Ferrotec Corporation

Results for the fiscal year ended March 31, 2016

May 25, 2016

（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, 2016 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 25, 2016. 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 2016 Financial Results

Financial highlights

¥ in millions	FY3/15		FY3/16		YoY	
	Amount	Pct. of sales(%)	Amount	Pct. of sales(%)	Amount	Pct. Change(%)
Net sales	59,078	100.0	69,463	100.0	10,385	17.6
Cost of sales	45,594	77.2	52,149	75.1	6,555	14.4
Gross income	13,484	22.8	17,313	24.9	3,829	28.4
SG&A expenses	11,813	20.0	13,289	19.1	1,476	12.5
Operating income	1,671	2.8	4,024	5.8	2,353	140.8
Non-operating income	1,334	2.3	664	1.0	△ 670	△ 50.2
Non-operating expense	974	1.6	867	1.2	△ 107	△ 11.0
Ordinary income	2,030	3.4	3,822	5.5	1,792	88.3
Extraordinary income	7	0.0	33	0.0	26	371.4
Extraordinary loss	3,362	5.7	499	0.7	△ 2,863	△ 85.2
Net income attributable to owners of parent	△2,132	-	2,162	3.1	4,294	-
Capital Investment	3,375	-	3,440	-	65	1.9
Depreciation	3,964	-	4,303	-	339	8.6

Note: exchange rate FY3/15⇒FY3/16：US$ ¥ 106.46 → ¥ 121.03　　RMB ¥ 17.26 → ¥ 19.19（Avg. during period)

Financial highlights

¥ in millions	FY3/16	
	Amount	Pct. of sales(%)
Net sales	69,463	100.0
Cost of sales	52,149	75.1
Gross income	17,313	24.9
SG&A expenses	13,289	19.1
Operating income	4,024	5.8
Non-operating income	664	1.0
Non-operating expense	867	1.2
Ordinary income	3,822	5.5
Extraordinary income	33	0.0
Extraordinary loss	499	0.7
Income before income tax	3,356	4.8
Corporate tax, etc.	1,266	1.8
Net income attributable to owners of parent	2,162	3.1

The cost of sales ratio decreased 2.1 points because of higher sales in the equipment-related business and electronic device business

Up ¥254 million excluding the effects of foreign exchange but down 0.9 point as a pct. of sales

Equity-accounted investment income : ¥ 142 million
Exchange gain : ¥236 million

Impairment loss in:
Photovoltaic-related business :¥295 million
Other business :¥120 million

Segment Sales and Operating income

Net sales (¥ in millions)	FY3/15		FY3/16		YOY	
	Amount	Pct. Of Sales(%)	Amount	Pct. Of Sales(%)	Amount	Pct. change(%)
Equipment-related	26,566	45.0	31,405	45.2	4,839	18.2
Electronic device	9,679	16.4	13,328	19.2	3,649	37.7
Photovoltaic-related	17,948	30.4	18,505	26.6	557	3.1
Others	4,884	8.3	6,224	9.0	1,340	27.4
Total	59,078	100.0	69,463	100.0	10,385	17.6

Operating income (¥ in millions)	FY3/15		FY3/16		前期比	
	Amount	Pct. Of Sales(%)	Amount	Pct. Of Sales(%)	Amount	Pct. change(%)
Equipment-related	1,523	5.7	3,148	10.0	1,625	106.7
Electronic device	1,459	15.1	2,467	18.5	1,008	69.1
Photovoltaic-related	△1,272	-	△1,692	-	△ 420	-
Others	10	0.2	143	2.3	133	1,330.0
Corporate & elimination	△50	-	△42	-	8	-
Total	1,671	2.8	4,024	5.8	2,353	140.8

Consolidated Balance Sheet ～Assets～

(¥ in millions)	FY3/15	FY3/16	Difference
Current assets	**44,418**	**45,284**	866
Cash & deposits	**10,517**	**10,038**	△ 479
Note & accounts receivable	**16,971**	**17,745**	774
Inventory	**14,135**	**14,442**	307
Fixed assets	**34,992**	**33,484**	△ 1,508
Tangible fixed assets	**27,739**	**26,044**	△ 1,695
Building	**7,287**	**6,695**	△ 592
Equipment & machinery	**9,995**	**9,575**	△ 420
Tools, furniture, and fixture	**6,394**	**6,103**	△ 291
Land	**638**	**631**	△ 7
Intangible fixed assets	**1,875**	**2,062**	187
Goodwill	**530**	**668**	138
Investments & other assets	**5,377**	**5,377**	0
Total assets	**79,410**	**78,769**	△ 641

[Major factors for increase in current assets]

Increase in current assets thanks to higher notes and accounts receivable, as a result of the acquisition of ADMAP

[Major factors for decrease in tangible fixed assets]

Purchases of tangible fixed assets were ¥3,440 million (cash flow basis) and depreciation was ¥4,303 million; also affected by impairment and sales of other equipment

[Intangible fixed assets]

Goodwill on acquisition of ADMAP：¥ 295 million

Amortization of goodwill：¥155 million

Consolidated Balance Sheet ～Liabilities and Net assets～

（¥ in millions）	FY3/15	FY3/16	Difference
Current liabilities	**31,535**	**29,351**	△ 2,184
Notes and accounts payable	**13,241**	**10,996**	△ 2,245
Shot-term debt	**8,352**	**6,922**	△ 1,430
Current portion of long-term borrowings	**3,321**	**3,386**	65
Fixed liabilities	**8,443**	**9,929**	1,486
Long-term debt	**5,239**	**6,399**	1,160
Total liabilities	**39,979**	**39,280**	△ 699
Net Assets	**39,431**	**39,488**	57
Shareholder's equity	**28,286**	**30,199**	1,913
Total adjustment	**10,559**	**8,484**	△ 2,075
Non-controlling interests	**575**	**780**	205
Total liabilities & shareholder's equity	**79,410**	**78,769**	△ 641

[Major factors for decrease in current liabilities]

Mainly because of a ¥1,800 million decline in payables for materials sold to a company used for outsourced production, as a result of a production adjustments by OEM producer of photovoltaic wafers

[Interest-being debt]

Short-term debt +Current portion of long-term borrowings	**¥10,308 million**	**（ 11,673 ）**
Long-term debt + bond etc.	**¥6,399 million**	**（ 5,239 ）**
Total	**¥16,707 million**	**（ 16,912 ）**
[Net interest-being debt	**¥6,669 million**	**（ 6,395 ）]**

*Parentheses represent the figures as of end-FY3/15

[Net assets]

Major factors :

Net income : ¥2,162 million

Dividends : △ ¥246 million

Foreign currency translation adjustments : △¥1,969 million

※Net income＝Net income attributable to owners of parent

Note: exchange rates for end FY3/16 :¥ 120.61 / US dollar ¥ 18.36 / RMB (year-end exchange rate)

Consolidated Cash Flow

(¥ in millions)	FY3/15	FY3/16
Cash flow from operating activities	7,829	**4,642**
Income before income taxes	△1,324	3,356
Depreciation	3,964	4,303
Exchange gain & loss (△: gain)	△273	239
Changes in notes & accounts receivable (△: increase)	1,569	△ 1,042
Changes in inventories (△: increase)	△469	△ 478
Changes in accounts payable (△: decrease)	773	△ 2,340
Others	3,589	604
Cash flow from investing activities	△3,552	**△ 4,023**
Payments for purchase of tangible fixed assets	△3,375	△ 3,440
Proceeds from sales of tangible fixed assets	368	204
Payments for purchase of marketable securities	△192	△ 21
Payments for purchase of shares of subsidiaries accompanying changes in the scope of consolidation	-	△ 221
Others	△353	△ 545
Cash flow from financing activities	△2,111	**△ 520**
Changes in short-term borrowing	△1,658	△ 1,398
Proceeds from long-term debt	2,872	4,989
Payments of long-term debt	△3,075	△ 3,755
Payments for dividend	△185	△ 248
Others	△65	△ 108
Changes in cash & cash equivalents	2,966	**△ 479**
Cash and cash equivalents, beginning of year	7,550	**10,517**
Cash and cash equivalents, end of year	10,517	**10,038**

[Operating cash flow]

Income before income tax + Depreciation

¥7,659 million

Decrease in operating CF
due to increase in notes & accounts receivable

△¥1,042 million

Increase in operating CF due to decrease in
in accounts payable

△¥2,340 million

[Investing cash flow]

Main contents of payments
for tangible fixed assets acquired

- Shanghai subsidiary : **¥649 million**
- Hangzhou subsidiary : **¥1,424 million**
- Yinchuan subsidiary : **¥797 million**

Business forecast

(¥ in millions)	FY3/16	FY3/17(Est.)	YoY(%)
Net sales	69,463	75,000	8.0
Operating income	4,024	5,000	24.3
Ordinary income	3,822	4,200	9.9
Net income attributable to owners of parent	2,162	3,000	38.8
Capital investment	3,440	8,000	132.6
Depreciation	4,303	4,500	4.6

Note: Exchange rate FY3/16⇒FY3/17(assumed rate) : ¥ 121.03 → ¥ 105/ US dollar ¥ 19.19 → 16.50 /RMB(Avg. during period)

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

Business forecast

(¥ in millions)	FY3/17 Est.
Net sales	75,000
Operating income	5,000
Ordinary income	4,200
Net income attributable to owners of parent	3,000

Forecast higher sales. Expect semiconductor capital investments to continue and more large investments involving organic EL panels. Installation of solar power facility is high due to the global CO2 reduction agreement. Also anticipate growth in orders for power semiconductor substrates.

Expect earnings to remain mostly strong. Plan to use the higher conversion rate of solar silicon products and solar cell products to improve earnings, with the aim of being profitable and increase earnings in the photovoltaic-related business. Foresee no downturns in the other two business segments either.

Expect a foreign exchange loss caused by the yen's strength but assume no change in other non-operating income and non-operating expenses.

Anticipate an effective tax rate of about 30%, assuming that major subsidiaries are profitable.

Business forecast（sales by segment）

（¥ in millions）	FY3/16	FY3/17(Est.)	YoY(%)
Equipment-related	31,405	31,650	0.8
Vacuum Feedthroughs	7,163	7,400	3.3
Quartz	7,624	7,850	3.0
Ceramics	6,147	5,400	△ 12.1
CVD-SiC	1,685	3,000	78.0
EB-Gun, LED	4,468	4,000	△ 10.5
Semiconductor wafer	4,317	4,000	△ 7.3
Electronic device	13,328	12,200	△ 8.5
Thermo-electric module	12,559	11,500	△ 8.4
Ferrofluid, others	769	700	△ 9.0
Photovoltaic-related	18,505	23,550	27.3
Quartz crucibles	3,524	3,500	△ 0.7
Solar silicon	8,483	12,000	41.5
PV manufacturing Epuip.	359	800	122.8
Solar cell, Others	6,141	7,250	18.0
Others	6,224	7,600	22.1
Total	**69,463**	**75,000**	8.0

FY March 2016 Financial Results

Status by Segment and Outlook

セグメント

45% Equipment-related

Vacuum feedthroughs

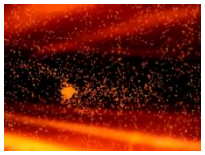
Quartz

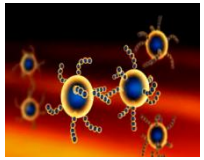
Ceramics

CVD-SiC

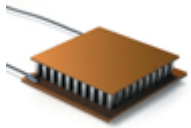
19% Electronic device

Ferrofluid





Thermo-electric module



Substrates for power semiconductor

26% Photovoltaic-related

PV silicon（Ingot）【OEM】

Mono-crystal ingot

Multi- crystal ingot

PV wafer

Solar cell

Consumable

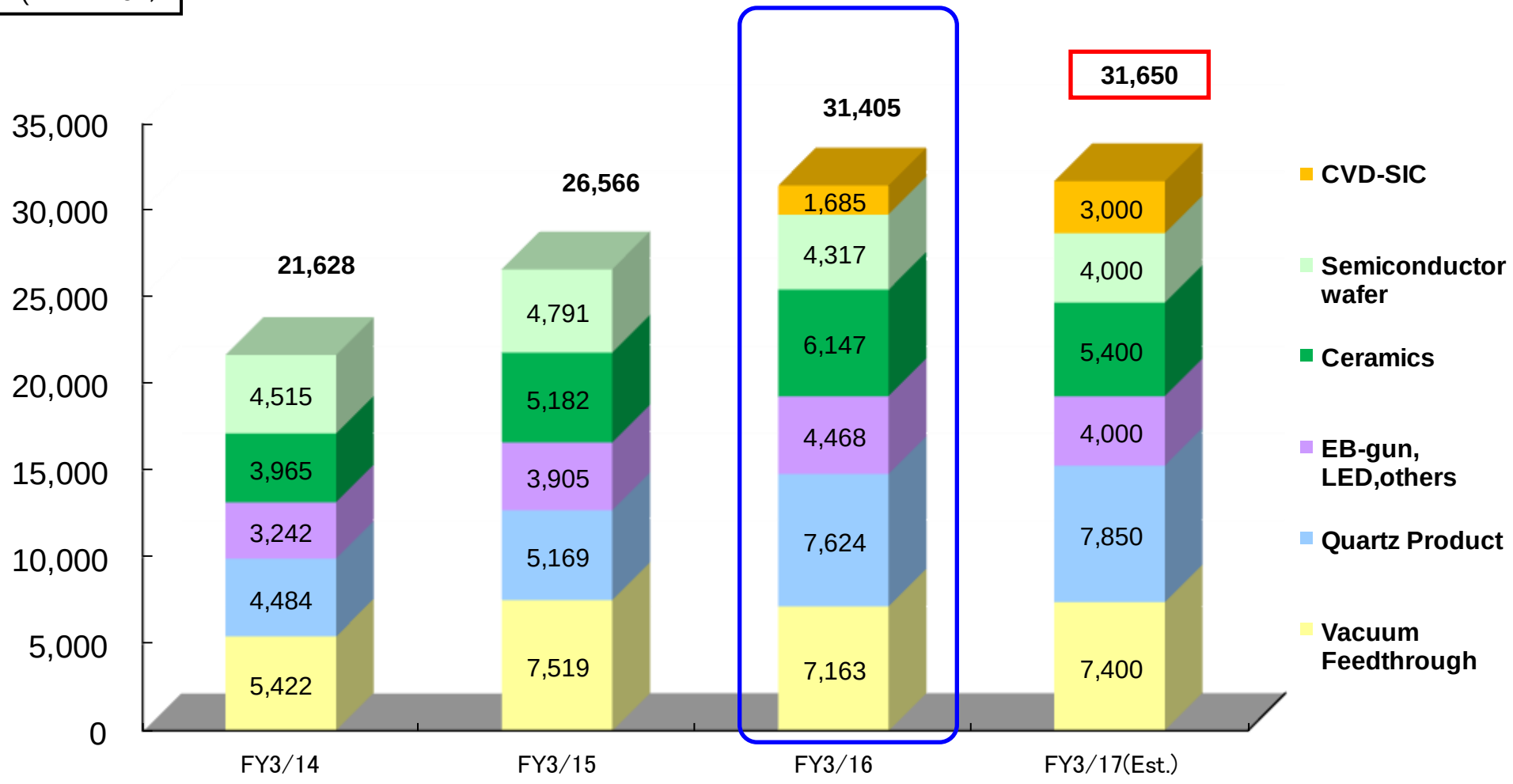
Quartz crucible

Vessel

※ The bar chart represents the pct. of each segment in FY3/16 sales

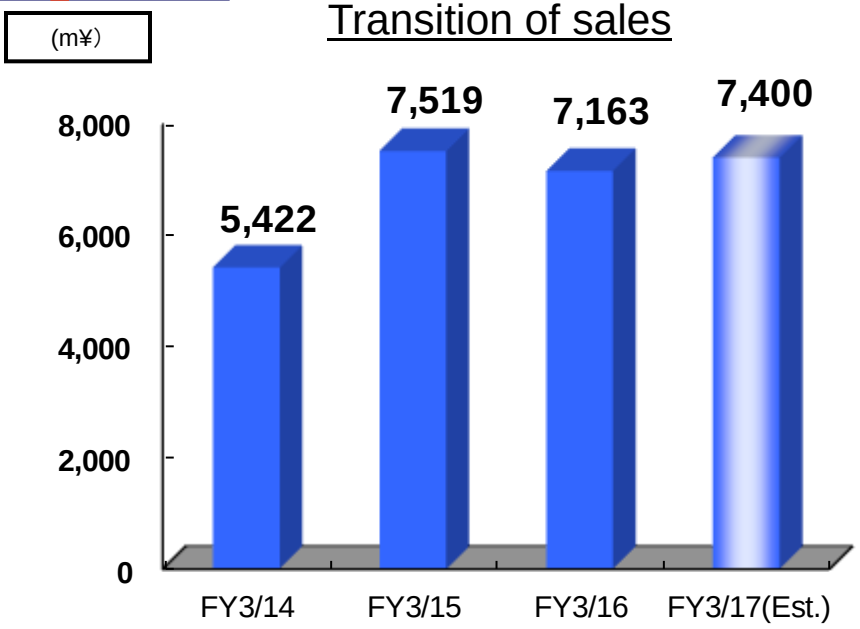
Equipment-related Segment

Sales
(¥ in million)

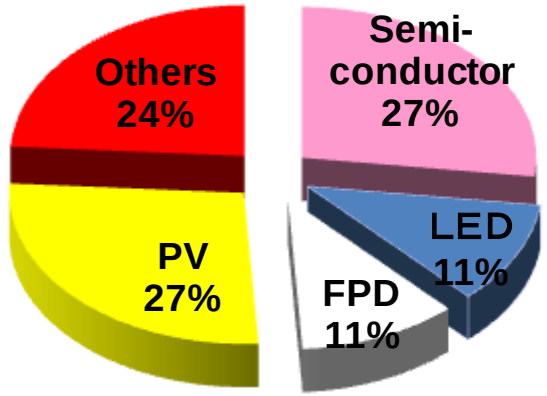


Status and Outlook for Vacuum Feedthroughs

Transition of sales



Sales by category



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

1. Status for FY3/16

- Major semiconductor miniaturisation investments ended and started declining but growth resumed in the second half of the FY.
- In the FPD market, Japanese and Chinese manufacturers continued making investments. Korean manufacturers started making investments in organic EL
- Demand involving robots used in FPD applications increased.
- In contract manufacturing, performance was slightly weak.
- Capital investment for photovoltaic equipment in Europe continued

2. Outlook for FY3/17

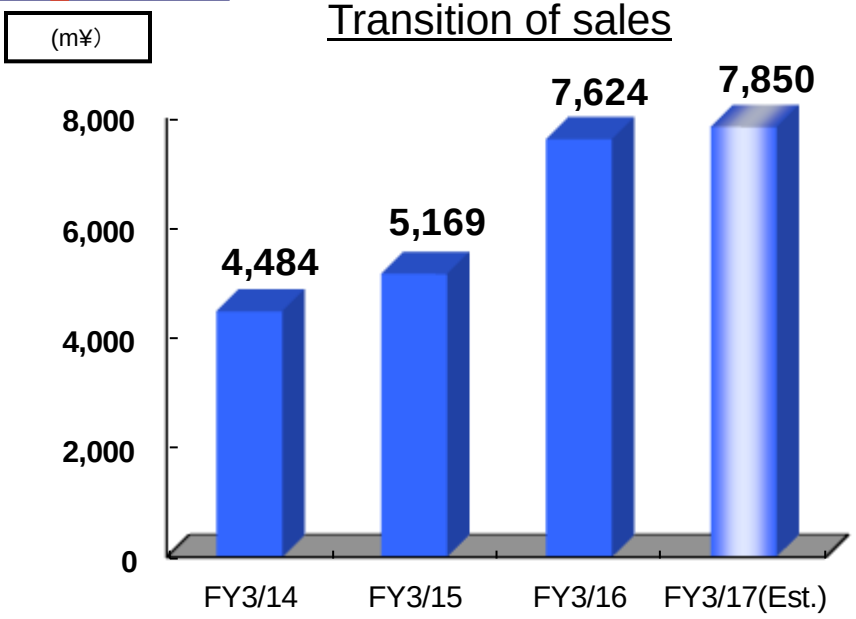
- Expect an slight increase in the logic category of the semiconductor market.
- Anticipate a shift to 3D NAND memory devices; capital investment will continue
- In the FPD market, LCD investments in China will increase. In China and Japan as well as Korea, investment in organic EL is expected.
- Expect an upturn in demand from procurement activity within China.

<Measures>

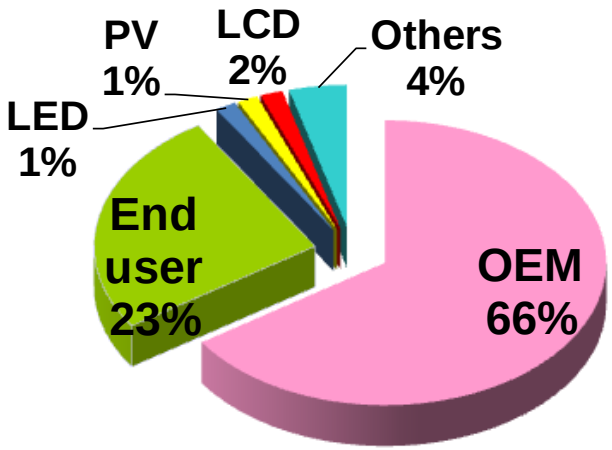
- Maintain strong ties with manufacturers of semiconductor production equipment.
- Continue operations involving contract manufacturing and subassembly processes.
- Enhance sales activity and strengthen the aftermarket in China, Korea and Taiwan.

Status and Outlook for Quartz Products

Transition of sales



Sales by category



1. Status for FY3/16

- Sales to a major US OEM customer were higher due to strong 4Q sales
- Sales to a major Japan OEM started increasing at the end of 2015
- Higher sales to end users in Japan and Asia
- Increase in sales of silicon parts(Boat) to a large foundry in Taiwan

2. Outlook for FY3/17

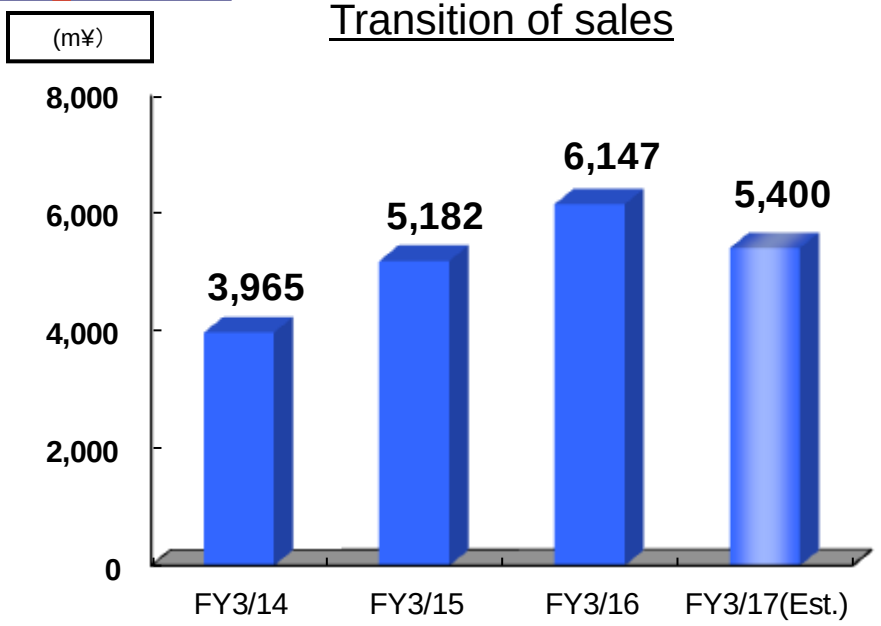
- Expect growth in sales of products consumed during 3D production processes
- Anticipate continued strength in large Japanese and US OEM orders
- No significant change expected in capacity utilization at manufacturers in China and Taiwan
- Signs are appearing of substantial semiconductor industry investments in China
- Plan to make capital investments to increase production capacity

<Measures>

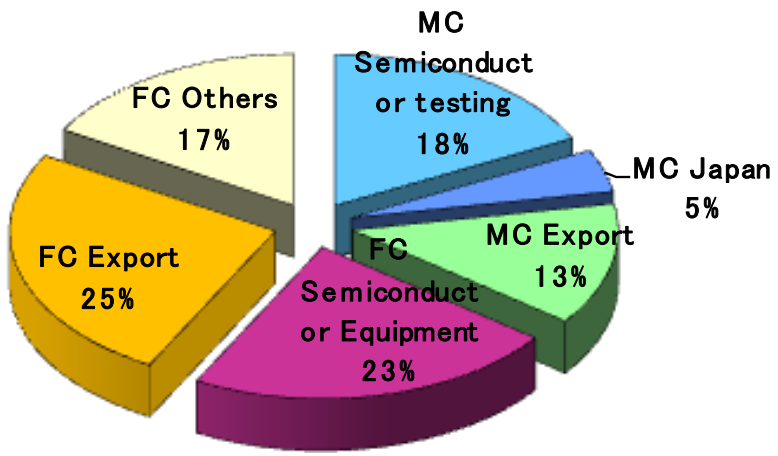
- Deliver products faster by investing in people and equipment at factories
- Relocate production to start volume production of next-generation silicon wafers
- Continue to meet demand in Taiwan for customization

Status and Outlook for Ceramics Products

Transition of sales



Sales by category



FC（Fine Ceramics）、MC（Machinable Ceramics）

1. Status for FY3/16 (Jan. - Dec.)

Machinable ceramics "Photoveel"

- Memory applications in Japan were slackening temporarily but in the second half orders from large overseas foundries increased in the logic category for next-generation smartphones and other products.

Fine ceramics

- Orders slowed somewhat in the fall of 2015 as large semiconductor device makers pushed back investments for miniaturisation and growth in production.
- Demand at US companies weakened temporarily but this market is continuing to grow steadily.

2. Outlook for FY3/17 (Jan. -Dec.)

Machinable ceramics "Photoveel"

- For memory applications in Japan, expect increasing demand for a new type of wafer circuit inspection equipment starting in the second half.
- At large overseas foundries, expect an increasing need for precision wafer circuit inspection equipment for next-generation smartphone logic devices.

Fine ceramics

- Although demand is currently weak, anticipate growth in demand for parts required by new equipment for miniaturisation and 3D requirements at major client companies in Japan and other countries.

3. Continued sales policy

< **Machinable ceramics** >

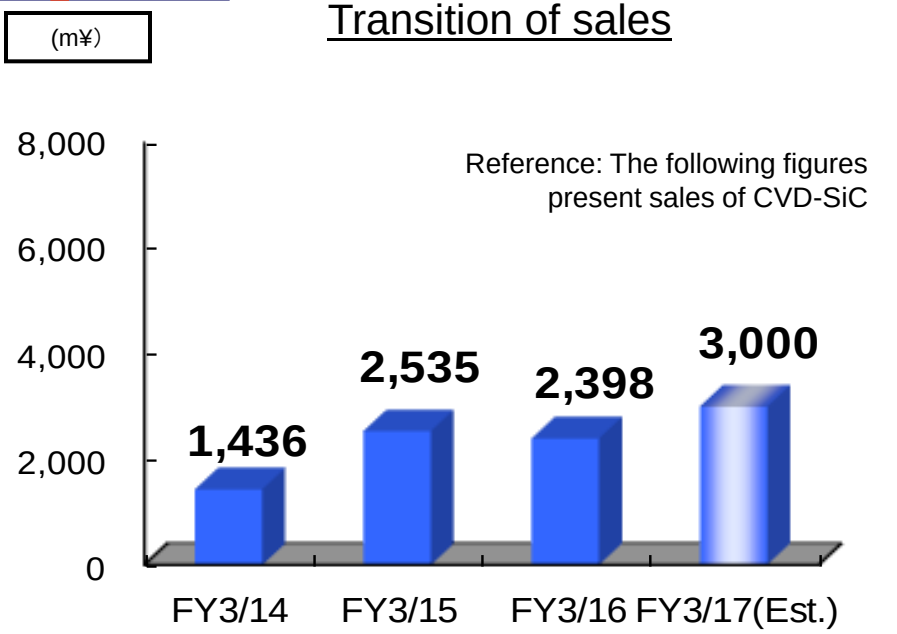
- Develop and sell a next-generation high-precision production technology to meet changing requirements for wafer circuit inspection equipment.

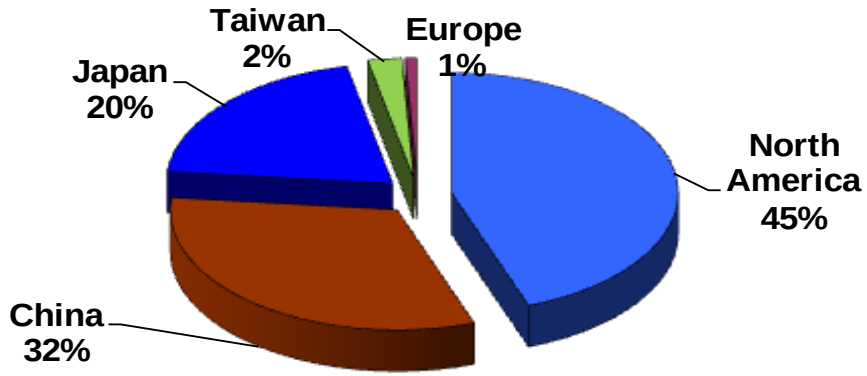
<Fine ceramics>

- Plan to raise production capacity to meet expected growth in demand for parts used in new equipment needed as companies make more progress with miniaturisation.

Status and Outlook for CVD-SiC Products

Transition of sales





Sales by region（FY3/16）

1. Status for FY3/16

- Firm sales to large US companies
- Brisk sales in Japan
- In Asia, sales were down slightly in the first half but recovered in the second half.
- Succeeded in establishing a presence in the non-semiconductor sector

2. Outlook for FY3/17

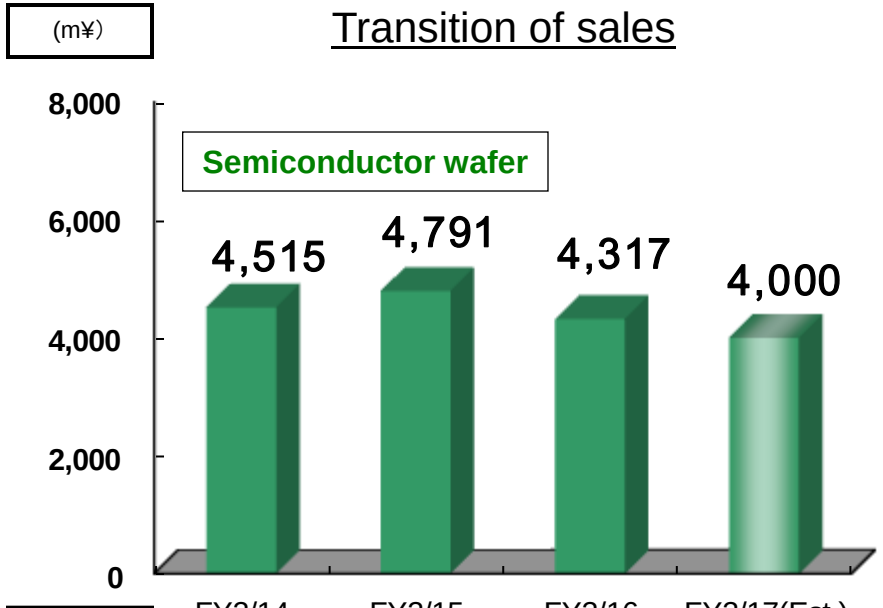
- Expect sales to large US companies to remain strong.
- Anticipate strength in Japan and Asia, too
- Plan to capture receive for new OEM parts from major equipment manufacturers.
- Non-semiconductor sector sales will make an increasing contribution to sales in this business.

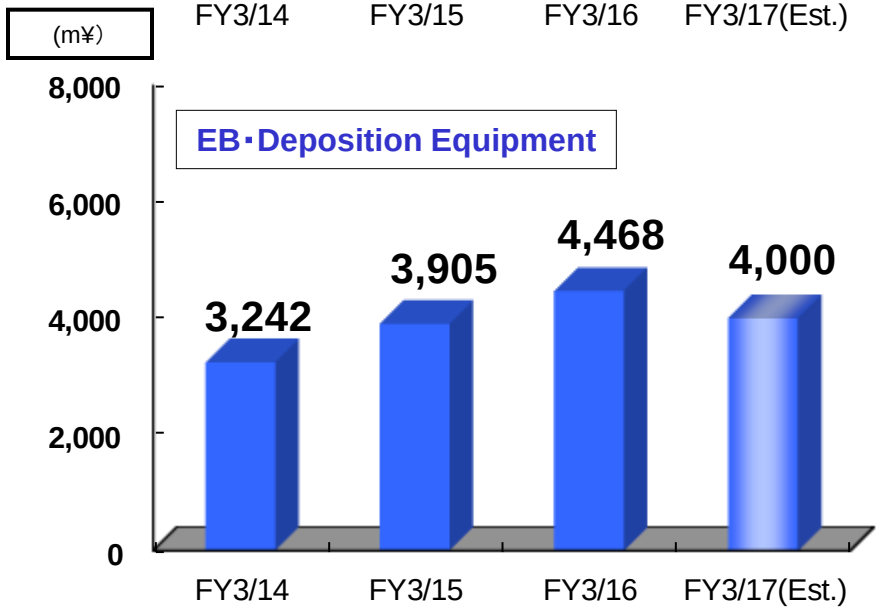
[Measures]

- Capture more synergies by using the involvement of group companies
- Build a framework for quickly performing development and prototype activities
- Establish a manufacturing infrastructure capable of meeting the rapid growth in demand for OEM parts at major equipment manufacturers
- Continue to aggressively pursue opportunities outside the semiconductor industry

Status and Outlook for Semiconductor wafer and Deposition Equipments

Transition of sales





Semiconductor wafers:

1. Status of FY3/16

- Firm sales of products using Ferrotec's own brands but demands for discounts are increasing
- In addition to Taiwan OEM operations, started production for OEM customers in Europe
- Small decline in sales caused by intense price competition for automotive applications

2. Outlook for FY3/17

- Foresee a continuation of heated competition based on prices.
- 8-inch wafer demand is rising in China; plan to quickly start operations in this market sector

<Measures>

Establishing an infrastructure for 8-inch wafer operations in China, including the start of construction of a factory

EB gun and deposition equipment:

1. Status of FY3/16

- Received large orders for wireless communication chips; LED market was flat all year.
- The optical EB gun market was generally strong all year.

2. Outlook for 3/17

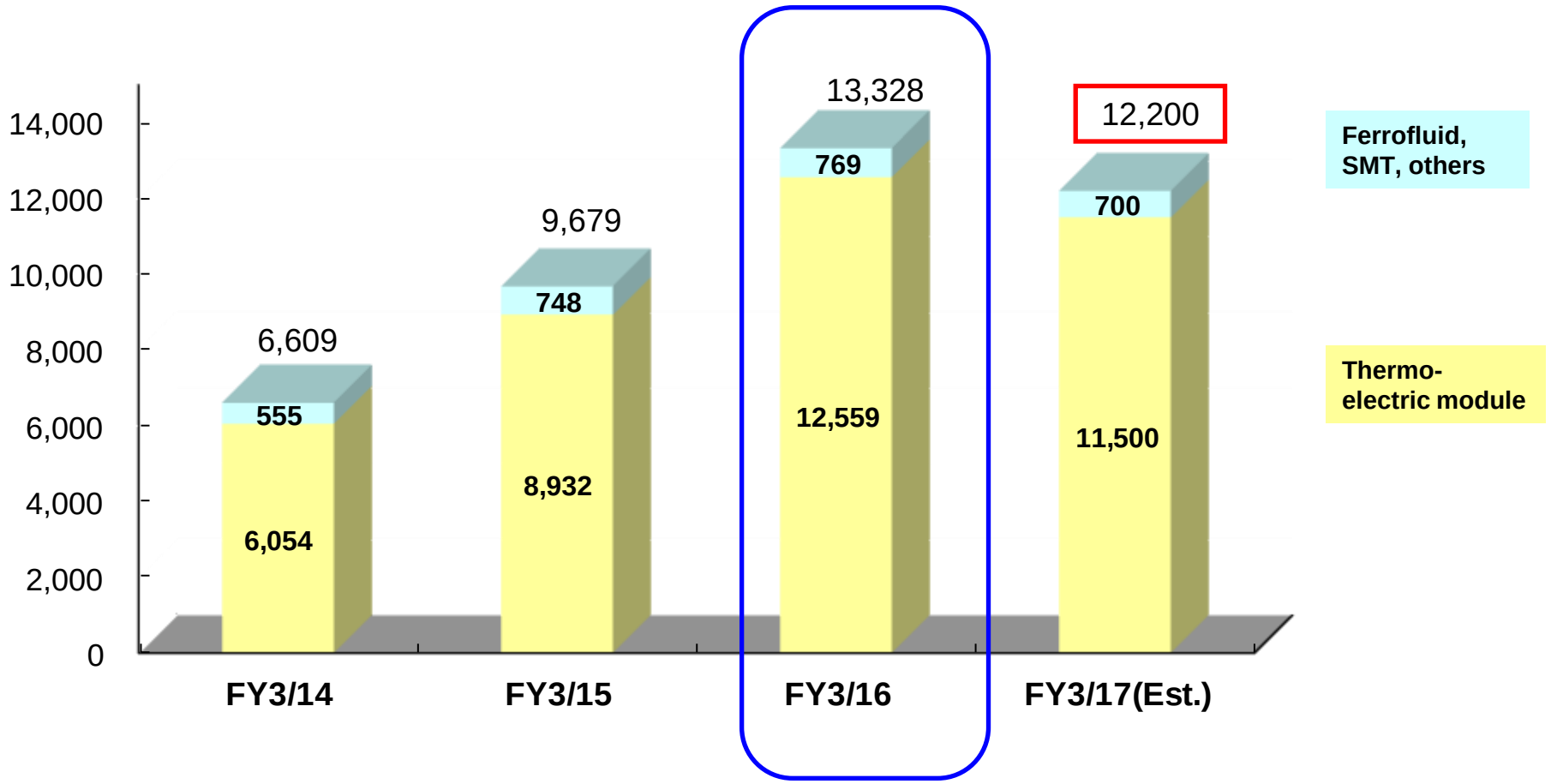
- Expect more applications involving compound semiconductors
- Anticipate strong demand for communication chip applications

<Measures>

- Deposition equipment: Sales activities are focusing on wireless communication chips and semiconductor power devices
- EB guns: Concentrating on operation to equipment manufacturers

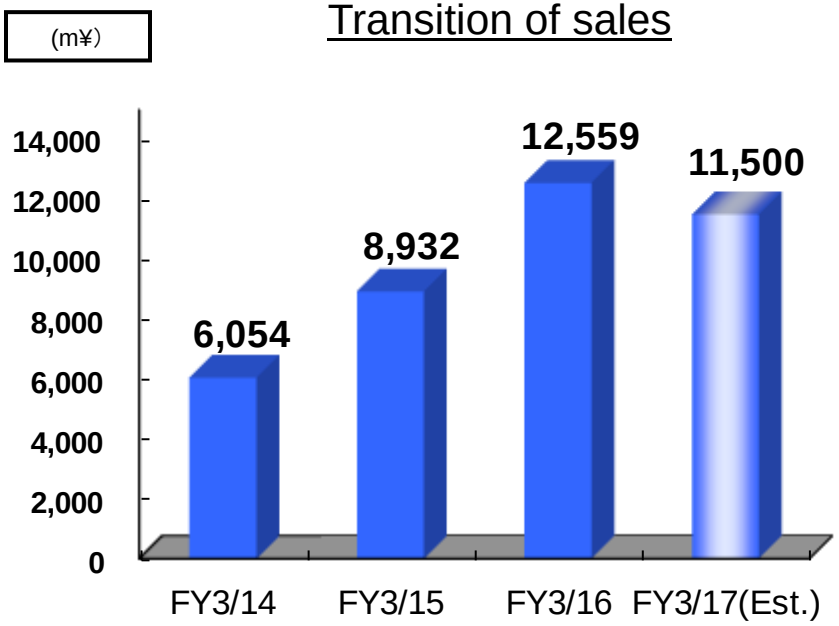
Electronic Device Segment

Sales
(¥ in million)

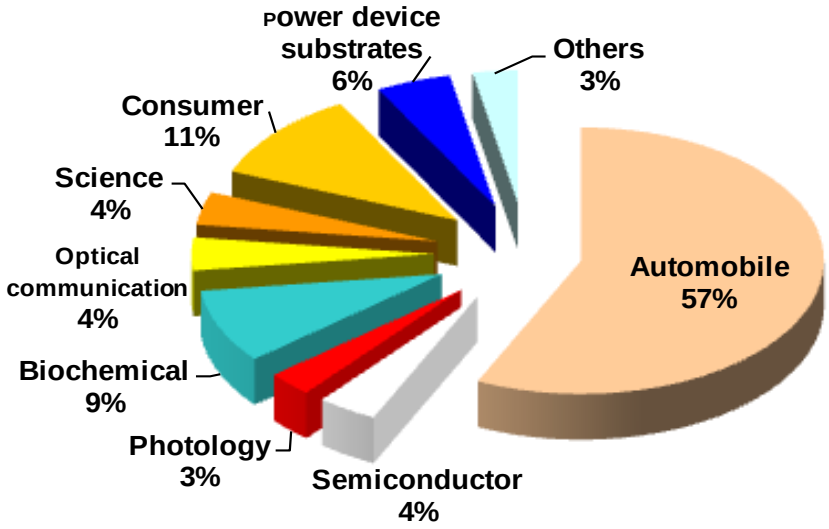


Status and Outlook for Thermo-electric Module Products

Transition of sales



Sales by category



1. Status of FY3/16

Automobile Seat Application

- Demand remained strong in North America and sales volume reached the level prior to the global financial crisis.

Other Applications

- Consumer product demand was strong and the number of prospective orders increased.
- In China, communication equipment-related demand benefited from the switch from 3G to 4G.
- Orders for bio/medical applications remained steady.
- A large European manufacturer certified a substrate for power semiconductor devices.

2. Outlook for 3/17

Automobile Seat Application

- The yen's strength, the peaking of the US market and concerns for interest rate hike make the outlook somewhat negative.

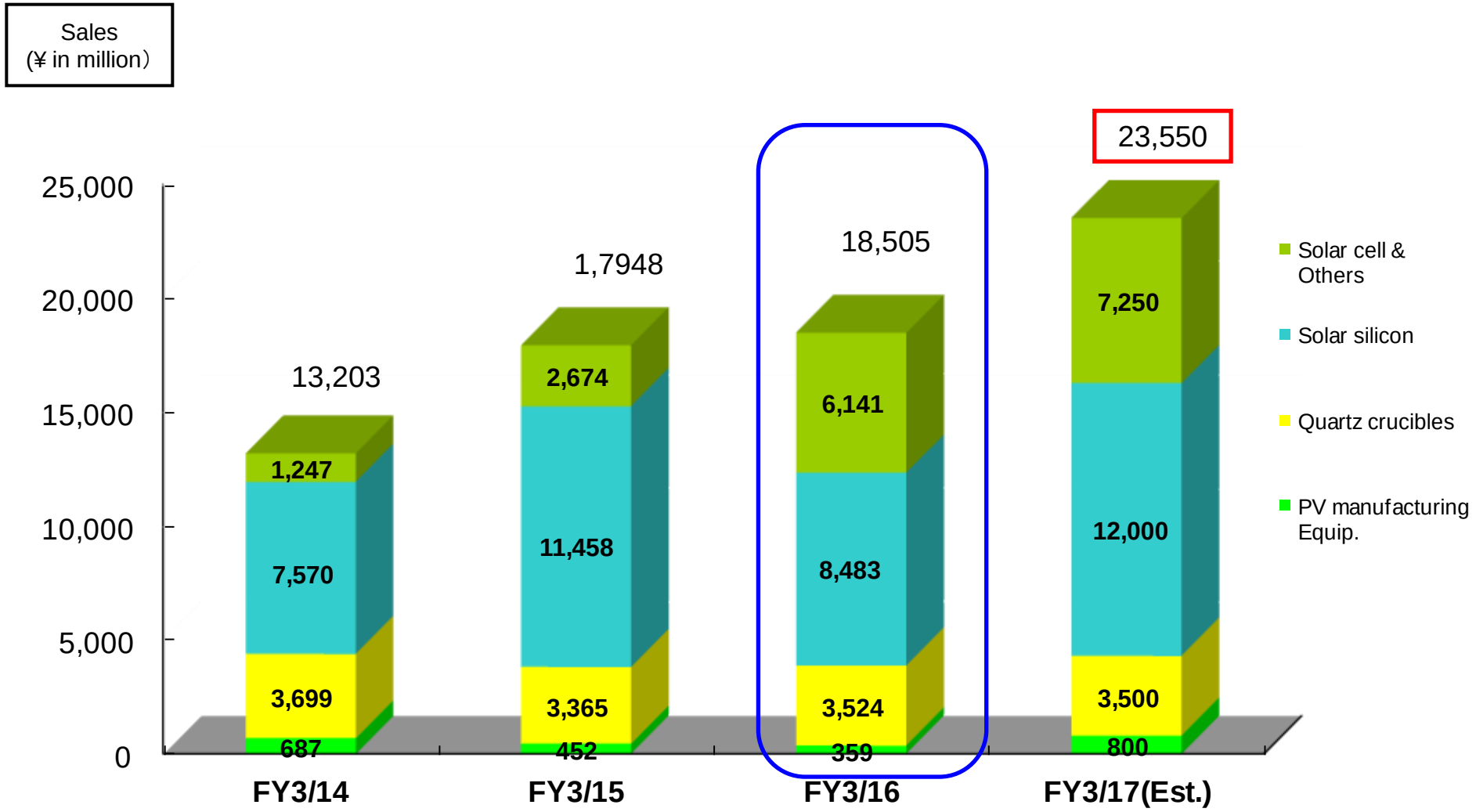
Other Applications

- Expect generally flat performance but new orders may boost sales and earnings
- Increasing the lineup of sub-assembly products and reinforcing sales activities (consumer products)
- Make investments to increase output of substrates for semiconductor power devices

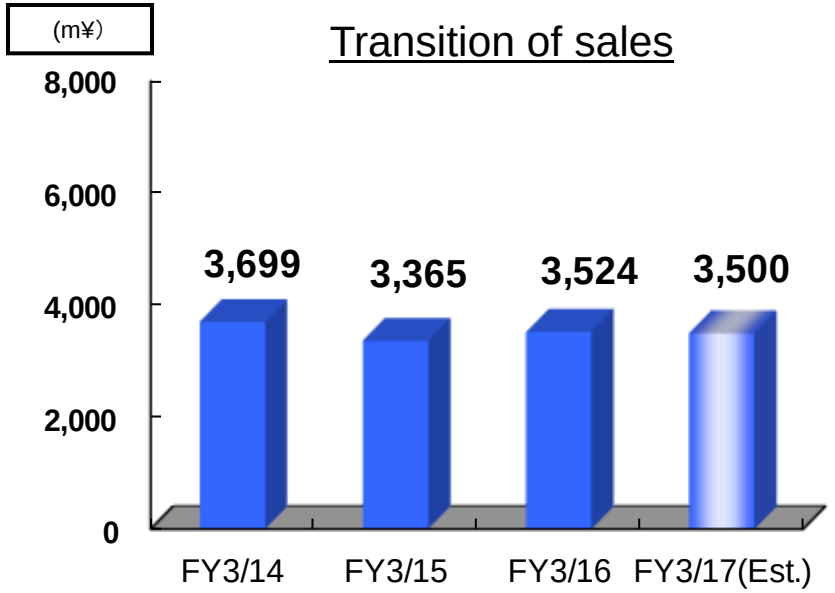
[Measures]

- Continue providing support for developing customer solution products.
- Make automation investments to increase output and cut costs.
- Continue to make investments for the volume production of semiconductor power device substrates.

Photovoltaic-related Segment



Status and Outlook for Quartz Crucibles

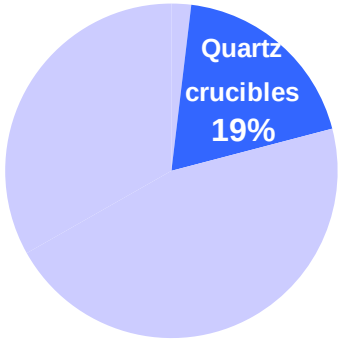


Mono-crystal quartz crucible

Multi-crystal vessel

Pct. Of sales In the PV segment

FY3/16



1. Status for FY3/16

- Slow growth as solar facility installations in China increase
- Transfer of operations to the Yinchuan plant produced benefits, and sales of small-diameter products were strong due to the launch of an improved crucible for the semiconductor industry
- Started making evaluation samples of medium-diameter (24 inches) crucibles for semiconductor devices
- Expect a slow recovery in sales of multi-crystal vessels
- The multi-crystal market in China has shifted to the large G6 size.
- Expect moderate growth in sales in the crucible, vessel and small-diameter semiconductor wafer categories

2. Outlook for FY3/17

- Expect a consistent improvement in earnings at the Yinchuan plant
- Slow growth in demand in the semiconductor sector
- Anticipate growth in demand for multi-crystal vessels as the use large G6 sizes.
- Expect growth that will be offset by foreign exchange rates, resulting in no change in sales.

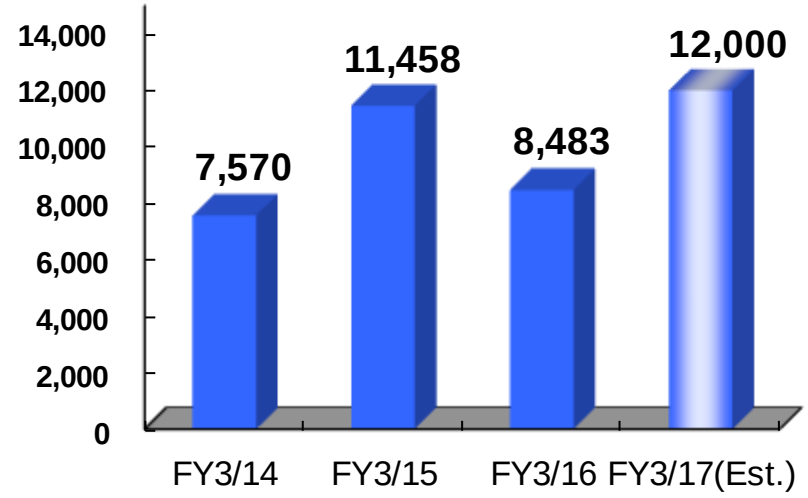
<Measures>

- Supply only value-added versions of mono-crystal semiconductor crucibles.
- Use the full-capacity output of the Yinchuan plant to become more price competitive.
- Install a furnace for large-diameter 28-inch crucibles for the semiconductor industry.
- Improve quality by automating a coating technology.

Status and Outlook for Solar Silicon

(m¥)

Transition of sales



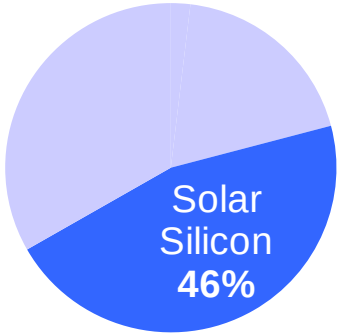
Mono-crystal ingot

Multi- crystal ingot

PV wafer

Pct. Of sales In the PV segment

FY3/16



1. Status for FY3/16

- Current OEM customers held down production through the year.
- Volume production evaluations by a new OEM customer started.
- Technological progress such as making mono-crystal wafers thinner and reducing the amount of oxygen
- Global solar installation in 2015 surpassed 51GW (IEA flash report).
- Emerging country solar facility installations are increasing and now exceed developed countries, (China ranks first), but performance in industrialized regions (Europe and Japan) was weak
- Prices of photovoltaic products remained low throughout the year

2. Outlook for FY3/17

- After final evaluation by a new OEM customer, plan to start volume production in the second half of the fiscal year
- Use advanced technologies to meet the demand for thinner wires.
- More solar power will be needed by 2020 to meet the requirements of the COP21 Paris Agreement
- More US demand expected due to the feed-in tariff postponement; China outlook is unclear but growth will probably continue
- Foresee growth in India, South Africa, Chile, Mexico, Turkey, Honduras, Argentina and other emerging countries

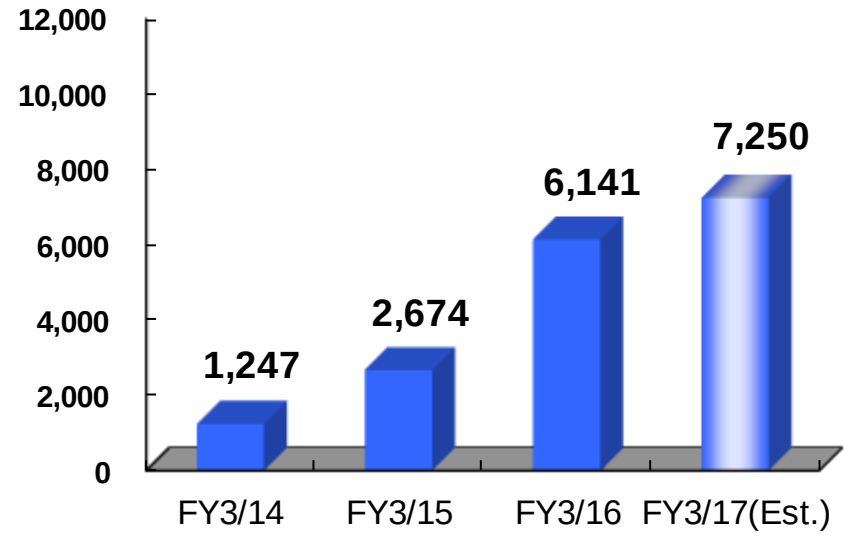
<Measures>

- Operating the Yinchuan plant at full capacity for crystal production
- Using a fixed abrasives (wire saw) to make thinner wafers
- Improve the performance of N-type mono crystals to meet customers' demands
- Earn recognition as a provider of the world's most advanced thinner wire technologies

Status and Outlook for Solar cell

(m¥)

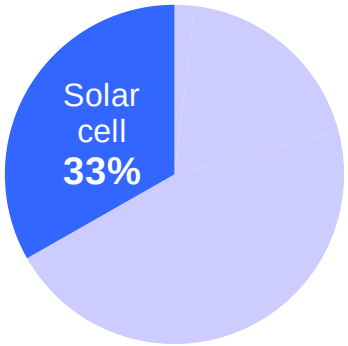
Transition of sales



Solar cell

Pct. Of sales In the PV segment

FY3/16



1. Status for FY3/16

- Demand was strong in China and India with powerful government support.
- Solar installations in India were 2.2GW in 2015.
- Met demands for volume production of mono and multi-crystal solar cells.
- Increasing demands for high conversion efficiency and lower prices
- Emerging country installations increased and surpassed developed countries (China ranks first).

2. Outlook for FY3/17

- Expect very strong demand for multi-crystal products and more growth in emerging countries, mainly China and India.
- Increasing demands in China and other countries for high conversion efficiency
- Operating at full capacity and adding an automated production line to increase output

<Measures>

- Improve earnings by using passive emitter rear contact (PERC) technology to increase conversion efficiency.
- Become more competitive by using wafer quality and solar cell technologies.
- Increase productivity of mono and multi-crystal products.
- Cut costs by using automation.

Reference Materials

会社概要

Corporate Name	Ferrotec Corporation
Date of Foundation	September 27, 1980
Address	Nihonbashi Plaza Building, 2-3-4, Nihonbashi, Chuo-ku, Tokyo Japan
Listed	JASDAQ （Listed Code：6890）
President	Akira Yamamura
Business Segment	• **Equipment-related business** : Vacuum Feedthrough, Quartz, Ceramics, silicon, wafer processing • **PV-related business** : PV manufacturing equip, Quartz crucibles, solar silicon • **Electronic device business :** thermo-electric module, Ferrofluid
Capital	13,201,346,010 JPY
Issued Stock	30,903,702
Related Company	[27 Consolidated Subsidiary] [5 Companies Accounted for by the Equity Method]
Employees	[Consolidated]5,411 [Non-consolidated]129

Corporate history

1980～

Started manufacturing and selling products using ferrofluids (computer seals, vacuum feedthroughs)

Vacuum Feedthroughs

1990～

92 – Started manufacturing and selling thermo-modules and modules in China
98 – Started manufacturing and selling quartz products for the semiconductor industry

Thermo-electric module

Quartz

2000～

02 – Started contract manufacturing service business for silicon wafer processing, machine tool production and other activities (Shanghai factory)
05 – Started photovoltaic products business; started manufacturing and selling machinery and crucibles for manufacturing silicon ingots and crystals
08 – Started manufacturing and selling ceramic products

Ingot

Mono-crystal silicon growing furnaces

Machinable Ceramics

With a core of ferrofluid expertise

～ Ferrotec's core Technology ～

Establishing operations in other countries

91: Established subsidiary in Massachusetts, **USA**

92: Established subsidiary in Hangzhou, **China**

95: Established subsidiary in Shanghai, **China**

97: Established subsidiary in **Singapore**

99: Started operations in **North America** and **Europe** by acquiring Ferrofluidics

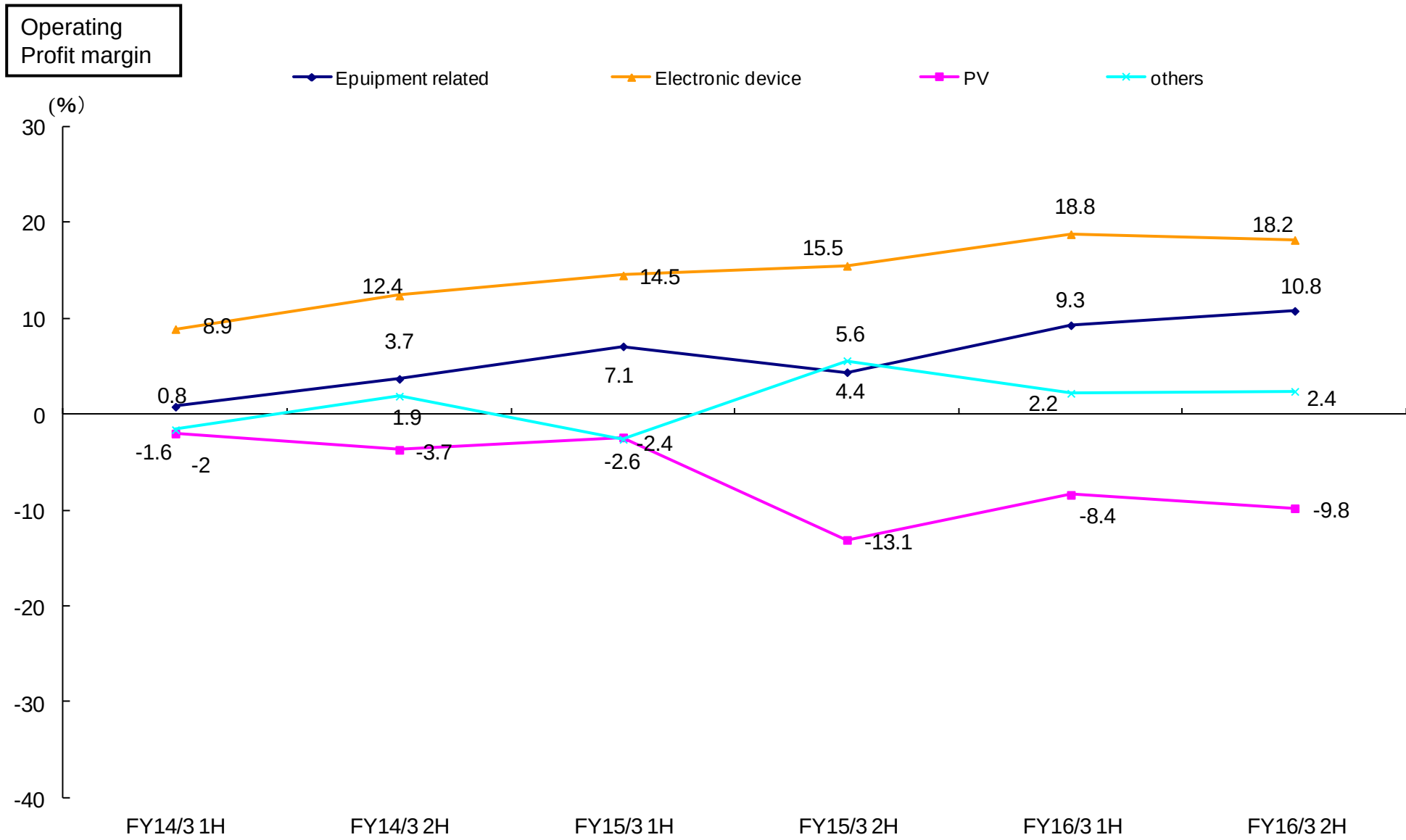
Building a new profit structure

02: Started contract manufacturing service (CMS) business at the Shanghai factory, including silicon wafer processing, machine tool production and other activities

Expertise in production technologies extending from component processing to final assembly allowed Ferrotec to start the CMS business

05 : Increased manufacturing and sales activities for photovoltaic products in Hangzhou, China

Operating Margin by Business Segment



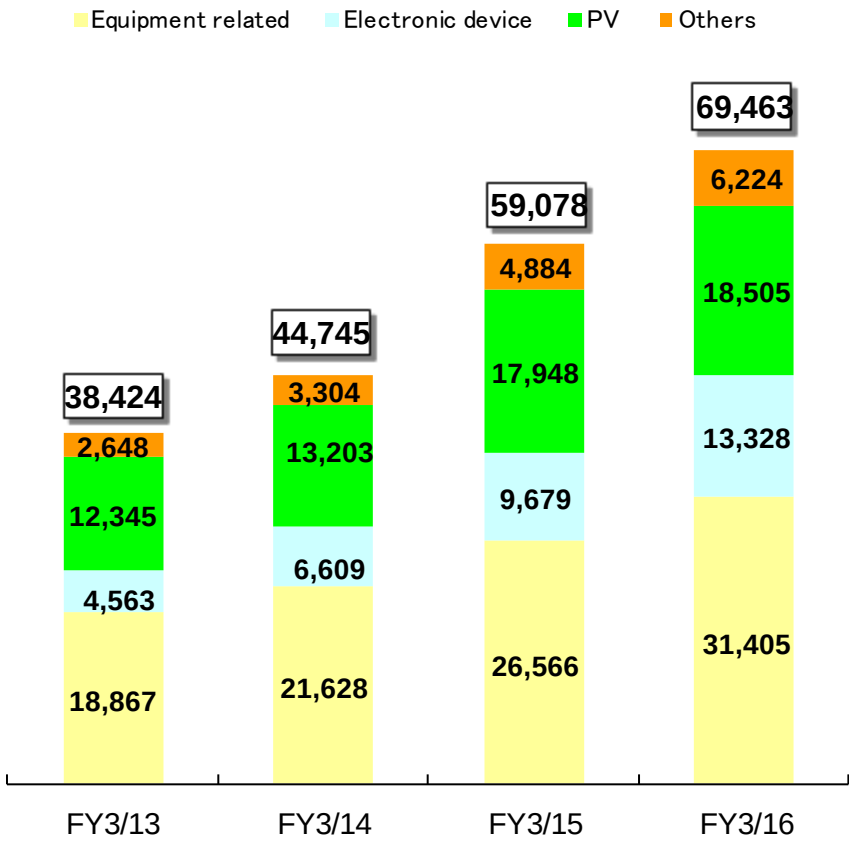
Strategies for M&A and Alliances

Time	Company acquired/Alliance partner	Description
July 2015	Acquired ADMAP Inc.	Acquired ADMAP which manufactures and sells **CVD-SiC products**
Oct. 2011	Merged with a subsidiary	Merged with Ferrotec silicon which manufactures and sells **mono crystal silicon products**
Sep. 2010	Established a joint venture manufacturing and sales company	Ferrotec, a local subsidiary and Covalent Materials agreed to establish a joint venture “Hangzhou Solartech Co., Ltd.” to manufacture and sell **vessels and related products**.
Jul. 2010	Acquired shares of IMI in the US	Began sales of **pure silicon products**
April. 2010	Merged with a subsidiary	Merged with **Ferrotec Quartz** which manufactures and sells quartz products
Jan. 2010	Acquired the Temescal Division of Edwards Vacuum	Acquired the Temescal Division of Edwards Vacuum which is the leading manufacturer and distributor of **electron beam-based evaporative coating systems.**
July. 2008	Acquired of Sumikin Ceramics. Changed the name of the company.	Acquired 90% of the surviving company **Sumikin Ceramics & Quartz Co., Ltd.** after spinning of its business except the ceramics business, converted it into a subsidiary, became “Ferrotec Ceramics” and made it a wholly owned subsidiary in 2013
Dec. 2007	Jointly established an assembly sales company in Korea.	Established "CMC Ferrotec" with the local company for the manufacture of **solar cell manufacturing equipment.**
April. 2007	Established a joint venture Manufacturing Corporation in Korea	Established joint venture corporation Ferrotec Korea Co.Ltd with Korean Company(KSMC Corp) for manufacturing **Vacuum Feedthrough.**
Nov. 2006	Merger and liquidation	Merged with Ferrotec Precision, which produces **Vacuum feedthrough**. Liquidated two subsidiaries(Dec.).
Sep. 2006	Established a joint venture in Taiwan	Established Ferrotec Taiwan jointly with a local partner to sell **vacuum feedthroughs** and offer maintenance services
Dec. 2005	Established a joint venture with LTD Ceramics Inc. (USA)	Established joint venture in China to manufacture **ceramics**
July 2005	Acquired NORD Co., Ltd.(Russia)	Acquired company that manufactures and sells **Peltier (thermoelectric) devices** in order to increase share of global market
May 2005	Business alliance with KSM Inc.(Korea)	Alliance for mutual sales of **vacuum feedthroughs** and products associated with semiconductor manufacturing equipment
July 2004	Exclusive contract with Applied Films(Germany)	Gave this company exclusive rights to purchase Ferrotec **vacuum feedthroughs**
Oct. 2003	Business and financial alliance with Aliontek	Technology alliance with ALIONTEK CORPORATION, which has technology for the grinding of quartz products, strengthened manufacturing technology for **quartz products** in China
Feb. 2002	Business alliance with Toshiba Ceramics and Mitsui Co. for wafer production by commissioning	Ferrotec **silicon wafer** production equipment moved to China factory to conduct a CMS business, and manufacturing is outsourced to this factory

Sales and Operating income Trend

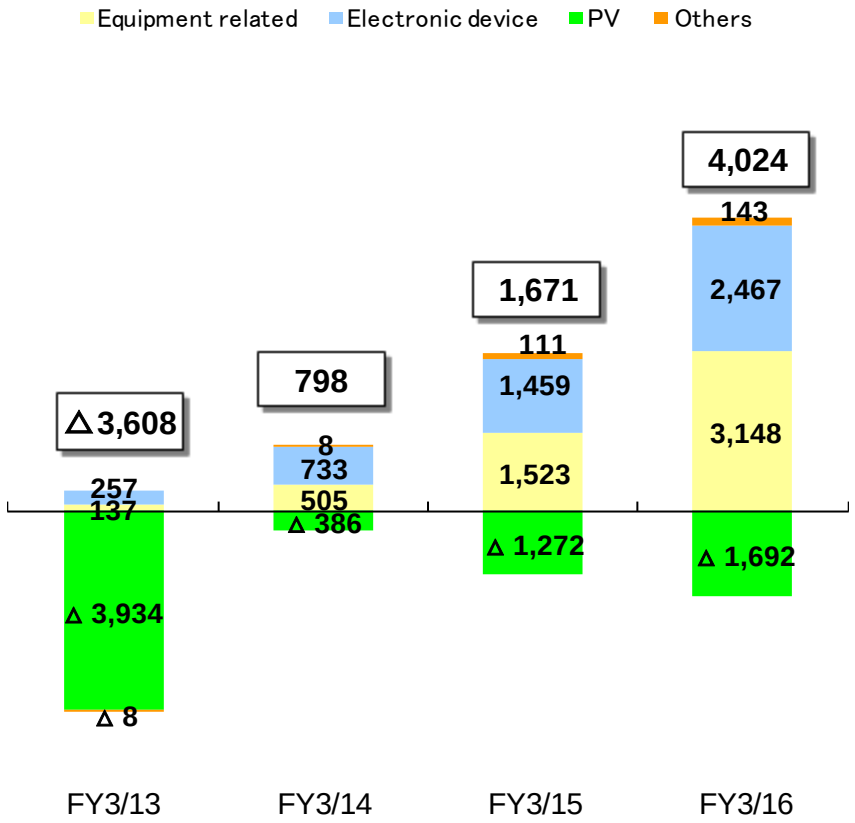
Sales Trend

(¥ in millions)



Operating income Trend

(¥ in millions)



Business performance（FY3/16 revised plan vs. results）

¥ in millions	FY3/16 revised plan		FY3/16 Results			
	Amount	Pct. Of Sales(%)	Amount	Pct. Of Sales(%)	Amount	Pct. change(%)
Equipment-related	30,000	45.5	31,405	45.2	1,405	4.7
Vacuum Feedthroughs	6,857	10.4	7,163	10.3	306	4.5
Quartz	7,085	10.7	7,624	11.0	539	7.6
Ceramics	5,800	8.8	6,147	8.8	347	6.0
CVD-SiC	1,524	2.3	1,685	2.4	161	10.
EB-Gun, LED	3,971	6.0	4,468	6.4	497	12.5
Semiconductor Wafer	4,763	7.2	4,317	6.2	△ 446	△ 9.4
Electronic device	12,500	18.9	13,328	19.2	828	6.6
Thermo-electric module	11,708	17.7	12,559	18.1	851	7.3
Ferrofluid, others	792	1.2	769	1.1	△ 23	△ 2.9
Photovoltaic-related	17,400	26.4	18,505	26.6	1,105	6.4
Quartz crucibles	3,314	5.0	3,524	5.1	210	6.3
Solar silicon	9,641	14.6	8,483	12.2	△ 1,158	△ 12.0
PV manufacturing Epuip.	353	0.5	359	0.5	6	1.7
Solar cell, Others	4,092	6.2	6,141	8.8	2,049	50.1
Others	6,100	9.2	6,224	9.0	124	2.0
Total	66,000	100.0	69,463	100.0	3,463	5.2

Gross income	16,688	25.3	17,313	24.9	625	3.7
SG&A expenses	13,288	20.1	13,289	19.1	1	0.0
Operating income	3,400	5.2	4,024	5.8	624	18.4
Ordinary income	3,000	4.5	3,822	5.5	822	27.4
Net income	1,900	2.9	2,162	3.1	262	13.8

※Net income＝Net income attributable to owners of parent

Business performance（FY3/16 1st half vs. 2nd half）

¥ in millions	FY3/16 1st half		FY3/16 2nd half			
	Amount	Pct. Of Sales(%)	Amount	Pct. Of Sales(%)	Amount	Pct. change(%)
Equipment-related	15,491	46.1	15,914	44.4	423	2.7
Vacuum Feedthroughs	3,527	10.5	3,636	10.1	109	3.1
Quartz	3,625	10.8	3,999	11.2	374	10.3
Ceramics	3,270	9.7	2,877	8.0	△ 393	△ 12.0
CVD-SiC	504	1.5	1,181	3.3	677	134.3
EB-Gun, LED	1,941	5.8	2,527	7.0	586	30.2
Semiconductor Wafer	2,624	7.8	1,693	4.7	△ 931	△ 35.5
Electronic device	6,466	19.2	6,862	19.1	396	6.1
Thermo-electric module	6,074	18.1	6,485	18.1	411	6.8
Ferrofluid, others	392	1.2	377	1.1	△ 15	△ 3.8
Photovoltaic-related	8,741	26.0	9,764	27.2	1,023	11.7
Quartz crucibles	1,704	5.1	1,820	5.1	116	6.8
Solar silicon	5,241	15.6	3,242	9.0	△ 1,999	△ 38.1
PV manufacturing Epuip.	104	0.3	255	0.7	151	145.2
Solar cell, Others	1,692	5.0	4,449	12.4	2,757	162.9
Others	2,917	8.7	3,307	9.2	390	13.4
Total	33,615	100.0	35,848	100.0	2,233	6.6

Gross income	8,548	25.4	8,765	24.5	217	2.5
SG&A expenses	6,605	19.6	6,684	18.6	79	1.2
Operating income	1,942	5.8	2,082	5.8	140	7.2
Ordinary income	1,888	5.6	1,934	5.4	46	2.4
Net income	1,202	3.6	960	2.7	△ 242	△ 20.1

※Net income＝Net income attributable to owners of parent

Business performance（ FY3/15 vs. FY3/16 ）

¥ in millions	FY3/15 Results		FY3/16 Results			
	Amount	Pct. Of Sales(%)	Amount	Pct. Of Sales(%)	Amount	Pct. change(%)
Equipment-related	26,566	45.0	31,405	45.2	4,839	18.2
Vacuum Feedthroughs	7,519	12.7	7,163	10.3	△ 356	△ 4.7
Quartz	5,169	8.7	7,624	11.0	2,455	47.5
Ceramics	5,182	8.8	6,147	8.8	965	18.6
CVD-SiC	-	-	1,685	2.4	-	-
EB-Gun, LED	3,905	6.6	4,468	6.4	563	14.4
Semiconductor wafer	4,791	8.1	4,317	6.2	△ 474	△ 9.9
Electronic device	9,679	16.4	13,328	19.2	3,649	37.7
Thermo-electric module	8,932	15.1	12,559	18.1	3,627	40.6
Ferrofluid, others	748	1.3	769	1.1	21	2.8
Photovoltaic-related	17,948	30.4	18,505	26.6	557	3.1
Quartz crucibles	3,365	5.7	3,524	5.1	159	4.7
Solar silicon	11,458	19.4	8,483	12.2	△ 2,975	△ 26.0
PV manufacturing Epuip.	452	0.8	359	0.5	△ 93	△ 20.6
Solar cell, Others	2,674	4.5	6,141	8.8	3,467	129.7
Others	4,884	8.3	6,224	9.0	1,340	27.4
Total	59,078	100.0	69,463	100.0	10,385	17.6

Gross income	13,484	22.8	17,313	24.9	3,829	28.4
SG&A expenses	11,813	20.0	13,289	19.1	1,476	12.5
Operating income	1,671	2.8	4,024	5.8	2,353	140.8
Ordinary income	2,030	3.4	3,822	5.5	1,792	88.3
Net income	△ 2,132	-	2,162	3.1	4,294	-
Capital Investment	3,375	-	3,440	-	65	1.9
Depreciation	3,964	-	4,303	-	339	8.6

Business performance（FY3/16 vs. FY3/17 Plan）

¥ in millions	FY3/16 Results		FY3/17 Plan			
	Amount	Pct. Of Sales(%)	Amount	Pct. Of Sales(%)	Amount	Pct. change(%)
Equipment-related	31,405	45.2	31,650	42.2	245	0.8
Vacuum Feedthroughs	7,163	10.3	7,400	9.9	237	3.3
Quartz	7,624	11.0	7,850	10.5	226	3.0
Ceramics	6,147	8.8	5,400	7.2	△ 747	△ 12.1
CVD-SiC	1,685	2.4	3,000	4.0	1,315	78.0
EB-Gun, LED	4,468	6.4	4,000	5.3	△ 468	△ 10.5
Semiconductor wafer	4,317	6.2	4,000	5.3	△ 317	△ 7.3
Electronic device	13,328	19.2	12,200	16.3	△ 1,128	△ 8.5
Thermo-electric module	12,559	18.1	11,500	15.3	△ 1,059	△ 8.4
Ferrofluid, others	769	1.1	700	0.9	△ 69	△ 9.0
Photovoltaic-related	18,505	26.6	23,550	31.4	5,045	27.3
Quartz crucibles	3,524	5.1	3,500	4.7	△ 24	△ 0.7
Solar silicon	8,483	12.2	12,000	16.0	3,517	41.5
PV manufacturing Epuip.	359	0.5	800	1.1	441	122.8
Solar cell, Others	6,141	8.8	7,250	9.7	1,109	18.0
Others	6,224	9.0	7,600	10.1	1,376	22.1
Total	69,463	100.0	75,000	100.0	5,537	8.0

Gross income	17,313	24.9	17,692	23.6	379	2.2
SG&A expenses	13,289	19.1	12,692	16.9	△ 597	△ 4.5
Operating income	4,024	5.8	5,000	6.7	976	24.3
Ordinary income	3,822	5.5	4,200	5.6	378	9.9
Net income	2,162	3.1	3,000	4.0	838	38.8
Capital Investment	3,440	-	8,000	-	4,560	132.6
Depreciation	4,303	-	4,500	-	197	4.6

Business performance（FY3/17 1st half vs. 2nd half）

¥ in millions	FY3/17 1st half		FY3/17 2nd half			
	Amount	Pct. Of Sales(%)	Amount	Pct. Of Sales(%)	Amount	Pct. change(%)
Equipment-related	15,430	41.7	16,220	42.7	790	5.2
Vacuum Feedthroughs	3,750	10.1	3,650	9.6	△ 100	△ 2.7
Quartz	3,950	10.7	3,900	10.3	△ 50	△ 1.3
Ceramics	2,700	7.3	2,700	7.1	0	0.0
CVD-SiC	1,380	3.7	1,620	4.3	240	17.4
EB-Gun, LED	1,800	4.9	2,200	5.8	400	22.2
Semiconductor wafer	1,850	5.0	2,150	5.7	300	16.2
Electronic device	5,990	16.2	6,210	16.3	220	3.6
Thermo-electric module	5,640	15.2	5,860	15.4	220	3.9
Ferrofluid, others	350	0.9	350	0.9	0	0.0
Photovoltaic-related	12,130	32.8	11,420	30.0	△ 710	△ 5.9
Quartz crucibles	1,540	4.2	1,960	5.2	420	27.1
Solar silicon	6,090	16.5	5,910	15.6	△ 180	△ 3.0
PV manufacturing Epuip.	800	2.2	0	-	△ 800	-
Solar cell, Others	3,700	10.0	3,550	9.3	△ 150	△ 4.1
Others	3,450	9.3	4,150	10.9	700	20.3
Total	37,000	100.0	38,000	100.0	1,000	2.7
Gross income	8,702	23.5	8,990	23.7	288	3.3
SG&A expenses	6,332	17.1	6,360	16.7	28	0.4
Operating income	2,370	6.4	2,630	6.9	260	11.0
Ordinary income	1,745	4.7	2,455	6.5	710	40.7
Net income	1,250	3.4	1,750	4.6	500	40.0

※Net income＝Net income attributable to owners of parent