

## Q&A Summary for Kioxia Corporate Strategy Meeting

- Q. How do you see your market share for enterprise SSDs going forward?
- A. As it says in our financial model that we released in November 2024, we aim to have a market share of over 15% in the SSD market, and we plan to expand our business mainly in the enterprise and hyperscale data center markets.
- Q. What is the status of the launch of your 8<sup>th</sup> generation BiCS FLASH™ products and their ratio of total production?
- A. The 8<sup>th</sup> generation BiCS FLASH™ should surpass the production of the 5<sup>th</sup> generation BiCS FLASH™ on a bit basis in March 2026. After that we will continue to invest in the 8<sup>th</sup> generation BiCS FLASH™ and increase its production ratio. The pace of ramp-up during this fiscal year is expected to increase mostly linearly.
- Q. I heard that you are developing a Super High IOPS SSD with a GPU manufacturer, but can you tell us if this will come to fruition? I think sample shipments are planned for the second half of 26, what is the timeline after that? Will the price per GB will be at a premium compared to NAND?
- A. Super High IOPS SSDs are being developed based on XL-FLASH, which is a storage class memory based on BiCS FLASH™. We are currently developing controllers and firmware. It is still very difficult to say anything regarding price, but since it is a high-performance product compared to ordinary TLC SSDs, we would like to sell it with some added value. Even after the sample shipment we will use feedback from customers to continue to consider products that have further improved IOPS.
- Q. Does the capital efficiency graph on slide 38 refer to only NAND for your competitors, or does it also include DRAM? If you increase wafer capacity in the future, is there a risk that investment will become too intensive? Are you expecting help from government grants?
- A. The capital efficiency graph on slide 38 was created based on a report by a research firm and it shows investments related to NAND. With the launch of the 8<sup>th</sup> generation BiCS FLASH™ with CBA technology, we believe that we will be able to meticulously respond to the growing market in terms of capacity and performance, and we will be able to invest with optimal efficiency and maintain this efficiency going forward.

Since we have made investments in manufacturing buildings with Fab7 at our Yokkaichi Plant and Fab2 at our Kitakami Plant while staying disciplined with our capital expenditures, we believe that we will be able to concentrate on investing in manufacturing equipment for the time being, and that there will be no other special capital expenditures for the time being.

The total amount of grants, including for our joint ventures, is about 240 billion yen. We have utilized about half of this amount as of FY24. The remainder, with some exceptions, should be fully utilized in FY25. We would like to see additional grants from the government in the future.



- Q. What percentage of your enterprise SSDs support PCIe® 5.0? Is an increase in PCIe® 5.0 compatible SSDs in 2026 expected to be a driver for market share expansion? What kind of negotiations are you in now, looking ahead to 2026?
- A. We see PCIe® 4.0 still being mainstream at present, but we expect more than half of demand to shift to PCIe® 5.0 through 2026. The ratio of our enterprise SSDs that support PCIe® 5.0 is about half. Our PCIe® 5.0 compatible products are also compatible with the previous generation of PCIe® 4.0, so we will be able to do qualifications with customers using the PCIe® 4.0 interface quickly once they make the change to PCIe® 5.0. We are working on a plan to capture market share with leading PCIe® 5.0 compatible products.
- Q. Will CBA technology reduce manufacturing lead times?
- A. Our manufacturing method combines CBA technology with double etching. With CBA technology we make the CMOS circuit wafer and the memory cell wafer separately but in parallel, so it is sufficiently competitive in terms of manufacturing lead time, and we believe this to be a great advantage.
- Q. Will the ASP for the 8<sup>th</sup> generation BiCS FLASH™ increase compared to the previous 5<sup>th</sup> generation BiCS FLASH™? Will that depend on the market? Can you get some added value with CBA with increased interface speed, improved quality, and appeal to enterprise SSDs?
- A. We will refrain from talking about ASPs specifically. While we are affected by the market and competitors, we will focus on the enterprise market by introducing the 8<sup>th</sup> generation BiCS FLASH™ to enterprise SSDs and promoting high performance and power efficiency at write time.
- Q. I think part of the cost for the 8<sup>th</sup> generation BiCS FLASH™ comes from CBA, but there should be some offset with the lateral shrink, so will costs increase? Will it be about the same? As production of the 8<sup>th</sup> generation of BiCS FLASH™ increases, will profit margins increase?
- A. Despite the fact that CBA technology requires 2 wafers as well as new equipment for bonding, the BiCS FLASH™ 8<sup>th</sup> generation has a notable shrink in the lateral direction and a high bit density, making it a very cost-competitive product. Therefore, compared to the 5<sup>th</sup> and 6<sup>th</sup> generations, we see the cost power of the 8<sup>th</sup> generation products being noticeably higher.
- Q. Can most 8<sup>th</sup> generation BiCS FLASH™ be sold for enterprise SSDs? For smartphones and other devices, will ASPs continue to be tight? What is the impact on profitability from the introduction of the 8<sup>th</sup> generation BiCS FLASH™?
- A. We will refrain from discussing the profitability of each product. We will introduce the 8<sup>th</sup> generation BiCS FLASH™ to PCIe® 5.0 compatible SSD products. In addition, there will also be new specifications for UFS products for high-end smartphones. The 8<sup>th</sup> generation BiCS FLASH™ is very advantageous for UFS products with its high performance and high power efficiency.
- Q. I think that the KIOXIA LC9 series of large-capacity SSDs will be one of the drivers to increase your share in the SSDs market, but are there any advantages it has other than capacity? Please tell us about the status of qualifications and how much you expect it to contribute to revenue.
- A. The 8<sup>th</sup> generation BiCS FLASH™ 2Tb QLC is a chip that uses CBA technology to deliver high throughput and high performance while reducing power consumption. We believe that the KIOXIA LC9 series, which uses this technology, is a competitive product that combines high performance, large capacity, and low power consumption. Mass production of the KIOXIA LC9 series will begin in the



fourth quarter of the calendar year 2025. We are now in preparation for certification with key customers.

- Q. Is there a difference between 9th generation and 10th generation BiCS FLASH™ products and their respective markets?
- A. The 10th generation aims for high-capacity products, one of these targets being SSDs for enterprises and data centers. On the other hand, the 9th generation of BiCS FLASH™ will be a high-performance product for smartphones and client PCs made with high investment efficiency. However, even in the enterprise market we plan to use the extremely high performance and high power efficiency of the 9th generation for mid-capacity needs.
- Q. How often are customers asking that IOPS for SSDs be improved? How much can IOPS be improved by you and other players in the NAND/SSD industry? Like with HBM in DRAM, would higher IOPS mean higher ASPs?
- A. We are currently in talk with GPU manufacturers regarding the performance of Super High IOPS SSDs. Specifically, with the numbers we received, the IOPS that can be achieved with the first generation is at a level that is not 100% satisfactory yet. However, Super High IOPS SSDs can handle IOPS that normal SSDs cannot handle, so we are hearing from these manufacturers that they would like to evaluate them first. We are thinking of products that further improve IOPS in the second generation.

One of the problems that customers who use GPUs have is high cost of DRAM, and Super High IOPS SSDs help resolve this. We see GPU manufacturers wanting faster IOPS, and Super High IOPS SSDs will replace the parts that cannot be scaled by HBM. GPU manufacturers are currently seeing this as the direction things are going.

- Q. When will the next-generation 3D flash memory technology based on horizontal channel structure be introduced?
- A. The number of layers that BiCS FLASH™ could theoretically reach is 1,000, and we believe that we could do it from a technical perspective. However, there are concerns about whether the cost and performance would be at a level that customers and end users could really use.

We are considering as one option the development of horizontal channel stacking structure technology with a different kind of concept. As for the timeline, we are considering introducing it probably sometime in the late 2030s.

- Q. What about the structure without the staircase-like area connecting the word lines that competitors are using?
- A. We refrain from commenting regarding the competitor's process, but we develop technology with a concept to reduce the number of process steps.
- Q. In terms of the AI-related bit demand on page 17, I understand that there is quite a big difference between training and inference, but what causes the difference here? What applications are involved?
- A. Inference-related demand includes data centers and inference applications for AI servers, as well as smartphones and PCs equipped with AI functions. When comparing training and inference in AI servers, inference has greater bit growth. For inference, each company uses its own RAG to introduce an inference server, so it is an increase of one or two figures.

Q. I understand that you have been investing efficiently, but if your competitors do the same in the future, will you be able to maintain your current efficiency and advantage? Of the four methods of vertical scaling, lateral shrinking, CBA, and logical shrink (increased levels), which is the most important as a key technology to be addressed?

A. We are investing in both new and existing technologies while picking the right timing for both of them. I think the fact that we were able to introduce CBA at the right time was crucial. In addition, considering that the equipment invested in will be used for a long time, as long as the technology cutting-edge, it should maintain a certain level of competitiveness. I believe that one of our strengths is our ability to make decisions about the right technology at the right time. Our policy is to continue this investment efficiency while maintaining financial discipline.

I think that the most important thing regarding the four methods is to properly identify the market for a given choice and for a given combination, as in the case of the 9th and 10th generations of BiCS FLASH™.

Q. NAND bit growth exceeded a record 30% through 2021, but that growth rate has recently fallen to around 10%. What is your view on demand growth over the long term and the applications that will drive that growth?

A. This past year saw an inventory adjustment in the first half, so I think the bit growth was around low to mid-teens % year on year. However, as we mentioned, from next year onwards the whole market should be at about 20%, mainly because there are growth drivers for data centers centered around AI. With bit growth gradually decreasing, under these circumstances we will shift our product mix to AI and data centers, which should see the most growth. The main idea of today's strategy is to grow in line with the market growth.

Q. In the diagram regarding the production capacity of the frontend processes on page 37, the GB output in FY2029 is about twice as much compared to FY2024, can you explain your thinking regarding construction of a third fab at your Kitakami Plant?

A. Bit output is assumed based on the bit growth rate of the market at a CAGR of 20%. We have Fab2 at our Kitakami Plant scheduled to start operations this fall, and a variety of options being considered with long-term investment efficiency in mind, but our view is that there is enough production space for the time being. We have nothing to mention regarding expansion of the Kitakami Plant today.

Q. Why do you want to decentralize downstream outsourcing? Will this decentralize to places in Japan or overseas, and if the latter, to what regions?

A. For quite a while we have been looking into stabilization of our supply chain. Currently we are diversifying mainly in Greater China, but after COVID-19 we thought that increasing the number of sites on a given scale would lead to the stabilization of the supply chain, so we are currently starting to consider Southeast Asia as well.

Q. With the scale of production capacity of the backend processes increasing by 1.5 times from FY2024 to FY2029, what is your policy when it comes to increasing your in-house production rate?

A. We will determine the rate of in-house production while monitoring market conditions, but with the technology of backend processes is becoming more sophisticated, and it being necessary to work closely with frontend processes in Japan, we believe that a given scale will be required, mainly in Yokkaichi. We believe that such a strategy will lead to the most stable supply chain.



- Q. With regard to CBA, I think there have been many advantages, namely increased investment efficiency, since its introduction with the 8<sup>th</sup> generation BiCS FLASH™. However, your competitors are also looking to introduce wafer bonding, how do you intend to ensure your technological superiority in the future?
- A. We estimate that we will have introduced CBA two generations earlier than our competitors, so in the time other companies are introducing CBA, we can start working on the next thing. In that sense, I believe we will continue to have an advantage by introducing it first.

Note: This document is a summary of the questions were asked and answered during the earnings call. Some expressions have been edited to be easier to understand.