

Ferrotec Holdings Corporation

6890

TSE JASDAQ

2-Oct.-2020

FISCO Ltd. Analyst

Noboru Terashima



FISCO Ltd.

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

■ Index

| | |
|--|-----------|
| ■ Summary | 01 |
| 1. FY3/20 results | 01 |
| 2. FY3/21 forecasts | 01 |
| 3. Longer-term outlook: currently revising the medium-term management plan (final fiscal year, FY3/22) | 02 |
| ■ Company profile | 03 |
| 1. Company profile | 03 |
| 2. History | 03 |
| ■ Business overview | 04 |
| 1. Business segments | 04 |
| 2. Semiconductor and other equipment-related | 04 |
| 3. Electronic devices | 06 |
| 4. Others | 07 |
| 5. Features and strengths | 08 |
| ■ Business performance | 08 |
| 1. Review of FY3/20 results | 08 |
| 2. Segment results | 11 |
| 3. Capital investment and depreciation costs | 13 |
| 4. Review of 1Q FY3/21 results | 13 |
| ■ Business outlook | 15 |
| 1. FY3/21 forecasts | 15 |
| 2. 1H FY3/21 forecasts | 16 |
| 3. 1H FY3/21 results forecast by segment | 17 |
| 4. Capital investment and depreciation costs | 19 |
| ■ Medium- to long-term growth strategy | 19 |
| 1. Overview of medium-term management goals | 19 |
| 2. Recent conditions of and outlook for strategic products | 19 |
| 3. Issue for the future: maintain a balance between investment and the financial base | 21 |
| ■ Shareholder return policy | 22 |

Summary

Leading manufacturer of quartz, silicon, ceramic, and other inorganic parts and products.

Ferrotec Holdings <6890> (hereafter, also “the Company”) manufactures vacuum seals, quartz products, ceramic products, CVD-SiC, ferrofluids, thermo-electric modules, silicon wafers, power semiconductor substrates, and other various products, equipment, parts, and materials. The Company is a major manufacturer that also provides cleaning service for various parts to semiconductor production equipment (SPE) manufacturers and silicon wafer polishing. Its main customers are major SPE manufacturers.

1. FY3/20 results

In FY3/20, the Company reported ¥81,613mn in net sales (-8.8% YoY), ¥6,012mn in operating income (-31.5%), ¥4,263mn in ordinary income (-47.1%), and ¥1,784mn in net income attributable to owners of parent (-37.3%). Results had already been sluggish from the 1H for the mainstay semiconductor and other equipment-related, so during the 2Q, the Company downwardly revised the full fiscal year results forecasts. However, on entering the 4Q, results were slightly below the revised values, including due to the impact of the novel coronavirus pandemic (hereafter, the coronavirus). In net sales by segment, semiconductor and other equipment-related decreased 7.2%, electronic devices increased 4.6%, and others declined 22.1%. Photovoltaic-related, which continues to contract, has been incorporated into “others.” The impact of the coronavirus on the current results was minimal, because the fiscal year of the main subsidiary in China ends in December. However, in the domestic market from February onwards, its impact was felt in areas including distribution and sales. Capital investment was ¥33,920mn (initial forecast, ¥48,000mn), centered on wafer-related, with some projects being postponed until the next period.

2. FY3/21 forecasts

In FY3/21 guidance, the Company targets ¥85,000mn in net sales (+4.1% YoY), ¥6,500mn in operating income (+8.1%), ¥5,500mn in ordinary income (+29.0%), and ¥1,500mn in net income attributable to owners of parent (-16.0%). For 1H FY3/21, the Company is forecasting ¥40,000mn in net sales (-4.4% YoY), ¥3,000mn in operating income (-15.9%), ¥2,500mn in ordinary income (+1.1%), and ¥0mn in net income attributable to owners of parent (-100.0%). The reasons for the net income attributable to owners of parent forecast are that, on closing the photo-voltaic-use multi-crystal ingots business, the Company will record on impairment loss on manufacturing equipment of approximately ¥1,200mn, and the outlook is for a loss of ¥1,500mn, including to process other fixed assets. The net sales forecasts by segment are semiconductor and other equipment-related to increase 4.9%, electronic devices to decrease 5.2%, and others to decline 36.8%. The 1H results period for the main subsidiaries is until the end of June, and it is thought that at the present time, the 1H results have basically been determined. Therefore, it seems highly likely that the results will achieve the 1H forecasts on a consolidated basis. For capital investment (full fiscal year), there are projects postponed from FY3/20, so the capital investment forecast is for ¥29,400mn (initial forecast, ¥12,000mn).

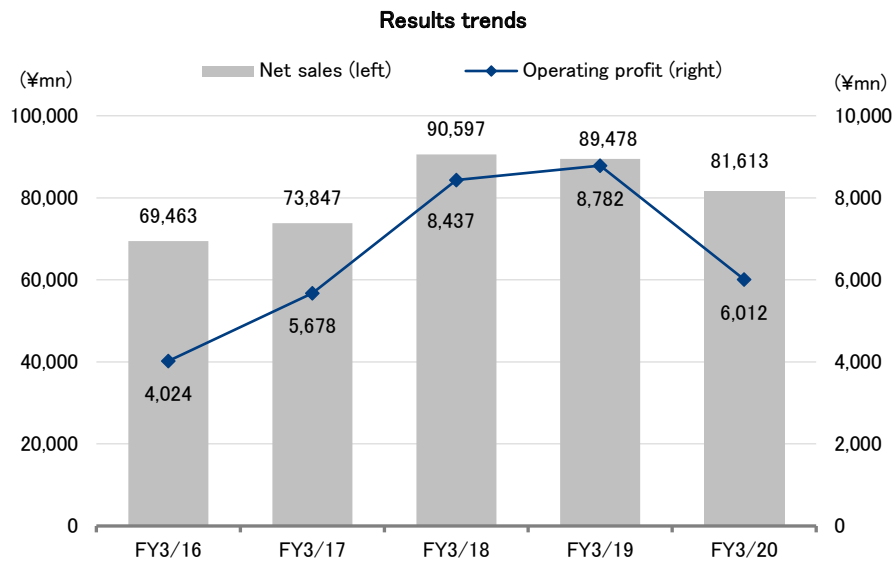
Summary

3. Longer-term outlook: currently revising the medium-term management plan (final fiscal year, FY3/22)

The Company has announced the medium-term management plan, in which it set the targets for FY3/22 of net sales of ¥120bn to ¥130bn, operating income of ¥12bn to ¥13bn, an operating margin of at least 10.0%, ROE of at least 10.0%, ROIC of at least 6.0%, and an equity ratio of at least 40.0%. However, due to the impact of the coronavirus, the future remains unclear, particularly for the semiconductor industry, and therefore it has decided to review these targets. Capital investment is expected to remain at a high level in FY3/21 due to the projects that were postponed from FY3/20. Conversely, interest-bearing debt continues to increase. The Company has also changed its Representative Director and President. Going forward, it plans to progress the plan while maintaining a balance between business opportunities (the investment plan) and the financial base, and it is expected to once again announce a new medium-term management plan.

Key Points

- Leading manufacturer of quartz, ceramic, and other inorganic products; mainly supplies the semiconductor industry
- Sales and profits declined in FY3/20 due to the slowdown of the semiconductor industry
- Earnings are forecast to increase in FY3/21, but will continue with a high level of capital investment. An important issue is maintaining a balance with the financial base.



Source: Prepared by FISCO from the Company's financial results

■ Company profile

Manufactures a wide range of parts and products mainly for SPE firms

1. Company profile

Ferrotec is a pure holding company with 47 consolidated subsidiaries and 6 equity-method affiliates and 7,533 group employees as of March 31, 2020. It was originally established as US-based Ferrofluidics Corporation's Japanese entity (former Nippon Ferrofluidics Co., Ltd.) in 1980, but later separated from the parent company and has pursued an independent path.

It manufactures vacuum seals, quartz products, ceramic products, CVD-SiC, ferrofluids, thermo-electric modules, silicon wafers, solar-cell silicon, and other various products that are mainly made from inorganic materials, equipment, parts, and materials. It also handles cleaning and consignment processing and assembly of various parts and products for SPE firms. Its primary customers are global major SPE firms. Meanwhile, the solar-cell silicon business is shrinking, and the Company ultimately plans to withdraw from those operations except for OEM supply activities.

2. History

The Company has a very unique history. It was initially established as the Japanese entity of a US company in 1980 and mainly conducted import sales of the parent's products (vacuum seals, etc.). In 1982, it built a plant in Chiba Prefecture and began direct production. Ties to the parent company faded as the Company's ratio of self-manufactured products climbed and in 1987, the Company completely split from the parent. It then developed proprietary products, such as HDD laminated seals and ultra-high vacuum ferrofluids (fluorine-based magnetic fluids). It established the first Chinese site (Hangzhou) in 1992 and created a second Chinese production site in Shanghai and changed the company name to Ferrotec Corporation in 1995.

The Company continued to expand the product line-up and businesses. It registered shares with the Japan Securities Dealers Association as an OTC publicly-traded stock in 1996. It acquired Ferrofluidics Co., Ltd., the former US parent company, as a subsidiary in a friendly TOB in 1999. It entered into a business alliance in automobile temperature control systems with US-based Gentherm Incorporated (former Amerigon) in 2001, started consignment processing of small-diameter silicon wafers at the Shanghai plant in 2002, and acquired Russia-based thermo module manufacturer SCTB NORD as a subsidiary in 2005. The Company widened business scope more recently through the purchase of a vacuum deposition equipment business from UK-based Edwards Vacuum in 2010, the launch of a large plant in Y-inchuan (China) in 2011, acquisition of a stake in Admap Inc., a CVD-SiC product supplier, making it a subsidiary in 2015, and capital participation in Asahi Seisakusho Co., Ltd., an industrial equipment firm, making it a subsidiary in 2016. The Company transitioned to a holding company in spring 2017 and currently operates as an international company with manufacturing subsidiaries and sales companies located in nine countries worldwide, including Japan, Europe, America, China, and Southeast Asia.

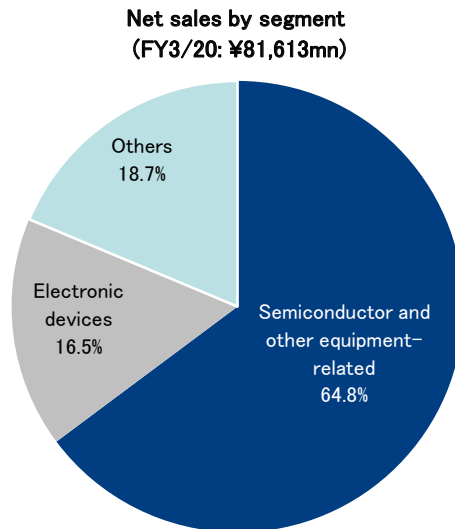
The Company listed shares through an OTC registration with the Japan Securities Dealers Association in October 1996, and it is now listed on the Tokyo Stock Exchange's JASDAQ Standard market. On July 31, 2020, the founder, Representative Director and President Akira Yamamura, became Representative director and Chairman, while Representative Director and Vice President He Xian Han was appointed Representative Director and President.

■ Business overview

Has wide-ranging business content (products), but semiconductor and other equipment-related business is the main area

1. Business segments

Ferrotec has broad business content because of its proprietary development of many products and acquisitions of numerous companies as subsidiaries through M&A activity, as described above. Its business segments are semiconductor and other equipment-related business (64.8% of overall sales in FY3/20), electronic devices business (16.5%), and others (18.7%).



Source: Prepared by FISCO from the Company's results briefing materials

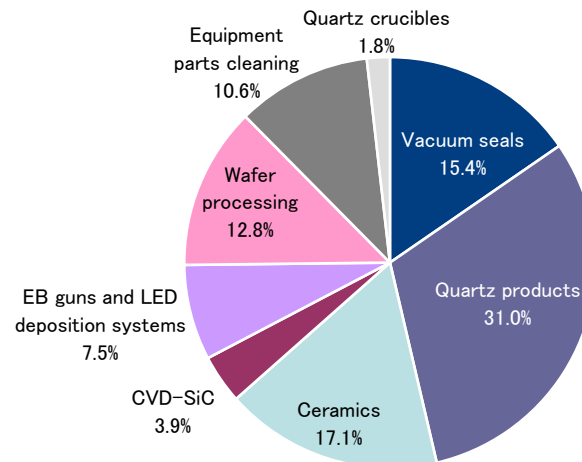
These segments consist of the sub-segments described below.

2. Semiconductor and other equipment-related

The semiconductor and other equipment-related business covers vacuum seals, quartz products, ceramics, CVD-SiC, electron-beam guns and LED deposition equipment, semiconductor wafer processing, equipment parts cleaning, and quartz crucibles sub-segments.

Business overview

**Semiconductor manufacturing equipment-related sales ratios
 by sub-segment
 (FY3/20: ¥52,880mn)**



Source: Prepared by FISCO from the Company's results briefing materials

(1) Vacuum seals (10.0% of overall sales in FY3/20)

The Company's core product vacuum seals function as a rotary manipulator into a vacuum environment using ferrofluid and are utilized in semiconductor, FPD, LED, solar cell, and other manufacturing processes. Vacuum seals are used mainly in semiconductor wafer etching and deposition processes and in the rotary mechanism of FPD panel conveyance robots. They are capable of precisely transferring required power for processing while keeping sealed space separated from the outside.

Sales shares by industries (FY3/20) are semiconductors at 41%, LEDs at 9%, FPDs at 11%, solar cells at 10% and others (mainly consignment business, etc.) at 29%.

(2) Quartz products (20.1%)

Quartz products are silica glass with very high purity that can withstand heat and chemical changes. Ferrotec's products are primarily utilized in semiconductor manufacturing for the wafer deposition and dispersion process and as jigs and consumables in conveyance and cleaning processes. Quartz products serve in an important capacity in semiconductor manufacturing processes that are becoming more precise and requiring higher purity levels.

Sales shares by industries (FY3/20) are OEM mainly to major semiconductor manufacturers at 70%, end users (device manufacturers) at 26%, optical fibers at 1%, and others at 3%. Main OEM sites are three major companies in Japan, two major companies in the US, and one company in China.

(3) Ceramics (11.1%)

Ferrotec supplies a variety of ceramic parts with high strength and high purity utilizing the material technologies, production technologies and precision processing technologies that it possesses. Ferrotec's offerings can be categorized as fine ceramics (FC) with robust strength, high purity, and excellent heat resistance and machinable ceramics (MC) that can undergo advanced machine processing. The former are mainly used as parts in SPE. In particular, they are vital to the dry-etching method (plasma etchers). The latter are used as parts and jigs in a variety of processing. Demand is growing for use as jigs in the semiconductor inspection process (for wafer probers). Usage in advanced medical equipment that leverages precision processing features is also growing in recent years.

Business overview

Sales shares by major products (FY3/20) are MC semiconductor inspection at 11%, MC domestic general at 4%, MC exports at 9%, FC domestic semiconductor equipment at 15%, FC overseas semiconductor equipment at 59%, and others at 2%.

(4) CVD-SiC (2.5%)

Ferrotec realizes very high purity, excellent heat resistance, high wear resistance, and erosion resistance in silicon carbide (SiC) products that apply a proprietary CVD production method. It is broadly utilized in jigs for use in high temperatures, including wafer boats and tubes and dummy wafers (silicon wafer replacements).

Sales shares by regions (FY3/20) are Japan at 42%, China at 36%, North America at 12%, Taiwan at 7%, and Europe and other at 3%.

(5) Electron beam guns and LED deposition equipment (4.9%)

Ferrotec supplies electron-beam (EB) guns and a wide range of US-made Temescal mount systems (precision deposition equipment), which are outfitted with an advanced EB guns and high voltage power supply as core components, from smaller production types for universities and research centers to large product models with high throughput. Many customers employ these systems as a global standard for compound semiconductors that are likely to be adopted in next-generation communications and other areas. Steady advances are proceeding in LED and communications chip process areas.

(6) Semiconductor wafer processing (8.3%)

Ferrotec handles integrated production from mono-crystal ingots to wafer processing for small-diameter silicon wafers (six-inches or less) for the semiconductor industry. It has built global supply operations mainly for volume-output products used by bipolar ICs, discrete circuit applications, and MEMS. It also started production of eight-inch wafers in 2017, and it has built a framework to boost volume output for 8-inch wafers, as shall be noted later.

(7) Equipment parts cleaning (6.9%)

Equipment parts cleaning business handles cleaning of SPE parts. It was included under other business through FY3/18. This is an area with growth prospects.

(8) Quartz crucibles (1.2%)

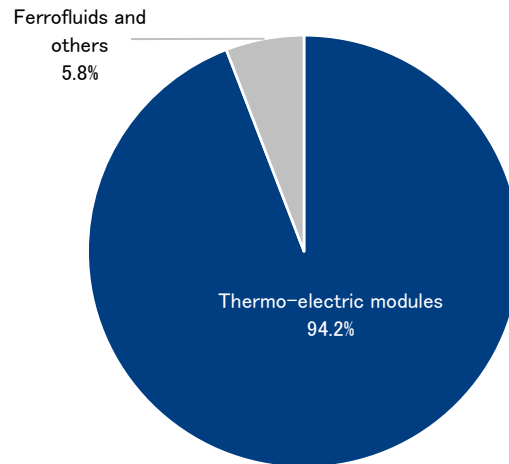
The Company uses the same high-purity raw materials which are essential for the quartz products used in the semiconductor production process for its quartz crucibles, and the crucibles are used as containers to replenish single-crystal silicon raw material. Main customers are manufacturers of single-crystal silicon used in semiconductors, solar cells, and other applications. The Company aims to generate profits by raising the share of sales to semiconductor customers. It therefore moved the segment to semiconductor and other equipment-related business in FY3/20.

3. Electronic devices

The electronic devices business is divided into the two sub-segments of thermo-electric modules and ferrofluids and others.

Business overview

**Electronic device sales ratios by sub-segments
 (FY3/20: ¥13,489mn)**



Source: Prepared by FISCO from the Company's results briefing materials

(1) Thermo-electric modules (15.6%)

Thermo-electric modules are plate-like semiconductor cooling devices (Peltier devices) that utilize the effect of heat transferring from one metal to the other when electric current flows through a junction between two types of metal. These modules are compact and lightweight and do not require freons. Common uses are temperature-controllable seats in automobiles and cooling chillers, optical communications, biochemical, air-conditioners, and dryers and other consumer electronics products.

Sales shares by industry (FY3/20) are automobiles at 16.5%, automobiles, other at 0.3%, semiconductors at 4.9%, photography at 4.6%, biochemical at 7.4%, optical communications at 31.0%, scientific areas at 1.7%, consumer at 3.7%, power device substrates at 22.3%, and others at 7.6%.

(2) Ferrofluids and others (1.0%)

Ferrofluids are a functional liquid material that is magnetically affected by external magnetic fields and is attracted to magnets. The NASA space program in the 1960s developed ferrofluids for the purpose of transporting fuel in a zero-gravity environment. Today they are utilized in speakers, actuators, sensors, recycling separation, and vacuum seals (which are one of Ferrotec's main products).

Other businesses include power semiconductor substrates. They are heat-dissipation and insulation substrates that apply thermo-electric module manufacturing technologies and bond a copper circuit board to alumina and aluminum nitride ceramics through a eutectic reaction. These products contribute to downsizing and energy savings in trains, electric-drive vehicles, air-conditioners, and servers and are likely to attract growing demand.

4. Others

This segment consists of solar-cell silicon, silicon crystal production equipment, cells, and subsidiary Asahi Seisakusho's linen detergent, consignment tasks and other business. The Company is currently shrinking photo-voltaic-related business and ultimately plans to exit it, other than OEM supply activities.

5. Features and strengths

(1) Pioneer in inorganic materials

The Company has been involved for many years in production and processing of a wide range of inorganic materials, including quartz, silicon, silicon nitride, and silicon carbide (SiC). It hence has accumulated extensive knowhow (material qualities, production method, processing method, etc.) related to these materials. We believe this aspect is a characteristic and strength.

(2) Handles production equipment too

Additionally, the Company handles not just materials, but also various types of production equipment. It therefore possesses knowledge related to production equipment as well and offers customers a variety of proposals (solutions), including materials, processed parts, finished products, and manufacturing equipment.

(3) Supports one-stop solutions

Furthermore, the Company engages in service businesses, such as cleaning SPE parts (removal, cleaning, reinstallation) and production equipment assembly. Customers can conduct one-stop outsourcing of material supply, parts processing, equipment assembly, and parts cleaning. We think this is an important strength.

(4) Trust relationship with major customers

The Company's main customers are global top-class SPE manufacturers because its products are primarily utilized in SPE and semiconductor production processes as explained above. The top three firms in FY3/18 sales were two US-based production equipment firms and a Japanese equipment firm. The Company has supplied these leading SPE manufacturers with products and parts over many years. We believe its deep trust relationships with these customers are assets and strength.

■ Business performance

In FY3/20, demand from the semiconductor industry slowed down and sales and profits decreased. Some of the high-level capital investment was postponed to the next period.

1. Review of FY3/20 results

(1) Earnings

In FY3/20, the Company reported ¥81,613mn in net sales (-8.8% YoY), ¥6,012mn in operating income (-31.5%), ¥4,263mn in ordinary income (-47.1%), and ¥1,784mn in net income attributable to owners of parent (-37.3%). Results had already been sluggish from the 1H for the mainstay semiconductor and other equipment-related, so during the 2Q, the Company downwardly revised the full fiscal year results forecasts. However, on entering the 4Q, results were slightly below the revised values, including due to the impact of the coronavirus.

Ferrotec Holdings Corporation | 2-Oct.-2020

6890 TSE JASDAQ | <https://www.ferrotec.co.jp/en/ir/>

Business performance

In net sales by segment, semiconductor and other equipment-related decreased 7.2% YoY, electronic devices increased 4.6%, and others declined 22.1%. Photovoltaic-related, which continues to contract, has been incorporated into "others." In the mainstay semiconductor and other equipment-related, in the 2H capital investment-related (manufacturing equipment) and consumables-related both slowed down, and sales declined for the full fiscal year. In electronic devices, sales trended downward for automobile temperature-controllable seats, but they trended solidly for other products, including thermo-electric modules for communication equipment (5G) and power semiconductor substrates. Therefore, sales increased for the segment. However, sales decreased in others, which includes photovoltaic-related that is currently contracting.

The impact of the coronavirus on the current results was minimal, because the fiscal year of the main subsidiary in China ends in December. However, in the domestic market from February onwards, its impact was felt in areas including distribution and sales. Capital investment was ¥33,920mn (initial forecast, ¥48,000mn), centered on wafer-related, with some projects being postponed until the next period.

The total gross profit margin improved to 33.0% (30.3% in the previous period). This was mainly due to the improved gross profit margins in the electronic devices segment and the others segment. But although the profit margin improved, due to the decline in sales, gross income was basically the same as in the previous fiscal period at ¥26,928mn (down 0.8% YoY). Conversely, SG&A expenses increased to ¥20,915mn (up 14.0%) because of factors including the start of operations at a new site and an increase in the allowance for doubtful accounts (¥575mn). Therefore, operating income declined 31.5% YoY to ¥6,012mn. For non-operating expenses and income, in non-operating income, subsidy income increased ¥671mn. However, non-operating expenses were ¥1,749mn (compared to expenses of ¥722mn in the previous period), mainly because interest expense increased ¥538mn, the exchange loss rose ¥885mn, and the provision of allowance for doubtful accounts grew ¥546mn. The decrease rate of ordinary income was bigger than that of operating income. Also, net income attributable to owners of parent decreased 37.3% due to the recording of an impairment loss of ¥788mn, mainly for the surface treatment business.

Capital investment was ¥33,920mn (¥35,953mn in the previous period), primarily for investment by the Chinese subsidiaries, which was approximately ¥14,000mn below the initial forecast (¥48,000mn). This was because some projects were postponed until the next period, and the forecast itself has not been suspended. Breaking it down, around ¥24,500mn was for large diameter wafer-related and the remaining ¥9,400mn was for other investments. Depreciation costs were high, at ¥7,600mn (¥5,755mn).

FY3/20 results

| | FY3/19 | | FY3/20 | | | |
|---|--------|-------------------|--------|-------------------|--------|----------|
| | Amount | Composition ratio | Amount | Composition ratio | Change | Change % |
| Net sales | 89,478 | 100.0% | 81,613 | 100.0% | -7,864 | -8.8% |
| Gross profit | 27,137 | 30.3% | 26,928 | 33.0% | -209 | -0.8% |
| SG&A expenses | 18,354 | 20.5% | 20,915 | 25.6% | 2,560 | 14.0% |
| Operating income | 8,782 | 9.8% | 6,012 | 7.4% | -2,769 | -31.5% |
| Ordinary income | 8,060 | 9.0% | 4,263 | 5.2% | -3,796 | -47.1% |
| Net income attributable to owners of parent | 2,845 | 3.2% | 1,784 | 2.2% | -1,060 | -37.3% |
| Capital investment | 35,953 | 40.2% | 33,920 | 41.6% | -2,033 | -5.7% |
| Depreciation | 5,755 | 6.4% | 7,600 | 9.3% | 1,845 | 32.1% |

Source: Prepared by FISCO from the Company's financial results and results briefing materials

Due to the high-level capital investment, tangible fixed assets increased, while interest-bearing debt also grew significantly

(2) Financial condition

In the financial condition at the end of FY3/20, the Company reported ¥71,451mn in current assets (up ¥5,819mn from the end of the previous fiscal year), mainly on decreases of ¥7,846mn in cash and deposits, ¥1,025mn in notes and accounts receivables, and an increase of ¥992mn in inventories. Fixed assets decreased ¥32,731mn from the end of previous fiscal year to ¥118,558mn. This was mainly due to a ¥34,683mn increase in tangible fixed assets primarily from capital investments, a ¥3,057mn decrease in intangible fixed assets due to the adoption of IFRS 16, and a ¥1,105mn increase in investments and other assets. Total assets hence grew by ¥26,911mn to ¥190,010mn.

Total liabilities were ¥139,862mn (up ¥26,612mn on the end of the previous period). The main items were that notes and accounts payable decreased ¥2,635mn, short-term debt increased ¥2,906mn, the current portion of long-term borrowings (including bonds) rose ¥2,764mn, bonds increased ¥8,057mn, convertible bond-type bonds with share acquisition rights grew ¥3,734mn, and long-term debt declined ¥65mn. As a result, interest-bearing debt at the end of the period was ¥78,474mn (up ¥17,398mn). Net assets were ¥50,147mn (up ¥299mn), with the main items including that retained earnings increased ¥908mn due to the recording of net income attributable to owners of parent, and foreign currency translation adjustments decreased ¥2,158mn. As a result, the equity ratio at the end of the period was 25.5% (30.3% at the end of the previous period).

Consolidated balance sheet

| | End of FY3/19 | End of FY3/20 | Change |
|---|----------------|----------------|---------------|
| | | | (¥mn) |
| Cash and deposit | 31,555 | 23,709 | -7,846 |
| Notes and accounts receivable | 21,460 | 20,435 | -1,025 |
| Inventories | 16,276 | 17,269 | 992 |
| Total current assets | 77,271 | 71,451 | -5,819 |
| Tangible fixed assets | 76,133 | 110,816 | 34,683 |
| Intangible fixed assets | 3,557 | 500 | -3,057 |
| Investments and other assets | 6,136 | 7,241 | 1,105 |
| Total fixed assets | 85,827 | 118,558 | 32,731 |
| Total assets | 163,098 | 190,010 | 26,911 |
| Notes and accounts payable | 20,887 | 18,251 | -2,635 |
| Short-term debt | 9,603 | 12,510 | 2,906 |
| Current portion of long-term borrowings | 8,784 | 10,138 | 1,354 |
| Total current liabilities | 60,180 | 61,443 | 1,263 |
| Bonds | 11,225 | 19,282 | 8,057 |
| Long-term debt | 29,505 | 29,439 | -65 |
| Total fixed liabilities | 53,069 | 78,418 | 25,349 |
| Total liabilities | 113,250 | 139,862 | 26,612 |
| Net assets | 49,848 | 50,147 | 299 |

Source: Prepared by FISCO from the Company's financial results

Business performance

(3) Cash flow conditions

Cash flow provided by operating activities during FY3/20 was ¥8,902mn. Major inflows include income before income taxes of ¥3,540mn, depreciation of ¥7,600mn and a ¥299 decrease in trade receivables. Major outflows include a ¥1,328mn increase in inventories, and a ¥1,168mn decrease in trade payables. Cash flow used in investing activities was ¥34,472mn, mainly due to ¥33,795mn in purchase of tangible fixed assets. Cash flow provided by financing activities was ¥17,996mn. Major inflows include a ¥4,349mn increase in short- and long-term debt, ¥11,941mn in proceeds from the issuance of bonds, and ¥3,707mn in proceeds from the issuance of convertible bond-type bonds with share acquisition rights, versus outflows of ¥887mn in dividends paid.

As a result, the balance of cash and cash equivalents decreased ¥7,968mn to ¥23,709mn in FY3/20.

Cash flow statement

| | (¥mn) | |
|---|---------|---------|
| | FY3/19 | FY3/20 |
| Cash flow from operating activities | 11,466 | 8,902 |
| Income before income taxes | 5,642 | 3,540 |
| Depreciation | 5,755 | 7,600 |
| Changes in notes and accounts receivable (-: increase) | -2,057 | 299 |
| Changes in inventories (-: increase) | -157 | -1,328 |
| Changes in accounts payable (-: decrease) | 1,543 | -1,168 |
| Cash flow from investing activities | -37,063 | -34,472 |
| Purchase of tangible fixed assets | -34,810 | -33,795 |
| Cash flow from financing activities | 34,507 | 17,996 |
| Changes in short-and long-term debt | 25,825 | 4,349 |
| Proceeds from the issuance/redemption of bonds | 10,001 | 9,358 |
| Proceeds from the issuance of convertible bond-type bonds with share acquisition rights | - | 3,707 |
| Dividends paid | -887 | -887 |
| Changes in cash and cash equivalents (-: decrease) | 7,906 | -7,968 |
| Cash and cash equivalents, end of year | 31,555 | 23,709 |

Source: Prepared by FISCO from the Company's financial results

Net sales of equipment parts cleaning increased 61.6% YoY and has the top market share in China

2. Segment results

In segment results, sales and profits decreased to ¥52,880mn in sales (-7.2% YoY) and ¥4,192mn in operating income (-54.2%) for mainstay semiconductor and other equipment-related and ¥13,489mn in sales (+4.6%) and ¥2,768mn in operating income (+17.0%) for electronic devices. Others booked ¥15,243mn in sales (-22.1% YoY) and a ¥260mn in operating income (vs. a ¥1,930mn loss a year ago).

Ferrotec Holdings Corporation | **2-Oct.-2020**
 6890 TSE JASDAQ | <https://www.ferrotec.co.jp/en/ir/>

Business performance

Segment sales and operating income

| | FY3/19 | | FY3/20 | | | |
|--|--------|-------------------|--------|-------------------|--------|----------|
| | Amount | Composition ratio | Amount | Composition ratio | Change | Change % |
| Net sales | 89,478 | 100.0% | 81,613 | 100.0% | -7,864 | -8.8% |
| Semiconductor and other equipment-related business | 57,001 | 63.7% | 52,880 | 64.8% | -4,120 | -7.2% |
| Vacuum seals | 11,889 | 13.3% | 8,136 | 10.0% | -3,753 | -31.6% |
| Quartz products | 15,590 | 17.4% | 16,373 | 20.1% | 783 | 5.0% |
| Ceramics | 10,221 | 11.4% | 9,048 | 11.1% | -1,173 | -11.5% |
| CVD-SiC | 2,800 | 3.1% | 2,036 | 2.5% | -764 | -27.3% |
| EB guns and LED deposition systems | 4,750 | 5.3% | 3,973 | 4.9% | -777 | -16.4% |
| Wafer processing | 7,236 | 8.1% | 6,754 | 8.3% | -482 | -6.7% |
| Equipment parts cleaning | 3,468 | 3.9% | 5,606 | 6.9% | 2,138 | 61.6% |
| Quartz crucibles | 1,072 | 1.2% | 955 | 1.2% | -117 | -10.9% |
| Electronic devices business | 12,897 | 14.4% | 13,489 | 16.5% | 591 | 4.6% |
| Thermo-electric modules | 11,930 | 13.3% | 12,701 | 15.6% | 771 | 6.5% |
| Ferrofluids and others | 967 | 1.1% | 789 | 1.0% | -178 | -18.4% |
| Others business | 19,579 | 21.9% | 15,243 | 18.7% | -4,336 | -22.1% |
| Operating income | 8,782 | 9.8% | 6,012 | 7.4% | -2,769 | -31.5% |
| Semiconductor and other equipment-related business | 9,143 | - | 4,192 | - | -4,951 | -54.2% |
| Electronic devices business | 2,365 | - | 2,768 | - | 402 | 17.0% |
| Others business | -1,930 | - | 260 | - | 2,190 | - |
| Adjustment value | -796 | - | -1,208 | - | -412 | - |

Source: Prepared by FISCO from the Company's financial results and results briefing materials

The status of the main sub-segments is as follows.

(1) Vacuum seals business

Net sales were ¥8,136mn (down 31.6% YoY). In 2019, capital investment in semiconductors and flat panel manufacturing equipment, including organic EL and liquid crystal, entered adjustment phases and sales were weak across the year. For consignment processing, to secure production operations, the Company is capturing demand domestically and overseas for non-semiconductor applications. However, the decline for the mainstay SPE (mainly for the vacuum process) did not fully recover and sales decreased significantly for the full fiscal year.

(2) Quartz products

Net sales increased to ¥16,373mn (up 5.0% YoY). The semiconductor market is in an adjustment phase, and in this situation, the consumables repeat demand rate is high, and sales of quartz products were secured basically the same as in the previous year. From the second half of 2019, it has become clear that demand is on a recovery track, and progress was made in recovering the order volume. Si parts were adopted in the Chinese market for SPE, and an increase in sales was secured even in the severe market environment.

(3) Ceramic products

Net sales were ¥9,048mn (down 11.5% YoY). For the machinable ceramic Photoveel, sales were solid of semiconductor inspection jigs to domestically and overseas for both the conventional and new types, although sales slumped to overseas of semiconductor inspection jigs materials. Sales to overseas of medical-related parts and other such products were strong. In fine ceramics, sales were sluggish to overseas of etching equipment parts, including because customers conducted inventory adjustments in 2019. Domestically, sales of various parts for film formation equipment recovered from the second half of the year.

Business performance

(4) CVD-SiC products

Net sales were ¥2,036mn (down 27.3% YoY). Sales were solid of highly pure refractory materials for SiC-epi. However, sales decreased of parts for SPE, mainly due to the impact of capital-investment adjustments.

(5) Wafer processing and equipment parts cleaning

Net sales of semiconductor wafer processing were ¥6,754mn (down 6.7% YoY). Demand declined for markets including automobiles and industrial equipment, and from the 2H, sales were weak for both 6-inch and 8-inch. So sales declined 6.7% for the full fiscal year.

Equipment parts cleaning net sales increased greatly to ¥5,606mn (up 61.6% YoY) in response to the expansion in the scale of production of semiconductor device manufactures and FPD manufacturers in China.

(6) Thermo-electric module products

Net sales were ¥12,701mn (up 6.5% YoY). For automobiles, sales of temperature-controllable seats have continued to decline. In new applications for automobiles, the Company has focused on projects that are highly likely to be adopted in the future. For other industries, the expansion in applications for 5G-related communication devices was noticeable across the year. Sales of power substrates increased over the full fiscal year. However, sales declined in the 2H, including due to adjustments of industrial equipment.

3. Capital investment and depreciation costs

In FY3/20, capital investment was ¥33,920mn (¥35,953mn in the previous period), a decrease of approximately ¥14,000mn from the initial forecast of ¥48,000mn. This was because some projects have been postponed until the next period and does not mean a significant decrease in the forecast itself. Breaking down the investment, large diameter (8-inch and 12-inch) related was around ¥24,500mn and others (power semiconductors, quartz-related, cleaning-related, etc.) was approximately ¥9,400mn. Depreciation costs were ¥7,600mn (¥5,755mn in the previous period).

There are signs that results are recovering in the semiconductor and other equipment-related business

4. Review of 1Q FY3/21 results

The Company announced the 1Q FY3/21 consolidated results on August 14, 2020. Net sales decreased 2.3% YoY to ¥20,526mn, operating income declined 25.5% to ¥1,560mn, ordinary income fell 68.5% to ¥563mn, and the net loss attributable to owners of parent was ¥1,096mn (net income of ¥1,326mn in the same period in the previous fiscal year).

By segment, in the semiconductor and other equipment-related business, net sales increased 0.1% YoY to ¥13,887mn and operating income decreased 55.7% to ¥736mn. For the mainstay vacuum seals, signs of a recovery could be seen from the capital-investment adjustment phases of semiconductor and organic EL panel manufacturers. Also, for material products, including quartz and ceramics used in semiconductor wafer processing, due to the expansion in remote work and lock-downs in various countries, the prices of various types of memory for PCs and servers are recovering, and device manufacturers have restarted capital investment and production activities. Therefore, demand trended at around the same level as in the previous year. Results for silicon wafer processing also remained at a constant level, but equipment depreciation costs have become a burden. Results were solid for parts cleaning, including for SPE and organic EL panel manufacturing equipment.

Ferrotec Holdings Corporation | **2-Oct.-2020**
 6890 TSE JASDAQ | <https://www.ferrotec.co.jp/en/ir/>

Business performance

In the electronic devices business, net sales increased 6.4% YoY to ¥3,467mn and operating income rose 23.7% to ¥883mn. For the mainstay thermo-electric modules, sales in the North American and Chinese markets for automobile temperature-controllable seats were weak due to the decrease in the number of automobiles sold. But sales were as forecast for 5G-use mobile communication systems, and for PCR and other medical testing devices. Sales were also solid of power semiconductor-use DCB substrates, while demand for magnetic fluid for speaker and smartphone applications trended at a constant level.

The China subsidiary is a company that leases manufacturing equipment for photovoltaic-use multi-crystal ingots and other equipment and concludes contracts for consignment processing. There were requests to cancel contracts due to slumping results because of the impact of the coronavirus, and contracts were cancelled. Therefore, it conducted impairment processing for the manufacturing equipment that had become idle and recorded an extraordinary loss of approximately ¥1.2bn.

1Q FY3/21 results

(¥mn)

| | 1Q FY3/19 | | 1Q FY3/20 | | | |
|---|-----------|-------------------|-----------|-------------------|--------|----------|
| | Amount | Composition ratio | Amount | Composition ratio | Change | Change % |
| Net sales | 21,002 | 100.0% | 20,526 | 100.0% | -476 | -2.3 |
| Gross profit | 7,114 | 33.9% | 6,795 | 33.1% | -318 | -4.5 |
| SG&A expenses | 5,019 | 23.9% | 5,234 | 25.5% | 215 | 4.3 |
| Operating income | 2,094 | 10.0% | 1,560 | 7.6% | -533 | -25.5 |
| Ordinary income | 1,789 | 8.5% | 563 | 2.7% | -1,226 | -68.5 |
| Net income attributable to owners of parent | 1,326 | 6.3% | -1,096 | -5.3% | -2,423 | -182.7 |

Source: Prepared by FISCO from the Company's financial results

1Q FY3/21 consolidated balance sheet

(¥mn)

| | End of FY3/20 | End of 1Q FY6/20 | Change |
|---|----------------|------------------|---------------|
| Cash and deposit | 23,709 | 22,318 | -1,390 |
| Notes and accounts receivable | 20,435 | 21,263 | 828 |
| Inventories | 17,269 | 18,436 | 1,167 |
| Total current assets | 71,451 | 71,095 | -355 |
| Tangible fixed assets | 110,816 | 110,582 | -233 |
| Intangible fixed assets | 500 | 457 | -42 |
| Investments and other assets | 7,241 | 7,260 | 18 |
| Total fixed assets | 118,558 | 118,301 | -257 |
| Total assets | 190,010 | 189,396 | -613 |
| Notes and accounts payable | 18,251 | 17,903 | -348 |
| Shot-term debt | 12,510 | 10,392 | -2,118 |
| Current portion of long-term borrowings | 10,138 | 11,999 | 1,860 |
| Total current liabilities | 61,443 | 61,397 | -45 |
| Bonds | 19,282 | 18,807 | -475 |
| Long-term debt | 29,439 | 29,677 | 237 |
| Total fixed liabilities | 78,418 | 79,916 | 1,497 |
| Total liabilities | 139,862 | 141,314 | 1,452 |
| Net assets | 50,147 | 48,082 | -2,065 |

Source: Prepared by FISCO from the Company's financial results

Business outlook

The forecasts are for operating income to increase 8.1% YoY for the full fiscal year and for operating income to decrease 15.9% YoY in the 1H. Capital investment will continue at a high level.

1. FY3/21 forecasts

For FY3/21, the Company is forecasting ¥85,000mn in net sales (+4.1% YoY), ¥6,500mn in operating income (+8.1%), ¥5,500mn in ordinary income (+29.0%), and ¥1,500mn in net income attributable to owners of parent (-16.0%).

FY3/21 forecasts

| | FY3/20 | | FY3/21 E | | | |
|--|--------|-------------------|----------|-------------------|--------|----------|
| | Amount | Composition ratio | Amount | Composition ratio | Change | Change % |
| Net sales | 81,613 | 100.0% | 85,000 | 100.0% | 3,387 | 4.1% |
| Semiconductor and other equipment-related business | 52,881 | 64.8% | 58,410 | 68.7% | 5,529 | 10.5% |
| Vacuum seals | 8,136 | 10.0% | 8,640 | 10.2% | 504 | 6.2% |
| Quartz products | 16,373 | 20.1% | 19,290 | 22.7% | 2,917 | 17.8% |
| Ceramics | 9,048 | 11.1% | 10,460 | 12.3% | 1,412 | 15.6% |
| CVD-SiC | 2,036 | 2.5% | 2,230 | 2.6% | 194 | 9.5% |
| EB guns and LED deposition systems | 3,973 | 4.9% | 3,000 | 3.5% | -973 | -24.5% |
| Wafer processing | 6,754 | 8.3% | 6,800 | 8.0% | 46 | 0.7% |
| Equipment parts cleaning | 5,606 | 6.9% | 7,080 | 8.3% | 1,474 | 26.3% |
| Quartz crucibles | 955 | 1.2% | 910 | 1.1% | -45 | -4.7% |
| Electronic devices business | 13,489 | 16.5% | 14,770 | 17.4% | 1,281 | 9.5% |
| Thermo-electric modules | 12,701 | 15.6% | 14,030 | 16.5% | 1,329 | 10.5% |
| Ferrofluids and others | 789 | 1.0% | 740 | 0.9% | -19 | -6.2% |
| Others business | 15,243 | 18.7% | 11,820 | 13.9% | -3,423 | -22.5% |
| Gross profit | 26,928 | 33.0% | 27,200 | 32.0% | 272 | 1.0% |
| SG&A expenses | 20,915 | 25.6% | 20,700 | 24.4% | -215 | -1.0% |
| Operating income | 6,012 | 7.4% | 6,500 | 7.6% | 488 | 8.1% |
| Ordinary income | 4,264 | 5.2% | 5,500 | 6.5% | 1,236 | 29.0% |
| Net income attributable to owners of parent | 1,785 | 2.2% | 1,500 | 1.8% | -285 | -16.0% |
| Capital investment | 33,920 | 41.6% | 29,400 | 34.6% | -4,520 | -13.3% |
| Depreciation | 7,600 | - | 11,000 | - | 3,400 | 44.7% |

Source: Prepared by FISCO from the Company's financial results and results briefing materials

Ferrotec Holdings Corporation | **2-Oct.-2020**
 6890 TSE JASDAQ | <https://www.ferrotec.co.jp/en/ir/>

Business outlook

2. 1H FY3/21 forecasts

The Company has announced forecasts for the 1H, as the 1H results (end of June) of the main Chinese subsidiary have basically been determined. The 1H FY3/21 results forecasts are for net sales of ¥40,000mn (down 4.4% YoY), operating income of ¥3,000mn (down 15.9%), ordinary income of ¥2,500mn (up 1.1%), and net income attributable to owners of parent of ¥0mn (down 100.0%). The main reason for the net income attributable to owners of parent forecast is that the Company will close the business of photovoltaic-use multi-crystal ingots supplied through OEM to specific customers. Specifically, in 1Q FY3/21, it will record an impairment loss on manufacturing equipment of approximately ¥1,200mn, and the outlook is for a loss of ¥1,500mn, including to process other fixed assets. In the net sales forecasts by segment, semiconductor and other equipment-related is ¥28,520mn (up 4.9%), electronic devices is ¥6,630mn (down 5.2%), and others is ¥4,850mn (down 36.8%). However, the forecast is that capital investment will remain at the high level of ¥14,000mn (¥19,123mn in the same period in the previous fiscal year), including due to projects postponed from the previous period. Depreciation costs are also expected to increase significantly to ¥5,000mn (¥3,435mn).

Sales outlook by segment

| | 1H FY3/20 | | 1H FY3/21 E | | | |
|--|-----------|-------------------|-------------|-------------------|--------|----------|
| | Amount | Composition ratio | Amount | Composition ratio | Change | Change % |
| Net sales | 41,849 | 100.0% | 40,000 | 100.0% | -1,849 | -4.4% |
| Semiconductor and other equipment-related business | 27,182 | 65.0% | 28,520 | 71.3% | 1,338 | 4.9% |
| Vacuum seals | 4,031 | 9.6% | 4,500 | 11.3% | 469 | 11.6% |
| Quartz products | 8,189 | 19.6% | 9,580 | 24.0% | 1,391 | 17.0% |
| Ceramics | 4,603 | 11.0% | 4,850 | 12.1% | 247 | 5.4% |
| CVD-SiC | 1,218 | 2.9% | 1,060 | 2.7% | -158 | -13.0% |
| EB guns and LED deposition systems | 1,720 | 4.1% | 1,380 | 3.5% | -340 | -19.8% |
| Wafer processing | 4,502 | 10.8% | 3,170 | 7.9% | -1,332 | -29.6% |
| Equipment parts cleaning | 2,375 | 5.7% | 3,550 | 8.9% | 1,175 | 49.5% |
| Quartz crucibles | 544 | 1.3% | 430 | 1.1% | -114 | -21.0% |
| Electronic devices business | 6,991 | 16.7% | 6,630 | 16.6% | -361 | -5.2% |
| Thermo-electric modules | 6,651 | 15.9% | 6,310 | 15.8% | -341 | -5.1% |
| Ferrofluids and others | 340 | 0.8% | 320 | 0.8% | -20 | -5.9% |
| Others business | 7,675 | 18.3% | 4,850 | 12.1% | -2,826 | -36.8% |
| Gross profit | 13,907 | 33.2% | 13,567 | 33.9% | -341 | -2.5% |
| SG&A expenses | 10,341 | 24.7% | 10,567 | 26.4% | 225 | 2.2% |
| Operating income | 3,566 | 8.5% | 3,000 | 7.5% | -566 | -15.9% |
| Ordinary income | 2,472 | 5.9% | 2,500 | 6.3% | 28 | 1.1% |
| Net income attributable to owners of parent | 1,539 | 3.7% | 0 | - | -1,539 | - |
| Capital investment | 19,123 | - | 14,000 | - | -5,123 | -26.8% |
| Depreciation | 3,435 | - | 5,000 | - | 1,565 | 45.5% |

Source: Prepared by FISCO from the Company's results briefing materials and supplementary materials

Business outlook

3. 1H FY3/21 results forecast by segment

The 1H FY3/21 net sales forecasts by segment and by sub-segment are as follows.

(1) Semiconductor and other equipment-related business: ¥28,520mn in sales (+4.9% YoY)

a) In the vacuum seals-related business, the net sales forecast is ¥4,500mn (up 11.6% YoY). From the second half of 2019, orders recovered for semiconductors and organic EL manufacturing equipment. Although slight delays have been seen on the timing of introductions by customers due to the coronavirus, the forecast remains for sales to increase YoY. In consignment processing as well, orders for semiconductors and other fields have recovered, so the outlook is for sales to increase in the 1H.

As the main measures, the Company is continuing joint developments with SPE manufacturers and to conduct capital investment in large processing machinery, acquiring synergies through strengthening relations between members of the Group, and bolstering sales in the Chinese market through utilizing the existing channels and brands of the Group companies.

b) The quartz products net sales forecast is ¥9,580mn (up 17.0% YoY). While delays in introducing equipment and other effects have been seen due to the coronavirus, new investment remains strong for logic-related and memory-related, mainly for the rapidly growing Chinese semiconductor market. Therefore, quartz demand is expected to increase compared to in the previous year. Worldwide also, new investment in 5G and data centers is proving beneficial. For Si parts, the forecast is that demand will be strong for film-deposition and vacuum-etching processes, mainly in markets such as China, Taiwan, and Japan.

The Company significantly expanded facilities to accommodate OEM demand from major customers (it operates Changshan and Dongtai plants in China). It is strengthening initiatives for next-generation and subsequent generation development projects too. (It launched a development site in Yamagata in Japan and started operating a plant for next-generation development products in May 2019.)

c) The ceramics products net sales forecast is ¥4,850mn (up 5.4% YoY). In machinable ceramics, sales to overseas of semiconductor inspection jigs materials are expected to be strong. Alongside the trend toward finer processing, the forecast is for sales of the new-type semiconductor inspection jigs to be favorable. In fine ceramics, there are signs of sales recovering to overseas of etching equipment parts. Sales are also expected to be strong of film formation equipment parts, both domestically and overseas.

As the continuous-sales policy, in machinable ceramics, the Company is focusing on increasing sales of the new-type inspection jigs alongside the trend toward more refined processing. It has received inquiries for machinable ceramic materials with high-function properties, and sales for next-generation applications are growing. In the same way, it is focusing on increasing sales for fields including medical- and analysis-related parts. In fine ceramics, the aim is to leverage the characteristics of alumina materials that have superior dielectric characteristics to increase their adoption in parts for new semiconductor equipment. With an abundant array of ceramic materials, it also sales general industrial machinery parts.

d) The CVD-SiC products net sales forecast is ¥1,060mn (down 13.0% YoY). Demand is expected to continue to be strong for parts for Chinese device manufacturers. For consumable parts for semiconductor etching equipment, which are expected to have new applications, the outlook is that they will be adopted for mass production in the 4Q.

Business outlook

e) The net sales forecast for semiconductor wafer processing is ¥3,170mn (down 29.6% YoY). There are signs of demand recovering for 6-inch, but a fully-fledged recovery in demand for 8-inch is not expected in the 1H. Therefore, the forecast for wafers as a whole is for sales to decrease 29.6% YoY.

As the main measures, for 8-inch, the new plant in Hangzhou will further promote new customer certification. In the same way, it is progressing customer certification for 12-inch toward mass production during FY3/21.

f) The equipment parts cleaning net sales forecast is ¥3,550mn (up 49.5% YoY). Sales are expected to increase (up 49%) due to expectations that Chinese semiconductor and FPD manufacturers will expand their scales of production. The Company will continue to respond to this by increasing production at its five sites and six plants in China.

As the main measures, in the parts cleaning business, the Company will reorganize the Tongling plant in Anhui Province to be the main second-generation subsidiary. In the future, it will establish an analysis center in Shanghai and capture demand from more cutting-edge fields.

(2) Electronic devices: ¥6,630mn (-5.2% YoY)

The net sales forecast for thermo-electric module products is ¥6,310mn (down 5.1%). Due to the impact of the coronavirus, the number of automobiles sold is declining, and therefore the outlook is for sales of temperature-controllable seats to decrease. For other industries, sales are expected to be steady for communication-equipment applications relating to 5G infrastructure investment, mainly in China. The outlook is for strong sales for wearables in consumer products and for PCR testing in biotechnology applications. Sales of power substrates are expected to increase compared to in the 2H of the previous year, despite the weakness of the automobile and industrial equipment markets. For automobiles, sales of temperature-controllable seats are expected to continue to be sluggish, so the Company is progressing the development of product applications for the next generation of automobiles. For other industries, demand is forecast to increase for communication devices, including for 5G. The Company will also continue to strengthen its production capacity for power semiconductor substrates, for which demand is expected to increase.

As the main measures, the Company will conduct global sales-expansion activities for the sub-assembly parts of thermo-electric modules. For automobiles, it intends to further strengthen the development of applications (toward mass production in 3 to 5 years). For power substrates, it will strengthen the development of applications of silicon nitride substrates (AMB substrates) for automobiles.

(3) Other business: ¥4,850mn (-36.8 YoY)

The current focus of this segment is the photovoltaic-related business, which is contracting, while it also includes the Asahi Seisakusho's linen detergent and the machine assembly business.

4. Capital investment and depreciation costs

The 1H FY3/21 capital investment forecast is ¥14,000mn. This is mainly investment in medium- and large-diameter wafers, and the remainder is in power semiconductor-related, quartz-related, cleaning-related (China), and others. Depreciation costs are expected to increase from ¥3,435mn in the same period in the previous fiscal year to ¥5,000mn. The plan is to fund this capital investment through approximately ¥9,500mn from borrowing from financial institutions, around ¥9,500mn from local borrowing by the Chinese semiconductor wafer subsidiary, approximately ¥3,000mn from semiconductor wafer investment subsidies in China, and around ¥4,000mn from a capital increase in the Chinese recycled wafer business subsidiary. As described below, investment in the future and a financial strategy can be said to be important issues for the Company. The FY3/21 full year capital investment forecast is ¥29,400mn (initial forecast, ¥12,000mn), because it will include projects postponed from FY3/20.

■ Medium- to long-term growth strategy

Completely reviewing the medium-term management plan. Going forward, an important issue will be maintaining a balance between investment and the financial base.

1. Overview of medium-term management goals

In order to achieve medium-term growth in the future, the Company announced the targets in the medium-term management plan, which has FY3/22 as its final fiscal year. These quantitative targets (FY3/22) are for net sales of ¥120bn to ¥130bn, operating income of ¥12bn to ¥13bn, an operating margin of at least 10%, ROE of at least 10%, ROIC of at least 6%, and an equity ratio of at least 40%. However, due to the slowdown of the semiconductor industry and the impact of the coronavirus, the future of the global economy remains unclear. Therefore, the Company has decided to completely revise these targets and to once again announce new targets.

2. Recent conditions of and outlook for strategic products

(1) Quartz products

Among materials, the outlook is particularly for sales of quartz products to grow steadily (due to the underlying strength of demand for consumables). Demand is expected to surpass that in 2018, which was the most recent peak for semiconductor demand. Therefore, the Company has established plants in Hangzhou and Changshan in Zhejiang Province and in Dongtai in Jiangsu Province in China, and in Yamagata City in Japan, and it is building a production system with increased capacity.

(2) Ceramic products and CVD-SiC

For ceramics and CVD-SiC, a strength of the Company is its superiority for developing “materials, processing and coating technologies” in Japan. At the Hangzhou plant in Zhejiang Province, China, it plans to strengthen the production capacity for fine ceramics, for which demand is strong.

Medium- to long-term growth strategy

(3) Semiconductor wafers

The markets softened in FY3/20, including demand for power devices and automobiles, and sales in the 2H were weak. Demand for 6-inch is currently strong and the Company is conducting full production. In the 2H FY3/21, it is targeting a monthly production structure of 460,000 wafers (an increase of 60,000 wafers). For 8-inch, it is strengthening the in-house direct-sales system. The new plant in Hangzhou is progressing customer certification. During FY3/21, it is aiming to increase the monthly production structure from 100,000 wafers to 200,000 wafers. For 12-inch, the Company is currently progressing certification with a number of Chinese semiconductor manufacturers. Therefore, it expects to start mass production in the 2H FY3/21. The Hangzhou wafer plant is focusing on acquiring certification and increasing production toward acquiring new customers for 8-inch and 12-inch.

(4) New business: launch of a recycled wafer business

Due to the acceleration of domestic semiconductor production in China, recycling demand for monitor wafers (used at the start of mass production) is rapidly increasing. Therefore, the Company has decided to launch a recycling wafer business. As the schedule going forward, it plans to complete the plant in November 2020, start trial production in January 2021, and begin mass production in April of the same year.

The Company will divert resources from the wafer business and use the knowhow of the cleaning business for a technology tie-up with a partner for the coating-removal process. This will be through a joint venture by the Company's subsidiary and the investment fund of the government of Tongling City, Anhui Province, China, with a shareholding ratio of 7:3 and an investment amount of approximately ¥7,650mn (Phase 1). The monthly production target is for 100,000 wafers, but it is anticipated that ultimately the monthly production will be around 200,000 wafers (timing still to be determined).

(5) Parts cleaning

This is a business specialized in China. Its business scale has expanded steadily each year, in conjunction with the expansion of production by its semiconductor and FPD (organic EL and liquid crystal) customers. The same as semiconductor material products, this is a "stock-type" business that is connected to customers' production operations, so it is able to more easily secure steady sales (going forward also, this business is expected to continue to steadily grow). Currently, the Company has established a structure of five sites and six plants and continues to respond to demand by increasing production, and its market share within China is approaching 60%. It conducts detailed sales to semiconductor customers and provides services, and in the future, it plans to develop this business horizontally in order to supply recycled wafers (a new business) to customers common to both businesses. The investment fund of Tongling City, Anhui Province, has joined as an investor, and going forward the aim is to obtain orders that will grow the business. The current situation is of a series of new projects by Chinese semiconductor and FPD customers, so the plan is to increase the production capacity at Tongling.

(6) Thermo-electric modules

These are the Company's core technology and they have an abundance of applications. In particular, the outlook is that applications for 5G communication devices will grow (in China, it is forecast that 600,000 5G communication base stations will have been established by the end of 2020). Other than this, applications and demand are growing alongside the digitization of society, including for consumer products-use (wearables), IoT, and consumer electronics-related. Currently, applications are increasing for equipment used for PCR testing for the coronavirus.

Medium- to long-term growth strategy

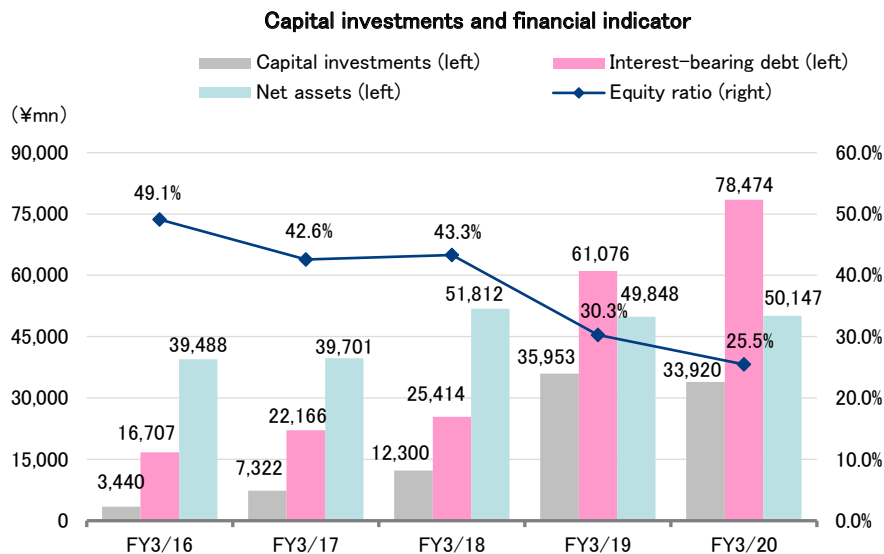
(7) Power semiconductor substrates

Riding the wave of the global trend to reduce power consumption, sales of these products are steadily increasing. According to the Company’s materials, the power semiconductor market is projected to grow to a scale of ¥4.2tn by 2030. Its market share in China is growing, including due to the impact of the trade friction, while the number of certifications acquired from global manufacturers is also increasing. Currently, its customers are mainly located in Europe, Japan and China.

Going forward, demand is forecast to increase in the automobile field as well. In addition to DCB (Direct Copper Bonding) substrates, the Company plans to newly launch AMB (Active Metal Brazing) substrates. The power semiconductor substrates plant in Dongtai, Jiangsu Province, is currently increasing its production capacity, so the outlook is for sales to increase from FY3/22 onwards. The monthly production capacity forecasts (during 2020), as the totals of the Shanghai and Dongtai plants, are for 600,000 DCB substrates and 100,000 AMB substrates.

3. Issue for the future: maintain a balance between investment and the financial base

In the five years from FY3/16 to FY3/20, the Company conducted high-level capital investment, mainly in semiconductor-related in China. A fairly large portion of these investments were covered by external funding, and during this period interest-bearing debt rose from ¥16.7bn at the end of FY3/16 to ¥78.4bn in FY3/20. As a result, the equity ratio declined from 49.1% at the end of FY3/16 to 25.5% at the end of FY3/20, falling to a level below 30%.



Source: Prepared by FISCO from the Company’s financial results and results briefing materials

According to the Company, capital investment peaked in FY3/20, while it is expected to continue at a fairly high level from FY3/21 onwards as well. But on the other hand, if thinking of financial soundness, it will be difficult for the Company to further increase interest-bearing debt. In the future, a major issue it is likely to face is continuing to invest toward growth at the same time as improving its financial structure, including by diversifying its fund raising. In particular, although it has invested a large amount in the wafer business, recovering this investment has been slow. Therefore, it is considered to have reached a stage of looking for business partners at the same time as having in sight selling some of its businesses.

■ Shareholder return policy

Will pay an annual dividend of ¥24 in FY3/21

The Company pays dividends as its shareholder return policy. The annual dividend for FY3/19 and FY3/20 was ¥24, and it plans to pay ¥24 again in FY3/21. We think the Company is likely to give priority to retained profits (capital investments) for the next few years because of its large capex budget as explained above.



Disclaimer

FISCO Ltd. ("FISCO") offer stock price and index information for use under the approval of the Tokyo Stock Exchange, the Osaka Stock Exchange and Nikkei Inc.

This report is provided solely for the purpose of offering information, and is not a solicitation of investment nor any other act or action.

FISCO prepared and published this report based on information which it considered reliable; however, FISCO does not warrant the accuracy, completeness, fitness nor reliability of the contents of this report or the said information.

The issuers' securities, currencies, commodities, securities and other financial instruments mentioned in this report may increase or decrease in value or lose their value due to influence from corporate activities, economic policies, world affairs and other factors. This report does not make any promises regarding any future outcomes. If you use this report or any information mentioned herein, regardless of the purpose therefor, such use shall be made based on your judgment and responsibility, and FISCO shall not be liable for any damage incurred by you as a result of such use, irrespective of the reason.

This report has been prepared at the request of the company subject hereto based on the provision of information by such company through telephone interviews and the like. However, the hypotheses, conclusions and all other contents contained herein are based on analysis by FISCO. The contents of this report are as of the time of the preparation hereof, and are subject to change without notice. FISCO is not obligated to update this report.

The intellectual property rights, including the copyrights to the main text hereof, the data and the like, belong to FISCO, and any revision, reprocessing, reproduction, transmission, distribution or the like of this report and any duplicate hereof without the permission of FISCO is strictly prohibited.

FISCO and its affiliated companies, as well as the directors, officers and employees thereof, may currently or in the future trade or hold the financial instruments or the securities of issuers that are mentioned in this report.

Please use the information in this report upon accepting the above points.

■ For inquiry, please contact: ■

FISCO Ltd.

5-11-9 Minami Aoyama, Minato-ku, Tokyo, Japan 107-0062

Phone: 03-5774-2443 (Financial information Dept.)

Email: support@fisco.co.jp