of important matters to be discussed by utilizing the procedure for receiving report on off-topic matters, etc.) ● Had opportunities for Outside Directors to communicate with one another exclusively. (The Company plans to prepare exclusive opportunities for Outside Officers [i.e., Outside Directors and Outside Members of Audit and Supervisory Board] with one another in and after fiscal 2024.)

Changes in the characteristics of matters discussed at the Board of Directors' meetings caused by changes in standards for bringing up matters for discussion to the Board of Directors' meetings



[Strategic/companywide issues]
- Business strategies, portfolio reform, and human resource strategies Strategies for R&D and intellectual properties, governance system
- Material issues for sustainability
- Progress in risk management promotion and other important CXO issues, etc.

Action plan for fiscal 2024 based on the reviews of business execution in fiscal 2023 is as follows.

Issues recognized in the review of the management of business in fiscal 2023	● Discrepancies exist in the skills which are recognized as being necessary for the members of the Board of Directors that aims to be a monitoring board. Discussion on this matter requires a lot of time. It is also necessary for the Board of Directors to discuss how the Board of Directors will protect its independence. ● Many Directors thought there was an improvement in the adequacy of bills. However, some of Directors said we need more thorough discussion on bills. The Company must have appropriate agenda for monitoring business processes including mechanism for risk management which aims to strengthen governance of the group. ● Some Directors said it is necessary to improve information sharing with consultative committees. Some Directors also said it is necessary for the Board of Directors to have substantial discussion about requests from investors.
Action plan for fiscal 2024	● Continue discussion on how the Board of Directors' meetings should be (including composition of the Board of Directors and skills of each Director) in order to make it function effectively as a monitoring board. ● Formulate and implement agenda optimized for the Board of Directors to function as a monitoring board. ● Enhance effectiveness of the Board of Directors through continuous improvement in various opportunities of communication and information sharing.

Nomination Process

Approach to nomination

Candidates for Directors shall be persons who have the knowledge, experiences and capabilities required to fulfill their duties as Directors. The Company selects senior management members by considering corporate and individual performance and other factors. Candidates for Audit & Supervisory Board Members shall have the knowledge, expertise and capabilities required to fulfill their duties, including those with strong expertise in finance and accounting.

In electing and nominating aforementioned positions, the Nomination Advisory Committee, an advisory body to the Board of Directors, shall deliberate matters related to nomination and report the results of its deliberation to the Board of Directors.

Dismissal of the CEO or other members of management

If there is a fact concerning the senior management, including CEO, that may meet the Dismissal Standards given below, the Nomination Advisory Committee shall deliberate the applicability of the Dismissal Standards, and report the result of deliberation to the Board of Directors. Then the Board of Directors shall make a final decision on dismissal of the relevant Director.

Implementing a succession plan

The Company is conducting company-wide talent reviews, at the Groupwide and global levels, to cultivate the future leaders who will be necessary to advancing its growth strategies.

The Nomination Advisory Committee discusses and confirms the viability of management's selection of potential successors and its formulation of development processes. The Board of Directors continually monitors all succession planning initiatives based on reports from the Committee.

Composition of the Nomination Advisory Committee

Chairman: Tetsuo Tsuneishi (Outside Director)
Members: Hidehito Takahashi (Representative Director; President and Chief Executive Officer)
Nori Imai (Director)
Kozo Isshiki (Outside Director)
Noriko Morikawa (Outside Director)
Kenji Yasukawa (Outside Director)

With the exception of Ms. Imai and Mr. Yasukawa, who assumed office in March 2024, all the aforementioned members, along with Mr. Nishioka, a former outside director and Mr. Kohei Morikawa, an inside director, were present at every meeting.

Remuneration

Basic policies on remuneration

The policy for determining the remuneration for respective directors of the Company is established by the Board of Directors after the Remuneration Advisory Committee, comprising a majority of outside and independent officers, deliberates on the appropriateness of the policy each fiscal year. While deliberating, the Remuneration Advisory Committee considers the evolving business environment, along with feedback from shareholders and investors. Additionally, it sources essential information for its discussions from third-party organizations with extensive global experience and knowledge.

In determining the remuneration for respective directors for fiscal 2023, the Remuneration Advisory Committee, comprising a majority of outside and independent officers, conducted a multifaceted assessment utilizing objective and specialized information necessary for deliberation, ensuring alignment with the Policy for Determining Remuneration for Directors and Corporate Officers. The Board of Directors generally acknowledges reports made by the Committee and deems the content to be appropriate and in line with the aforementioned determination policy.

[Directors (excluding Outside Directors)]
- Establish a remuneration scheme appropriate for recruiting and retaining talented human resources from inside and outside Japan suited to a World-class Functional Chemical Company
- Incentivize them to achieve performance targets and increase medium- to long-term corporate value, thereby driving the sustainable growth of the Group
- Maintain a transparent, fair, and rational process for deciding remuneration from the viewpoint of accountability to all shareholders including stakeholders

[Outside Directors]
- Establish a remuneration scheme appropriate for the role and responsibility of supervising management from an independent and objective standpoint

Composition of the Remuneration Advisory Committee

Chairman: Kenji Yasukawa (Outside Director)
Members: Hidehito Takahashi (Representative Director; President and Chief Executive Officer),
Hideki Somemiya (Director),
Kozo Isshiki (Outside Director),
Noriko Morikawa (Outside Director),
Tetsuo Tsuneishi (Outside Director)

Primary roles and authority of the Remuneration Advisory Committee

Matters to be resolved	Matters to be deliberated or confirmed
● Basic compensation for individual directors ● Targets and evaluation of performance indicators associated with short-term incentives (STIs) for directors, and amounts paid to individual directors ● Position-based standard points, TSR evaluation, and the number of earned points and shares to be delivered to individuals associated with long-term incentives (LTIs) for directors	● Policy for determining the remuneration for directors and corporate officers ● Details of remuneration for respective corporate officers (excluding those concurrently serving as directors), executive officers, and directors ● Formulation, amendment, or revocation of significant company rules and procedures related to remuneration for directors and corporate officers, along with descriptions presented in important public announcements and other relevant communications

In order to appropriately fulfill its roles and exercise authority in deliberating on matters entrusted or consulted by the Board of Directors, the Remuneration Advisory Committee carefully considers consistency with the Policy for Determining Remuneration for Directors and Corporate Officers, while also accounting for the evolving business environment and feedback from shareholders and investors. Furthermore, the Committee obtains information, advice, and other insights necessary for its deliberations from Willis Towers Watson (WTW), a third-party organization with a wealth of international experience and knowledge.

Compensation consultants from WTW were present at four out of the five meetings of the Remuneration Advisory Committee throughout the period. The Remuneration Advisory Committee reported the matters deliberated upon or resolved to the Board of Directors in a timely and appropriate manner during the period. Accordingly, the Board of Directors is confirming the reasonableness and appropriateness of the reported matters.

Corporate Governance

Matters discussed, etc.

Time of meeting and matters discussed		Participants
January and March 2023	● Determined the individual standard compensation amounts and the number of LTI standard points to be granted to each director for fiscal 2023 ● Discussed the evaluation of performance indicators (consolidated financial results and personal performance) for the fiscal 2022 STI to determine the individual amounts to be paid to each director. The process of personal performance evaluations for each evaluated director (President and CEO, CTO, CFO, CSO) began with an initial assessment by the President and CEO (including a self-evaluation for the President and CEO). The final evaluations were then conducted through deliberation and confirmation of their appropriateness. ● Opted not to grant shares for the fiscal 2022 LTI to a director who resigned in March 2023, based on the TSR evaluation through the end of the fiscal year immediately preceding his resignation ● Discussed the targets of performance indicators for the fiscal 2023 STI, deliberated and confirmed the appropriateness of personal performance targets after receiving explanations from each director and candidate for reappointment as a director (President and CEO, CRO, CFO, CSO) who were under evaluation ● Confirmed the details of remuneration for directors and corporate officers that were to be disclosed in the Business Report and Securities Report for fiscal 2022	All members (excluding newly appointed members)
July 2023	● Discussed the consolidated financial performance targets (EBITDA) for the fiscal 2023 STI, which were undetermined due to uncertainty of the business environment, and decided to apply the performance forecast for the second half agreed upon by the Management Committee in June 2023. However, considering the delay in target setting and the fact that target values were much lower than in the previous year, the EBITDA evaluation coefficient was set to a value that was calculated by multiplying the calculation result based on a predetermined formula by 50%.	All members (excluding newly appointed members)
October 2023	● Confirmed the trend by collecting and analyzing the latest trends in Japan and abroad regarding KPIs for incentive compensation, including ESGs, as well as examples from other companies.	All members (excluding newly appointed members)
November 2023	● Confirmed that the current remuneration aligns appropriately in level and composition with the Policy for Determining Remuneration for Directors and Corporate Officers after verifying the appropriateness of the composition and levels of remuneration for directors and corporate officers through a comparison with global chemical or other material companies (peer companies) of a similar scale (No revision would be made in fiscal 2024.) ● Confirmed that the standard compensation amounts for the newly established Executive Vice President to be established in 2024 is set according to the Policy for Determining Remuneration for Directors, with reference to the remuneration levels of peer companies. ● Having compared and examined the remuneration level of Outside Audit & Supervisory Board members with that of global Japanese companies the same size as our company, we confirmed that it is low, and we recommend an increase to the Audit & Supervisory Board.	All members (excluding newly appointed members)

Composition and levels of remuneration

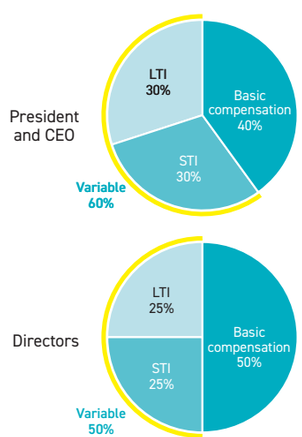
[Directors (excluding Outside Directors)]

- The remuneration of directors (excluding outside directors) consists of basic compensation (fixed compensation) based on the position, a short-term incentive (STI) tied to annual performance, and a long-term incentive (LTI) contingent upon medium- to long-term performance and corporate value. However, for the Director and chairman of the Board without right of representation, remuneration consists of basic compensation and LTI, in light of his/her role and responsibility.
- The ratio of variable compensation (STI and LTI) to total compensation is set at 50% or higher, with the intention to reinforce management's commitment to improving business performance and other results, as well as corporate value. Given the substantial responsibility for business performance and stock price, the President receives a greater portion of variable compensation in comparison to other directors. For the chairman of the Board, the ratio will be individually set according to his/her role and responsibility.
- The levels of remuneration are established at appropriate amounts, aligning with benchmarks from other companies (comparison with global chemical or other material companies of a similar scale to the Company) based on surveys conducted by external specialized organizations.

[Outside Directors]

- Outside directors are paid basic compensation (fixed compensation) only.
- The members and chairman of the Remuneration Advisory Committee or the Nominating Advisory Committee receive additional allowances corresponding to their designated duties.
- The levels of remuneration are established at appropriate amounts, considering the time and efforts spent by each outside director to fulfill their expected roles and functions, as well as benchmarks from other companies (comparison with global companies of a similar scale to the Company) based on surveys conducted by external specialized organizations.

Composition of remuneration for directors (standard amount) for fiscal 2024



Composition of remuneration for directors for fiscal 2024

Types of remuneration			Recipients			
Fixed / variable	Monetary / non-monetary	Composition	Directors, corporate officers	Director and chairman of the Board (without right of representation)	Outside director	Audit & Supervisory Board members
Fixed	Monetary	Basic compensation	○	○	○	○
Variable		Short-term incentive (bonuses)	○	–	–	–
	Non-monetary	Long-term incentive (stock-based compensation)	○	○	–	–

Short-term Incentive (STI)

The amounts to be paid to individuals as STI are calculated by multiplying the position-based standard amount by two factors: (1) companywide performance evaluation coefficient (evaluation ratio of 70%); and (2) personal performance evaluation coefficient (evaluation ratio of 30%). This approach aims to enhance incentives for achieving companywide performance targets. The performance evaluation coefficient ranges from 0% to 200%, based on performance results and other factors.

Individual amount granted as STI = Position-based standard amount × ((1) Companywide performance evaluation coefficient + (2) Personal performance evaluation coefficient)

Key performance indicators (KPIs) used to calculate the companywide performance evaluation coefficient and the personal performance evaluation coefficient are selected from the financial and strategic indicators prioritized by the Company to achieve its Long-term Vision.

Key Performance Indicators (KPIs) for the fiscal 2024 STI

	KPIs	Evaluation weight	Reasons for selection
Company-wide performance evaluation	EBITDA	20%	**Indicators for becoming a World-class Functional Chemical Company** Through business growth centered on electronics/mobility + innovation and structural reform, we aim for scale and profitability appropriate for a company that can compete on the world stage.
	EBITDA margin (%)	30%	
	ROIC	20%	**Indicators for maximizing corporate value and profit distribution to shareholders** In addition to fitness for strategy and best owner, encourage management that is more aware of discipline (profitability and capital efficiency), aiming to further enhance portfolio management and improve medium to long-term ROE.
Personal performance evaluation	Endeavors aligned with the long-term vision, actions to resolve sustainability issues, and more.	30%	Strongly encourage management from a long-term perspective to attain sustainable growth of the Company

EBITDA = Consolidated operating income + Depreciation and amortization + Amortization of goodwill, etc. EBITDA margin (%) = EBITDA ÷ Consolidated net sales
ROIC = (Operating income + Equity in earnings of unconsolidated subsidiaries and affiliates – Income taxes) ÷ (Interest-bearing debt + Total net assets)
Sustainability issues are discussed at the Sustainability Promotion Council

Long-term incentive (LTI)

The LTI system is designed to deliver a certain number of shares calculated by multiplying the standard points based on the position-based standard amount by a coefficient corresponding to the Company's TSR (Total Shareholder Return) over a three-year period, with the aim of enhancing corporate value in the medium to long term.

To further enhance value sharing with shareholders, the actual delivery of shares is deferred to the time of resignation of each director.

Number of shares delivered to individuals as LTI = Position-based standard points x TSR evaluation coefficient

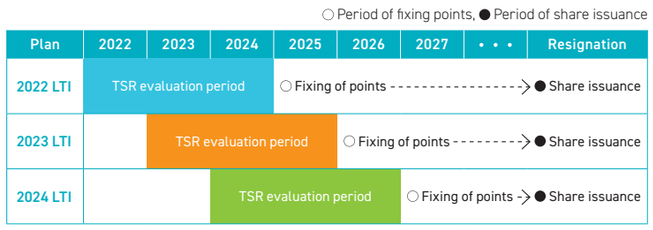
The TSR evaluation coefficient is decided based on a rank order of the Company's three-year TSR evaluation by comparison with companies (in the chemical and material industries with similar business models and of the same size of larger). The target for TSR ranking is set at mid-range or higher to realize the long-term vision of "TSR: Aiming to be in the top 25% in the chemical industry in the medium to long term."

This system has been operational since 2022, and the first TSR evaluation period (linked with the fiscal 2022 LTI) spanned three years from 2022 to 2024. Subsequently, the TSR evaluation period rolls over every year to maintain a three-year evaluation period.

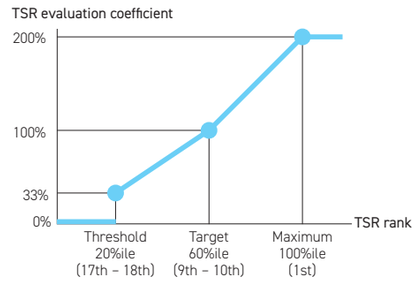
Once the number of shares to be delivered is determined through the TSR evaluation, the equivalent amount of dividends during the interval until the time of resignation when the shares are physically delivered is deemed to be reinvested, thereby adding the count of shares slated for delivery. (see chart on next page)

Corporate Governance

TSR evaluation period and timeline for determining the number of shares (points) to be delivered under the LTI plan per fiscal year



Calculation method for the TSR evaluation coefficient for the fiscal 2024 LTI



Adjustment of compensation, request for return of compensation, etc.

In case of deterioration in the Company's business performance, or such problems that could damage its corporate or brand value as quality issues, serious accidents, or scandals, the Company reserves the right to temporarily decrease or withhold remuneration and other benefits for directors.

Regarding the short-term incentive (STI), if temporary special factors emerge, which was not anticipated when the targets were set at the beginning of the period, individual bonus amounts may be recalculated based on reassessed performance and other elements with the exclusion of the impact of such factors.

Regarding the short-term incentive (STI) and long-term incentive (LTI), if a director or corporate officer is involved in misconduct or if payment was made based on incorrect financial statements, the Company may nullify the right to receive associated benefits on account of such fact or demand return of compensation already paid to the individual concerned.

Remuneration of Directors and Audit & Supervisory Board members

Category	Total amount paid (Millions of yen)	Total amount paid by remuneration type (Millions of yen)			Number of recipients
		Basic compensation	Short-term incentive (STI)	Long-term incentive (LTI)	
Directors	503	354	82	66	12
Outside directors	69	69	–	–	5
Audit & Supervisory Board members	106	106	–	–	5
Outside Audit & Supervisory Board members	39	39	–	–	3

Notes:
1. The amounts of basic compensation are the total amount of compensation paid in fiscal 2023 (all monetary compensation).
2. The amount of STI is the total amount of compensation paid in March 2023 (all monetary compensation), based on the performance and other results achieved during fiscal 2022.
3. The amount of LTI is the total amount expensed in fiscal 2023. The Company's LTI represents the number of shares of the Company's stock determined based on the results of the three-year TSR (Total Shareholder Return) evaluation, to be deferred and delivered upon resignation. For the LTI management, we utilize the Stock Benefit Trust of Mizuho Trust & Banking Co.
4. The amount of remuneration for directors from fiscal 2022 onward was resolved at the 113th Ordinary General Meeting of Shareholders held on March 30, 2022, and the details are as presented below. The STI and LTI amounts are paid to directors, excluding outside directors.

Category	Date of resolution of the General Meeting of Shareholders	Monetary remuneration (Basic Compensation + STI)	Stock-based compensation (LTI) (Amount of BBT contribution / Points granted)	Number of applicable persons
Directors	The 113th Ordinary General Meeting of Shareholders held on March 30, 2022	Up to ¥850 million per year (Of which, outside directors: ¥100 million)	Up to ¥1.35 billion for 3 fiscal years (Up to 410,000 points per fiscal year)	10 (Of which, 4 outside directors)

5. The amount of remuneration for Audit & Supervisory Board members was resolved at the 96th Ordinary General Meeting of Shareholders held on March 30, 2005 to be no more than ¥12 million per month. The number of Audit & Supervisory Board Members as of the close of the said General Meeting of Shareholders was four.

Individual remuneration amounts (limited to the President and CEO or those with a total amount of remuneration paid by the Group of ¥100 million yen or more)

Principal position and name during fiscal 2023	Total amount paid (Millions of yen)	Total amount paid by remuneration type (Millions of yen)			Company category
		Basic compensation	Short-term incentive (STI)	Long-term incentive (LTI)	
Representative Director and Chairman of the Board Kohei Morikawa	101	66	9	25	Resonac Holdings
Representative Director, President and CEO Hidehito Takahashi	134	73	32	28	Resonac Holdings

Cross-Shareholdings

Policy on reduction of cross-shareholdings

In principle, the Company adheres to a policy of not engaging in cross-shareholdings, and steps are currently underway to reduce existing cross-shareholdings.

Review on the appropriateness of cross-shareholdings

The Board of Directors verifies each year whether the profitability and business feasibility of holdings are rational given the associated capital costs.

Voting right exercise standard

When the Company exercises its voting rights of cross-shareholdings, the company shall decide approval or disapproval of each item on the agenda by examining whether the item contributes to increasing corporate value and maintaining/increasing shareholders' returns or not.

Holdings for which numbers of shares held increased in fiscal 2023*

	Holdings	Acquisition costs of additional shares (Millions of yen)	Reason for increase
Listed stocks	–	–	–
Unlisted stocks	–	–	–

Holdings for which numbers of shares held decreased in fiscal 2023*

	Holdings	Sales proceeds associated with reduction in the number of shares (Millions of yen)
Listed stocks	3	506
Unlisted stocks	7	198

Numbers of cross-shareholdings and amount on the balance sheet*

	Holdings	Amount on the balance sheet (Millions of yen)
Listed stocks	1	190
Unlisted stocks	68	1,927

* Cross-shareholdings held by Resonac Corporation

Consolidated 11-Year Summary

For details of the data, please refer to the relevant website.

Financial data | Non-financial data

Resonac made former Hitachi Chemical a consolidated subsidiary, and started on July 1, 2020 to incorporate Hitachi Chemical's sales figures and income/losses into its consolidated financial statements.

Financial Highlights (Consolidated) Millions of yen	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*5	2023
For the year											
Net sales	847,803	872,785	775,732	671,159	780,387	992,136	906,454	973,700	1,419,635	1,392,621	1,288,869
Operating income (loss)	25,953	20,551	33,508	42,053	77,708	180,003	120,798	(19,449)	87,198	61,726	(3,764)
Ratio of operating income (loss) to sales (%)	3.1	2.4	4.3	6.3	10.0	18.1	13.3	(2.0)	6.1	4.4	(0.3)
Net income (loss) attributable to owners of the parent	9,065	2,929	921	12,305	37,404	111,503	73,088	(76,304)	(12,094)	32,422	(18,955)
Net cash provided by operating activities	63,565	66,996	61,170	68,949	67,235	149,785	78,554	109,286	115,283	99,376	118,686
Net cash provided by (used in) investing activities	(55,203)	(46,876)	(42,497)	(53,754)	(29,866)	(49,338)	(48,156)	(930,047)	28,606	(54,667)	(61,869)
Free cash flow	8,362	20,120	18,674	15,195	37,369	100,447	30,397	(820,761)	143,889	44,709	56,817
Net cash provided by (used in) financing activities	(6,805)	(24,856)	(21,336)	(13,220)	(18,370)	(61,061)	(18,546)	896,521	(121,741)	(103,267)	(62,880)
R&D expenditures	20,435	20,362	20,289	17,313	18,539	19,735	20,605	34,379	46,750	47,135	42,697
Capital expenditures	44,370	47,318	44,059	39,276	41,787	41,727	50,216	69,052	78,647	107,074	96,633
Depreciation and amortization	39,779	40,673	42,137	38,761	38,565	39,459	37,704	68,643	97,726	91,964	92,516
At year-end											
Total assets	985,771	1,009,843	940,494	932,698	1,026,999	1,074,983	1,076,381	2,203,606	2,142,390	2,093,744	2,031,953
Total net assets	345,811	319,087	308,142	311,231	368,994	465,340	519,433	718,080	818,452	574,718	578,668
Shareholders' equity ratio (%)	30.6	29.7	31.5	31.8	34.3	41.5	46.4	18.4	24.0	26.3	27.2
Return on equity (ROE) (%)	3.2	1.0	0.3	4.1	11.5	27.9	15.5	(16.9)	(2.6)	6.1	(3.4)
Interest-bearing debt*1	353,686	383,124	368,835	359,929	346,726	287,968	303,192	1,060,146	850,603	1,062,637	1,016,532
Debt/equity ratio (gross, times)*1	1.02	1.20	1.20	1.16	0.94	0.62	0.60	1.84	1.15	1.07	1.00
Per share*2 (yen)											
Net income (loss)—primary*3	6.06	1.99	6.45	86.27	262.44	758.15	501.03	(523.06)	(77.40)	179.02	(104.65)
Net assets	201.27	209.76	2,076.05	2,080.85	2,473.06	3,057.16	3,423.25	2,782.79	2,838.51	3,038.35	3,052.07
Cash dividends (applicable to the period)	3.00	3.00	3.00	—	80.00 *4	120.00	130.00	65.00	65.00	65.00	65.00

*1 From the third quarter of 2020, due to former Hitachi Chemical, becoming a consolidated subsidiary, the D/E ratio reflects the following situation: regarding preferred shares issued by HC Holdings K.K., a subsidiary, posted under non-controlling interests on the consolidated balance sheets, the value equivalent to 50% is added to each of interest-bearing debt, and shareholders' equity, in consideration of the characteristics of the capital structure. For interest-bearing debt, net value is indicated after excluding cash and deposits and adding debt on lease. For Determination of the 50/50 allocation for preferred shares in light of the characteristics of the capital structure is based on the rating of Japan Credit Rating Agency, dated April 21, 2020. This change in accounting standards for the D/E ratio from 2020 has been retroactively reflected in 2019 figures. Furthermore, in regard to the subordinated loans taken out in order to purchase preferred stock, 50% of this amount is deducted from interest-bearing debt and added to shareholders' equity. Determination of the 50/50 allocation for the subordinated loan in light of the characteristics of the capital structure is based on the rating of Japan Credit Rating Agency, dated October 4, 2022.

*2 Resonac consolidated every 10 shares of common stock into one share on July 1, 2016. "Per share" indicators for 2015 and 2016 (except for cash dividends) are calculated on the basis of the number of outstanding shares after this consolidation.

*3 Net income (loss) per share has been computed based on the average number of shares of common stock outstanding during the respective fiscal year.

*4 Resonac resolved payment of dividends of ¥30.00 per share based on the record date of May 11, 2017 at the extraordinary general meeting of shareholders held in June 2017. Cash dividends applicable to 2017 include this amount.

*5 Our subsidiary former Hitachi Chemical (current Resonac Corporation) and its Japanese subsidiaries previously adopted the International Financial Reporting Standards (IFRS), but switched to Japanese Generally Accepted Accounting Principles (JGAAP) from fiscal 2023. This change has been applied retroactively and the figures for fiscal 2022 have been retroactively adjusted.

Non-financial data	Scope up to 2017	2014	2015	2016	2017	Scope in and after 2018	2018	2019	2020	2021	2022	2023
Number of employees (persons)	2014-2017: Former Showa Denko (consolidated)	10,577	10,561	10,146	10,864	Consolidated	33,465	33,908	33,684	26,054	25,803	23,840
Ratio of employees working outside Japan (%)		43.9	44.4	40.1	44.0		54.2	54.5	54.6	51.2	50.8	50.0
Number of female managers (persons)	2014-2017: Former Showa Denko (non-consolidated)	18	23	26	28	2018-2021: Resonac (non-consolidated) + Subsidiaries of former Showa Denko in and outside Japan 2022-: Consolidated	162	170	170	148	397	404
Ratio of female managers (%)		2.3	3.0	3.4	3.7		7.0	7.1	7.1	7.3	12.6	12.4
Greenhouse gas emissions (Scope 1 + Scope 2) (kt-CO_2)*	2014-2017: Former Showa Denko (consolidated in Japan)	3,667	3,699	3,818	3,785	Consolidated	4,827	4,657	4,266	4,483	4,360	4,226
Amount of water withdrawals (excluding seawater; thousand m^3)		62,620	60,040	58,720	59,470	2018-2021: Resonac (consolidated in Japan) and former Hitachi Chemical subsidiaries (outside Japan) 2022-: Consolidated	67,306	68,060	67,522	64,261	68,292	73,361
Ratio of industrial waste sent to landfills (%)		1.08	0.95	0.32	0.38	Resonac (consolidated in Japan) and former Hitachi Chemical subsidiaries (outside Japan)	1.8	1.8	1.0	1.4	2.5	1.2

Note:
For non-financial data, boundaries (scope of data) differ depending on the item and time period. Upon the integration of the former Showa Denko and the former Hitachi Chemical, we have re-examined boundaries and figures for past fiscal years, making some adjustments in our disclosures. Additionally, water withdrawals data up until 2017 is expressed in units of 10,000 m^3.
*Actual greenhouse gas emissions (Scope 1 + Scope 2) in 2013 (consolidated) were 4,634 kt. P97

Consolidated Financial Statements

Millions of yen

Consolidated Balance Sheets	2022	2023
Assets		
Current assets		
Cash and deposits	186,499	190,318
Notes and accounts receivable-trade	266,093	266,122
Merchandise and finished goods	121,172	115,123
Work in process	34,130	23,687
Raw materials and supplies	95,151	86,383
Other	85,248	72,019
Allowance for doubtful accounts	(1,254)	(1,731)
Total current assets	787,037	751,922
Noncurrent assets		
Property, plant and equipment		
Buildings and structures, net	138,242	154,659
Machinery, equipment and vehicles, net	214,718	218,346
Tools, furniture and fixtures, net	24,280	25,021
Land	233,987	230,806
Leased assets, net	15,973	12,403
Construction in progress	50,866	37,351
Total property, plant and equipment	678,064	678,586
Intangible assets		
Goodwill	295,355	285,199
Customer related assets	133,639	128,908
Other	64,695	56,482
Total intangible assets	493,689	470,589
Investments and other assets		
Investment securities	83,341	72,503
Net defined benefit asset	18,046	28,038
Deferred tax assets	16,671	14,965
Other	17,517	16,513
Allowance for doubtful accounts	(622)	(1,163)
Total investments and other assets	134,953	130,856
Total noncurrent assets	1,306,706	1,280,031
Total assets	2,093,744	2,031,953

Millions of yen

	2022	2023
Liabilities		
Current liabilities		
Notes and accounts payable-trade	194,054	177,375
Short-term loans payable	72,419	52,489
Current portion of long-term loans payable	42,677	23,552
Commercial papers	—	10,000
Current portion of bonds	—	40,000
Provision for repairs	19	794
Provision for bonuses	9,489	10,593
Provision for bonuses for directors	47	109
Provision for stock payments	21	81
Provision for business structure improvement	—	621
Other	140,152	146,267
Total current liabilities	458,877	461,881
Noncurrent liabilities		
Bonds payable	260,000	250,000
Long-term loans payable	672,446	625,840
Deferred tax liabilities	51,379	36,321
Deferred tax liabilities for land revaluation	29,525	28,448
Provision for repairs	1,260	2,430
Provision for stock payments	302	353
Provision for business structure improvement	772	577
Net defined benefit liability	9,981	9,961
Other	34,484	37,474
Total noncurrent liabilities	1,060,148	991,404
Total liabilities	1,519,026	1,453,285
Net assets		
Shareholders' equity		
Capital stock	182,146	182,146
Capital surplus	108,140	108,140
Retained earnings	165,902	137,269
Treasury stock	(11,612)	(11,593)
Total shareholders' equity	444,576	415,963
Accumulated other comprehensive income		
Valuation difference on available-for-sale securities	355	194
Deferred gains or losses on hedges	1,461	1,196
Revaluation reserve for land	27,915	26,113
Foreign currency translation adjustments	72,008	99,217
Remeasurements of defined benefit plans	3,980	10,154
Total accumulated other comprehensive income	105,719	136,875
Non-controlling interests	24,423	25,830
Total net assets	574,718	578,668
Total liabilities and net assets	2,093,744	2,031,953

Millions of yen

Consolidated Statements of Income	2022	2023
Net sales	1,392,621	1,288,869
Cost of sales	1,087,775	1,042,252
Gross profit	304,847	246,617
Selling, general and administrative expenses	243,120	250,380
Operating income (loss)	61,726	(3,764)
Non-operating income		
Interest income	1,068	1,840
Dividends income	766	400
Equity in earnings of affiliates	3,630	3,589
Rent income on noncurrent assets	1,516	1,599
Foreign exchange gain	10,632	1,967
Miscellaneous income	4,949	4,859
Total non-operating income	22,561	14,253
Non-operating expenses		
Interest expenses	15,762	13,370
Miscellaneous expenses	6,815	11,893
Total non-operating expenses	22,576	25,263
Ordinary income (loss)	61,711	(14,773)
Extraordinary income		
Gain on sales of noncurrent assets	13,578	3,720
Gain on sale of businesses	251	24,638
Other	9,451	5,976
Total extraordinary income	23,280	34,335
Extraordinary loss		
Loss on sales and retirement of noncurrent assets	6,153	5,889
Impairment loss	10,091	26,183
Extra retirement payments	434	6,573
Loss on sale of businesses	3,504	—
Loss related to the Antimonopoly Act	5,579	—
Other	8,303	7,100
Total extraordinary losses	34,064	45,746
Profit (loss) before income taxes	50,927	(26,184)
Current	18,617	9,483
Deferred	(7,377)	(17,642)
Total income taxes	11,240	(8,159)
Net income (loss)	39,687	(18,026)
Net income attributable to non-controlling interests	7,265	929
Net income (loss) attributable to owners of the parent	32,422	(18,955)

Millions of yen

Consolidated Statements of Comprehensive Income	2022	2023
Net income (loss)	39,687	(18,026)
Other comprehensive income		
Valuation difference on available-for-sale securities, net of tax	(2,035)	(255)
Deferred gains or losses on hedges, net of tax	294	(265)
Foreign currency translation adjustments	32,932	27,695
Remeasurements of defined benefit plans, net of tax	(3,895)	6,190
Share of other comprehensive income of unconsolidated subsidiaries and affiliates accounted for using equity method	1,763	887
Total other comprehensive income	29,058	34,252
Comprehensive income	68,745	16,227
Comprehensive income attributable to:		
Owners of the parent	60,319	14,003
Non-controlling interests	8,426	2,223

Consolidated Statements of Cash Flows

Consolidated Statements of Changes in Net Assets

Millions of yen

	Shareholders' equity					Accumulated other comprehensive income							
	Capital stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustments	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance as at December 31, 2021	182,146	119,772	143,335	(11,655)	433,598	2,838	1,167	28,928	38,421	9,036	80,391	304,463	818,452
Cumulative effects of changes in accounting policies			847		847	(415)				(1,141)	(1,556)		(709)
Restated balance as at December 31, 2021	182,146	119,772	144,182	(11,655)	434,445	2,423	1,167	28,928	38,421	7,896	78,835	304,463	817,743
Changes of items during the period													
Dividends from surplus			(11,788)		(11,788)								(11,788)
Net income attributable to owners of the parent			32,422		32,422								32,422
Purchase of treasury stock				(3)	(3)								(3)
Disposal of treasury stock		(0)		46	46								46
Increase by decrease of consolidated subsidiaries			72		72								72
Change in treasury shares of the parent arising from transactions with non-controlling shareholders		(29)			(29)								(29)
Changes in liabilities for written put options over non-controlling interests		(11,603)			(11,603)								(11,603)
Reversal of revaluation reserve for land			1,013		1,013								1,013
Net changes of items other than shareholders' equity						(2,068)	294	(1,013)	33,587	(3,916)	26,884	(280,040)	(253,156)
Total changes of items during the period	—	(11,632)	21,720	43	10,131	(2,068)	294	(1,013)	33,587	(3,916)	26,884	(280,040)	(243,025)
Balance as at December 31, 2022	182,146	108,140	165,902	(11,612)	444,576	355	1,461	27,915	72,008	3,980	105,719	24,423	574,718

Millions of yen

	Shareholders' equity					Accumulated other comprehensive income							
	Capital stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Revaluation reserve for land	Foreign currency translation adjustments	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance as at December 31, 2022	182,146	108,140	165,902	(11,612)	444,576	355	1,461	27,915	72,008	3,980	105,719	24,423	574,718
Cumulative effects of changes in accounting policies					—						—		—
Restated balance as at December 31, 2022	182,146	108,140	165,902	(11,612)	444,576	355	1,461	27,915	72,008	3,980	105,719	24,423	574,718
Changes of items during the period													
Dividends from surplus			(11,788)		(11,788)								(11,788)
Net income attributable to owners of the parent			(18,955)		(18,955)								(18,955)
Purchase of treasury stock				(4)	(4)								(4)
Disposal of treasury stock		(0)		23	23								23
Increase by decrease of consolidated subsidiaries			309		309								309
Change in treasury shares of the parent arising from transactions with non-controlling shareholders					—								—
Changes in liabilities for written put options over non-controlling interests					—								—
Reversal of revaluation reserve for land			1,801		1,801								1,801
Net changes of items other than shareholders' equity						(160)	(265)	(1,802)	27,209	6,174	31,156	1,406	32,563
Total changes of items during the period	—	(0)	(28,632)	19	(28,613)	(160)	(265)	(1,802)	27,209	6,174	31,156	1,406	3,949
Balance as at December 31, 2023	182,146	108,140	137,269	(11,593)	415,963	194	1,196	26,113	99,217	10,154	136,875	25,830	578,668

Consolidated Statements of Cash Flows

Millions of yen

	2022	2023
Cash flows from operating activities		
Income (loss) before income taxes	50,927	(26,184)
Depreciation and amortization	91,964	92,516
Impairment loss	10,091	26,183
Amortization of goodwill	16,843	16,953
Increase (decrease) in net defined benefit liability	(2,383)	(10,292)
Interest and dividends income	(1,834)	(2,240)
Interest expenses	15,762	13,370
Equity in (earnings) losses of unconsolidated subsidiaries and affiliates	(3,630)	(3,589)
Loss (gain) on sales and valuation of investment securities	(4,952)	462
Loss on retirement of noncurrent assets	6,045	5,803
Loss (gain) on sales of noncurrent assets	(13,470)	(3,634)
Loss (gain) on sales of businesses	3,504	(24,638)
Loss related to the Antimonopoly Act	5,579	—
Decrease (increase) in notes and accounts receivable-trade	23,377	1,131
Decrease (increase) in inventories	(39,961)	28,081
Increase (decrease) in notes and accounts payable-trade	(19,894)	(16,570)
Other, net	30	34,077
Subtotal	137,998	131,429
Interest and dividends income received	8,686	7,064
Interest expenses paid	(15,641)	(12,233)
Income taxes (paid) refund	(31,667)	(7,574)
Net cash provided by (used in) operating activities	99,376	118,686
Cash flows from investing activities		
Payments into time deposits	(1,606)	(1,146)
Proceeds from withdrawal of time deposits	2,570	1,096
Purchase of property, plant and equipment	(87,857)	(87,105)
Proceeds from sales of property, plant and equipment	20,960	6,169
Purchase of investment securities	(1,667)	(38)
Proceeds from sales of investment securities	22,019	3,283
Purchase of investments in subsidiaries without change in scope of consolidation	—	(4,552)
Proceeds from sales of investments in subsidiaries resulting in change in scope of consolidation	—	31, 692
Net decrease (increase) in short-term loans receivable	774	(12)
Payments of long-term loans receivable	(410)	(892)
Collection of long-term loans receivable	251	910
Other, net	(9,701)	(11,274)
Net cash provided by (used in) investing activities	(54,667)	(61,869)

Millions of yen

	2022	2023
Cash flows from financing activities		
Net increase (decrease) in short-term debt	11,838	(20,138)
Net increase (decrease) in commercial papers	(15,000)	10,000
Proceeds from long-term loans payable	409,600	65,300
Repayments of long-term loans payable	(285,642)	(131,665)
Proceeds from share issuance of bonds	112,536	29,843
Redemption of bonds	(20,000)	—
Purchase of treasury stock	(3)	(4)
Cash dividends paid	(11,758)	(11,794)
Cash dividends paid to non-controlling shareholders	(13,025)	(1,263)
Purchase of investments in subsidiaries without change in scope of consolidation	(287,635)	—
Other, net	(4,178)	(3,159)
Net cash provided by (used in) financing activities	(103,267)	(62,880)
Effect of exchange rate changes on cash and cash equivalents	10,027	9,922
Net increase (decrease) in cash and cash equivalents	(48,531)	3,859
Cash and cash equivalents at the beginning of the year	234,587	186,056
Cash and cash equivalents at the end of the year	186,056	189,915

Corporate Data/Editorial Policies

Corporate Data

(As of December 31, 2023)

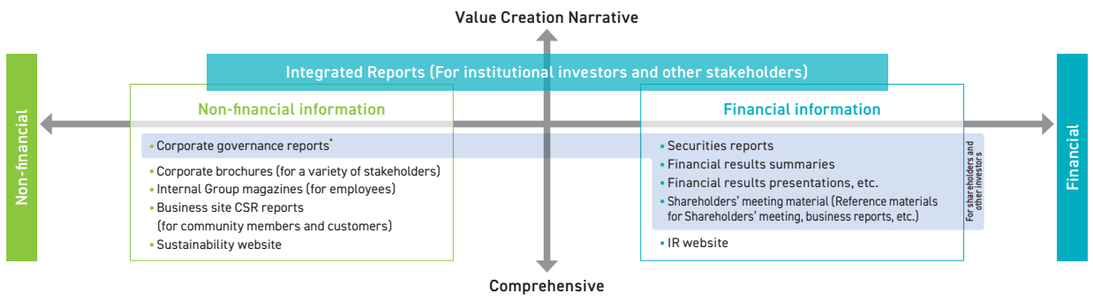
Company Name	Resonac Holdings Corporation	Capital	¥182,146 million
Head Office	Tokyo Shiodome Bldg., 1-9-1, Higashi-Shimbashi, Minato-ku, Tokyo 105-7325, Japan	Consolidated Number of Employee	23,840
Formed	June 1939	Affiliates Subsidiaries (Japan) Web Subsidiaries (Global) Web	Consolidated Subsidiaries: 102 Equity method applied: 12

Editorial Policies

Publication Date	July 2024
Reporting Period	January 1, 2023 to December 31, 2023. Some information on disclosure items and business activities from after January 1, 2024, is also provided.
Scope	Resonac Holdings Corporation and its consolidated subsidiaries (including Resonac Corporation)
Display Methods in This Report	Figures and information in this report refer to the Resonac Group. Official names are used when referring to Resonac Holdings Corporation or Resonac Corporation as a non-consolidated entity. In this report, "non-consolidated" refers to Resonac Holdings Corporation and Resonac Corporation.
Scope for Results Data	Financial: A total of 115 companies consisting of Resonac Holdings Corporation and its 114 consolidated subsidiaries and affiliates accounted for using equity method *The aluminum specialty components business changed its segment from Innovation Enabling Materials to Mobility, effective January 2024. This change has been applied retroactively and the figures for fiscal 2023 have been retroactively adjusted. These retroactively adjusted figures have not yet been audited. Others: Resonac Holdings Corporation and its consolidated subsidiaries *Please refer to the relevant website for details on the scope of environmental and safety data. Web
Third-Party Verification of Environmental and Safety Data	Data disclosed by the Company are submitted to third-party verification each year to ensure reliability. For details, please refer to the relevant website. Web
Caution Regarding Forward-Looking Statements	Performance forecasts and other forward-looking statements are based on information available as of the time of publication of this report and certain assumptions judged to be reasonable. Actual performance may vary materially due to risks, uncertainty, or other factors.

Disclosure Materials

Resonac discloses information through its integrated reports and a variety of other communication tools.



Stock Information

(As of December 31, 2023)

Authorized number of shares	330,000,000
Number of shares outstanding	184,901,292
Number of shareholders	84,100

Shareholders by Sector

Foreign corporate entities, etc.	63,323 thousand	34.25%
Financial institutions	62,852 thousand	33.99%
Individuals	35,716 thousand	19.32%
Securities firms	15,246 thousand	8.25%
Japanese corporate entities	4,208 thousand	2.28%
Treasury shares	3,556 thousand	1.92%

Shareholders (Top 10)

(As of December 31, 2023)

Name of shareholders	Stake in the Company: Number of shares held (in thousands)	Stake in the Company: Rate of shareholding (%)
The Master Trust Bank of Japan Ltd. (Trust Account)	31,836	17.22
Custody Bank of Japan, Ltd. (Trust Account)	10,365	5.61
KOREA SECURITIES DEPOSITORY – SAMSUNG	9,063	4.90
JPMorgan Securities Japan Co., Ltd.	5,967	3.23
STATE STREET BANK AND TRUST COMPANY 505223	5,578	3.02
SSBTC CLIENT OMNIBUS ACCOUNT	5,200	2.81
Fukoku Mutual Life Insurance Company	4,517	2.44
Goldman Sachs Japan Co., Ltd.	3,417	1.85
The Dai-ichi Life Insurance Company, Limited	2,700	1.46
STATE STREET LONDON CARE OF STATE STREET BANK AND TRUST. BOSTONSSBTC A/C UK LONDON BRANCH CLIENTS-UNITED KINGDOM	2,553	1.38

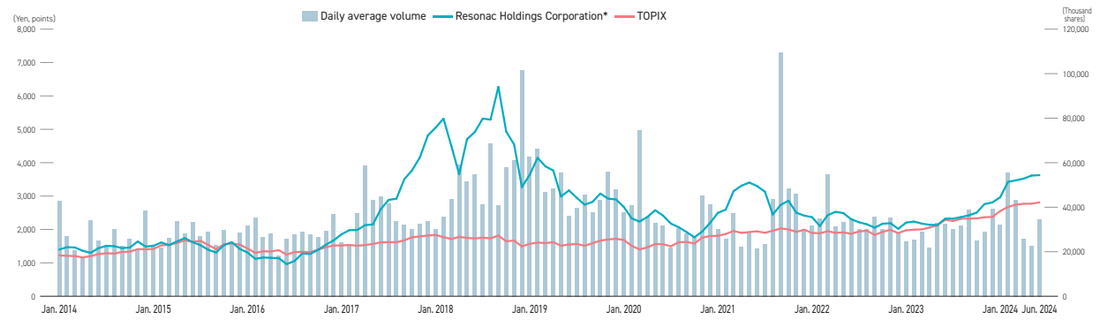
Note: Each rate of shareholding was calculated after deducting the number of treasury shares (3,556 thousand) from the number of shares outstanding.

		Fiscal 2019	Fiscal 2020	Fiscal 2021	Fiscal 2022	Fiscal 2023
Year-end stock price (yen)		2,899	2,197	2,415	2,020	2,810
Dividends per share (yen)		130	65	65	65	65
Payout ratio (%)	(Non-consolidated)	40.5	34.8	33.1	35.5	284.2
	(Consolidated)	29.9	—	—	36.3	—

Total shareholder return (TSR)	Past year	Past 3 years	Past 5 years	Past 10 years
Resonac	142.3%	136.8%	97.9%	232.2%
TOPIX (including dividends)	128.3%	141.1%	178.9%	227.8%

*As of the end of 2023
*TSR: Total shareholder return. The total rate of return on investments, consisting of capital gains and dividend payouts.
*TSR for Resonac is calculated based on accumulated dividends and stock price fluctuations. TSR for TOPIX is calculated based on dividend included stock index (see Japan Exchange Group's monthly statistics report data).

Stock Price/Volume



*Figures from before 2022 are from Showa Denko.