

**Market Forecast Report  
Semiconductor and FPD Manufacturing Equipment  
Released in January 2024  
(Fiscal years 2023 to 2025)**

**January 18, 2024**



**Semiconductor Equipment Association of Japan**

## Overview

This report provides trend forecasts for semiconductor and FPD manufacturing equipment. The comprehensive results included in this forecast report are based on demand forecasts by the Semiconductor Research and Statistics subcommittee and the FPD Research and Statistics subcommittee of the Semiconductor Equipment Association of Japan (hereinafter called SEAJ, Chairman: Mr. Toshiaki Kawai) as well as market trend research by the 20 companies represented on the Board of Directors and auditors.

We forecast sales of semiconductor manufacturing equipment made in Japan for fiscal 2023 to be 3.18 trillion yen, a decrease of 19% from the previous year, due to a large decline in overall capital investment, particularly in Memory, despite relatively strong sales in the Chinese market. For fiscal 2024, we forecast sales of 4.03 trillion yen, an increase of 27%, as we expect a significant recovery in memory investment in the second half of the fiscal year, following logic/foundries. For fiscal 2025, we forecast sales of 4.44 trillion yen, an increase of 10%, owing to persistent sound investment.

As for FPD manufacturing equipment, we forecast sales of 321 billion yen in fiscal 2023, a decrease of 25%, since large-scale investments will be few. For fiscal 2024, we forecast sales of 353 billion yen, an increase of 10%, expecting demands owing to launch of Organic Light Emitting Diode (OLED) investment in Korea using new technology on G8 boards. For fiscal 2025, we forecast sales of 468 billion yen, an increase in 35%, in anticipation of full-scale investment in G8-class OLEDs in China as well as Korea.

- |                         |  |
|-------------------------|--|
| (1) Forecast period     | Three years from fiscal year 2023 to 2025 (FY2023: From April 2023 to March 2024)  |
| (2) Forecast items      | Sales of Japanese-made semiconductor manufacturing equipment and sales for the Japanese market<br>Sales of Japanese-made FPD manufacturing equipment |
| (3) Forecast background |  |

### **(Semiconductor Manufacturing Equipment)**

Consumers worldwide did not have a strong appetite for electronic devices in 2023 due in part to rising inflation, higher policy interest rates, conflicts in Ukraine and Israel, soaring raw material and energy prices, and the slowdown in the Chinese economy. Semiconductor prices continued to fall, particularly for memory devices. Shipments of PCs and smartphones fell below the previous year's levels, while prices of semiconductors used in these products continued to fall, notably for Memory.

On the other hand, the adoption of the 3 nm process in mass production of cutting-edge processors for smartphones has begun, and demand for server semiconductors for generative AI is also expanding significantly. Since GPUs for AI use many High Bandwidth Memory (HBM), the business profitability

of DRAM manufacturers is on an improving trend. The supply-demand balance is also gradually improving, and prices have been on an upward trend since September. Though Memory investment will take some more time for a full-scale recovery, the worst is already behind us.

From 2024, we expect new CPUs along with a variety of semiconductors optimized for generative AI functions to be released. Data center investment, which is currently focused on AI, will eventually move toward new and replacement investment, including general-purpose servers. Together with the recovery of the macro economy, a recovery in demand for PCs and smartphones is also expected.

As for semiconductor manufacturing equipment, there had been concerns about a drop in sales to China since the U.S. tightened export restrictions on China in October 2022. Following Japan, which joined last July, the Netherlands also joined in imposing export controls on semiconductors in September. In practice, however, the targets of investment have shifted to areas not subject to the restrictions, and to date, demand for equipment for China has been strong. Although future trends are still unknown, investment appetite remains at an extremely high level.

In fiscal 2024, following logic/foundries, a full-fledged investment recovery in DRAM is expected in the second half of the fiscal year. In addition to the market recovery in Logic and Memory, government support will also boost investment recovery. The semiconductor manufacturing equipment market in 2025 is also expected to grow, supported by demands for PCs, smartphones, and AI-centric servers for data centers, as well as growing demands for diverse applications such as AR/VR/Digital Twin and EV/autonomous vehicles.

WSTS (World Semiconductor Trade Statistics) released its latest semiconductor market forecast in November. The global semiconductor market in 2023 is expected to decline by 9.4% from the previous year to 520 billion US dollars, while in 2024, it is expected to recover to 588 billion US dollars, an increase of 13.1%. The numbers were both revised upward from the previous June announcement. Since the global semiconductor market is said to be targeting 1 trillion US dollars by 2030, high medium-term growth rate is expected for semiconductor manufacturing equipment likewise.

### **(FPD Manufacturing Equipment)**

With regards to the business environment surrounding FPD manufacturing equipment, many panel companies, with the exception of one Korean and one Chinese company, have been generating operating losses. With television panel prices bottoming out in September 2022 and rising moderately thereafter, deficits of the various manufactures are also beginning to narrow. Even so, they lack the strength to stimulate capex spending. For calendar year 2023, capex spending is expected to have fallen to about half the level of the same period in the previous year.

In contrast, investment in G8 boards for OLEDs in Korea is expected to begin into full swing from fiscal 2024. OLED panels are being considered for use in various IT products including PCs, and, since the panel size per unit will be larger than conventional OLEDs for smartphones, it will be

necessary to manufacture the panels on G8 boards. Development for mass production is already underway at equipment manufacturers.

Not only Korea but also China's largest manufacturer announced plans for major investment in G8 substrates for OLEDs at the end of last November. We are finally beginning to see how technological innovation in IT panels will drive market recovery in fiscal 2024 and beyond.

#### (4) Forecast results

##### *【Sales forecasts for semiconductor/FPD manufacturing equipment made in Japan】*

For fiscal 2023, assuming that sales of semiconductor manufacturing equipment will fall by 19% and sales of FPD manufacturing equipment will decrease by 25%, we forecast overall sales of 3.5 trillion yen, a decrease by 19.6%. For fiscal 2024, both semiconductors and FPDs are expected to recover by 27% and 10% respectively, as we forecast overall sales of 4.39 trillion yen, an increase of 25.4%. Fiscal 2025 is also expected to see steady growth, with a 10% increase in semiconductors and a 30% increase in FPDs, as we forecast overall sales of 4.92 trillion yen, an increase of 12%.

##### *【Sales forecasts for semiconductor manufacturing equipment made in Japan】*

For fiscal 2023, we forecast a 19% decrease from the previous year to 3.18 trillion yen, factoring in the strong Chinese investment in areas outside of export restrictions to China by the U.S. and others, despite the significant impact of capital investment cuts due to the decline in Memory prices. In fiscal 2024, we forecast a 27% increase to 4.03 trillion yen owing to a full-fledged revival of DRAM investment following investment in logic foundries. In fiscal 2025, we forecast 4.44 trillion yen, a 10% increase, owing to many large capital investments planned with the support from various governments.

##### *【Sales forecasts for semiconductor manufacturing equipment in the Japanese market】*

In fiscal 2023, we forecast sales of 1.08 trillion yen, a 5% decrease. Though investment in the Memory sector declined significantly, investment in new areas including power semiconductors, as well as investment by major foundries, have begun to contribute in the second half of fiscal 2023. In fiscal 2024, we forecast sales of 1.3 trillion yen, a 20% increase, as Memory investment is expected to make a significant comeback along with investment by major foundries. The sales forecast for fiscal 2025 is 1.7 trillion yen, an increase in 30%, owing to expectations for aggressive investments in various product areas, including those by major foundries.

##### *【Sales forecasts for FPD manufacturing equipment made in Japan】*

In fiscal 2023, we forecast a 25% decrease to 321 billion yen since there will be very few large-scale investment projects in the calendar year 2023, however, there will be several projects for China in the January-March period of 2024, and some OLED investments in G8 substrates are

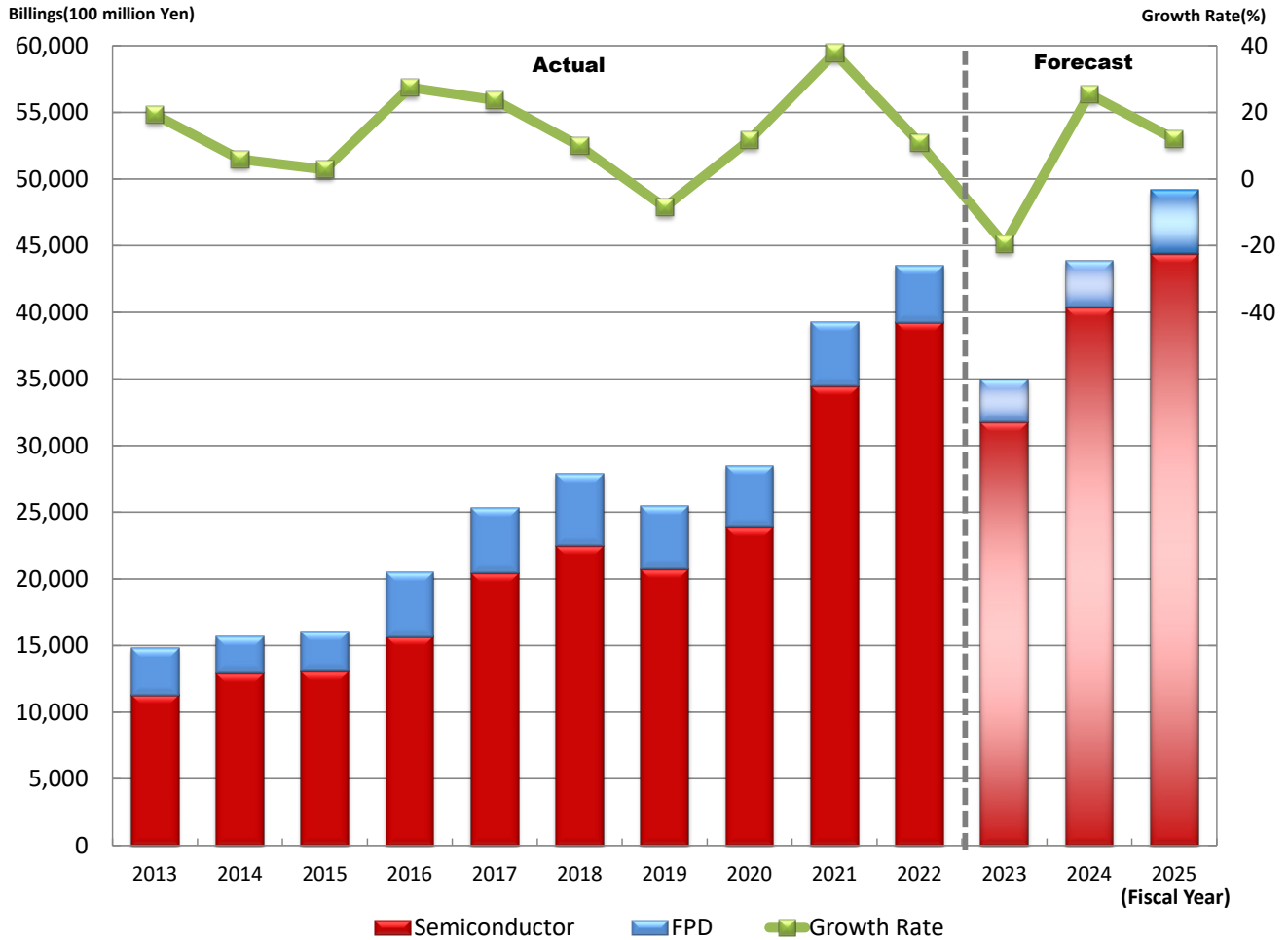
expected to be recorded in sales in March. In fiscal 2024, we forecast a 10% increase to 353 billion yen due to the full-scale investment in OLEDs on G8 substrates and the television market's investment in shifting to new high-end products. In fiscal 2025, we forecast a 35% increase to 478 billion yen, as we expect investment in G8-class OLEDs to be in full swing in Korea and China at the same time.

## January 2024 Forecast for Semiconductor and FPD Manufacturing Equipment

### ■ 1. Semiconductor and FPD Manufacturing Equipment

#### 【Forecast for Japanese Equipment Billing】

\* "Japanese Equipment Billing " = Japanese manufacturers Domestic and Oversea Billing.



(CAGR : 2022-2025)

	Actual										Forecast			
Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
Semiconductor	11,278	12,921	13,089	15,642	20,436	22,479	20,730	23,835	34,430	39,222	31,770	40,348	44,383	4.2%
FPD	3,485	2,717	2,993	4,857	4,916	5,364	4,758	4,638	4,809	4,282	3,211	3,532	4,769	
Total (100 million yen)	14,763	15,638	16,082	20,499	25,352	27,843	25,488	28,473	39,239	43,504	34,981	43,880	49,151	
Growth Rate (%)	19.3	5.9	2.8	27.5	23.7	9.8	-8.5	11.7	37.8	10.9	-19.6	25.4	12.0	

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\* FPD statistics participating companies have changed since FY2019.

\* The names and amounts of the companies participating in the statistics are not disclosed.

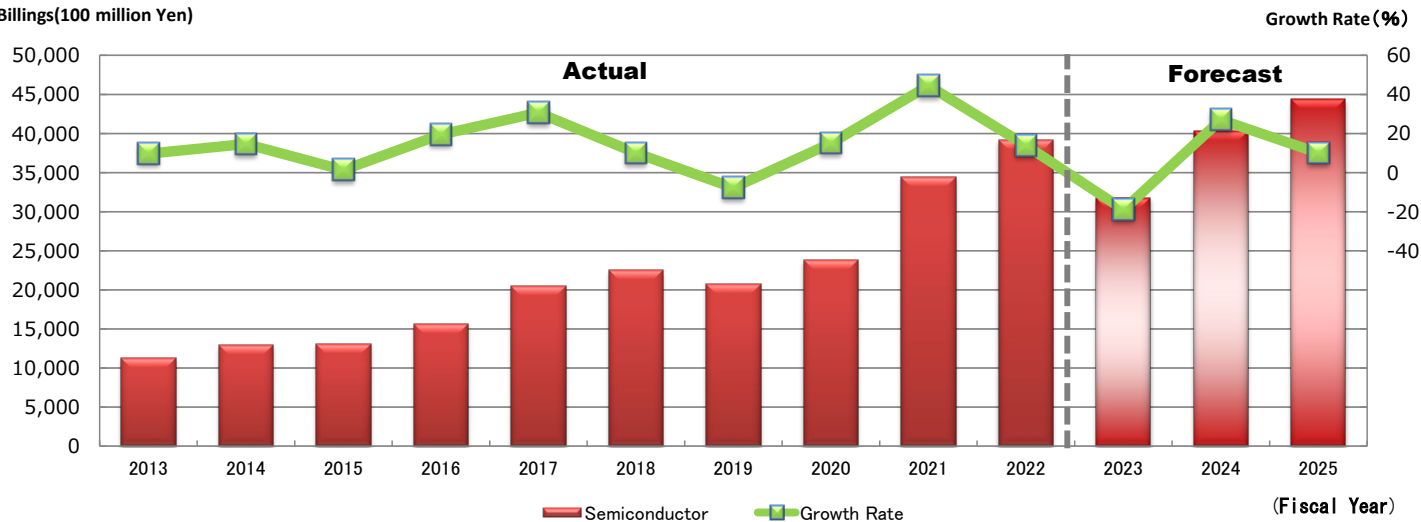
## January 2024 Forecast for Semiconductor and FPD Manufacturing Equipment

### 2. Semiconductor Manufacturing Equipment

#### 【Forecast for Japanese Equipment Billing】

\* "Japanese Equipment Billing" = Japanese manufacturers Domestic and Oversea Billing.

Billings(100 million Yen)



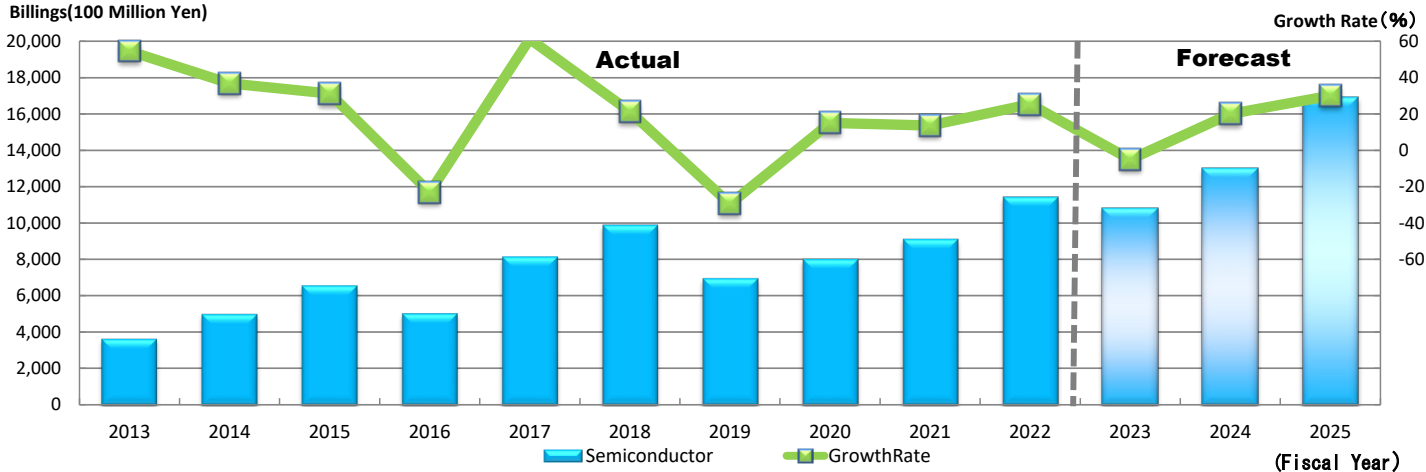
(CAGR : 2022-2025)

	Actual										Forecast			
Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
Total (100 million yen)	11,278	12,921	13,089	15,642	20,436	22,479	20,730	23,835	34,430	39,222	31,770	40,348	44,383	
Growth Rate (%)	9.7	14.6	1.3	19.5	30.6	10.0	-7.8	15.0	44.4	13.9	-19.0	27.0	10.0	4.2%

#### 【Forecast for Japanese Market Billing】

\* "Japanese Market Billing" = Domestic Billing of Japanese and Foreign manufacturers.

Billings(100 Million Yen)



(CAGR : 2022-2025)

	Actual										Forecast			
Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
Total (100 million yen)	3,653	5,000	6,562	5,047	8,138	9,878	6,961	8,009	9,103	11,410	10,840	13,008	16,910	
Growth Rate (%)	54.6	36.9	31.2	-23.1	61.3	21.4	-29.5	15.1	13.7	25.3	-5.0	20.0	30.0	14.0%

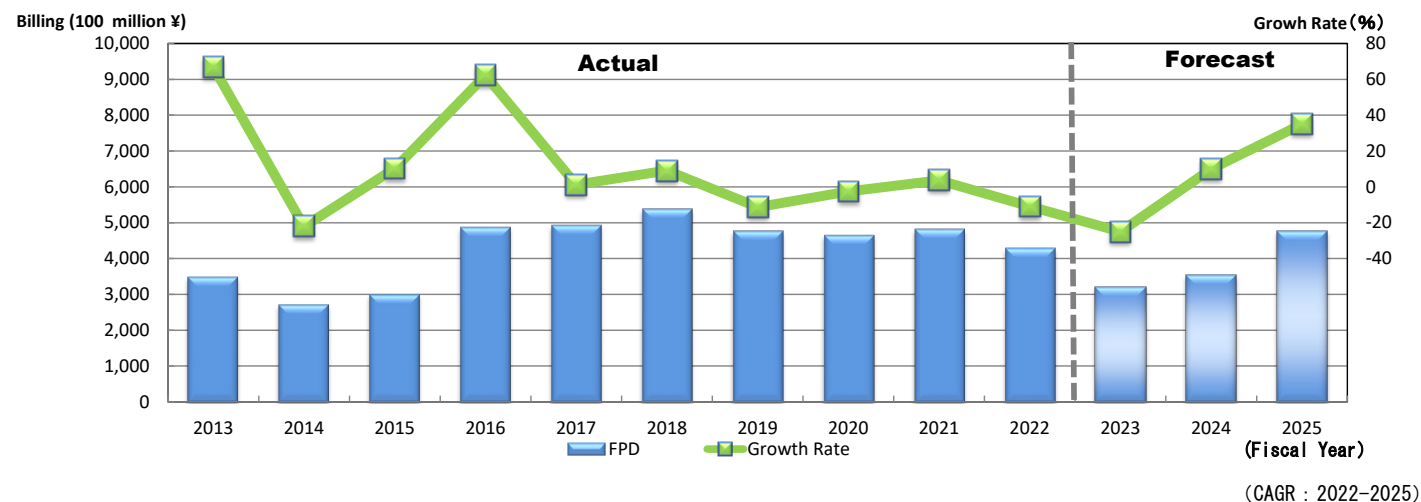
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## January 2024 Forecast for Semiconductor and FPD Manufacturing Equipment

### ■3. FPD Manufacturing Equipment

#### 【Forecast for Japanese Equipment Billing】

\* "Japanese Equipment Billing " = Japanese manufacturers Domestic and Oversea Billing.



	Actual										Forecast			
Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
Total (100 million yen)	3,485	2,717	2,993	4,857	4,916	5,364	4,758	4,638	4,809	4,282	3,211	3,532	4,769	
Growth Rate (%)	66.8	-22.0	10.2	62.3	1.2	9.1	-11.3	-2.5	3.7	-11.0	-25.0	10.0	35.0	3.7%

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