

Q&A Summary of the IR Business Briefing of Furukawa Electric Co., Ltd.

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Contents: Functional Products business

Speaker:

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Q: How much progress have you made in expanding the customer base in the Tape for Semiconductor Process business? Also, how is the current competitive environment?

A: We recognize expanding the customer base to be an issue not just for the Tape for Semiconductor Process business but for the entire Functional Products segment. In particular, the semiconductor manufacturing processes have become increasingly complex over the past several years. We call these cutting-edge processes, and while working to align the high value-added products with customer specifications for these cutting-edge processes, we are expanding the customer base by rolling these products out to customers who have implemented similar cutting-edge processes. As a result, our share in the BG tape (back grinding tape) market is increasing. In addition to the frontrunner South Korean semiconductor manufacturers, we are expanding the customer base to other regions including Taiwan and China.

Q: What is the outlook for profit recovery in the Copper Foil business? Given the existence of other Japanese manufacturers in the area of copper foil for high frequency applications, will you be able to improve profits, including after taking into consideration the market environment?

A: Copper foil for high frequency applications is necessary for transmitting large volumes of

data at high speeds with low loss. We believe the Japanese manufacturers, ourselves included, possess advanced technology and are market leaders. It is an extremely difficult technology, but we will work to swiftly differentiate ourselves in this domain. In addition, we will increase profits by improving the product mix that increases the volume of high-frequency copper foil used for AI servers. This business is expected to contribute to profits in FY24.

Q: Concerning thermal management products, I understand your water-cooling products have been adopted. Are these products expected to be superior to competitors, similar to your air-cooling products?

A: Regarding the cooling methods, in addition to air-cooling, there are also water-cooling and liquid immersion. We are preparing with the aim of being able to respond to all of these methods. The forms differ for air-cooling, water-cooling and liquid immersion, but the targets for cooling are semiconductors and the basic principle of removing the heat generated is the same for all of the methods. Because it is an extension of existing technology, our water-cooling and liquid immersion products are being adopted based on our experience.

Q: A competitor uses copper powder and 3D printing technology to manufacture cold plates. What are your thoughts about the superiority of this technology?

A: I do not believe the technology will be realized for some time, and I do not view it to be a major advantage.

Q: The CAGR for Thermal Management Solution & Products shown on page 20 appears to be more gradual than the forecast growth of the generative AI market. How did you decide this forecast?

A: When formulating the FY24 forecast, we exchanged opinions with the end users. At that time, we forecasted growth of 10-15% from FY24 compared to FY23. The current demand is robust, so the growth rate might be slightly higher. While closely monitoring market demand, we will revise the plan as necessary.

Q: I understand that you are expanding the customer base in the Tape for Semiconductor Process business, but net sales and profits have not increased much in the past several years. Has the slowdown in the semiconductor market been a factor?

A : As you state, the weak market conditions have been a major factor. The market is gradually starting to recover, and I am not particularly concerned about the future.

Q : Concerning the Thermal Management Solution & Products business, what is the competitive environment within the overall air-cooling, water-cooling and liquid immersion market and what is your competitive position within the market?

A : It is difficult to provide an overall image, and we do not view the market in terms of share. However, we are definitely positioned within the top tier in this domain. Because we are in a good position, it will lead to future inquiries about water-cooling and liquid immersion. Concerning competition, water-cooling and liquid immersion are new methods, and new companies are trying to break into the market.

Q : How much upward potential does the Thermal Management Solution & Products business have, particularly from the perspective of available capacity based on the operating levels and investments in expanding production?

A : We have increased production in both the Philippines and China, and the plants are operating at almost full capacity. While monitoring future demand, we will make investments as necessary and respond to the increased demand.

Q : When thinking about increasing ROIC for the overall Functional Products segment, I believe concentrating on high value-added businesses is one option, but what are your thoughts?

A : In FY23, for example in the case of aluminum blanks for HDD and copper foil, the market was extremely challenging, and in a large part, ROIC will increase when the market recovers. From the standpoint of select and concentrate, we will focus to the extent possible on the rapidly growing AI market, but I do not think limiting ourselves to just this market is the right course of action from a medium-term perspective. Our intent is to expand the businesses in a high margin direction while closely monitoring the market situation. For example, 10 years ago, personal computers were our primary market, but due to commodification, it has become a red ocean. As a result, we have changed the portfolio, including downgrading this business. Just because the AI related market is strong right now, we will not disregard our other businesses.

Q : In the Copper Foil business, profits are planned to improve in FY24 compared to FY23, but does this include the net sales from copper foil for AI applications?

A : The net sales are included, and they will increase going forward.

Q : Following completion of the No. 2 manufacturing plant for tape for semiconductor process, how much demand will you be able to respond to?

A : The increase in net sales in FY24 will depend on the market recovery in the second half, and the existing plant will conduct the manufacturing. From FY25, we will firmly respond to increased demand with a network of 3 plants. Based on the current plan, all 3 plants are expected to be operating at full capacity by around 2030. We are looking into further expanding capacity directed at increased demand from 2030.

However, regarding all facility expansion, not just tape for semiconductor process but also for copper foil, thermal management and other products, we will respond appropriately as necessary while monitoring the situation in each market.

Q : I understand tape for semiconductor process manufacturing will expand from 2 plants to 3 plants. Is it correct to assume manufacturing capacity will increase by about 50%?

A : That is correct.

Q : Concerning the investments in expanding production of tape for semiconductor process, why has it taken 2 years since the start of construction and why will it take another year until the start of mass production in 2025?

A : When the manufacturing plant changes, it is a major 5M change for the customer in terms of quality control. Therefore, this year will be spent acquiring customer certification.

(Note: 5M : Man, Machine, Material, Method, Measurement)

Q : I understand that in the Copper Foil business, you will work to improve profits by increasing sales of high value-added products, but how do you expect the weight of high value-added products to change heading into FY25?

A : In the chart on the right hand side of page 25, the products of the grade H-VLP (3rd row from the bottom) and higher are high value-added products. The ratio of these products was under 10% in FY22, 30% in FY23 and trending at 30-35% recently. Going forward, given the demand centered on AI servers, the ratio is expected to be 40% in FY24 and climb to around 50% overall in FY25.

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