



For the World's Leading Manufacturer of Heat Exchange Systems
that address Environmental Conservation

Result Briefing for the Fiscal Year Ended March 31, 2017

May 2017

T.RAD Co.,Ltd.





The 10th medium term management plan “T.RAD-10”

1. Trusted company

Win the trust of all stakeholders through corporate activities

- (1) Achievement of the goals set in the areas of safety and sanitation, compliance, product quality, environment, and earnings**
- (2) Honest, fair and highly transparent business activities**
- (3) A company that keeps growing (spiraling up) by leveraging 3C + S**

2. Global growth

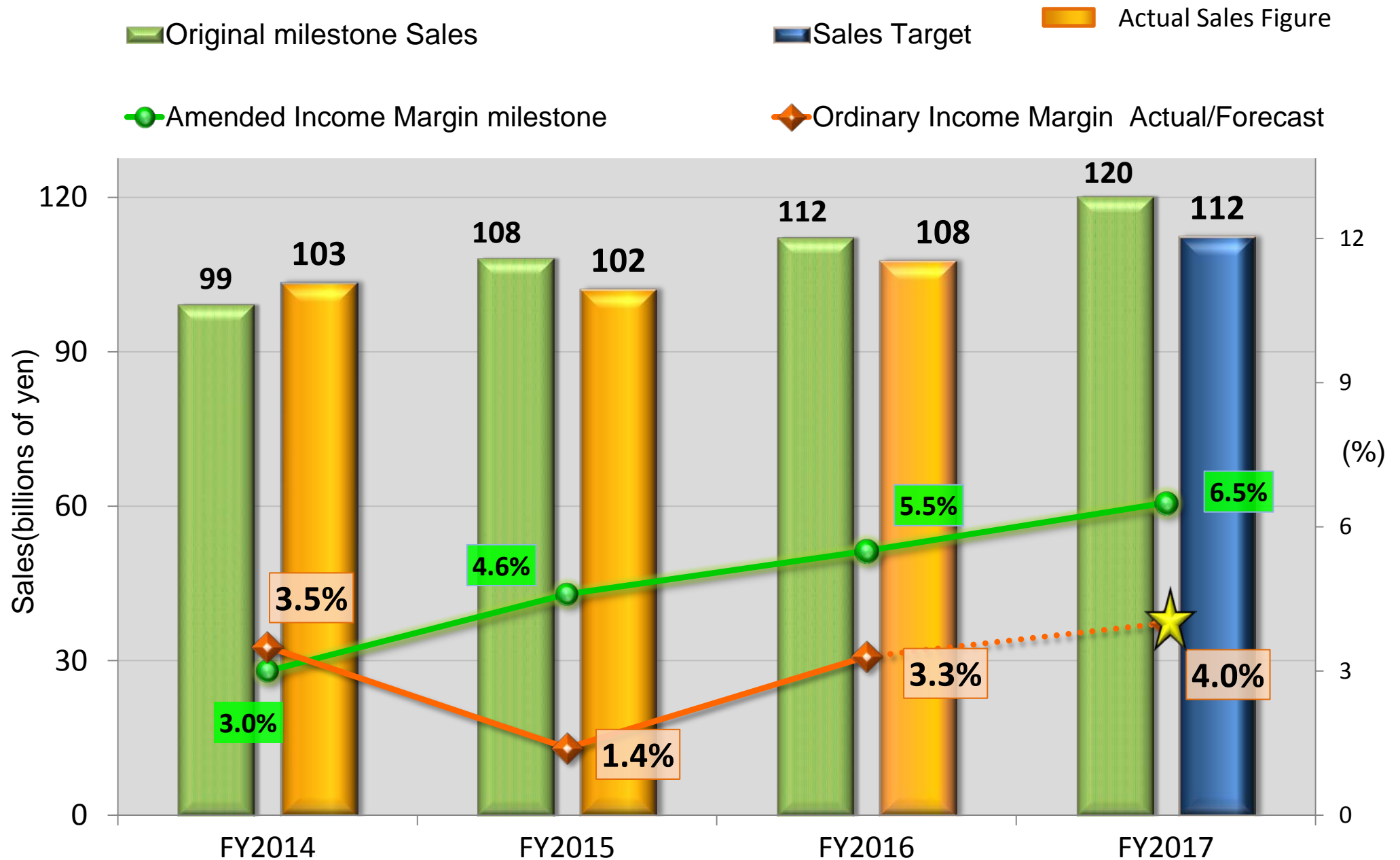
Become an internationally competitive company

~T.RAD-10 is aimed at achieving a major stride toward T.RAD-11 ~

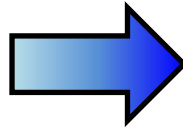
- (1) Product development and strategy for T.RAD-11**
- (2) Global sales promotion**
- (3) Development of globally competitive human resources, and the creation of an environment for developing such human resources**



T.RAD-10 Sales Revenue



I . Trusted Company



**Innovation to the company
which goes through**

1. Safety and sanitation

- **Zero disaster(safety and sanitary activities performed by the whole company staff)**

2. Compliance

- **Zero legal violations**
- **Enhancement of a company-level legal compliance system**

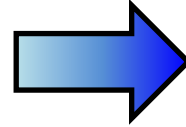
3. Product quality

- **Zero recurrence(Thorough-going of preventive activities in advance)**
- **Promotion of the continuance of "Stop First" in our quality process**

4. Profit

- **Cost reduction(manufacturing reform)**
- **Increasing the efficiency of indirect operations**

II . Global Growth



Development in the world market

1. Global strategy

- Deployment of business strategy based on priority
- Development in which profit comes first
(selection and concentration)

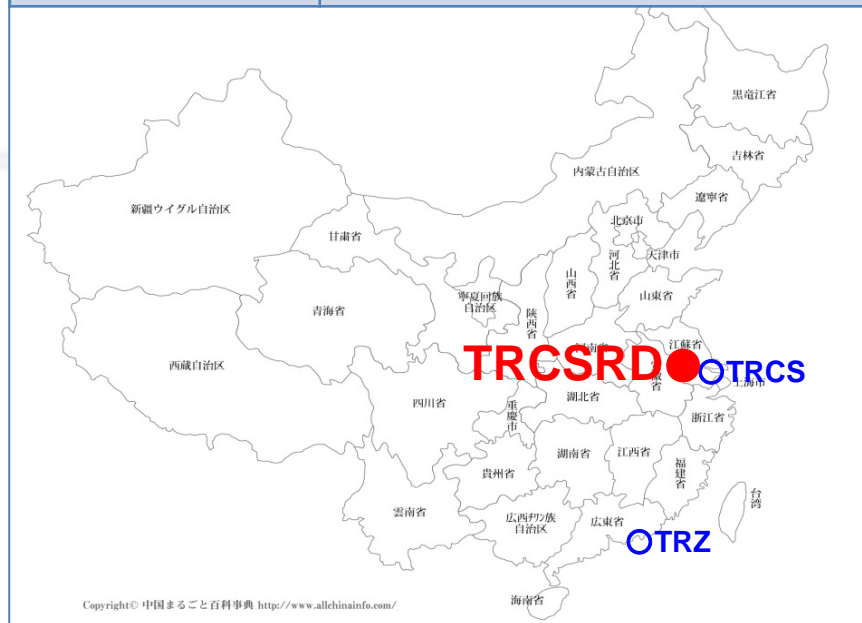
2. Construction of globally competitive system

- Development of globally competitive human resources
- Closer cooperation with overseas offices

In March 2017, T.RAD(Changsyu) R&D Center Co.,LTD, “TRCSR” was established as the third overseas R&D center

※The third R&D Center base following the bases in the US (TRA) and India (TTR)

| | |
|-----------------|---|
| Purpose | Established as a heat exchanger development base for China’s construction machinery and automobile manufacturers. Aims to expand sales to a huge market. |
| Business | Design, development, and evaluation test of heat exchangers |



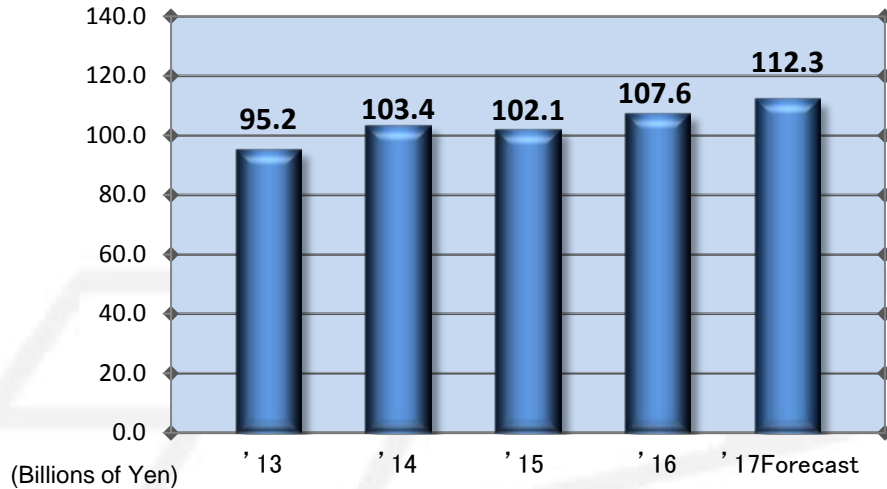
| | |
|-------------------------|-------------------------------|
| Location | Changshu, Jiangsu, P.R. China |
| Registered | Total: US\$3,000,000 |
| Established | March 7, 2017 |
| Investment ratio | T.RAD 100% |



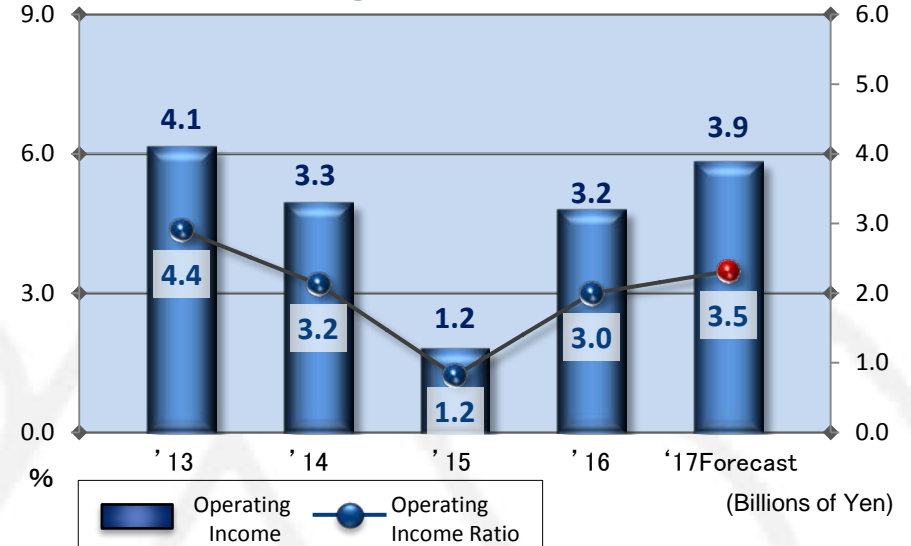
Financial results for FY2016

Financial Results (Consolidated)

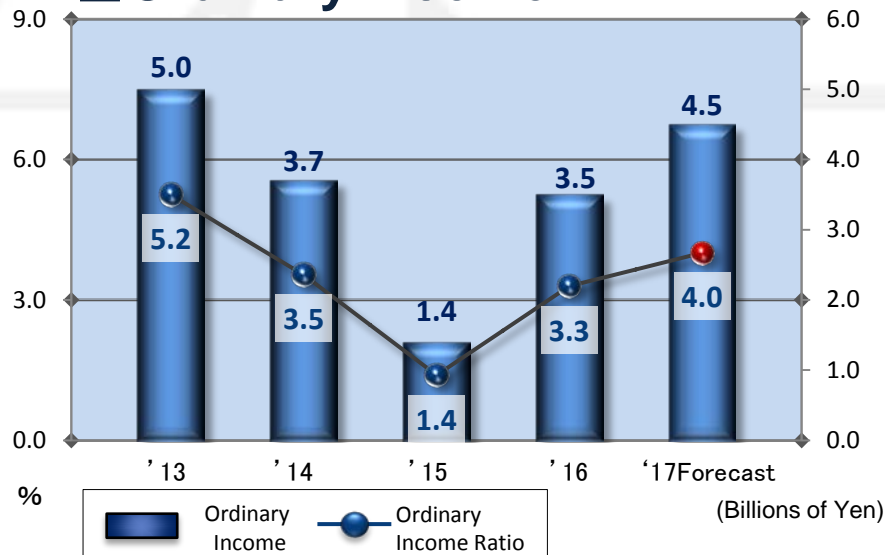
Net Sales



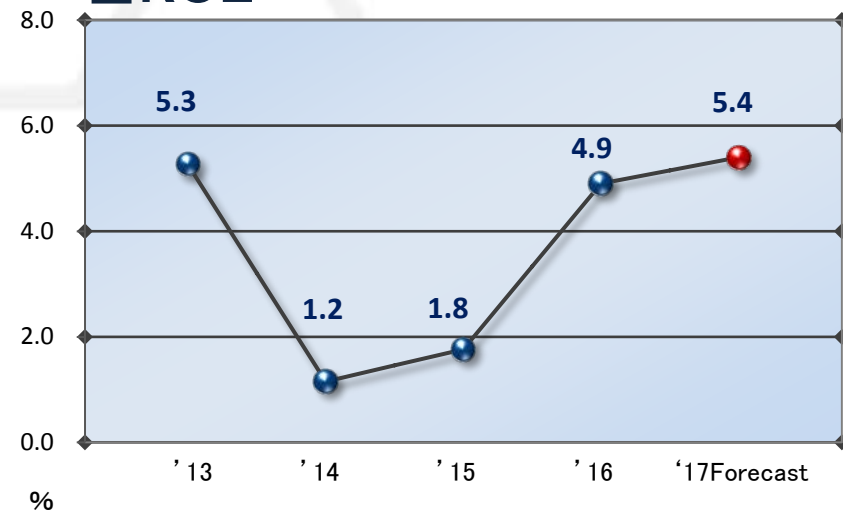
Operating Income



Ordinary Income



ROE





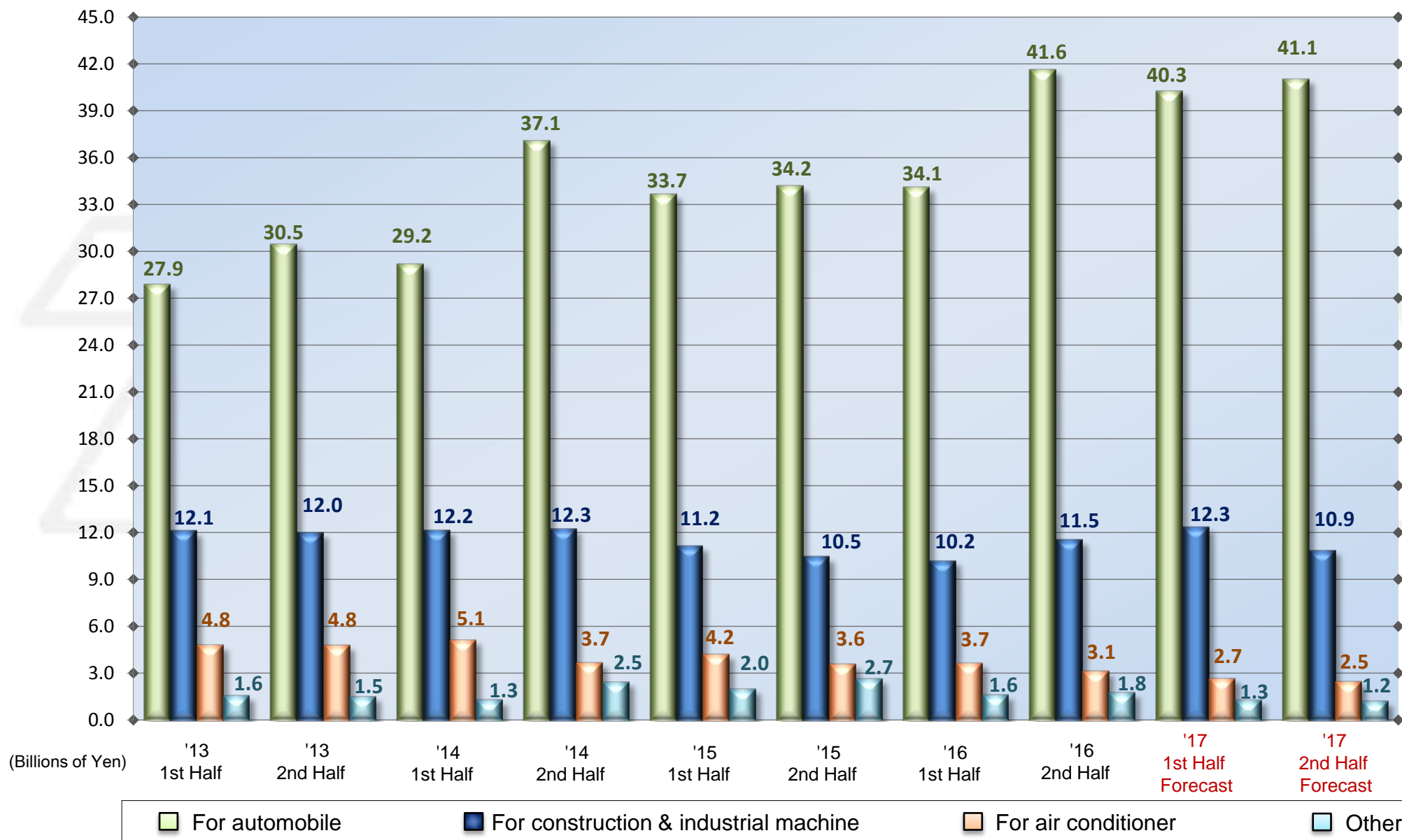
Financial Results (for FY2015, FY2016) and Forecast (FY2017 Forecast)

(Billions of Yen)

| | | FY2015 | | FY2016 | | FY2017 Forecast | | Increase, Decrease (-) | | | |
|---|------------------|--------|--------|--------|--------|-----------------|--------|------------------------|---------|-------------------|--------|
| | | Amount | % | Amount | % | Amount | % | '16-'15 | % | '17 Forecast -'16 | % |
| Net Sales | Consolidated | 102.1 | 100.0% | 107.6 | 100.0% | 112.3 | 100.0% | 5.5 | +5.4% | 4.7 | +4.4% |
| | Non-Consolidated | 58.6 | 100.0% | 56.8 | 100.0% | 57.3 | 100.0% | -1.7 | -2.9% | 0.5 | +0.8% |
| Operating Income | Consolidated | 1.2 | 1.2% | 3.2 | 3.0% | 3.9 | 3.5% | 2.0 | +157.9% | 0.7 | +21.3% |
| | Non-Consolidated | -0.0 | -0.1% | 0.8 | 1.4% | 0.3 | 0.5% | 0.8 | — | -0.5 | -62.1% |
| Ordinary Income | Consolidated | 1.4 | 1.4% | 3.5 | 3.3% | 4.5 | 4.0% | 2.1 | +148.9% | 1.0 | +26.9% |
| | Non-Consolidated | 1.9 | 3.3% | 2.9 | 5.0% | 2.6 | 4.5% | 0.9 | +49.3% | -0.3 | -9.0% |
| Profit attributable to owners of parent | Consolidated | 0.7 | 0.7% | 2.0 | 1.9% | 2.3 | 2.0% | 1.3 | +171.4% | 0.3 | +13.7% |
| | Non-Consolidated | 0.9 | 1.5% | 1.9 | 3.4% | 1.4 | 2.4% | 1.0 | +116.3% | -0.5 | -26.5% |



Semi Annual Sales by Application (Consolidated)





Business results of the segment (for FY2015, FY2016) and Forecast (FY2017 Forecast)

(Billions of Yen)

| | Net Sales | | | | | Operating Income(Loss) | | | | |
|--------|-------------------|-------------------|--------------------|--------------------------------------|--|------------------------|-------------------|--------------------|--------------------------------------|--|
| | FY2015 Results | FY2016 Results | FY2017 Forecast | Increase /Decrease ('16 -'15) | Increase /Decrease ('17 Forecast -'16) | FY2015 Results | FY2016 Results | FY2017 Forecast | Increase /Decrease ('16 -'15) | Increase /Decrease ('17 Forecast -'16) |
| | Amount | Amount | Amount | Amount | Amount | Amount | Amount | Amount | Amount | Amount |
| Japan | 52.0 | 51.5 | 51.9 | -0.5 | 0.4 | -0.0 | 0.8 | 0.3 | 0.8 | -0.5 |
| USA | 23.1 | 26.0 | 29.3 | 2.9 | 3.3 | -1.0 | -0.3 | 0.6 | 0.6 | 1.0 |
| Europe | 3.1 | 3.9 | 4.0 | 0.8 | 0.1 | -0.3 | -0.3 | -0.4 | 0.0 | -0.1 |
| Asia | 13.4 | 15.6 | 15.2 | 2.3 | -0.4 | 1.0 | 1.0 | 1.5 | -0.0 | 0.5 |
| China | 8.5 | 9.6 | 11.0 | 1.0 | 1.4 | 1.3 | 1.7 | 1.6 | 0.4 | -0.1 |
| Other | 2.0 | 1.0 | 0.9 | -1.0 | -0.1 | 0.2 | 0.4 | 0.2 | 0.1 | -0.1 |
| Total | 102.1 | 107.6 | 112.3 | 5.5 | 4.7 | 1.2 | 3.2 | 3.9 | 2.0 | 0.7 |

※Europe(Czech, Russia), Asia(Thailand, Indonesia, Vietnam), Other(The other Subsidiaries in Japan)

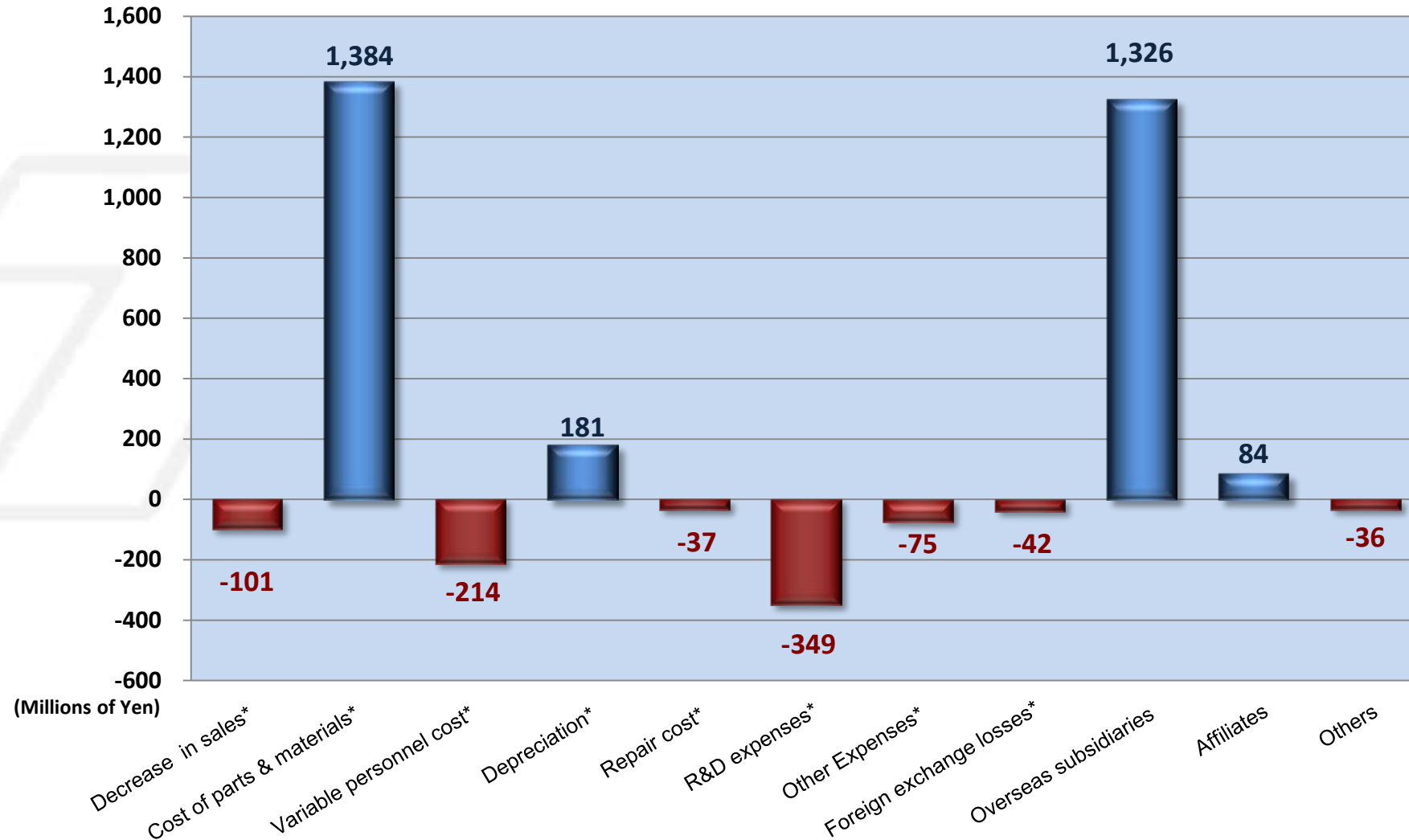
Exchange Rate (Dec.2016⇒Dec.2017 Forecast) USD: 116.53⇒110.12, THB: 3.25⇒3.2, CNY: 16.76⇒15.99,

CZK: 4.54⇒4.4, IDR: 0.0087⇒0.0083, VDN: 0.0051⇒0.0049, EUR: 122.73⇒117.95, RUB: 1.93⇒1.95



Analysis of Increase Factor of the Consolidated Ordinary Income (FY2016 vs. FY2015)

Increase in the consolidated ordinary income by ¥2,121 million



(*Fluctuation factor of non-consolidated)



Non-operating Income/Expenses and Extraordinary Income / Loss for FY2016(Consolidated)

Operating Income → Profit attributable to owners of parent
3,216 → 2,022

(Millions of Yen)

| | |
|--|-----|
| Non-operating income | |
| Earnings of affiliates (TTR 190, QTH 122, TORC 81, Adjustment -6) | 387 |
| Dividends income | 215 |
| Interest income | 70 |
| Others | 180 |

| | |
|---|-----|
| Extraordinary income | |
| Sales of investment securities | 333 |
| Reversal of subscription rights to shares | 37 |
| Sales of noncurrent assets | 16 |

Non-operating expenses

Extraordinary income

Non-operating income

853

525

388

Extraordinary loss

1,115

Profit attributable to owners of parent

2,022

Income taxes & other*

794

| | |
|-------------------------|-----|
| Non-operating expenses | |
| Foreign exchange losses | 276 |
| Interest expenses | 236 |
| Others | 12 |

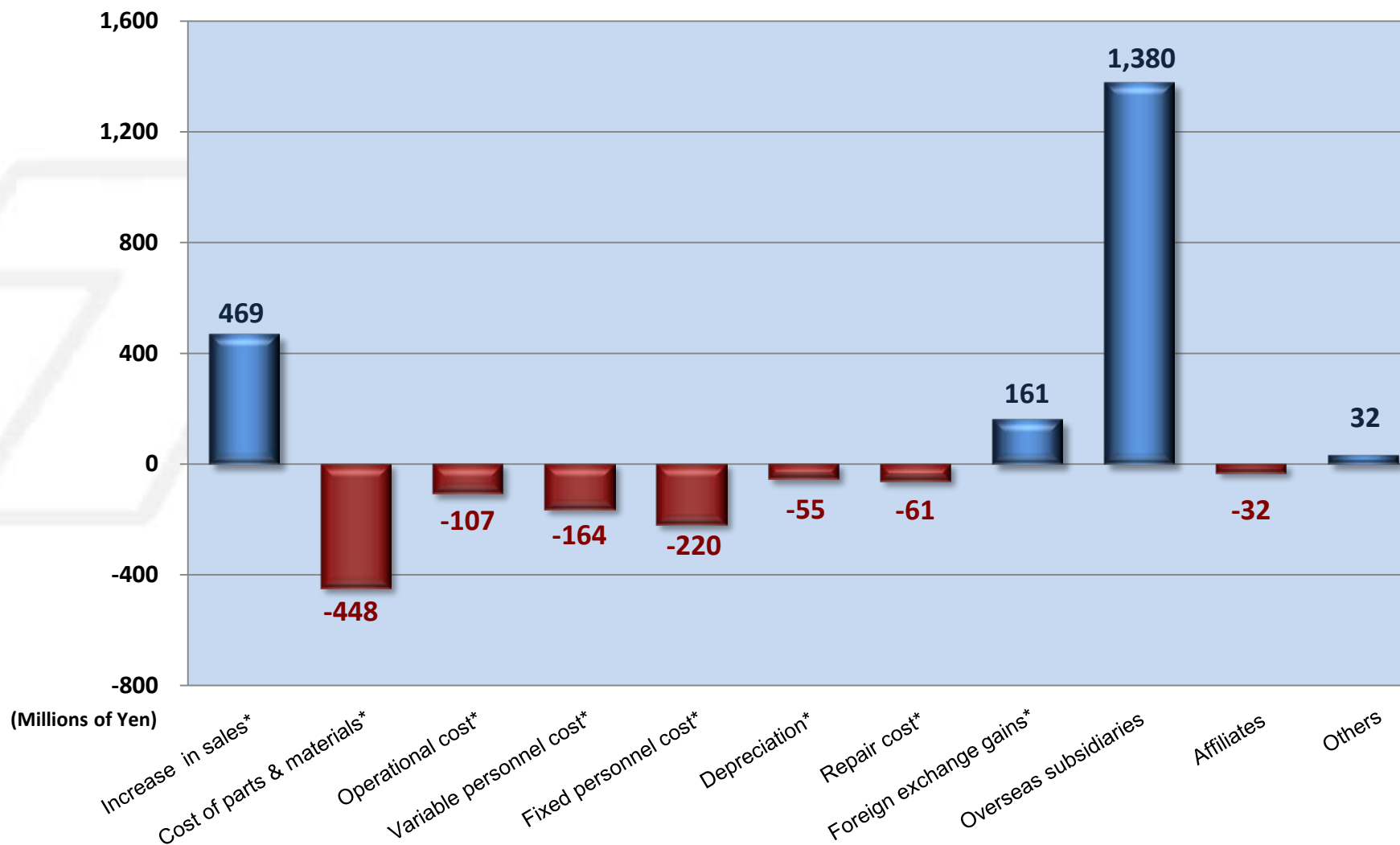
| | |
|---|-----|
| Extraordinary loss | |
| Legal fees for antitrust etc. | 592 |
| Impairment loss (tangible fixed assets) | 354 |
| Retirement of noncurrent assets | 142 |
| Sales of noncurrent assets | 24 |

Operating income

3,216

* Income taxes & other include Profit attributable to non-controlling interests.

Increase in the consolidated ordinary income by ¥955 million



(*Fluctuation factor of non-consolidated)



Contact information

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03-3373-2106(Direct number)

Finance & Accounting Department

03-3373-2138 (Direct number)



T.RAD Co., Ltd.

URL : <http://www.trad.co.jp/>



Appendix

Introduction of Our Company



Automobiles

- 【Gasoline Vehicles
& Clean Diesel Vehicles】
- 【Hybrid Vehicles
& Plug-in Hybrid Vehicles】
- 【Electric Vehicles
& Fuel Cell Vehicles】

Development of products in consideration for environment

- Measure against Global Warming
- Recycling reinforcement
- Prevention of Air Pollution
- Energy Conservation Technology
- Reduction of Carbon Dioxide Emissions
- Shift from Fossil Fuel
- Prevention of Ozone Depletion

Motorcycles



- 【High Efficiency Radiators】
- 【High Efficiency Engine Oil Coolers】

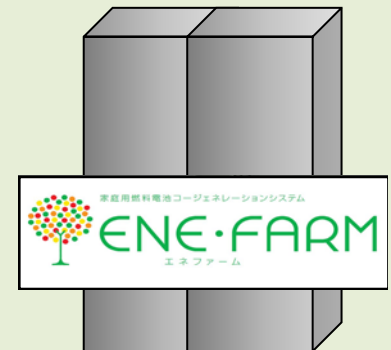
- 【Hybrid & Clean Diesel】
- 【High Efficient Elements】



Construction & Industrial Machines



- 【Household Water Heaters】
- 【Household Fuel Cells】

Household Energy



Features of the product

- ◆ The new high efficient inner fin make the EGR Cooler significantly smaller and lighter for use with gasoline and LPL diesel engines.
- ◆ Promotion of adoption in gasoline engine vehicles as an important component for improvement in fuel efficiency
- ◆ Global development at each base in Japan, ASEAN, Europe, and North America
- ◆ The development of the New High-performance EGR Cooler for HPL diesel engines has already been completed.

| | New model | Conventional |
|-------------------|--|---|
| Performance ratio | 120 or more | 100 |
| Weight ratio | 65 or less | 100 |
| Appearance |  |  |

Features of the product

- ◆ High-performance inner fins make the cooler significantly smaller and lighter.
- ◆ Round/square/rectangular shapes are available.
- ◆ Support for various models such as those for transmissions, motors for hybrid vehicles, and engines
- ◆ Global development at three bases in Japan, China and North America

| | High-end | Conventional |
|-------------------|--|--|
| Performance ratio | 110 or more | 100 |
| Weight ratio | 90 or less | 100 |
| Appearance |  |  |

Features of the product

Slim & Advanced Radiator Technology

- ◆ Support for all radiators such as those for motorcycles, light automobiles and large trucks(serialized)
- ◆ Improvement of fin tubes makes the radiator lighter drastically, yet high-performance.
- ◆ Development of high-strength materials that can be globally launched
- ◆ Reduction of power consumption by making production lines more compact

| | SMART | Conventional |
|----------------------------|--|--------------|
| Performance ratio | 110 or more | 100 |
| Weight ratio | 90 or less | 100 |
| Appearance of SMART series |  <p>Improvement of core makes the radiator slim</p> | |

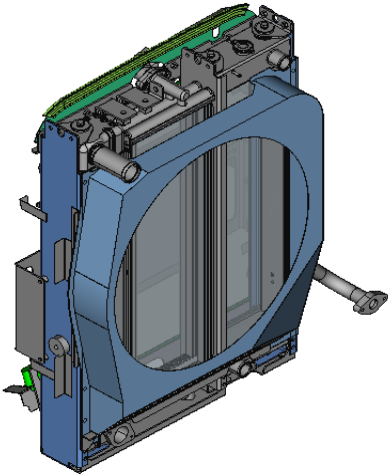
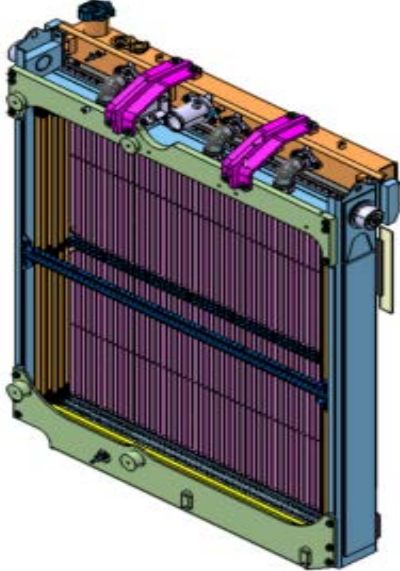
Features of the product

【S-ACoM : *SMART-Advanced Cooling Module*】

- ◆ Improvement of fin tubes makes the radiator lighter, yet high-performance.
- ◆ Durability increased substantially due to the improvement of the shape of fin tube
- ◆ Reduction of power consumption by making production lines more compact

【T-MEX: *T.RAD Mining Machine Heat Exchanger*】

- ◆ Enter the Super Large Construction Machines Market(Mining Machines Market) with newly developed heat exchangers that allow tube replacement

| | S-ACoM | T-MEX |
|----------------------------|---|--|
| Appearance of SMART series |  |  <p>Outline size 2.5m x 2.5m</p> |



Global Network: Worldwide Business with 5 Regional Bases



| ● Subsidiaries | |
|---------------------------------------|------------------------------------|
| 【North America】 | 【China】 |
| T.RAD North America, Inc. (USA) | T.RAD (Zhongshan) Co., Ltd.(China) |
| Tripac International Inc. (USA) | T.RAD (Changshu) Co., Ltd. (China) |
| 【Asia】 | 【Europe】 |
| T.RAD (THAILAND) Co., Ltd. (Thailand) | T.RAD Czech s.r.o. (Czech) |
| PT. T.RAD INDONESIA(Indonesia) | TRM LLC(Russia) |
| T.RAD(VIETNAM)Co., Ltd.(Vietnam) | |

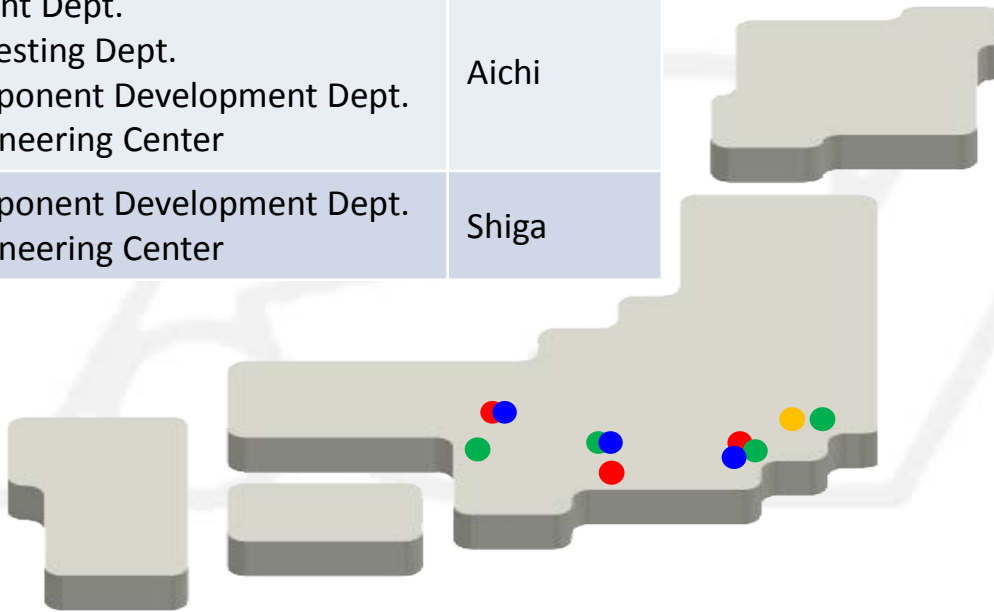
| ● Offices in Europe • R&D center | |
|--|---|
| T.RAD Co., Ltd. Europe Representative Office (Germany) | |
| North America T.RAD R&D Center (USA) | |
| TACO/T.RAD R&D Centre(India) | |
| T.RAD (Changshu) R&D Center Co., Ltd. (China) | |
| ● Joint Ventures | |
| 【Asia】 | 【China】 |
| TORC Co.,Ltd. (Thailand) | Qingdao Toyo Heat-Exchanger Co., Ltd(China) |
| TATA Toyo Radiator Ltd.(India) | |

● Research & Development Offices

| | |
|--|----------|
| H.E. Development Dept.(Construction Machine) Research & Development Dept. Prototyping & Testing Dept. | Kanagawa |
| H.E. Development Dept. Prototyping & Testing Dept. Functional Component Development Dept. Production Engineering Center | Aichi |
| Functional Component Development Dept. Production Engineering Center | Shiga |

● Production Bases

| | |
|--------------|----------|
| Hatano Works | Kanagawa |
| Nagoya Works | Aichi |
| Shiga Works | Shiga |



● Sales Offices

| | |
|--------------------------------|--------------|
| Automotive Dept. | Tokyo, Aichi |
| Construction/off-Highway Dept. | Kanagawa |
| Osaka Sales Dept. | Osaka |

● Head Office

| | |
|-------------|-------|
| Head Office | Tokyo |
|-------------|-------|



Hatano Works



Nagoya Works



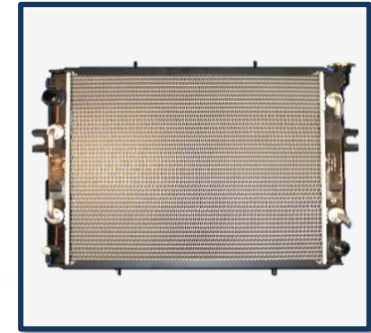
Shiga Works



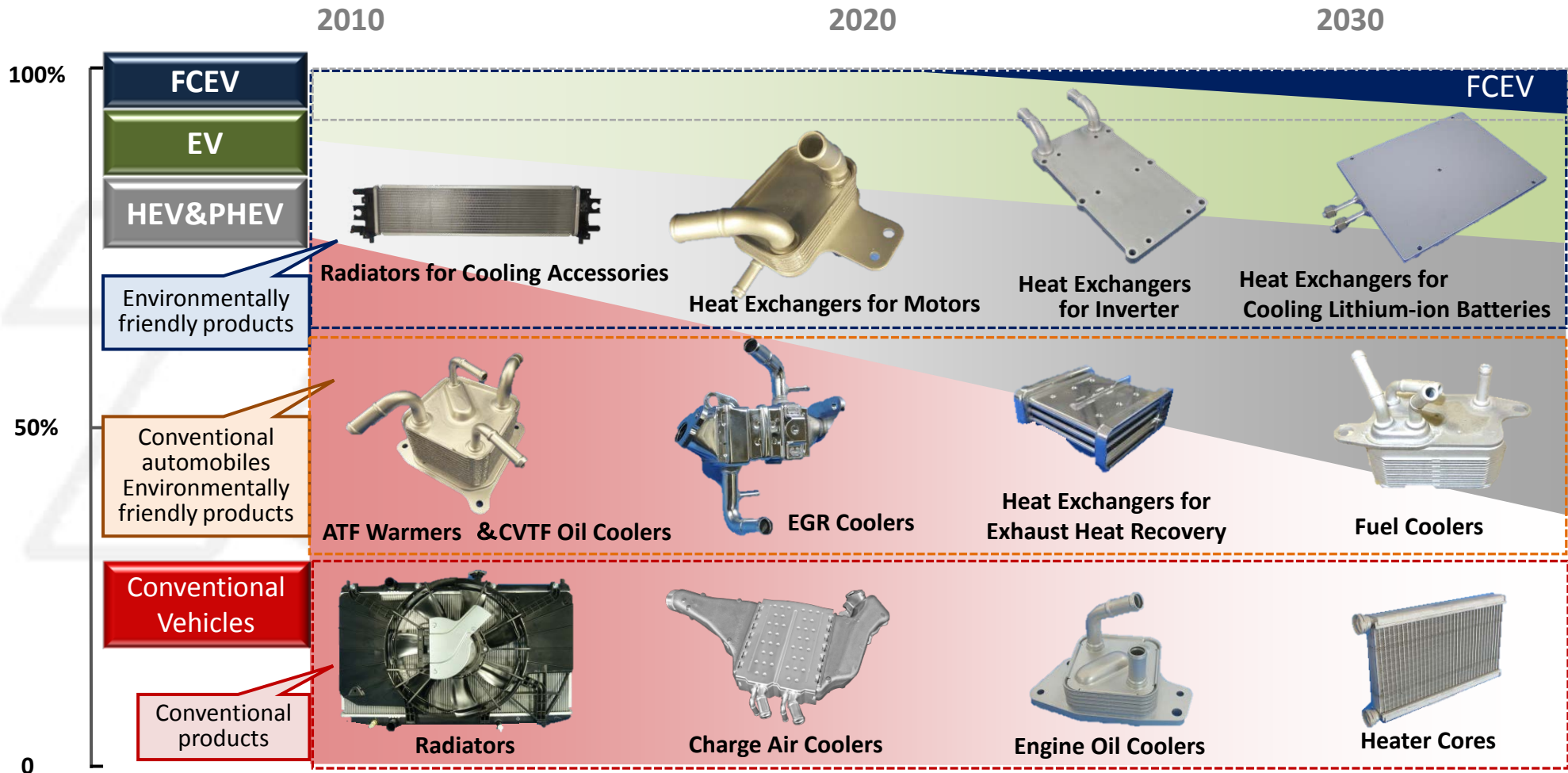
**The heat exchangers for
motorcycles
63% share of the
international market**
(Excluding some models for local
specialized manufacturers)



**The heat exchangers for
excavators
38% share of the
international market**
(Excluding some models for local
specialized manufacturers)



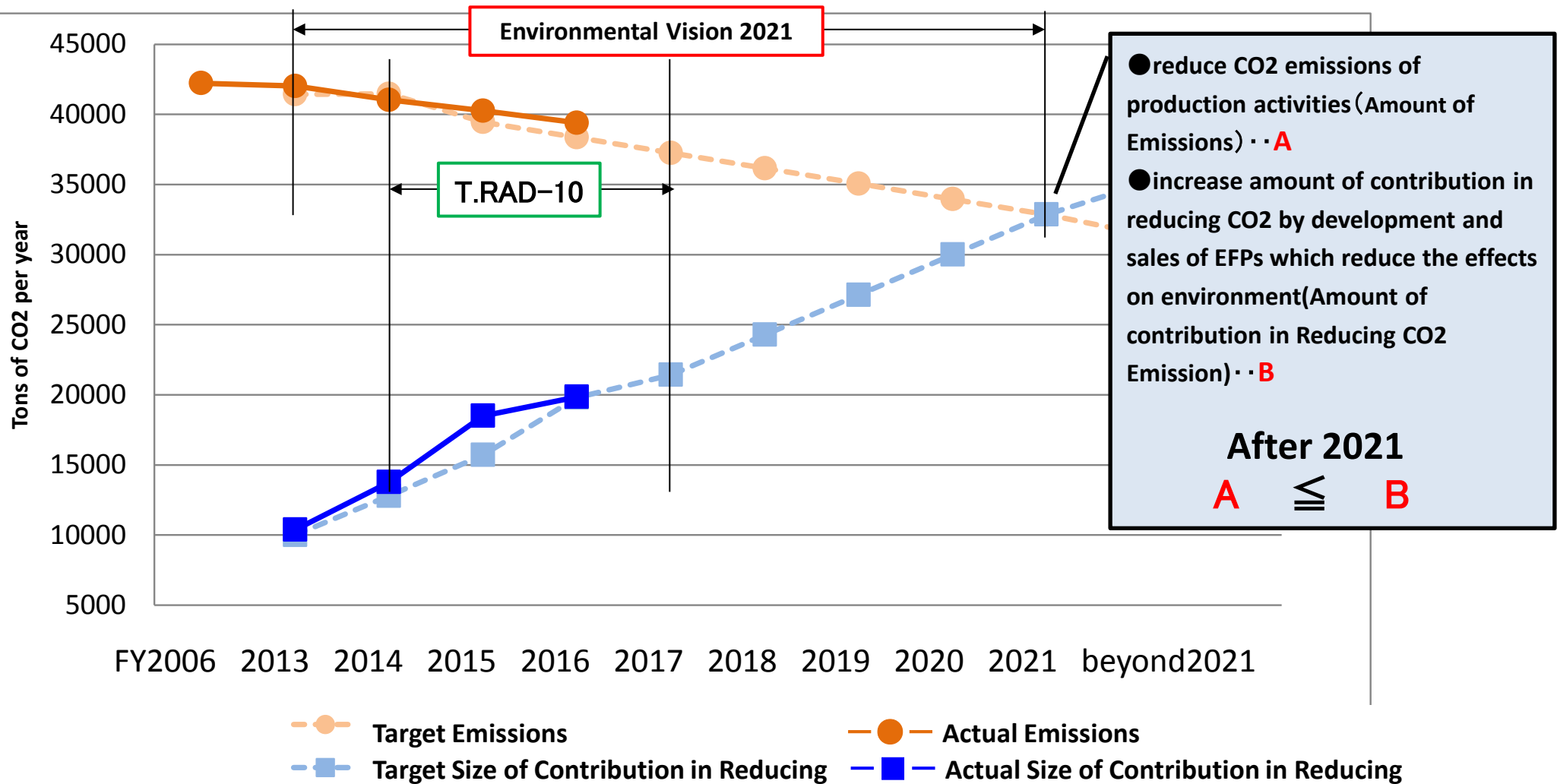
**The heat exchangers for
forklifts
35% share of the
international market**



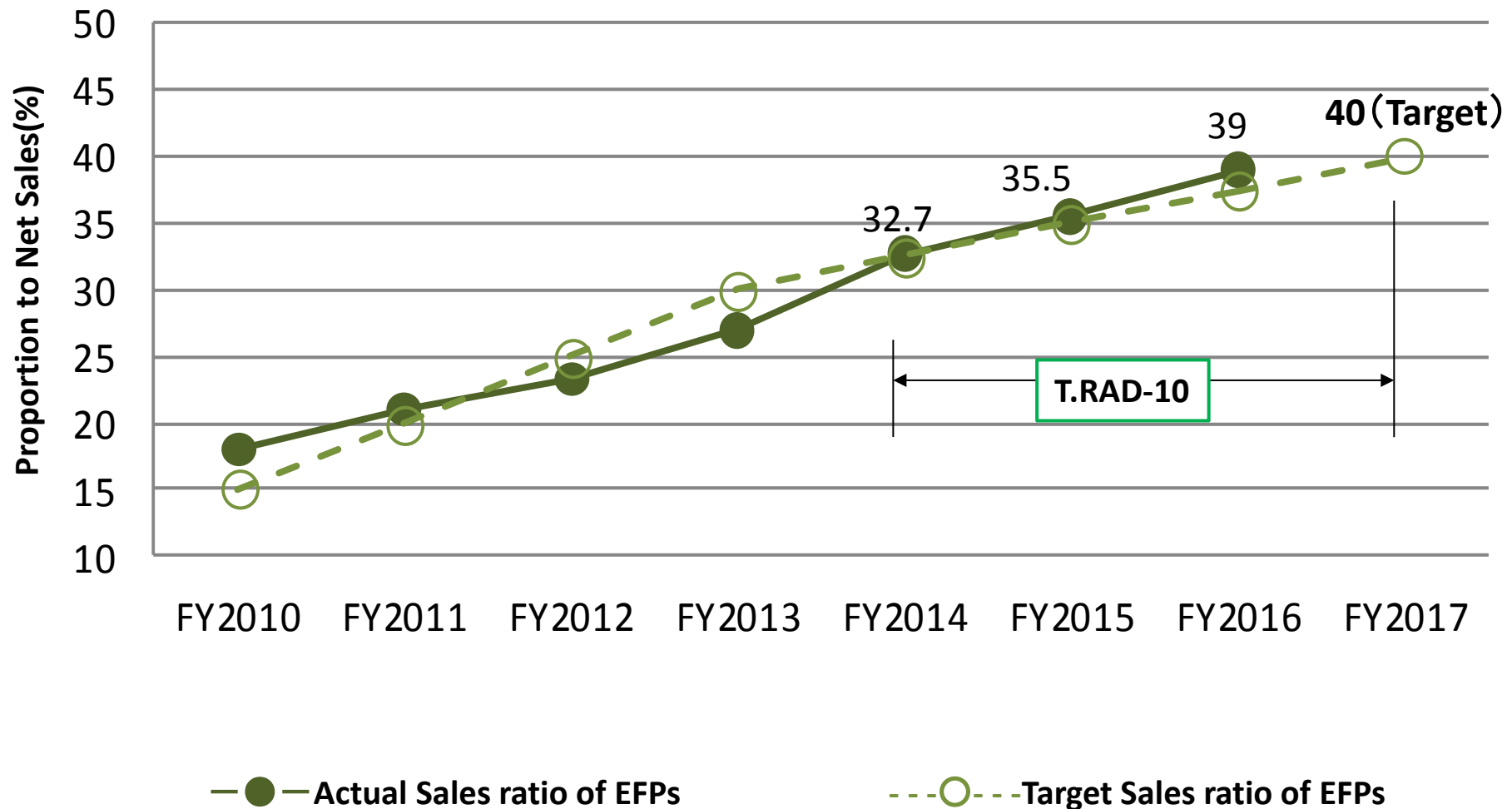
Development of heat exchangers corresponding to the change of the markets and customers' needs

(1) Reduction in CO2 Emission : By FY2021

Reduction in Emissions of production activities \leq Contributions to Reducing CO2 by Eco-friendly Products



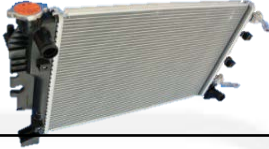




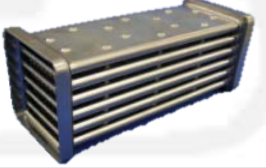

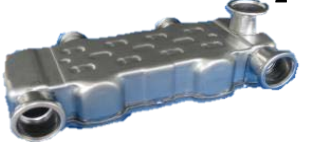
(2) Sales expansion targets of Eco-friendly Products:
Promotion of sales increase more than 40% by FY2017(T.RAD-10)



The Best 8 Sales of Eco-friendly Products

【The Standard of Our Eco-friendly Products】 Product Environment Indicator (=newly / conventional Eco-efficiency) ≥ 1.2

Eco-efficiency = Product Value / Environmental Load (=Performance Ratio x Cost Ratio / CO2 Ratio x Weight Ratio x Substance of Concern)

| rank | Products Type | Product environmental indicator and appearance of product | rank | Products Type | Product environmental indicator and appearance of product |
|------|---|---|------|--|--|
| 1 | High Performance Radiators | 【Product environmental indicator】 1.35  | 5 | Mission Oil(ATF) Coolers/Warmers | 【Product environmental indicator】 1.61  |
| 2 | Charge Air Coolers (Intercoolers) for automobiles | 【Product environmental indicator】 1.23  | 6 | Radiators for motorcycles | 【Product environmental indicator】 1.20  |
| 3 | EGR Coolers | 【Product environmental indicator】 2.33  | 7 | Exhaust Heat Recovery for automobiles | 【Product environmental indicator】 1.20  |
| 4 | Case-less Oil Coolers | 【Product environmental indicator】 1.32  | 8 | Heat Exchangers for Household Fuel Cells | 【Product environmental indicator】 1.35  |

Thought about our Product Environmental Indicator \Rightarrow Setup according to the guideline of Japan Auto Parts Industries Association(JAPIA)

Eco-efficiency

=

Product Value

Rise

Usability, High performance, Low cost

Environmental Load

Lower

Worming



Resource depletion



Substance of concern

