

Power Electronics Systems Industry Business Strategies

May 31, 2021

Hiroshi Tetsutani

Managing Executive Officer

Corporate General Manager

Power Electronics Systems Industry Business Group

Fuji Electric Co., Ltd.

■ Business Overview

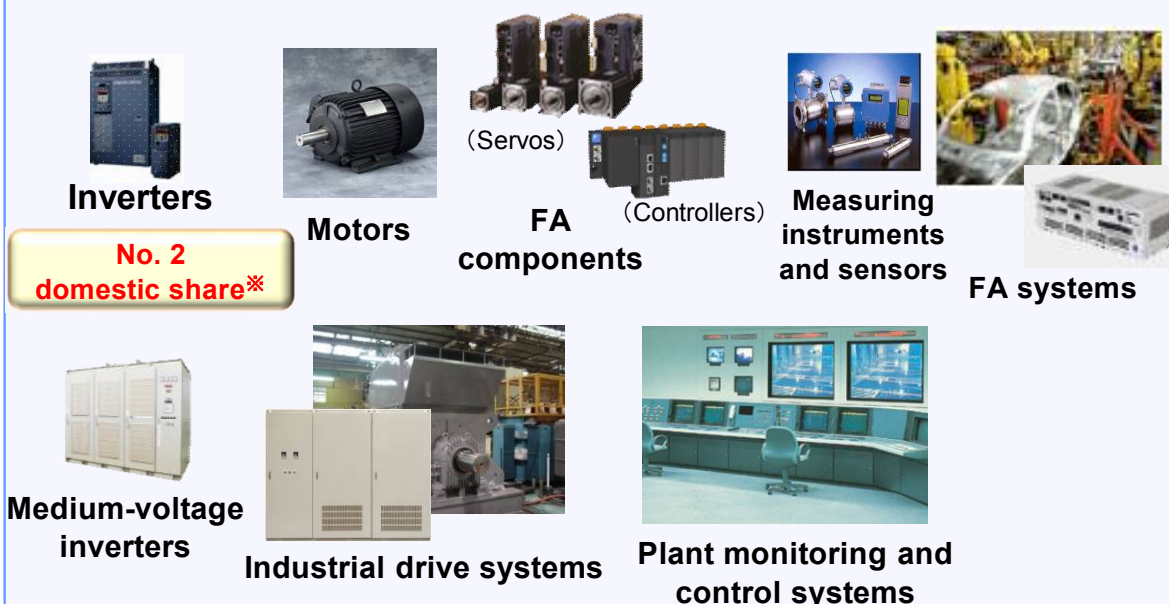
■ FY2021 Management Plan

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

Realizing productivity improvements and energy savings through factory automation and visualization

Automation Systems

42%
of total net sales



Inverters
No. 2 domestic share*

Motors

(Servos)

FA components
(Controllers)

Measuring instruments and sensors

FA systems

Medium-voltage inverters

Industrial drive systems

Plant monitoring and control systems

Main Customers

- Factory Automation**
- Assembly plants (Automobile, electric and electronic)
 - Air conditioner, water treatment facility
 - Elevator
 - Industrial machine

- Process Automation**
- Material plant (steel, nonferrous metal, chemical)
 - Crane

Social Solutions

12%
of total net sales



Transportation systems
(Electrical equipment for railcars)

(Passenger door systems)

SOx scrubbers

Radiation equipment
(Monitoring post)

No.1 domestic share*

- Social Solutions**
- Railway
 - Shipbuilder
 - Electric power company

Equipment Construction

17% of total net sales

Plant installation, air conditioners, construction

Equipment Construction

- Material plant
- Data center
- Solar power generation facility, etc.

IT Solutions









29% of total net sales

Information systems

IT Solutions

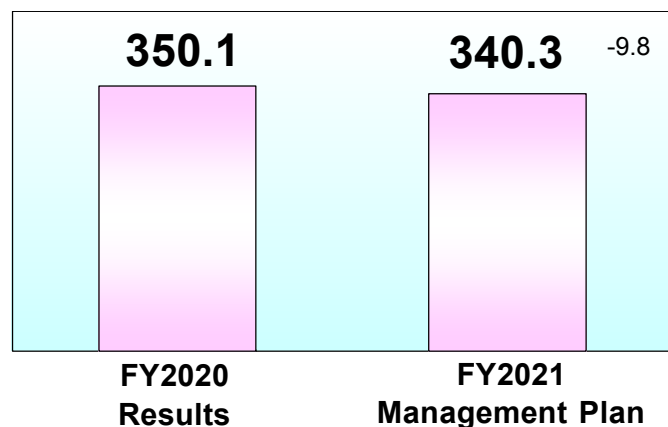
- Autonomous body, school

※ Based on FY2020 performance; Source: Fuji Electric Co., Ltd.
Note: Percentages of total net sales represent FY2020 performance and are calculated before deduction and adjustment for inter-segment sales.

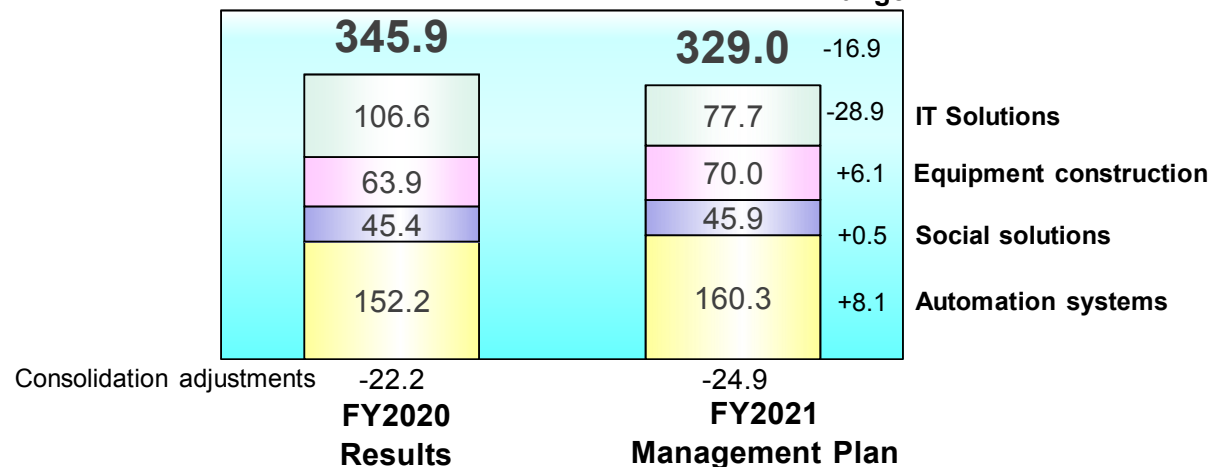
			Market Outlook (FY2021)	
			YOY Change	Details
Automation Systems	Components	Japan		Demand recovery centered on semiconductor, machine tool, and other products performing well overseas exports
		Overseas		Increased private sector demand in China due to government's new infrastructure project, strong demand to continue into FY2021 Different conditions by country in Southeast Asia, but positive growth from FY2020 downturn Late FY2020 recovery trend in India to continue
	Systems	Steel (Japan)		Recovery trend centered on automotive products continuing from late FY2020, cost reductions centered on fixed costs of blast furnace manufacturers and investment plan revisions to persist in FY2021
		Chemical (Japan)		Ongoing investment in battery and electronic material, automotive, life science, and other growth fields along with consistent upgrade demand aimed at improving productivity
		Waste (Japan)		Flat growth in new projects but higher upgrade demand related to aging facilities
		Social Solutions	Railcars (Global)	
	Ships (Global)		Growing price gap between low-sulfur and high-sulfur fuel oil; favorable operating environment as large-scale oil tanker construction approaches peak in period from 2023 to 2025	
IT Solutions	Telecommunications (Japan)		Reduced demand for academic solutions due to dissipation of special demand trend stimulated by GIGA School Pack, but rising demand for digital transformation and security measures accompanying spread of teleworking and new demand associated with establishment of government organization related to digital technologies	

Development of platforms for accomplishing FY2023 medium-term management plan targets, strengthening of business constitution, and acceleration of R&D

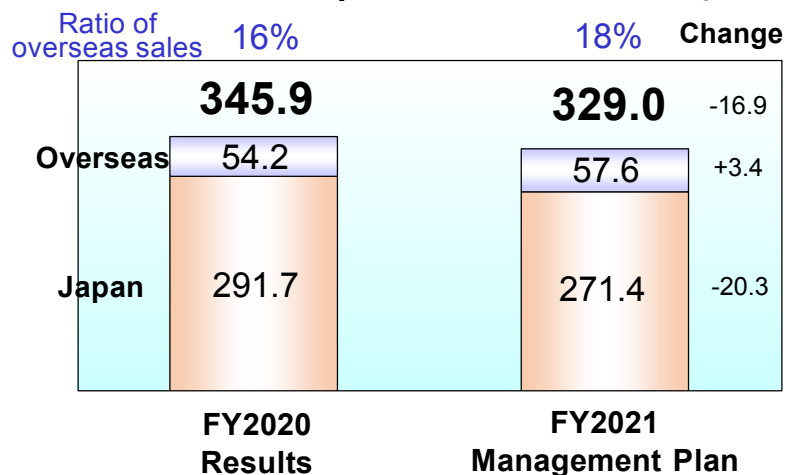
Amount of Orders Received (Billion yen) Change



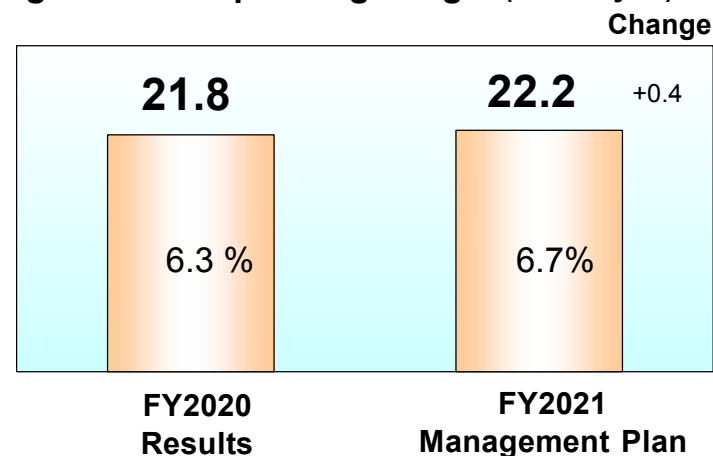
Net Sales (Billion yen) Change



Net Sales in Japan / Overseas (Billion yen)



Operating Income / Operating Margin (Billion yen)



<Automation Systems>

- Growth of overseas operations centered on China, other parts of Asia, and India
- Expansion of domestic plant operations through comprehensive equipment orders
- Strengthening of component business constitution

<Social Solutions>

- Growth of global businesses using differentiated products
(railcars, vessel systems)

<IT Solutions>

- Expansion of information solutions business through enhanced Group coordination

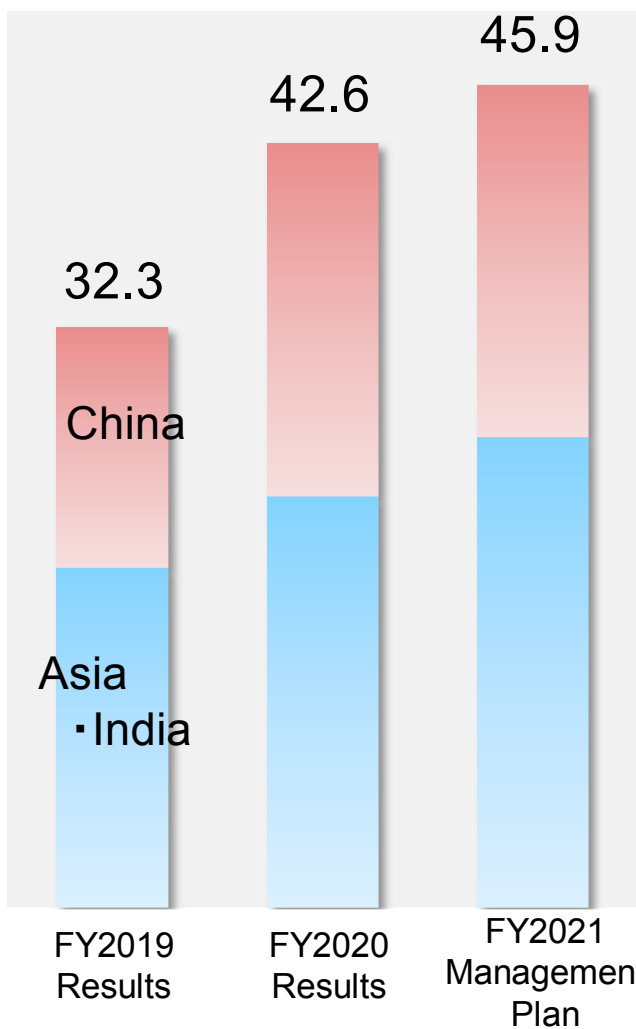
<General>

- Creation of competitive components

<Automation Systems>
Growth of Overseas Operations Centered on China,
Other Parts of Asia, and India

Net Sales

(Billion yen)



Major Measures

China

- Expansion into systems and plant fields using Shanghai Electric Group's sales channels
- Enhancement of competitiveness in component businesses

Asia

- Enhancement of plant system proposals and exploration of new fields through integrated operation of FEV and FCAC

India

- Enhancement of competitiveness in component and systems businesses
- <Bolstering of Chennai Factory and Pune Factory>
<Integration of FEI and FCN>

Expansion of Partnerships in Overseas Plant Businesses

Construction of business structure contained entirely in Southeast Asia
Integration of Fuji Electric expertise and technologies and region-rooted design and services

<Topics>

Establishment of plant business structures in Vietnam

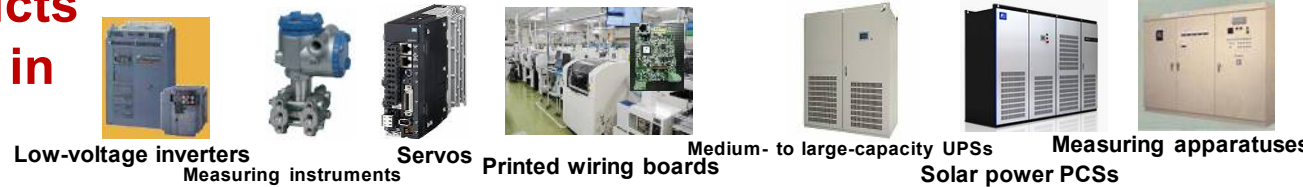


	Focus Areas	Measures
Northern Areas	Cement plants	<ul style="list-style-type: none"> Recruitment of dedicated plant staff Development of wide-area sales system Establishment of engineering and service operation
	Waste treatment plants	
	Systems for Japanese manufacturers	
Central Areas	Harbor cranes	<ul style="list-style-type: none"> System proposals Accommodation of local services
Southern Areas	Food and beverage distribution	<ul style="list-style-type: none"> Bolstering of standalone component offerings Expansion of projects handled by FEV and FFE&C Engineering, service, and quality education Participation in product planning and development
	Electronics	
	Other manufacturing fields, distribution (factories, warehouses)	

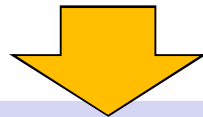
FCAC: Fuji CAC Joint Stock Company; FEV: Fuji Electric Vietnam Co., Ltd.; FFE&C: Fuji Furukawa Engineering & Construction Co., Ltd

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

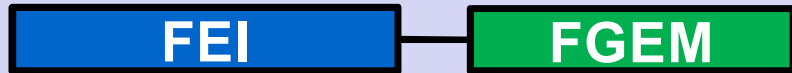
Sales Promotion Via Local Production and New Product Launches



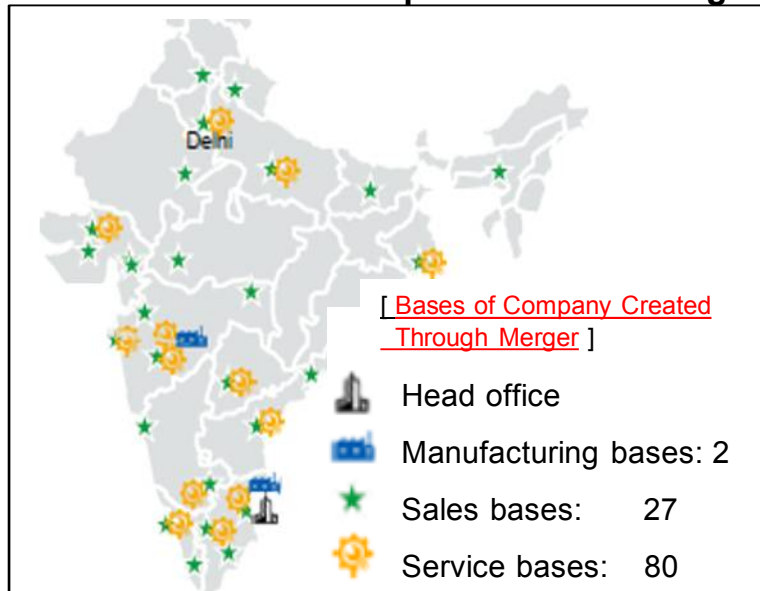
Merger of FCN, with strength in products for end users, and FEI, with strength in distributor sales channels



Merger in August 2021



Switchgear and controlgear production and engineering



Major Measures

Promotion of united One Fuji and local design, production, and consumption

- **Low-voltage inverters for new fields (HVAC, textiles, water treatment)**
Enhancement of cost competitiveness through local design, local procurement, and production
- **Participation in steel, harbor crane, and onshore power supply fields**
- **Locally produced PCSs for solar power market**
- **Development of UPS for Indian internet data center market**

<Automation Systems> Expansion of Domestic Plant Operations through Comprehensive Equipment Orders

Growth of orders and improvement of engineering quality by accommodating comprehensive equipment orders in response to changing customer needs

Target Customer Industries

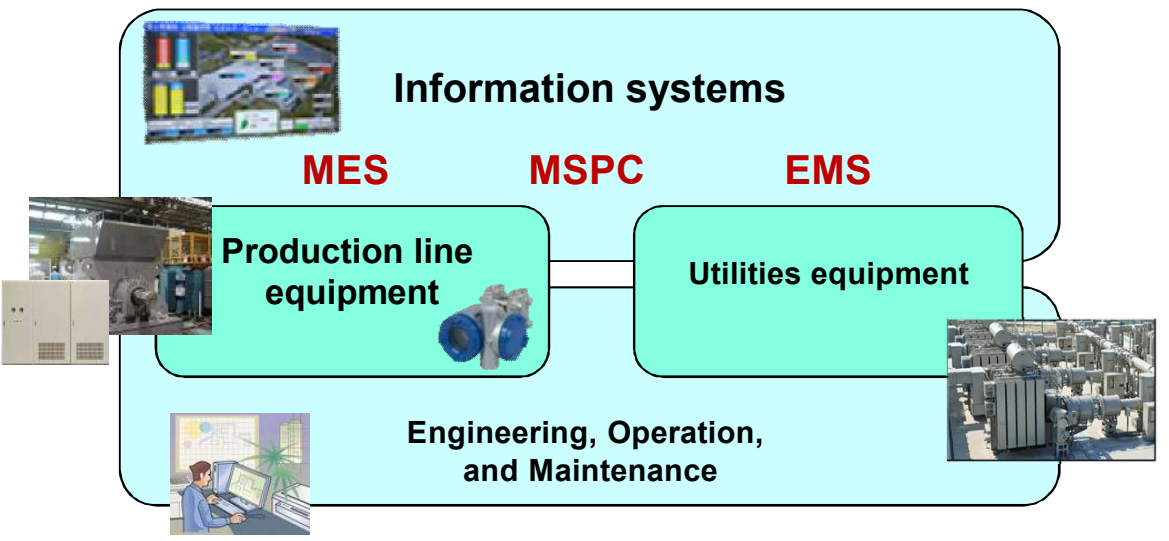
<p>《Priority》</p> <ul style="list-style-type: none"> ● Steel ● Casting ● Waste treatment, ceramics 	<p>《New》</p> <ul style="list-style-type: none"> ● Chemicals ● Gas ● Pharmaceuticals, food products
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Major Needs

<ul style="list-style-type: none"> ● Facility consolidation ● Labor shortage response ● Increased information system investment 	<ul style="list-style-type: none"> ● Measures for addressing aging facilities ● Operating cost reductions ● Security augmentation
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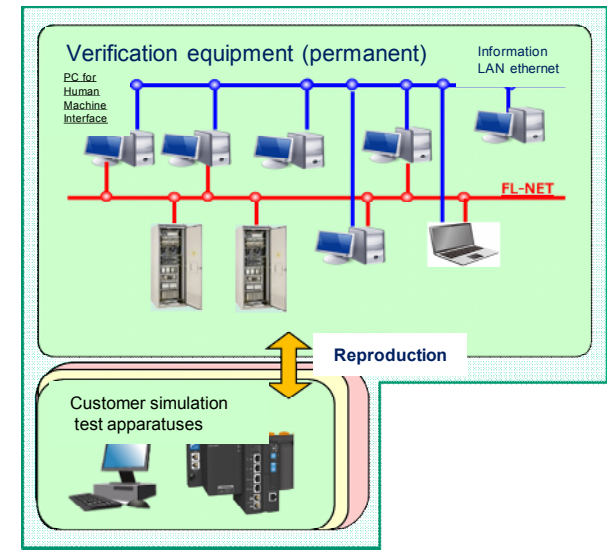
【Comprehensive Orders】

Proposal of comprehensive solutions encompassing electric machinery, measuring instruments, information systems, engineering, and services



【Improvement of Engineering Quality】

Increasing system complexity and diversity
⇒ Improvement of engineering quality



Improvement of profitability through platform development

【Development of Low-Voltage Inverter Platforms】

【Current Series】

Series	MEGA	Eco	Lift	Mini	Ace	VP
Type	High-performance, multipurpose	Fan pump	Elevator	Miniature, multipurpose	Multipurpose	Fan pump
No. of models	36	37	13	5	31	

No. of models※
Total: 122

【Issues】

- Rising development and production costs due to development of multiple models
- Higher numbers of components and procured articles
- Low production efficiency at production bases



New-MEGA Series
(Launched in March 2021)

【Next-Generation Series】

Series	N-MEGA	N-Eco	N-Lift	N-Mini	N-Ace	N-VP
No. of models	35			14		
	Standard platform			Compact platform		

No. of models
Total: 49
Approx. 60% reduction

【Benefits】

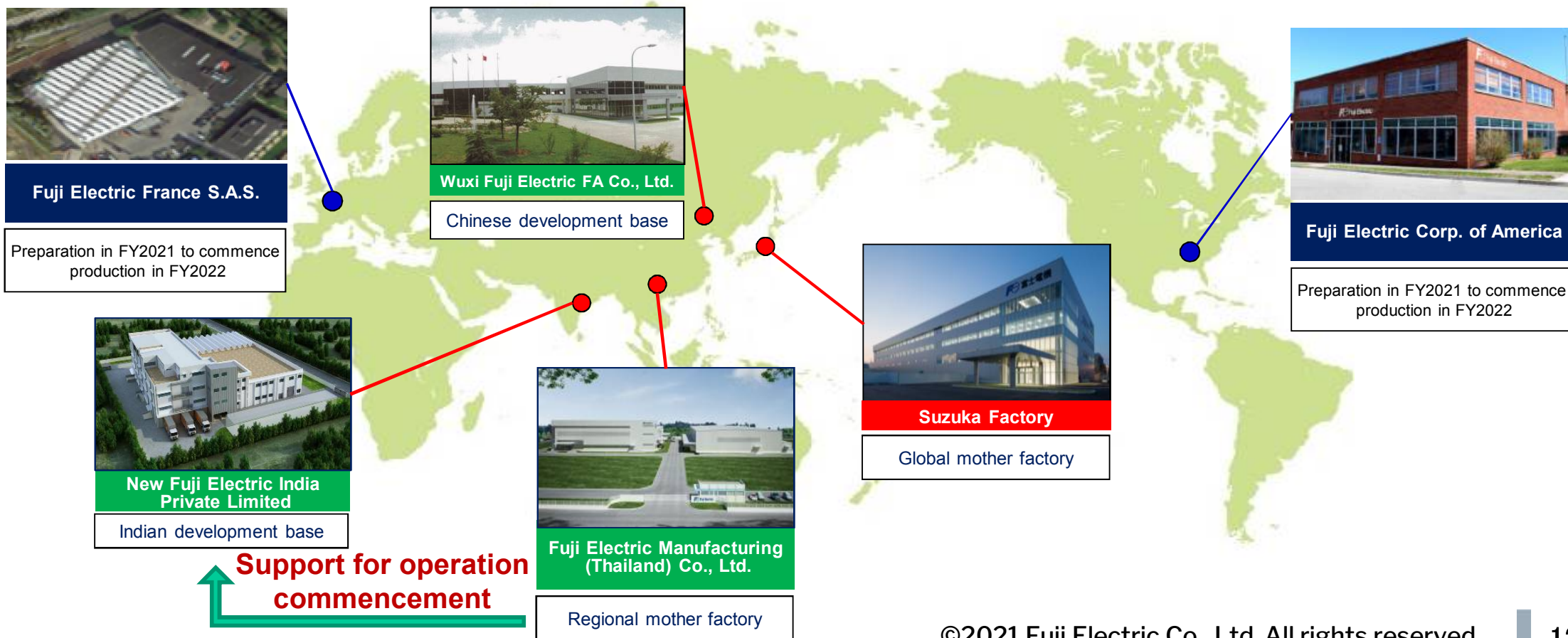
- Reduced Costs and Improved Productivity**
- Downsized material inventories due to component standardization
 - Lower procurement and production costs
 - Simplification of customization and knockdown production procedures at overseas bases

* No. of models = Total number of inverter cases (frames) and major circuit variations

Acceleration of overseas business expansion through local design, production, and consumption

● Development of Six-Base Global Low-Voltage Inverter Production System

- Swift development of six-base system and benefit realization through platform utilization
- Support for commencement of operation in India, Europe, and United States from local Thai employees (FMT)
- Reinforcement of local design functions (FMT, Wuxi, India), reduction of costs, improvement of quality, and accommodation of customization

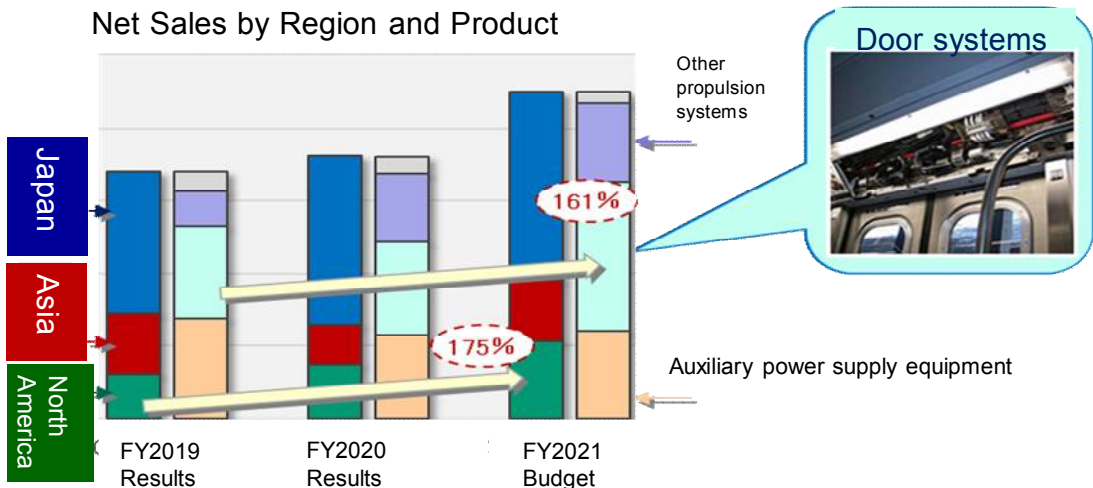


< Social Solutions > Growth of Global Businesses Using Differentiated Products (Railcars, Vessel Systems)

Railcars

Target year-on-year growth, despite risk of customers postponing projects due to COVID-19 pandemic

Net Sales by Region and Product

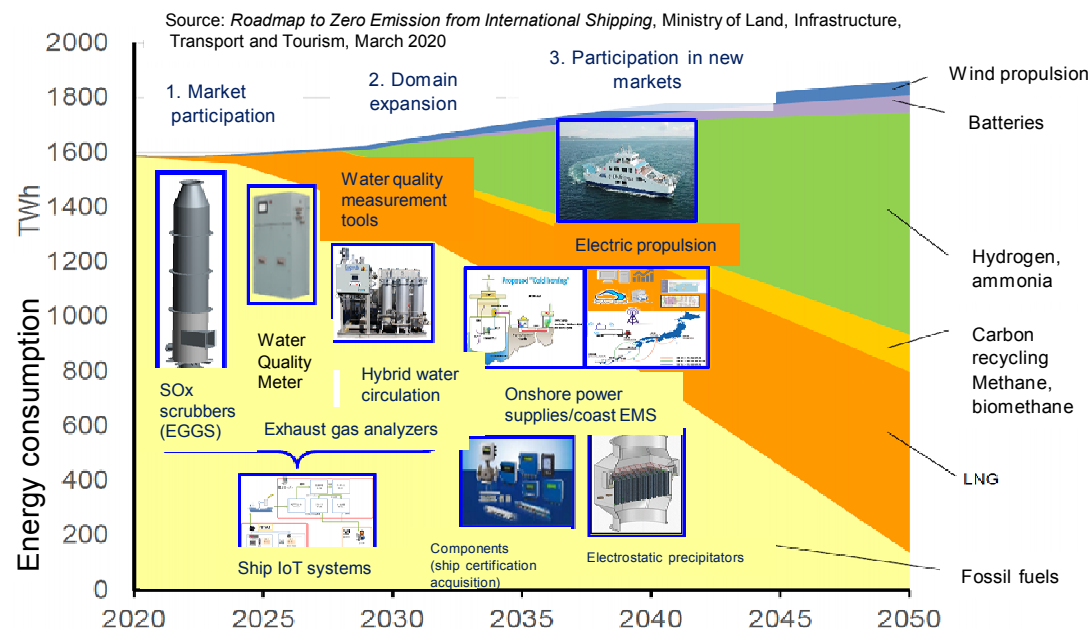


Develop platforms for growing railcar business and promoting autonomous operation at FSEMEC (North America)



- Bolstering of systems for mass production
- Reinforcement of design and engineering functions

Vessel Systems

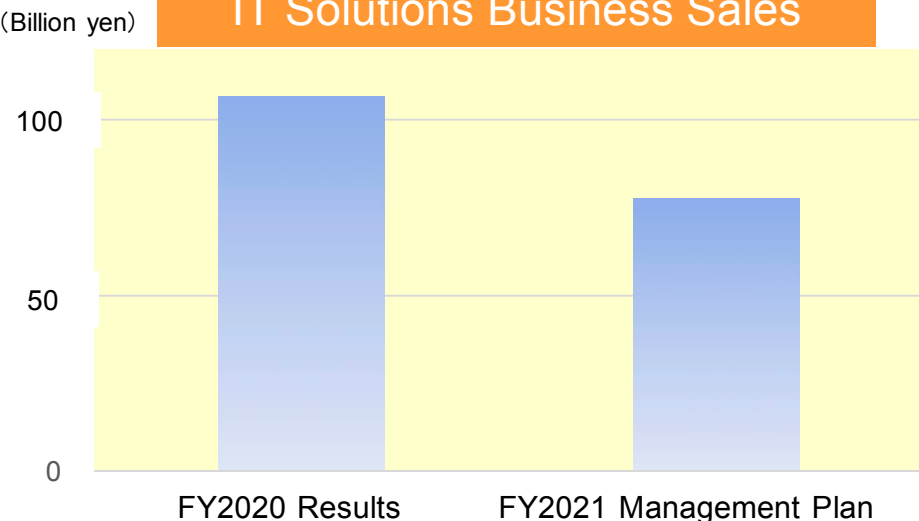


Expansion into new areas of ship and harbor field entered into via SOx scrubbers

- Consistent SOx scrubber demand up until 2030
⇒ Expansion of business domain centered on scrubber systems to grow sales
- Shift to alternative fuel sources beginning in 2025
⇒ Introduction of new products for accommodating growing electric propulsion demand

Acceleration of IT adoption and digitization to grow platform businesses and new solutions

IT Solutions Business Sales



◆ Acceleration of digital transformation initiatives
(Corporate Marketing Headquarters)

◆ Launch of academic cloud systems
(for post-GIGA School Pack era)

◆ Promotion of AI and IoT solutions

Solutions Packages

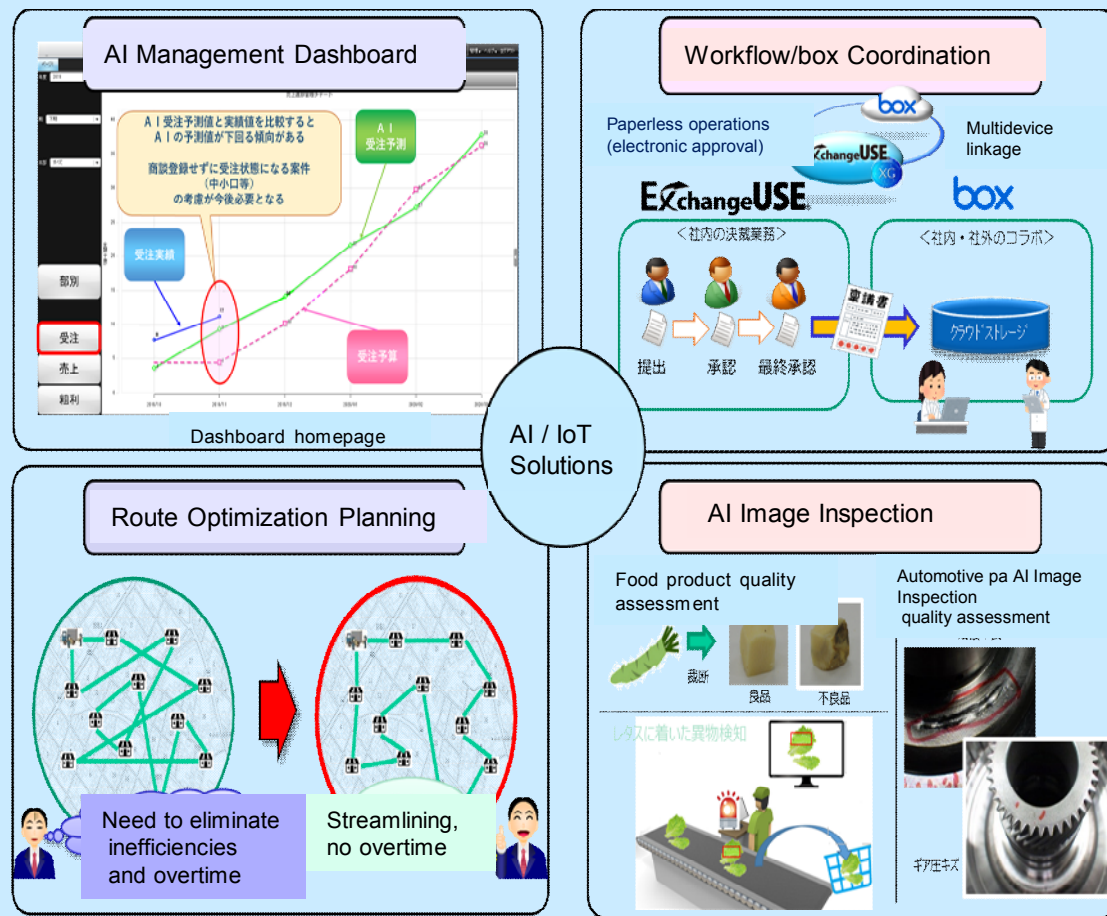
- Compliance with Act concerning Preservation of Electronic Books, electronic contracts (ExchangeUSE)
- New offerings (CSStream CW)

Digital Transformation Solutions

- Security, process management, flow management (Factory IoT)
- AI image inspection, AI optimization solutions

Major Measures

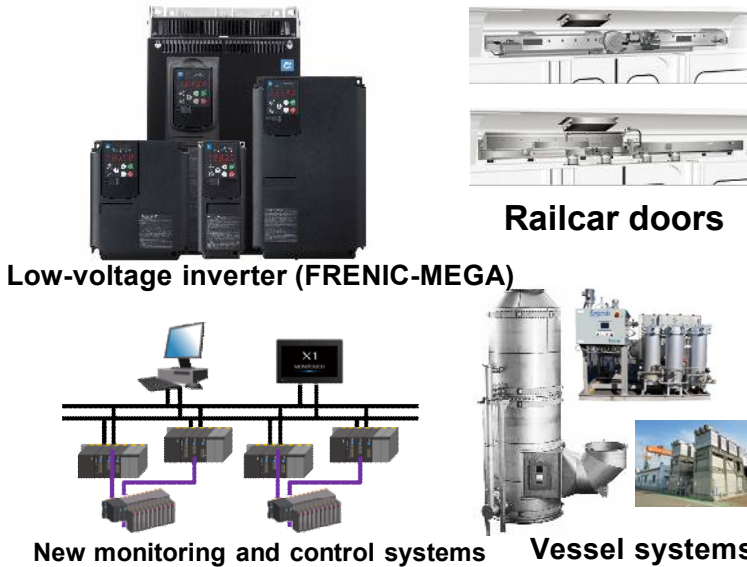
Promotion of AI and IoT Solution Sales



Creation of Competitive Components

Commercialization of competitive components in differentiated product lines

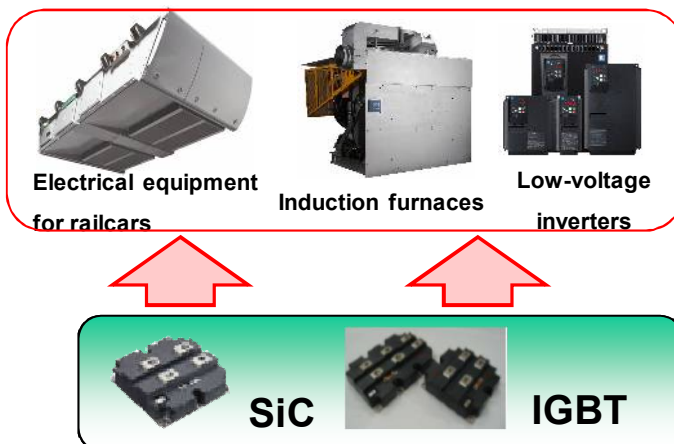
● Products for Global Market



★Launch (Scheduled commercialization)

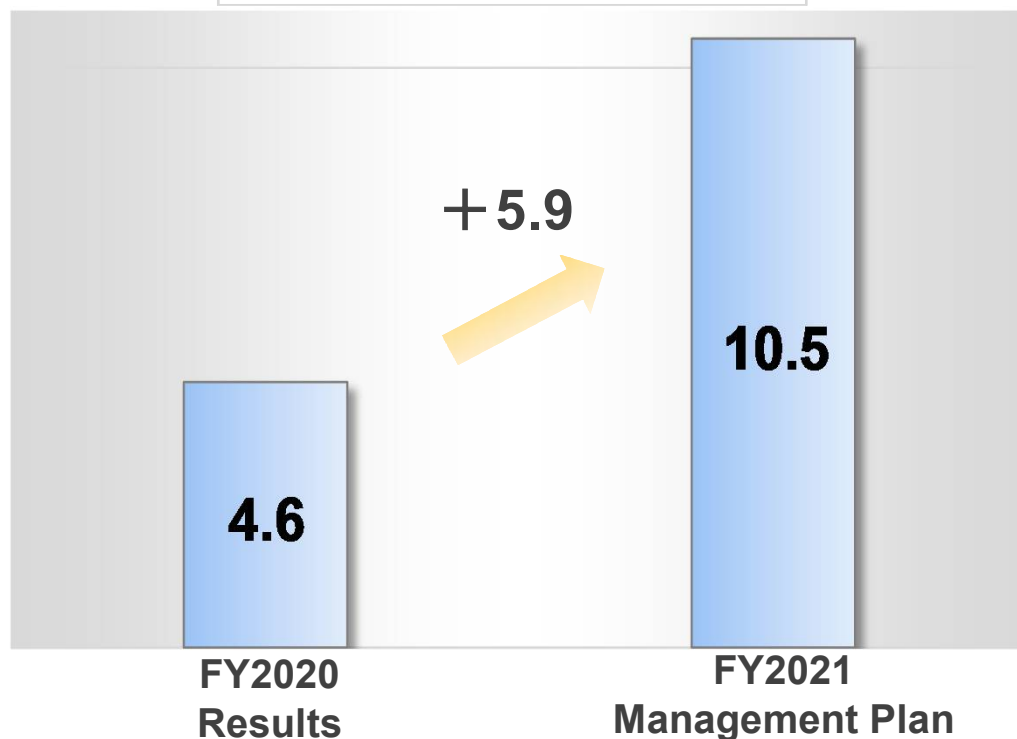
Subsegment	Product	Target Regions	FY2020	FY2021	FY2022	FY2023
Automation Systems	Low-voltage inverters • Component platform development, model deployment	Japan China Asia Europe North America	Platform development, model deployment			
	New monitoring and control systems • Engineering function enhancement • Increased application as global specifications	Japan Southeast Asia India	Global compatibility for control systems			
	New induction furnaces • Reduced energy consumption during production • Lower CO2 emissions	China	★ Large capacity	Energy conservation monitoring systems	★	
Social Solutions	Electrical equipment for railcars (traction converters) • Compact, lightweight • Highly reliable	Japan	Next-generation models			
	Railcar door standardization • FCPM in Japan, linear in North America	Japan North America	Series expansion			
	Vessel systems • Large-capacity SOx scrubbers (2L, XL) • Hybrid-compatible water circulation systems • Onshore harbor power supply systems • Electric propulsion systems	Japan Asia Europe	SOx scrubbers	★ Large capacity		
			Water circulation systems	★	★ PWM converter-type	
			Onshore power supply systems		★ UPS-type	
			Electric propulsion systems	★ Transformers		★ Electric motors

● Fuji Electric Device-Equipped Products



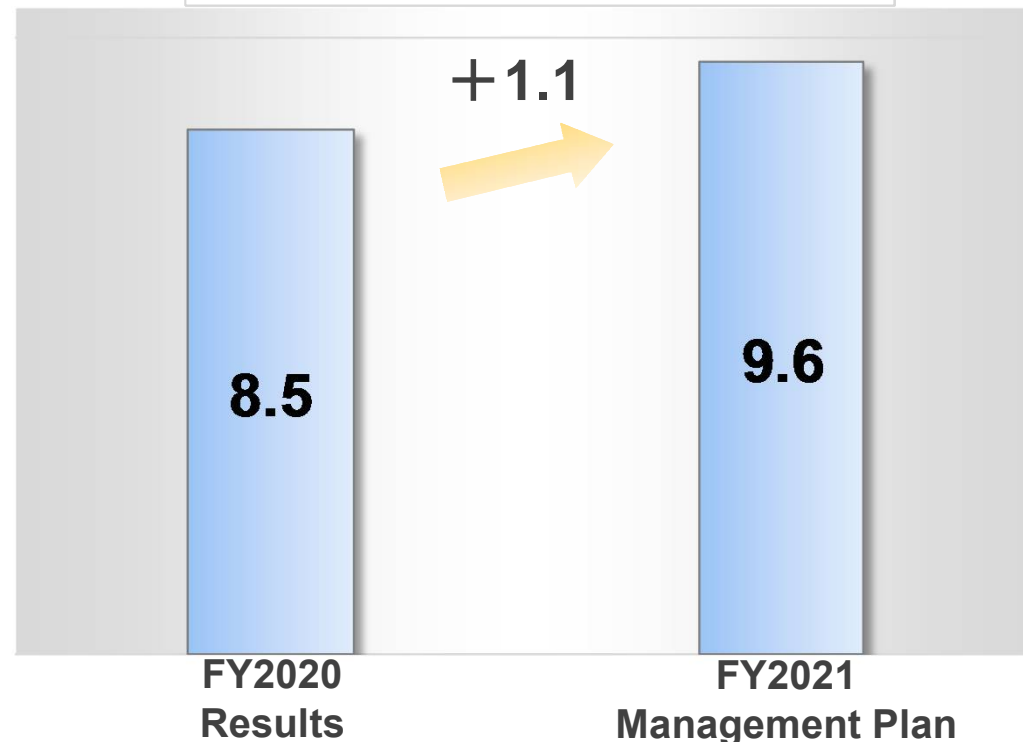
(Billion yen)

Capital Investment



- **Forward-looking strategic investment**
 - Tokyo Factory (construction of new building)
Improvement of productivity and engineering quality
 - Suzuka Factory (construction of new building)
Distribution rationalization
 - India (factory augmentation)
Expansion of range of products

Research and Development



- **Component platform development**
- **Global drive / control systems**
- **Expansion of ship system product lineup**
- **Railcar systems (SiC)**
- **Operation and maintenance services**

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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