

Research and Development

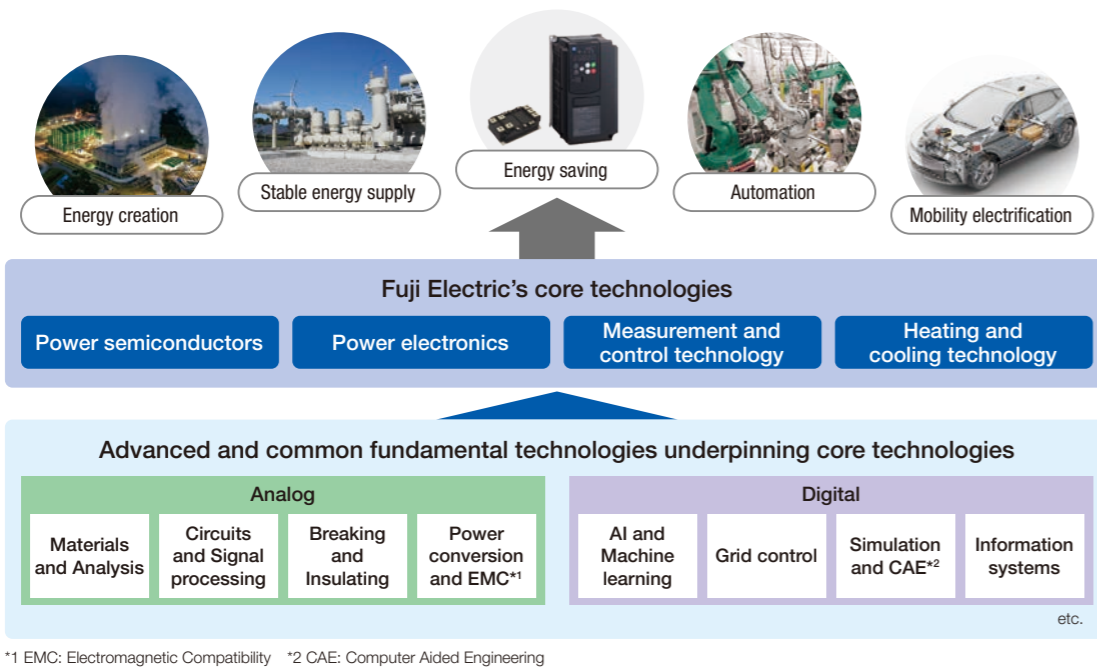
Basic Policies

We attempt to create new customer value and resolve social issues by integrating power semiconductor and power electronics technologies with advanced digital technologies.

Fuji Electric's Core Technologies

Fuji Electric has four core technologies, centered on power semiconductors with top-of-the-line power conversion efficiency and power electronics to convert and utilize electric power freely and without waste, as well as measurement and control technology and heating and cooling technology cultivated in our industry-leading vending machines. These core technologies are underpinned by high levels of advanced technology and common fundamental technology, both analog and digital, including materials and analysis, electrochemistry,

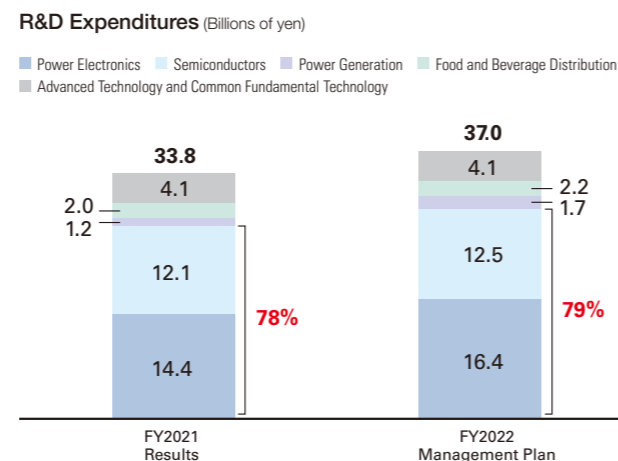
AI and machine learning, and system control. Fuji Electric has contributed to solving customers' problems in a wide range of fields from energy creation to stable energy supply, energy saving, automation, and mobility electrification. Going forward, we will continue to strengthen our advanced and common fundamental technologies, as well as our core technologies, all of which are the source of our competitive advantage, and work to create new customer value and solve social issues.



Efforts to Achieve the Medium-Term Management Plan

As part of the growth strategy in the FY2023 Medium-Term Management Plan, we announced a policy of investing 80% of our R&D expenditure in our power electronics and semiconductor businesses.

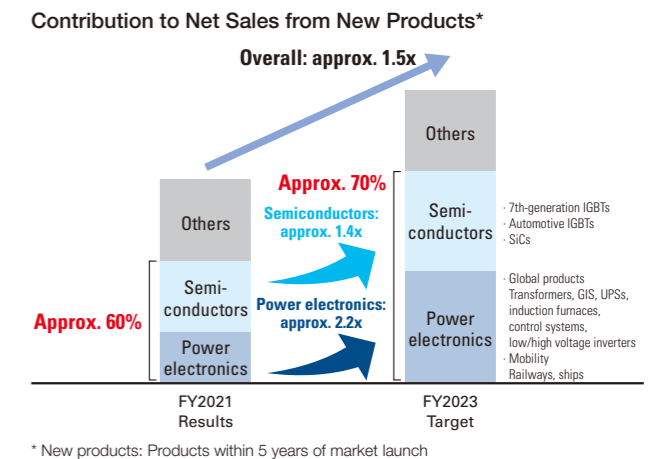
In fiscal 2021, we invested ¥33.8 billion in R&D, 78% of which was for power electronics and semiconductors. In power electronics, we are developing global products such as substation equipment and control systems to expand overseas businesses and products for electrification in the mobility field, including ships. Meanwhile, in response to the difficulty in procuring parts, we focused on changing the designs of existing products to facilitate adoption of alternative parts. In semiconductors, we focused on developing automotive IGBTs



* Figures for R&D expenditures are classified by segment according to theme and therefore differ from figures stated in the consolidated financial report.

with higher power density for electrified vehicles (xEVs) and promoted the development of SiC modules that achieve even lower loss using the next-generation material.

In fiscal 2022, we will continue to actively invest in development in the power electronics and semiconductor businesses, including mobility and global products. We will accelerate the development and market launch of new products, strengthen the competitiveness of our products, and expand sales of new products, thereby contributing to the achievement of the sales targets of the Medium-Term Management Plan. In fiscal 2023, sales of new products are expected to grow by about 1.5 times compared to fiscal 2021.



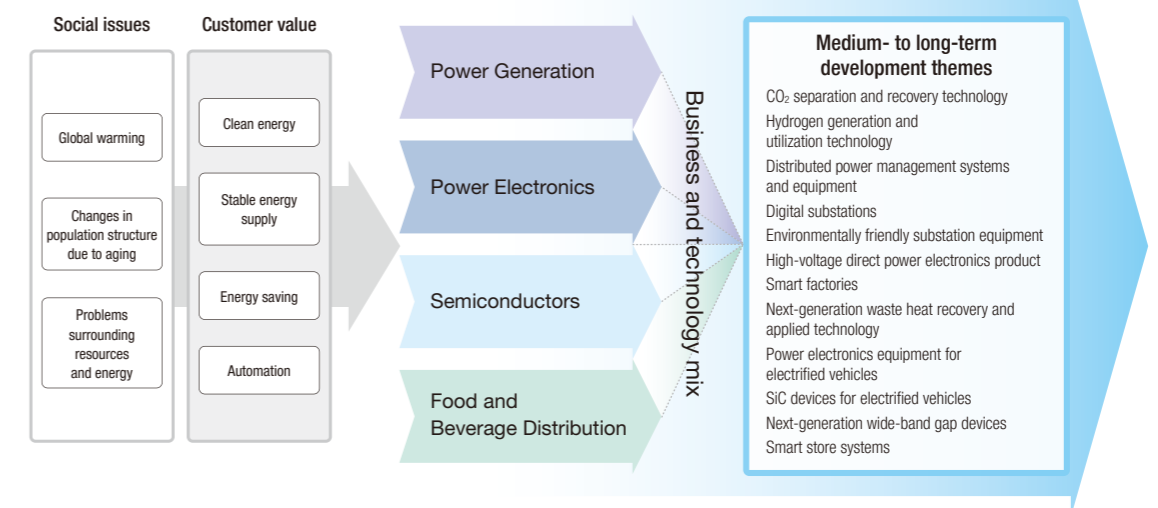
* New products: Products within 5 years of market launch

Medium- to Long-Term R&D Initiatives

As a medium- to long-term initiative, we are strengthening our technology marketing*, which envisages social issues 10 years into the future. At the same time, we are stepping up our search for themes to address increasingly complex issues through both advanced technology development and social acceptability research. In fiscal 2021, we established a New Products Development Office in our Corporate R&D Headquarters to accelerate and promote future new product

development. To achieve the sustainable growth of Fuji Electric, the sales, business, and R&D divisions collaborate cross-sectionally to analyze market and customer trends from a medium- to long-term perspective, and then match market needs with Fuji Electric's mix of technologies to create new business opportunities and social value through products.

* This means uncovering new customer value from a technology-oriented perspective, creating an ecosystem with potential customers, and co-creating a product market, before creating the product itself.



Intellectual Property Initiatives

Fuji Electric considers intellectual property to be an important management resource. We are strengthening intellectual property at the source of business planning and R&D and promoting global intellectual property strategies, including the promotion of international standardization. Our aim is to build a group of patents that will give us an advantage in our business, such as:

- (1) Patents related to enhancing efficiency and energy saving of power electronics products
- (2) Patents related to power semiconductors, including SiC-related technology

(3) Patents related to our food and beverage distribution sector
Among our global intellectual property activities, we are continuing to address intellectual property issues overseas and take measures against counterfeit products. For international standardization, we foster the development of standards in close cooperation with the International Electrotechnical Commission (IEC), which is in charge of standards related to electrical and electronics technologies, as well as other industry organizations in Japan and overseas.