Power Generation

To address changing market conditions, we will focus on renewable energy and distributed power sources while expediting the transformation of our business portfolio to strengthen our after-sales business and enhance profitability.

Tadao Horie
Executive Officer
Corporate General Manager,
Power Generation Business Group

Business Areas

- Renewable and new energy
  Geothermal power, Hydro power, Solar power, Wind power, Fuel cells
- Thermal Power
- Nuclear power-related equipment

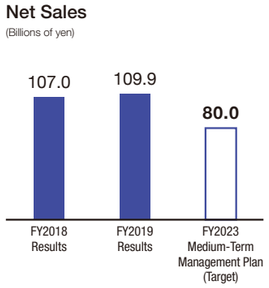
Supplied to

Japanese and overseas power generation companies

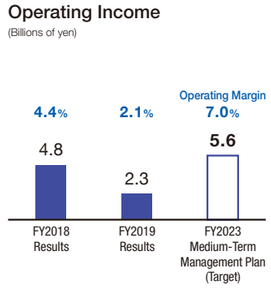
Strengths

- **Engineering capabilities across the whole plant**
- **One-stop proposal capabilities in geothermal power, and industry leading delivery track record**
- **Extensive delivery track record in hydro power**
- **Power storage control technologies and economic efficiency in solar and wind power**

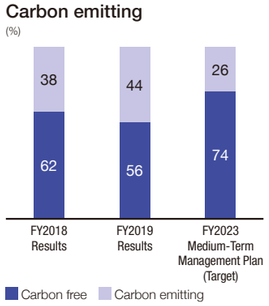
Net Sales



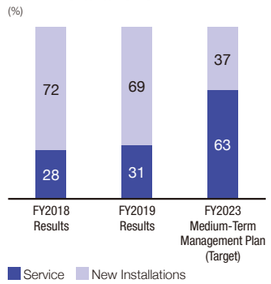
Operating Income



Sales Ratio by Carbon free / Carbon emitting



Sales Ratio by Service / New Installations



Medium-Term Management Plan Policy

Responding to changes in the market environment as the world moves toward decarbonization, we will focus on renewable energy and distributed power sources to transform our business portfolio. At the same time, we will capture replacement demand for power generation equipment while expanding our after-sales business and improving profitability.

Awareness of Market Needs and Business Opportunities

Since the enactment of the Paris Agreement, an international framework for addressing climate change, moves toward decarbonization have gathered pace worldwide, and the market for renewable energy sources, which do not emit greenhouse gases, is growing as a result.

In addition to rising demand for mega solar power in Southeast Asia, demand is growing for solar as a small-scale distributed power source. Demand for geothermal power generation is also increasing on the back of economic growth in Southeast Asia and Africa, which have abundant geothermal resources. In Japan, meanwhile, aging hydro power generation facilities are being replaced and upgraded to enhance generation efficiency, reflecting expectations that hydro power generation can help reduce environmental impact and risk.

In the maintenance and renewal of power generation equipment, the need to enhance capacity utilization ratio and operability is growing.

Major Initiatives in Fiscal 2019–2020

Expanding orders for renewable energy

Solar and wind power

For solar and wind power generation, using storage batteries and further combining them with our power conditioning systems and controllers, we are forging ahead with solution-driven proposals that contribute to power system stabilization and peak shifts.

In fiscal 2019, in collaboration with an overseas subsidiary, we received an order for our first overseas solar project, and we also received two orders in Japan.

In fiscal 2020, we will continue working to increase orders to meet growing demand for renewable energy in Japan and overseas.

Geothermal power

In geothermal power generation, where we have a leading market share*1, we are proceeding with construction of a facility in Kenya, our first geothermal project in Africa.

In fiscal 2019, we received an order from the Onikobe Geothermal Power Plant in Japan and an order for a new project in Kenya, as we did in the previous year.

In fiscal 2020, we will aim to expand business opportunities by adding a small-capacity-generation package to our lineup for Japan to support a wide range of geothermal resources. Overseas, we will continue focusing on Southeast Asian and African regions as priority targets and accelerate marketing activities in countries with geothermal resources all over the world.

Hydro power

Recent years have seen growth in demand for hydro power generation as a low-cost, stable power source in Japan, and scrap-and-build*2 projects for aging equipment are increasing as a result.

To address this demand, we will continue strengthening our frontline response capabilities. At the same time, we will strive to increase orders by making full use of our distinct and differentiated product lineup, including our hybrid servo system*3, which won a New Energy Award in 2019.

Expanding our after-sales business

In maintenance and replacement services, we will continue promoting onshore and onsite projects that bring together all functions in each customer's region, from sales to procurement, installation, and after-sales service.

In fiscal 2019, we enhanced our maintenance service proposals and achieved a year-on-year sales increase of around 10%.

In fiscal 2020, we will expand our after-sales business by strengthening our local networks, centered on our bases in the Middle East, the Philippines, Vietnam, and Indonesia.

*1 Based on actual figures for the past 20 years (Fuji Electric research)
*2 Entails disposal or decommissioning of aging and inefficient equipment and replacing it with new equipment to achieve better efficiency
*3 A turbine operation mechanism in a hydro power generation facility

Close Up!

Expanding orders for solar power generation facilities with storage batteries

In Southeast Asia, a major challenge is to develop infrastructure in areas that are not serviced by electricity due to weak power grids. This has prompted numerous plans to utilize solar power generation as a distributed power source. Solar power become increasingly cost competitive because it is inexpensive to operate. However, using solar as the primary power source requires installation of storage batteries that can supply electricity at night when solar cannot generate power. To ensure stable power supply, there is growing demand to use storage batteries for optimal control.

By combining storage batteries with our power conditioning systems, we have amassed strengths in power control optimization. Moreover, we have a solid track record in the production of power generation equipment. These include equipment for the Suzuran Kushiro-cho Solar Power Plant, one of Japan's largest solar power stations with storage batteries.

Deploying our abundant know-how and track record, we collaborated with overseas subsidiary Fuji Electric (Thailand) Co., Ltd. to win two EPC* contracts for our first overseas solar power generation projects. With this achievement as a foothold, we will continue aggressively expanding sales in Southeast Asia to foster the proliferation of renewable energy.

* Abbreviation for "engineering, procurement, and construction." EPC contracts cover everything from design to construction, installation, and test operation.

Suzuran Kushiro-cho Solar Power Plant (Hokkaido, Japan)