

**Securities ID code:6859**

# **ESPEC CORP.**

**Results Briefings for  
Fiscal 2015 Ended March 2016**

**May 23, 2016**

**[www.espec.co.jp](http://www.espec.co.jp)**

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# Company Profile

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**Industry-leading manufacturer of environmental test chambers;  
69th year since company was founded in Osaka**

<b>Name</b>	<b>ESPEC CORP.</b>
<b>Head Office</b>	<b>3-5-6, Tenjinbashi, Kita-ku, Osaka</b>
<b>Represented By</b>	<b>Masaaki Ishida</b>
<b>Established</b>	<b>July 25, 1947</b>
<b>Incorporated</b>	<b>January 13, 1954</b>
<b>Paid-up Capital</b>	<b>¥6,895 Million</b>
<b>Shares Issued</b>	<b>23,781,394 Shares</b>
<b>Employees</b>	<b>1,409 (consolidated)</b>
<b>Main Business</b>	<b>Manufacture and Sales of Environmental Test Chambers, Energy Device Equipment, Semiconductor Equipment and Plant Factory. After-sales Service, Commissioned Tests and others.</b>



Head office

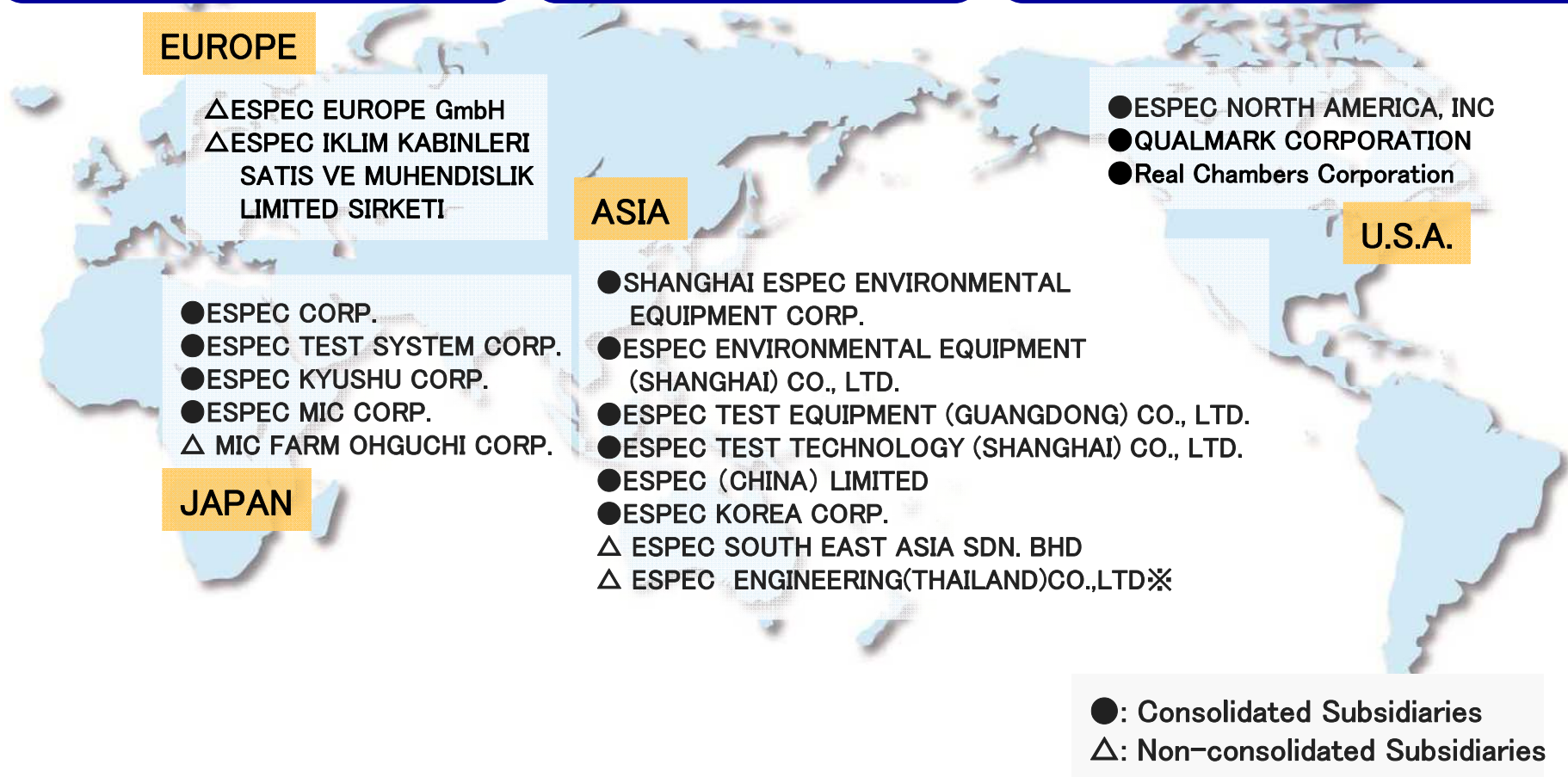
(As of March 31, 2016)

# Global Network

Consolidated Subsidiaries  
13 companies

Global Network  
43 countries  
33 companies

Business facilities in Japan:26  
Domestic agencies in Japan:48



(As of March 31, 2016)

# TOPICS

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October 2015  
ESPEC NORTH AMERICA Plant Expansion



# TOPICS

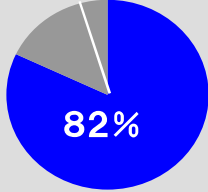
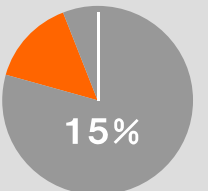
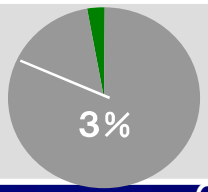
January 2016  
Received an iF DESIGN AWARD 2016  
International Design Award



ESPEC' s Bench-Top Type Temperature (& Humidity )  
Chamber received an iF DESIGN AWARD 2016 in the  
product design category



# Summary of ESPEC Business (Per Market / Use)

		Main Products	Market	Use	Sales composition (FY2015)
Equipment Business	Environmental Test Chambers	<ul style="list-style-type: none"> <li>•Temperature &amp; humidity chamber</li> <li>•Thermal shock chamber</li> <li>•Bench-top type temperature &amp; humidity chamber</li> <li>•Walk-in type temperature &amp; humidity chamber</li> <li>•Combined temperature &amp; humidity chamber</li> <li>•HAST chamber</li> <li>•FPD equipment</li> </ul>	<ul style="list-style-type: none"> <li>•Electronic component and equipment market</li> <li>•Automobile market</li> <li>•Semiconductor market</li> <li>•Medicine, Cosmetics, Foods market</li> <li>•LCD and Organic Electro-Luminescence market</li> </ul>	<ul style="list-style-type: none"> <li>•For R &amp; D</li> <li>•For credibility and evaluation</li> <li>•For production and inspection</li> </ul>	 <p>82%</p>
	Energy Device Equipment	<ul style="list-style-type: none"> <li>•Advanced battery tester</li> <li>•LIB safety evaluation system</li> <li>•Fuel cells chamber</li> <li>•Power semiconductors chamber</li> </ul>	<ul style="list-style-type: none"> <li>•Next generation automobile</li> <li>•Secondary batteries</li> <li>•Fuel cells</li> <li>•Power semiconductors</li> </ul>	<ul style="list-style-type: none"> <li>•For R &amp; D</li> <li>•For credibility and evaluation</li> <li>•Safety evaluation</li> <li>•For production</li> </ul>	
	Semiconductor Equipment	<ul style="list-style-type: none"> <li>•Burn-in system</li> <li>•Semiconductor evaluation system</li> <li>•Instrumentation system</li> </ul>	<ul style="list-style-type: none"> <li>•Semiconductor market</li> <li>•Automobile market</li> </ul>	<ul style="list-style-type: none"> <li>•For production and inspection</li> <li>•For development and evaluation</li> </ul>	
Service Business	After-sales Service and Engineering	<ul style="list-style-type: none"> <li>•After-sales service</li> <li>•Construction around equipment</li> </ul>	<ul style="list-style-type: none"> <li>•Electronic component and equipment market</li> <li>•Automobile market</li> <li>•Semiconductor market</li> </ul>	—	 <p>15%</p>
	Commissioned Tests and Facility Rentals	<ul style="list-style-type: none"> <li>•Commissioned test</li> <li>•Equipment rental</li> <li>•Resale</li> <li>•Calibration</li> </ul>		<ul style="list-style-type: none"> <li>•For R &amp; D</li> <li>•For credibility and evaluation</li> </ul>	
Other Business	Environmental Engineering Business	Reforestation (Tree planting), Waterfront biotope restoration, urban greening			 <p>3%</p>
	New Business	Plant factory, developing and creating new businesses as a major source of profit			

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# **Financial Result for the Fiscal 2015 Ended March 31, 2016**



# Financial Highlights

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■ Orders–received increased year on year in the Equipment Business and Service Business segments

■ Net sales increased year on year in both domestic and overseas markets

• In Japan, the trend was up for both standardized and customized environmental test chambers

The trend was also strong for energy devices equipment and semiconductor equipment

• Overseas, environmental test chamber exports centered on the U.S., China, and Southeast Asia were robust

Business conditions remained strong at U.S. and Chinese subsidiaries

■ Operating income rose 33.2% year on year as a result of sales increasing

■ The year–end dividend is ¥23 per share, a ¥4 increase from that initially planned;

accordingly, the annual dividend is ¥32 per share

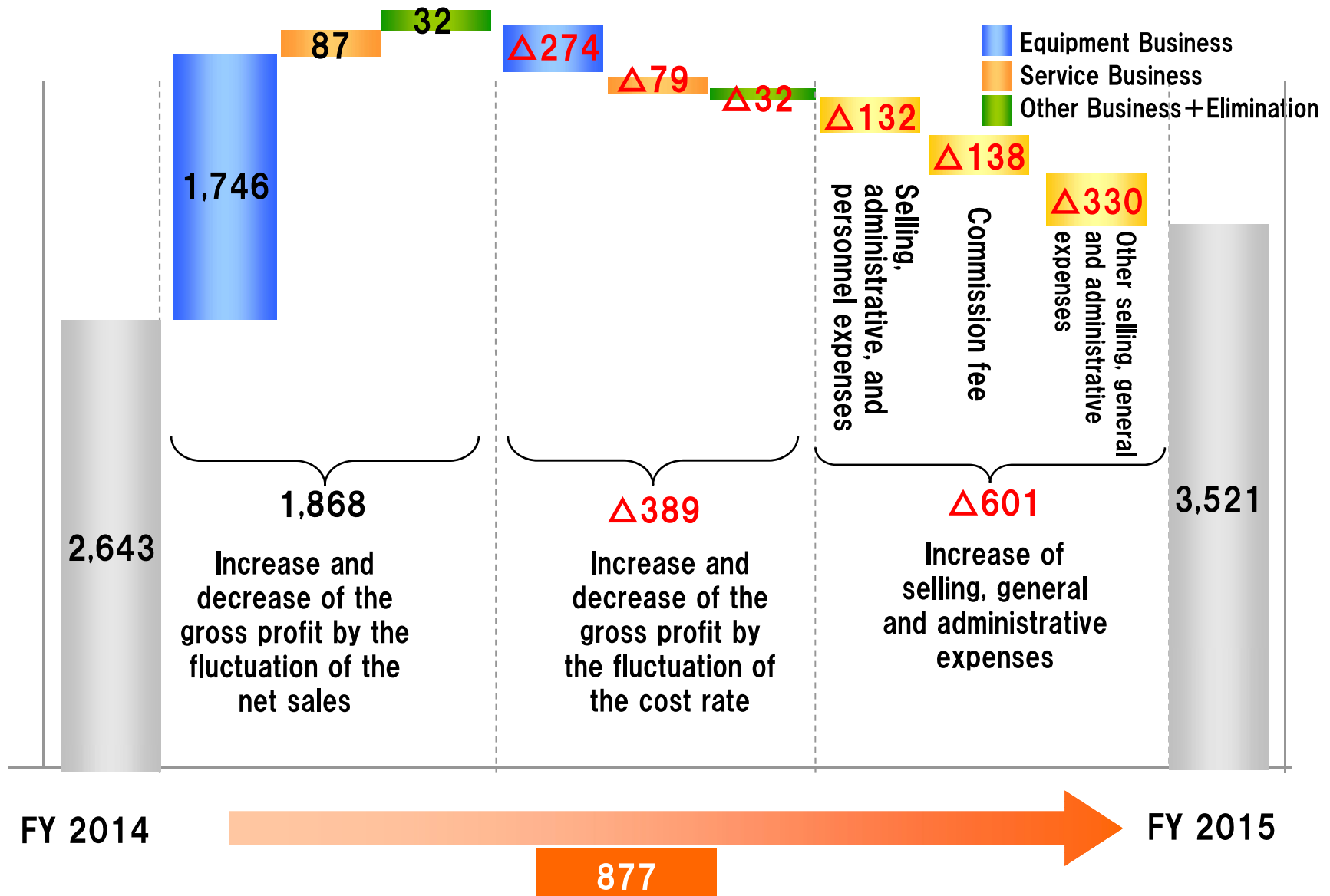
# Summary of Profits and Losses

(millions of yen)

	FY 2014	FY 2015	Rate of Change
Orders-Received	36,287	39,903	10.0%
Net sales	33,661	39,035	16.0%
Cost of Net Sales	21,567 (64.1%)	25,461 (65.2%)	18.1% (1.1pt)
Gross profit	12,094	13,573	12.2%
SG & A	9,450	10,051	6.4%
Operating income	2,643	3,521	33.2%
Ordinary income	3,044	3,570	17.3%
Profit attributable to owners of parent	2,118	2,410	13.8%

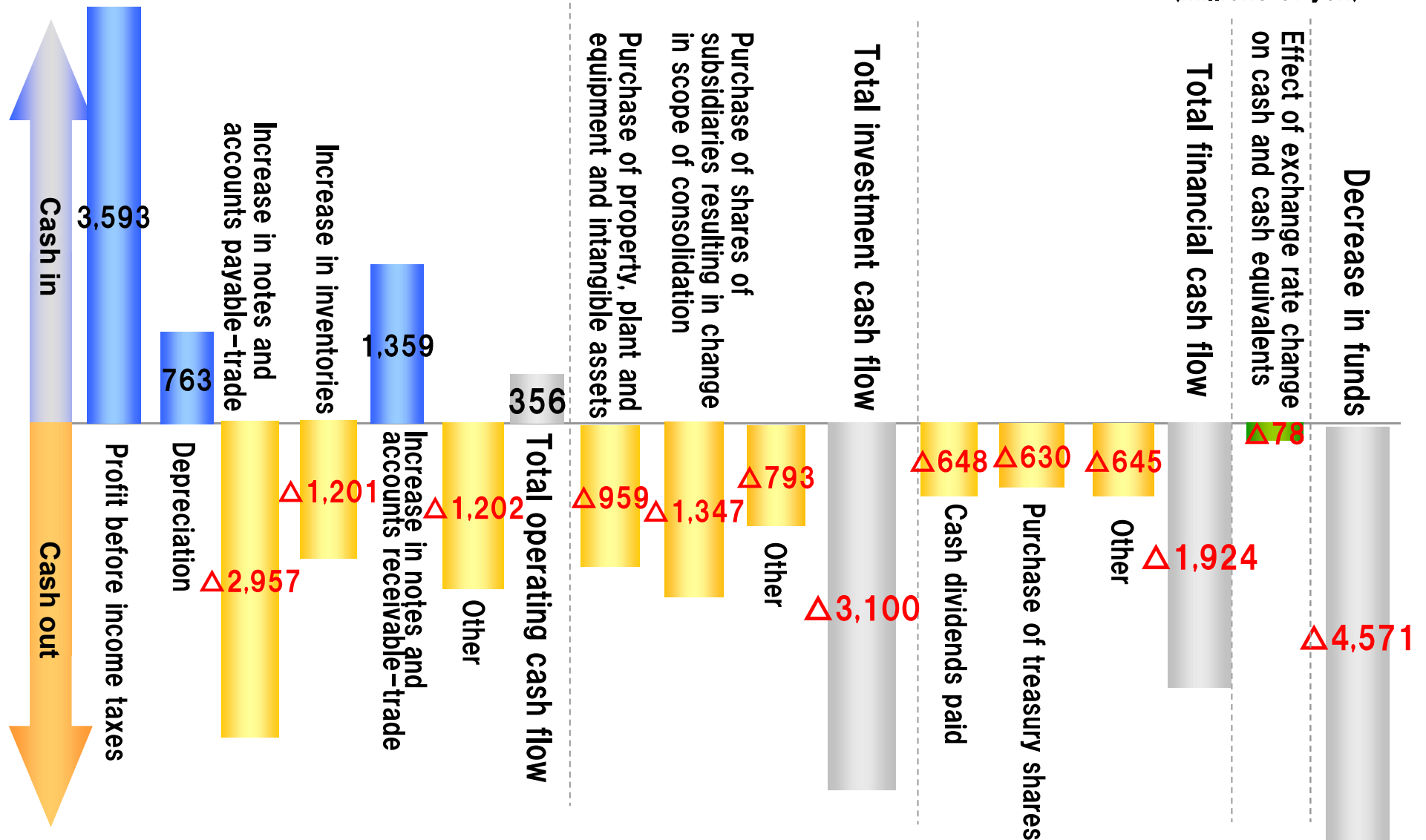
# Analysis of Operating Income Increase and Decrease Factor

(millions of yen)



# Statement of Cash Flow

(millions of yen)



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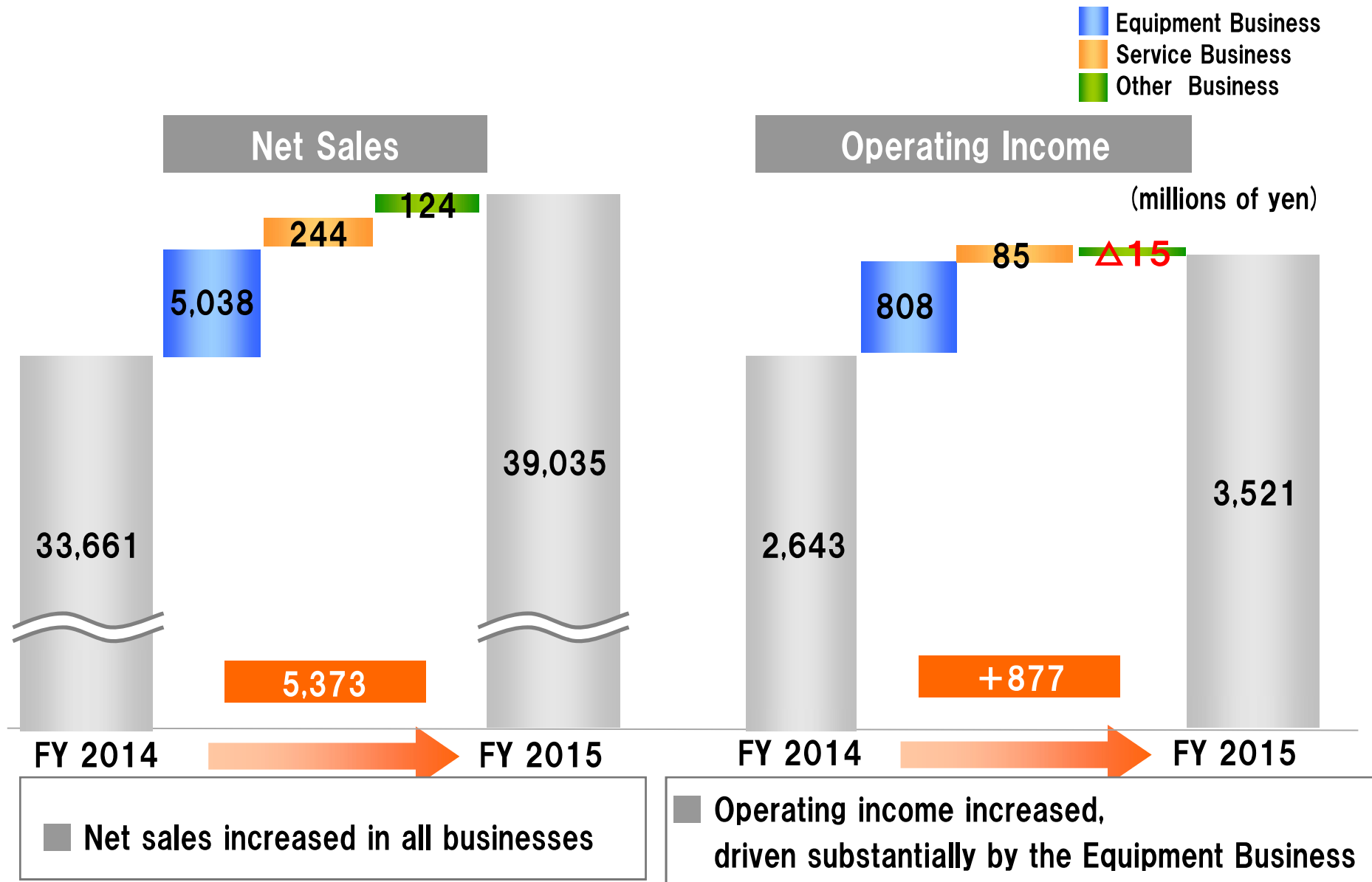
# **Analysis per Segment for the Fiscal 2015 Ended March 31, 2016**

# Performance by Segment

(millions of yen)

Segment		FY 2014	FY 2015	Rate of Change
Equipment Business	Orders-Received	29,399	32,951	12.1%
	Net Sales	26,992	32,030	18.7%
	Operating Income	2,178	2,986	37.1%
Service Business	Orders-Received	5,589	5,874	5.1%
	Net Sales	5,541	5,786	4.4%
	Operating Income	430	516	19.8%
Other Business	Orders-Received	1,527	1,340	△12.2%
	Net Sales	1,350	1,474	9.2%
	Operating Income	34	19	△44.1%
Elimination	Orders-Received	△227	△263	—
	Net Sales	△223	△256	—
	Operating Income	0	△0	—
Total	Orders-Received	36,287	39,903	10.0%
	Net Sales	33,661	39,035	16.0%
	Operating Income	2,643	3,521	33.2%

# FY 2015 Results and FY 2014 Applicable Products



# Equipment Business

## Environmental Test Chambers

- In the Japanese market, net sales increased
  - The trend was brisk for highly versatile standardized products
  - Business conditions for customized products centered on the automobile market and research institutions remained strong as well
- In the overseas market, net sales increased
  - Exports centered on the U.S., China, and Southeast Asia continued to rise
  - Business conditions remained strong at U.S. and Chinese subsidiaries

## Energy Device Equipment

- Business trends strengthened for charge-discharge evaluation systems for secondary batteries in automobiles and fuel cell evaluation systems
- Orders-received were about the same while net sales increased year on year

## Semiconductor Equipment

- Orders-received from manufacturers in the smartphone supply chain remained strong
- Both orders-received and net sales increased year on year



# Equipment Business

(millions of yen)

	FY 2014	FY 2015	
			Rate of Change
Orders- Received	29, 399	32, 951	12. 1%
Net Sales	26, 992	32, 030	18. 7%
Operating Income [Profit ratio (%) ]	2, 178 [8. 1%]	2, 986 [9. 3%]	37. 1%

# Service Business

(millions of yen)

	FY 2014	FY 2015	
			Rate of Change
Orders- Received	5, 589	5, 874	5. 1%
Net Sales	5, 541	5, 786	4. 4%
Operating Income [Profit ratio (%) ]	430 [7. 8%]	516 [8. 9%]	19. 8%

## After-sales Service and Engineering

- Both orders-received and net sales were about the same as the previous year

## Commissioned Tests and Facility Rentals

- Conditions were up for the mainstay test consulting business
- Both orders-received and net sales increased year on year

# Other Business

(millions of yen)

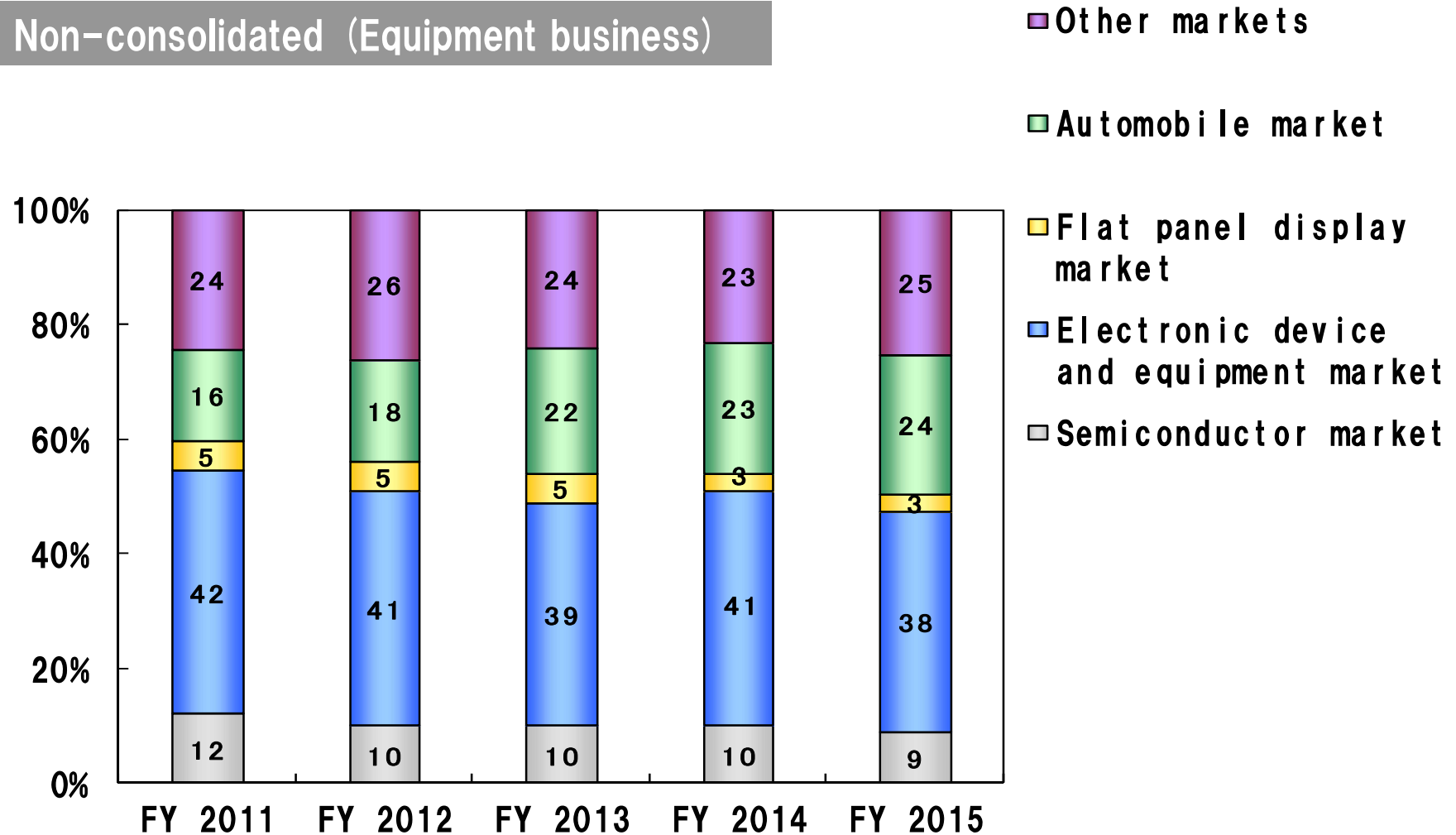
	FY 2014	FY 2015	
			Rate of Change
Orders- Received	1, 527	1, 340	△12. 2%
Net Sales	1, 350	1, 474	9. 2%
Operating Income [Profit ratio (%) ]	34 [2. 5%]	19 [1. 3%]	△44. 1%

## Environmental Engineering and Plant Factory

- Business performance remained strong for environmental engineering in reforestation (tree planting) and the plant factory business
- Net sales increased , even though orders–received fell short of levels the previous year when conditions were strong

# Breakdown of Sales by Market

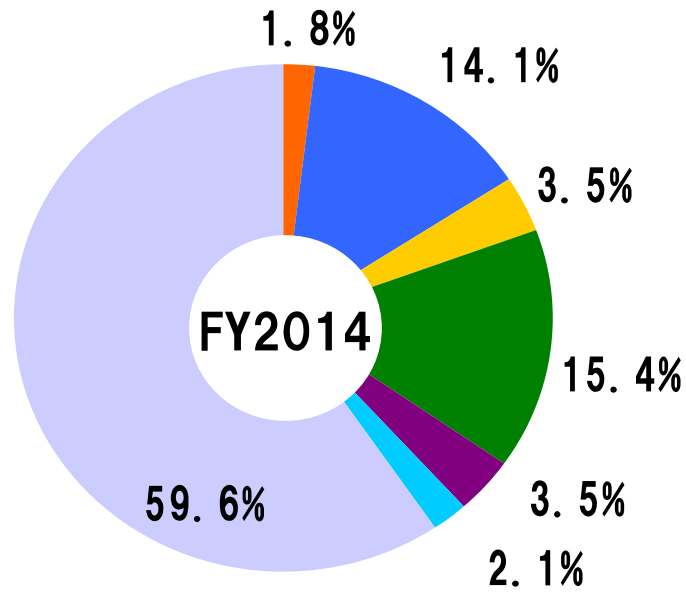
Non-consolidated (Equipment business)



# Sales by Region

FY 2014

Overseas sales ratio: 40.4%

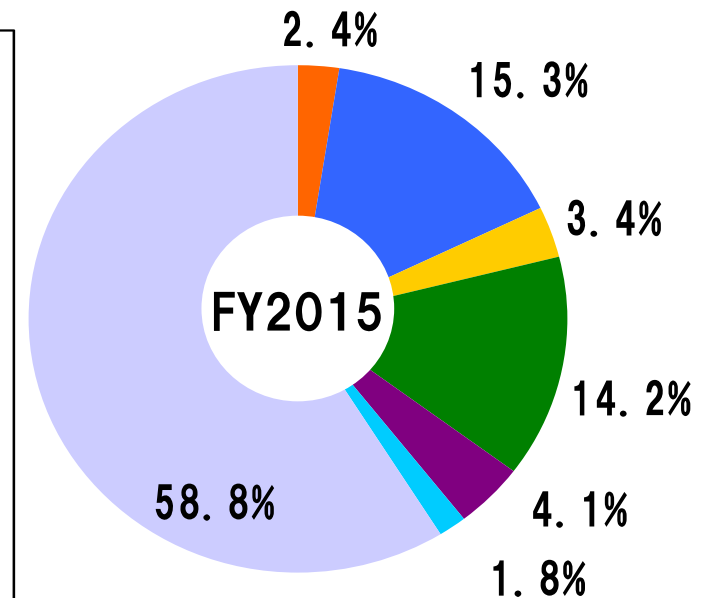


Total: 33,661 million yen

(Overseas sales: 13,609 million yen)

FY 2015

Overseas sales ratio: 41.2%



Total: 39,035 million yen

(Overseas sales: 16,072 million yen)

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# **Management Plan for the Fiscal Ending March 31, 2017**

# Targets for Consolidated Revenues and Earnings for the Fiscal Ending March 31, 2017

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(millions of yen)

	<b>FY 2015 Results</b>	<b>FY 2016 Target</b>
<b>Net Sales</b>	<b>39,035</b>	<b>39,000</b>
<b>Operating Income</b>	<b>3,521</b>	<b>3,600</b>
<b>Operating Income Ratio</b>	<b>9.0%</b>	<b>9.2%</b>

# Business Plan for the Fiscal Ending March 31, 2017

(millions of yen)

	FY 2015	FY 2017 (Plan)			
	Fiscal (Results)	2Q	Second half	Fiscal	Year on Year (%)
Orders-received	39,903	19,000	21,000	40,000	0.2%
Net sales	39,035	18,000	21,000	39,000	Δ0.1%
Gross profit [Profit ratio (%) ]	13,573 (34.8%)	6,350 (35.3%)	7,480 (35.6%)	13,830 (35.5%)	1.9%
Operating income (loss) [Profit ratio (%) ]	3,521 (9.0%)	1,400 (7.8%)	2,200 (10.5%)	3,600 (9.2%)	2.2%
Ordinary income (loss) [Profit ratio (%) ]	3,570 (9.1%)	1,450 (8.1%)	2,250 (10.7%)	3,700 (9.5%)	3.6%
Net Income [Profit ratio (%) ]	2,410 (6.2%)	1,000 (5.6%)	1,600 (7.6%)	2,600 (6.7%)	7.9%
Capital expenditures	1,162	230	250	480	Δ58.7%
Depreciation expenses	757	383	363	746	Δ1.5%
R&D expenditures	956	470	490	960	0.4%
Profit Per Share (yen)	104.75	43.84	70.14	113.98	8.8%



# Equipment Business

(millions of yen)

	FY 2015	FY 2016 (Plan)			
	Fiscal (Results)	2Q	Second half	Fiscal	Year on Year (%)
Orders-received	32,951	15,600	17,400	33,000	0.1%
Net sales	32,030	14,900	17,100	32,000	Δ0.1%
Operating income [Profit ratio (%) ]	2,986 [9.3%]	1,150 [7.7%]	1,850 [10.8%]	3,000 [9.4%]	0.5%

# Service Business

(millions of yen)

	FY 2015	FY 2016 (Plan)			
	Fiscal (Results)	2Q	Second half	Fiscal	Year on Year (%)
Orders-received	5,874	2,800	3,200	6,000	2.1%
Net sales	5,786	2,800	3,200	6,000	3.7%
Operating income [Profit ratio (%) ]	516 [8.9%]	300 [10.7%]	300 [9.4%]	600 [10%]	16.3%

# Other Business

(millions of yen)

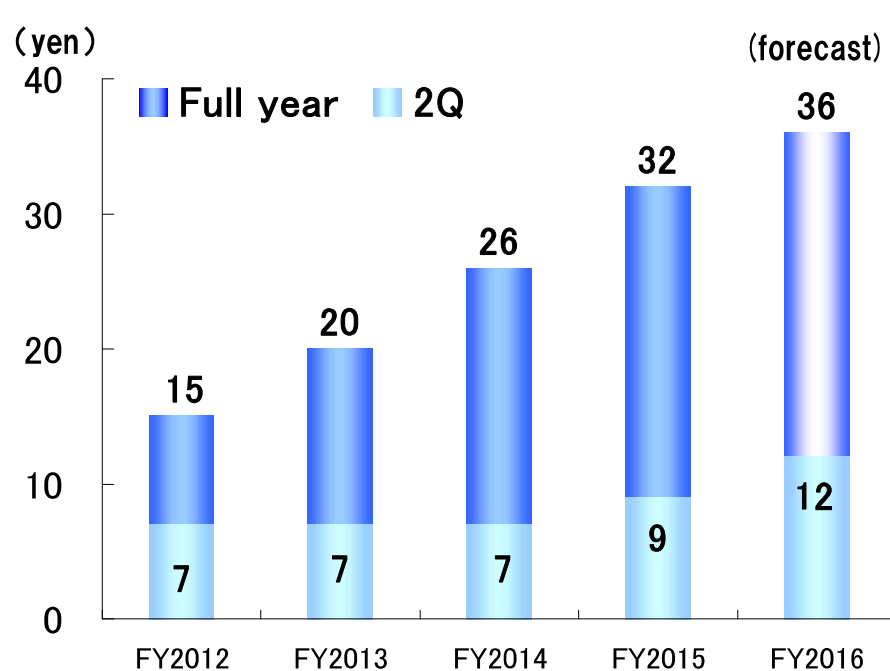
	FY 2015	FY 2016 (Plan)			
	Fiscal (Results)	2Q	Second half	Fiscal	Year on Year(%)
Orders-received	1,340	700	500	1,200	Δ10.4%
Net sales	1,474	400	800	1,200	Δ18.6%
Operating income [Profit ratio (%) ]	19 [1.3%]	Δ50 [Δ12.5%]	50 [6.3%]	0	Δ100.0%

# Dividends

## Dividend policy

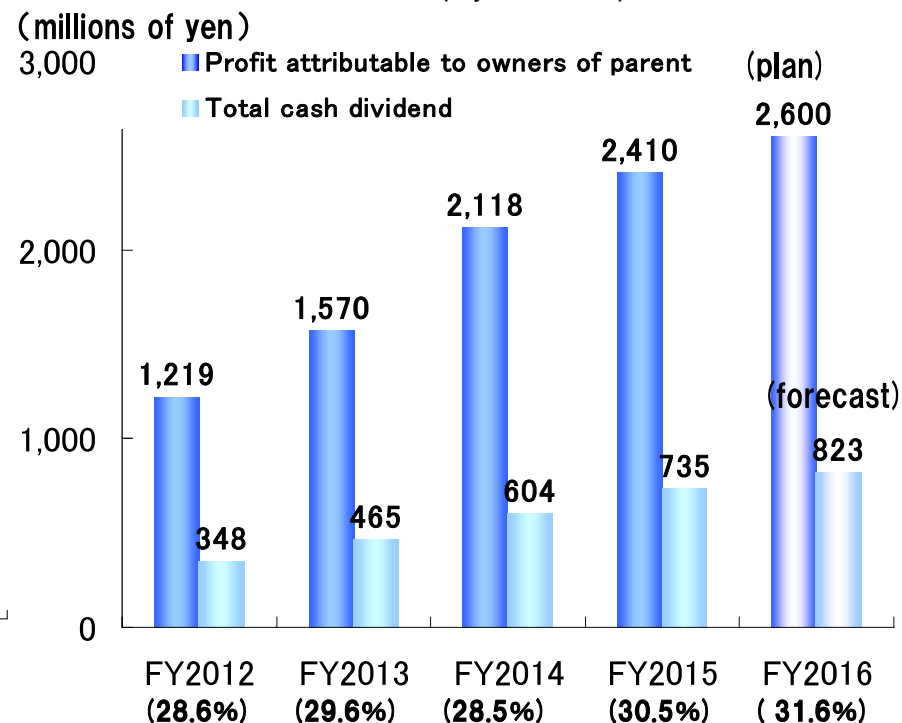
Recognizing that passing on profits to our shareholders is a key priority and that raising corporate value on a lasting basis is fundamental to raising shareholder value, dividends are decided taking into account sustainability and the dividend payout ratio.

## Dividend per share



## Profit attributable to owners of parent and total cash dividend

\*Consolidated dividend payout ratio in parentheses.



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# **Priority Strategies for the Fiscal Ending March 31, 2017**

# Priority Strategies for the Fiscal Ending March 31, 2017

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## Priority Strategy 1

**Apply collaborative synergies of the ESPEC Group to increase sales in overseas markets**

## Priority Strategy 2

**Expand business domains targeting growing and strategic markets**

**Investment of management resource**

## Priority Strategy 3

**Apply competitive strategies to increase sales in the Japanese environmental testing market**

# 1 – 1 Increase sales in overseas markets

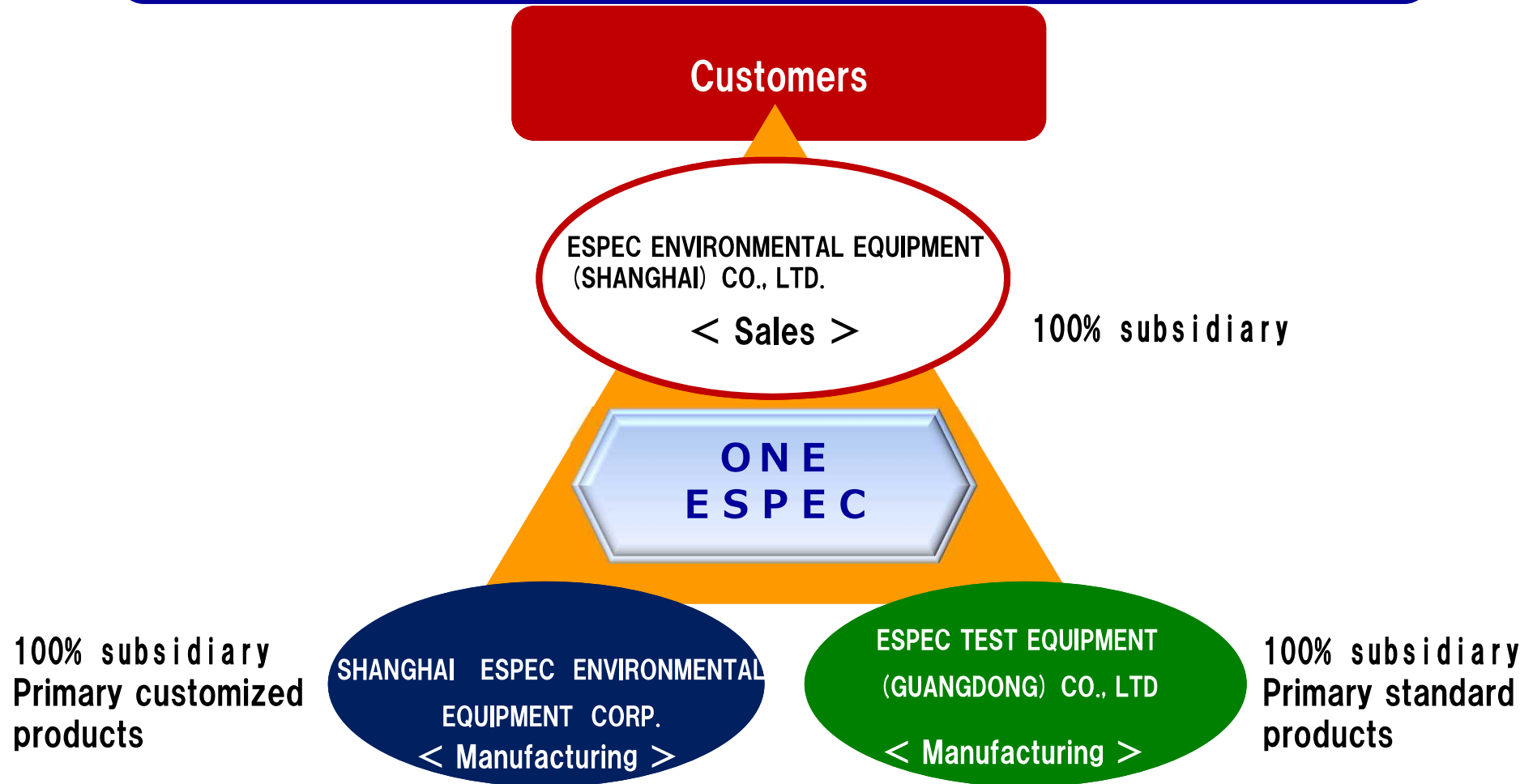
**Apply ASEAN (Thai) technical support functions to differentiate**



- Strengthen technical support capabilities of ESPEC ENGINEERING (THAILAND) CO., LTD. to deeply cultivate the ASEAN market

# 1 – 2 Increase sales in overseas markets

Apply the “One ESPEC Structure” to increase sales in the Chinese market





## 2-1 Expand business domains in growth strategy markets

### Automotive

<Increase sales in the field of electrification and automated driving of automobiles>

- Increase sales of customized products
- Increase sales of commissioned testing services



## 2-2 Expand business domains in growth strategy markets

### Automotive

<Increase sales in the certification testing market for secondary batteries and fuel cells>

- Increase sales of customized products
- Increase sales of commissioned energy device testing services
- Increase sales of battery safety verification tests



Battery Safety Certification Center  
(in Utsunomiya Technocomplex )



Fuel Cells Evaluation Equipment

## 2-3 Expand business domains in growth strategy markets

**<New> pharmaceuticals and food**

- Increase sales of Stability Test Chambers and Walk-In Stability Test Chambers



Walk-in Stability Test Chamber



## 2-4 Expand business domains in growth strategy markets

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**<New> Biomedicine**

- Increase sales of training rooms



**Hypoxic Training**

## 2–5 Expand business domains in growth strategy markets

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### <New> Accelerated testing

#### Generate synergies with QUALMARK CORPORATION

- New product development
- Commissioned test services



HALT & HASS testing equipment

## 2-6 Expand business domains in growth strategy markets

### <New> Plant factory

Plant factories focused on high-nutrition vegetables

- Production of vegetables high in minerals with the use of deep sea water at DHC Corporation
- For sale as an ingredient in inflight meals, and in upscale super markets, among other venues
- Development overseas, including in the U.S.



Plant factory near an airport (Ota-ku, Tokyo)



Leafy lettuce

### 3 Increasing sales in the Japanese environmental testing market

## Strengthen competitiveness with proprietary services

- Industry' s first 5-year product guarantee
- Develop after-service products and a menu of commissioned tests

"5-year Product Guarantee" Applicable products



Temperature & Humidity Chamber  
Platinous J Series



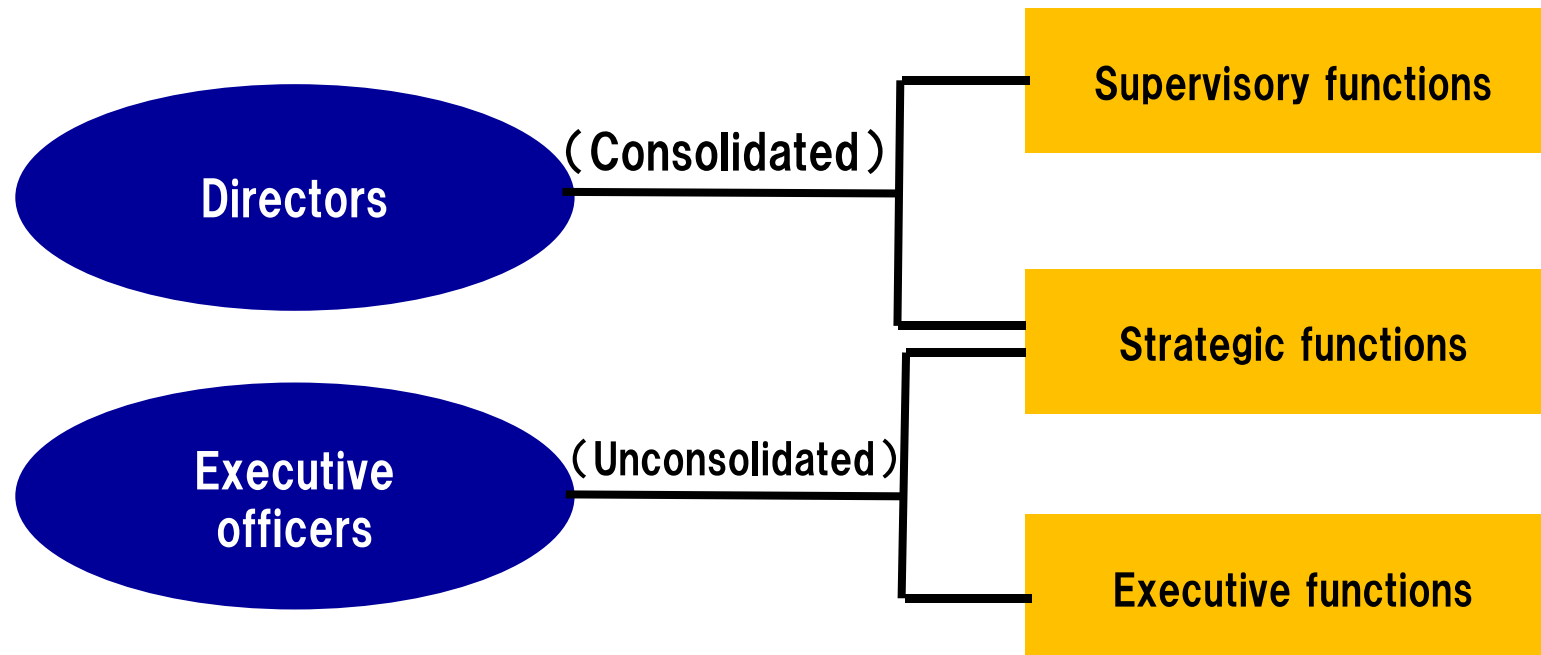
Bench-Top Type  
Temperature (&Humidity) Chamber



Thermal Shock Chamber  
TSA Series

# Management Structure in Fiscal 2016—Introduction of an Executive Officer System

**Raise transparency of the supervisory and executive functions of consolidated management to strengthen corporate governance**





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# Reference

# 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.

<1950s>

The environmental test was JIS-standardized in Japan for consumer products.



<1970s-1990s>

"Reliability" and "quality control" became important issues in product development. Demand increased dramatically due to a rapid shift toward computerization and the use of electronic components.



<Today>

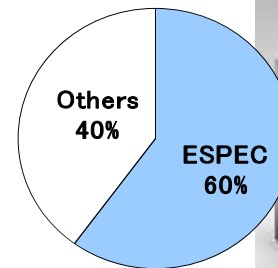
Demand has been growing in new energy sectors such as secondary batteries and solar batteries.



1961 Japan's First Environmental Test Chamber



【 Low temperature & humidity chamber "Lucifer" 】



To Domestic Market Share No.1

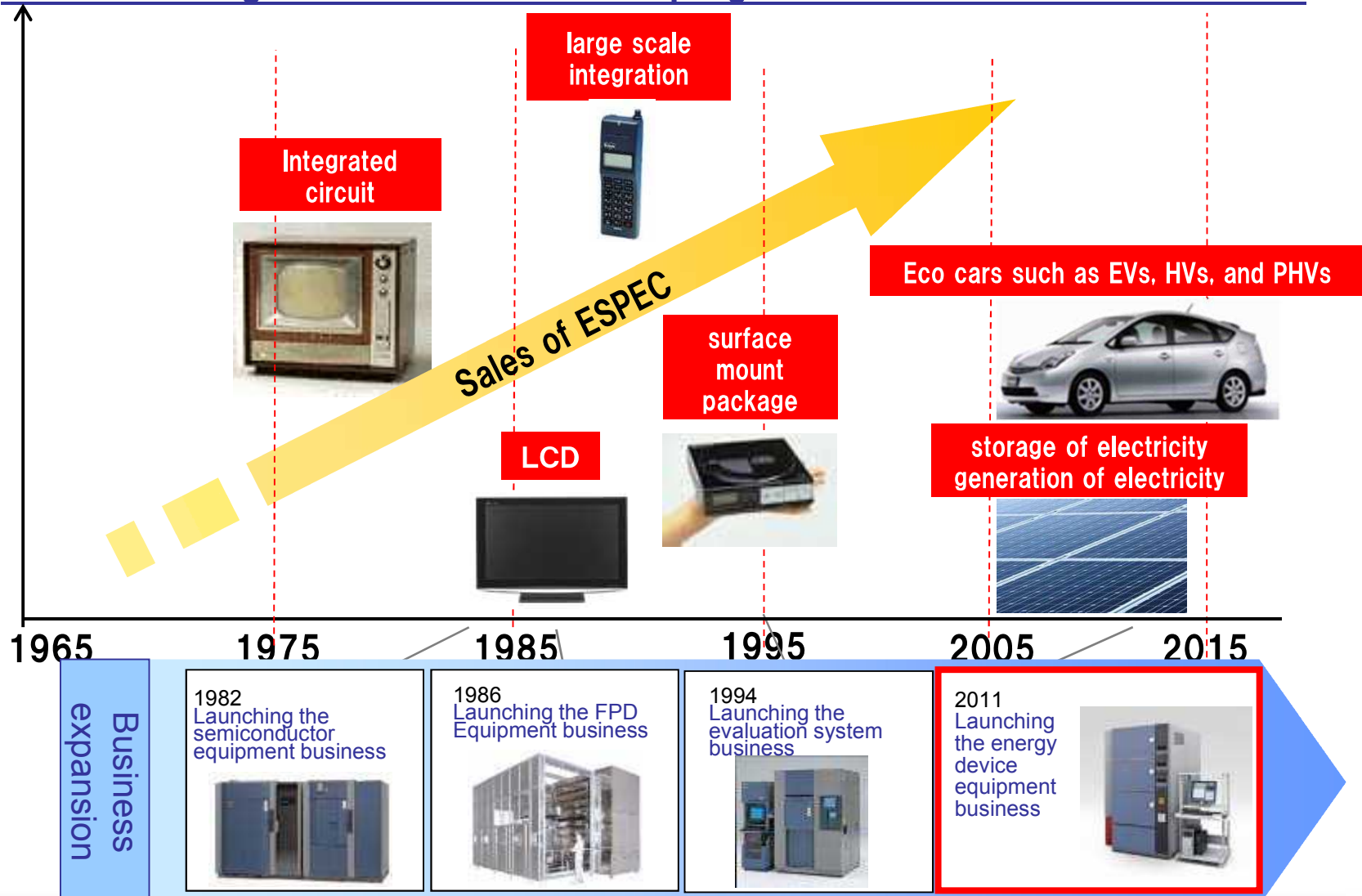


【 Temperature & Humidity Chamber 】

"Platinous J series"

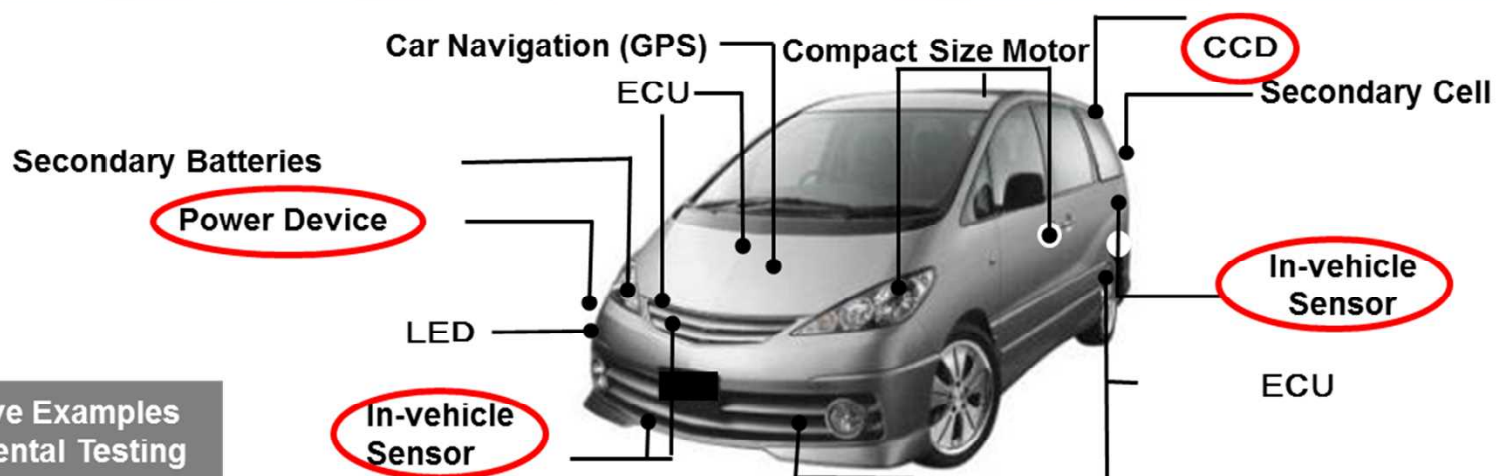
# Transition in Business

Expanding business based on the “environmental creation technology” refined during the course of developing environmental test chambers






# [Equipment Business]

## Usage Case with Environmental Test Chambers



Representative Examples for Environmental Testing

Device	Process/Test Condition		Our Products
<b>【Power Device】</b> 	Inspection	■ Thermal shock test: $-40^{\circ}\text{C} \Leftrightarrow +125^{\circ}\text{C}$	Thermal shock chamber
		■ High temperature exposure: $+175^{\circ}\text{C}$ , $+85^{\circ}\text{C}$	(Compact size) Oven
		■ Burn-in test	Burn-in chamber
<b>【In-vehicle Sensor】</b> 	Inspection	■ Temperature cycle test of printed circuit board: $-40^{\circ}\text{C} \Leftrightarrow +110^{\circ}\text{C}$	Temperature & humidity chamber (Platinous) /Oven
		■ Temperature characteristic test after soldering: Linear change between $-30^{\circ}\text{C}$ and $+85^{\circ}\text{C}$	Burn-in chamber, Rapid-rate thermal cycle chamber
	Evaluation	■ Thermal shock test : $-30^{\circ}\text{C} \Leftrightarrow \text{RT} \Leftrightarrow +80^{\circ}\text{C}$ , $-55^{\circ}\text{C} \Leftrightarrow +155^{\circ}\text{C}$	Thermal shock chamber
<b>【CCD/CMOS】</b> 	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 : $-40^{\circ}\text{C} \Leftrightarrow +125^{\circ}\text{C}$ , $-20^{\circ}\text{C} \Leftrightarrow +85^{\circ}\text{C}$	Thermal shock chamber	

# [Equipment Business] Introduction of New Products

Release Date	Name of product	Features
2015/9	Constant-Temperature Bath for Combined Testing Equipment	Material evaluation testing of mainly plastics, rubbers, and fibers
2015/2	Low Temperature (&Humidity) Chamber	Preservation testing of foods Long-term refrigerated storage testing of pharmaceuticals and cosmetics
2014/11	Thermal Shock Chamber TSA series	Build in state-of-the-art controllers to improve operability
2014/11	Advanced Safety Tester	Conduct three types of safety testing of rechargeable batteries on one platform
2014/11	Advanced Battery Chamber Next	Constant-temperature bath that can control the temperature of the charge-discharge testing of rechargeable batteries with even higher precision
2014/7	Constant Climate Cabinet	<ul style="list-style-type: none"> <li>• 100 V/15 A usable</li> </ul>
2014/7	Compact Ultra Low Temperature Chamber	<ul style="list-style-type: none"> <li>• Precise control from -85°C to 180°C</li> </ul>
2014/5	Stability Test Chamber / Walk-in Stability Test Chamber	<ul style="list-style-type: none"> <li>• Total lineup of 9 models</li> <li>• Complies with international standards</li> </ul>

# [Equipment Business] TOPICS

## Bench-Top Type Temperature (& Humidity) Chamber receives an iF DESIGN AWARD 2016 international design award

ESPEC's Bench-Top Type Temperature (& Humidity) Chamber received an iF DESIGN AWARD 2016, the most prestigious design award in the world, in the product design category.

This product is used in the R&D stage for primarily evaluating the reliability of electronic and automotive components. The product's unrivaled compact and highly functional design was praised around the world.



# [Service Business] TOPICS

Start the industry-first "5-year Product Guarantee"

In January 2015, ESPEC started a free 5-year product guarantee service based on the two key concepts of "making connections" and "reliability" to build even stronger relationships of trust with our customers

● Applicable products



Temperature & Humidity Chamber  
Platinous J Series



Bench-Top Type  
Temperature (& Humidity) Chamber



Thermal Shock Chamber  
TSA Series

# [Equipment Business]

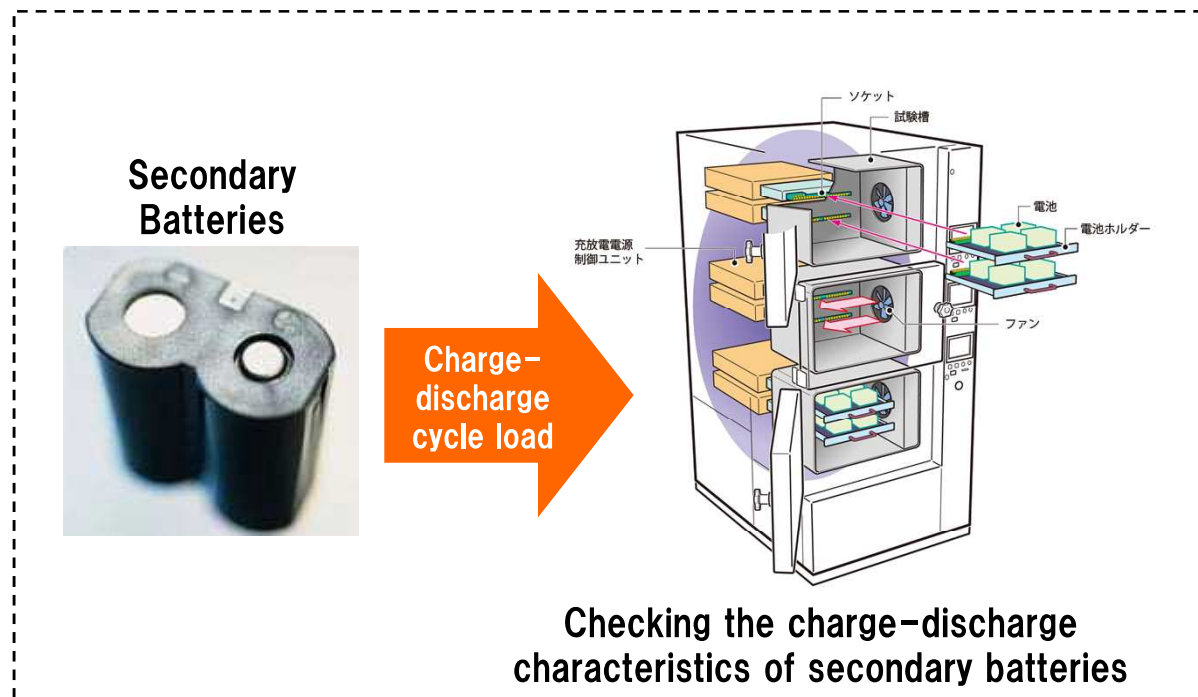
## Usage Case with Energy Device Equipment

### Charge-discharge Cycle Evaluation Equipment

Equipment for ensuring the reliability and safety of lithium-ion secondary batteries for next-generation vehicles (e.g., hybrid and electric vehicles)



Charge-discharge Cycle Evaluation Equipment



Evaluating the performance and life of secondary batteries



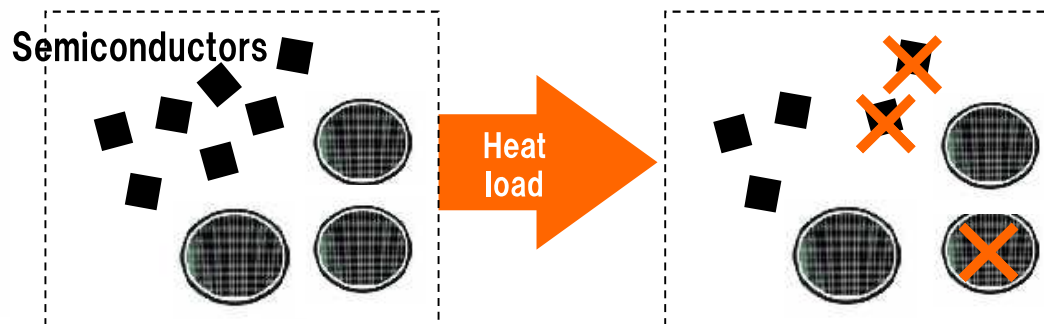
# [Equipment Business] Usage Case with Semiconductor Equipment

## Screening

Eliminate defective products to maintain initial-period quality at the final inspection stage of semiconductor device manufacturing



Burn-in chamber



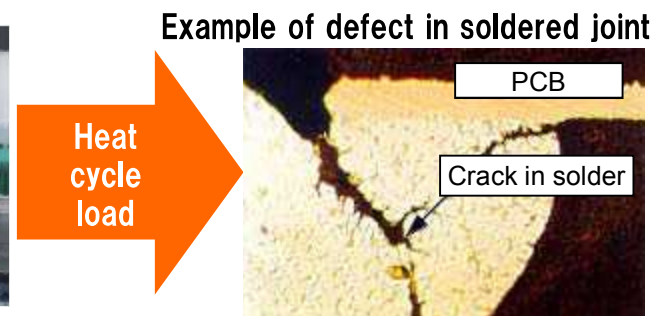
Elimination of latent early failures

## Reliability Evaluation

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



Conductor resistance evaluation system



Electrical evaluation of reliability of joints in electronic parts

# [Service Business]

## After-sales Service and Engineering

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

- Speedy response via one of the most extensive networks in Japan
- Launching new services by utilizing the network function mounted in the equipment
- In overseas, established “Global Support Desk”, global framework, with distributors located in many countries

## 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 five commissioned test centers in Japan, two commissioned test centers in China. (In Japan, 2 point of Utsunomiya, Toyota, Kariya and Kobe. In China, Shanghai, Suzhou)

- 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).
- September 2015, Opened the world's first Battery Safety Certification Center.
- One-stop provision of 9 safety tests and verification services compliant with UN-agreed regulations.
- About for secondary batteries for automobiles of safety testing and verification services business alliance with TÜV SÜD Japan (October 2014).



Battery Safety Certification Center  
(in Utsunomiya Technocomplex)

# [Service Business] TOPICS

## Opened the world's first Battery Safety Certification Center

The facility was opened within the Utsunomiya Technocomplex in September 2015. Application for testing and certification compatible with the United Nations Economic Commission for Europe (UN ECE)'s R110-2. Part II global standard for rechargeable battery systems in electric vehicles.

One-stop service providing support.



Battery Safety Certification Center  
(in Utsunomiya Technocomplex )



Crush Testing Equipment  
(No. 1 Safety Test Room)



No. 2 Safety Test Room

# [Other Business]

## Environmental Engineering Business

### Environmental Engineering Business

#### ■ Reforestation (Tree planting)

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



#### ■ Waterfront biotope restoration

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



#### ■ Urban greening

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

### Plant factory

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



Container plant factory



Phyto-toron

# [Service Business] TOPICS

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## Establishment of a plant factory near Haneda Airport

Sale of high-nutrition vegetables produced  
with the use of deep sea water



Interior of the plant factory near an airport