

Investors' Meeting for Current Priority Management Issues and Business Strategy
Q&A Summary

Date and time: Tuesday, November 27, 2018, 15:00 to 16:30
Presenter: Masakazu Tokura, President

Specialty Chemicals

- Q. Regarding the separators business in the Energy & Functional Materials Sector, can you tell me about the status of new customer leads, increases to production capacity, and strategies for your investment plans?**
- A. Production at an electric vehicle manufacturer, which adopts batteries using our products, has achieved steady improvements, and it looks like that company is finally ready to take the next step. As such, we are exploring the feasibility of expanding the production capacity of separators. We think that we need to start work without taking much time. Because we are dependent on a major customer, we do need to develop new customers. We are currently focusing on shipping the quantities that have been requested, however. Therefore, while we have made some progress in developing new customers, we have yet to achieve major successes on this front. We understand that, in the future, we will have to sell separators for various battery types.
- Q. You earlier spoke about the profitability of separators, but, as it seems like there is a lot of cost pressure, what are your thoughts on doing the production in-house and on cost improvements?**
- A. The first thing is raising productivity, and we make daily improvements on this front. At the Ohe Works we have achieved substantial improvements to productivity, while at the plant in Daegu, South Korea, we are carrying out initiatives to raise productivity further. We produce our substrate internally, and cover any shortfalls through purchases from third parties. When possible, it is better to produce everything from substrate to coating all together on our own, but since we have limited resources, we are conducting studies on the expansion of our own substrate production while continuing to acquire third-party substrates.

Q. I would like to hear more details about the Liquid Crystal Polymer (LCP) from the Energy & Functional Materials Sector, which you newly introduced. With the arrival of the 5G (next-generation mobile telecommunications) society, it is predicted there will be a move to replace polyimide, which is currently in use as the high-frequency material, with LCP. What are the cost advantages, and how does the competitive environment look? Also, am I correct in understanding that Sumitomo Chemical has a competitive advantage in the market for LCP because you have a solution type and because it can be expanded for rigid applications?

A. Our Super Engineering Plastic business is focused on LCP and PES. While our competitors have a full line of products, we have concentrated on technology just for these two materials, and we are confident that we have superior competitiveness. Especially in the case of LCP, we are one of the top suppliers in the world, and our application technology is also very advanced. Our solution type of LCP has the feature that it is optimal for thin-film applications, which no other company has, and we also have LCP with other unique features.

Q. Am I correct in understanding that Sumitomo Chemical possesses base resins?

A. Yes, of course we have those.

Q. Regarding the IT-related Chemicals Sector, you previously were chasing the top manufacturers from behind, but I think it looks like you have now caught up to or are overpassing them. Please tell us the reasons for this. Is it because the OLED era has arrived in the last year or two, or because products using your own technologies are contributing?

A. Since establishing the IT-related Chemicals Sector we have done business based on our proprietary technologies. We have assiduously carried out research and development, and are finally starting to see business blossom in the field of liquid crystal displays. Currently, sales of polarizing films for full-screen smartphones, which is a special processing polarizing film, are steady, and sales of products using the Company's materials, such as acrylic protection films for polarizing films, which we have long been developing, are progressing. Furthermore, in the OLED display field, in addition to touchscreen panels, we have been selling circular polarizing films using a reverse wavelength dispersion and liquid crystal-coated retardation film, which is our own material. Certainly, we do need to consider such factors as the cost of processes, but products using our proprietary materials provide high marginal income ratios, and fundamentally we think of them as being high in added value. Moreover, if sales of OLED light-emitting materials, on which we have carried out R&D, increase, I think we can grow further.

Q. I would like to ask you about the thinking of the IT-related Chemicals Sector on page 26, especially about sustainability and growth. Considering that growth is topping out in the high-end smartphone market, I think that the penetration ratio of OLED displays for smartphones somewhat lags projections. Meanwhile, new-entrant display manufacturers have begun shipping OLED displays. With such a market environment, can you tell me your forecast for the Company's touchscreen panels? Also, what sorts of products are you thinking about selling for foldable smartphones, which are rumored to be released in the next period? Finally, I think that regarding circular polarizing film, you are currently using films bought from third parties to ship liquid-crystal-coated polarizers. Can you provide a comprehensive answer that addresses points such as the progress of your Company's development of its own materials?

A. Regarding touchscreen panels, we have both a glass type for rigid applications and a film type for foldable applications. It is not as if foldable OLED displays are suddenly going to be adopted for all smartphones, so we have both types so that we can support both types of display—rigid and foldable. We expect to see demand for film-type touchscreens rise as our new customer's operations increase in the future, so we will be devoting energies to support that. Also, as I have been saying for a while, in regard to components for foldable smartphones, development of a window film is progressing steadily. Regarding circular polarizing film for OLED displays, we ship products using liquid crystal-coated retardation film. Regarding sales to North American smartphone manufacturers, there has been news about the slumping sales of smartphones using liquid-crystal displays, but, fortunately, we ship polarizing films for OLED displays, so are in good shape.

Q. Regarding the new methionine plant, I would like to hear more about the status of its launch, including about the commencement of commercial production in November. I would also like to know the basis for your earlier statement that methionine is now at its market bottom. And, with Evonik currently experiencing trouble, the price of methionine appears to be rising sharply. Do you think this is a situation that will continue?

A. Although I do not have any definitive evidence that the methionine market is currently at its bottom, keeping in mind that global demand for 1.3 million tons of methionine is increasing at 6 to 7 percent annually, I think that supply and demand will always come into equilibrium. Put simply, manufacturers' plans for increased methionine production capacity, which were announced simultaneously when the market took off, work out to about 800,000 tons in total, but we are actually seeing a number of around 300,000 tons, 100,000 tons of which is from our new plant. With the growth rate in demand for methionine, this amount can be absorbed in about four years' time. Demand for chicken meat remains strong, so I think we will see the market turn in the near future. We opened the new plant at the beginning of November with a vertical startup of 100,000 tons, and we expect it to achieve full operations within this year. We have received extensive support from Niihama city and Ehime prefecture.

Q. The re-evaluation system for crop protection products will be implemented in 2021. How will this affect costs? Will costs related to re-evaluation arise bundled as large fixed costs at a specific point, such as 2021, or will they appear annually in small increments?

A. The crop protection products re-evaluation system is part of a global trend that I want us to manage, leveraging our strengths. Because we will evaluate many existing products over 15 years, costs will arise not at a specific point, but over time.

Q. Regarding the pharmaceuticals sector, including nucleic acid medicine, there are the areas that your company handles and there are the areas handled by Sumitomo Dainippon Pharma. On the point that Sumitomo Dainippon Pharma, as a listed company within your Group, plays an important role in the pharmaceuticals sector, I would like to know if there are any disadvantageous aspects related to the pursuit of synergies and whether the current organization is optimal, including from the perspective of governance.

A. I think that I should not generalize here, but, in the life sciences field, we have both crop protection and pharmaceuticals businesses. Especially in the case of the pharmaceuticals business, while there was a time in the past when it was Sumitomo Chemical's pharmaceuticals division, we implemented the current organization in order to give the subsidiary as much autonomy as possible, because the patterns of behavior in that business are so different from our other businesses,. At the same time, while it is commonly said that scale is the issue in the pharma business, I have consistently said that size is not everything. In fact, the world's major pharmaceutical manufacturers are partnering with startups, and innovative drugs are more apt to be acquired from outside. What lies at the source of those types of technologies is gene editing technology—engineering that fuses digital with bio, which is referred to as “digital bio,” it is also very useful for agriculture. For example, if you are looking at toxicity tests on human cells created through gene editing or iPS cells, the technologies are identical to those for pharmaceuticals. The underlying basic research and technologies for regenerative and cellular medicine and gene editing are all common, so I think there are large synergies. Therefore, while I do not know if it will be forever, my thinking is that, in the life sciences field, I want us to keep both the crop protection and pharmaceuticals businesses. With the fusion of the two and our desire to newly pick up the areas in regenerative and cellular medicine that Sumitomo Dainippon Pharma is unable to handle, we recently established the Bioscience Research Laboratory. Bio and gene editing technologies will also contribute to increased added value and increased production of foodstuffs. While we are not growing foods through gene editing, and are only doing biomarkers, there are already organizations in the world beginning to produce cows with plentiful meat, tuna with lots of fat, and tomatoes high in nutrients using gene editing, though it is not yet approved. For us to contribute to higher production of foodstuffs, I think that in the future we will need to consider such things. As the technologies for agriculture and pharmaceuticals are the same in those types of fields, I want to carefully develop both.

Bulk Chemicals

Q. I would like to know about the background of how Rabigh Refining & Petrochemical Co. - Petro Rabigh (PRC) achieved stable operations.

A. PRC overcame 6 or 7 years of adversity with dogged perseverance, experiencing cultural differences, differences in skill levels, and differences of opinion with top management. By steadily resolving all the issues one at a time, stable operations were achieved. The biggest contributing factor is that the local employees of PRC have raised their own abilities. I previously said that PRC has achieved full operations, but it encounters problems at times. Even when it gets in trouble, though, it recovers at almost the same speed as a plant in Japan. I think this can only mean that the company has raised its capabilities. Of course, there is also the fact that the current CEO has become comfortable working with people of an Asian background, that he is receptive to our opinions, that maintenance skills have risen, and that spare parts for problems have been secured. I think the accumulation of all these small factors has contributed to stable operations. Therefore, I do not think business will easily break down, and I expect it to continue for the time being. I want PRC's Phase II Project to adopt this system and reach stable operations.

Q. It seems that the market conditions behind petrochemical products, especially ethylene, are fluctuating greatly. What is your outlook?

A. I have not heard any specific stories about US-produced ethane or polyethylene being shipped to Asia in large quantities. In China, however, with the effects of the US-China trade war, we could see, for example, a slowdown in the production of home electronics, and demand become slightly bearish. With that, it seems plausible that we will see ethane-based ethylene and polyethylene from the US flow our way. As such, I think that market conditions for petrochemical products, especially centered on polyethylene, have clearly peaked. I think we were lucky that conditions remained favorable as long as they did.

Others

Q. I think that the content of the section “Direction of Future Business Strategy” from your presentation is a good fit for the present day. Currently, with the economic environment experiencing great changes, including the issues between the US and China, what approach will you take in carrying out business over the next three years? Also, returns to shareholder and capital allocation were not explained in depth. Could you share your thoughts on how you will allocate funds, or any other relevant information, from a medium- to long-term perspective going forward?

A. Regarding the world’s economic environment, you often hear talk of a trade war between the US and China, but this tension needs to be looked at from a broader perspective. I see the situation as a battle for hegemony between China and the United States. Ian Bremmer, the president of the Eurasia Group, used the term “geopolitical depression” in the report “TOP RISKS 2018” at the beginning of the year and “China Loves a Vacuum” came first within their list of risks. Here, “vacuum” refers to the spaces unoccupied by the US, and it neither signifies that Pax Americana has come to an end nor implicates Pax Sinica, rather that the battle for hegemony between the two countries has begun. As the current US-China trade war is one aspect of this, I think it would be wise to prepare for the tension to not easily be relieved. There are experts who claim that the decades following World War II were an unusually blessed period, and now we are entering very uncertain times, especially geopolitically, which will likely continue for a good while. That aside, everyone is cognizant of the tasks, such as those symbolized by the SDGs, that must be done, and there is no change to the essential proposition of maximizing the contribution we can make with our company. That is what we will continue to do, and I think that we will need to periodically review various issues, including capital allocation, as necessary.

Q. Even in such an environment, do you think growth will be possible?

A. If we were only out to increase results during the three years of the next Corporate Business Plan, yes, I think we could achieve it, by slightly lowering the amount of investments and putting off difficult initiatives, such as digital transformation. When taking the 2020s and 2030s into consideration, however, we may see a time when success or failure is decided very quickly, so I would like to proceed now by carrying out initiatives with determination, while we have the resources.

Q. Regarding your thoughts on investments in the next Corporate Business Plan, I would like to know the scale of the three-year total. Approximately how much of an increase (or decrease) will there be from the investment amount during the current Corporate Business Plan, or are you envisioning a similar amount? Also, about the ratio of the investment amounts by sector, what sort of image do you have considering the current situation?

Also, you have made a large amount of upfront investments into the Rabigh Project, but there is not much to be heard about any cash-base recovery. Please tell us the pace at which you intend to collect your investments from the next Corporate Business Plan onward?

A. We currently are in the midst of formulating our investment plan for the next Corporate Business Plan. Basically, the 690 billion yen (on a decision-making basis) in projected investments for the current Corporate Business Plan is above our primary balance, which we find acceptable in light of the increase of our financial strength. By “primary balance,” I mean free cash flow minus dividends paid. For the next Corporate Business Plan, I would like to restore the primary balance, but, amidst calls for innovation, there are various investments in infrastructure that we must make, so we think that it cannot be helped if we exceed the primary balance. Accordingly, we expect the level of investments in the next Corporate Business Plan to be as much as the 2016-2018 level. Because we have to maintain a good financial condition while making any investments, however, our position is to keep an eye on that balance while formulating our profit plans. As for the proportion of investment spending for each business sector, we expect it will not change much from the current Corporate Business Plan. The reason why is because we concentrate our investments in areas where we can win with superior technology. That does not necessarily mean that we will not make investments in the Petrochemicals & Plastics Sector. Our position is that we will, of course, make investments in the Petrochemicals & Plastics Sector if there are value-added business opportunities. Petro Rabigh made a profit last year of \$400 million, but the dividends we have received so far have been insignificant, and, as you point out, we have not been able to achieve much in terms of a cash return on our investment. Because we started Phase 2 in the midst of this situation, we think it will take a long time before we can recover the investments made in Phase 1 and Phase 2 combined. Still, we want to work to maintain stable operations so that we can earn a steady return every year.

Q. Your explanation regarding the SDGs is in line with the “Sumitomo Spirit” and is very positive. On the other hand, I get the impression that there is a huge amount of emotional news coverage of problems related to crop protection products and waste plastics. This issue is not limited to your company, and relates, rather, to the chemicals industry at large, and I think that, over the next five years or so, we are entering a period in which the industry will have to give more presentations to avoid negative impressions forming and Sumitomo Chemical will have to do more to make its initiatives known amongst the public. Are you aware of these issues, and what are your thoughts on them? From the perspectives of costs and risks and business opportunities, please paint a picture of how you will grow in SDG-related businesses over the next five years.

A. As you say, doing nothing to address the different issues, including environmental problems, is a risk. I would like to see us convert these issues into opportunities, by providing, with our own technologies, solutions that solve problems. That is something I want to pursue.

Uncertain debates about chemicals and plastics do often arise, so I think we need to provide better explanations, which are more scientific, logical, and quantitative, to Japanese governmental agencies and to the world. The initiatives of the Chairman of the Japan Chemical Industry Association at the International Congress and Convention Association (ICCA) the other day can be viewed as one such effort. I often meet with the major chemical companies, and we completely agree that, while there may be steps that each company can take regarding problems related to the recycling of plastics, industry-wide action is the way to maintain the reputation of the chemical industry.

There is a wide-range of information about the disposal of plastics. For example, there are reports that 8 million tons of plastic waste enters the oceans annually, and at this rate, there will be an amount that will exceed the mass of the world’s fish by 2050—. You also hear about how much plastic waste is extracted from the stomachs of whales that have been necropsied, and that microplastics are being found in human bodies upon dissection. The streaming video, “[Plastic Pollution: How Humans are Turning the World into Plastic](#),” created by Kurzgesagt – In a Nutshell, through collaboration with the United Nations Environment Programme (UNEP), is a 9-minute video that looks at the problems of plastic. The video, which has garnered much attention, introduces both the merits and demerits of plastics. Please do take a look. My thoughts are that it is our job to explain the contents of this video, and similar reports, by providing statistics that are a little more scientifically grounded. Take, for example, single-use food packaging, which offers the highest level of thermal recycling among the types of plastic. Without this packaging, food freshness would decline, causing waste to increase, which would lead to an increase in CO₂. Similarly, consider the use of a cotton bag instead of a plastic grocery bag. Only when a cotton bag would be used 7,100 times, its impact on the environment would be equivalent to that of a plastic grocery bag, because the energy cost and CO₂ emissions to produce plastic bags is low. In this way, plastic comes with many different good and bad points. This all means that leaving and discarding plastics into the environment is bad, and that it is important to intelligently recycle them for further use. In this vein, the Japanese government, especially the Ministry of the Environment is now formulating a plastics circulation strategy. I see it as our responsibility to put out information that is as scientifically, logically, and quantitatively accurate as possible, and I also think this is an

issue we share with the other major chemical companies. Finally, as I earlier mentioned, I think it is important for us to actively participate in international alliances and other organizations, in order to promote this type of thinking we have in Japan.

Q. I look forward to seeing what you can do, for example, by contributing with a product that can be made thin with a material like your Easy Processing Polyethylene.

A. Thank you. We will do our best.

(END)

Cautionary Statement

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