

# Power Electronics Systems Industry Business Strategies

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## ■ Business Overview

## ■ FY2020 Management Plan


- Business Policies
- Market Outlook
- Business Plan
- Priority Measures
- Capital Investment / Research and Development

## Power Electronics Systems Industry—Automation and Energy Saving

### Automation Systems



Motion systems



Process control systems

### Social Solutions



Ships



Railcars



Automobiles



Radiation monitoring systems

### Equipment Construction

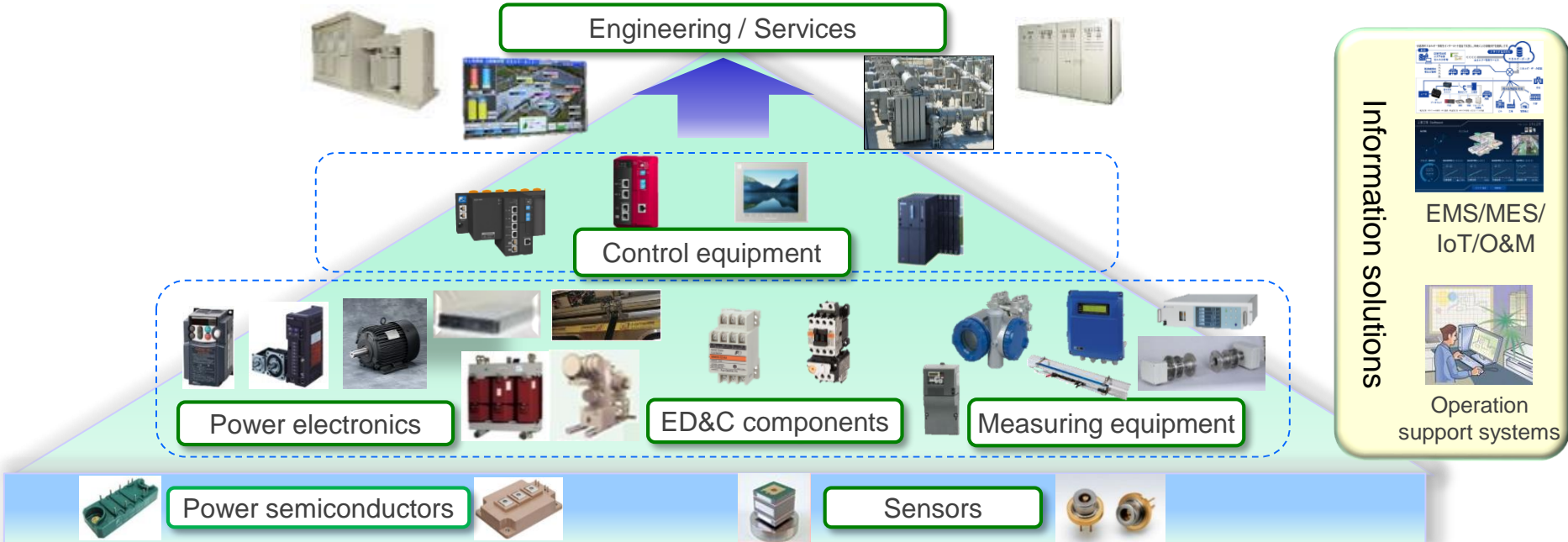


Construction  
(electrical equipment, air conditioning, structures)

### IT Solutions

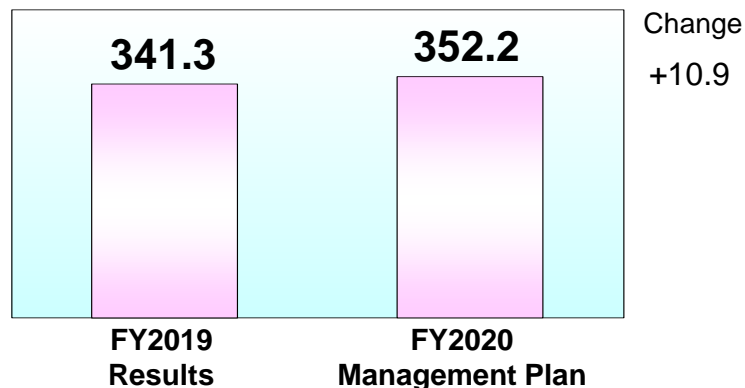


Information systems

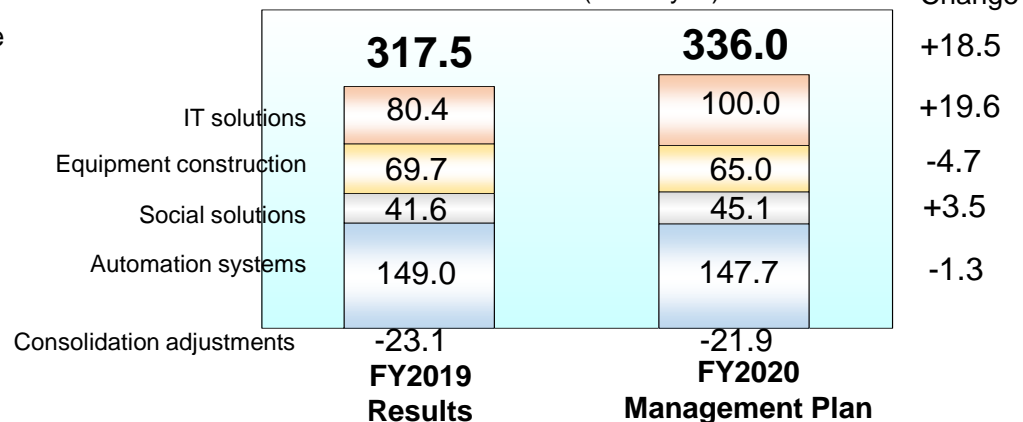


## Strengthening of business constitution and acceleration of R&D to establish foundations for accomplishing medium-term management plan goals

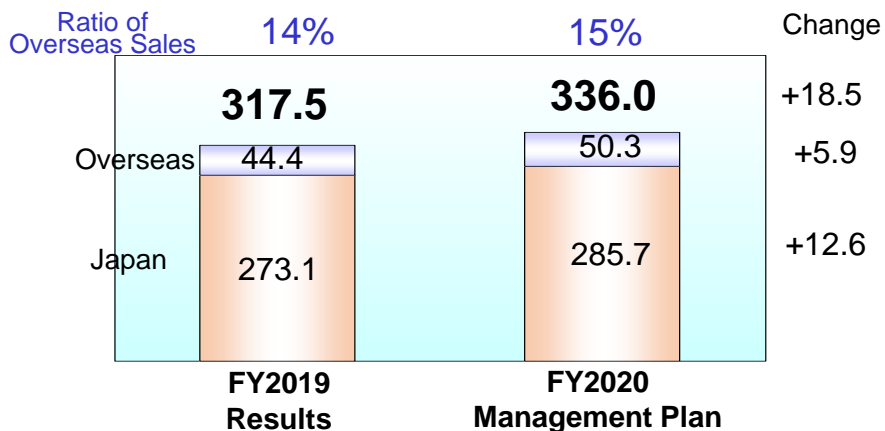
### Amount of Orders Received (Billion yen)



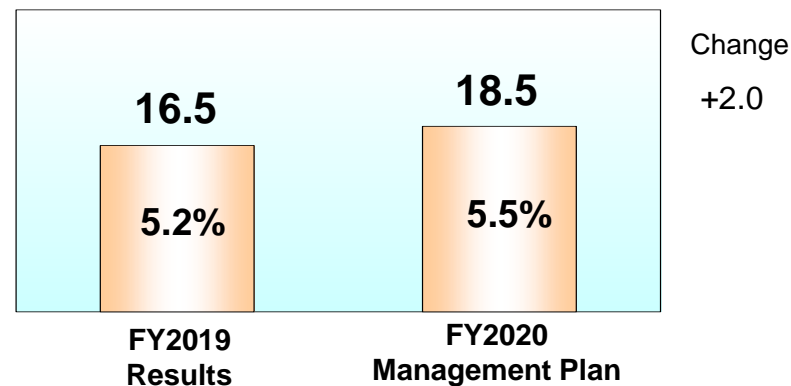
### Net Sales (Billion yen)



















### Net Sales in Japan / Overseas (Billion yen)



### Operating Income / Operating Margin (Billion yen)



Note: SOx scrubber operations were transferred from the automation systems business to the social solutions business in the second half of FY2020.

			Market Outlook (FY2020)		
			YoY		Details
			1H	2H	
Automation Systems	Components	Japan			Consistently bearish demand throughout fiscal year due to COVID-19 pandemic, despite recovery of exports in certain fields
		Overseas			Special demand trend seen for mask production equipment in China during first half of fiscal year due to COVID-19 pandemic, ongoing recovery of internal infrastructure-related demand in second half Modest fourth-quarter recovery in Asia, Europe, and the United States
	Systems	Steel (Japan)			Sluggish global demand Reductions in fixed and other costs and reevaluation of investments in Japan
		Chemical (Japan)			Progress in petrochemical plant equipment consolidation and plateauing demand in Japan Strong investment in fine chemicals, pharmaceuticals, and other high-value-added functional chemical fields
		Waste (Japan)			Decrease in new construction projects in Japan but increased demand for replacing aged facilities
		Social Solutions	Railcars (Global)		
		Ships (Global)			Ongoing reduction of price gap between low-sulfur and high-sulfur fuel oil as a result of falling crude oil price and reduced transportation volumes due to the COVID-19 pandemic
IT Solutions		Telecommunications (Japan)			Rising demand for academic solutions due to special demand trend stimulated by GIGA School Pack in Japan and strong IT investment in private and public fields as a result of workstyle reforms and the COVID-19 pandemic

## <General>

- Growth of overseas operations centered on China and other parts of Asia
- Creation of competitive components

## <Automation Systems>

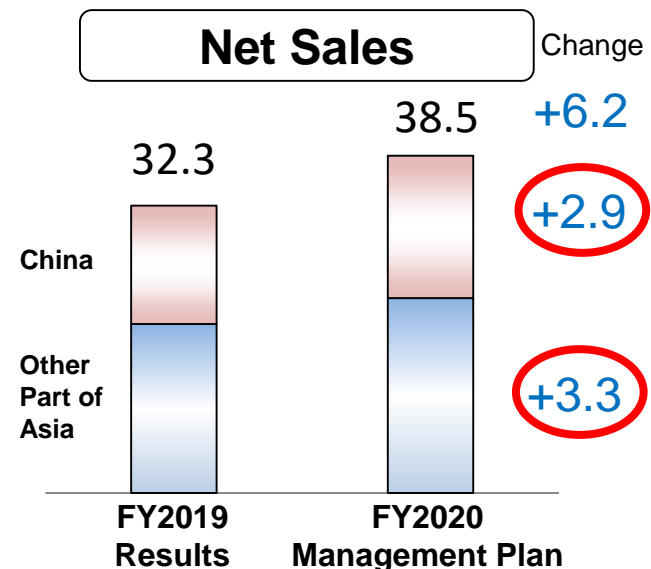
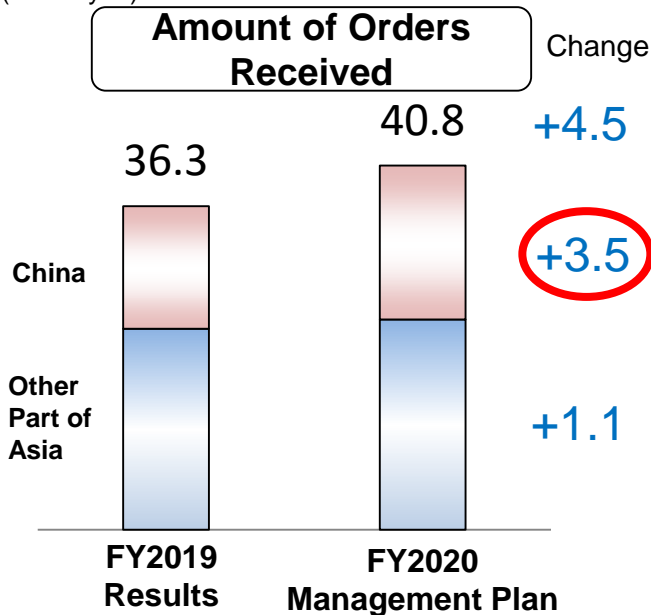
- Initiatives targeting focus areas in domestic plant operations
- Strengthening of constitution of component businesses
- Expansion of information solutions business through enhanced Group coordination

## <Social Solutions>

- Growth of global businesses through differentiated products (railcar, vessel systems)

# Growth of Overseas Operations Centered on Asia and Other Parts of China

(Billion yen)



## Major Measures

### Asia

- **India: Enhancement of competitiveness in component and systems businesses**
- Growth of system projects using sales channels of FCAC and FGEM and production equipment bundles for steel and cement plants

### China

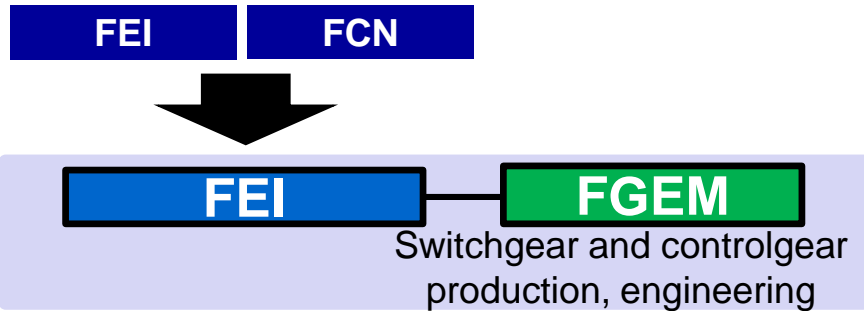
- Exploration of target industries to incorporate internal demand
- Acquisition of system orders in Asian and Middle Eastern markets through collaboration with Shanghai Electric Group

FCAC: Fuji CAC Joint Stock Company; FGEM: Fuji Gemco Private Limited

# India: Enhancement of Competitiveness in Component and Systems Businesses

Strengthening of sales channels and constitution through management integration and establishment of local development and production systems

**Integration of FCN, which boasts strengths pertaining to end users, and FEI which has strengths related to sales distributors**



## Sales Promotions Focused on End Users

### Target Industries



HVAC



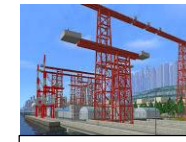
Data centers



Renewable energy



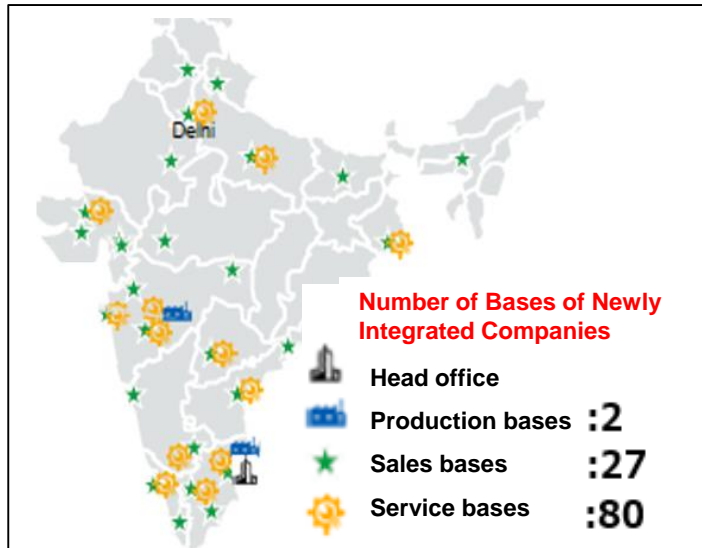
Steel



Harbor cranes

### Major Measures

- Forming of new relationships with major internet data center operators in India through approach combining FCN's sales channels with Fuji Electric's products (numerous negotiations currently underway)
- Commencement of local production of Fuji Electric products (PCSs, measuring instruments)
- Local design and customization of low-voltage inverters
- Expansion of lineup of products handled by sales and service bases (UPSs and Fuji Electric's other products)





Expansion of orders for new plants and equipment upgrades  
in response to fluctuating demand and need for higher efficiency

## Focus Fields

### Steel

- Continuous upgrade and maintenance demand of a certain degree for preventing accidents despite overall trend toward curtailing capital investment

### Chemicals

- Growing demand for automotive materials and other highly functional products
- Increases in capital investment for domestic production of pharmaceuticals

### Waste Incineration

- Increased demand for extending facility lifespans

### Gas

- Ongoing equipment upgrade demand for disaster response purposes



Steel



Chemical



Waste Incineration



Gas

## Major Measures

- Provision of optimal operational systems by effectively using existing assets and combining IoT products
- Enhancement of service proposal and product development capabilities
  - ✓ Augmentation of solution engineer staff
  - ✓ Development of remote monitoring and equipment management support systems

## Fuji Electric's Strengths

**Robust delivery background and wealth of engineering experience**

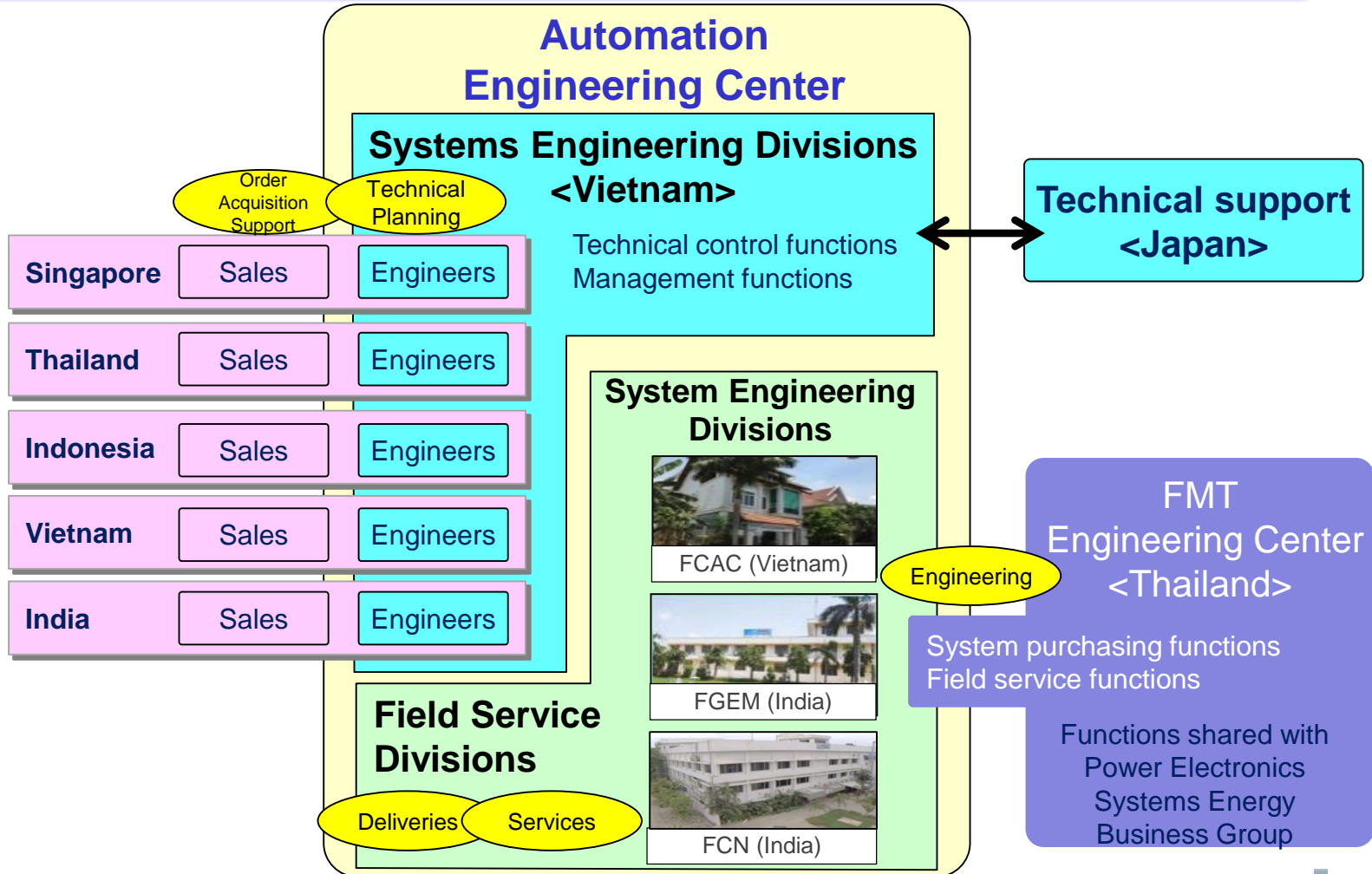
Track Record of Deliveries in Japan

Steel Plants	Waste Incineration Plants	Cement Plants
Metal Bar Compression Equipment*	More than	More than
<b>More than 170 units</b>	<b>300 facilities</b>	<b>11 / 30 Plants</b>

**Competitive components (high reliability)**

\* Equipment used to melt and compress metals to mold and process them into bars

**Development of business structures in Southeast Asia and India contained entirely within their respective regions**  
 Merging of Fuji Electric’s expertise, technologies, and locally rooted design and services



FCAC: Fuji CAC Joint Stock Company; FGEM: Fuji Gemco Private Limited; FCN: Fuji Electric Consul Neowatt Private Limited; FMT: Fuji Electric Manufacturing (Thailand) Co., Ltd.

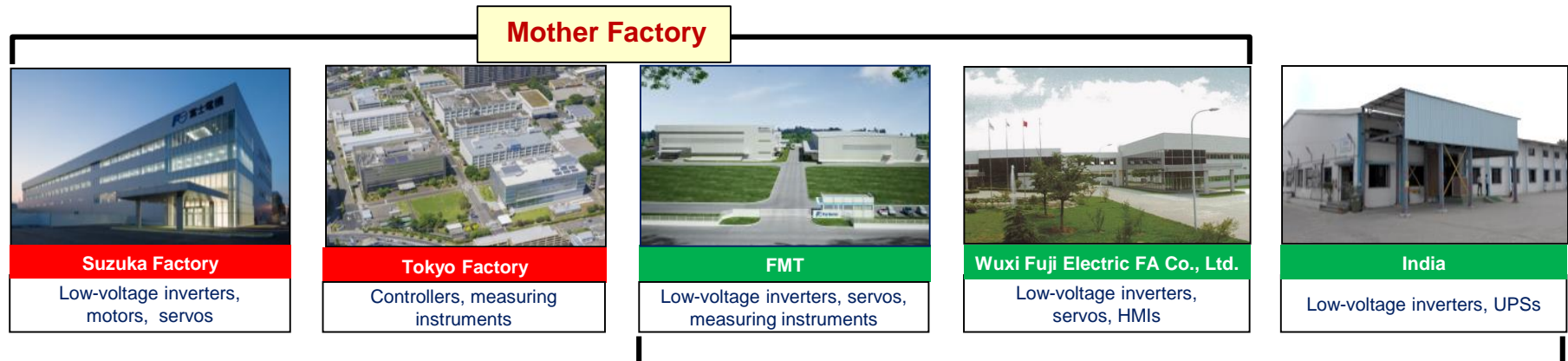
Acceleration of measures for strengthening constitution  
to improve resilience to sales volume fluctuations

## ● Improvement of production efficiency through completion of platform development

- Reduction of material inventories and shortening of production lead times through parts standardization
- Simplification of customization and knockdown production processes at overseas bases through utilization of standardized platforms

## ● Promotion of local production, consumption, and design

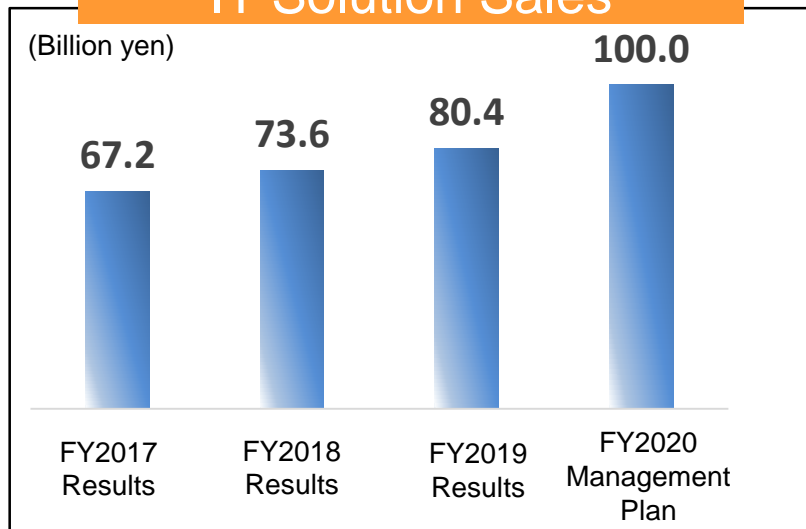
- Facilitation of independence through remote guidance for overseas production bases from mother factories
- Strengthening of local design functions through appointment of custom design team (FMT, Wuxi, India)



Enhancement of local design functions

Expansion of platform business and new solutions through acceleration of adoption of IT and digital technologies

## IT Solution Sales



### <Academic Field>

- **Special demand simulated by GIGA School**

### <Private>

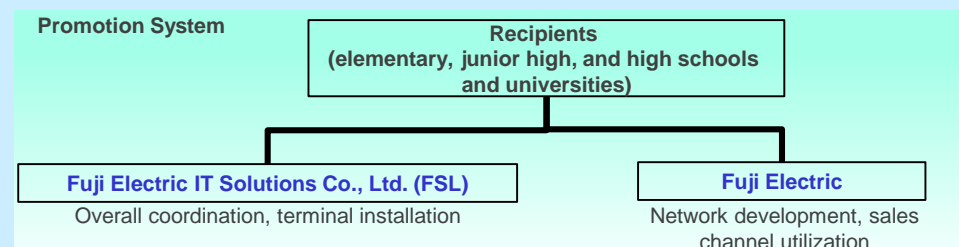
- **Brisk investment in IT infrastructure for introduction of teleworking systems and strengthening and acceleration of security services**

### <Public>

- **Adoption of cloud computing by government agencies (central and municipal governments)**

## Major Measures

- **Expansion of businesses targeting academic fields**
- **Enhancement of coordination and new specification incorporation activities to engage in negotiations related to the GIGA School project and demand to be seen after this project**



- **Expansion of digital solutions by combining **Fuji Electric's product technologies with FSL's sales channels****

- **AI image inspection (food products, medical devices)**
- **Workflow systems (expense calculation, attendance management, etc.)**
- **Shipment tracking (distribution)**



AI image inspection for egg cooking



## Railcars

Orders in line with previous year to be targeted, despite projected decrease in sales due to project delays resulted from the COVID-19 pandemic

### Japan

- Cross-field application of standardized door system platform products
- Ongoing deliveries of products for new high-speed railways

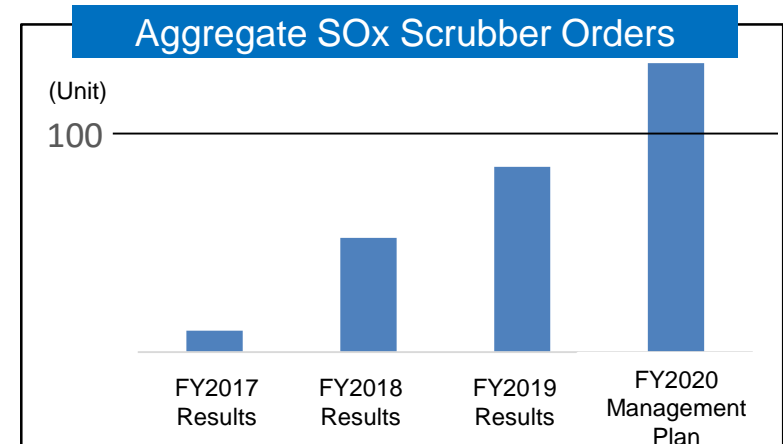
### Overseas

- Acquisition of service and new orders in North America

### Priority Measures

- Drive systems: Expansion of orders for SiC products for high-speed railways
- Door systems: Cost reductions through design standardization (Japan, Americas)
- Promotion of autonomy of overseas bases (FSEMEC)
- Acceleration of efforts to be selected by railway companies driven by strong track record

## Vessel Systems



Ongoing contraction of price gap between conventional heavy fuel oil C and low-sulfur fuel heavy oil compliant with tighter SOx regulations

**Proactive order acquisition activities targeting following customers**

- Customers considering scrubber installation from long-term perspective
- Large-scale vessels with short investment recovery periods (tankers, container ships, etc.)

⇒ Large sizes launched in April 2020

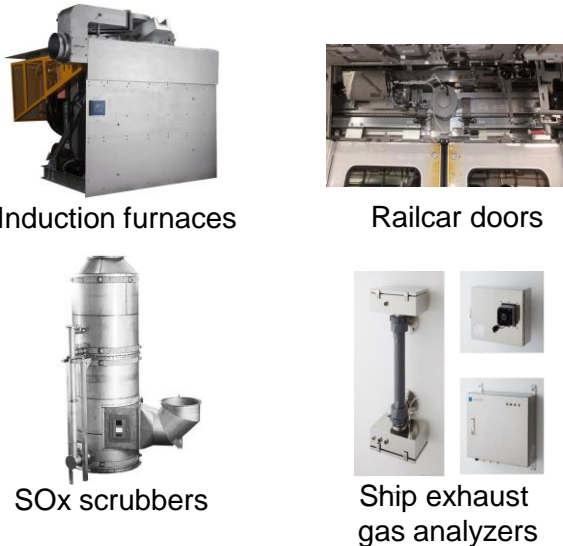
### Priority Measures

- Improvement of scrubber profitability (productivity increases, standardization)
- Establishment of overseas service and engineering bases
- Development of products and promotion of collaboration for expanding ship business scope



## Commercialization of differentiated, competitive components

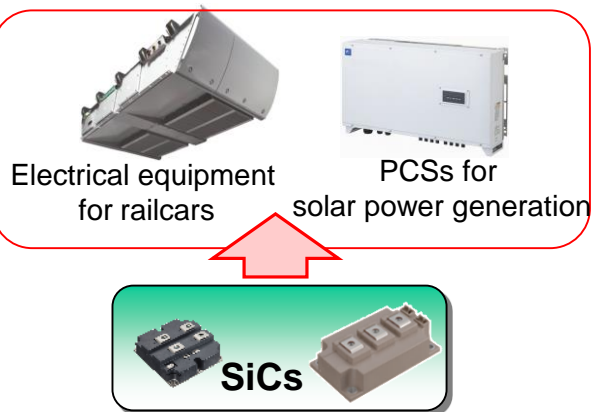
### ● Products for Global Market



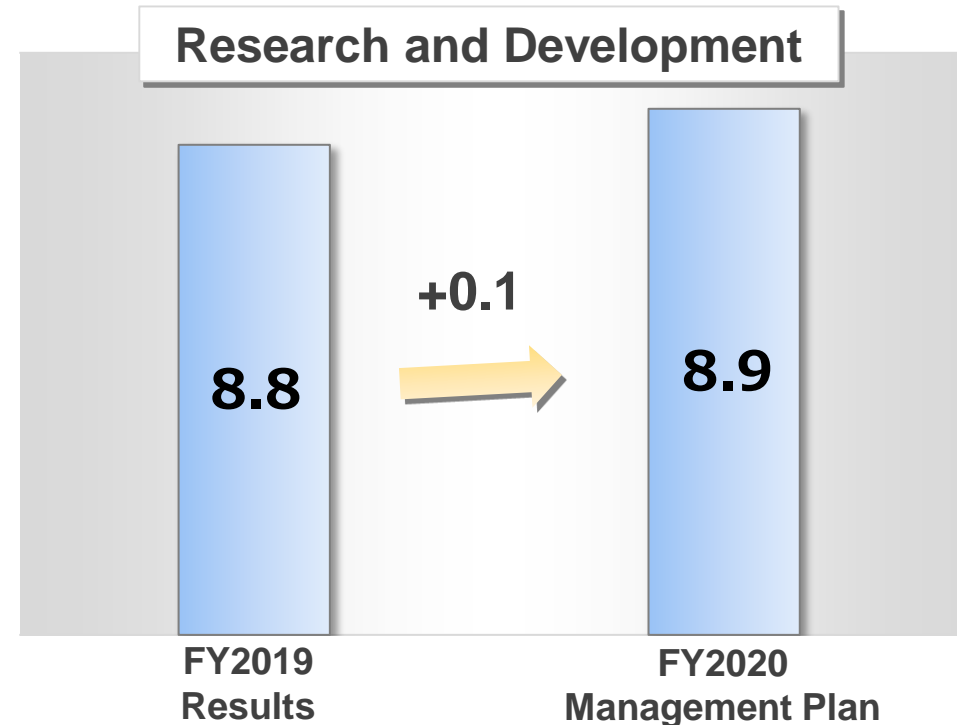
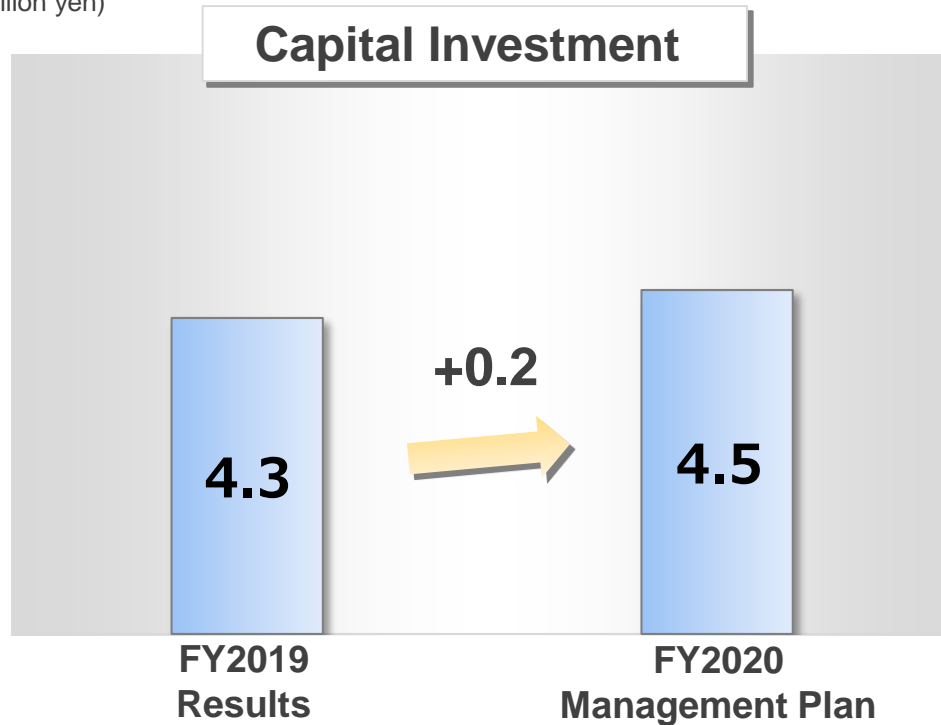
★ Launch (Scheduled commercialization)

Sub segments	Products	Target Regions	FY2019	FY2020	FY2021	FY2022 -23	
Automation Systems	<b>Component platforms</b>	General	Platform development, model deployment				
	<b>PCSs for solar power generation</b> Household consumption applications (string) Power generation applications (central, string)	Japan Asia	★ SiC	Series expansion			
	<b>On-site diagnosis systems</b> Facility abnormality detection / analysis systems <b>MSPC tools for batch processes (industry first)</b>	Japan	★	Next-generation models			
	<b>New induction furnaces</b> Reduced energy consumption during production Lower CO <sub>2</sub> emissions	China		★	Series expansion		
Social Solutions	<b>Electrical equipment for railcars (traction converters)</b> Compact, lightweight Highly reliable	Japan	★ SiC	Next-generation models			
	<b>Railcar doors</b> Platform development	North America		★	Series expansion		
	<b>Ship measuring instruments</b> <b>World's smallest laser-type gas analyzers</b> Water quality measurement tools	Japan Asia Europe		★ Gas analyzers	Water quality measurement tools		★
	<b>SOx scrubbers</b> Large sizes (2L, XL) Hybrid-compatible water circulation systems	Japan Asia Europe		★ Large sizes	Hybrid compatibility		★

### ● SiC Device-Equipped Products



(Billion yen)



- **Forward-looking strategic investment**
  - Next-generation inverter products (compatible with hardware and software platforms)
  - Expansion of standardization and improvement of productivity of switchgears and controlgears in Tokyo Factory (construction of new building)

- **Component platform development**
- **Global control systems (integrated engineering, packages)**
- **Vessel systems**  
Railcars main power converter, doors

Note: The R&D expenditure figures above represent expenditures that have been allocated to segments based on theme and may therefore differ from figures contained in consolidated financial reports.

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