RS Technologies

3445 Tokyo Stock Exchange
First Section

18-Jan.-17

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at the end of this document.

FISCO Ltd. Analyst
Hiroyuki Asakawa

Profitability is expected to increase greatly in FY12/17 and steady progress to be made in the medium- to long-term growth strategy

RS Technologies <3445> (hereafter, also "the Company") is a reclaim service provider for silicon wafers, which are a main part in semiconductor chips. It has factories in Japan and Taiwan and when both factories are operating at full capacity, it has a global production share of approximately 30% (based on the production capacity for the mainstay 12 inch wafers), making it the world's leading producer of reclaimed wafers.

The Company's three main strengths are that it is highly cost competitive and it has a geographically diversified customer structure and advanced reclaim technologies. Taking advantage of its low reclaim costs, the Company realizes an operating margin that greatly exceeds those of other wafer-related companies. Its customer structure gives it a highly stable earnings structure that is not easily affected by fluctuations in the results of particular countries or companies. Its advanced reclaim technologies are enabling it to steadily benefit from the increase in demand following the appearance of highly complex chips, such as 3D NAND flash.

The Company has set five points for its medium- to long-term growth strategy and is making steady progress for each of them. The Tainan Factory of its Taiwanese subsidiary obtained its first customer certification in April 2016 and since then its utilization rate has steadily increased. Together with the subsequent increase in the number of customer certifications, by the end of 2016 it appeared to be operating at a level close to full production capacity. The main Sanbongi Factory has also been eliminating bottlenecks and as a result, its production capacity has expanded to 200,000 wafers a month.

At FISCO, we think that the demand for reclaimed wafers will outperform the silicon cycle wave and increase. One reason for this is the appearance and miniaturization of 3D NAND flash. Another reason is the fully fledged launch of the Chinese semiconductor industry. Factors such as new technologies, new models, a new generation of design rules, and new factories are pushing up demand for monitor wafers and in turn for reclaim wafers. But apart from the Company, there seems to be hardly any other reclaim wafer manufacturer that is capable of expanding production capacity.

Expectations are steadily increasing for the Company's business performance also. Alongside the increase in its capacity utilization rate, the Taiwanese subsidiary has been profitable on a single-month basis from June 2016, and it is expected to return to profitability in FY12/17 on a full year basis. The Tainan Factory has a low-cost structure from the transfer of equipment from Japan, and it seems to be realizing high productivity from stable operations. Therefore, if its utilization rate rises, it is expected that its profit margin will dramatically improve and it will contribute significantly to earnings.

Check Point

- Sales and final profits increased by double digits in 3Q FY12/16
- It has a production capacity-based global market share of approximately 30% and has built a globally leading position
- It has expanded production capacity through the new establishment of a Taiwanese subsidiary and is aiming for a global share of 40%

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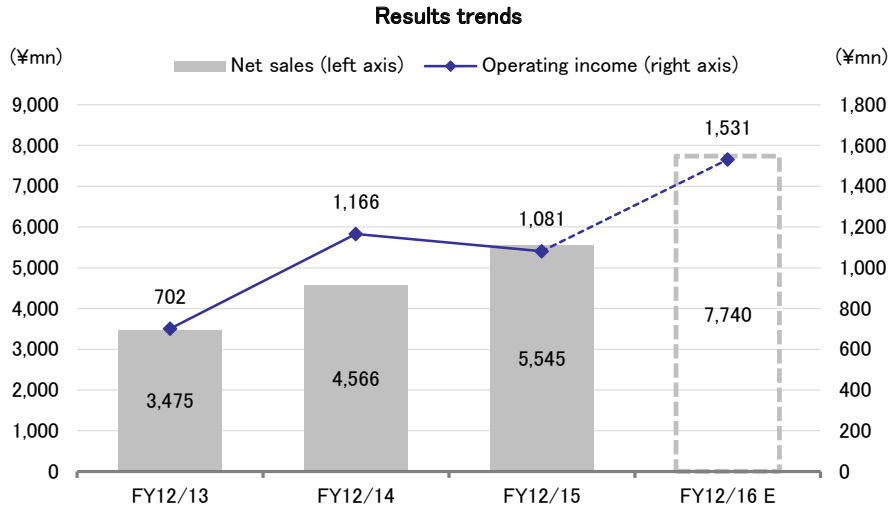

Note: Results are non-consolidated in FY12/13 and are consolidated from FY12/14 onwards

■ Company overview

The wafer business is its main business

(1) History

The Company's main business, silicon wafer reclaim service, was originally conducted by RASA Industries, Ltd. <4022> from 1984. Following RASA Industries' decision to withdraw from this business, the current President Nagayoshi Ho acquired all of this business in December 2010 and established the Company.

RASA Industries started a silicon wafer reclaim business in 1984 as part of its business diversification, and in 1985 it newly constructed the Sanbongi Factory in Sanbongi Town (currently, Osaki City), Miyagi Prefecture and made a fully-fledged start to this business. RASA Industries' reclaim business steadily grew alongside the business expansion of Japan's semiconductor manufacturers, and it acquired the leading position in the reclaim field in the industry. However, when the production scale of Japan's semiconductor manufacturers shifted to a reduction stage, its reclaim business also became unprofitable due to the double blow of falling unit prices and lower production volume. So in the end, RASA Industries decided to withdraw from this business.

After the Company acquired this business at the end of 2010, it launched operations at the Sanbongi Factory from January 2011. It inherited the equipment and some of the employees of RASA Industries, so the business made a steady start and the customer base expanded. In February 2014, it established a subsidiary in Taiwan and began the construction of a new factory, which was completed in December 2015 as the Tainan Factory. Also, in 2013 the Company diversified its business and entered into the solar power station business. It was listed on the Tokyo Stock Exchange (TSE) Mothers market in March 2015, and its listing was transferred to the TSE First Section on September 9, 2016.

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Main Events in the Company's History

Date	Event
December 2010	RS Technologies was established, mainly to conduct a silicon wafer reclaim business It launched its business after purchasing the equipment that RASA Industries used for its wafer reclaim business and also concluded a lease agreement with it for the Sanbongi Factory's industrial buildings. Furthermore, it hired some of the employees who had left RASA Industries.
January 2011	Sanbongi Factory began operations
November 2011	Sanbongi Factory acquired the ISO 90001: 2008 certification
March 2013	It acquired a used goods dealers license and started sales of machinery
October 2013	It launched a solar power station business at the Sanbongi Factory
February 2014	It established a consolidated subsidiary in Taiwan
March 2015	It was listed on the TSE Mothers market
December 2015	It completed the construction of the Taiwanese subsidiary's Tainan Factory
September 2016	Its listing was transferred to the TSE First Section

Source: Prepared by FISCO from Company materials

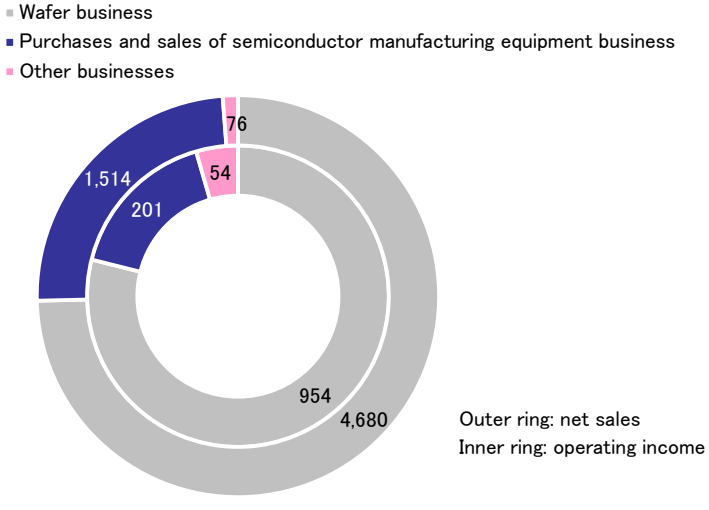
Since FY12/16, the Company has had three business segments; the main "wafer business," "the purchases and sales of semiconductor manufacturing equipment business," and "other businesses." Up to FY12/15, purchases and sales of semiconductor manufacturing equipment was included in other businesses, but it was made a stand-alone segment following its business expansion.

As the name indicates, the purchases and sales of semiconductor manufacturing equipment business involves the purchase of used semiconductor manufacturing equipment from South Korean and Taiwanese semiconductor manufacturers and then their sale to Chinese companies toward the full-fledged launch of this industry in China in the future. The distribution of used manufacturing equipment is common for liquid crystal panel manufacturing equipment, and a similar development is expected to emerge in the future for semiconductor manufacturing equipment. But at the current point in time, the Chinese semiconductor industry is still in its infancy and as yet the distribution of used equipment has not become fully established.

Currently, the content of the purchases and sales of semiconductor manufacturing equipment business is the purchase and sale of consumables that are used when semiconductors are manufactured. At FISCO, we estimate that the reason why the Company decided to launch this trading company-type business is that it is meaningful in terms of building relations toward business expansion in the future and also for gathering information, including for the handling of used equipment. It is also because human relations are considered to be extremely important when conducting business with local companies in China. In the 3Q FY12/16 cumulative results of the purchases and sales of semiconductor manufacturing equipment business, net sales grew rapidly to ¥1,514mn, which was mainly due to the growth in sales of liquid crystal modules as a part of its trading-company functions.

Other businesses include the earnings from technical consulting and from the solar power station business in the Sanbongi Factory.

Percentages of sales (3Q FY12/16 cumulative results)



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

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(2) Business overview

In order to understand the Company's silicon wafer reclaim business and also to fully understand its strengths and value, at FISCO we think it is essential to understand silicon wafers themselves and also the semiconductor manufacturing process. So we provide brief explanations of both below.

a) Silicon wafers
"A semiconductor" is a substance that has intermediary properties between a conductor, which conducts electricity, and an insulator, through which electricity cannot pass. Integrated circuits (IC) are manufactured to use these properties to fabricate highly dense electric circuits. An IC includes the CPU, which is 'the brain' of the PC, and memory to store information (such as flash memory and DRAM). If speaking of semiconductors today, it commonly means a "product that applies the properties of a semiconductor," or in other words IC, and it is also sometimes referred to by terms like semiconductor chips or IC chips.

There are various substances with semiconductor properties, but presently silicon is widely used for the mass production of IC. For this usage, an ingot of a single crystal silicon is pulled out of melted polycrystalline silicon and then sliced thinly into wafers, and these wafers are called "silicon wafers." Semiconductor manufacturers use various types of semiconductor manufacturing equipment to fabricate detailed circuits on silicon wafers and thereby manufacture semiconductor chips.

The following are the points that should be kept in mind about silicon wafers.

1) Silicon wafers come in various sizes, but the trend is for larger sizes
This is because the manufacturing costs per semiconductor chip can be lowered by fabricating the circuits of many semiconductor chips on a single silicon wafer. Currently, on a mass-production basis wafers with a 12 inch (300mm) diameter are both the largest and the mainstay size. There are also smaller sizes, such as 8 inches, 6 inches, and 5 inches, while an 18 inch (450mm) wafer is set to appear in the future

2) The surfaces of silicon wafers must be very smooth.
This is because the surface treatment of semiconductor chips is extremely detailed work. Realizing this smoothness is one way for a company to technologically differentiate itself, but it becomes more and more difficult as the size of the wafer grows larger.

b) The semiconductor manufacturing process
The semiconductor manufacturing process is divided broadly into "the pre-process" and "the post-process." The pre-process is the process of fabricating the semiconductor circuit on the silicon wafer and it utilizes the latest state-of-the-art technologies, such as vacuum technologies like lithography technology, and polymer chemistry technologies. An important point here is "miniaturization." By making the lines of the circuit as fine as possible, the circuits of hundreds of semiconductor chips can be fabricated on a single silicon wafer.

The post-process involves separating the individual chips on the silicon wafers for which the pre-process has been completed, mounting them on a mounting part known as the semiconductor package, and forming them into completed semiconductor products. What we usually see as are these packaged IC chips.

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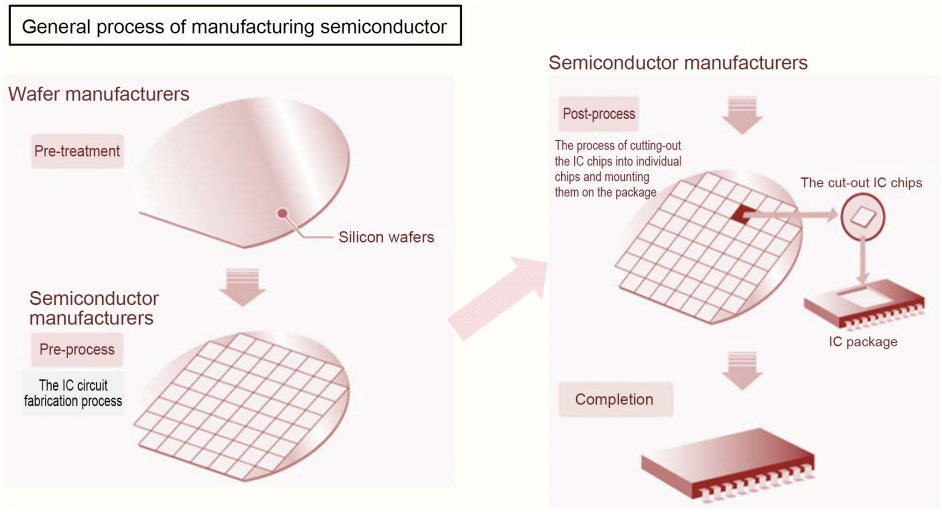
The semiconductor manufacturing process



Source: The Company's financial results briefing materials

c) The silicon wafer reclaim business

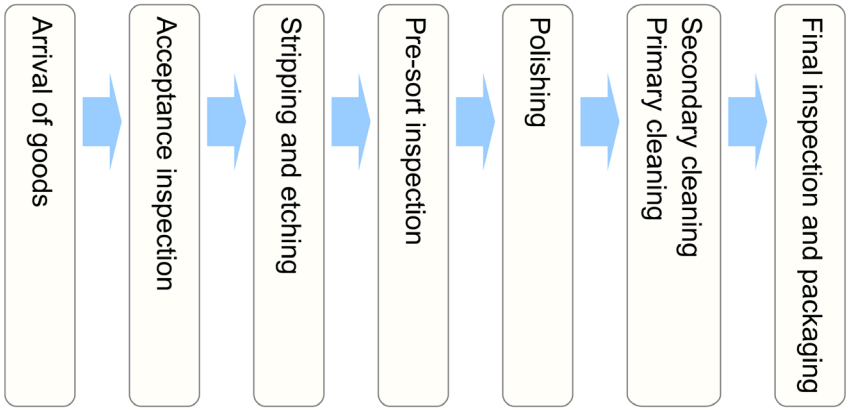
Not all of the silicon wafers introduced into the semiconductor manufacturing process are used to manufacture semiconductor chips. As previously explained, the semiconductor manufacturing process is a series of extremely detailed processes, so it is necessary to progress through these manufacturing processes while conducting tests and evaluations at each of its stages. The silicon wafers used for these purposes are usually called "test wafers," "dummy wafers," or "monitor wafers" (in this report, they are collectively referred to as "monitor wafers").

Currently, approximately 20% of all wafers are used as monitor wafers. In other words, if 100 wafers are to be introduced into the semiconductor manufacturing line, in actuality only 80 wafers will be processed into semiconductors (wafers used for this purpose are called "prime wafers" and are distinguished from monitor wafers), and the remaining 20 wafers will be used for testing and evaluation purposes.

Although introducing new wafers for testing and evaluation purposes is a fundamental part of the process, there has arisen the need among semiconductor manufacturers to reuse (reclaim) the used monitor wafers in order to reduce the costs of manufacturing semiconductors, even if just by a little. In response to this need, the Company provides a silicon wafer reclaim service, in which it polishes the surfaces of used monitor wafers so they can be used again.

In terms of its specific business model, the Company provides the reclaim services on the used monitor wafers sent to it by the various semiconductor manufacturers, and then sends them back to these manufacturers, for which it collects a reclaim fee. As monitor wafers contain the trade secrets and expertise of these semiconductor manufacturers, the Company manages each carefully and separately and sends them securely back to the semiconductor manufacturer that requested its service.

Outline of the silicon wafer reclaim process



Source: The Company's financial results briefing materials

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One standard for the reclaim fee that the Company collects as the service provider is 20% of the new prime wafers. The price per silicon wafer calculated from the Current Production Statistics of METI (all sizes, averaged basis) is approximately ¥9,000. From this current situation, it is easier to get an image if you consider the price is ¥2,000 per wafer ($20 for dollar-denominated exports).

There are mainly two factors that cause the reclaim fee to fluctuate. The first is movements in the price of prime wafers and the second is the supply and demand relations at a particular time. Reclaim service demand is mainly affected by the semiconductor manufacturers' capacity utilization rates. Semiconductor manufacturers' utilization rates are further affected by demand for the final products that consume large amounts of semiconductors (such as PCs or household electrical appliances). If speaking only of reclaim service, there is also the supply and demand factor. This occurs when a semiconductor becomes newly operational, a new line is introduced, or the process rules (the fine-processing level) are changed. When these events occur, semiconductor manufacturers will introduce a large quantity of monitor wafers into the process in order to stabilize the manufacturing line prior to mass production. While on the supply side, as previously stated, the level of the reclaim fee makes it difficult for new entrants to generate profits, and it is difficult for even existing manufacturers to take the decision to invest in increasing their production capacity. So in this sense, the market situation can be said to be stable.

To simply explain the earnings model for the wafer reclaim business, first, net sales are obtained by multiplying the number of reclaim-treatment wafers by the average treatment fee. Conversely, the cost of sales, which is a variable cost for factory operations, is a fixed cost. Labor costs and depreciation are major elements within it, and from this amount, the SG&A expenses are deducted to leave the operating income.

■ The business environment and RS Technologies' strengths

It has a capacity-based global share of approximately 30% and has built a globally leading position

(1) Industry environment and competitive conditions

The silicon wafer reclaim business is a niche field within the semiconductor industry, which covers a broad range of fields. But as previously mentioned, it has an impact that cannot be ignored from the perspective of reducing semiconductor chip manufacturing costs, and at FISCO, we think this business field will survive in the future. On the other hand, as it is a difficult field for newcomers to enter into due to the decline in the reclaim fee, the competition conditions can be said to be stable for the existing service providers, including the Company.

According to the Current Production Statistics of METI, currently in Japan, 2.8 million to 3 million 12 inch wafers are sold (consumed) (for the other wafer sizes also, on converting them into 12 inch wafers, 3.8 million to 4 million are sold) each month. On a cumulative basis from January to October 2016, the percentage of 12 inch wafers from among the total number of wafers was 48.0%, and 72.4% on a surface-area basis. According to SEMI, the total volume of the silicon wafers shipped globally in 2015 was 10,434 million square inches. If we assume that 70% of this area was 12 inch wafers, the same as in Japan, then the number of 12 inch wafers shipped in 2015 can be calculated to be approximately 62.53 million wafers, or monthly shipments of around 5 million wafers. Twenty percent of this amount (approximately 1 million wafers a month) became monitor wafers, and this presents the overall image of the silicon wafer reclaim market.

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Production statistics of silicon wafers

Item name	Total sales amount	Total sales volume	No. of wafers, converted to 12 inch	Unit price, converted to 12 inch	Ratio of sales volume (area) by base size				No. of wafers sold by size			
					5 inches	6 inches	8 inches	12 inches	5 inches	6 inches	8 inches	12 inches
Unit	¥mn	Square inches	Wafers	¥	%	%	%	%	Wafers	Wafers	Wafers	Wafers
January 2016	32,702	413,849	3,661,085	8,932	1.8%	5.2%	18.8%	74.3%	370,089	762,845	1,546,099	2,718,967
February 2016	32,644	427,641	3,783,094	8,629	1.8%	5.7%	19.1%	73.4%	393,936	866,242	1,625,677	2,775,619
March 2016	30,875	432,283	3,824,160	8,074	1.7%	5.5%	19.5%	73.3%	376,968	836,270	1,680,195	2,802,893
April 2016	32,702	419,286	3,709,183	8,816	1.8%	6.2%	21.0%	71.1%	389,860	914,013	1,748,905	2,635,704
May 2016	33,586	442,514	3,914,667	8,580	1.8%	6.2%	19.6%	72.4%	397,452	966,914	1,730,693	2,834,740
June 2016	34,610	460,453	4,073,363	8,497	1.9%	5.3%	19.5%	73.3%	449,121	871,656	1,783,897	2,984,634
July 2016	32,505	449,206	3,973,868	8,180	1.9%	5.8%	20.7%	71.7%	426,446	916,985	1,852,090	2,847,435
August 2016	32,888	443,366	3,922,205	8,385	1.9%	5.6%	20.7%	71.9%	420,178	874,239	1,824,662	2,819,736
September 2016	31,845	454,227	4,018,286	7,925	1.8%	5.8%	19.7%	72.7%	414,624	925,018	1,784,335	2,922,010
October 2016	32,723	450,341	3,983,908	8,214	1.7%	6.2%	21.9%	70.2%	379,465	985,350	1,967,257	2,797,355
Jan-Oct. 2015 total	356,202	4,302,592	38,062,562	9,358	2.1%	5.6%	21.2%	71.1%	4,706,344	8,477,424	18,140,983	27,063,473
Jan-Oct. 2016 total	327,080	4,393,166	38,863,818	8,416	1.8%	5.7%	20.1%	72.4%	4,018,140	8,919,533	17,543,810	28,139,092

Source: Prepared by FISCO from METI's Current Production Statistics

The Company has the capacity to provide the 12-inch wafer reclaim service on 200,000 wafers a month at its Sanbongi Factory and 100,000 wafers a month at its Tainan Factory. It is thought that it has been able to expand its production capacity up to the current level of 200,000 wafers a month by repeatedly eliminating bottlenecks at the Sanbongi Factory over the past few years. Other than for 12 inch wafers, the Sanbongi Factory has a treatment capacity 120,000 wafers a month for sizes of 8 inches and below. The newly constructed Tainan Factory exclusively treats 12 inch wafers.

Production capacities

Factory	Size	Monthly production capacity	
		Design capacity	Actual capacity (end of 2016)
Sanbongi Factory	12 inches	180,000 wafers	200,000 wafers
	8 inches or less	120,000 wafers	120,000 wafers
Tainan Factory	12 inches	100,000 wafers	100,000 wafers

Source: Prepared by FISCO from interviews, etc.

Within the market of around 1 million wafers a month (12 inch wafers), the Company can reclaim 300,000 wafers a month, meaning it has a global share of 30% on a production-capacity basis, and we analyze it to be the global leader. Its competitors in the Japanese market include Mimasu Semiconductor Industry Co., Ltd. <8155> and Hamada Heavy Industries Ltd. Of these, Mimasu Semiconductor Industry is a member of the Shin-Etsu Chemical Co., Ltd. <4063> Group and it also performs the grinding of new wafers. Hamada Heavy Industries, which is based on Kumamoto Prefecture, specializes in reclaim wafers, the same as the Company.

Overseas, Taiwanese companies are its main competitors. Japanese companies have a 70% to 80% share of the global silicon wafers market, and they are also the leaders in the reclaim market. But alongside the accumulation of foundry companies (semiconductor manufacturing contractors), reclaim service providers have also been established in Taiwan. Currently, there are three main companies and each is considered to have around a 10% share of the market.

Within these competitive conditions, as described below the Company is aiming to utilize its unique strengths, as well as business partnerships and M&A, to acquire a global share of 40% in the medium term.

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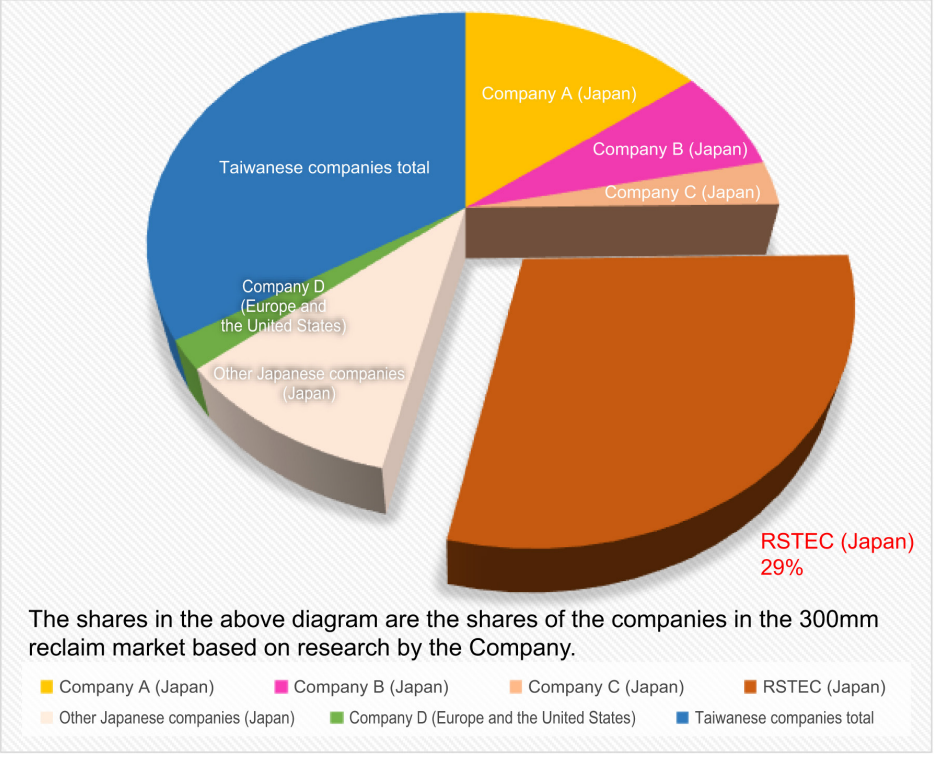
Shares of the reclaim market



Source: The Company's financial results briefing materials

The Company is highly profitable compared to its competitors

(2) RS Technologies' strengths

The Company has various strengths, but among them, at FISCO we think the following three are particularly important.

a) Cost competitive

We think that the Company's biggest strength is that it is cost competitive. As previously explained, the reclaim fee has been trending downward, and as a result RASA Industries decided to withdraw from this business. The Company, which acquired this business, realized an operating margin of 19.5% in FY12/15. This includes the operating loss recorded by its Taiwanese subsidiary, and the Company itself achieved an operating margin of 24.8% in Japan.

The reason it is able to realize this high level of profitability is that it purchased RASA Industries' production equipment at an inexpensive price, and also it keeps employee numbers down to the minimum necessary. RASA Industries made some of its employees unemployed when it withdrew from this business, and the Company launched the business by re-employing some of these employees. It started with 55 employees, the business today has expanded to a production capacity of 200,000 wafers a month, but even now it operates with only 350 employees. When considering that RASA Industries had a production capacity of 90,000 wafers a month with 450 employees, we can clearly see that the Company is operating with a high level of efficiency.

We compared the operating income of the Company to other silicon wafer-related companies, of Shin-Etsu Chemical, SUMCO CORPORATION <3436>, and Mimasu Semiconductor Industry. Shin-Etsu Chemical and SUMCO are so-called silicon wafer integrated manufacturers, conducting all of the process from the extraction of silicon single crystals. Mimasu Semiconductor Industry and the Company only carry out surface polishing, although Mimasu Semiconductor Industry both manufactures new products and conducts reclaim on used products, unlike the Company that only conducts reclaim. The Company's operating margin should inherently be similar to that of Mimasu Semiconductor Industry, but for the reasons described above, it is able to secure an operating margin that greatly exceeds that of Mimasu Semiconductor Industry. Also, as the Company's FY12/15 results include the loss recorded by its Taiwanese subsidiary, we should be aware that this kept down the operating margin achieved by the Company itself.

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Comparison of the operating margins of silicon wafer-related companies

Company name	Code	Fiscal period	FY2015		
			Operating margin (%)	Net sales (¥mn)	Operating income (¥mn)
RS Technologies	3445	December 2015	19.5%	5,545	1,081
Mimasu Semiconductor	8155	May 2016	6.2%	56,297	3,479
Shin-Etsu Chemical	4063	March 2016	19.3%	243,329	46,911
SUMCO	3436	December 2015	12.4%	236,826	29,447

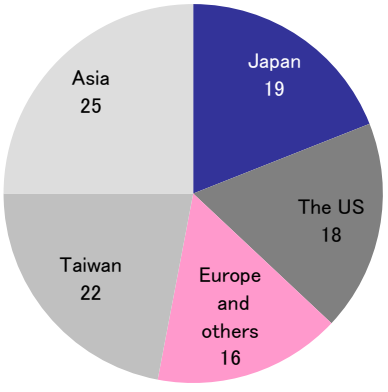
Note: operating margins are calculated on the unit of millions of yen.
Shin-Etsu Chemical's value is the result of its semiconductor silicon business segment.
Source: Prepared by FISCO from each company's financial results summary, etc.

b) Customer structure

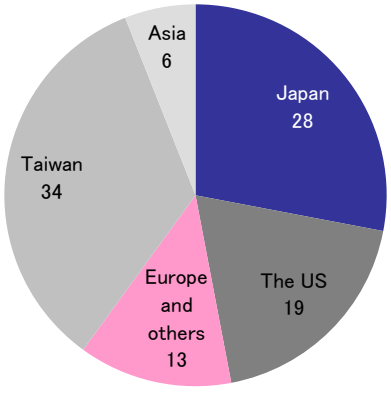
One more of the Company's strengths is its customer structure, which has changed greatly from the RASA Industries period. During the RASA Industries period, approximately 70% of sales were to specific semiconductor manufacturers, which meant its earnings base was vulnerable, in that the demand for its reclaim services was greatly affected by the production conditions at these semiconductor manufacturers.

The Company has worked to diversify its customers since the time it first launched the business. Currently, the composition of the wafer reclaim market by region is basically the same as the composition of the Company's net sales by region. Even within each respective region, it has multiple semiconductor manufacturers as customers and it has succeeded in greatly reducing the extent it relies on individual companies as customers.

Composition of the semiconductor materials market by region



Composition of the wafer reclaim market by region



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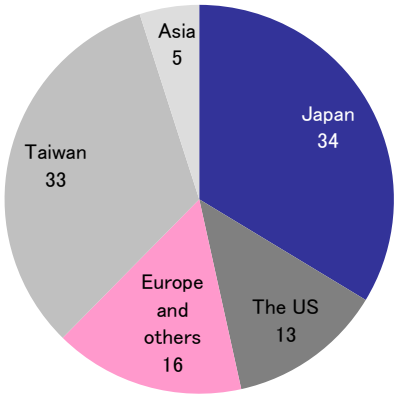
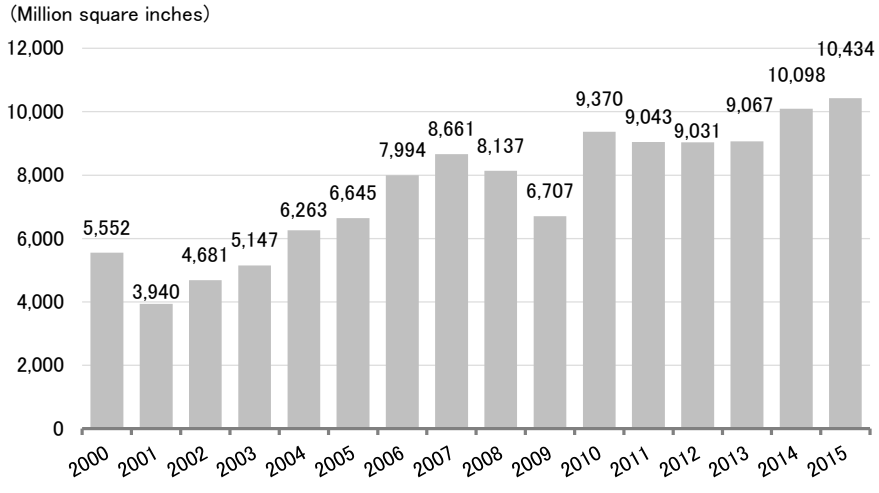
Composition of RS Technologies' net sales by region



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

This is very significant point. In the semiconductor industry, where technological progress is fast and a huge investment is required, no semiconductor manufacturer is guaranteed to survive in the future. However, if looking at the semiconductor industry as a whole, although there are temporarily declines, such as following the collapse of the high-tech bubble or the Lehman shock, it has continued to grow over the long term. As long as a large paradigm shift does not occur, it is thought that the semiconductor market will continue to grow in the future. In terms of customer structure, it is significant that the Company's customers are spread widely and thinly as a network over the entire semiconductor industry, as this means it is not easily affected by fluctuations in semiconductor production in a specific country or company, suggesting it will be able to realize long-term growth in line with the growth of the industry as a whole.

Trend in global shipments of silicon wafers



Source: Prepared by FISCO from SEMI data

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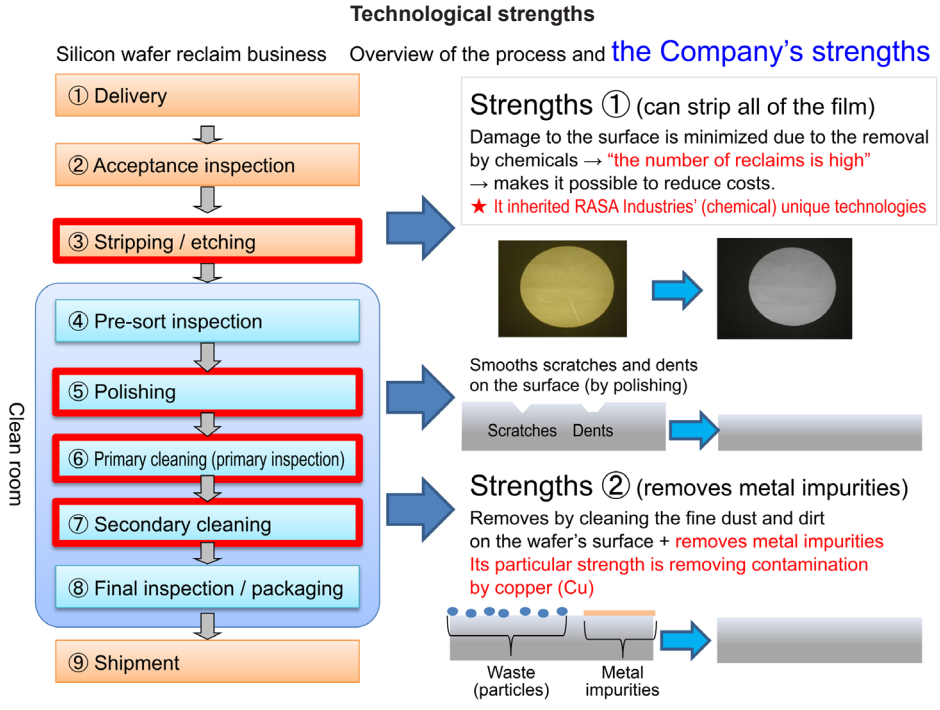
c) Production technologies: thin-film stripping technologies and metal-removal technologies

The Company also has technological strengths. At the present time, it is demonstrating this strength for technologies to strip the thin film on the surface of the wafer using a chemical treatment. A thin film of various substances is formed on the monitor wafer's surface as the pretreatment for the circuit fabrication, and also a doping treatment is carried out on the inside of the wafer. Fundamentally, the reclaim removes this film and the doping material and returns the wafer back to being highly pure silicon. Whereas rival companies achieve this by polishing, the Company achieves it through a combination of chemical treatment and polishing. The advantage of this approach is that it reduces the amount of polishing per reclaimed wafer, which makes it possible to increase the number of times a wafer can be reclaimed (to prolong its life). At FISCO, we think this is very appealing to customers, as it directly results in cost reductions.



Source: The Company's financial results briefing materials

One more strength is its metal-removal technologies. Some semiconductor manufacturers fabricate a circuit made of metal, such as copper, on the monitor wafer for testing and evaluation purposes. Currently, monitor wafers fabricated with these metal circuits cannot be reclaimed so are thrown away. The reason is that when a metal circuit is fabricated, the metal components seep into the wafer and cannot be removed even if the surface is polished. The Company has solved this problem by developing a technology that makes it possible to reuse even monitor wafers fabricated with metal circuits. Presently, the Company is receiving praise from semiconductor manufacturers for this development, and if this technology is certified, the wafer reclaim market will expand and the Company will be able to capture all of this expanded part. If the wafers that are currently thrown away are reclaimed, it is estimated that the reclaim market would expand by 5%, with 25% of all introduced wafers being reclaimed instead of the current percentage of approximately 20%. This means the market would expand from the present 1 million wafers a month to 1.25 million wafers a month, which is an increase on a scale comparable to the Company's total production capacity. Therefore, the impact of this development would be considerable.

However, it will likely take some time before this metal-removal technology comes to be widely accepted by customers. The biggest hurdle would seem to be that semiconductor manufacturers are unable to give up their preconception that it is impossible to remove the metals. The Company also is currently in a situation where its supply and demand situation is tight and its capacity utilization rate is at full capacity, so promoting the use of this metal-removal service is a low priority.

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■ Growth strategy and progress made

New establishment of Taiwanese subsidiary has increased its production capacity and is aiming for a global share of 40%

The Company is implementing measures for the five items it has set in its management policy to realize medium- to long-term growth. The items are explained in detail below, but overall the Company is making steady progress for this policy.

The five points for the medium- to long-term management policy

The medium- to long-term management policy	
(1)	Expanding production capacity by newly establishing a Taiwanese subsidiary and increasing production equipment at the Sanbongi Factory
(2)	Expanding share of the reclaim market
(3)	Capturing the growing demand
(4)	Opening-up the potential reclaim market
(5)	Entering into the Chinese semiconductor market

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

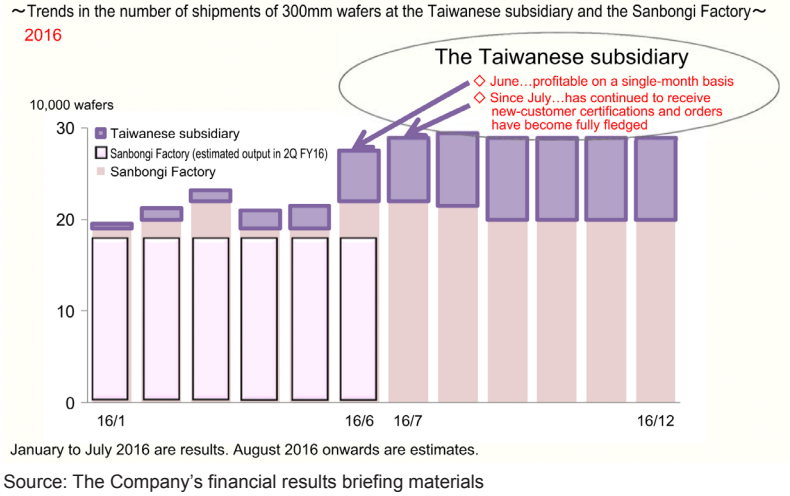
(1) Expanding production capacity by newly establishing a Taiwanese subsidiary and increasing production equipment at the Sanbongi Factory

As a top priority issue in FY12/16, the Company worked to expand its production capacity by newly establishing a Taiwanese subsidiary and increasing production facilities at its Sanbongi Factory. As explained in the business environment section, the situation is that while demand for wafer reclaim services is expected to grow in the future, in consideration of the return on investment, it is not easy for existing service providers to take the decision to increase production equipment, let alone for new entrants to decide to enter the market. In this situation, the Company is continuing to expand its production capacity against the backdrop that it is highly cost competitive, and it is aiming to raise its global market share from the present 30% to 40%.

When constructing the Taiwanese subsidiary's Tainan Factory, the Company transferred equipment from the Sanbongi Factory with the aim of keeping down capital investment costs and making a smooth start, and the factory was completed by December 2015. However, it took longer than expected to acquire the certification from customers that was necessary for actual operations, due to the fact that it was a newly constructed factory and for the on-site inspections of the Taiwanese foundry manufacturers, which are the target customers. As a result, the utilization rate in 1H FY12/16 was low.

After that, the Tainan Factory received its first customer certification in April 2016 and then steadily increased its production output in May and June. From July onwards, it continued to receive new customer certifications, orders increased, and operations became fully fledged, and the factory's capacity utilization rate steadily rose. By December 2016, its production was at a level close to full capacity. Essentially, the potential demand from Taiwanese foundry companies for reclaim wafer services is high, and this potential demand was materialized instantaneously in the form of the operations of the Company's new factory, which possesses advanced technologies. Alongside the rise in the utilization rate, the results of the Taiwanese subsidiary also rapidly recovered, and since becoming profitable for the first time in June on a single-month basis, it has remained profitable.

Production at the Taiwanese subsidiary (Tainan Factory) and the Sanbongi Factory



January to July 2016 are results. August 2016 onwards are estimates.

Source: The Company's financial results briefing materials

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As previously explained, it is considered that the Sanbongi Factory has been able to increase its production capacity for 12 inch treated wafers to 200,000 wafers a month by repeatedly raising production capacity through eliminating bottlenecks. Combined with the 100,000 wafers produced by the Tainan Factory, the Company's 12 inch wafer treatment capacity has reached 300,000 wafers a month, meaning it has a global share of approximately 30%.

(2) Expanding share of the reclaim market

As described above in (1), the elimination of the bottlenecks at the Sanbongi Factory combined with the completion of the Tainan Factory, and the Company's 12 inch wafer production capacity has risen to 300,000 wafers a month. Currently, the demand for reclaimed 12 inch wafers is 900,000 to 1 million wafers a month, meaning the Company has a share in excess of 30%. The fact that that the Company seems to be currently actually achieving a production output of 300,000 wafers a month is an important point.

Toward achieving its target of a global share of 40%, it will need to further increase its production capacity to 400,000 to 500,000 wafers a month, although it seems likely that the specific measures to achieve this will be an issue from the next fiscal period onwards. There are many factors to investigate and consider for this decision, such as the trends in the price of silicon wafers and the reclaim fee, and the investment plans of its industry peers. A factor specific to the Company is that at both its Sanbongi Factory and Tainan Factory, there is space to construct new buildings. In other words, it will be possible to further expand capacity simply by installing more production equipment. This will enable it to keep down the capital investment and the construction periods at both factories.

At FISCO, we think that it might take some time before the Company undertakes a large-scale investment to expand it production capacity. This is because in the absence of any conspicuous developments by its industry peers, it seems a better idea to aim to hike-up the reclaim fee while maintaining the current tight supply and demand relation. We expect that for the time being, it will be able to respond to the increase in demand by eliminating bottlenecks.

The Company is also considering increasing its production capacity through business partnerships and M&A with industry peers. We evaluate this to be one potentially effective option. As described above, the fall in the reclaim fee means not every wafer reclaim service provider is profitable. On the occasion of the generational change of wafer that is expected to occur in the future (from the technological roadmap, the main wafer size is expected to increase from the current 12 inches to 18 inches), reclaim service providers will also have no choice but to implement large-scale capital investment in response to this change. In this sort of situation, the Company, which has the leading share and is highly cost competitive, is considered to be in advantageous position for business partnerships and M&A. In addition, we think that even for the Company, it is important to keep down, even if by just a little, investment in expanding production capacity for the current size of wafer.

On this point, there were some developments in FY12/16. In July, the Company entered into a business partnership with Nippon Valqua Industries, Ltd. <7995>. Nippon Valqua Industries' subsidiary, Valqua FFT Inc., has a silicon wafer reclaim business, so the aim of this partnership is to pursue business synergies with it. We expect the Company to announce details, including the specific partnership model and the actual synergies, in the future.

(3) Capturing the growing demand

While the preposition of "Capturing the growing demand" is inversely related to (2) above, there are structural changes emerging, of once again only emphasizing demand growth. One example of this is the fully fledged spread in the use of 3D NAND flash. NAND-type flash memory is currently the mainstay type of flash memory, but as there are limits to its memory capacity from the current fabrication methods, there has appeared a product called 3D NAND flash, which increases memory capacity by vertically stacking circuits. On entering 2016, companies like Toshiba Corporation <6502> and Intel Corporation began to manufacture it in earnest. 3D NAND flash is difficult to manufacture and for that reason the manufacturing process consumes the monitor wafer. Apart from the so-called semiconductor cycle, as previously stated the demand for monitor wafers increases from the start of operations of a new factory or the launch of a new product, and this major wave is occurring at the present time and the Company is succeeding in capturing the demand from it.

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At FISCO, our understanding is that the preposition of capturing growing demand includes the meaning of responding to the generational change in the size of wafers in the medium- to long-term. The history of semiconductor manufacturing is a history of wafers growing larger in size, and the road map shows there will be a shift from the current size of 12 inches to 18 inches. Reclaim service providers are in a passive position for this shift to 18 inches, and the important point will be whether or not they can respond quickly when the demand for them occurs. On this point, the Company has already introduced equipment and established the polishing technologies for 18 inch wafers into its Sanbongi Factory. These preparations have been highly evaluated by customers and it has in place a system enabling it to transition to mass production at any time. At FISCO, we think that among the specialist providers of reclaim services, only a few companies have completed the preparations to respond to the shift to 18 inches, and in this respect the Company has a major advantage.

(4) Opening-up the potential reclaim market

This refers to the expansion of the reclaim market by the previously described metal-removal technology. If the Company receives certification for its proprietary metal-removal technology, the monitor wafers that are currently thrown away can be expected to be sent for reclaim service. The scale of this potential demand is thought to be in the region of 250,000 wafers a month and can be expected to have a major impact on the Company's earnings.

As previously mentioned, there is a strong preconception among semiconductor manufacturers that is impossible to remove the metals, and as yet the Company's technology has not been launched on a commercial basis. However, for example the appearance of new products like 3D NAND flash and the further progress in miniaturization will result in a decline in yields for semiconductor chips and an increase in costs. In such a case, demand for reclaim wafers will grow even stronger and it is possible that in this process, the need for the Company's metal-removing technology will increase.

(5) Entering into the Chinese semiconductor market

The Company made significant progress on this point in FY12/16. As explained above, it established the purchases and sales of semiconductor manufacturing equipment business as a new segment. Company President Ho and the rest of the management team previously worked in a trading company and have an abundance of experience of doing business with Chinese companies and also have human relations with them. They have been working to use this knowledge for the Company and to expand its business in China.

Currently, the Company is conducting transactions for various equipment and materials according to the needs of customer, centered on sales of consumables related to semiconductor manufacturing. The rapid increase in earnings in FY12/16 was in large part due to the expansion of transactions for liquid crystal modules (liquid crystal panel semi-finished products).

In terms of the medium- to long-term targets, the Company plans to conduct transactions for semiconductor manufacturing equipment, as indicated by the segment name. It has already introduced used liquid crystal panel manufacturing equipment. The degree of fine processing for semiconductor manufacturing equipment is very different to that for liquid crystal, so the degree of difficulty is also very high. But nonetheless, it is not difficult to imagine that both of these trends will expand going forward.

At FISCO, we think the Company also has major business opportunities other than in the trading company business. Alongside the growth in the Chinese semiconductor industry, the demand for reclaim wafers will grow correspondingly. In this case, it seems likely that the idea of constructing a factory close to customers will naturally emerge. It is thought that it will take some time to advance to this stage, but we will be paying attention to the Company's business in China as an area where major developments can be expected to occur in the future.

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■ Results trends

Sales and final profits increased by double digits in 3Q FY12/16

(1) 3Q FY12/16 results and full fiscal year outlook

a) 3Q FY12/16 results

In 3Q FY12/16, net sales were ¥6,271mn (up 60.3% year-on-year (y-o-y)), operating income was ¥890mn (up 5.0%), ordinary income was ¥491mn (down 31.7%), and net income attributable to owners of parent was ¥242mn (up 14.0%), for increases in both sales and profits.

In the wafer business, net sales were ¥4,680mn (up 44.2% y-o-y) and operating income was ¥954mn (down 4.8%), for higher sales but lower profits. The main reason for the higher sales was the growth in the sales volume of reclaim wafers from the strong demand. Conversely, the main factor behind the lower profits was the delay in obtaining customer certification for the Taiwanese subsidiary that meant in substantive terms, its start was pushed back to April 2016, which resulted in bigger losses in 1Q and 2Q. Since June, the Taiwanese subsidiary has been profitable on a single-month basis, but it was unable to completely recover the loss recorded in 1H.

In the purchases and sales of semiconductor manufacturing equipment business, net sales were ¥1,514mn and operating income was ¥201mn (it is a new segment so there are no y-o-y comparisons). Since the past the Company has sold consumables used for semiconductor manufacturing, but earnings in this 3Q were pushed-up by the growth in sales of liquid crystal modules.

The main reason why ordinary income declined y-o-y was the recording of a foreign exchange loss of ¥344mn in non-operating profit and loss. This was related to the Company's US dollar denominated accounts receivable and the Taiwanese subsidiary's foreign-currency denominated liabilities and borrowing.

Overview of the 3Q FY12/16 results and the full year outlook

(¥mn)

	FY12/15			FY12/16					
	3Q cumulative	4Q	FY12/15	3Q cumulative	y-o-y	4Q (E)	y-o-y	FY12/16 (revised estimates)	y-o-y
Net sales	3,913	1,632	5,545	6,271	60.3%	1,468	-10.0%	7,740	39.6%
Gross profit	1,387	484	1,872	1,566	12.9%	-	-	-	-
Gross profit margin	35.5%	29.7%	33.8%	25.0%	-10.5pt	-	-	-	-
SG&A expenses	539	251	790	675	25.3%	-	-	-	-
Ratio of SG&A expenses to net sales	13.8%	15.4%	14.3%	10.8%	-3.0pt	-	-	-	-
Operating income	848	233	1,081	890	5.0%	640	174.5%	1,531	41.6%
Operating margin	21.7%	14.3%	19.5%	14.2%	-7.5pt	43.6%	29.3pt	19.8%	0.3pt
Ordinary income	720	217	937	491	-31.7%	655	200.9%	1,147	22.3%
Net income attributable to owners of parent	212	91	304	242	14.0%	499	444.5%	742	143.9%

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

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b) Prices, demand and supply, and production trends for reclaim wafers

The business environment surrounding reclaim wafers is favorable. The semiconductor industry continues to grow globally at around 5% a year. In this situation, the Company is succeeding in capturing demand from foundry companies in the Taiwanese market, in which it is strong, following the completion of the Tainan Factory and the acquisition of customer certifications. In the Japanese market also, it is steadily capturing demand that is increasing from the production of 3D NAND flash, and also other growth in demand including from the expansion in sensor production.

In terms of prices, the Company had been negotiating for prime wafers, but it is noteworthy that since the start of 2017 they have settled on an upward trend. The important point going forward is whether or not this will lead to a hike in the reclaim fee. But even supposing that the reclaim fee does not rise, we can expect positive effects for the reclaim wafer industry, as a hike in the price of prime wafers will lead to an increase in demand for reclaim wafers. Another positive is that some prime manufacturers and wafer manufacturers have strengthened their shift to high-value-added products. This reduces the supply of monitor wafers for new products and this reduction becomes demand for reclaim wafers.

While on the one hand demand is strong, on the other hand currently only the Company is increasing its reclaim wafer supply capacity. At its current level, the reclaim fee does not act as an incentive for service providers to increase their production capacity. The Company newly constructed a factory in Taiwan against the backdrop that it was able to keep costs down by transferring equipment from Japan. Also, as previously explained, it has been able to increase the production capacity of the Sanbongi Factory by eliminating bottlenecks.

In this way, at FISCO we think that the supply and demand balance for reclaim wafers is currently in an extremely good condition and that this will continue in 2017 also.

c) FY12/16 full year outlook

The Company announced its upwardly revised FY12/16 full year forecasts for net sales and operating income when it released its 2Q results (August 2016), reflecting the strong supply and demand balance in its wafer business and the steady rises in the utilization rates at both its Sanbongi and Tainan factories (however, ordinary income and net income attributable to owners of parent were downwardly revised on the assumption that the exchange rate in 2H would change from ¥120/US dollar to ¥111/US dollar). Looking at the progress made up to 3Q FY12/16, the profit hurdles to be cleared in 4Q (October to December 2016) in order to achieve the full-year forecasts seem to be extremely high. However, at FISCO we think it is fully possible that it will achieve them if, in the wafer business, the Sanbongi Factory continues to perform strongly and the Tainan Factory operates at close to full production capacity.

The reasons why we think it can achieve its forecasts are that the contribution to profits of the Taiwanese subsidiary is likely to be larger compared to a similar case normally. The reclaim wafer business is an equipment-based industry and it is known that profits are rapidly generated once the equipment utilization rate exceeds a certain level. At FISCO, we estimate that the Company's Taiwanese subsidiary will incur only light depreciation expenses as its equipment was transferred to it from Japan, and in terms of operations also, from the start it has been achieving high productivity and yields. As result, as it grows closer to full operating capacity its profitability can be expected to rapidly rise. This is the main reason why we think that profits will increase rapidly in 4Q, leading to the full year operating income forecast being achieved. We also think that the reason why operating margin in 4Q is 43.6% is because the full year net sales forecast is too small.

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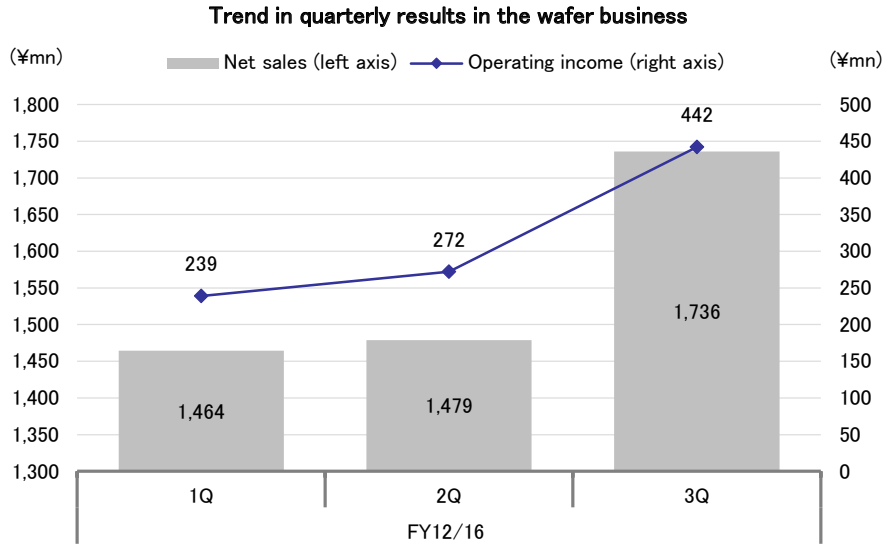

Source: Prepared by FISCO from Company materials

(2) The approach for FY12/17

The Company announces three-year results targets each year on a rolling (review) basis. The targets for FY12/16 announced at the start of the year were net sales of ¥8,292mn and operating income of ¥2,191mn. But the Company's earnings environment has changed greatly since the time it prepared these targets, and as previously described, it has upwardly revised the FY12/16 forecasts for net sales and operating income. In the background to this is the fact that demand is extremely strong in the wafer business and prices are also trending upward. Conversely, the rolling targets assumed an exchange rate of ¥120/US dollar, but the yen has appreciated recently. Also, while the earnings scale of purchases and sales of semiconductor manufacturing equipment expanded rapidly in FY12/16, it is also possible that this will rapidly shrink as it has strong elements of a trading company business.

Three-year results targets (prepared at the start of FY12/16)

(¥mn)

	FY12/15	FY12/16		FY12/17	FY12/18
	Results	New announcement	Revised forecast	New announcement	New announcement
Net sales	5,545	7,031	7,740	8,292	8,338
Operating income	1,081	1,464	1,531	2,191	2,186
Net income attributable to owners of parent	304	986	742	1,578	1,588
Assumptions		US dollar: ¥120/dollar			
		Taiwan Dollar: ¥3.75/dollar			

Source: Prepared by FISCO from Company materials

Based on this situation, at FISCO we have assumed another logic for FY12/17. In the main wafer business, the Sanbongi Factory continues to operate at full production capacity, so if there is no increase to production capacity, the scale of profits will remain unchanged. Therefore, improving profits in the wafer business will be dependent upon improving the results of the Taiwanese subsidiary.

As the Taiwanese subsidiary seemed to be approaching full production capacity in FY12/16 4Q, we can imagine that its FY12/17 earnings will be approximately 4 times the earnings in 4Q in the previous fiscal year. On the other hand, it is expected to record an operating loss in FY12/16 due to the impact of the low utilization rate in the 1H of this fiscal year. We estimate that this increase amount, which took it from a deficit to profitability, is in the region of ¥500mn to ¥700mn. The FY12/16 full year forecasts after the revisions reflect the assumption about the exchange rate, of the appreciation of the yen, so we think that once the portion from the improvement in the results at the Taiwanese subsidiary is added, the Company can achieve its current medium-term targets for FY12/17. It is difficult to predict fluctuations to exchange rates and moreover it is not possible to completely avoid their impact. Rather than focusing excessively on this external factor, we will be focusing on the operating conditions at the Company's Sanbongi and Tainan factories, which we think are the more important points in order to evaluate the profit level from FY12/17 and beyond, and also its intrinsic competitive advantages.

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Simplified consolidated income statement

(¥mn)

	FY12/14	FY12/15	FY12/16 (E)
Net sales	4,566	5,545	7,740
Growth rate	31.4%	21.4%	39.6%
Gross profit	1,819	1,872	-
Gross profit margin	39.9%	33.8%	-
SG&A expenses	653	790	-
Ratio of SG&A expenses to net sales	14.3%	14.3%	-
Operating income	1,166	1,081	1,531
Growth rate	-	-7.3%	41.6%
Operating margin	25.5%	19.5%	19.8%
Ordinary income	1,247	937	1,147
Growth rate	-	-24.8%	22.3%
Net income attributable to owners of parent	664	304	742
Growth rate	-	-54.2%	143.9%
After adjustment for share split			
Earnings per share (¥)	131.90	56.72	136.54
Book value per share (¥)	300.54	485.54	-
Dividend per share (¥)	0.00	0.00	0.00
Depreciation expenses	102	326	-
Capital investment	2,901	4,537	-

Simplified consolidated balance sheet

(¥mn)

	FY12/14	FY12/15	3Q FY12/16
Current assets	2,759	3,892	5,002
Cash and deposits	1,190	1,842	1,558
Note and accounts receivable–trade	696	970	2,366
Merchandise and finished goods	523	616	726
Others	348	463	352
Non-current assets	4,064	5,845	5,240
Tangible non-current assets	3,918	5,667	5,012
Intangible non-current assets	15	29	23
Investments and other assets	130	148	204
Total assets	6,823	9,737	10,243
Current liabilities	2,292	2,295	3,063
Notes and accounts payable–trade	151	186	347
Short-term loans payable	827	1,216	1,959
Others	1,314	893	756
Non-current liabilities	2,934	4,798	4,359
Long-term loans payable and corporate bonds	2,925	4,079	3,752
Others	8	718	606
Shareholders' equity	1,511	2,634	2,884
Capital stock	199	616	616
Capital surplus	198	616	616
Retained earnings	1,114	1,418	1,660
Treasury shares	-	-17	-10
Accumulated other comprehensive income	23	4	-69
Non-controlling interests	60	-	-
Total net asset	1,596	2,644	2,820
Total liabilities and net assets	6,823	9,737	10,243

Simplified consolidated cash flow statement

(¥mn)

	FY12/14	FY12/15	2Q FY12/16
Cash flow from operating activities	643	470	-163
Cash flow from investing activities	-3,215	-2,127	-631
Cash flow from financing activities	3,066	2,327	417
Cash and deposits translation difference	80	-18	-91
Change in cash and deposits	573	652	-468
Cash and deposits balance at start of period	-	951	1,603
Cash and deposits balance at end of period	951	1,603	1,135

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■ Returns to shareholders

Currently prioritizing capital investment for growth

The Company considers returning profits to shareholders to be an important management issue and its basic policy is to do so through the payment of dividends. But it is presently prioritizing capital investment for growth and retaining internal reserves above paying dividends. The Company's operating margin is 19.5% and ROE (return on equity) is 14.6% (both are values calculated from FY12/15 results using millions of yen as the unit), and it is achieving high levels of profitability. But at FISCO, we consider that rather than paying dividends, it is in the interests of shareholders that it uses these profits to invest in growth.

For FY12/16 also, the Company has announced that it does not plan to pay a dividend. Although in its results, as previously explained profits are expected to increase substantially, it has many investment projects that are needed in order to expand share and realize sustainable growth. As an enterprise that is still in its growth stage, at FISCO we think the Company is justified in prioritizing investment in growth over the payment of dividends.

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