02 Our Goals and Challenges

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

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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.

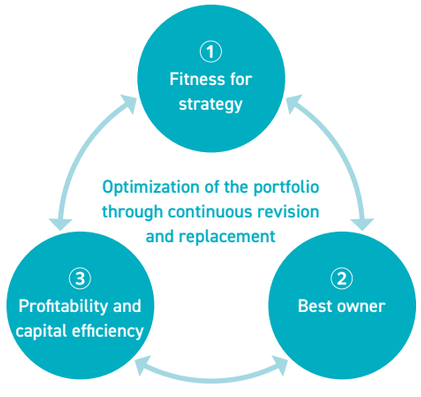
Focusing on Semiconductor Materials and Portfolio Reform

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.

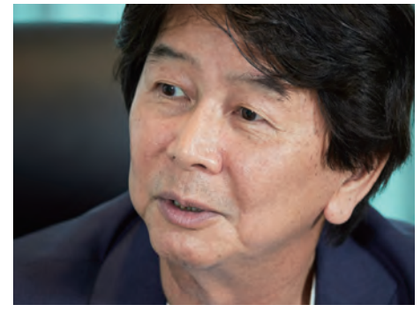
Yamashita: We need to determine how much these risks will manifest themselves. Various customers are stepping up their requests regarding supply chains, such as their demands for BCP measures. The effects of this U.S.-China decoupling are emerging, and we are engaging in scenario planning in preparation 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.