



Ferrotec Holdings Corporation

Results for the fiscal year ended March 31, 2019

May 27, 2019
(JASDAQ 6890)

<http://www.ferrotec.co.jp/>

1. This fiscal year results cover twelve months period from April to March of Ferrotec, and twelve months period from Jan. to Dec. of consolidated subsidiaries and affiliated companies included in investment profit loss in equity method.
2. This presentation was prepared for the purpose of providing information regarding the company's results of operations for the fiscal year ended March 31, 2019 and is not a solicitation to purchase securities issued by the company. Please ensure that the decision on whether to make an investment in our company is made at your own risk.
3. These materials were prepared based on information available as of May 27, 2019. All opinions, forecasts and other forward-looking statements are based on management's judgments in accordance with materials available at that time and may be changed without prior notice.



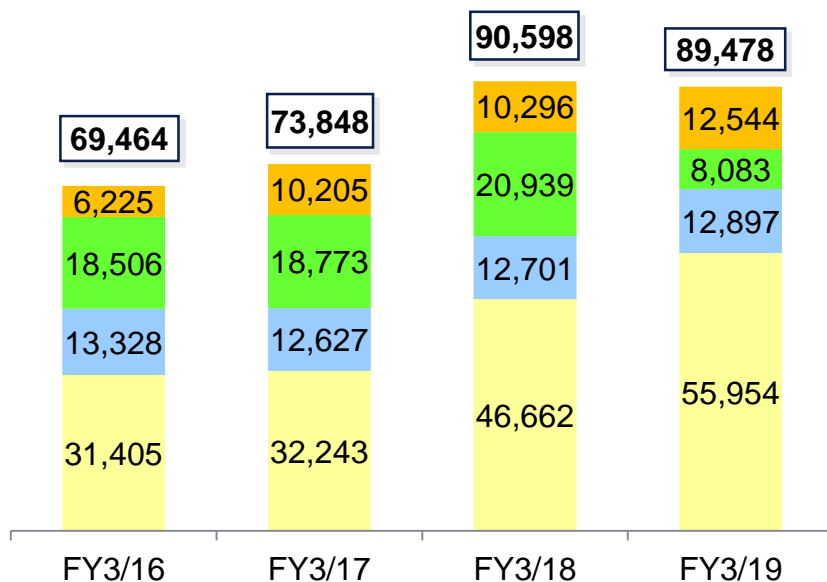
FY March 2019 Financial Results

Sales and Operating Income Trend

Sales Trend

(¥ in millions)

■ Semiconductor and other equipment-related ■ Electronic device ■ PV ■ Others

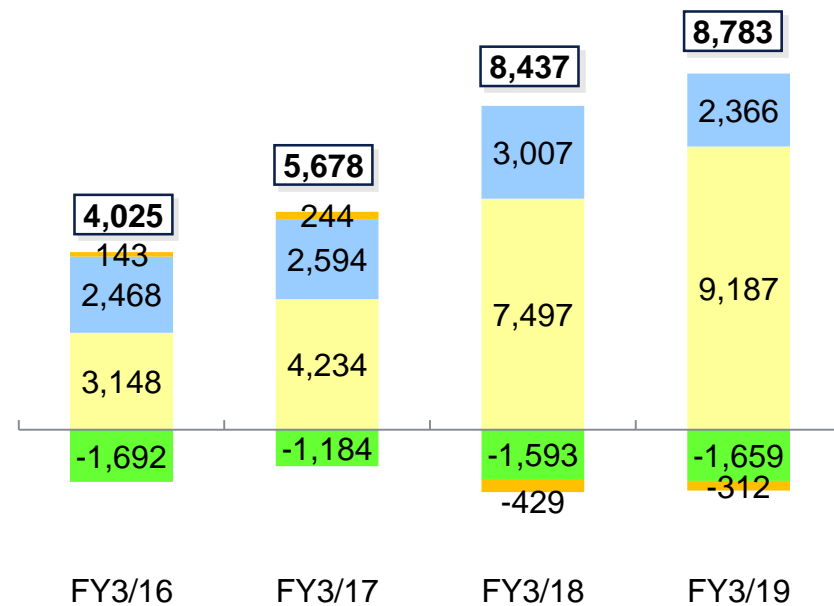


Note: Equipment parts cleaning has been included in semiconductor and other equipment-related segment from FY 3/18.

Operating income Trend

(¥ in millions)

■ Semiconductor and other equipment-related ■ Electronic device ■ PV ■ Others



Note: The difference between the sums and totals in each segment is due to transactions between segments.

Consolidated Financial Summary

¥ in millions	FY3/18		FY3/19		YOY	
	Amount	Pct. Of sales (%)	Amount	Pct. of sales (%)	Amount	Pct. change (%)
Net sales	90,598	100.0	89,478	100.0	- 1,120	- 1.2
Cost of sales	65,683	72.5	62,341	69.7	- 3,342	- 5.1
Gross income	24,915	27.5	27,137	30.3	2,222	8.9
SG&A expenses	16,478	18.2	18,354	20.5	1,876	11.4
Operating income	8,437	9.3	8,783	9.8	346	4.1
Non-operating income	670	0.7	1,054	1.2	384	57.3
Non-operating expense	1,949	2.2	1,777	2.0	- 172	- 8.8
Ordinary income	7,158	7.9	8,060	9.0	902	12.6
Extraordinary income	122	0.1	648	0.7	526	431.1
Extraordinary loss	1,779	2.0	3,066	3.4	1,287	72.3
Net income attributable to owners of parent	2,678	3.0	2,846	3.2	168	6.3
Capital Investment	12,300	-	35,953	-	23,653	192.3
Depreciation	4,188	-	5,755	-	1,567	37.4

Note: Exchange rate FY3/18⇒FY3/19: US\$ ¥112.04 → ¥110.36; RMB ¥16.63 → ¥16.64 (Avg. during period)

Capital investment is based on cash flow for acquiring tangible and intangible fixed assets considering unprojected large-scale capital investment and accounts payable facilities at the end of previous fiscal year.

Consolidated Financial Summary

¥ in millions	FY3/19	
	Amount	Pct. of sales (%)
Net sales	89,478	100.0
Cost of sales	62,341	69.7
Gross income	27,137	30.3
SG&A expenses	18,354	20.5
Operating income	8,783	9.8
Non-operating income	1,054	1.2
Non-operating expense	1,777	2.0
Ordinary income	8,060	9.0
Extraordinary income	648	0.7
Extraordinary loss	3,066	3.4
Income before income tax	5,642	6.3
Corporate tax, etc.	2,796	3.1
Net income attributable to owners of parent	2,846	3.2

Gross income rose for semiconductor and other equipment-related segment, and as a result, gross profit margin rose to 30.3% from 27.5% in the previous fiscal year.

As a result of a 1,009 million yen increase in experimental research costs, the SG&A expenses to sales ratio grew to 20.5% from 18.2% in the previous fiscal year.

Equity-accounted investment income: ¥556 million
Interest expense: ¥778 million
Exchange loss: ¥12 million

Impairment loss on fixed assets in the PV-related business: ¥2,101 million
Impairment loss on a CVD reactor at Korean subsidiary: ¥305 million

Sales and Operating Income by Segment

Net sales (¥ in millions)	FY3/18		FY3/19		YOY	
	Amount	Pct. of sales (%)	Amount	Pct. of sales (%)	Amount	Pct. change (%)
Semiconductor and other equipment-related	46,662	51.5	55,954	62.5	9,292	19.9
Electronic device	12,701	14.0	12,897	14.4	196	1.5
Photovoltaic-related	20,939	23.1	8,083	9.0	- 12,856	- 61.4
Others	10,296	11.4	12,544	14.0	2,248	21.8
Total	90,598	100.0	89,478	100.0	- 1,120	- 1.2

Operating income (¥ in millions)	FY3/18		FY3/19		YOY	
	Amount	Pct. of sales (%)	Amount	Pct. of sales (%)	Amount	Pct. change (%)
Semiconductor and other equipment-related	7,497	16.1	9,187	16.4	1,690	22.5
Electronic device	3,007	23.7	2,366	18.3	- 641	- 21.3
Photovoltaic-related	-1,593	-	-1,659	-	- 66	-
Others	-429	-	-312	-	117	-
Corporate & elimination	-45	-	-799	-	- 754	-
Total	8,437	9.3	8,783	9.8	346	4.1

Consolidated Balance Sheet ~Assets~

(¥ in millions)	FY3/18	FY3/19	Difference
Current assets	66,827	77,271	10,444
Cash & deposits	23,649	31,556	7,907
Note & accounts receivable	20,700	21,461	761
Inventory	16,774	16,277	- 497
Fixed assets	51,631	85,827	34,196
Tangible fixed assets	43,542	76,133	32,591
Building	10,355	10,789	434
Equipment & machinery	12,565	17,428	4,863
Tools, furniture, and fixture	7,305	8,422	1,117
Land	1,589	1,562	- 27
Intangible fixed assets	2,922	3,557	635
Goodwill	378	166	- 212
Investments & other assets	5,167	6,137	970
Total assets	118,458	163,098	44,640

[Main reason for increase in current assets]
Increased cash and deposits due to bank loans and issuing of bonds

[Main reason for increase in tangible fixed assets]
Construction in progress increased 26,341 million yen (from 11,186 million yen to 37,527 million yen) due to investing in production equipment for large-diameter wafers

[Main reason for increase in intangible fixed assets]
Land-use rights at a Chinese subsidiary increased by 739 million yen, 516 million yen at a company in Yinchuan City that manufactures silicon for large-diameter wafers, 131 million yen at a cleaning company in Tongling City, etc.

Consolidated Balance Sheet ~Liabilities and Net Assets~

(¥ in millions)	FY3/18	FY3/19	Difference
Current liabilities	43,477	60,180	16,703
Notes and accounts payable	18,419	20,887	2,468
Short-term debt	5,875	9,603	3,728
Current portion of long-term borrowings + bonds	5,644	10,743	5,099
Fixed liabilities	23,168	53,070	29,902
Bonds	2,418	11,225	8,807
Long-term debt	11,478	29,505	18,027
Total liabilities	66,645	113,250	46,605
Net assets	51,813	49,848	- 1,965
Shareholder's equity	43,856	45,793	1,937
Total accumulated other comprehensive income	7,450	3,705	- 3,745
Non-controlling interests	503	324	- 179
Total liabilities & shareholder's equity	118,458	163,098	44,640

[Main reason for increase in current liabilities]

Increased due to bank loans and issuing of bonds for capital investment in China

[Status of interest-bearing debt]

*Parentheses represent the figures as of end-FY3/18

Short-term debt + current portion of long-term borrowings + bonds: ¥20,346 million (11,518)

Long-term debt + bonds: ¥40,730 million (13,896)

Total: ¥61,076 million (25,415)

[Net interest-bearing debt: ¥29,521 million (1,766)]

[Net assets]

Breakdown:

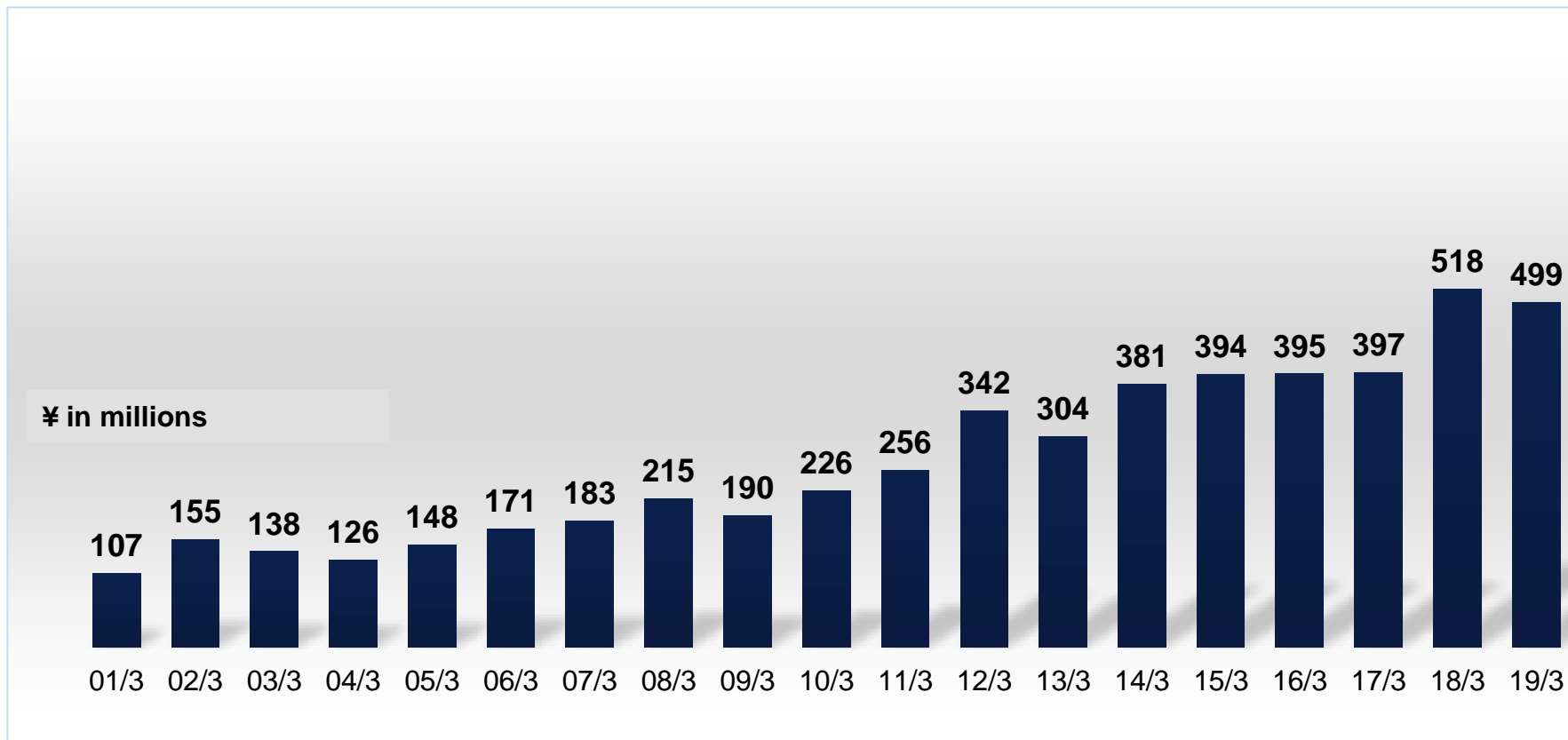
Net income attributable to owners of parent: ¥2,846 million

Dividends: -¥888 million

Foreign currency translation adjustments: -¥3,704 million

Note: Exchange rate FY3/18→FY3/19: US\$ ¥113.00 → ¥111.00; RMB ¥17.29 → ¥16.16 (as of March 31, 2019)

Transition of Consolidated Net Assets



Consolidated Cash Flow

¥ in millions	FY3/18	FY3/19
Cash flow from operating activities	9,947	11,466
Income before income tax	5,501	5,642
Depreciation	4,188	5,755
Exchange gain & loss (- : gain)	- 134	481
Changes in notes & accounts receivable (- : increase)	- 2,435	- 2,057
Changes in inventories (- : increase)	- 2,604	- 157
Changes in accounts payable (- : decrease)	3,931	1,543
Others	1,500	259
Cash flow from investing activities	- 12,389	- 37,063
Payments for purchase of tangible fixed assets	- 11,087	- 34,811
Proceeds from sales of tangible fixed assets	116	5
Payments for purchase of intangible fixed assets	- 1,212	- 1,142
Payments for purchase of affiliate shares	-	- 682
Others	- 206	- 433
Cash flow from financing activities	10,831	34,507
Changes in short-term debt	728	4,038
Proceeds from long-term borrowings	4,148	27,634
Payments of long-term borrowings	- 4,786	- 5,846
Proceeds from the issuance of bonds	3,245	11,174
Proceeds from the issuance of shares	8,712	6
Others	- 1,216	- 2,499
Changes in cash & cash equivalents	8,810	7,907
Cash and cash equivalents, beginning of year	14,778	23,649
Cash and cash equivalents, end of year	23,649	31,556

[Operating cash flow]

**Income before income tax + depreciation :
¥11,397 million**

**Decrease in operating CF due to increase
in notes & accounts receivable :
-¥2,057 million**

**Increase in operating CF due to decreased
accounts payable :
¥1,543 million**

[Investing cash flow]

**Main content of payments for tangible and intangible
fixed assets acquired**

- Investment into large-diameter wafer-related equipment in Hangzhou, China: ¥12,561 million
- Investment into large-diameter wafer-related equipment in Yinchuan, China: ¥6,002 million
- Investment into cleaning equipment in Tongling, China: ¥1,502 million

Full-Year Forecast

(¥ in million)	FY3/19	FY3/20 (Est.)	YoY (%)
Net sales	89,478	92,000	2.8
Operating income	8,783	8,800	0.2
Ordinary income	8,060	8,100	0.5
Net income attributable to owners of parent	2,846	4,700	65.1
Capital Investment	35,953	48,000	33.5
Depreciation	5,755	8,000	39.0

Note: Exchange rate FY3/19⇒FY3/20: US\$ ¥110.36 → ¥110.00; RMB ¥16.64 → ¥ 16.00 (Avg. during period)

Capital investment is based on cash flow for acquiring tangible and intangible fixed assets considering unprojected large-scale capital investment and accounts payable facilities at the end of previous fiscal year

Full-Year Forecast

(¥ in million)	FY3/20 Est.	
Net sales	92,000	Investment into the semiconductor industry is forecast to begin once again from the second half of the year. The sale of parts cleaning and power substrates will grow, and mass production of 8-inch wafers will also contribute to sales, but photovoltaic-related sales are expected to decline.
Operating income	8,800	Due to depreciation resulting from mass production of 8-inch wafers for semiconductor and other equipment-related segment, and the effects of the mixture of withdrawing from photovoltaic-related segment, operating income is estimated to be mostly unchanged.
Ordinary income	8,100	The difference between non-operating income and non-operating expense is estimated to be roughly 700 million yen.
Net income attributable to owners of parent	4,700	The dollar-yen foreign exchange sensitivity is 1 yen per year: the effect on the sales amount is estimated to be about 1,000 million yen, on operating income about 65 million yen, and effective tax rate is expected to be around 40%.

Business Forecast (Sales by Segment)

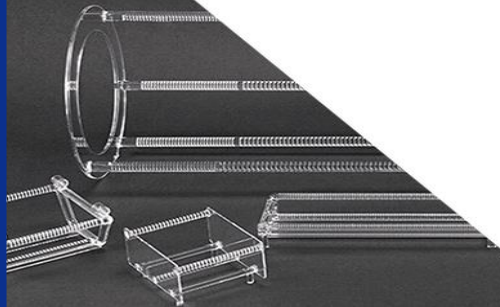
¥ in millions	FY3/19	FY3/20 (Est.)	YoY (%)
Semiconductor and other equipment-related	55,954	60,800	8.7
Vacuum feedthroughs	11,889	8,500	- 28.5
Quartz	15,590	16,800	7.8
Ceramics	10,221	10,200	- 0.2
CVD-SiC	2,800	2,600	- 7.1
EB-Gun, LED	4,750	3,800	- 20.0
Semiconductor wafer	7,236	10,500	45.1
Equipment parts cleaning	3,468	6,600	90.3
Quartz crucibles (segment changed from FY3/20)	-	1,800	-
Electronic device	12,897	14,900	15.5
Thermo-electric module	11,930	13,700	14.8
Ferrofluid, others	967	1,200	24.1
Photovoltaic-related	8,083	4,900	- 39.4
Quartz crucibles (segment changed from FY3/20)	1,072	-	-
Solar silicon	3,620	3,400	- 6.1
PV manufacturing equip.	116	0	- 100.0
Solar cell, others	3,275	1,500	- 54.2
Others	12,544	11,400	- 9.1
Total	89,478	92,000	2.8



Ferrotec
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Status by Segment and Outlook



Products by Segment

63% Semiconductor and other equipment-related

Vacuum feedthroughs

Quartz

Ceramics

CVD-SiC

14% Electronic device

Ferrofluid

Thermo-electric module

Substrates for power semiconductor

9% Photovoltaic-related

PV silicon (ingot) [OEM]

Monocrystal ingot

Multi-crystal ingot

PV wafer

Solar cell

125 R150

125 R165

156 R200

Consumable

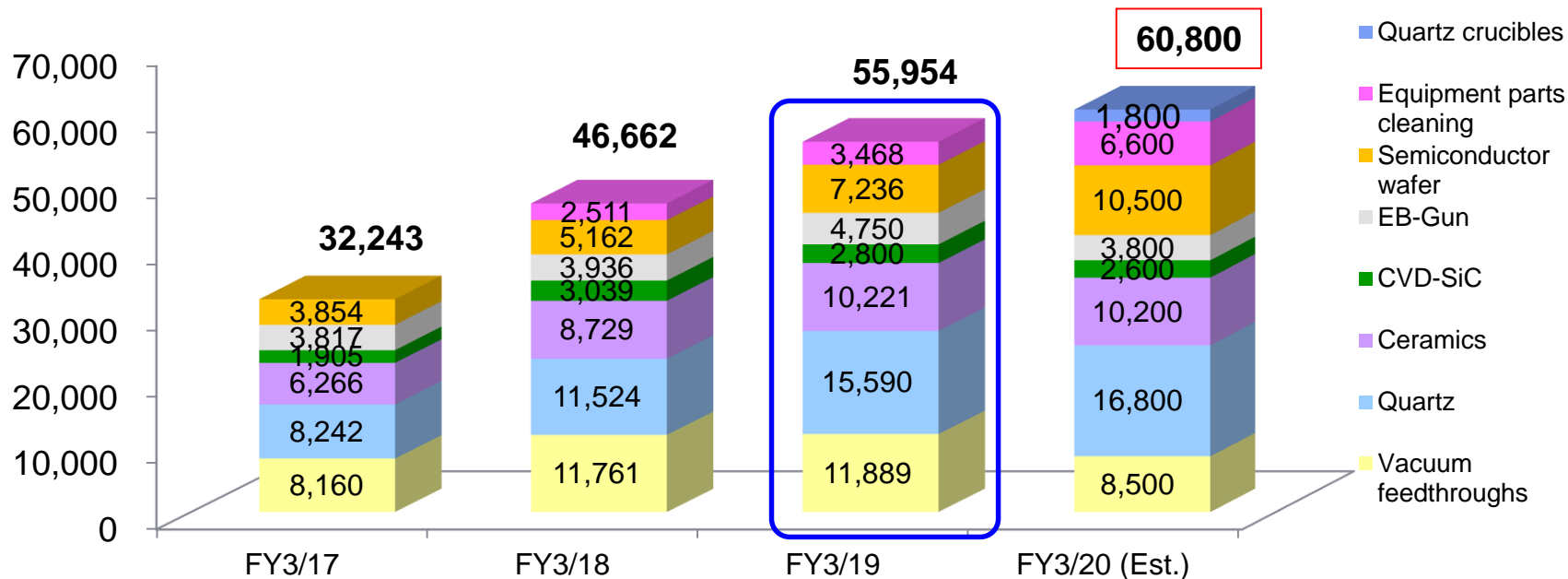
Quartz crucible

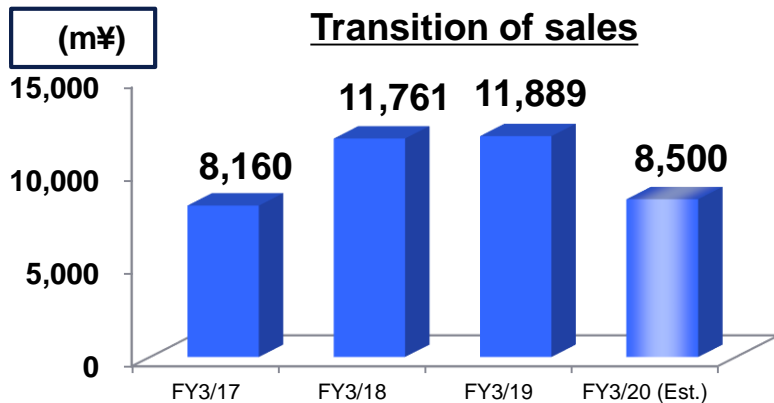
*The circle graph represents the pct. of each segment in FY3/19 sales.

Semiconductor and other Equipment-related

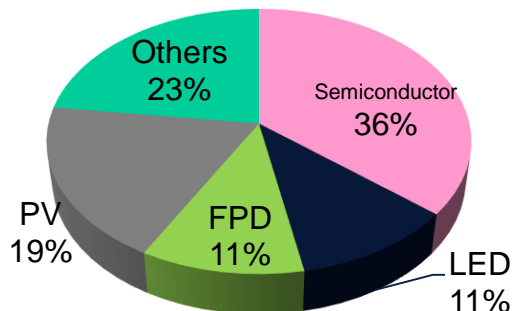
Sales
(¥ in million)

*Quartz crucibles are added in FY3/20 due to reallocation of segments.





Sales by category



Note) Others: Vacuum feedthrough equipment for industrial use, aviation, medical care, science, etc.

1. Status for FY3/19

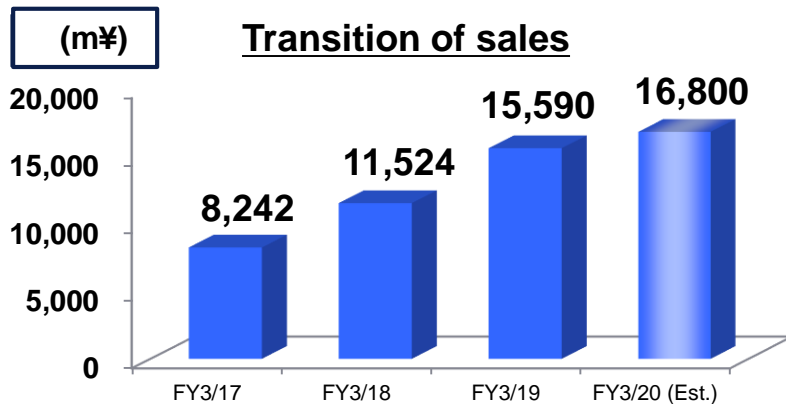
- Sales of vacuum feedthroughs for semiconductor manufacturing equipment were on a weak trend in the second half due to postponed investments into memory device.
- In the FPD market as well, sales of vacuum feedthroughs for organic EL and LCD were sluggish from the second quarter.
- Demand for contract processing declined in the second half, particularly for PV and semiconductor manufacturing equipment. This resulted in a decline in sales.

2. Outlook for FY3/20

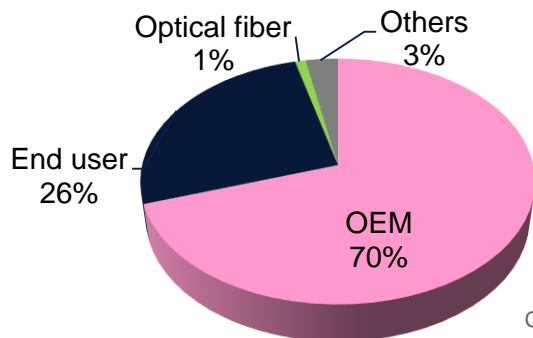
- Sales of vacuum feedthroughs for semiconductor manufacturing equipment are expected to be on a recovery trend in the end of 2019, when full-scale investment into memory device will be resumed.
- Sales of organic EL and LCD in the FPD market are expected to be on a slow recovery trend from the second half.
- As for contract processing, since demand for vacuum feedthroughs for products other than semiconductor manufacturing equipment is still weak, we aim to secure a fixed rate of operation by capturing demand in these sectors.

<Measures>

- Continue joint development projects with manufacturers of semiconductor manufacturing equipment
- Capital investments for large processing machinery
- Strengthen ties among Ferrotec Group companies to generate synergies
- Strengthen sales in the Chinese market, utilizing Group companies' existing channels and brands



Sales by category



1. Status for FY3/19

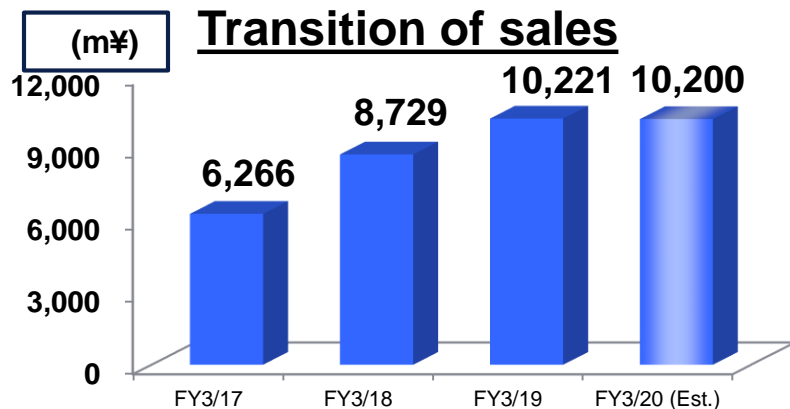
- Investment in semiconductor facility also remained strong in the first half. Investment in semiconductor manufacturing equipment declined in the second half, but quartz consumables continued to show steady repeat demand.
- Sales of Si boats and Si parts for high temperature processes increased.

2. Outlook for FY3/20

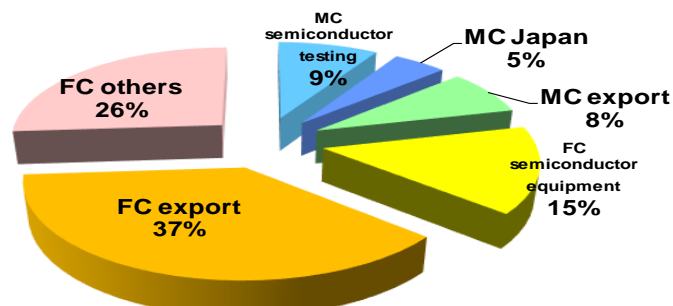
- There was a break in investment into semiconductor production equipment for DRAM and 3D-NAND memory during the first half of 2019. Capital investment is expected to increase in 2020.
- Sales of power devices for 200mm vehicles and EVs are forecast to be strong.
- Plan to increase production capacity of facilities such as two Chinese bases (Changshan and Dongtai) established in 2018, and one Japanese base (Yamagata). We will steadily increase sales to meet the full recovery of customer demand in the second half.
- Sales are expected to increase for Si boats used in fine-pitch high temperature processes and Si parts for vacuum etchers.

<Measures>

- Increase production capacity in response to increased demand from major OEMs. Establish new factories in China. (Operation started at 2 new factories: Changshan Factory and Dongtai Factory)
- Work more actively on development projects involving next-generation and later-generation devices. (In Yamagata, Japan, a development base and factory for next-generation product development will begin operations in May 2019.)



Sales by category



*FC (Fine Ceramics), MC (Machinable Ceramics “Photoveel”)

1. Status for FY3/19 (Jan. - Dec.)

Machinable ceramics “Photoveel”

- Strong overseas sales of materials for semiconductor inspection jigs
- Strong overseas sales of medical parts
- Weak domestic sales of semiconductor inspection jigs

Fine ceramics

- Strong overseas sales of parts for etching equipment
- Weak domestic sales of parts for manufacturing equipment and etching equipment in the second half

2. Outlook for FY3/20 (Jan. - Dec.)

Machinable ceramics “Photoveel”

- Domestic sales of semiconductor inspection jigs are projected to be on a recovery trend. Sales of new type of inspection jigs are expected to grow due to miniaturization.
- Sales of ceramics for the general industry are expected to be healthy.

Fine ceramics

- Domestic sales of parts for manufacturing equipment are projected to be healthy.
- Overseas demand for manufacturing equipment parts is expected to be low.

3. Continued sales policy

Machinable ceramics

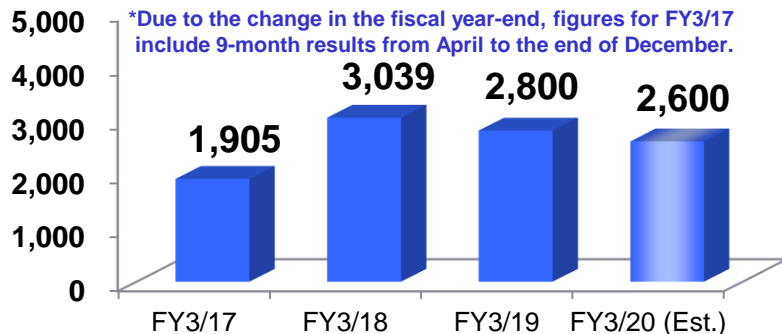
- Focus on sales of new inspection jigs for miniaturization
- Focus on increasing sales of highly-functional machinable ceramics

Fine ceramics

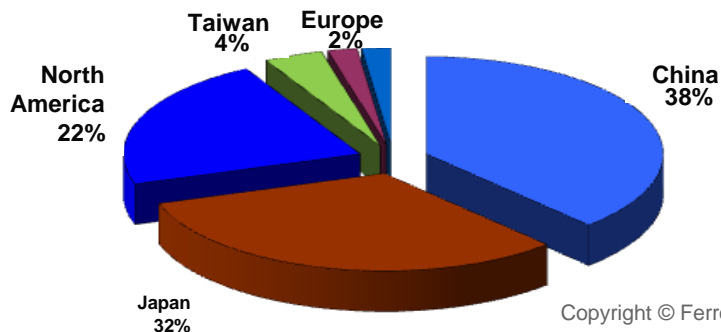
- Focus on a wide range of sales both domestic and overseas, from semiconductor equipment parts to machine parts for general industries

(m¥)

Transition of sales



Sales by region



1. Status for FY3/19

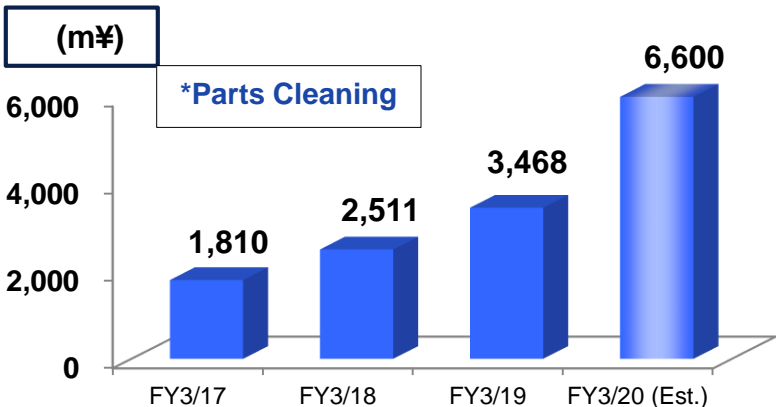
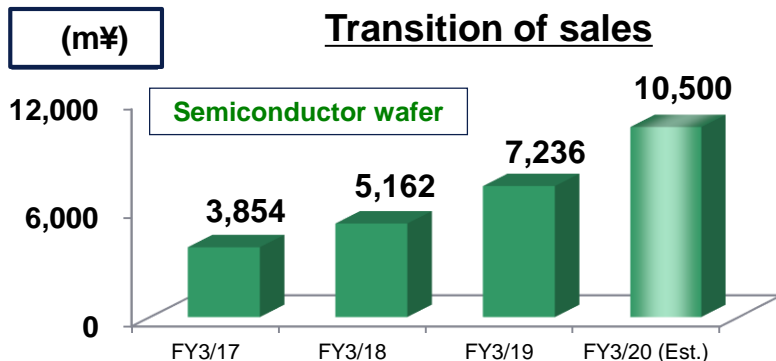
- Although components for semiconductor manufacturing equipment mostly stayed on a healthy trend in Japan and overseas, sales declined slightly near the end of the fiscal year.
- Demand for high-purity heat resistant components used in SiC epitaxial growth equipment increased.

2. Outlook for FY3/20

- Sales of components for semiconductor manufacturing equipment will be sluggish until around September due to postponed investment into equipment and inventory adjustment. Recovery is expected from October.
- Sales of high-purity heat resistant components used in SiC epitaxial growth equipment will be steady and expected to increase further in 2020.

<Measures>

- Increase sales of consumable materials for semiconductor manufacturing equipment and maintain production system.
- Focus on recruiting makers of semiconductor manufacturing equipment in Japan and China.
- Strengthen development and trial production system in the SiC semiconductor field.



*Falls under "Other" segment until FY3/17; from FY3/18 onwards, moved to semiconductor and other equipment-related segment.

Semiconductor wafers:

1. Status for FY3/19

- Since the second quarter, the market has been healthy and 6-inch wafers have been produced at a rapid pace.
- Production of 8-inch wafers was resumed in July 2018, and a system to produce 100,000 of them per month was established in December of the same year.

2. Outlook for FY3/20

- We will continue to produce 6-inch wafers at a rapid pace, setting the baseline at 400,000 per month.
 - Aiming to increase full-year sales of 8-inch wafers, with 100,000 per month produced in Shanghai as a baseline.
- <Measures>
- Focus on installation and startup of equipment for 8-inch wafers at the new Hangzhou factory during the first half.
 - Establish a monthly production capacity of 450,000 units (including 100,000 units in Shanghai) during FY2020.

Parts Cleaning :

1. Status for FY3/19

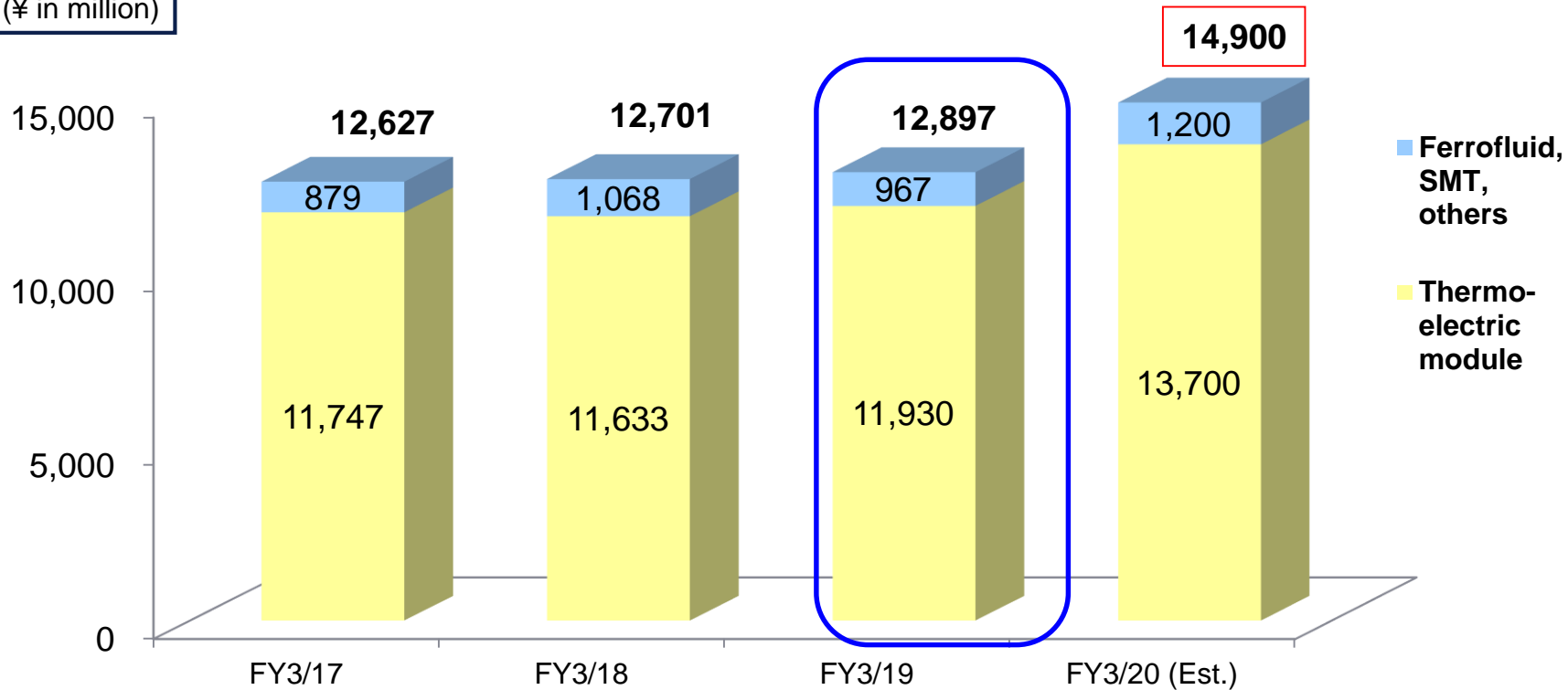
- Sales grew 38% year on year as purchases from semiconductor customers increased.
- Made progress towards preparing for medium-term production increase, building a new base in Tongling, Anhui, and a second plant in Neijiang, Sichuan.

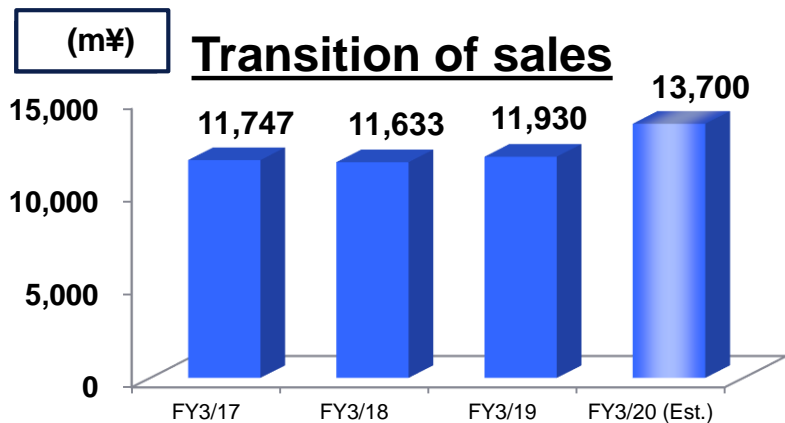
2. Outlook for FY3/20

- With the increased production capacity from two new bases, revenue is projected to grow 90% year on year.
- <Measures>
- Determine demand trends of customers for semiconductors and FPD in China, and discuss further production increase if necessary.

Electronic Device Segment

Sales
(¥ in million)





1. Status for FY3/19

Modules for automobiles

- Sales of modules for seat temperature controllers declined.
- Expanded the range of applications for next-generation automobiles.

Other applications

- Strong production of modules for semiconductor manufacturing equipment and consumer products
- Sales of power substrates increased 38% year on year due to increased production capacity at the new base.

2. Outlook for FY3/20

Modules for automobiles

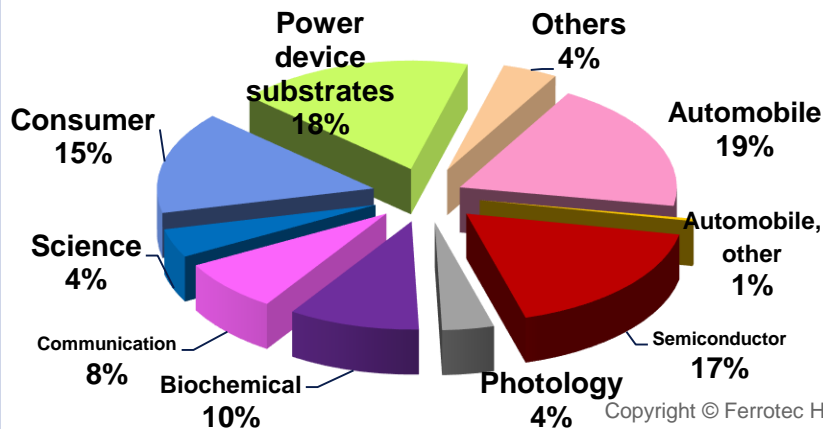
- Sales of modules for seat temperature controllers are expected to also decline.
- Focus on trial production and development of temperature control modules for next-generation automobiles

Other Applications

- Demand is expected to increase for modules used in communication equipment such as 5G.
- Demand is expected to increase for power substrates, and we will continue to raise production capacity.

[Measures]

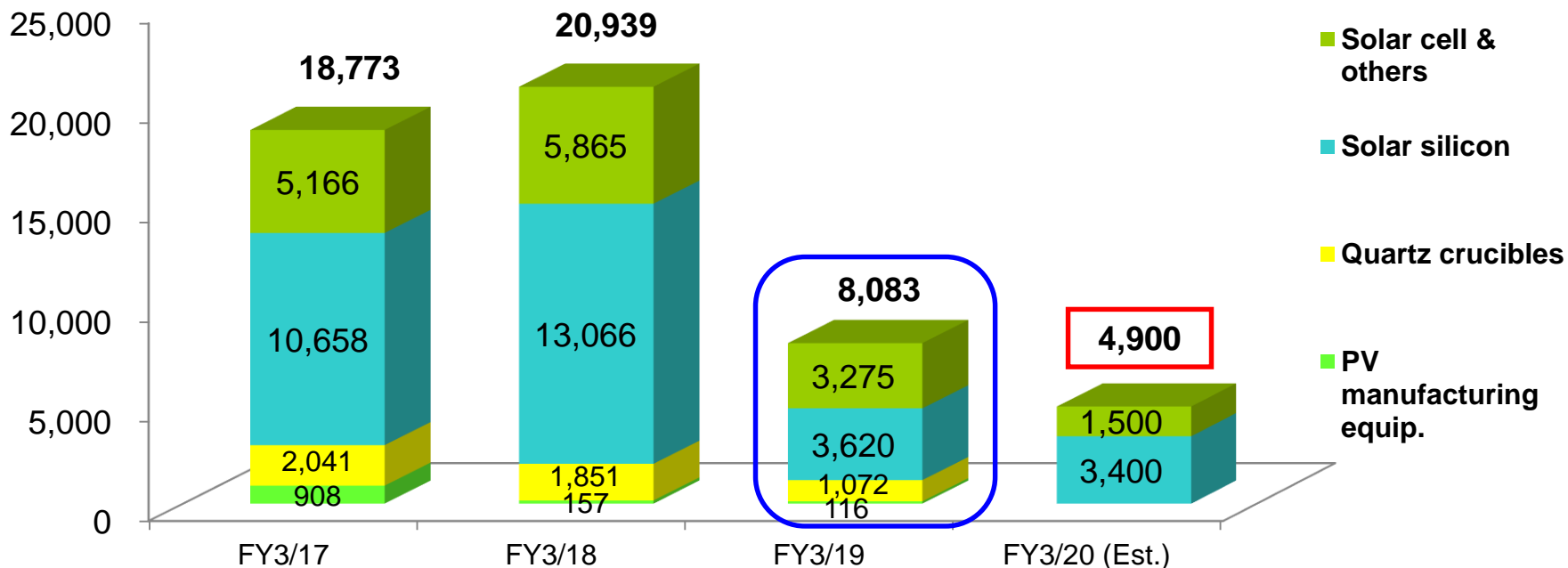
- Expand sales activities worldwide for thermo-electric module subassembly.
- Further strengthen sales of modules used in automobiles, aiming for mass production in 3-5 years
- Strengthen sales of new materials for power substrates (silicon nitride and aluminum nitride materials)



Photovoltaic-related Segment

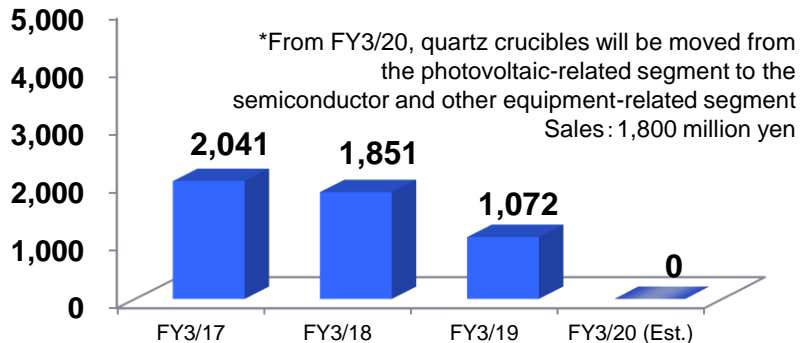
Sales
(¥ in million)

*Quartz crucibles are omitted from FY3/20 due to reallocation of segments.

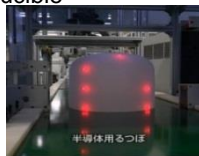


(m¥)

Transition of sales

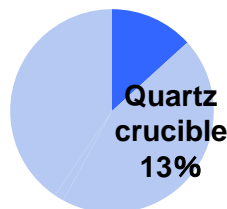


Mono-crystal quartz crucible



Semiconductor crucible

Pct. of sales in the PV segment
FY3/19



1. Status for FY3/19

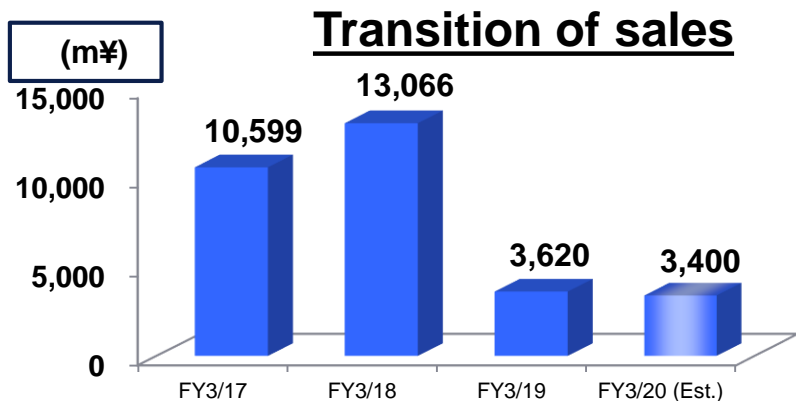
- Strengthened sales for high-value-added semiconductor crucibles, and improved profitability.
- Strong sales of semiconductor crucibles and 8-inch wafer large-scale crucibles
- Narrowed sales of PV to some large-diameter modules only

2. Outlook for FY3/20

- The sale of semiconductor crucibles, which accounts for roughly 70% of sales, is expected to increase.
- Quartz crucibles will be moved to the semiconductor and other equipment-related segment from FY3/20.

<Measures>

- Increase sales of semiconductor crucibles by focusing on semiconductor applications.
 - Start operations at a factory devoted solely to semiconductor crucibles (clean-up, automation of post processing).
 - 32-inch crucible will be introduced.
- Mass production is scheduled to start in the second half of 2019.



Monocrystal ingot

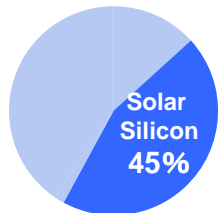


Multi-crystal ingot

Pct. of sales in the PV segment
FY3/19



PV wafer



1. Status for FY3/19

- Market prices remained low throughout the year.
- Withdrew from independent sales to improve profitability. Focused on OEM production.

2. Outlook for FY3/20

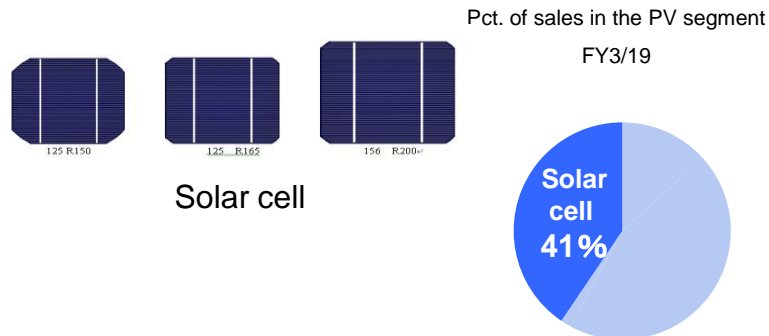
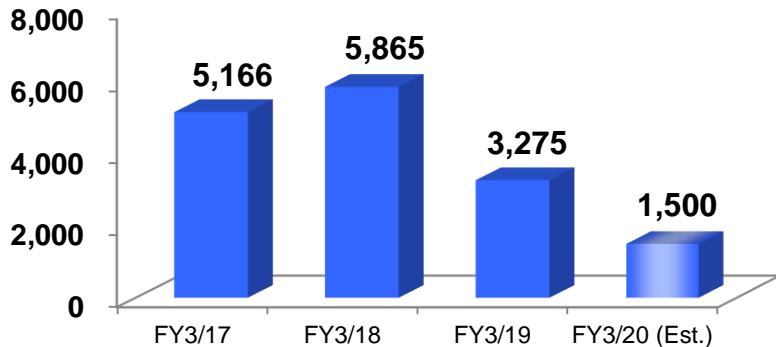
- Focus on monocrystal wafers and multi-crystal ingots for OEMs

<Measures>

- Improve quality of OEM products with low oxygenation and slice thinning.
- Cease production of unprofitable product types.
- Further reduce inventory.
- Dispose of unnecessary equipment.

(m¥)

Transition of sales



1. Status for FY3/19

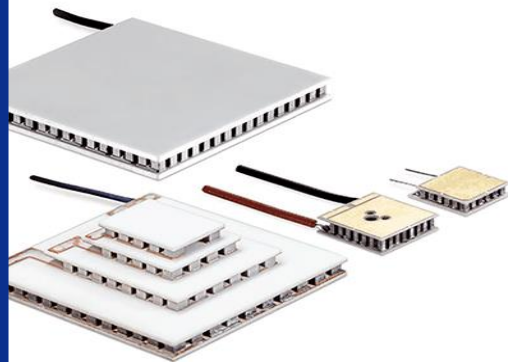
- Prices remained low, influenced by a review of subsidy policies by the Chinese government.
- Withdrew from independent sales to improve profitability. Focused on OEM production

2. Outlook for FY3/20

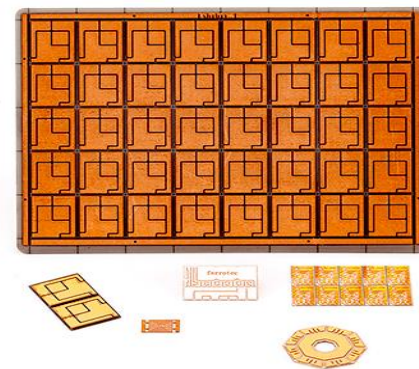
- Focus on OEM production only; full-year sales estimated to be roughly 1,500 million yen.
- Determine when to withdraw from OEM production.

<Measures>

- Focus on OEMs.
- Continue working to reduce costs.
- Continue to improve conversion efficiency.









Ferrotec
Ferrotec Holdings Corporation



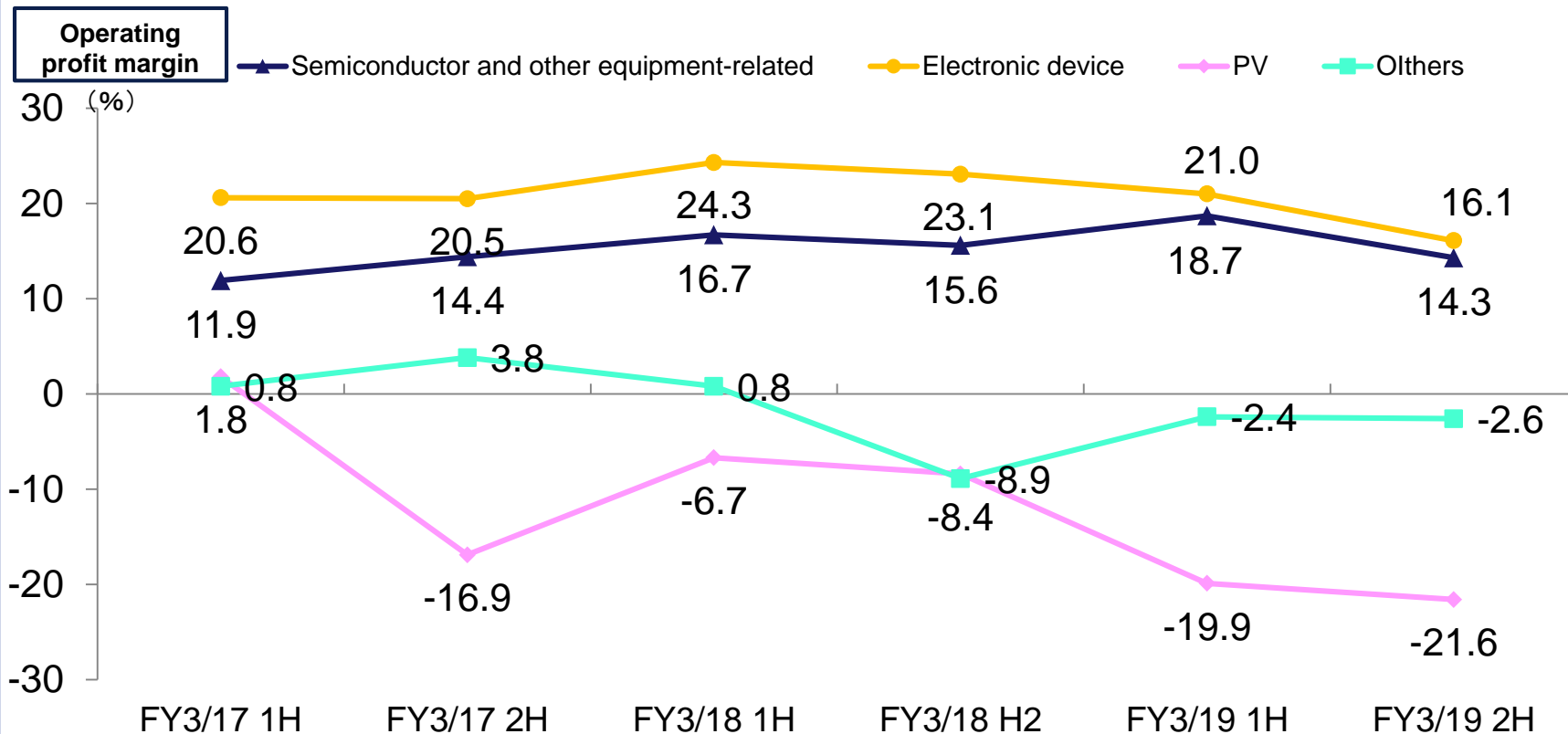
Appendix



Corporate Name	Ferrotec Holdings Corporation
Date of Foundation	September 27, 1980
Address	5 th floor of Nihonbashi Plaza Building, 2-3-4 Nihonbashi, Chuo-ku, Tokyo Japan
Listed on	JASDAQ (Listed Code : 6890)
President	Akira Yamamura
Business Segment	Business management and R&D operations of group companies
Capital	17,607,000,000 JPY
Issued Stock	37,106,702 shares (including 93,568 shares of treasury stock)
Related Company	[41 consolidated subsidiary] [7 companies accounted for by the equity method]
Employees	[Consolidated] 7,392, [Non-consolidated] 88

From 1980	From 1990	From 2000
<p>Started manufacturing and selling products using ferrofluids (computer seals, vacuum feedthroughs)</p> <p>Vacuum feedthroughs</p> 	<p>92 - Started manufacturing and selling thermo-electric modules and modules in China</p> <p>98 - Started manufacturing and selling quartz products for the semiconductor industry</p> <p>Thermo-electric module</p>  <p>Quartz</p> 	<p>02 - Started contract manufacturing service business for silicon wafer processing, machine tool production and other activities (Shanghai factory)</p> <p>05 - Started photovoltaic products business; started manufacturing and selling machinery and crucibles for manufacturing silicon ingots and crystals</p> <p>08 – Started manufacturing and developing ceramic products</p> <p>Ingot</p>  <p>Single crystal silicon growing furnaces</p>  <p>Machinable ceramics</p> 
<p>With a core of ferrofluid expertise</p> <p><i>~Ferrotec's core Technology~</i></p>	<p>Establishing operations in other countries</p> <p>91: Established subsidiary in Massachusetts, USA</p> <p>92: Established subsidiary in Hangzhou, China</p> <p>95: Established subsidiary in Shanghai, China</p> <p>97: Established subsidiary in Singapore</p> <p>99: Started operations in North America and Europe by acquiring Ferrofluidics</p>	<p>Building a new profit structure</p> <p>02: Started contract manufacturing service (CMS) business at the Shanghai factory, including silicon wafer processing, machine tool production and other activities</p> <p>Expertise in production technologies extending from component processing to final assembly allowed Ferrotec to start the CMS business</p> <p>05 : Increased manufacturing and sales activities for photovoltaic products in Hangzhou, China</p>

Operating Margin by Business Segment



Business Performance (FY3/19 Plan vs. Results)

¥ in millions	FY3/19 Plan		FY3/19 Results			
	Amount	Pct. of sales (%)	Amount	Pct. of sales (%)	Amount	Pct. change (%)
Semiconductor and other equipment-related	57,830	62.9	55,954	62.5	- 1,876	- 3.2
Vacuum feedthroughs	14,000	15.2	11,889	13.3	- 2,111	- 15.1
Quartz	10,899	16.2	15,590	17.4	4,691	43.0
Ceramics	11,100	12.1	10,221	11.4	- 879	- 7.9
CVD-SiC	2,900	3.2	2,800	3.1	- 100	- 3.4
EB-Gun, LED	4,631	5.0	4,750	5.3	119	2.6
Semiconductor wafer	6,600	7.2	7,236	8.1	636	9.6
Equipment parts cleaning	3,700	4.0	3,468	3.9	- 232	- 6.3
Electronic device	12,000	13.0	12,897	14.4	897	7.5
Thermo-electric module	11,050	12.0	11,930	13.3	880	8.0
Ferrofluid, others	950	1.0	967	1.1	17	1.8
Photovoltaic-related	9,000	9.8	8,083	9.0	- 917	- 10.2
Quartz crucibles	1,404	1.5	1,072	1.2	- 332	- 23.6
Solar silicon	4,371	4.8	3,620	4.0	- 751	- 17.2
PV manufacturing equip.	125	0.1	116	0.1	- 9	- 7.2
Solar cell, others	3,100	3.4	3,275	3.7	175	5.6
Others	13,170	14.3	12,544	14.1	- 626	- 4.8
Total	92,000	100.0	89,478	100.0	- 2,522	- 2.7
Gross income	27,468	29.9	27,137	30.3	- 331	- 1.2
SG&A expenses	17,668	19.2	18,354	20.5	686	3.9
Operating income	9,800	10.7	8,783	9.8	- 1,017	- 10.4
Ordinary income	8,500	9.2	8,060	9.0	- 440	- 5.2
Net income	5,300	5.8	2,846	3.2	- 2,454	- 46.3

*Net income=Net income attributable to owners of parent

*Some figures are rounded

Business Performance (FY3/19 1H vs. 2H)

¥ in millions	FY3/19 1st half		FY3/19 2nd half			
	Amount	Pct. of sales (%)	Amount	Pct. of sales (%)	Amount	Pct. change (%)
Semiconductor and other equipment-related	27,030	59.8	28,924	65.4	1,894	7.0
Vacuum feedthroughs	6,704	14.8	5,185	11.7	- 1,519	- 22.6
Quartz	7,300	16.1	8,290	18.8	990	13.6
Ceramics	5,302	11.7	4,919	11.1	- 383	- 7.2
CVD-SiC	1,291	2.9	1,509	3.4	218	16.9
EB-Gun, LED	2,458	5.4	2,292	5.2	- 166	- 6.8
Semiconductor wafer	2,360	5.2	4,876	11.0	2,516	106.6
Equipment parts cleaning	1,615	3.6	1,853	4.2	238	14.7
Electronic device	5,879	13.0	7,018	15.8	1,139	19.4
Thermo-electric module	5,451	12.1	6,479	14.6	1,028	18.9
Ferrofluid, others	428	0.9	539	1.2	111	25.9
Photovoltaic-related	5,166	11.4	2,917	6.6	- 2,249	- 43.5
Quartz crucibles	554	1.2	518	1.2	- 36	- 6.5
Solar silicon	2,687	5.9	933	2.1	- 1,754	- 65.3
PV manufacturing equip.	125	0.3	- 9	- 0.0	- 134	- 107.2
Solar cell, others	1,800	4.0	1,475	3.3	- 325	- 18.1
Others	7,156	15.8	5,388	12.2	- 1,768	- 24.7
Total	45,231	100.0	44,247	100.0	- 984	- 2.2

Gross income	13,877	30.7	13,260	30.0	- 617	- 4.4
SG&A expenses	8,808	19.5	9,546	21.6	738	8.4
Operating income	5,069	11.2	3,714	8.4	- 1,355	- 26.7
Ordinary income	4,866	10.8	3,194	7.2	- 1,672	- 34.4
Net income	2,825	6.2	21	0.0	- 2,804	- 99.3

*Net income=Net income attributable to owners of parent

*Some figures are rounded

Business Performance (FY3/18 vs. FY3/19)



¥ in millions	FY3/18 Results		FY3/19 Results			
	Amount	Pct. of sales (%)	Amount	Pct. of sales (%)	Amount	Pct. change (%)
Semiconductor and other equipment-related	46,662	51.5	55,954	62.5	9,292	19.9
Vacuum feedthroughs	11,761	13.0	11,889	13.3	128	1.1
Quartz	11,524	12.7	15,590	17.4	4,066	35.3
Ceramics	8,729	9.6	10,221	11.4	1,492	17.1
CVD-SiC	3,039	3.4	2,800	3.1	- 239	- 7.9
EB-Gun, LED	3,936	4.3	4,750	5.3	814	20.7
Semiconductor wafer	5,162	5.7	7,236	8.1	2,074	40.2
Equipment parts cleaning	2,511	2.8	3,468	3.9	957	38.1
Electronic device	12,701	14.0	12,897	14.4	196	1.5
Thermo-electric module	11,633	12.8	11,930	13.3	297	2.6
Ferrofluid, others	1,068	1.2	967	1.1	- 101	- 9.5
Photovoltaic-related	20,939	23.1	8,083	9.0	- 12,856	- 61.4
Quartz crucibles	1,851	2.0	1,072	1.2	- 779	- 42.1
Solar silicon	13,066	14.4	3,620	4.0	- 9,446	- 72.3
PV manufacturing equip.	157	0.2	116	0.1	- 41	- 26.1
Solar cell, others	5,865	6.5	3,275	3.7	- 2,590	- 44.2
Others	10,296	11.4	12,544	14.0	2,248	21.8
Total	90,598	100.0	89,478	100.0	- 1,120	- 1.2
Gross income	24,915	27.5	27,137	30.3	2,222	8.9
SG&A expenses	16,478	18.2	18,354	20.5	1,876	11.4
Operating income	8,437	9.3	8,783	9.8	346	4.1
Ordinary income	7,158	7.9	8,060	9.0	902	12.6
Net income	2,678	3.0	2,846	3.2	168	6.3
Capital Investment	12,300	-	35,953	-	23,653	192.3
Depreciation	4,188	-	5,755	-	1,567	37.4

Business Performance (FY3/19 vs. FY3/20 Plan)

¥ in millions	FY3/19 Results		FY3/20 Plan			
	Amount	Pct. of sales (%)	Amount	Pct. of sales (%)	Amount	Pct. change (%)
Semiconductor and other equipment-related	55,954	62.5	60,800	66.1	4,846	8.7
Vacuum feedthroughs	11,889	13.3	8,500	9.2	-3,389	-28.5
Quartz	15,590	17.4	16,800	18.3	1,210	7.8
Ceramics	10,221	11.4	10,200	11.1	-21	-0.2
CVD-SiC	2,800	3.1	2,600	2.8	-200	-7.1
EB-Gun, LED	4,750	5.3	3,800	4.1	-950	-20.0
Semiconductor wafer	7,236	8.1	10,500	11.4	3,264	45.1
Equipment parts cleaning	3,468	3.9	6,600	7.2	3,132	90.3
Quartz crucibles (segment changed from FY3/20)	-	-	1,800	2.0	1,800	-
Electronic device	12,897	14.4	14,900	16.2	2,003	15.5
Thermo-electric module	11,930	13.3	13,700	14.9	1,770	14.8
Ferrofluid, others	967	1.1	1,200	1.3	233	24.1
Photovoltaic-related	8,083	9.0	4,900	5.3	-3,183	-39.4
Quartz crucibles (segment changed from FY3/20)	1,072	1.2	-	-	-1,072	-
Solar silicon	3,620	4.0	3,400	3.7	-220	-6.1
PV manufacturing equip.	116	0.1	0	0.0	-116	-100.0
Solar cell, others	3,275	3.7	1,500	1.6	-1,775	-54.2
Others	12,544	14.1	11,400	12.4	-1,144	-9.1
Total	89,478	100.0	92,000	100.0	2,522	2.8
Gross income	27,137	30.3	28,062	30.5	925	3.4
SG&A expenses	18,354	20.5	19,262	20.9	908	4.9
Operating income	8,783	9.8	8,800	9.6	17	0.2
Ordinary income	8,060	9.0	8,100	8.8	40	0.5
Net income	2,846	3.2	4,700	5.1	1,854	65.1
Capital Investment	35,953	-	48,000	-	12,047	33.5
Depreciation	5,755	-	8,000	-	2,245	39.0

Business Performance (FY3/20 Plan 1st Half vs. 2nd Half)



¥ in millions	FY3/20 Plan 1st Half		FY3/20 Plan 2nd Half			
	Amount	Pct. of sales (%)	Amount	Pct. of sales (%)	Amount	Pct. change (%)
Semiconductor and other equipment-related	29,000	64.4	31,800	67.7	2,800	9.7
Vacuum feedthroughs	4,000	8.9	4,500	9.6	500	12.5
Quartz	8,300	18.4	8,500	18.1	200	2.4
Ceramics	5,000	11.1	5,200	11.1	200	4.0
CVD-SiC	1,300	2.9	1,300	2.8	0	0.0
EB-Gun, LED	1,900	4.2	1,900	4.0	0	0.0
Semiconductor wafer	4,700	10.4	5,800	12.3	1,100	23.4
Equipment parts cleaning	3,000	6.7	3,600	7.7	600	20.0
Quartz crucibles (after segment change)	800	1.8	1,000	2.1	200	25.0
Electronic device	7,100	15.8	7,800	16.6	700	9.9
Thermo-electric module	6,500	14.5	7,200	15.3	700	10.8
Ferrofluid, others	600	1.3	600	1.3	0	0.0
Photovoltaic-related	3,200	7.1	1,700	3.6	- 1,500	- 46.9
Solar silicon	2,200	4.9	1,200	2.5	- 1,000	- 45.5
PV manufacturing equip.	0	0.0	0	0.0	0	0.0
Solar cell, others	1,000	2.2	500	1.1	- 500	- 50.0
Others	5,700	12.7	5,700	12.1	0	0.0
Total	45,000	100.0	47,000	100.0	2,000	4.4
Gross income	13,661	30.4	14,401	30.6	740	5.4
SG&A expenses	9,339	20.8	9,923	21.1	584	6.3
Operating income	4,322	9.6	4,478	9.5	156	3.6
Ordinary income	4,000	8.9	4,100	8.7	100	2.5
Net income	2,300	5.1	2,400	5.1	100	4.3

Thank You

