### **Overview of Segments**

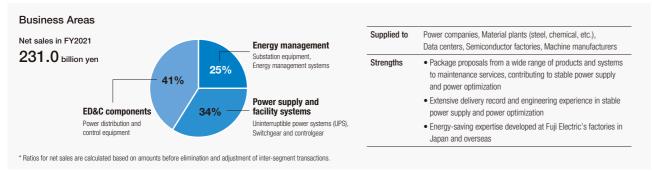
### **Power Electronics Energy**



We will work to expand sales in our comprehensive electrical equipment business, particularly in Southeast Asia. We will strengthen businesses that contribute to carbon neutrality.

#### Masashi Kawano

Managing Executive Officer Corporate General Manager, Power Electronics Energy Business Group



### **Market Trends and Business Opportunities**

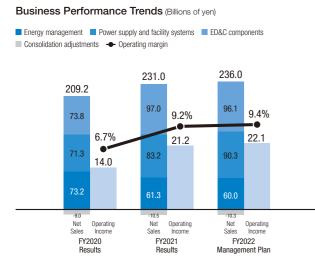
In the energy management business, we can expect an increase in equipment renewal demand due to replacement of aging substation equipment and an increase in capital investment related to renewable energy aimed at carbon neutrality.

In the power supply and facility systems business, investments by IDC operators, driven by digitalization and the use of 5G, as well as semiconductor-related investments, are expanding, and demand continues to increase at data centers

and semiconductor factories for our comprehensive electrical equipment business.

In the ED&C components business, demand from machine manufacturers is expected to continue to increase, driven by investment in electric vehicles and rising demand for 5G. In addition, we will continue to monitor and adjust to changes in demand and the situation related to procurement of parts and materials due to the impact of the lockdowns in China.

### Fiscal 2021 Results and Fiscal 2022 Plan



\* Results for FY2021 reflect the business restructuring in FY2022.

In fiscal 2021, the operating margin rose to 9.2% thanks to increased demand for ED&C components from machine manufacturers in both in Japan and overseas, as well as the benefits of business structural reforms including fixed cost reductions to date.

In fiscal 2022, despite the anticipated impact of lockdowns in China and a decrease in large-scale energy management projects, we forecast net sales of ¥236.0 billion, up ¥5.0 billion year on year, and operating income of ¥22.1 billion, up ¥0.9 billion, with an operating margin of 9.4%, mainly driven by increased sales of power supply and facility systems due to the continued expansion of the comprehensive electrical equipment business.

### **Priority Measures**

## Expanding orders in the substation business and developing the carbon neutrality market

In the substation business, we plan to expand our business through early development and market launch of differentiated products. To expand orders, we are developing new products such as natural ester filled global transformers for substations, where safety and environmental regulations are important, and gas insulated switchgear (GIS) that minimizes the generation of greenhouse gases, and combining these new products with other power electronics equipment.

In addition, we have established a specialized organization to promote the development of the carbon neutrality market, which is expected to expand over the medium to long term. Based on the know-how gained through our own carbon neutrality initiatives, such as the introduction of renewable energy power generation equipment and cogeneration (combined heat and power generation) in our own factories, we will develop new markets with solutions such as energy management systems and power stabilization systems that help customers adopt and procure renewable energy.

# Expanding sales in Southeast Asia by strengthening our comprehensive electrical equipment business

Our comprehensive electrical equipment business, for which demand is growing at data centers and semiconductor factories, has received high praise in terms of shortening the customer's construction period and reducing equipment management personnel, and based on our track record in Japan, inquiries are increasing overseas, mainly in Southeast Asia. To meet this demand, we will expand our business in Southeast Asia by increasing the number of personnel at Fuji

Electric Manufacturing (Thailand) Co., Ltd.'s engineering center and production and sales bases, as well as by strengthening cooperation with sales divisions in Japan.

In the data center market, as construction of large-scale data centers increases globally driven by the transition of information systems to the cloud and the progress of e-commerce systems, there are calls for uninterruptible power systems (UPSs) to have higher capacity and be made more compact and energy-efficient to expand server installation space and reduce power consumption. The 7500WX Series large-capacity UPS we launched last year combines one of the industry's smallest footprints and highest power efficiency rating, making it the optimal product for the needs of our customers. We aim to expand sales through our comprehensive electrical equipment business, which combines highly competitive large-capacity UPSs as the core with substation equipment, installation work, and maintenance services.

## Promoting strength of our ED&C components business

In the ED&C components business, we aim to maintain and improve our highly profitable structure by strengthening our response to parts procurement difficulties and material price hikes, and by continuing to engage in cost reduction activities. In terms of our sales structure, by integrating our sales bases with our subsidiary Fuji Electric FA Components & Systems Co., Ltd., we will work to develop new customers and expand sales volume by utilizing mutual sales channels. Furthermore, we will work to strengthen the competitiveness of our products by investing in the development of key models to focus on, such as switch controls and power distribution equipment.

### Comprehensive Electrical Equipment Business



Large-Capacity UPS for Large Data Centers
7500WX Series

Product features

- 1. Industry's smallest footprint
- 2. Industry's highest power efficiency rating
- Compliant with global standard power supply specifications



#### Capacity specifications:

- 1200 kVA (released April 2021)
- 2400 kVA (scheduled to be released in 2022)
  Larger-capacity models will be introduced to the market

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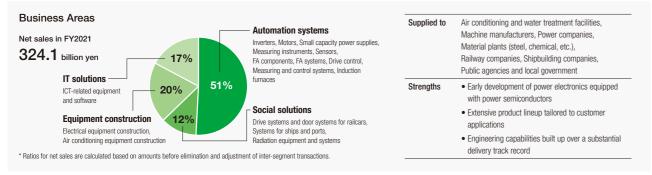
### **Power Electronics Industry**



We will work to expand our overseas businesses by building a system of local design, local production, and local consumption, and by launching new global products.

#### Hiroshi Tetsutani

Managing Executive Officer Corporate General Manager, Power Electronics Industry Business Group



### **Market Trends and Business Opportunities**

Globally, further capital investment in decarbonization-related environmental measures, automation, DX, and related areas is expected in the future.

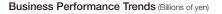
In the automation systems business, although demand for components remains uncertain due to the impact of the COVID-19 lockdowns in China and the impact of the global difficulty in procuring materials, including semiconductors, market conditions in Southeast Asia and India are predicted to continue their moderate recovery from the COVID-19 pandemic. In plant systems, we anticipate equipment replacement demand to improve productivity in the steel and

chemical sectors, as well as strategic investments related to high performance, electrification, and carbon neutrality.

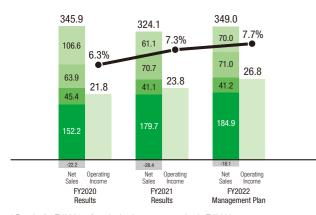
In the social solutions business, investments associated with equipment replacement demand continued in the rail sector, while in the ship sector, the market for environmentally friendly products is beginning to grow as countries move toward electrification and decarbonization of ports.

In the IT solutions business, rising demand is expected due to digitalization and teleworking in government, municipalities, and offices, and in the future, we also anticipate new demand in the industrial DX market.

### Fiscal 2021 Results and Fiscal 2022 Plan



■ Automation systems ■ Social solutions ■ Equipment construction ■ IT solutions
■ Consolidation adjustments ◆ Operating margin



<sup>\*</sup> Results for FY2021 reflect the business restructuring in FY2022

In fiscal 2021, despite a decrease in net sales due to the impact of the preceding fiscal year's large-scale IT solutions projects, demand for automation systems grew, mainly for low-voltage inverters and FA components, and the operating margin rose to 7.3%.

In fiscal 2022, despite the anticipated impact of lockdowns in China and material procurement difficulties, we expect capital investment to remain strong among manufacturers of machine tools, semiconductor manufacturing equipment, steel, chemicals, and other materials. Furthermore, due mainly to increased demand in automation systems and IT solutions driven by growing DX needs, we forecast net sales of ¥349.0 billion, up ¥24.9 billion year on year, and operating income of ¥26.8 billion, up ¥3.0 billion, with an operating margin of 7.7%

### **Priority Measures**

### Creating the platform for component products

To strengthen cost competitiveness and build a system that can steadily generate earnings, we are strengthening our system of "local design, local production, and local consumption" for components at the global level. We are working to strengthen profitability by expanding production models in India and Europe in fiscal 2022, launching knockdown production of low-voltage inverters in the Americas in fiscal 2023, and establishing a global six-pole production system (Japan, China, Southeast Asia, India, Europe, and the Americas).

Furthermore, we are promoting the creation of the platforms for the main components of our products to standardize them, thereby expanding the range of products to which they can be applied. Through that efforts, we can significantly reduce the number of parts, reduce procurement and production costs, and reduce material inventories, contributing to improved profitability. In addition, the use of common parts facilitates replacement with alternative parts, which helps to mitigate difficulties in the procurement of parts and materials.

### Offer new products in the Chinese, Southeast Asian, and Indian markets to expand overseas businesses

Whereas in the past we have been working to establish production and engineering systems outside Japan and strengthen our partnerships, we now intend to expand our business by providing competitive global products overseas.

In China, where we continue to develop new customers such as machine manufacturers and material plants as the main focus area, mainly with components, there is increasing demand for induction furnaces, which are more environmentally friendly. We will work to expand sales by promoting our highefficiency global induction furnaces, which use our power electronics, analysis, and control technologies and backed by our track record as the No.1 market leader in Japan.

For Southeast Asia and India, we have been developing a global control system as an easy-to-use engineering support tool for steel, chemical, and other material plants, and plan to bring it to market in fiscal 2022.

## Expanding business in the railway and ship sectors through differentiated products

In the railway business, electric door systems are highly regarded in the public transportation field for their ease of maintenance, safety, and reliability. We will expand our business globally with highly reliable electric door systems by using their platform.

In the ship and port business, specific studies have begun on the development of carbon neutral ports, led by Japan's Ministry of Land, Infrastructure, Transport and Tourism, with the goal of decarbonization of ports. Leveraging our track record, comprehensive proposal capabilities, and product lineup, we will expand our business by offering electrification of ships and systems that supply power to ships from the land.

#### Products for Focus Regions outside Japan



 $^{\star}$  Under expansion of production models

\* Market rollout planned for FY2022

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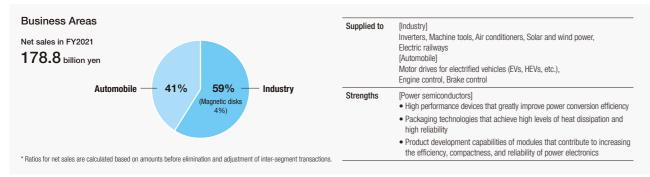
### **Semiconductors**



In response to growing demand for power semiconductors for electrified vehicles, we will steadily increase production capacity and expand sales.

#### Toru Hosen

Senior Managing Executive Officer Corporate General Manager, Semiconductors Business Group



### **Market Trends and Business Opportunities**

Power semiconductors help save energy thanks to their high levels of conversion efficiency and power control. Demand for these devices is rising globally, driven by environmental action aimed at decarbonization and increasing investment in automation in the manufacturing industry.

In the automotive field, the shift from gasoline-powered vehicles to electrified vehicles (xEVs) is gaining momentum in various countries around the world, and production of full hybrid and electric vehicles (EVs), which are Fuji Electric's

targets, will grow at an average annual rate of 42% from 2019 to 2023.

In the industry field, due to growing demand for energy saving and automation, demand is expected to continue to grow for factory automation equipment, such as inverters and machine tools, and applications for renewable energy, including solar and wind.

\* Fuji Electric forecast based on research firm forecasts

### Fiscal 2021 Results and Fiscal 2022 Plan

Business Performance Trends (Billions of yen)

■ Industry ■ Automobile 🥢 Magnetic disks (included in industry area) 🔸 Operating margin



 $<sup>^{\</sup>star}$  Results for FY2021 reflect the business restructuring in FY2022.

In fiscal 2021, despite the impact of our exit from the magnetic disk operation, increased demand for power semiconductors for automotive and industry applications, as well as accelerated expansion of 8-inch silicon (Si) wafer production capacity, has led to a significant increase in sales and income over the previous fiscal year, with an operating margin of 15.2%, up 4 percentage points from the previous fiscal year.

In fiscal 2022, thanks to sales growth in the growing market for xEVs, we forecast sales of ¥200.0 billion, up ¥21.2 billion year on year, and operating income of ¥30.5 billion, up ¥3.4 billion, with an operating margin of 15.3%.

### **Priority Measures**

### Growing sales of power semiconductors for xEVs

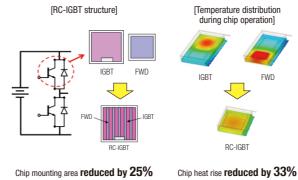
Power semiconductors contribute to reducing power loss and improving driving distance, which are major issues for xEVs, and as demand grows rapidly, there is a need for ever higher efficiency.

Fuji Electric's power semiconductor modules incorporate Si RC-IGBT\*, which we developed independently ahead of our competitors, and use a direct liquid cooling structure. We have continued their development to meet customers' requirement specifications, more and more manufacturers and models are adopting our modules in Japan and overseas.

In addition, there is a growing need for silicon carbide (SiC) products, which can significantly reduce power loss compared to Si products, and we have decided to work with our customers to develop new SiC products and to invest in increasing production of SiC power semiconductors.

We will continue to work to increase sales beyond the growth of the xEV market.

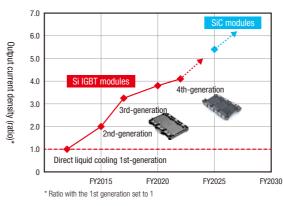
#### **RC-IGBT Features**



Chip mounting area **reduced by 25%**Miniaturization

High reliability

## Changes in Performance of Power Semiconductor Modules for xEVs $\,$



## Expanding sales of 7th-generation IGBT modules for industrial applications

We are expanding our product lineup of 7th-generation IGBT modules—which feature high heat dissipation and high reliability—and increasing sales of products for the renewable energy and FA markets.

Going forward, we will continue to capture the strong demand in these markets to boost sales.

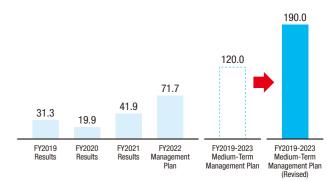
## Steadily implementing production capacity augmentation

In order to respond to strong demand for power semiconductors, we have decided to increase our cumulative plant and equipment investment for the five years up to fiscal 2023 from ¥120 billion in our initial plan to ¥190 billion.

For the manufacturing process of power semiconductor chips, we are accelerating investments to increase the production capacity for 8-inch Si wafers and plan to increase production capacity in fiscal 2022 by about 2.4 times the level of fiscal 2019. For the assembly process, we are continuing investments to increase the production capacity for automotive and industrial products.

For SiC products, as the SiC module market is expected to grow from fiscal 2024 onward, mainly for EV applications, we are preparing for the start of mass production at Fuji Electric Tsugaru Semiconductor in fiscal 2024.

### Plant and Equipment Investment (Whole Segment) (Billions of yen)



### 8-Inch Si Wafer Production Capacity



\* For production capacity (year-end comparison), FY2019 (benchmark year) is assigned 100 for comparison purposes.

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<sup>\*</sup> RC-IGBT: Reverse-conducting IGBT

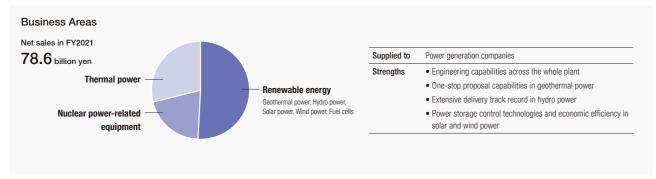
### **Power Generation**



We will transform our portfolio and strengthen profitability by expanding our renewable energy, after-sales, and nuclear power-related businesses.

### Tadao Horie

Executive Officer
Corporate General Manager, Power Generation Business Group



### **Market Trends and Business Opportunities**

In response to the growing problem of climate change, the market for renewable energy is expanding as the trend toward decarbonization accelerates.

For geothermal power generation, although business negotiations have stalled in some overseas markets due to the impact of the COVID-19 pandemic, development is progressing in Japan, and projects with low capacities are starting to materialize.

In hydro power generation, which is a stable source of electricity, demand continues in Japan for replacing aging power generation facilities and rising output.

For solar power generation, demand for the construction of

regional microgrids as distributed power sources is gradually expanding in Japan, while Official Development Assistance (ODA) projects are taking shape in Southeast Asia.

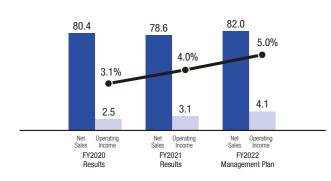
In the nuclear power generation sector, safety is a top priority, and there is increasing demand for decommissioning of facilities and waste treatment.

In the after-sales sector, in response to the expansion of renewable energy sources with fluctuating output, such as solar and wind power generation, there is a growing need to improve the output adjustment capabilities of existing thermal and geothermal power generation facilities.

#### Fiscal 2021 Results and Fiscal 2022 Plan

Business Performance Trends (Billions of yen)

- Operating Margin



We are focusing on improving profitability as well as promoting the transformation of our portfolio with a focus on the renewable energy and after-sales businesses.

In fiscal 2021, despite a decrease in sales due to rebound from large-scale renewable energy projects recorded in the previous fiscal year, the operating margin improved to 4.0%, reflecting differences between projects and cost reductions.

In fiscal 2022, thanks mainly to higher sales in the renewable energy and after-sales businesses, particularly geothermal power generation, we forecast net sales of ¥82.0 billion, up ¥3.4 billion year on year, and operating income of ¥4.1 billion, up ¥1.0 billion, with an operating margin of 5.0%.

### **Priority Measures**

We are promoting the transformation of our business portfolio in response to the accelerating tide of decarbonization. In addition to our core renewable energy and after-sales businesses, we will expand business in the decommissioning and waste treatment sectors in nuclear power-related facilities and increase sales in the carbon-free sector.

### Expanding orders for renewable energy

### Geothermal power

In geothermal power generation, where we have the top market share in the industry, we are expanding our business mainly in Japan, Asia, and Africa. Fuji Electric has the advantage of being able to handle flash cycles, which are suitable for high-temperature heat sources, and ORC\*, which can generate power from low-temperature heat sources, as a single company. Taking advantage of this strength, we will intensify proposals to expand orders in Japan for small-scale heat sources of 5 MW or less, which have short lead times. Overseas, we will continue to promote activities to win orders in countries developing geothermal power systems in Asia and Africa.

\* ORC (Organic Rankine Cycle): A method of generating electricity using a low-boiling medium with a low evaporation temperature instead of water and steam

#### Hydro power

In response to the high level of power plant S&B\* demand, we are expanding orders by leveraging our strengths in differentiated products such as hybrid servo systems that reduce environmental impact and improve reliability and maintainability, as well as turbine technology that enables highly efficient power generation from water sources with varied flow rates. As of the beginning of fiscal 2022, our order backlog had grown around 3.1-fold for the past 4 years, and we will strive to respond to high workloads by developing and expanding human resources, with the goal of further expanding orders and sales.

\* S&B (Scrap and Build): Achieving efficiency by scrapping or eliminating obsolete and inefficient facilities and replacing them with new ones

### Solar and wind power

For solar power generation, we are pursuing increased orders by leveraging our strengths in high-efficiency power conditioning systems, as well as solutions that use storage batteries to contribute to power stabilization and peak shifts, and by responding to the need for distributed power sources in Japan, for example with regional microgrid construction and self-consumption power generation facilities in the industrial sector. Overseas, we will seek to expand orders by leveraging the supply chain we have established for geothermal power generation and other projects, particularly in Southeast Asia.

For wind power generation, in addition to steadily carrying out our ongoing large-scale self-consumption wind power generation facility project, we will strengthen our proposals in Japan by leveraging the know-how we have accumulated through this project and our strengths in power stabilization technology and other areas.

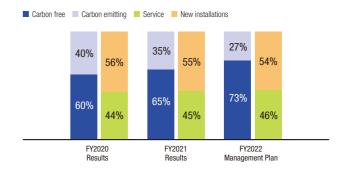
### Expanding our nuclear power-related equipment business

Amid progressive efforts to improve the safety of nuclearrelated facilities, we are continuing to contribute to safe and secure decommissioning and waste treatment by utilizing Fuji Electric's strengths in remote handling (including nuclear fuel removal and storage), radiation measurement, radioactive waste cutting and solidification, and other technologies.

### Expanding our after-sales business

To expand sales of maintenance and replacement services, we will develop and propose new products that meet decarbonization needs, such as solutions for changing fuel mixes. In Japan, we will strengthen our solution proposals by increasing the efficiency of power generation facilities and improving the adjustment capabilities of existing power generation facilities, which contribute to stabilizing electric power when combined with renewable energy. Overseas, we will strengthen our proposals to ensure that we capture the maintenance needs of existing power generation facilities in Southeast Asia and other regions.





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### **Food and Beverage Distribution**

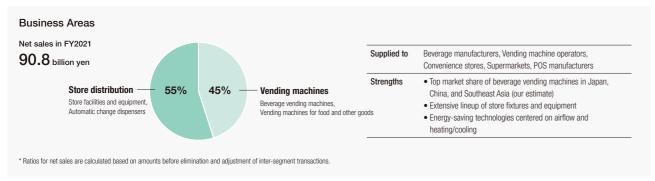


We will expand sales and improve profitability by increasing the added value of products that meet market needs and reducing the total cost of manufacturing.

#### Keiichi Asano

Executive Officer

Corporate General Manager, Food and Beverage Distribution Business Group



### **Market Trends and Business Opportunities**

The food and beverage distribution market, which had declined significantly due to the COVID-19 pandemic, is on the road to recovery.

With regard to the vending machine market in Japan, in addition to a recovery in investment by beverage manufacturers, we anticipate a growing market for new vending machines as the demand for contact-free, non-face-to-face sales increases.

As for the overseas vending machine market, sales are on a recovery trend from the previous fiscal year due to the

expansion of products being sold and the diversification of customer needs in areas such as energy saving and ecofriendliness, although in the case of China we are closely monitoring the lockdown and zero-COVID policy situations.

In the store distribution market, along with an increase in demand for store renovations to meet energy-saving requirements, particularly in convenience stores, needs are diversifying to include labor saving, food loss reduction, and contact-free, non-face-to-face interactions.

### Fiscal 2021 Results and Fiscal 2022 Plan

Business Performance Trends (Billions of yen)

■ Vending machines
■ Store distribution
◆ Operating margin



In fiscal 2021, sales increased thanks to a recovery in demand in vending machine investments, mainly from beverage manufacturers in Japan, and an increase in demand for store facilities and equipment at convenience stores. Operating income improved from a loss of ¥5.3 billion in the previous fiscal year to ¥8.3 billion, a surplus of ¥3 billion, reflecting the benefits of business restructuring in the previous fiscal year.

In fiscal 2022, despite a reactionary fall in large-scale automatic change dispenser projects, we forecast sales of ¥92.0 billion, up ¥1.2 billion year on year, thanks to the ongoing recovery of beverage manufacturers' investment in vending machines in Japan and the expansion of new markets centered on frozen food vending machines. Operating income is projected to increase by ¥2.1 billion to ¥5.1 billion, with an operating margin of 5.5%, due to increased product volume, streamlining of manufacturing, and progress in measures against variable costs.

### **Priority Measures**

## Expanding sales and further improving profitability in the vending machine business

In the vending machine sector in Japan, we will continue to introduce high-value-added vending machines that are energy-saving and cashless. In addition, we will expand sales and improve profitability by developing DX-related products such as vending machine IoT services that enable beverage manufacturers and vending machine operators to improve the efficiency of product replenishment operations. Overseas, in addition to energy saving, we will develop differentiated products that meet demands for high functionality, such as machines that support non-face-to-face sales, food delivery or other services.

To improve profitability, for the fully redesigned machines to be launched in fiscal 2022, we will standardize parts through platform design, consolidate models, and promote total cost reductions, including improved productivity and operational efficiency in manufacturing. In addition to passing on higher raw material prices, we will revise prices to reflect product value.

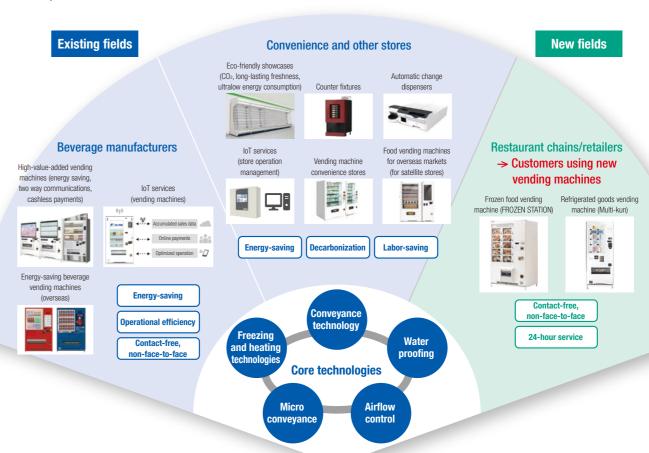
## Offering high-value-added products that meet diversifying needs

In the field of store distribution, we will develop total solutions centered on convenience stores, including showcases, counter fixtures, automatic change dispensers, and vending machine convenience stores. In the store distribution market, needs are diversifying, and now include energy saving, labor saving, food loss reduction, and non-face-to-face sales. To meet these needs, we will offer more high-value-added products such as eco-friendly showcases that improve energy-saving performance, new labor-saving, energy-efficient counter fixtures, and store operation management services, thereby improving profitability.

## Developing customers with a "vending machine as a store"

For customers considering the use of new vending machines to meet the demand for contact-free, non-face-to-face, 24-hour sales, we will introduce vending machines that can handle a variety of products, including frozen foods. Furthermore, to meet the needs of new customers, such as restaurant chains and retailers, a specialized sales organization to be launched in fiscal 2022 will play a central role in accelerating the capture of demand and will be a pillar of our new growth strategy.

#### Develop Products and Solutions that Meet Diverse Needs



Fuji Electric Report 2022 Fuji Electric Report 2022