

Fuji Electric R&D Strategy

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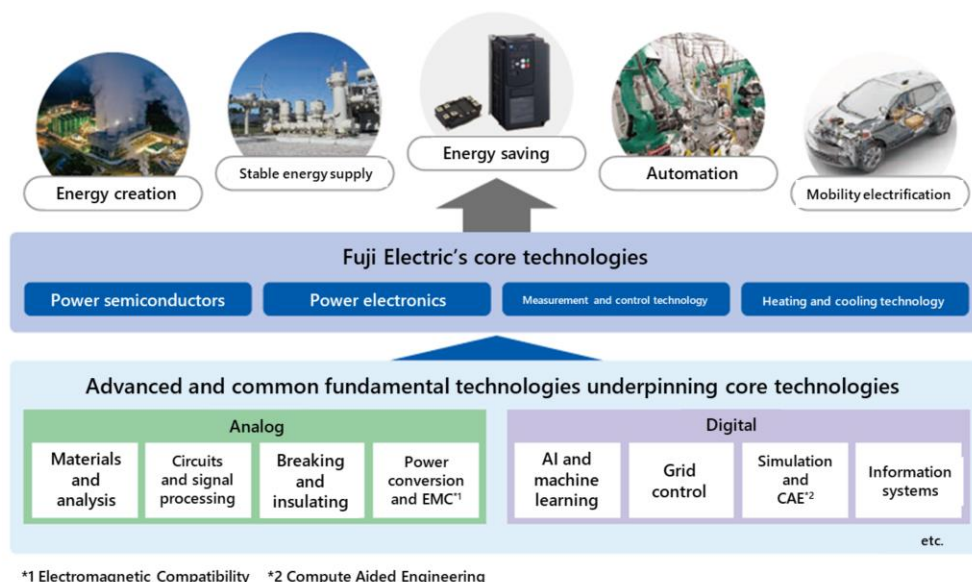
July 11th, 2024

I'm Kazuya Nakayama in charge of Corporate R&D Headquarters. We have many participants today. Thank you very much. I will explain Fuji Electric R&D Strategy.

We announced FY2026 Medium-Term Management Plan in May this year. Although we briefly touched upon R&D in the plan, I'll explain the specific strategy once again today.

Research and Development at Fuji Electric

Creation of customer value and resolution of social issues by integrating power semiconductor and power electronics technologies with advanced digital technologies

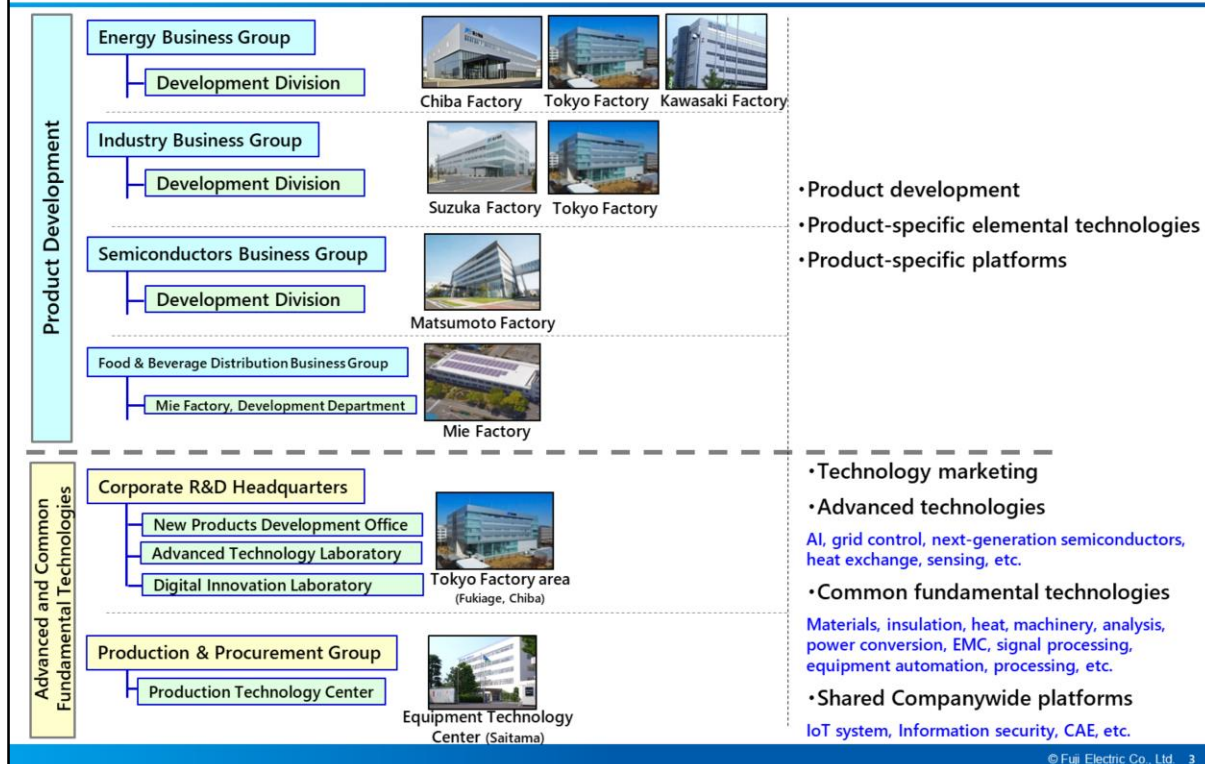


*1 Electromagnetic Compatibility *2 Compute Aided Engineering

The basic policy of Research and Development at Fuji Electric is creation of customer value and resolution of social issues by integrating power semiconductor and power electronics technologies with advanced digital technologies.

Specifically, we contribute to provision of components, systems and solutions for energy creation, stable energy supply, energy saving, automation and mobility electrification by combining advanced and common fundamental technologies underpinning core technologies based on Fuji Electric's core technologies such as power semiconductors, power electronics, measurement and control technology, and heating cooling technology.

R&D Organization and Bases



Let me explain R&D organization and bases of Fuji Electric.

For product development roles, we established Development Division or Development Department in each Business Group to advance product development and development of product-specific elemental technologies and product-specific platforms.

Each Group play a role in development of advanced technologies and common fundamental technologies.

New Products Development Office and two laboratories in Corporate R&D Headquarters and Production Technology Center in Production & Procurement Group engage in development of advanced technologies, common fundamental technologies and shared companywide platforms as well as technology marketing.

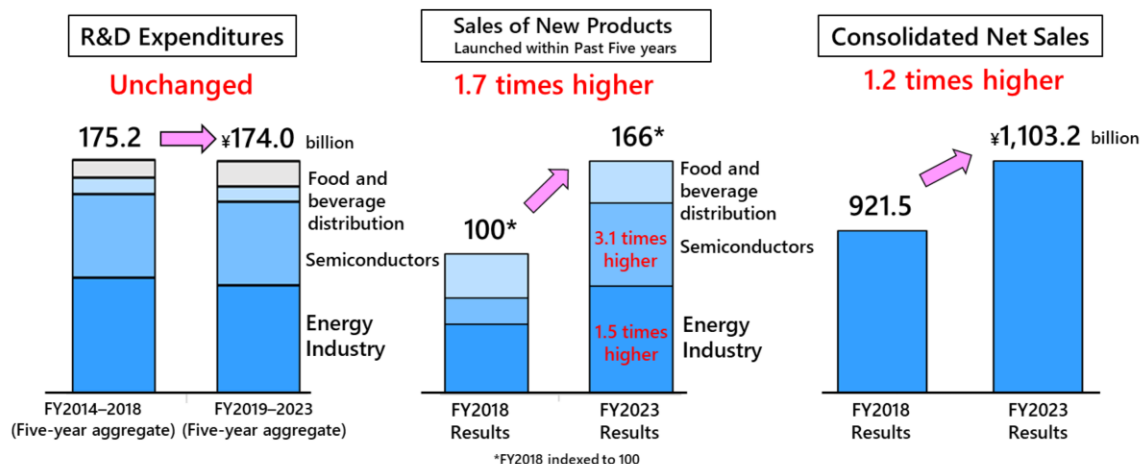
Overview of Research and Development Under FY2023 Medium-Term Management Plan (FY2019–2023)

R&D Policy

Promotion of efficient R&D to achieve sales and profit growth while creating customer value

Major Measures

- Launch of new products based on business strategies
- Acceleration of development of new products for overseas markets
- Enhancement of technology developments for addressing new social issues and creating customer value



Before moving on to R&D strategy, I'll give you an overview of research and development under the previous Medium-Term Management Plan from FY2019 to 2023.

We set R&D policy, promotion of efficient R&D to achieve sales and profit growth while creating customer value and carried out measures including launch of new products, acceleration of development of new products for overseas markets and enhancement of technology developments for addressing new social issues.

Five-year aggregate R&D expenditures from FY2014 was 175.2 billion yen and five-year aggregate under the previous Medium-Term Management Plan was almost flat at 174 billion yen. Despite various business environments and the impacts of COVID-19 pandemic, we promoted necessary development through higher efficiency and others.















Energy, Industry and Semiconductors drove significant growth in sales of new products as we invested intensively in these, in particular.

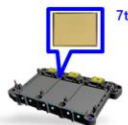





Consolidate net sales came to 1 trillion 103.2 billion yen. We evaluate sales of new products as a driving force.

We will continue to engage R&D by setting sales of new products as an important KPI.

Overview of Research and Development Under FY2023 Medium-Term Management Plan (FY2019–2023)

Introduction of industry-first and industry-leading products through development
focused on customer value

Energy	Industry	Food and beverage distribution
 Large-capacity geothermal power generation plants Turbine with world's largest single-unit capacity	 PCSs for 1,500 V DC storage batteries Industry-leading efficiency	 Sustainable vending machines Industry-leading energy efficiency
 FR3 oil-immersed transformers World's smallest FR3 product	 Industrial inverter Industry-leading single-unit capacity	 Frozen food vending machines Industry-leading energy efficiency and stocking capacity
 SC-NEXT magnetic switches Among world's most compact	 S-Flow compact ultrasonic flowmeter Industry-leading accuracy	 Convenience store coffee machines Industry's first cup identification function
 7th-generation RC-IGBTs Compact, low	 OnePackEdge data collection system Industry's fastest data collection capabilities	 Flat ice cream cases Industry-leading energy efficiency Industry's first to use low GWP coolant
 UP57500WX large-capacity UPSs Among world's most space-efficient		
 Φ16 command switches Among world's highest optical uniformity		

Semiconductors	Advanced technologies
 M660 automotive module Industry-leading power cycle resistance	 Exhaust heat recovery heat pump Industry-leading efficiency
 7th-generation industrial IGBTs Industry-leading output current	 120kW demonstration equipment Hydrogen fuel cells Industry-leading lifespan
 SiC MOSFET World's lowest on resistance	 Operating site diagnosis systems One of the industry's first AI explanation functions

We introduced industry-first and industry-leading products through development focused on customer value in five years from FY2019 to 2023. These shown here are typical examples and we launched approximately 200 new products in the past five years.

FY2026 Medium-Term Management Plan R&D Strategy **(FY2024～FY2026)**

Operating Environment Changes

Accelerated decarbonization trend

Goals of halving emissions by 2030 and achieving carbon neutrality by 2050

Evolution of digital technologies

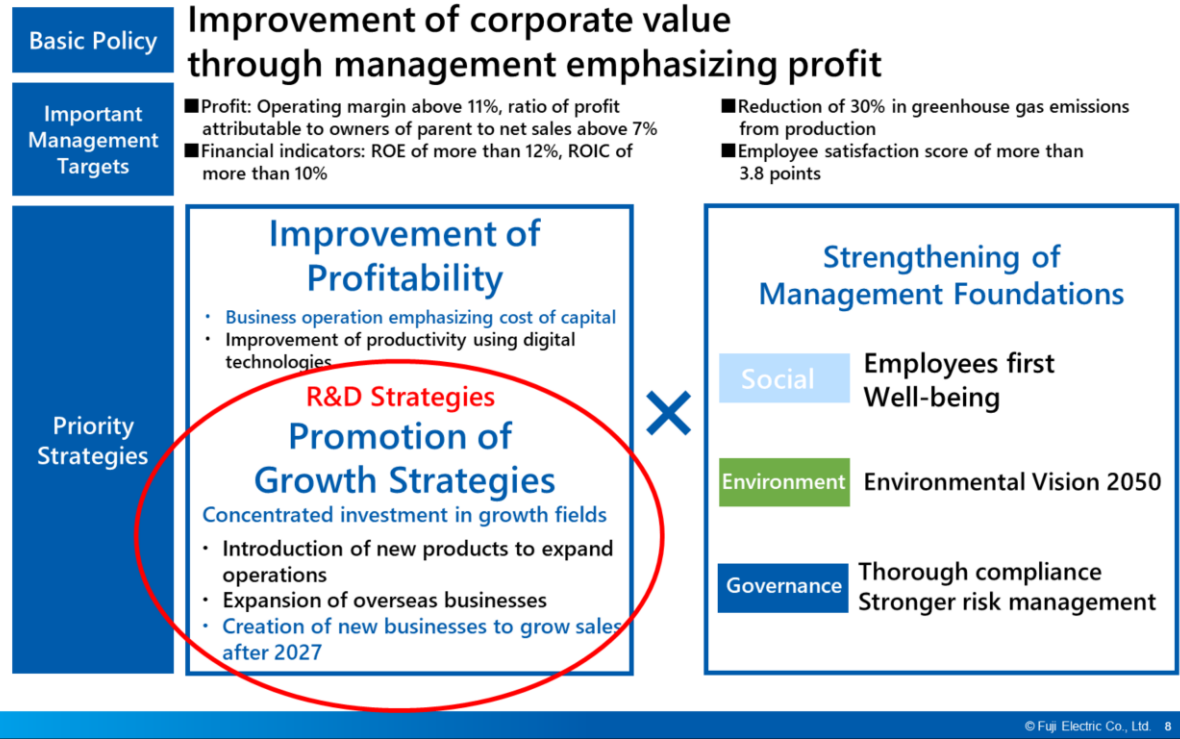
Rapid spread of use of digital technologies to improve productivity and create value

Promotion of circular economies

Fuji Electric's Opportunities

- 1 Growth of green transformation market
- 2 Promotion of new value and business models to facilitate customers' digital transformation
- 3 Massive improvements to productivity through digital transformation

Next, I will explain R&D strategy, starting with operating environment changes surrounding Fuji Electric and Fuji Electric's opportunities. As for operating environment changes, accelerated decarbonization trend, evolution of digital technologies and promotion of circular economies are recognized. In such changes, we recognize growth of green transformation market, promotion of new value and business models to facilitate customers' digital transformation and massive improvements to productivity through digital transformation will be our new business opportunities.

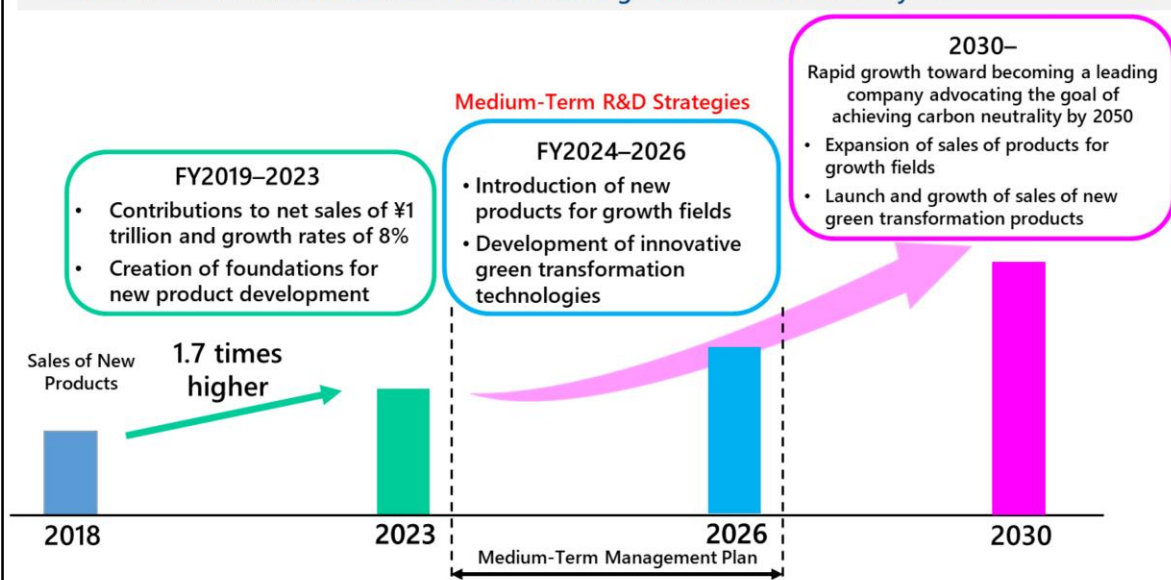


This slide shows an excerpt from the material of Medium-Term-Management Plan announced in May. The keys for promotion of growth strategies include concentrated investment in growth fields, introduction of new products and expansion of overseas businesses and creation of new businesses to grow sales after FY2027.

R&D Strategies of FY2026 Medium-Term Management Plan (Goals Leading Up to 2030)

Research and development aimed at ongoing creation of new products for growth fields (green transformation, digital transformation, global markets)

- Growth of domestic and overseas operations through introduction of new products
- Creation of new businesses to contribute to sales growth in FY2027 and beyond



Under the previous Medium-Term Management plan, sales of new products came to 1.7 times higher and contributed to net sales of 1 trillion yen with operating profit ratio of 8%. Under FY2026 Medium-Term Management Plan, in research and development, we aim at ongoing creation of new products for growth fields such as green transformation, digital transformation and global markets and promote introduction of new products and development of innovative green transformation technologies.

With our hope for rapid growth toward becoming a leading company advocating the goal of achieving carbon neutrality in 2030 and beyond, we would like to advance research and development to promote expansion of sales of new products for growth fields and launch of new green transformation products.

R&D Policy

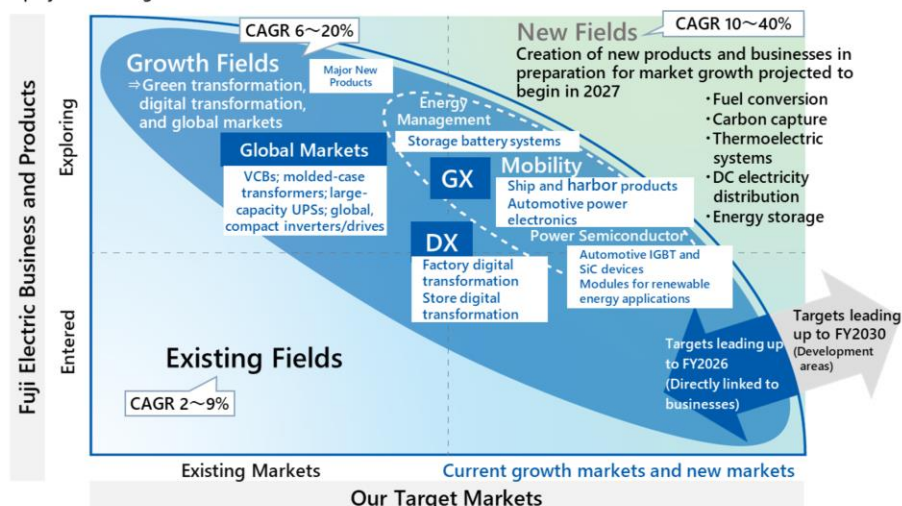
Contribute to ongoing growth through research and development for supporting businesses and shaping the future

Major Measures

Existing fields: Advance next-generation development projects, bolster competitiveness, and enhance platform development to help continue and grow existing businesses

Growth fields: Launch green transformation, digital transformation, and global products by 2026 to propel growth strategies

New fields: Acquire new green transformation technologies and create new products in preparation for market growth projected to begin in 2030



I will explain portfolio of R&D strategies.

R&D policy is to contribute to ongoing growth through research and development for supporting businesses and shaping the future.

I will explain the three points of major measures described here in detail with figure. Existing markets are shown in the left half and current growth markets and new markets are shown in the right half. The lower half indicates markets we already entered and the upper half indicates markets we are exploring or is new to us. The figure is shown in four quadrants.

CAGR is expected to be 2 to 9% in the markets of existing fields on the bottom left. In these fields, we will advance next-generation development projects, bolster competitiveness and enhance platform development to help continue and grow existing businesses. This is positioned as baseload.

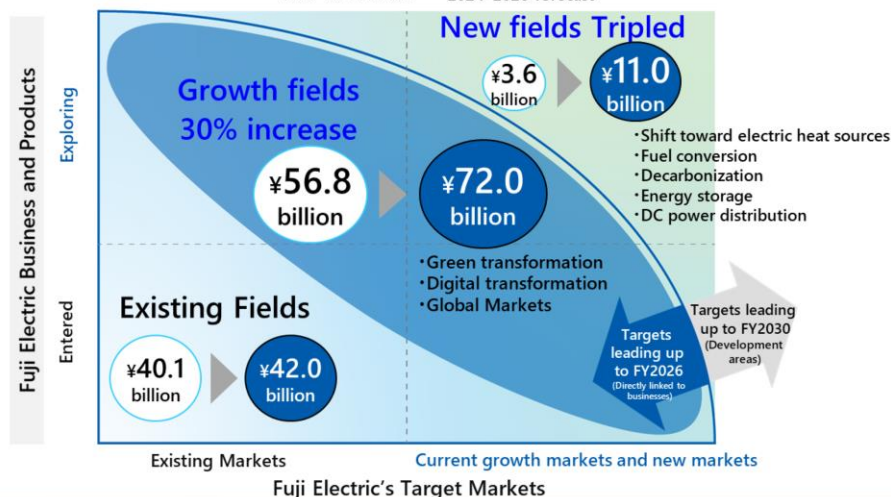
In growth fields, we plan to launch global, green transformation and digital transformation products by FY2026. CAGR in the fields is relatively high at around 6 to 20%.

New fields shown on the top right are new markets for Fuji Electric and are expected to expand in 2030 and beyond. We will try to acquire new green transformation technologies and create new products in preparation for the market growth projected to begin in 2030. To be more specific, we will promote R&D of fuel conversion (hydrogen and ammonia), carbon capture, thermoelectric systems, DC electricity distribution, energy storage and others.

FE Fuji Electric
Innovating Energy Technology

Aggregate R&D expenditures

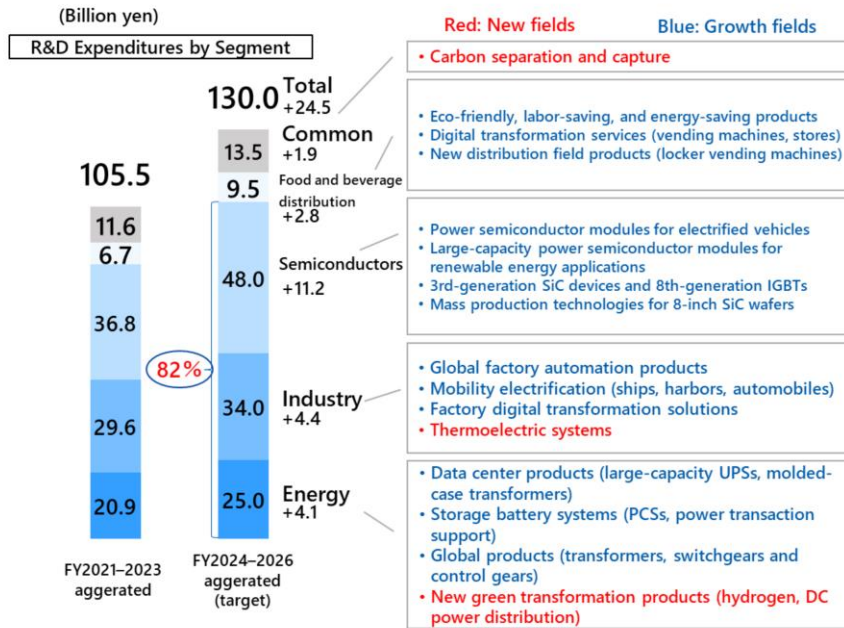
¥105.5 billion (2021–2023 result) → ¥130.0 billion (2024–2026 forecast) +¥24.5 billion



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Three-year cumulative investment in growth fields will be 72 billion yen, 30% increase from the previous Medium-Term Management Plan. The investment in new fields will be 11 billion yen, approximately triple of the previous Medium-Term Management Plan. Three-year aggregate R&D expenditures will be 130 billion yen, up 24.5 billion yen compared to three-year aggregate from 2021 to 2023.

【Reference】 R&D Expenditures by Segment



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.

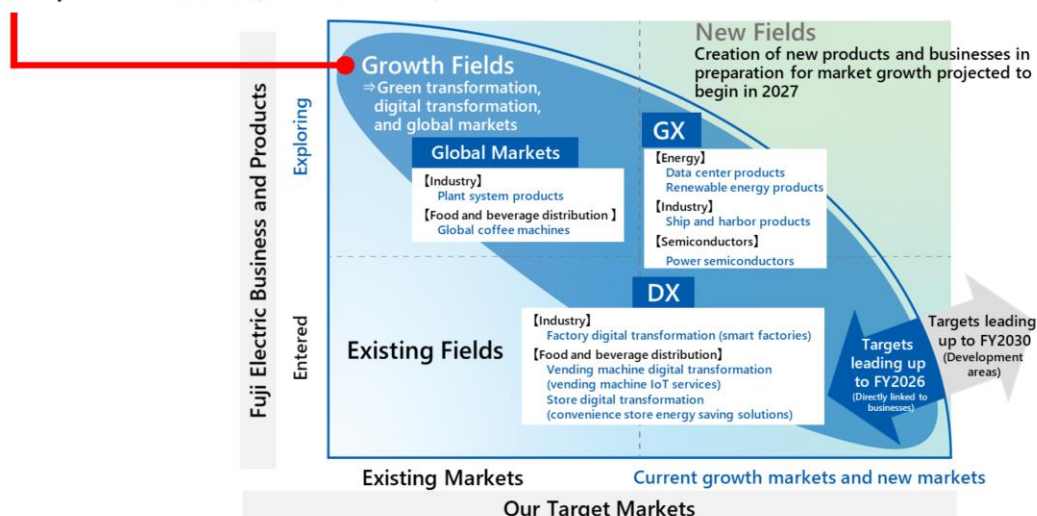
R&D expenditures by segment.

We plan to allocate 82% of total R&D expenditures to Energy, Industry and Semiconductors. The ratio of R&D expenditures to consolidated net sales was 3.5% in the recent three years and will increase to 3.7% in the next three years. We plan to invest 130 billion yen to reinforce products in growth fields and new fields.

Later explanations

【Research and Development looking toward FY2026 for each business group】

- Business Overview
- Operating Environment and Business Opportunities
- Market Outlook and Technical Requirements
- Key Development Themes (Growth Fields)



After this, each business group will explain research and development plan towards FY2026.

For each segment, each business group will talk about operating environment, business opportunities, market outlook, technical requirements and key development themes. For key themes, green transformation, digital transformation and global markets in particular will be discussed in depth.

Lastly, to meet your expectations, Corporate R&D headquarters and R&D departments of each business group and Production and Procurement Group will continue to work as one to drive our growth strategy and enhance our corporate value. I would appreciate your continued support. Thank you.

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