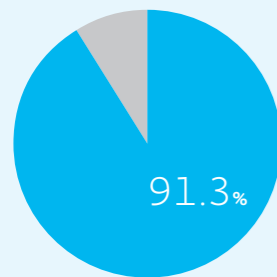


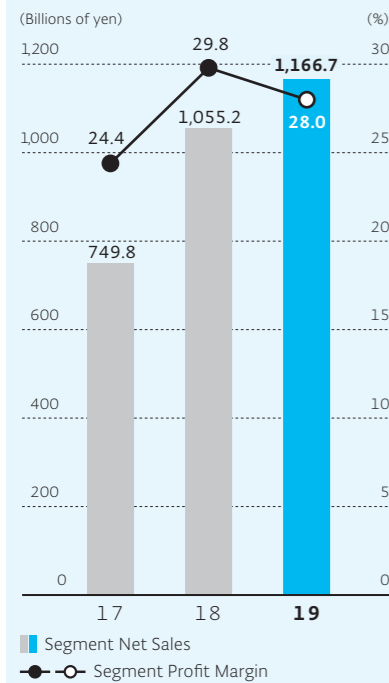
Review of Operations and Business Outlook

Semiconductor Production Equipment (SPE)

Share of Net Sales



Segment Net Sales and Profit Margin



Segment profit corresponds to income before income taxes on the consolidated statements of income.

2018 Business Environment

Investment in semiconductors for mobile devices and data centers was robust, backed by growing data traffic due in part to the spread of streaming and downloadable video services. Under these conditions, capital investment, especially in DRAM, saw significant growth. As a result, the 2018 global market for wafer fab equipment (WFE)¹ grew 16% year on year to a record high of about US\$59 billion.

¹ Wafer fab equipment (WFE): The semiconductor production process is divided into front-end production, in which circuits are formed on wafers and inspected, and back-end production, in which wafers are cut into chips, assembled and inspected again. WFE refers to the production equipment used in front-end production and in wafer-level packaging production.

Fiscal 2019 Business Overview

Segment net sales grew 10.6% year on year to ¥1,166.7 billion.

- By application, sales of equipment for DRAM grew substantially year on year.
- By product, etch systems saw especially large growth in both market share and sales, due in significant part to increased market share of products for key 3D NAND processes.
- Sales in the field solutions business (encompassing sales of parts and used equipment, modifications and maintenance services) rose 14.8% year on year to ¥288.2 billion, reflecting growth in parts sales.

The segment profit margin decreased from 29.8% in the previous fiscal year to 28.0%, due to aggressive investment aimed at medium- and long-term growth.

Business Outlook

Semiconductor demand is expected to expand over the medium to long term, due to dramatically increasing data traffic resulting from the adoption of such technologies as IoT and AI. Within the SPE market, Tokyo Electron particularly expects ongoing innovation and market expansion in etch, deposition and cleaning systems, and has designated these as its three key fields. By differentiating our technologies and services in these fields, we aim to grow sales and profit.

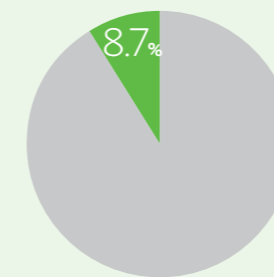
As the miniaturization of DRAM and logic chips continues and the number of layers in 3D NAND increases, the use of new materials and increasingly complex device structures are creating greater technological challenges. To turn these business opportunities into growth, in the area of etch, we will strengthen our competitive advantage based on process performance and productivity in HARC,² interconnects and patterning processes. In deposition, we boast technologies for batch, semi-batch and single wafer processes, and we will leverage this strength to offer optimal deposition methods while advancing the development of technologies for new materials. In cleaning, we will provide technologies to reduce fine pattern collapse and remove foreign particles and residue that reduce yields. In these ways, Tokyo Electron seeks to expand its SAM³ share in its three key fields.

In the longer term, the importance of co-optimizing multiple processes will grow, creating greater needs for services that help increase uptime and yields. Tokyo Electron will leverage the insights provided by its diverse product lineup to conduct joint development with customers from the early stages of each new technology node. By doing so, we aim to be at the forefront in offering integration technologies that realize co-optimization. In addition, by providing services with higher added value, such as remote equipment maintenance and equipment diagnosis using AI, we aim to achieve further business growth.

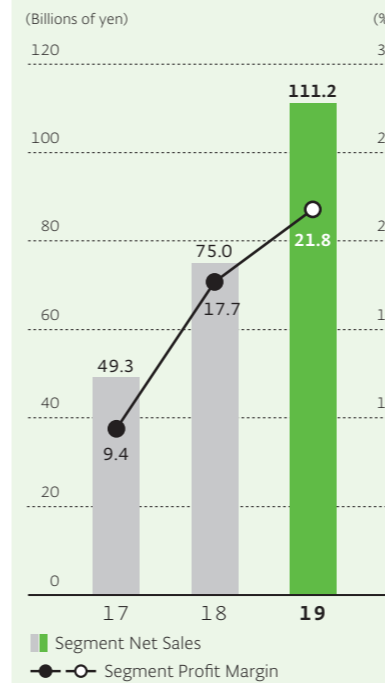
² HARC (High aspect ratio contact) process: A process for forming deep holes or trenches that requires advanced processing technology
³ SAM: Served available market

FPD Production Equipment

Share of Net Sales



Segment Net Sales and Profit Margin



Segment profit corresponds to income before income taxes on the consolidated statements of income.

2018 Business Environment

Capital investment in small- and medium-sized panels edged down year on year, reflecting stagnant demand for OLED panels for smartphones and other mobile devices. However, capital investment in generation 10.5 LCD panels for large-sized TVs over 65 inches increased significantly year on year. As a result, the equipment market for TFT array processes,¹ in which Tokyo Electron operates, remained strong at about US\$9.8 billion.

¹ TFT (Thin-film transistor) array process: The process of manufacturing the substrates with the electric circuit functions that drive displays

Fiscal 2019 Business Overview

Segment net sales rose 48.2% year on year to ¥111.2 billion.

The segment profit margin reached 21.8%, a record high, due to product differentiation in each generation.

- Tokyo Electron expanded its highly profitable PICP™² etch systems from small- and medium-sized panels to generation 8.5 panels.
- Tokyo Electron used its track record in generation 10 panels to secure a large share of the equipment market for generation 10.5 panels.

² PICP™: A plasma source that produces extremely uniform high-density plasma on panel substrates

Business Outlook

In the FPD market, technological innovation is expected in both products for mobile devices and for TVs. In response to increasingly advanced technological requirements, Tokyo Electron aims to achieve differentiation using its superior process technologies to expand its market share and raise the operating margin to 30%.

In small- and medium-sized panels for mobile devices, in addition to such technologies as LTPS³ and IGZO⁴ that enable even greater resolution, self-lighting OLED panels and foldable devices made with flexible displays are expected to gain broader utilization going forward. These changes will drive an increase in the number of masks and dry etch processes as well as a need for more precise patterning. Tokyo Electron will further enhance the performance of its dry etch systems and coater/developers to leverage these expanding business opportunities and achieve business growth.

Looking at large-sized panels, a shift from LCD to OLED is expected across a wide range of applications, including televisions, high-end monitors, and displays installed in vehicles and public places. Tokyo Electron will maintain its competitive advantage in generation 10.5 panels while expanding its PICP™ etch systems, which provide superior processing uniformity, from small- and medium-sized panels to generation 8.5 and 10.5 panels. Furthermore, Tokyo Electron has begun sales of inkjet printing systems, which until now it has sold only for large-sized panels, for generation 4.5 panels in anticipation of expansion in OLED panel applications. Tokyo Electron's inkjet printing systems can be used to manufacture high-resolution panels for 8K TVs and monitors. Leveraging the overwhelmingly high productivity of the inkjet method, Tokyo Electron will take advantage of the coming mass production of OLED displays.

³ LTPS: Low temperature poly-silicon

⁴ IGZO: An oxide semiconductor containing indium, gallium and zinc