

## Summary of Questions and Answers at a Briefing on SDK's 2016 Performance Forecast

10:00 - 11:30, Wednesday, February 15, 2017

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\*All contents are based on the information available as of the date and time of the briefing. See notes.

### [General]

**Q. It seems that the amount of extraordinary loss has been steadied down these days due to your daring structural reforms in your businesses during the period of former medium-term business plan "PEGASUS." Will this steadiness continue in the future? How is your forecast of dividends to be paid for 2017?**

A. Concerning extraordinary loss in 2017, we do not have any specific theme to consider at this moment. However, since SDK has many large facilities, we included extraordinary loss of ¥12,000 million in our projections for 2017, which could result from removal of some facilities. Our forecast of dividends to be paid for 2017 is at the same amount as that for 2016, taking unclear future prospects for the global economy and our acquisition of SGL GE into consideration.

### [Petrochemicals segment]

**Q. The demand for petrochemicals in Asia remained strong in the last two years. Is this strong market caused by limited expansion of petrochemical plants in China, or by environmental regulation? Recent trends in market prices of ethylene and propylene are different from those in the past. How do you see them?**

A. While strong demand for ethylene derivatives continues in China, concurrence of troubles and periodic shutdown maintenance of petrochemical plants in Asia tightened supply-demand balance of ethylene derivatives. This tightness will continue this year. We foresee no influence of US shale-oil based petrochemicals throughout 2017. It seems that the delay in startups of propane dehydrogenation plants in South Korea and China is one cause of the rise in market price of propylene.

**Q. How did you take into account the expected ethylene-naphtha price spread in forecasting your income? In 4Q 2016, your operating income substantially increased. If this trend continues, I think your forecasted operating income from Petrochemicals segment for 2017,**

**which is to be ¥4.7 billion less than that for 2016, is too conservative.**

A. We expect the operating income from Petrochemicals segment will be reduced due mainly to the shrunk ethylene-naphtha price spread. That spread was \$600/t in 2015 and \$700 in 2016. The spread is expected to be \$600/t in 2017, a reduction of \$100/t from that in 2016. We expect our ethylene plant will continue operating at full capacity due to strong demand in Asia.

**Q. From the second half of 2016, prices of propylene and butadiene continue to surge. Was that a positive factor for your operating income for 4Q 2016? Will the spread in the 1Q 2017 be less than that?**

A. The spread between material costs and product prices were favorable for us throughout 2016, centering on butadiene. The spread in 1Q 2016 was wider than that in 1Q 2015. However, that in 2Q 2016 was narrower than that in 2Q 2015. In 3Q 2016, the spread was wider than that in 3Q 2015, and the spread in 4Q 2016 was substantially wider than that in 4Q 2015. However, this favorable condition will not continue into 1Q 2017.

### [Chemicals segment]

(High-purity gases for electronics)

**Q. How were the sales of high-purity gases in 2016 compared to that in 2015? How do you expect the increase in sales of high-purity gases in 2017 will be? Do you expect your sales of high-purity gases for production of NAND flash memory chips will substantially increase due to the progress in switch from those with conventional design to those with 3D structure?**

A. Our yen-denominated sales of high-purity gases in 2016 recorded slight increase from that in 2015 due to an appreciation of yen. However, the sales denominated in local currency was more than 10% higher than that in 2015. We expect the same increase in the sales denominated in local currency in 2017. Switch to 3D NAND flash memory chips will substantially increase the quantity of gases needed to produce unit area of memory chips, in each step of production. In addition, the number of

kinds of gases used in production of 3D NAND flash is more than that used in production of conventional NAND flash because different kinds of gases are used in fine processing of 3D structure. This factor also gives us advantage because we produce many kinds of gas products.

**Q. Do you expect the demand for etching gases including C<sub>4</sub>H<sub>6</sub>, HBr, BCl<sub>3</sub> and CH<sub>3</sub>F will see double-digit growth due to the switch to 3D structure?**

A. Yes. We expect the switch to 3D structure will bring double-digit growth in the demand for etching gases. In addition, the diversity in combination of gases used by memory chip manufacturers gives us advantage as I mentioned before.

**[Electronics segment]  
(HD media)**

**Q. How much growth do you expect to be in your shipment volumes of HD media? How will your shipment volumes of HD media for PCs and servers for data centers be in the future?**

A. We expect our total shipment volumes of HD media will be slightly higher than that in the previous year. Shipment volumes of media for use in PCs will show mild decrease. However, we expect those for data center use will be higher than that in the previous year.

**Q. Do you plan to start commercial production of HAMR-based media next year?**

A. Our trial manufacture of HAMR-based media will proceed at full swing in 2018. At present, trial manufacture is proceeding at laboratory level. Trial manufacturing of HDD equipped with HAMR media is just started by HDD manufacturers. However, quality of trial-manufactured HAMR HDD has not become good enough to start mass production yet. The HDD value chain still has many issues the industry must clear before start of mass production.

**[Inorganics segment]**

**(Graphite electrodes)**

**Q. How is the progress in the process to obtain approval of relevant authorities to your acquisition of shares in SGL GE?**

A. There is some progress in the process of acquisition. However, I would like to withhold further comment on the details of the ongoing process to obtain official approval.

**Q. How is your image of the start of operation of the newly established 30,000t/y capacity production facilities in the US?**

A. We will start shipment of graphite electrodes produced by the new facilities in the second half of 2017. However, we do not expect attainment of full capacity operation by the end of 2017. We will raise operating rate of the new facilities in accordance with the increase in demand.

**[Others segment]**

**(LIB materials)**

**Q. I heard that your sales of LIB materials decreased in 4Q 2016. How is your LIB materials business in China? Do you still continue adjustment of production?**

A. It is said that the Chinese government may change its conditions to grant subsidies. The Chinese LIB industry is watching how this matter will develop. We are also watching the situation, but we see no changes in the structure of Chinese LIB industry.

**Q. Did you change the segment to which your LIB materials business belongs from “the Others segment” to “the Electronics segment”?**

A. Yes. We reclassified the whole LIB materials business including our consolidated subsidiary Showa Denko Packaging Co., Ltd.

**Q. As for Si-graphite composite anode material, I heard you would market that for use in home electrical appliances first. Is that true?**

A. We believe that material will be applied first to LIBs for small electronic devices such as mobile devices. We will also assess applicability to car applications, though it will take time.

\*Performance forecast and other statements pertaining to the future as contained in this material are based on the information available as of the date and time of the briefing regarding risk factors that could affect our future performance. Actual results may differ materially from the forecast due to a variety of risk factors, including, but not limited to, the economic conditions, costs of naphtha and other raw materials, demand for our products, market conditions, foreign exchange rates, changes in laws and regulations, and lawsuits. As to the assumptions about the consolidated performance forecast including exchange rate and naphtha price, please refer to the revised 2016 performance forecast which was announced on February 14, 2016.