

Industrial Infrastructure Business Strategies

May 26, 2014

Fuji Electric Co., Ltd.

Industrial Infrastructure Business Group

- Business Overview
- Market Trends
- Business Targets
- Priority Measures

Business Overview

◆Transmission and Distribution

Power supply facilities providing stable supplies of energy



Power grid substations
(Large-capacity transformers)



Industrial substations
(Power receiving and distribution substation equipment)



Industrial power supplies
(Large-capacity rectifiers)
(No. 2 global share)

◆Machinery and Electronics Systems

Integrated machinery and electronic systems and heat management focused on combining electricity and heat



Drive control systems
(Motors for plants)



Industrial electric heating
(Induction furnace)
(Top domestic share)



Air-environment
(Internet data centers)

◆Instrumentation and Control Systems

Environmental measures and safe and secure equipment based on measuring instruments and control systems



Instrumentation systems



Measuring instruments
(Gas analyzer)
(Top domestic share)

◆Equipment Construction

Equipment construction services supporting industrial infrastructure



Construction



Air conditioners



Plant installation

Major customers: Steelmaking, chemical, automotive, and other industries, and power and railway companies

Market Trends

◆ Rising capital investment in Japan

- Expansion in replacement and rationalization investments that had been postponed
- Substantial increases in the steelmaking and chemicals sectors, automotive remains high

● Capital Investment Trends at Major Companies (Capital of ¥1.0 Billion or More)

	Sector	Year-on-Year Increase in Capital Investment (%)			Capital Investment Forecast for FY2014 (Trillions of Yen)
		FY2012	FY2013	FY2014	
Manufacturing		+1.7	+2.8	+3.9	9.0
	Steelmaking	+11.3	- 12.4	+6.3	0.7
	Chemicals	+8.5	- 6.1	+5.2	1.2
	Automotive	+15.2	+6.6	+5.7	1.5
	Electrical Equipment	- 10.1	+9.1	+2.1	1.9
Non-Manufacturing		+2.5	+3.6	+1.3	16.6
All Industries		+2.2	+3.3	+2.2	25.6

Source: Bank of Japan's quarterly short-term economic survey (April 2, 2014)

Ongoing infrastructure investment and investment by Japanese companies in Asian markets

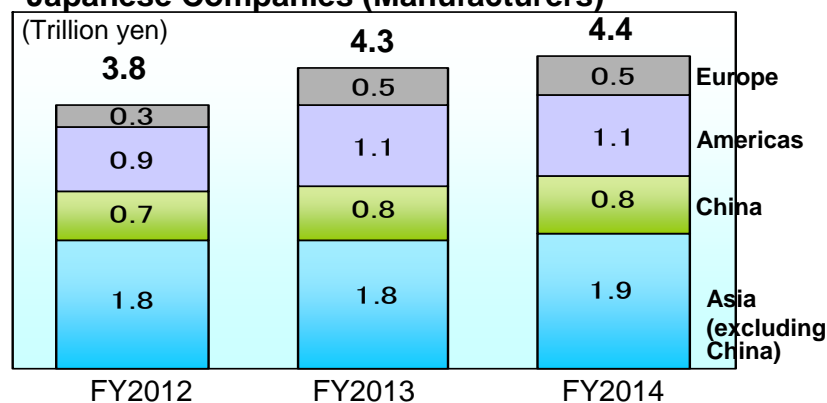
● Overseas GDP Growth Rate (Year-on-Year)

(%)

	Total	ASEAN-5					NIEs-4	India	China	Americas	Europe
		Indonesia	Thailand	Malaysia	Vietnam	Philippines					
2012	6.2	6.3	6.5	5.6	5.3	6.8	1.8	4.8	7.7	2.8	-0.6
2013	5.1	5.8	2.9	4.7	5.4	7.2	2.7	4.6	7.7	1.9	-0.4
2014	5.1	5.4	2.7	5.4	6.0	6.4	3.3	4.5	7.5	2.5	1.2

Source: Mizuho Research Institute Ltd. (March 10, 2014)

● Capital Investment in Overseas Markets by Japanese Companies (Manufacturers)



Source: Survey of Overseas Operations, Ministry of Economy, Trade and Industry (April 25, 2014) and GLOBAL INSIGHT

● Japanese Companies Operating in ASEAN-5 Countries Industrial Parks

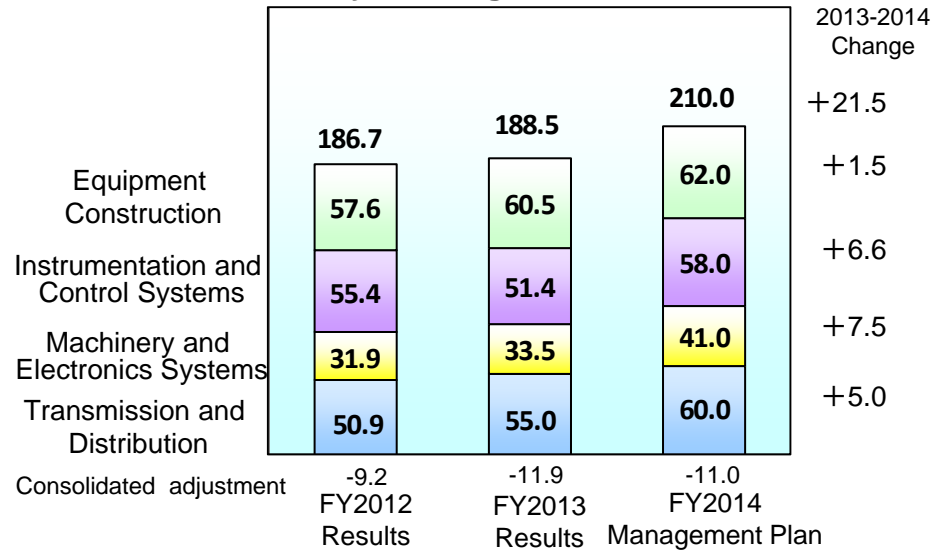
	Industrial parks	Parks with Japanese companies	Number of Japanese companies	Industrial parks with Japanese injected capital
Indonesia	77	15	352	6
Thailand	74	32	809	1
Malaysia	296	101	510	-
Vietnam	213	51	552	7
Philippines	108	40	427	-

Source: ASEAN-Japan Centre's website (data as of May 2014)

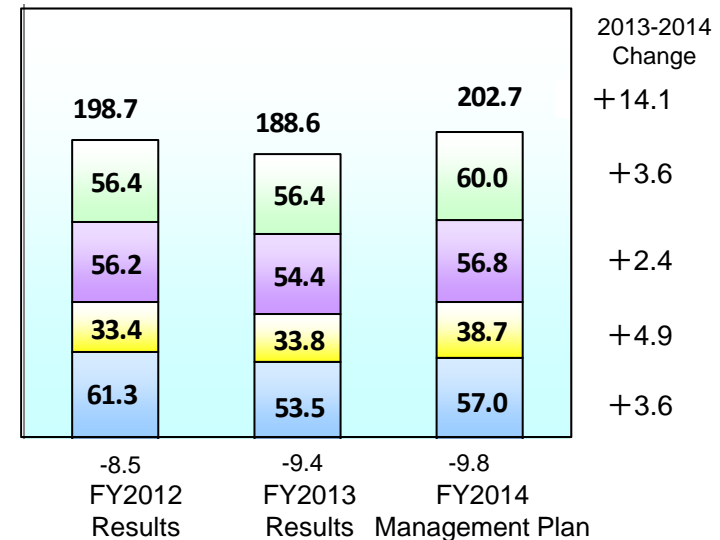
Business Targets

Business Targets

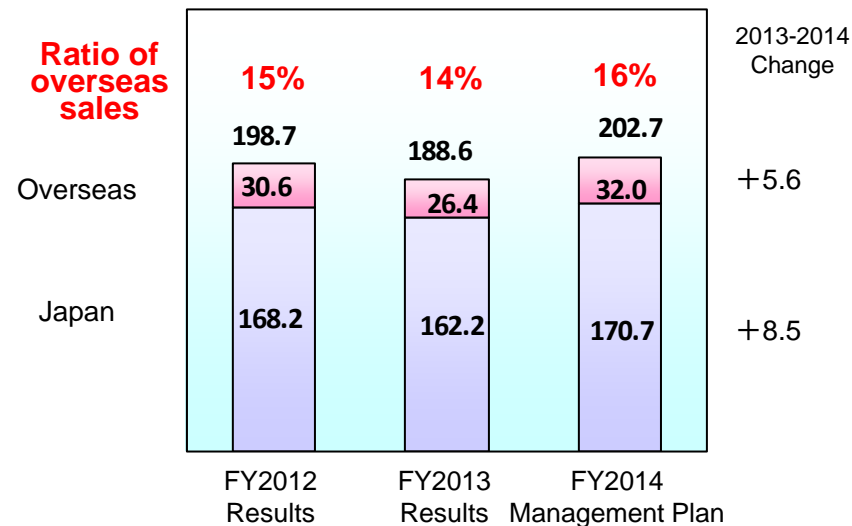
Amount of Orders Received by Subsegment (Billion yen)



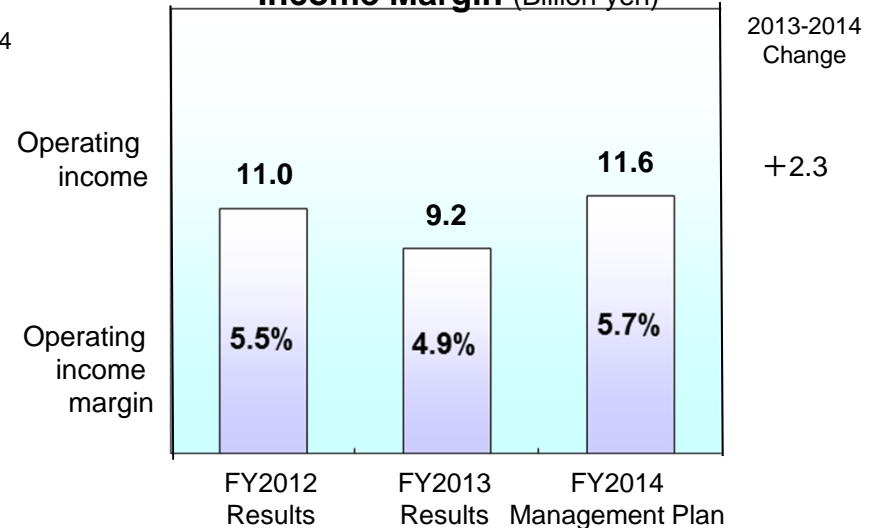
Net Sales by Subsegment (Billion yen)



Net Sales in Japan / Overseas (Billion yen)



Operating Income / Operating Income Margin (Billion yen)



Priority Measures

- Overseas
 - **Expand businesses in Asia** centered on **Fuji Tusco**
 - Boost orders for substation equipment as gateway products
 - Strengthen engineering systems
 - Increase overseas partners
 - Establish operating foundation through **new M&A activities**
 - Model on Fuji Tusco, which has sales channels
- Japan
 - Expand **automotive and IDC businesses**
 - Capture **replacement demand**

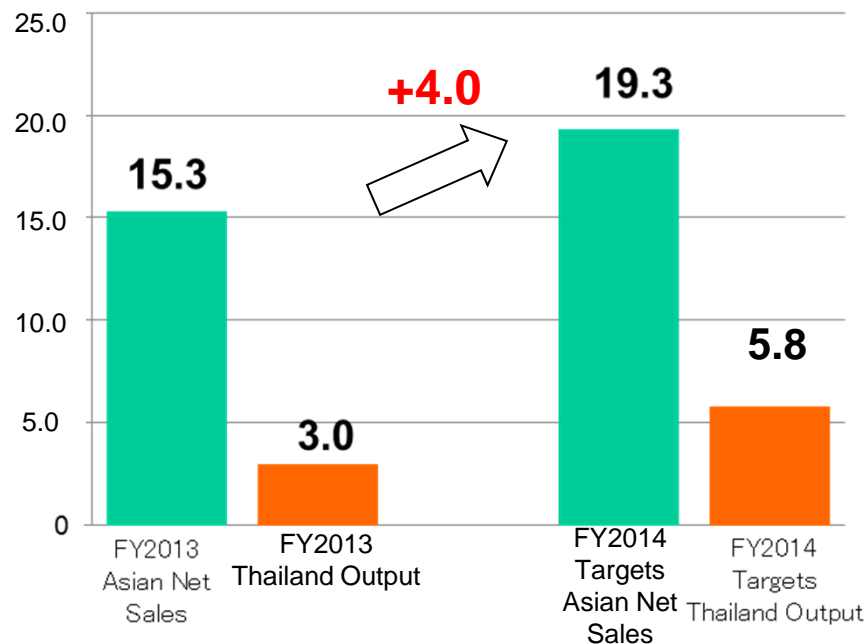
Overseas Priority Measures

Expand Businesses in Asia

Boost orders for highly competitive substation equipment as gateway products

- In Thailand, make capital investment in substation equipment **and ramp up production capacity** (double year on year)
- **Expand models manufactured** in Thailand (new production of such products as switchgear and cast resin transformers)
- Leverage Fuji Tusco's sales channels (in Thailand, the Middle East and other locations) to boost sales

(Billion yen) **Net Sales in Asia (excluding China) and Thailand Output**



New Production Models in Thailand



Switchgear



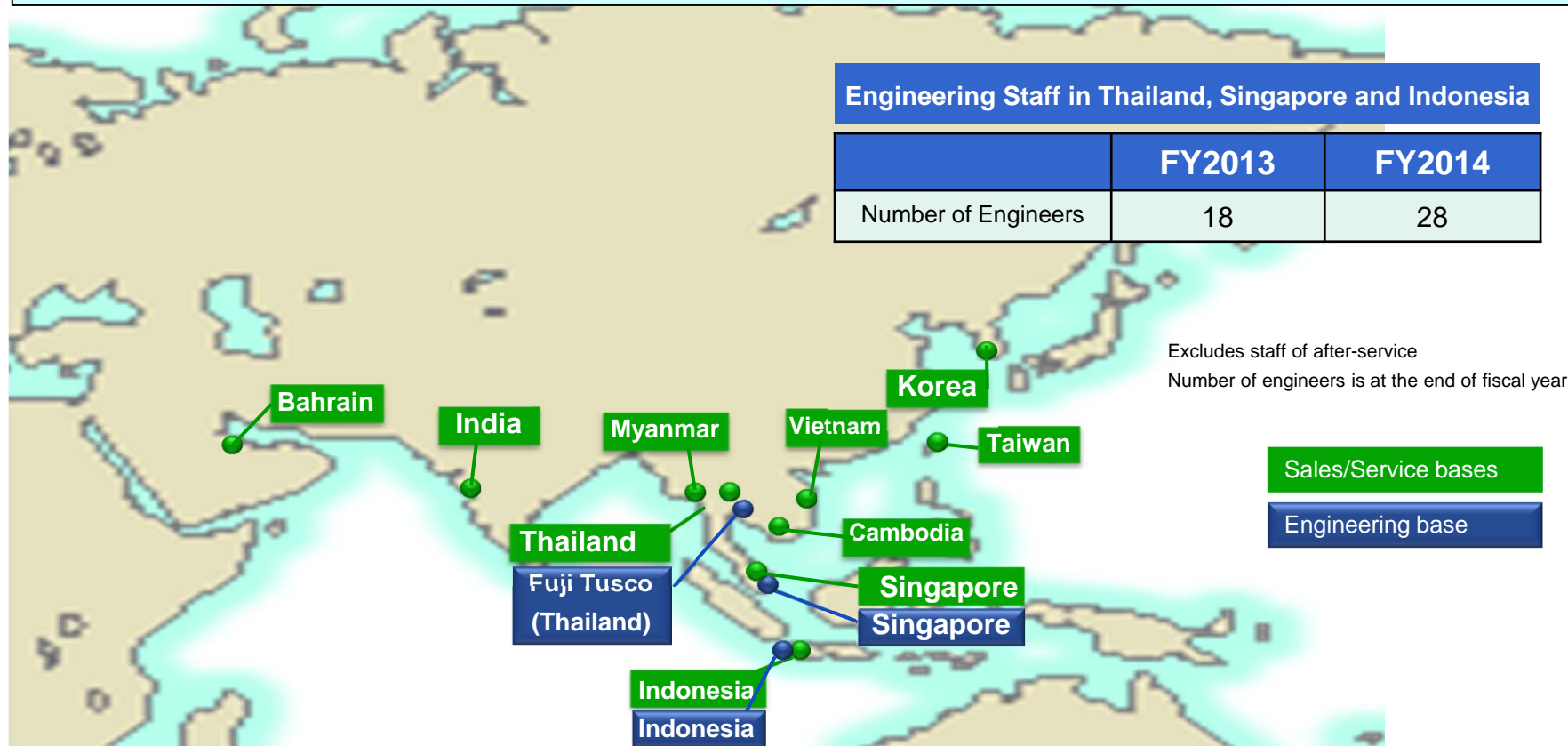
Cast resin transformers

Overseas Priority Measures

Expand Businesses in Asia

Strengthen Engineering Systems

- **Reinforce engineering resources** at Fuji Tusco, and expand business from substations to include machinery and electronic systems and instrumentation systems



Increase overseas partners

- Expand local business through collaboration with overseas partners, offering **system package equipped with instruments** as products

System package equipped with instruments

Package together system-level control systems and equipment

- Targets : Boilers, pumps, incinerators, heating furnaces...expand these menus
- Structure: Provide packages comprising Fuji sensors, control software and know-how
- Partners' roles: Package selection and incorporation into systems, delivery, installation, testing/adjustment, maintenance

Japan Priority Measures

Expand Automotive Business

Support customers' activities to reduce carbon emissions (visualization systems)

- Transfer from "Visualization" to "Understanding and Optimizing"
- Through optimization proposals, expand sales of CO₂-reducing equipment and systems

Reinforce new product development (such as electrical components for test systems) and at-spec development

◆ Visualization System

[STEP 1: Visualization]

Find out energy usage status

- Energy measurement equipment
(Current, voltage, flow rate, pressure, temperature, etc.)
- Energy visualization tools, demand monitoring

[STEPS 2, 3: Understanding, Optimizing]

Energy management and optimal operation

- Energy analysis management system
- Power facility operation optimization system (Fe-TOP)

CO₂-reducing equipment and systems

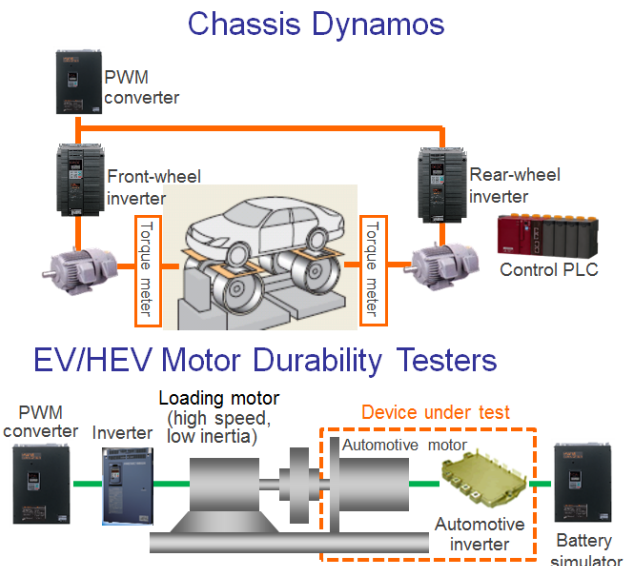
Power savings

Energy-creating equipment (fuel cells)

Heat pumps to use waste heat

Optimize heat sources

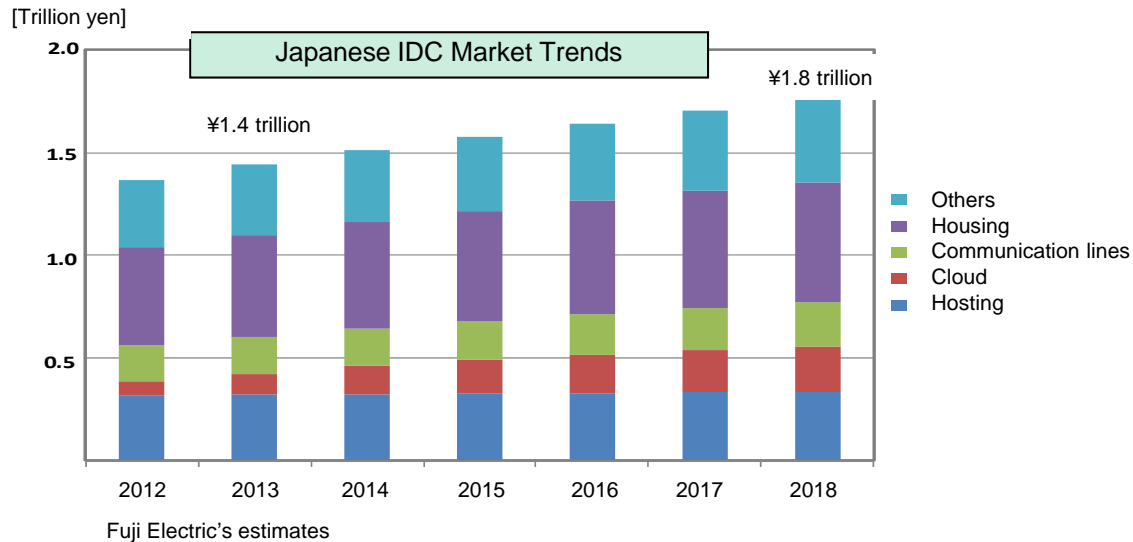
◆ New Products (electrical components for test systems)



Japan Priority Measures

Expand IDC Business

Expand orders by providing solutions centered on Fuji Electric's core technologies and product strengths



Customer Issues

- Increasingly stringent price competition
- Rising power costs
- Obsolescence of equipment specifications due to aging facilities
- Requires high-efficiency technology
- Start from small size data center (enhance scalability)

Provide solution by entire plant technology

Power system stabilization

Transmission and distribution equipment, power generators, UPSs, fuel cells

Energy savings

Indirect outside air conditioning unit, spot cooling unit, EMS (DCIM)

Security

Fire-prevention system, security system (direct intrusions), remote monitoring system

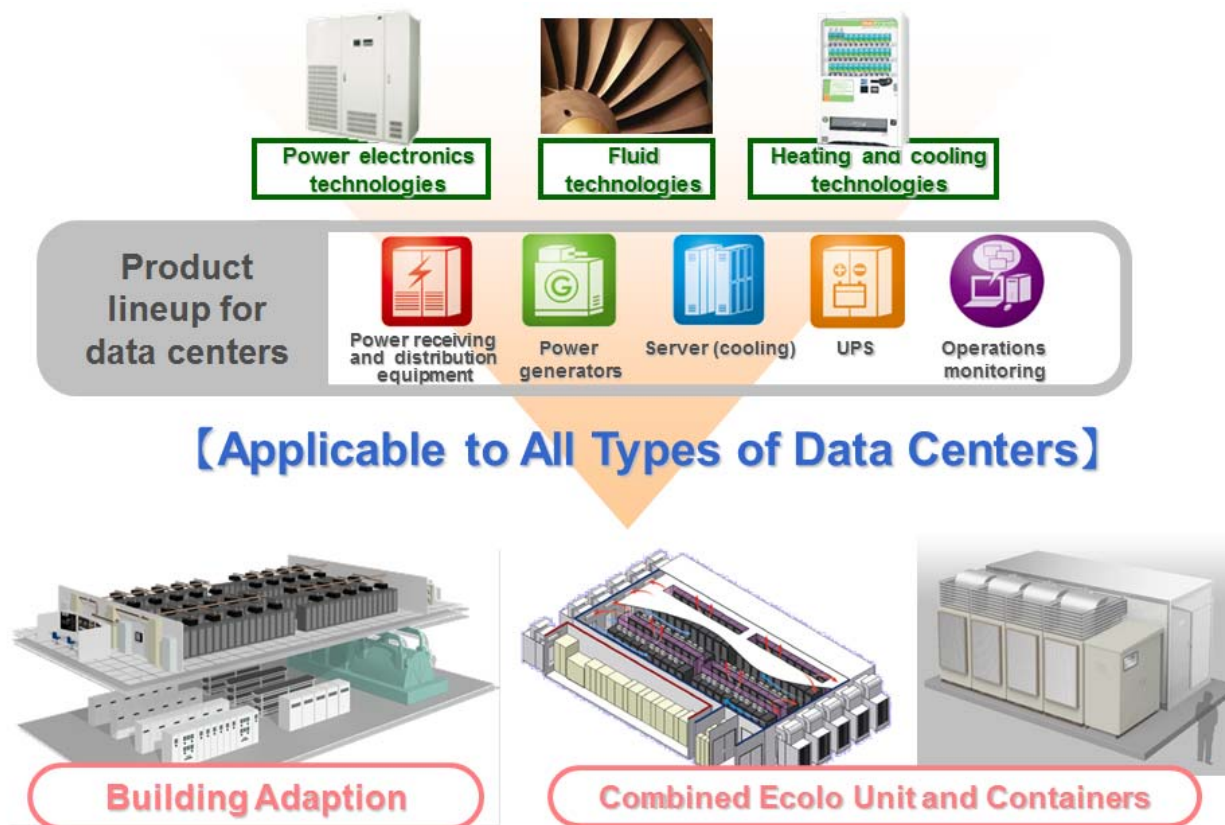
EPC

Building facilities (containers, prefab, buildings), construction

Core technologies
(power electronics technologies, fluid technologies, heating and cooling technologies)

Japan Priority Measures Expand IDC Business

Provide highly efficient **modular data centers**
with energy-saving functions



Characteristics

- Realize to **reduce the construction period and energy consumption** of data center by using Built-in-Block method of module type data center
- Realize to **save energy** (annual average COP:10) by applying indirect outside air conditioning unit into air conditioning system of data center
- Achieve **high efficiency (97%)** by using UPS that is adopted 3-level inverters controller

Provide solutions meet several customer needs

Japan Priority Measures

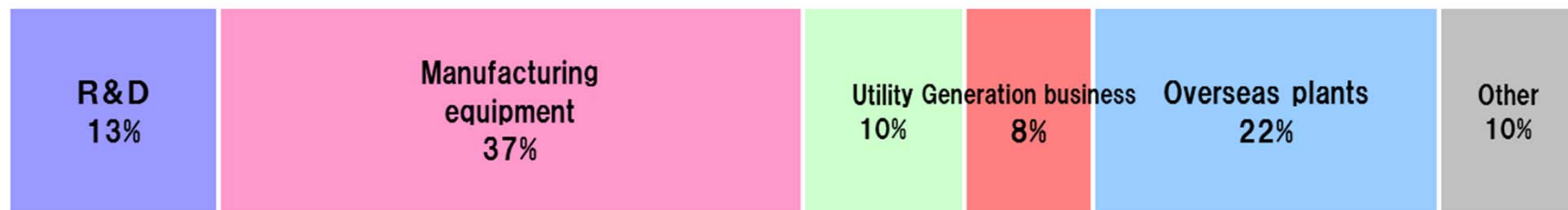
Capture Replacement Demand

Take an aggressive service approach targeting replacement of aging facilities and making operations “smarter”

- Develop residual life diagnosis activities and lifecycle replacement proposals
- Enhance product lineup (MICREX-View, retrofit products)

(Example) Steelmaker (Blast Furnace) Investment Objectives

Note: Fuji Electric's estimates



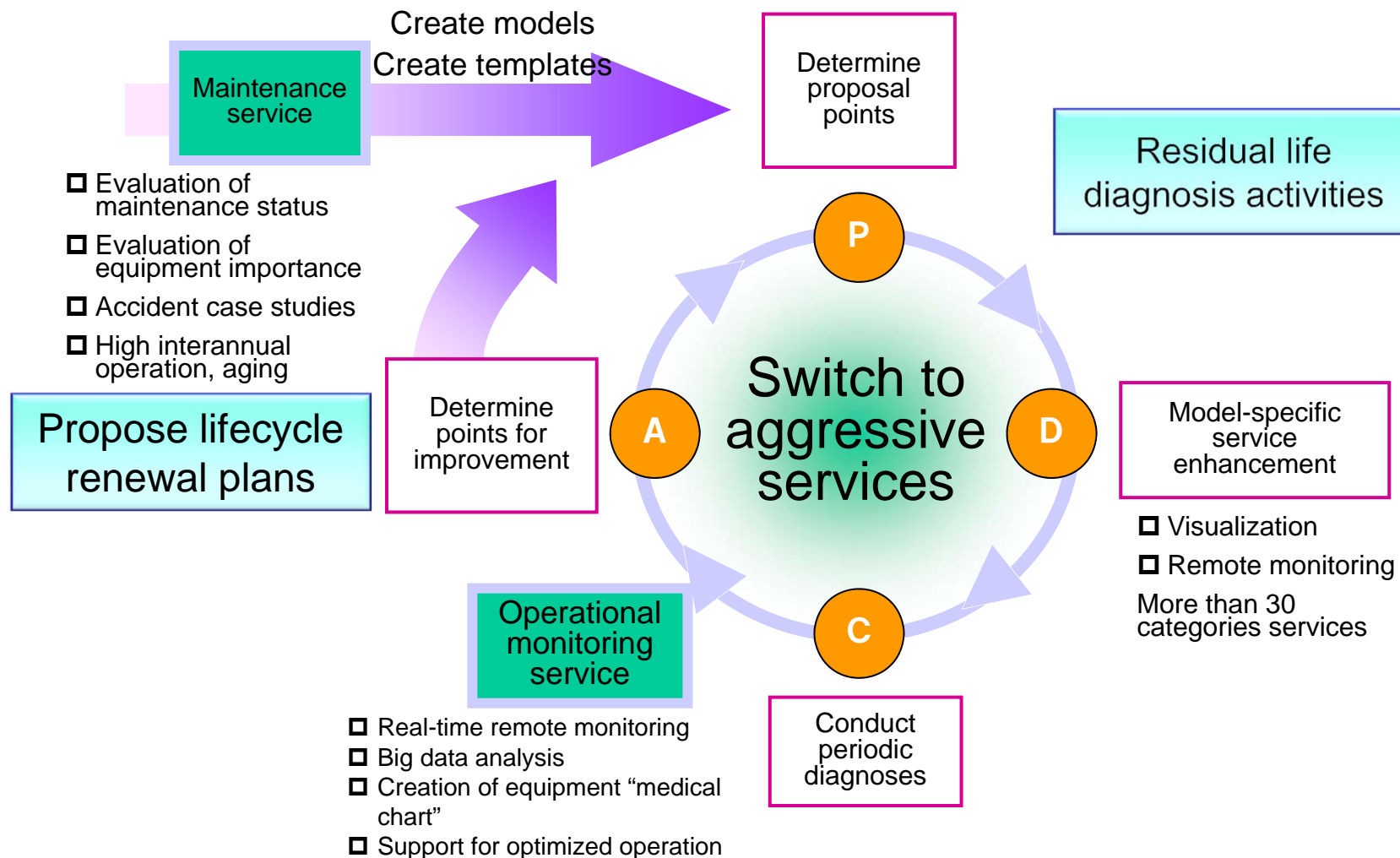
Investment in replacement of aging facilities accounts for half, and investment to make operations “smarter” for an estimated 30%

Japan Priority Measures

Capture Replacement Demand

Switch to aggressive services ⇒ Minimize customers' lifecycle costs

- **Conduct equipment diagnosis** prior to breakdown, link to **predictive detection**



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