

Securities ID code:6859



ESPEC CORP.

Results Briefings of The Second Quarter of Fiscal Ending March 2012

November 24, 2011

www.espec.co.jp

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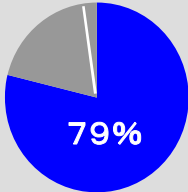
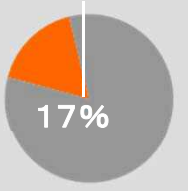
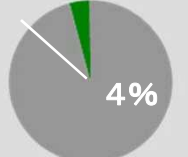
**Analysis per Segment of the Second Quarter
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**Business Plan for the Second-half and Full-year Periods
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**ESPEC Medium-term Management Plan
“Progressive Plan 2013”**

Reference

Individual Business Market / Use

		Main Products	Market	Use	Sales composition (2011/3 2Q)
Equipment Business	Environmental Test Chambers	•Temperature & humidity chamber •Walk-in type temperature & humidity chamber •Thermal shock chamber •Vibration combined environmental test system •HAST chamber	•Electronic component and equipment market •Automobile market •Semiconductor market • Medicine, Cosmetics, Foods and others	•For R & D •For credibility and evaluation ※ Partially used for production and inspection	
	Semiconductor Equipment	•Burn-in system •Semiconductor evaluation system •Instrumentation system	•Semiconductor market •Automobile market	•For production (inspection) ※ Instrumentation system is for development and evaluation	
	FPD Equipment	•Single processing system vertical clean oven •Low Oxygen Clean Oven (Temperature Property: Maximum 500℃)	•LCD market • Organic Electro-Luminescence market	• For production (Annealing, baking, drying)	
	Energy Device Equipment	•Advanced Battery Tester •LIB Electrode Oven	•Electronic component and equipment market •Automobile market	•For production •For R & D •For credibility and evaluation	
Service Business	After-sales Service and Engineering	• After-sales service •Construction around equipment	•Semiconductor market •FPD market •Automobile market •Communication market and others	—	
	Commissioned Tests and Facility Rentals	•Commissioned test • Equipment rental Calibration		•Resale •	
Other Business	Environmental Engineering Business	Growth of forest, creation of waterfront, urban greening			
	New Business	Plant factory, developing and creating new businesses as a major source of profit			



*Financial Results of the Second Quarter of
Fiscal Ending March 2012*



Financial Highlights

Backed by the improvement in capital spending among major customers, the company posted an increase in both sales and in the amount of orders received from the previous period.

Profit (Loss)

- Both sales and the amount of orders received increased against the backdrop of the improvement in capital spending in the semiconductor/battery industries and in the recovery in R&D investment by electronic components/equipment and automobile manufacturers.
- In spite of an increase in fixed cost, the company gained more profit than the initially projected figures, which is attributable to an improved cost-to-sales ratio and the increased profitability achieved by overseas subsidiary companies. However, the ordinary income and net income earned during the period under review declined from the same period of the previous year.
- The Great East Japan Earthquake had only limited impact on the company's business.

Balance Sheet and Cash Flow

- Total assets dropped by approx. 1.2 billion yen, affected by the decrease in cash, notes and accounts receivable-trade.
- The equity rate increased by 2.9 percentage points to 75.3% due to the decrease in total assets and the increase in net assets.
- Cash rose by approx. 820 million yen, reflecting the increase in operating cash flow.

Dividends

- The company's annual dividend will be 15 yen per share, with an interim dividend of 5 yen and year-end dividend of 10 yen (scheduled).

Summary of Profits and Losses

(Millions of yen)	2011/3 2Q		2012/3 2Q		Rate of Change
		Composition		Composition	
Net sales	12,916	100.0	14,306	100.0	10.8%
Cost of Net Sales	8,792	68.1	9,529	66.6	8.4%
Gross profit	4,124	31.9	4,776	33.4	15.8%
SG & A	3,574	27.7	4,207	29.4	17.7%
Operating income	550	4.3	569	4.0	3.4%
Non-operating income	184	1.4	168	1.2	△9.0%
Non-operating expenses	54	0.4	101	0.7	87.1%
Ordinary income	680	5.3	636	4.4	△6.6%
Extraordinary income	38	0.3	20	0.1	△45.0%
Extraordinary loss	62	0.5	90	0.6	44.1%
Income before income taxes and other adjustments	656	5.1	566	4.0	△13.6%
Quarterly net income	776	6.0	521	3.6	△32.8%

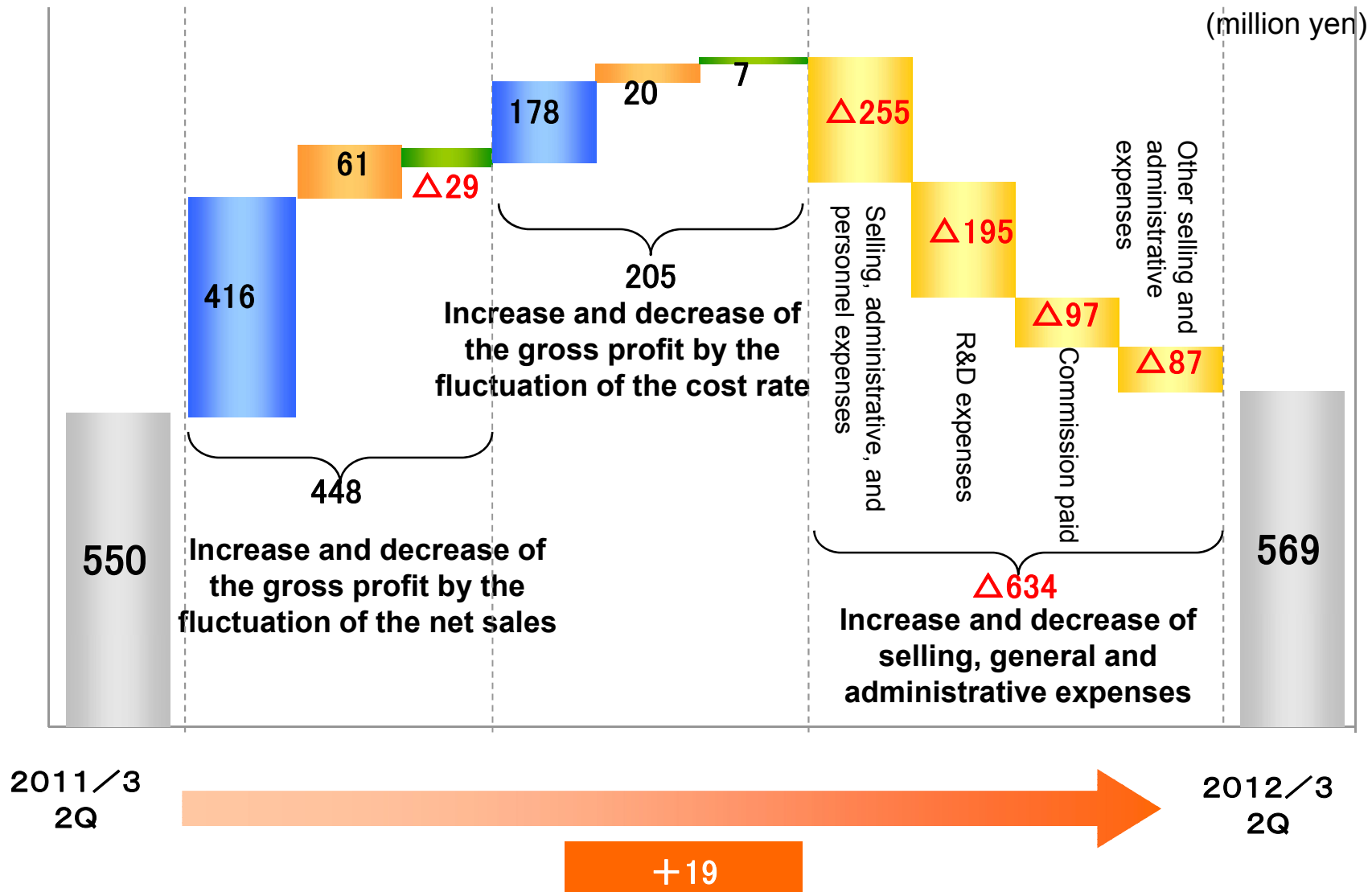
■ Sales grew due mainly to the **increased earnings from environmental test chambers** in the equipment business segment.

■ In spite of the increase in personnel costs in the manufacturing sector, **the cost-to-sales ratio fell by 1.5 percentage points**, backed by increased in-house production and successful cost improvement efforts.

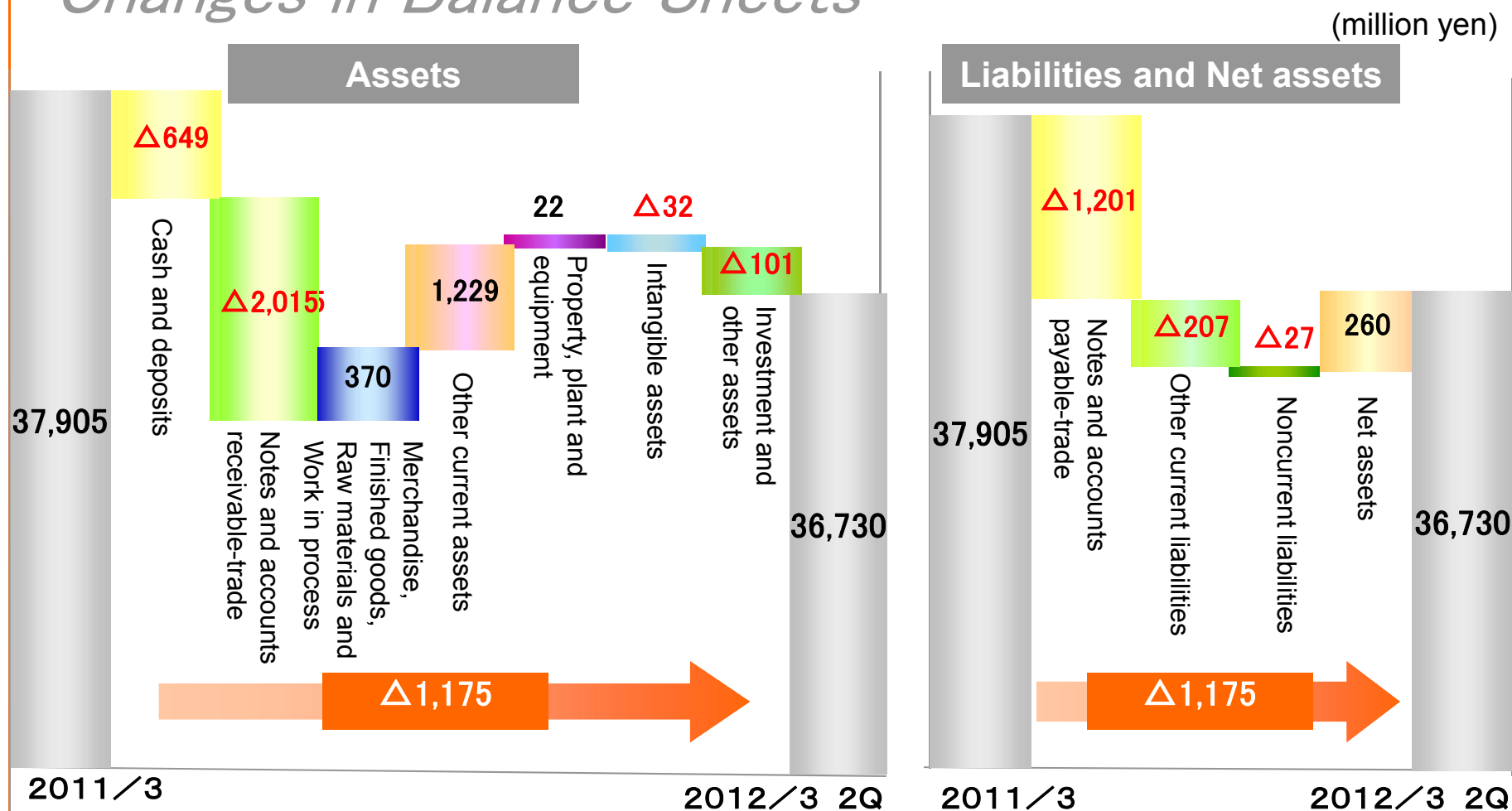
■ **Operating income increased from the same period of the previous year**, because of the growth in profitability achieved by overseas subsidiary companies, which more than offset the negative impact of the increase in selling, general and administrative expenses.

Analysis of Operating Income Increase and Decrease Factor

■ Equipment Business
■ Service Business
■ Other Business+Elimination



Changes in Balance Sheets

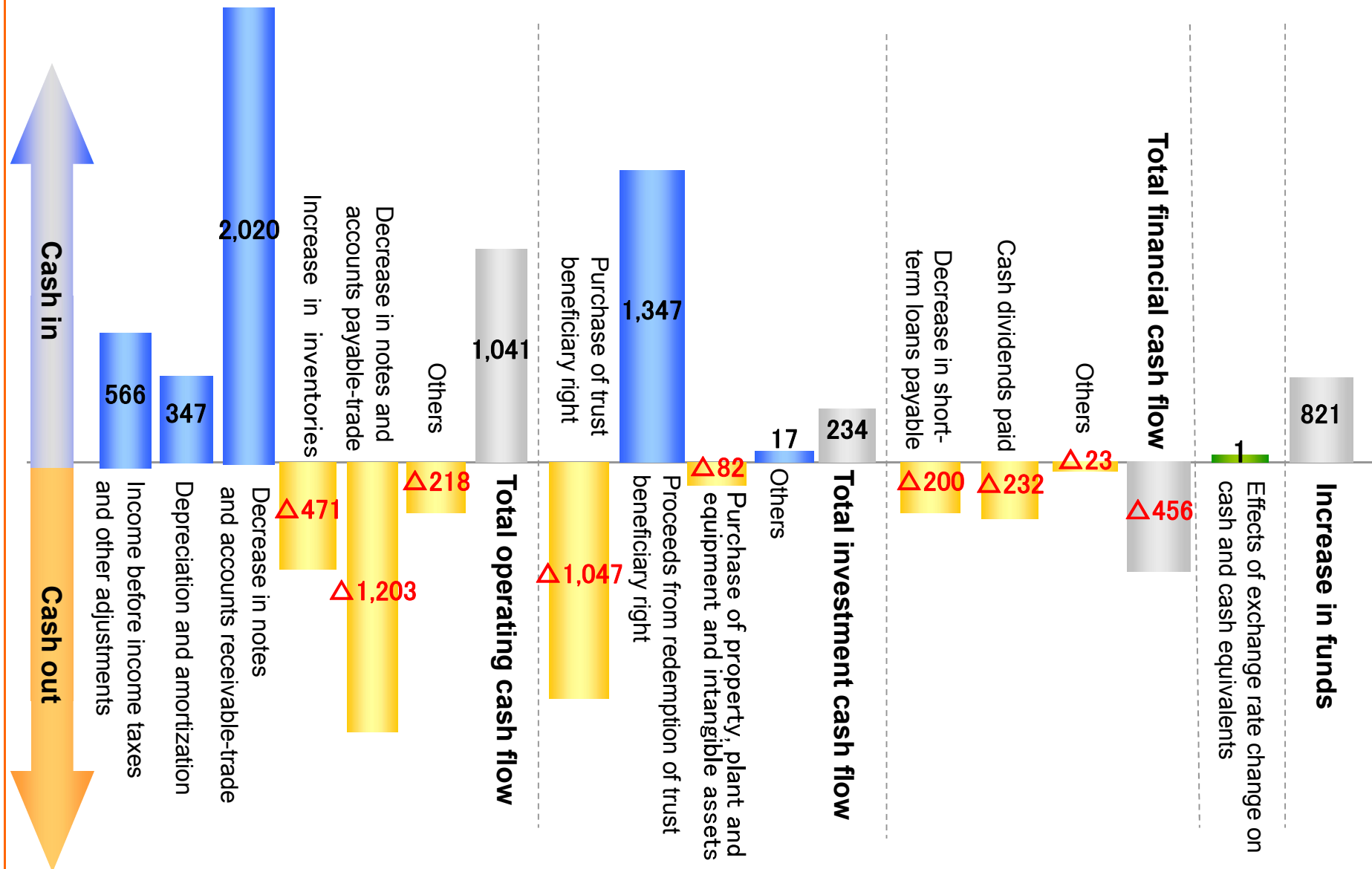


■ **Total assets fell by approx. 1.2 billion yen**, affected by the decrease in notes and accounts receivable-trade.

■ The equity rate **increased by 2.9 percentage points to 75.3%** due to the decrease in total assets and the increase in net assets.

Statement of Cash Flow

(million yen)





*Analysis per Segment of the Second Quarter
of Fiscal Ending March 2012*

Equipment Business

Environmental Test Chambers

- In Japan, both the sales and amount of orders received increased largely from the same period of the previous year, backed by the upward trend in capital spending and R&D investment in domestic industries—especially, the battery and semiconductor industries.
- Overseas, the company focused on developing new customers in China and other emerging countries in Asia, which resulted in the increased profitability of overseas subsidiary companies.

Energy Device Equipment

- While subsidiary companies posted favorable results in the sector of secondary battery test equipment during the first quarter, both the amount of orders received and sales fell short of the initially projected figures because of the failure of ESPEC to garner orders for secondary battery production equipment during the second quarter.

Semiconductor Equipment

- Business in the sector of burn-in systems remained strong since the previous year until the first quarter. As a result, both the sales and amount of orders received largely exceeded the initially projected figures, though falling short of the results of the same period of the previous year.

FPD Equipment

- The company received orders for clean ovens for testing small LCD panels from Taiwanese and Japanese manufacturers, which contributed to a drastic increase of the amount of orders received during the period under review from the same period of the previous year. However, sales declined from the same period of the previous year because the sales from many of these orders will be posted in the latter half of the current fiscal year.

Equipment Business

(million yen)

	2011/3 2Q	2012/3 2Q		Initially projected figures
			Year on year	
Orders-Received	11, 996	13, 392	111. 6%	12, 400
Net Sales	10, 284	11, 585	112. 7%	11, 500
Operating Income [Profit ratio (%)]	433 [4. 2%]	513 [4. 4%]	118. 5%	350 [3. 0%]

Service Business

(million yen)

	2011/3 2Q	2012/3 2Q		Initially projected figures
			Year on year	
Orders-Received	2, 711	2, 699	99. 6%	2, 650
Net Sales	2, 322	2, 486	107. 1%	2, 600
Operating Income [Profit ratio (%)]	147 [6. 3%]	198 [8. 0%]	134. 7%	170 [6. 5%]

After-sales Service and Engineering

■ After-sales service personnel worked in closer cooperation with sales personnel to propose to customers the upgrading of existing models in a manner that reduces energy consumption and encourages users to sign a new maintenance contract.

■ The amount of orders received declined from the same period of the previous year affected by the consequences of the earthquake, while sales increased partly due to the back orders carried over from the previous period.

Commissioned Tests and Facility Rentals

■ Both the amount of orders received and sales rose from the same period of the previous year, driven by the continued increase in the orders received from the company's major customers, namely automobile-related manufacturers.

Other Business

(million yen)

	2011/3 2Q	2012/3 2Q		Initially projected figures
			Year on year	
Orders-Received	463	273	59. 0%	550
Net Sales	381	290	76. 1%	400
Operating Income [Profit ratio (%)]	△32 [－%]	△143 [－%]	—	△120 [－%]

Environmental Engineering

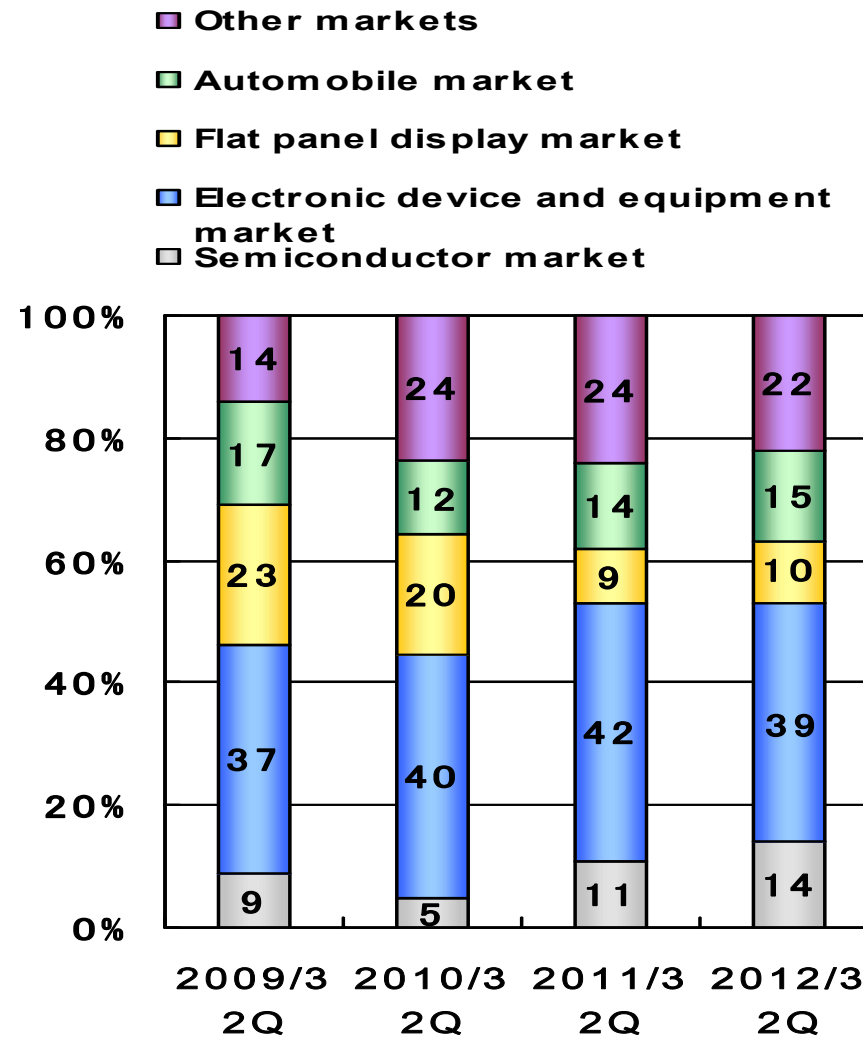
■ After the earthquake, many governmental agencies and other customers were pressed to freeze spending, which adversely affected the company's business. As a result, both the amount of orders received and sales declined from the same period of the previous year.

Plant Factory

■ Both the amount of orders received and sales declined from the same period of the previous year due mainly to the consequences of the earthquake.

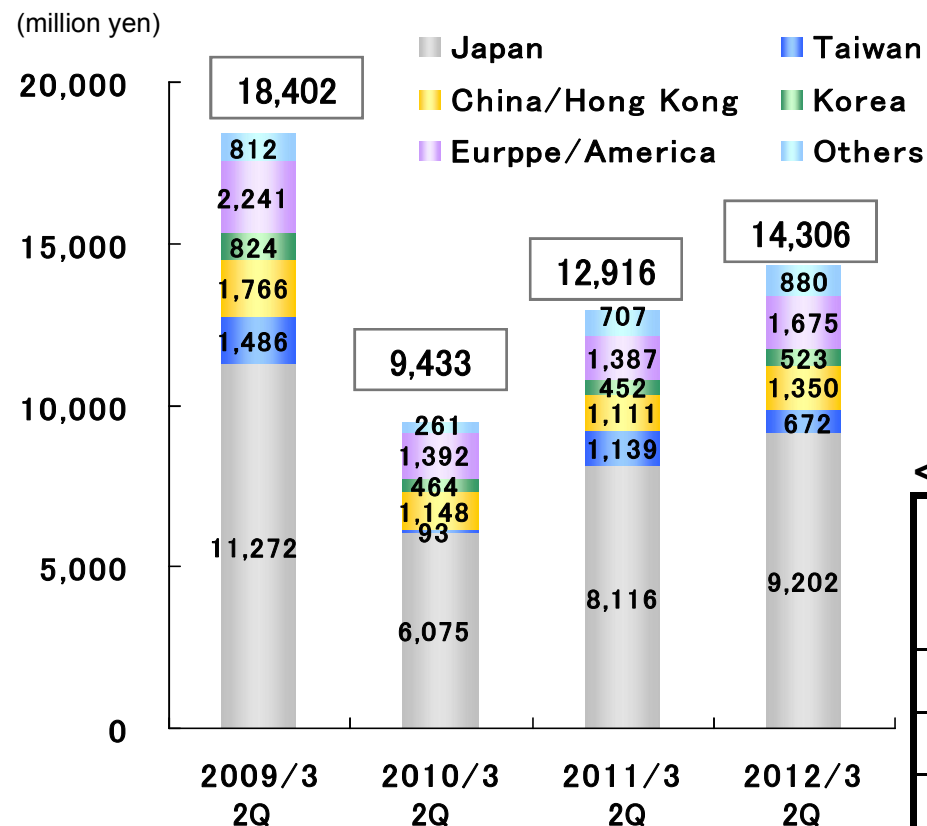
Breakdown of Sales by Market

Non-consolidated



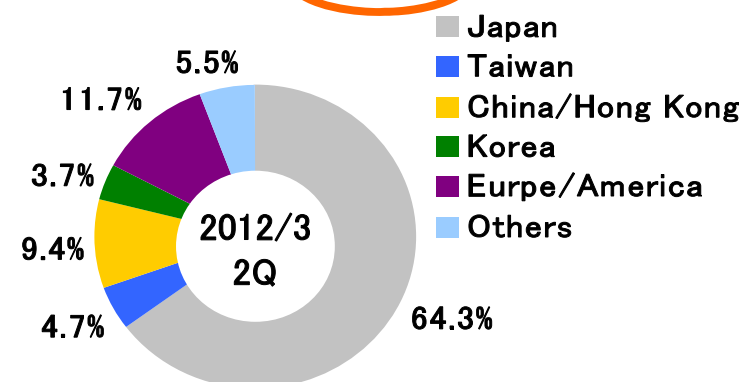
Sales by Region

Sales by Region



Regional sales composition ratio in segment

Overseas sales ratio: 37.2%



< Exchange rate >

	2012/3 Assumption of beginning of the year	2012/3 2Q Assumption after revision
U.S. dollar	85.00yen	79.19yen
Won	0.07yen	0.0727yen
Chinese Yuan	12.50yen	12.24yen
Hong Kong dollar	10.50yen	10.16yen

Sales growth rate (Year on Year change)

	Japan	Taiwan	China/Hong Kong	Korea	Europe/North America	Others
2012/3 2Q	13.4%	Δ41.0%	21.5%	15.7%	20.8%	24.5%
2011/3 2Q	33.6%	1124.7%	Δ3.2%	Δ2.6%	Δ0.4%	170.9%



*Business Plan for the Second-half and Full-year
Periods of the Fiscal Year Ending March 2012*

Full Fiscal Year Plan March 2012

(million yen)	2010/3	2012/3			
	Full year (Result)	First half (Result)	Second half (Revision Plan)	Full year (Plan)	
				Revision Plan	Initially projected figures
Orders-received	30, 924	16, 303	15, 197	31, 500	31, 000
Net sales	29, 589	14, 306	17, 194	31, 500	31, 500
Gross profit [Profit ratio (%)]	9, 219 [31. 2%]	4, 776 [33. 4%]	5, 024 [29. 2%]	9, 800 [31. 1%]	9, 800 [31. 1%]
Operating income [Profit ratio (%)]	1, 391 [4. 7%]	569 [4. 0%]	731 [4. 3%]	1, 300 [4. 1%]	1, 300 [4. 1%]
Ordinary income [Profit ratio (%)]	1, 683 [5. 7%]	636 [4. 4%]	814 [4. 7%]	1, 450 [4. 6%]	1, 450 [4. 6%]
Net income [Profit ratio (%)]	1, 654 [5. 6%]	521 [3. 6%]	879 [5. 1%]	1, 400 [4. 4%]	1, 400 [4. 4%]
Capital Investment	421	343	457	800	600
Depreciation	703	347	413	760	740
R&D Expense	1, 092	713	637	1, 350	1, 060
Profit Per Share (yen)	70. 03	22. 22	37. 47	59. 67	59. 67
Dividend (yen)	15	5	10	15	15

Equipment Business

Environmental Test Chambers

- Develop new customers and stimulate replacement demand among existing customers by launching the Platinous J Series, a new model of the company's core product, a temperature and humidity chamber.
- Enhance the ease of customization, achieve higher product quality, and further improve the cost-to-sales ratio.
- Strengthen sales efforts in China and other emerging countries in Asia and take measures to cope with the appreciation of the yen.

Energy Device Equipment

- Develop evaluation and production systems centering on secondary batteries for automobile use and develop customers both at home and overseas.

Semiconductor Equipment

- Strengthen sales efforts in the power semiconductor and new material markets to promote the sales of measurement evaluation systems.

FPD Equipment

- Promote the sales of clean ovens in the market for small LCDs for organic EL devices and smartphones.

Equipment Business

(million yen)

	2012/3			
	First half (Result)	Second half (Revision Plan)	Full year (Plan)	
			Revision Plan	Initially projected figures
Orders-Received	13, 392	11, 808	25, 200	24, 400
Net Sales	11, 585	13, 715	25, 300	25, 000
Operating Income [Profit ratio (%)]	513 [4. 4%]	537 [3. 9%]	1, 050 [4. 2%]	1, 100 [4. 4%]

Service Business

(million yen)

	2012/3			
	First half (Result)	Second half (Revision Plan)	Full year (Plan)	
			Revision Plan	Initially projected figures
Orders-Received	2, 699	2, 801	5, 500	5, 500
Net Sales	2, 486	2, 914	5, 400	5, 400
Operating Income [Profit ratio (%)]	198 [8. 0%]	252 [8. 6%]	450 [8. 3%]	350 [6. 5%]

After-sales Service and Engineering

- Promote preventive maintenance service and develop a remote diagnosis service.
- Take the measures necessary to extend the warranty period.

Commissioned Tests and Facility Rentals

- Develop and offer new test menus concerning power devices and eco devices.

Other Business

(million yen)

	2012/3			
	First half (Result)	Second half (Revision Plan)	Full year (Plan)	
			Revision Plan	Initially projected figures
Orders-Received	273	727	1,000	1,300
Net Sales	290	710	1,000	1,300
Operating Income [Profit ratio (%)]	△143 [－%]	△57 [－%]	△200 [－%]	△150 [－%]

Environmental Engineering

■ Strengthen sales efforts in the sectors of forest and waterfront recovery, promote sales of the soil pavement system, and offer an indoor greening system.

New Business

■ Promote the standardization of the design and production of plant factories and strengthen sales efforts at home and abroad.

■ Develop new business by leveraging the company's core technologies and strengths.



ESPEC Medium-term Management Plan
“Progressive Plan 2013”

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Business Climate Surrounding ESPEC

While the global economy remains fraught with uncertainties, investment in green innovation is likely to grow.

Major changes in the business climate

- The rapid appreciation of the Japanese yen will accelerate the hollowing out of the Japanese manufacturing industry.
- International competition in the electronics and automobile markets will grow increasingly intense.
- Emerging countries, especially China, will assume a leadership role in the global economy.
- Growing attention will be paid to environmental problems (e.g., energy, food and water problems)

Market and customer analysis

- Domestic demand for conventional environmental testing will be matured, while demand for new testing will emerge instead.
- The Japanese market will see huge replacement demand.
- Developed countries will accelerate the relocation of their production and R&D bases to China and other parts of Asia.
- As a global center of industry, Asia will see increasing and more diversified demand for environmental testing.
- Green innovation (technical innovation for transition to a low-carbon society) will be an essential part of the national strategies of respective countries, leading to the emergence of huge investment opportunities.

Policy and Target

PROGRESSIVE PLAN 2013

from fiscal 2011 to fiscal 2013

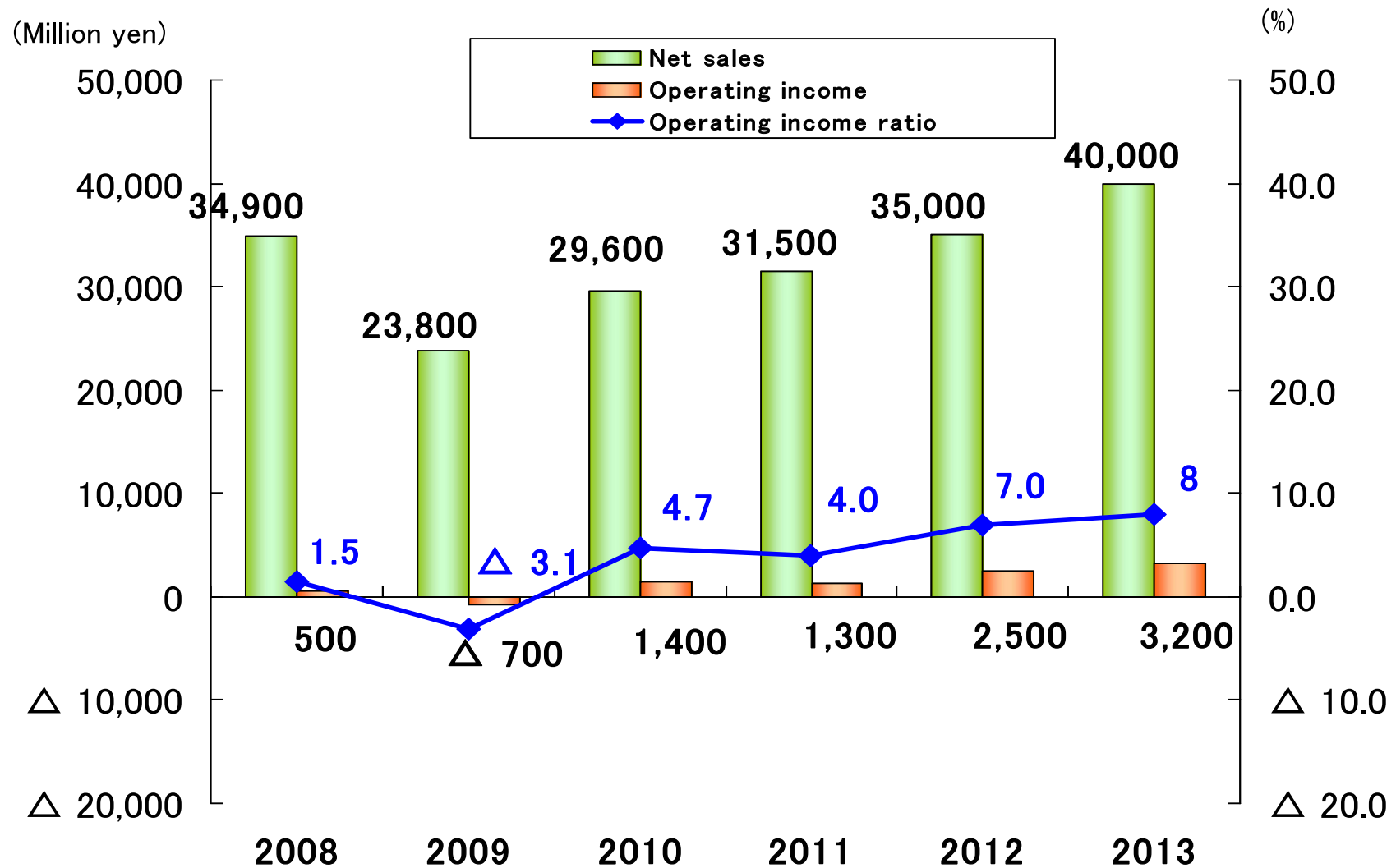
Basic Policy for the Medium Term

**Green Innovation is a Prime Business Opportunity
for Reorienting Our Executive Management to Play Offense**

Targets for Consolidated Revenues and Earnings

	Fiscal 2010 (Result)	Fiscal 2011 (Target)	Fiscal 2012 (Target)	Fiscal 2013 (Target)
	Million yen	Million yen	Million yen	Million yen
Net Sales	29,600	Over 31,500	Over 35,000	Over 40,000
Operating Income	1,400	Over 1,300	Over 2,500	Over 3,200
Operating Income Ratio	4.7%	Over 4%	Over 7%	Over 8%

Change of Management figures



Medium-term Management Policies

Policy 1

Accelerate growth in the green technology market

- Accelerate product development in response to technical innovation in the fields of the environment and energy.
- Develop secondary batteries for electric vehicles (EVs) and hybrid electric vehicles (HEVs) at a higher pace.

----- Non-consolidated -----

Green technology market :

Net sales Over 6,000million yen (Fiscal 2013)

[Energy Device Equipment :

Net sales Over 1,900million yen (Fiscal 2013)]

*Green technology market : Rechargeable battery, Solar battery, Power semiconductor, LED market

Policy 2

Accelerate growth in the green technology market

- Strengthen the development, production and sales structures to better cater to the demands of the growing markets in China and other parts of Asia.
- Build a multidimensional product line by offering products of group companies in an integrated manner.
- Enhance cooperation between sales and service personnel to better address the needs of global customers.

----- Consolidated -----

Overseas sales : Over 10,500million yen (Fiscal 2013)

Investment of management resources

Policy 3

Cultivate Japanese markets in more depth to enhance profitability

- Cater to newly emerging needs by strengthening the competitiveness of products and by enhancing the ability to customize products to meet the specific requirements of customers.
- Stimulate replacement demand by streamlining operations in the wake of the merger with two subsidiary companies and by enhancing the ability to serve customers.
- Expand the scope of business by encouraging the growth of the plant factory business.

----- Non-consolidated -----

Net sales per employee : Over 1.4 times (Fiscal 2013)

Policy 4

Speed up management and business activities with function and process reforms

Policy 5

Nurture professional talent and empower employees with a sense of purpose and achievement by conducting management in step with the times and carrying out systemic reforms

Policy 1. Accelerate Growth in the Green Technology Market

Background

The “Green technology market” (the market for secondary batteries, solar batteries, and power semiconductors) is in the stage of growth and development, giving rise to a variety of new needs and providing us with increasing business opportunities.

Take the growth of the green technology market as a golden opportunity

- **Develop distinctive devices and systems by effectively combining the company’s core technologies and launch them in the market.**
- **Introduce an evaluation system that can cater to the needs of customers engaged in advanced development and evaluation activities, and offer products designed to bring optimal solutions in anticipation of the requirements of customers in the production and inspection sector.**
- **Enhance the public recognition of the company in the green technology market through the above measures and expand the scope of business while building a robust income base.**



Advanced Battery Tester



Temperature Chamber for Battery Charge-Discharge Test System



LIB Electrode Oven



Solar Battery Electrode Oven

Policy 1. Accelerate Growth in the Green Technology Market

Strategies geared toward the green technology market

Management targets(Non-consolidated):

Achieve sales of more than 6 billion yen on a non-consolidated basis in the green technology market in FY 2013.
(Achieve sales of more than 1.9 billion yen on a non-consolidated basis in the energy device equipment sector, etc., in FY 2013.)

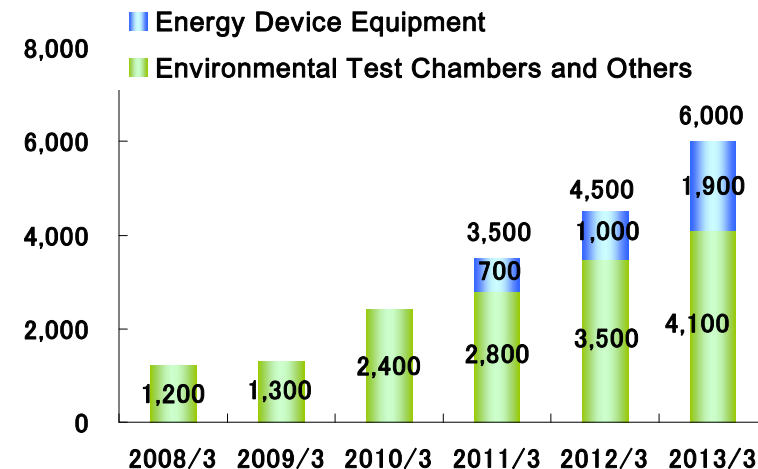
Target countries and regions:

Japan, Korea, Taiwan, China, America, and Germany

Target customers:

- (1)Manufacturers of secondary batteries for electric vehicles (EVs) and hybrid electric vehicles (HEVs)**
- (2)Power semiconductor manufacturers**
- (3)LED manufacturers**
- (4)Solar battery manufacturers**

Net sales
(Million yen)



Main measures to be taken:

- Establish a business organization by combining sales and technical services to better serve the market.
- Accelerate the development of differentiating products to capture greater market share.

Policy 2. Expand Overseas Business Operations Primarily in China and Asia

Focus on China and the rest of Asia as the most important market and take measures to cope with the appreciation of the yen.

Target market	Strategy	Goal
China and the rest of Asia	(1) Develop basic specifications of products for the global market in Japan, including products designed for overseas production. (2) Increase the production capacities of overseas group companies in China, Korea, and America.	Enhance product competitiveness. Strengthen the ability to cater to the growth of demand. Establish a multidimensional product line. “Maintain and further increase the market share.”
Global customers	Strengthen sales and service capabilities in overseas markets. (Expand the scope of products and the sales area.)	In Japan, China, Korea, America, and Europe, promote production/sales activities and build a service network.



Platinous series
of ESPEC NORTH AMERICA



Platinous J series



Z series of SHNGHAI ESPEC

Policy 2. Expand Overseas Business Operations Primarily in China and Asia

Overseas market strategy for the environmental test business

Management targets:

Achieve overseas sales of more than 10.5 billion yen on a consolidated basis in FY2013, an increase of 2.64 billion yen from FY2010.

- Sales increase resulting from the enhancement of production capability: 1.35 billion yen
- Sales increase resulting from an increase in exports to China and other parts of Asia: 800 million yen

Target countries and regions:

- (1) China, Korea, Taiwan and Thailand
- (2) Vietnam and Indonesia

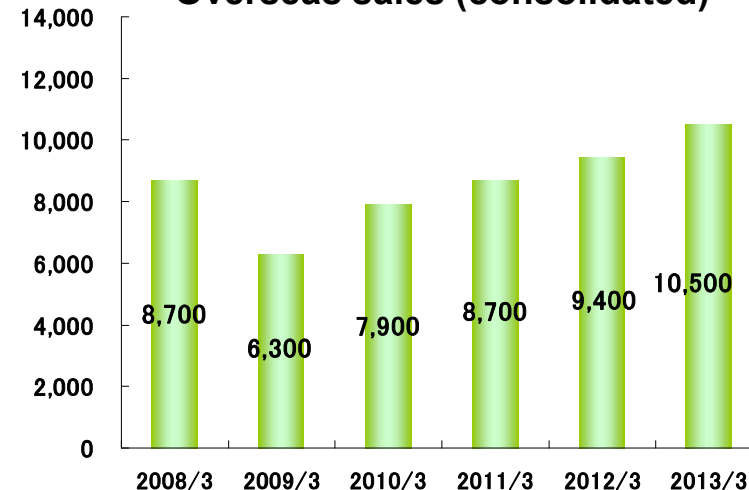
Target customers:

- (1) Japanese companies located in China and other parts of Asia
- (2) Global customers
- (3) Companies doing business in the green technology market (e.g., secondary batteries, solar batteries, power semiconductors, LEDs)

Main measures to be taken:

- Develop the basic specifications of the products for the global market to be manufactured and sold by overseas group companies.
- Increase the capacities of overseas group companies to produce environmental test chambers.
- Enhance cooperation between sales and service personnel both at home and abroad to better address the needs of global customers.

(Million yen) Overseas sales (consolidated)



Policy 3. Cultivate Japanese Markets in More Depth to Enhance Profitability

Maximizing competitiveness in the domestic market to build a robust income base that will last for 10 years to come

Target market	Stage	Product	Demand
Existing markets	Maturity	Standard environmental test chambers + maintenance contracts, networks	Replacement
Green technology market (Energy, EVs, etc.)	Growth	Customized products, customized products for dedicated use + new services (e.g., newly developed test menus)	New and additional installation



Walk-in Type Temperature
(& Humidity) Chamber



Platinous J series



Thermal Shock Chamber Series



[Customized products]
Solar Battery Modules Tester

Policy 3. Cultivate Japanese Markets in More Depth to Enhance Profitability

Domestic market strategy and Development strategy for the environmental test business

**Management target(Non-consolidated):
Achieve 1.4 times more sales per employee than the FY2010 level.**

Main measures to be taken:

- Launch new models of major products to replace existing models, developed under the shared concept of “high performance with high environmental specifications.”
- Develop new customers by enhancing the ability to meet the need for customized products under the motto of “external customization and internal standardization.”
- Enhance the ability to provide optimal solutions to customers by offering products combined with testing services and as part of a networked system.
- Stimulate replacement demand by enhancing the ability to serve customers, taking advantage of the synergies resulting from the merger with two subsidiary companies.

Policy 4. Speed up Management and Business Activities with Function and Process Reforms

Manufacturing strategy

Management target:

Reduce the lead time for temperature and humidity chambers (for the new Platinous J Series) by 50%, from 57 days in FY2010 to 28 days in FY2013.

Main measures to be taken:

- Reduce the total lead time from the receipt of an order to acceptance inspection.
- Take measures to improve product quality so that a three-year guarantee can be provided.
- Offer support to overseas group companies regarding their manufacturing processes.

Policy 4. Nurture Professional Talent and Empower Employees with a Sense of Purpose and Achievement by Conducting Management in Step with the Times and Carrying out Systemic Reforms

Organization and personnel strategy

Main measures to be taken:

- **Newly establish the Battery Solution Systems Business Division**
- **Strengthen the capabilities of divisions tasked with doing business in China and other parts of Asia.**
- **Implement personnel system reform to train personnel who can play an active role in international settings and serve as next-generation leaders.**

Plan of Capital Investment

Basic principle: Allocate around 3% of sales to capital investment.

Purpose	Million yen
	Total amount of capital investment
Reform in the manufacturing sector and the improvement of plant equipment	860
Promotion of the Battery solution systems business	100
Enhancement of the production capabilities of overseas group companies in China, Korea and America	260
Strengthening of the domestic income base	300
Capital investment for other purposes	1, 240
Total	2, 760

Plan of Capital Investment (R&D Investment)

Basic principle: Allocate around 6–7% of sales in the equipment business segment (5% of total sales) to R&D investment.

Purpose	Million yen
	Total amount of capital investment
Development of products for the secondary battery market	430
Development of the basic specifications of the products to be manufactured by overseas group companies	370
Development of products for the global market	370
Development of products in new fields	350
R&D for other purposes (e.g., development of energy-saving, control, and networking technologies)	2, 780
Total	4, 300

These materials contain forward-looking statements, including the Company's present plans and forecasts of performance, that reflect the Company's plans and forecasts based on the information presently available. These forward-looking statements are not guarantees of future performance, and plans, forecasts, and performance are subject to change depending on future conditions and various other factors.

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General Affairs & Personnel Department

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Corporate Services Group

General Affairs & Personnel Department

ESPEC

Reference



ESPEC

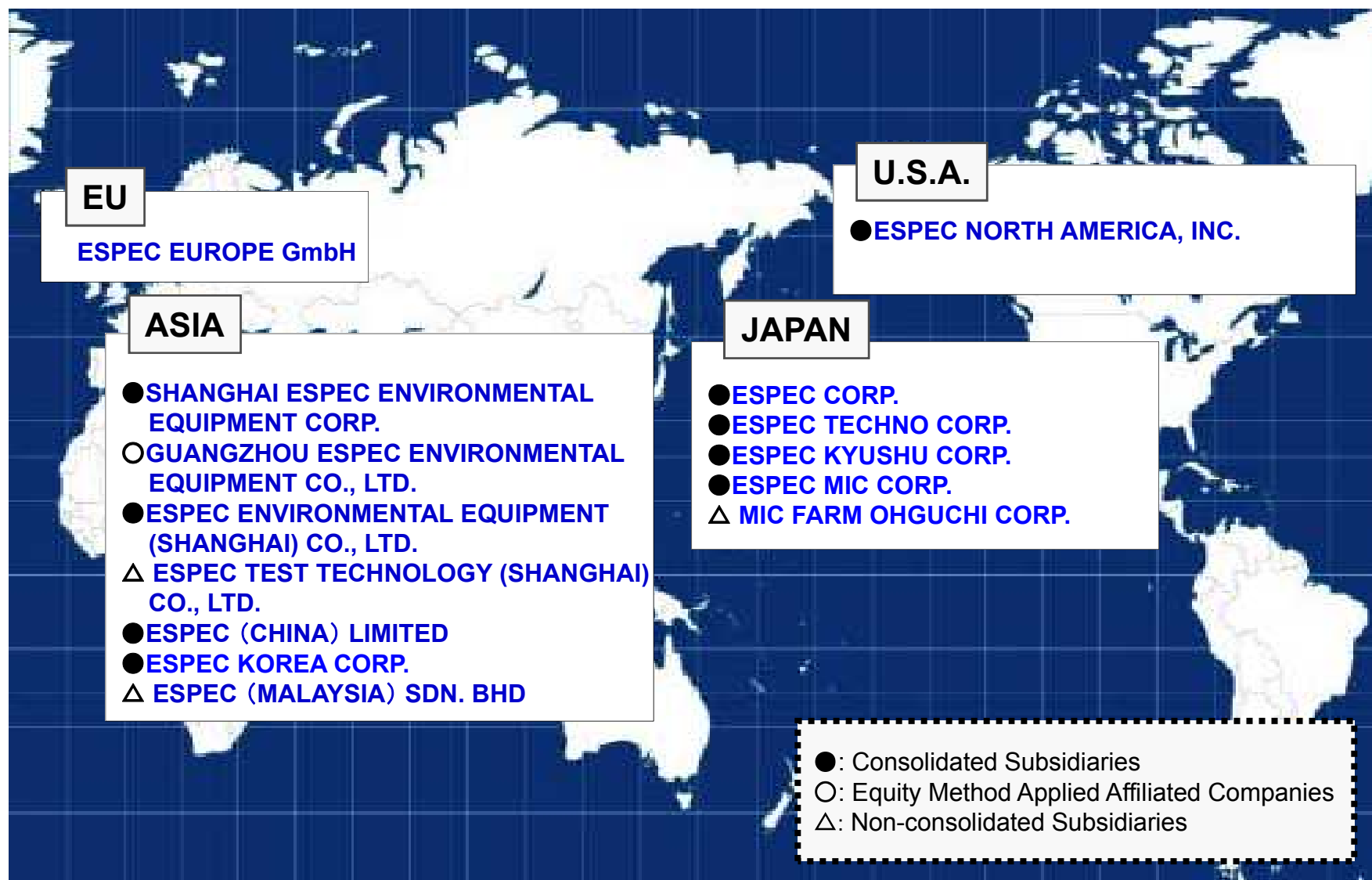
Company and Business Profile

Company Profile

Name	ESPEC CORP.
Head Office	3-5-6, Tenjinbashi, Kita-ku, Osaka
Represented By	Masaaki Ishida
Established	July 25,1947
Incorporated	January 13,1954
Paid-up Capital	¥6,895Million
Shares Issued	23,781,394 Shares
Employees	1,298 (consolidated)
Main Business	Manufacture and Sales of Environmental Test Chambers, Energy Device Equipment, Semiconductor Equipment, FPD Equipment and Plant Factory. After-sales Service, Commissioned Tests and others.

(As of September 30, 2011)

Global Network



(As of September 30, 2011)

[Equipment Business] History of Environmental Test

What is Environmental Test

Test to analyze and evaluate effects of environmental factors such as temperature, humidity, pressure, and light on various industrial products like electronic components in order to ensure product quality.

<During the WW II>

Environmental test was standardized in the United States for stabilizing and improving quality of military supplies.



<Postwar>

Environmental test was JIS standardized in Japan for stabilizing and improving quality of consumer products.



<Present>

Demand for environmental test has increased due to increased use of electronic parts, shortened development period, and pursuit for lower cost and higher quality.

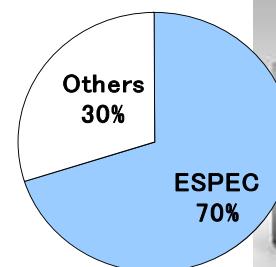


Japan's First Environmental Test Chamber



Low temperature & humidity chamber "Lucifer" (1961)

To Domestic Market Share No.1



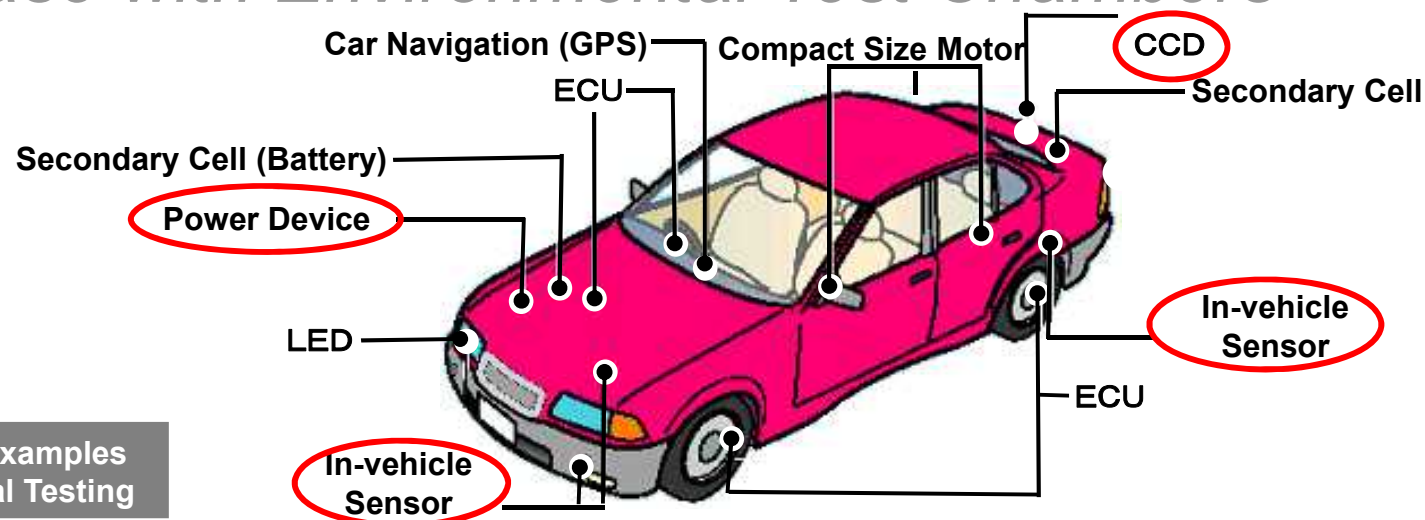
※Our presumption (2010)






[NEW] Temperature & humidity chamber "Platinous J series" (2011)

[Equipment Business]

Usage Case with Environmental Test Chambers



Representative Examples
for Environmental Testing

Device	Process/Test Condition		Our Products
【Power Device】 	Inspection	■ Thermal shock test: $-40^{\circ}\text{C} \rightleftharpoons +125^{\circ}\text{C}$	Thermal shock chamber
		■ left under high temperature: $+175^{\circ}\text{C}$, $+85^{\circ}\text{C}$	(Compact size) Oven
		■ Burn-in test	Burn-in chamber
【In-vehicle Sensor】 	Inspection	■ Temperature cycle test of board: $-40^{\circ}\text{C} \rightleftharpoons +110^{\circ}\text{C}$	Temperature & humidity chamber (Platinous) /Oven
		■ Temperature characteristic test after soldering: Linear change between -30°C and $+85^{\circ}\text{C}$	Burn-in chamber, Rapid-rate thermal cycle chamber
	Evaluation	■ Thermal shock test : $-30^{\circ}\text{C} \rightleftharpoons +80^{\circ}\text{C}$, $-55^{\circ}\text{C} \rightleftharpoons +155^{\circ}\text{C}$	Thermal shock chamber
【CCD/CMOS】 	Production	■ Diffusion Test: $+150^{\circ}\text{C}$	Compact size Oven
		■ Drying after cleaning: $+85^{\circ}\text{C}$	Clean Oven
	Evaluation	■ Screening: $+85^{\circ}\text{C}$	Temperature chamber (Platinous) /Burn-in chamber
	Inspection	■ Temperature and humidity test: $+85^{\circ}\text{C} / +85\%\text{rh}$, $+60^{\circ}\text{C} / 90\%\text{rh}$	Temperature & humidity chamber (Platinous)
		■ Acceleration test: $+120^{\circ}\text{C} / 100\%\text{rh}$	HAST chamber
		■ Thermal shock test : $-40^{\circ}\text{C} \rightleftharpoons +125^{\circ}\text{C}$, $-20^{\circ}\text{C} \rightleftharpoons +85^{\circ}\text{C}$	Thermal shock chamber

[Equipment Business]

Usage Case with Energy Device Equipment

Energy Device Equipment

Deal with devices for storing, producing, and controlling electricity, such as secondary and solar batteries and power semiconductors, known collectively as “energy devices,” and offer development/evaluation systems and production/inspection systems for such devices.

■ LIB Electrode Oven

This equipment is designed to dry solvents and remove water during the production process of lithium-ion secondary batteries



■ Advanced Battery Tester

This equipment is used to perform battery charge/discharge tests during the evaluation process of secondary batteries.

Equipped with three individually controlled compartments, this device allows different kinds of tests to be performed at the same time.



[Equipment Business]

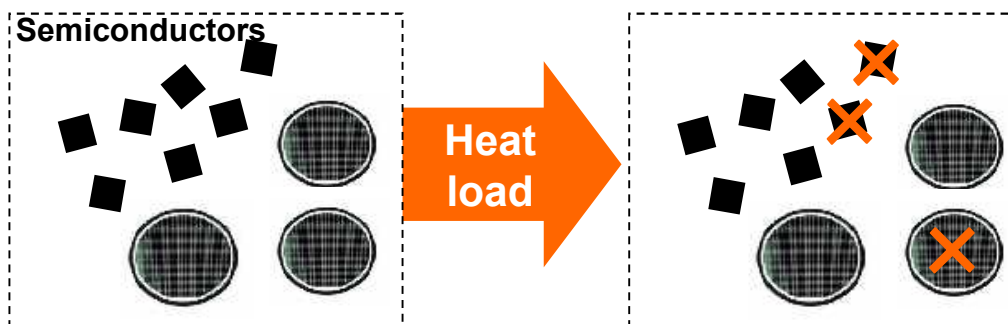
Usage Case with Semiconductor Equipment

Screening

Used for inspection in the manufacture of semiconductor devices to ensure product reliability suitable for mass production



Burn-in chamber



Elimination of latent early failures

Reliability Evaluation

Used to evaluate basic failure patterns to ensure reliability in the development of new technologies

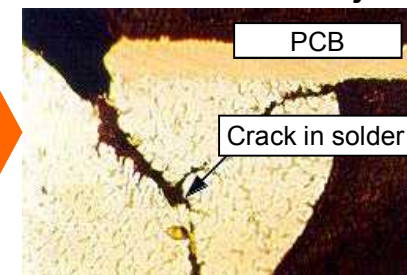


Conductor resistance evaluation system



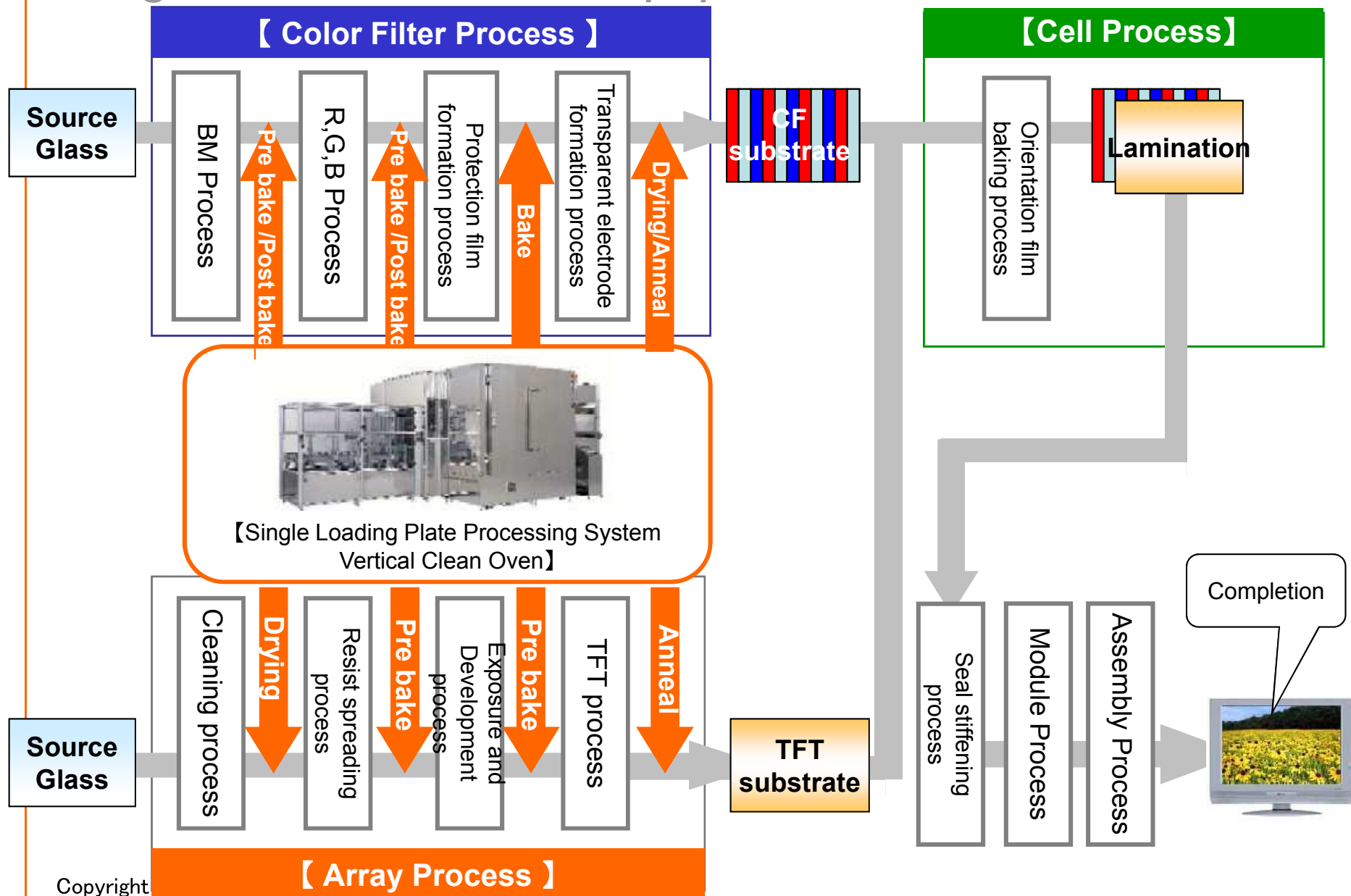
**Heat
cycle
load**

Example of defect in soldered joint



Electrical evaluation of reliability of joints in electronic parts

Equipment Business Usage Case with FPD Equipment



[Service Business]

After-sales Service and Engineering

Preventive maintenance of products, maintenance service, and the upgrading/improvement and installation/relocation of products

- Well-developed domestic and overseas networks
- Technical service available around-the-clock

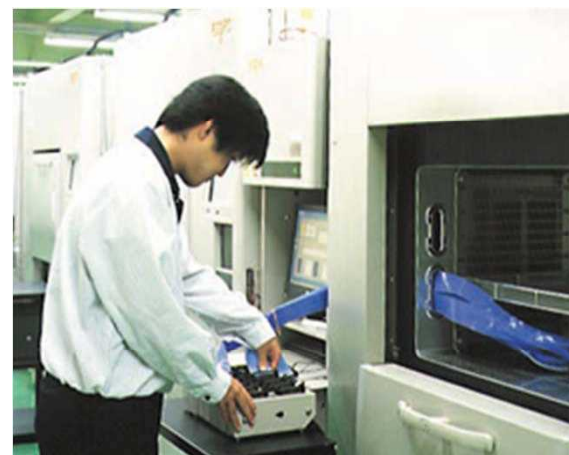
Commissioned Tests and Facility Rentals

Commissioning of testing, analysis, and evaluation; consulting; equipment rental; sales of used products; calibration of test equipment, etc.

- The company has four commissioned test centers in Japan (Utsunomiya, Toyota, Kariya and Kobe).
- These centers are IECQ-approved independent testing laboratories that meet ISO/IEC17025 standards.
- The centers are also recognized as official calibration facilities under the Japan Calibration Service System (JCSS).



【Commissioned test center in Kobe】



【 Test conducted by a staff member】

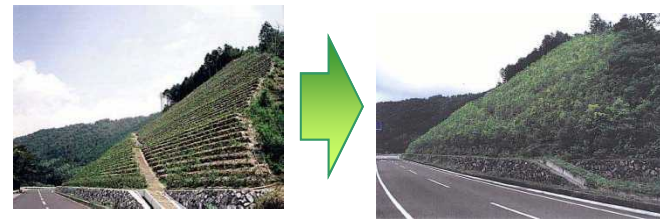
[Other Business]

Environmental Engineering Business

Environmental Engineering Business

■ Forest recovery

Recovery of local forest by selecting species and planting out seedlings using potential natural vegetation data.



■ Waterfront recovery

Reconstruction of natural environment, development of vegetative revetments, and water quality improvement using aquatic plants.



■ Unit greening

Provision of roof and wall greening systems that use moss to effectively alleviate heat island effect.



[Other Business] Plant Factory

Plant Factory

Provision of various cultivation environments employing advanced environmental control technologies to control light, temperature, humidity, carbon dioxide, etc.

■ **Plantcellar**

This compact vegetable growing system is offered in different sizes for customers to choose from according to the availability of, for example, the space in a restaurant, etc.



■ **Container plant factory**

This is a container-type plant factory equipped with an artificial light source and air conditioning system as a unit, and it can be easily transported and installed.



■ **Phyto-toron**

This system employs agri-glass, the company's proprietary greenhouse glass, and controls environmental factors using natural light.

