Q&A at the Explanation Meeting on the Engineered Materials Business

Reference: Material for the Explanation Meeting on the Engineered Materials Business
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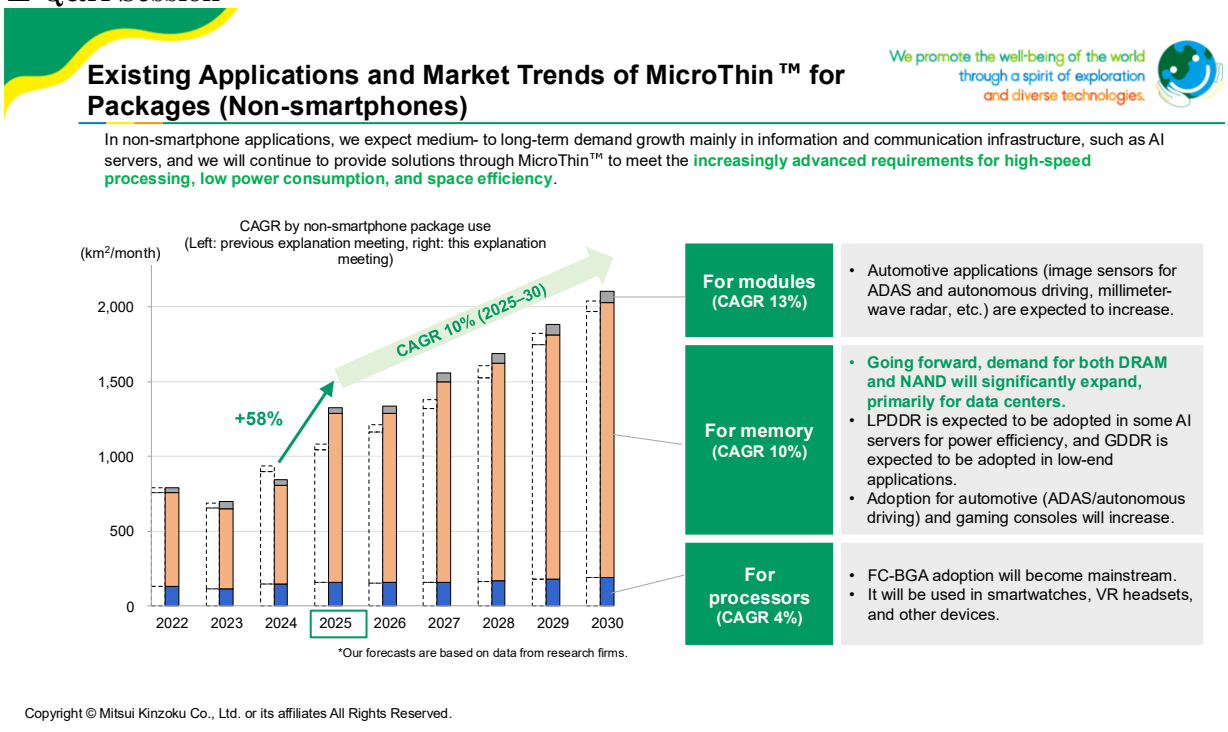
Note:
PKG = Package substrate
HDI = High density interconnect—a printed circuit board with a high wiring density that serves as a motherboard.

■ Q&A Session



Q. Could you explain the background behind your view that MicroThin™ sales are expected to show somewhat limited growth toward 2026?
A. Sales volumes in 2025 are significantly stronger than initially projected, and we are factoring in the risk of an adjustment phase in 2026. Following softer memory-related demand and customer inventory adjustments in the second half of FY2024, FY2025 is benefiting from a combination of rising data center-related demand and inventory normalization, resulting in a double boost to sales. As we enter FY2026, we expect sales volumes to return to levels more closely aligned with underlying end demand.

Q. With regard to memory applications for MicroThin™, could you explain the background behind the sharp growth expected from 2027 onward?
A. When smoothing out the significant sales increase in 2025, we see growth progressing in a largely linear manner, with DRAM-related demand, particularly for data center applications, expected to expand substantially within that trend. For AI servers, we have high expectations that GDDR will be adopted in certain low-end and mid-range segments. In general memory applications, we also expect DDR5 to continue expanding going forward.

Q. Regarding MicroThin™, could you share an indicative breakdown of the composition for memory applications in non-smartphone PKG in FY2025?
A. Shipments for DDR4, DDR5, LPDDR, and similar applications are based on the same copper foil products, with customers allocating them according to end use. As a result, we as a copper foil manufacturer are not able to track the breakdown in detail. Both DDR4- and DDR5-related shipments are showing strong growth in 2025, and we believe that shipments for LPDDR applications may also be growing in areas that are not fully visible to us. We consider it desirable to further refine our understanding in this area and will continue to investigate.

Q. With respect to MicroThin™, is growth expected to be driven primarily by AI server applications?
A. We believe that growth in both AI servers and conventional servers will contribute to increased sales. In particular, the expanding adoption of DRAM is expected to be a key driver.

Approach to New Application Fields for MicroThin™ to Drive Growth by 2030

We promote the well-being of the world through a spirit of exploration and diverse technologies.

We are actively engaged in marketing activities and product development aimed at **creating new businesses**.

	High-speed optical transceivers	Flexible wiring boards for ultra-fine wiring and substrate materials compatible with high-temperature processes
		
Projected scale for 2030	300 km^2/month	100 km^2/month
Overview	• Connects devices such as routers and switches to optical fiber cables, converting electrical signals to optical signals and vice versa. • With rapidly increasing demand for high-speed processing of AI servers, the **adoption of MSAP is growing for capacities exceeding 800 GB**.	• Even in flexible circuits, **mounting density is increasing to achieve thinner structures and finer wiring**, leading to adoption primarily in mobile applications. • Furthermore, **we have newly completed the development of MicroThin™ featuring a heat-resistant release layer that can be peeled even at temperatures exceeding 350°C**. We will also conduct sales promotion activities for substrate materials with excellent dielectric properties, such as MPI, LCP, and PTFE, which require high-temperature processes.

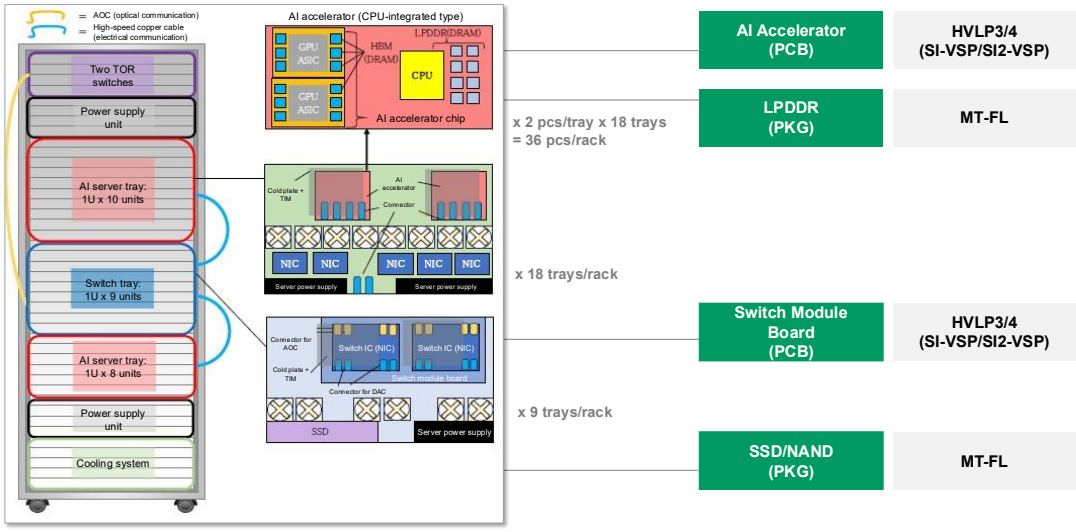
*All market sizes are company estimates.

Q. Regarding MicroThin™ for high-speed optical transceivers, the 2030 figure appears to be slightly above 300,000 square meters. If products shift from the current 800-gigabit class to the 1.6-terabit class, how might this affect demand?
A. For optical transceiver applications, we consider the 300,000 square meters projected for 2030 to be a somewhat conservative figure, with potential for further growth. We believe that over the next six months to one year, it will become clearer whether this growth materializes.

Q. With respect to MicroThin™ for high-speed optical transceivers, could you provide further explanation of the advantages and disadvantages from the customer's perspective, including cost and performance, in comparison with competing technologies?
A. Competing technologies for high-speed optical transceivers include solutions based on different interconnection architectures, such as CPO (Co-Packaged Optics) and CPC (Co-Packaged Copper). For example, in CPO configurations, optical cables are placed close to the ASIC, and such approaches are currently being evaluated by customers. However, when an optical cable fails, replacement is extremely difficult. As a result, we believe that the current plug-type configuration, which allows easier replacement in the event of a failure, is likely to remain widely adopted. From our perspective, the application of CPO is likely to be limited to certain specific use cases.

Q. Regarding MicroThin™ for high-speed optical transceivers, as products above 800 gigabits, such as 1.6-terabit class, become more prevalent, demand is expected to increase in line with unit volumes. Is there a need to consider the risk that demand may not grow as much as expected if customer yields, which are currently very low, improve significantly?
A. We do not hear such concerns very often from customers. Rather, we more frequently receive inquiries about whether MicroThin™ has sufficient supply capacity to keep pace with the anticipated growth in demand.

AI Server Architecture and Examples of Applications of VSP™ and MicroThin™



Source: Figures from "2025 Data Center and AI / Key Device Market Comprehensive Survey" by Fuji Chimera Research Institute, Inc., with additions by the Company.

Q. Regarding your view on demand for VSP™, do you have an idea of usage intensity per unit? Demand growth can be driven both by an increase in the number of data centers being built and by higher usage of HVLP copper foil in data center PCBs. How do you break down these respective factors in your outlook?

A. While it is not yet clear exactly how factors such as the number of racks, layer counts, and board area will increase, we expect that, as the number of racks grows, there will also be a further increase in the number of layers. For example, in switch boards, we anticipate that layer counts will rise to about 1.4 times current levels, which we expect will lead to increased demand for HVLP copper foil.

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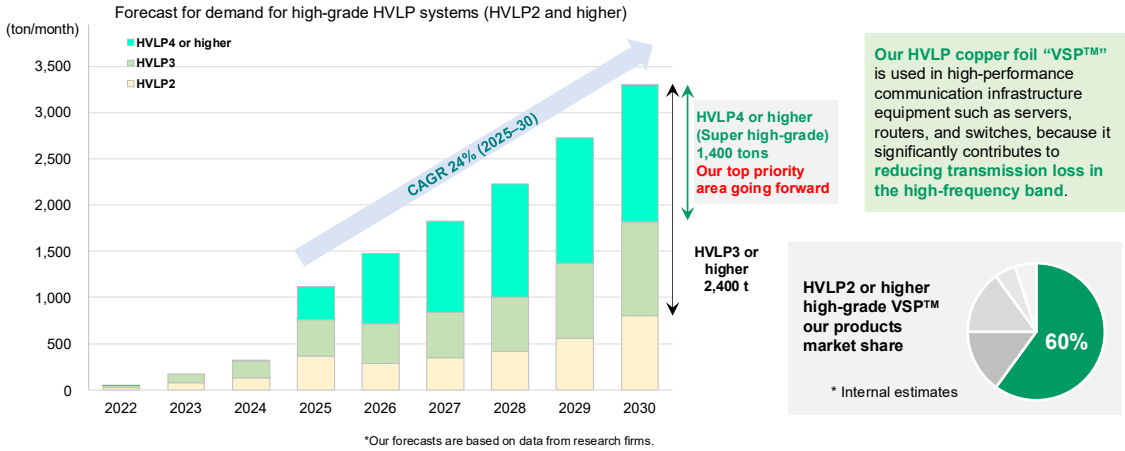
Long-Term Market Demand Forecast for High-Grade HVLP Copper Foil

At present, we are the largest supplier of HVLP copper foil, and demand is expected to exceed **approximately 2,400 tons per month for HVLP3 and higher and approximately 1,400 tons per month for HVLP4 and higher by 2030**. Thereafter, demand is expected to continue to grow steadily in line with the expansion of the AI server market.



*Our forecasts are based on data from research firms.

Our HVLP copper foil "VSP™" is used in high-performance communication infrastructure equipment such as servers, routers, and switches, because it significantly contributes to **reducing transmission loss in the high-frequency band**.

HVLP2 or higher high-grade VSP™ our products market share

* Internal estimates

Q. With respect to VSP™, you have indicated a policy of focusing on super high-grade products of HVLP4 and above. However, even among major tech companies, differences in design philosophies may result in the continued use of HVLP2 in next-generation products. Looking toward 2027 and 2028, do you expect high-grading of HVLP copper foil to progress across all customers, leading to broader adoption of HVLP4 and above?

A. As data communication speeds continue to increase, the required grade of copper foil will rise accordingly. From our perspective, it is important to continue development efforts and to be able to supply promptly whenever customer needs arise. Some customers use multiple grades of copper foil within the same product, so we expect mixed-grade orders to continue for some time. That said, as communication speeds advance, we believe that copper foil grades will inevitably trend upward overall.

Copper Foil for High-Frequency Communication Infrastructure VSP™: Mass Production and Development Lineup

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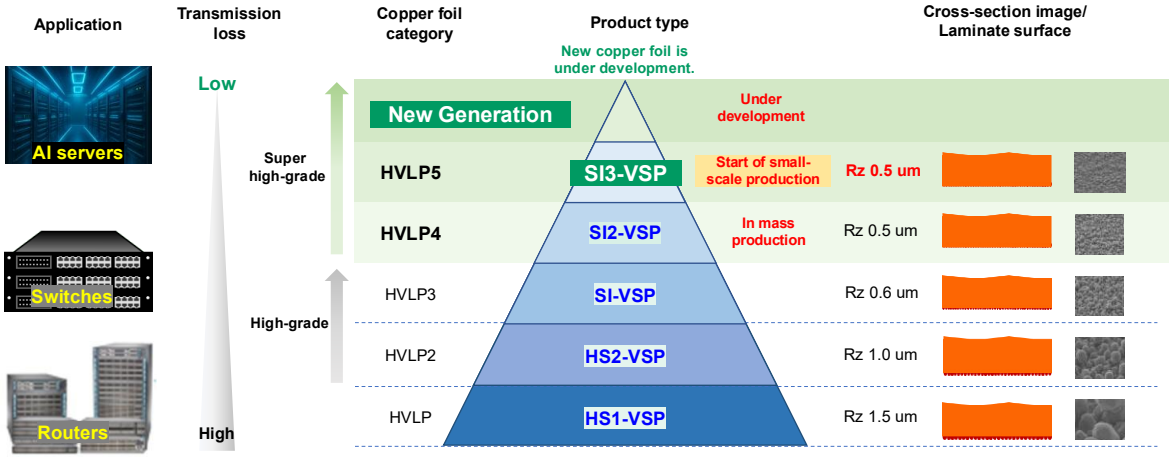
Demand for high-speed and high-frequency communications has been expanding due to the growing demand for generative AI and other factors, and our high-grade copper foil supports these needs. **Recently, we have started small-scale mass production and sales of HVLP5 (SI3-VSP™) and have also begun developing further next-generation products.**



Q. With regard to VSP™, for New Generation products beyond HVLP5, there may eventually be limits to further surface smoothing. In what direction do you plan to pursue new technology development?

A. At this stage, we have not yet received any specific requests from customers regarding New Generation products. While we continue to place importance on surface smoothness, we are also advancing development from perspectives such as how to adjust foil thickness and how to modify chemical treatment methods going forward. Although the timing has not been determined, we aim to be ready to respond promptly when customer requirements emerge.

Q. Regarding the competitive environment for VSP™, how far have competitors been able to catch up?

A. We estimate that our market share for HVLP2 and above is around 60%, with the remaining 40% accounted for by other copper foil manufacturers, including Japanese and Taiwanese companies, which are engaged in ongoing development competition. Therefore, we believe it is important to accelerate the development of higher-tier products at the top of the pyramid in order to further differentiate ourselves.

Sales Plan and Production Capacity for VSP™

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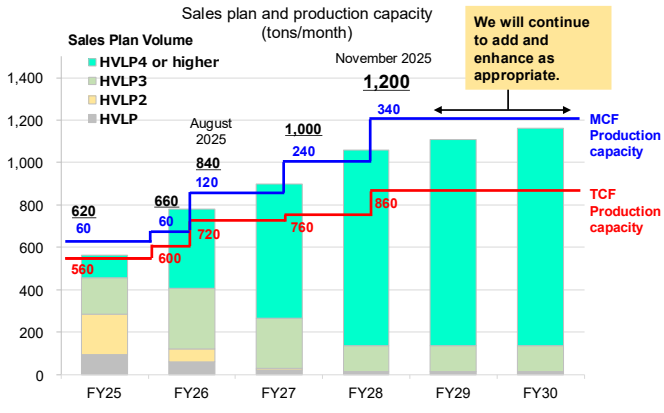
Regarding the production system for VSP™, in response to **strong requests from major customers**, we have decided to increase production capacity to **1,200 tons per month (increase of 360 tons per month) by September 2028 through an investment of approximately 6 billion yen**, in addition to the previously announced expansion to 840 tons per month disclosed in August 2025. By expanding production capacity, **we will enhance our ability to ensure stable supply and further strengthen our position as the industry's No. 1 supplier in the HVLP segment**.



Taiwan (TCF)

860 tons/month (September 2028)
- Conversion of existing electrolysis equipment
- New surface treatment equipment installation (including building)

Malaysia (MCF)

340 tons/month (September 2028)
- Replacement of existing electrolysis equipment
- Surface treatment machine retrofitting

+200 tons/month
Additional capacity available

Our Strengths:
- **Customization capabilities to offer surface treatments tailored to the customer's resin**
- **Advanced surface treatment technology that creates surface profiles capable of maintaining high adhesion, in addition to low roughness**

We also hold an 80% market share in HVLP5.

* Internal estimates

Q. Regarding investment in VSP™, you have indicated an investment of approximately 6 billion yen through September 2028, which appears different in scale from past incremental investments. Could you explain the background behind the amount and the timeframe?

A. Previously, our investments were primarily emergency measures to address near-term demand. This time, however, the investment decision is based on our view that the AI server-related market will grow significantly over the medium to long term. At our Taiwan site, we will construct a new building and add surface treatment equipment. At our Malaysia site, additional time is required to address aging facilities and other issues in order to restart equipment that has been idled.

Q. If demand for VSP™ becomes significantly stronger than currently planned and accelerates ahead of schedule, how would you respond?

A. We believe it would be difficult to accelerate the planned capacity expansion. In such a case, we would likely adjust our product mix by considering factors such as urgency, importance, and supply responsibility, and increase the output of products that should be prioritized.

Profit by Segment in the Copper Foil Business

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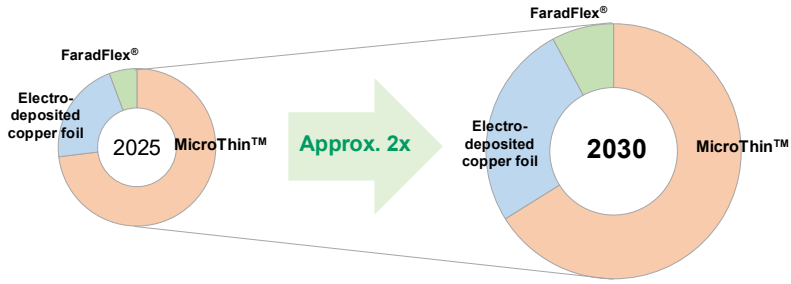
In the copper foil business, all three segments—**MicroThin™, electrolytic copper foil, and FaradFlex®**—are **expected to achieve significant growth, and we forecast that profits in FY2030 will be approximately double the level of the current fiscal year.**



MicroThin™	**1.7x**	We anticipate medium- to long-term demand growth primarily for non-smartphone packages within the information and communications infrastructure sector, while also promoting activities to expand adoption in new fields.
Electro-deposited copper foil	**2.3x**	We will maximize the shift in our sales mix toward high-grade VSP™, accelerate product development, and expand production capacity.
FaradFlex®	**2.6x**	We will accelerate our production capacity expansion plan to meet the rapidly growing demand for infrastructure and ensure we capture market growth.

Q. You project that profits from electrolytic copper foil will be 2.3 times higher in FY2030 compared with FY2025. Is it correct to understand that this increase will be driven almost entirely by VSP™?
A. That is correct.

Q. Regarding the pie chart showing profit by segment in the copper foil business, if this were reclassified to the Engineered Materials Sector as a whole, how do you envision the profit mix by business in 2030?
A. We expect the share of copper foil to be larger than it is today and to account for a substantial portion of overall profits. We believe that contributions from negative thermal expansion materials and iconos™ will materialize after 2030. While the Engineered Materials Sector in 2035 or 2040 is likely to look quite different from today, when looking through 2030, we expect growth to be driven primarily by the copper foil business.

Q. With regard to the pricing of MicroThin™ and the competitive environment, given the heightened risk of intensified competition, would it be difficult to implement price increases?
A. We have implemented price increases for MicroThin™ over the past two years, so it is not the case that we have refrained from raising prices. Our greatest concern is the rising risk of new competitors entering the market. Taking this risk fully into account, we intend to carefully consider value-based pricing—that is, reviewing prices based on the intrinsic value of the product—while proceeding in a prudent manner.

Q. If production capacity for MicroThin™ and VSP™ were to become insufficient, would future investments take the form of greenfield projects?
A. Without excluding any possibilities, we would like to broadly consider new sites, buildings, and M&A within the framework of the Big Moves initiative. However, there is no fixed policy at this point.

Q. In the recent revision of earnings forecasts, a significant portion of the approximately 15 billion yen year-on-year increase in profit is attributable to pricing effects. Are these price increases mainly the pass-through of higher costs, or do they reflect an uplift in base margins by having customers recognize the appropriate value of the products? Also, can this approach be sustained toward 2030? Could you elaborate further on your pricing strategy?
A. Prices are not determined by a single logic, and we believe there are multiple considerations at play. With respect to copper foil, price increases initially began as a pass-through of cost increases, and we are now advancing value-based pricing. For products where there is a gap between their appropriate value and current pricing, we will continue to pursue price corrections with that awareness in mind, even if they cannot be implemented immediately. By continuously reviewing costs, competing materials, and value, we aim to firmly realize the most appropriate pricing for our business.

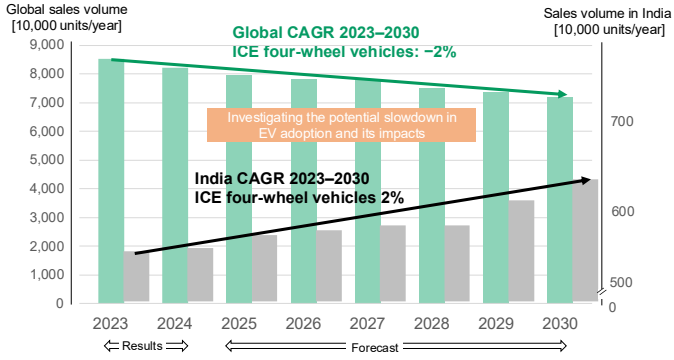
Q. In the new Medium-Term Business Plan (the FY25 MTP), ROIC for the copper foil business is projected at 27% in FY2024, 39% in FY2027, and 49% in FY2030. However, circumstances have changed significantly since the announcement in May. How will you link the business plan presented at this briefing with those ROIC targets?
A. In the copper foil business, initiatives related to pricing and earnings contributions from productivity improvements are resulting in performance that is trending above the ROIC target for FY2025. While this does not warrant revising the target levels at this point, we remain constantly focused on ROIC and will continue to refine our strategy, both in terms of volumes and pricing, with the aim of exceeding our targets.

Our Business Strategy for Catalysts for ICE Four-Wheel Vehicles

■ Future Business Policy and Strategy

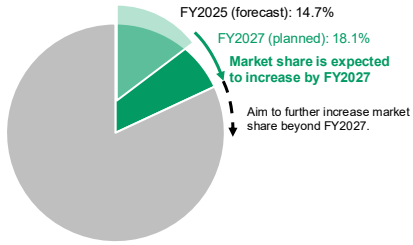
Policy	Expand our share in growth markets to maximize sales volume and earnings amid a shrinking ICE market.
Strategies	- Build an integrated development, manufacturing, and sales structure aligned with future electrification trends. - Leverage expertise in CNG/FFV-compatible catalysts and the strength of having development functions at local sites to expand sales in the Indian market, where growth of the ICE market is expected.

Global and Indian market growth rates for ICE four-wheel vehicles



Expected market share of our catalysts in India

* Calculated based on the number of ICE four-wheel vehicles equipped with our catalysts.



Estimated market size of the Indian market for catalysts for four-wheel vehicles: approximately 30 billion yen per year

*Based on catalyst processing fees.

Source: Prepared by the Company based on market research reports.

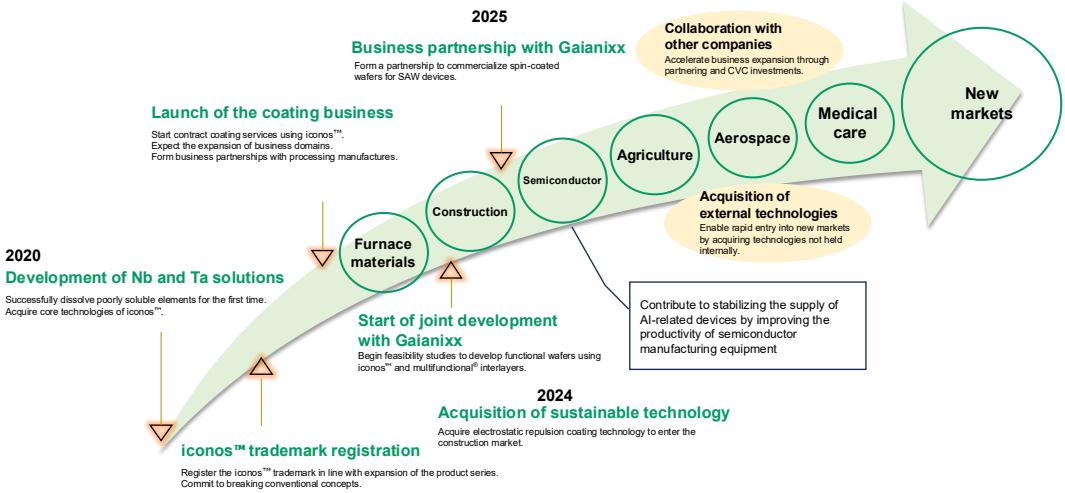
Q. With regard to the catalysts business, if growth is supported by increasing market share in focus areas, how should we think about the profit outlook toward 2030?

A. For two-wheelers, we believe the most significant driver of earnings growth will be the emergence of new countries and regions where the adoption of catalysts is increasing. In addition, by leveraging our precious-metal-saving technologies, we can propose cost reductions to customers while earning development fees, which contributes to improved business profitability. Even more promising is the expansion of four-wheeler applications in India. While this will depend on future regulations, we believe there remains considerable room for further expansion beyond simply increasing our market share. Although this upside is not fully reflected in our FY2030 projections for the catalysts business, we have expectations that it can become a business capable of generating additional profit growth.

Business Expansion Leveraging iconos™

We promote the well-being of the world through a spirit of exploration and diverse technologies.

By collaborating with external partners and leveraging external technologies to generate synergies, we aim to generate profits totaling several billion yen by around 2035.



Q. It is stated that iconos™ is expected to generate profits on the order of several billion yen around 2035. Does this mean that visibility has improved, allowing projections further into the future?

A. We believe there is potential to exceed the figures discussed at last year's business briefing. Previously, our assumptions were mainly centered on applications for semiconductor susceptors. Since then, however, efforts in application development and marketing have been effective in better connecting with market needs, and compared with the initial stages, the number of themes and application areas under consideration has expanded by roughly three to four times.

Q. There have been reports that China may impose export controls on dual-use items, and it has been suggested that rare earths could be included. How do you view this situation?

A. Rare earths are used as raw materials in certain products of the PVD Materials Division, the Rare Materials Division, and the Engineered Powders Division. We intend to carefully monitor developments and assess the potential impact on our business accordingly. At this point, we ask for your understanding that it is difficult to provide a clear outlook for the future.