

Environment



Through our initiative toward Environmental Vision 2050, we will promote contribution to carbon neutrality and aim to achieve zero emissions.

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In recent years, nature and human society have been greatly affected by frequent torrential rainfall caused by climate change, as well as record heat and cold waves. Addressing this issue will not only require decarbonization, but also accelerating the transition to a circular economy and the realization of nature positivity (nature revitalization). Therefore, the role of companies in solving environmental issues is becoming increasingly important.

Based on the “Fuji Electric Basic Environmental Protection Policy,” the Company has positioned global environmental protection as an important issue for management and in 2019, we formulated our “Environmental Vision 2050,” the framework for the Company to become carbon neutral and achieve zero environmental impact from a long-term perspective. In March 2022, our fiscal 2030 greenhouse gas (GHG) emissions reduction target was revised to “reduce GHG gas emissions by over 46% from the fiscal 2019 level,” consistent with “limiting the temperature rise to 1.5°C above pre-industrial levels.” This goal has acquired SBT^{*1} certification in December 2022.

In fiscal 2022, we incorporated measures to achieve the Fiscal 2030 Target for reduction of GHG emissions during production into an action plan, calculated the amount of necessary investments and expenses, and began materializing the plan. In response to TCFD recommendations, we also conducted an analysis of opportunities and risks and disclosed details of our risk-related considerations.

Future issues include materializing a plan to achieve a recycling-oriented society and a society in harmony with nature. As such, with the aim of achieving zero emissions by 2050, we will consider a new Fiscal 2030 Target from the perspective of generating zero environmental impact throughout the entire supply chain.

For the fourth consecutive year, the CDP^{*2} certified Fuji Electric as an “A List Company,” a company of the highest rank, with excellent climate change initiatives and information disclosure. We will continue to contribute to the realization of a sustainable society, taking advantage of the technologies we have cultivated in the energy and environment fields.

^{*1} SBT: Science-based GHG emissions reduction target to achieve the 1.5°C target
^{*2} CDP: An international environmental NGO that researches, evaluates, and discloses environmental initiatives

Fuji Electric Basic Environmental Protection Policy

1. Offering products and technologies that contribute to the global environmental protection
2. Reduction of environmental burden throughout product life cycles
3. Reduction of environmental burden in business activities
4. Compliance with laws, regulations and standards
5. Establishment of environment management systems and continuous improvements of the systems
6. Improvement of employees' environmental awareness and social contribution
7. Promotion of communication

Environmental Vision 2050

We aim to achieve a “Decarbonized Society,” “Recycling-Oriented Society,” and “Society in Harmony with Nature” by expanding use of Fuji Electric’s innovative clean energy technology and energy-saving products.

Achieve a Decarbonized Society	Target carbon neutrality across the supply chain
Achieve a Recycling-Oriented Society	Promote green supply chains and 3R activities to reduce environmental impact to zero
Achieve a Society in Harmony with Nature	Aim for zero influence on the ecosystem by corporate activities contributing to biodiversity

Fiscal 2030 Target

We aim to achieve the following goals in order to limit the temperature rise to 1.5°C above pre-industrial levels.	
Greenhouse gas emissions throughout the supply chain (Scope 1+2+3):	Reduction of over 46% (compared to FY2019)
Greenhouse gas emissions during production (Scope 1+2):	Reduction of over 46% (compared to FY2019)*
Contributions to CO ₂ emissions reduction in society through our products:	Over 59 million tons/year

* Reduction rate from FY2013: 54%



The World Aimed for in Environmental Vision 2050

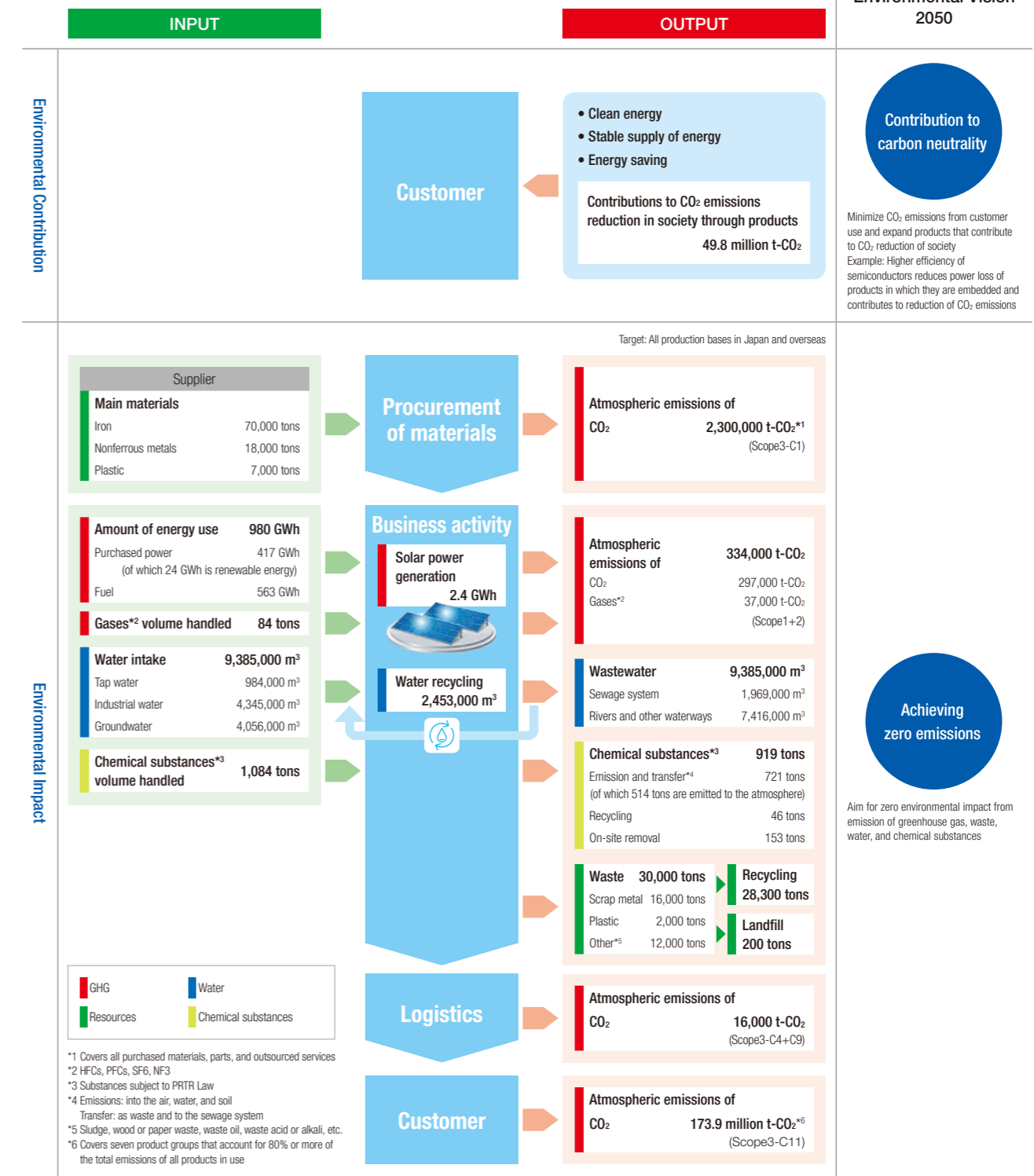
In addition to the environmental contribution made by our business, Fuji Electric quantifies its environmental impact based on the amount of energy and resources used at all of our production bases in Japan and overseas. Through

our initiatives in Environmental Vision 2050, we aim to maximize our environmental contribution and minimize our environmental impact through our supply chain.

Toward 2050

- We aim to contribute to carbon neutrality by increasing the supply of equipment that produces clean energy and by innovating energy saving technologies.
- We aim to achieve zero emissions by working to reduce environmental impact throughout the supply chain.

Overall Picture of Environmental Contribution and Impact of the Business (Fiscal 2022)



The World Aimed for in Environmental Vision 2050

Contribution to carbon neutrality

Minimize CO₂ emissions from customer use and expand products that contribute to CO₂ reduction of society
Example: Higher efficiency of semiconductors reduces power loss of products in which they are embedded and contributes to reduction of CO₂ emissions

Achieving zero emissions

Aim for zero environmental impact from emission of greenhouse gas, waste, water, and chemical substances

Initiatives to Achieve a Decarbonized Society

Fiscal 2022 Results and Progress

Environmental Vision Fiscal 2030 indicators	FY2021	FY2022		FY2023	FY2030
	Result	Target	Result	Measures	Target
Supply chain GHG emissions (Scope 1+2+3) (million tons)	180	181	177 <Achieved>	<ul style="list-style-type: none"> Increase percentage of 7th-generation IGBTs Expand sales of automotive modules 	72 or less 67 or less
GHG emissions during production (Scope 1+2) (thousand tons)	364	400 or less	334 <Achieved>	<ul style="list-style-type: none"> Implement production process as an alternate to SF6 Upgrade to high-efficiency equipment Start purchasing renewable energy electricity (Japan) 	380 or less 250 or less
Contributions to CO ₂ emissions reduction in society through products (million tons)	45.4	45.0 or more	49.8 <Achieved>	<ul style="list-style-type: none"> Cumulative increase in power electronics products and biomass power generation 	50.0 or more 59.0 or more

Initiatives toward 2030

● Supply chain GHG emissions (Scope 1+2+3) reduction

Fuji Electric calculates GHG emissions generated in its supply chain in accordance with the GHG Protocol, an international standard. GHG emissions for the entire supply chain (Scope 1+2+3) in fiscal 2022 were 177 million tons. CO₂ (Scope 3 Category 11) emitted during the use of the product accounts for 98% of the total, and approximately 60% of this is coal-fired EPC (a business form in which engineering, procurement, and construction are undertaken in an integrated manner) projects for the power generation business. The Company does not expect to ship any coal-fired EPC projects without CO₂ capture equipment after fiscal 2023. Therefore, the target for fiscal 2023 is a 60% reduction to 72 million tons.

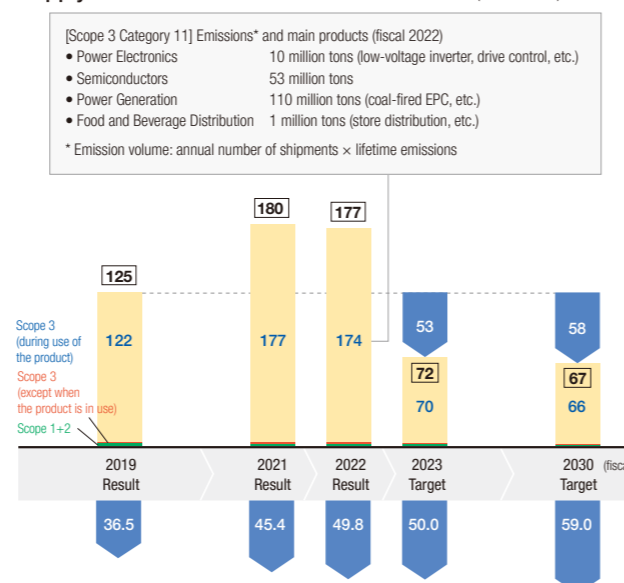
Many of our products contribute to the reduction of CO₂ emissions of society by saving energy through activation. We are working to reduce not only our own CO₂ emissions (Scope 1+2+3), but also those of society by contributing to the reduction of CO₂ emissions through the supply of our products.

● GHG emissions reduction during production (Scope 1+2)

We plan to increase production in our semiconductor and power electronics businesses by 2030. Based on the assumption of such production increase, we are working to achieve our goal of reducing GHG emissions during production (over 46% reduction compared to fiscal 2019). Major measures are as follows.

Measures	Overview
Expand installation of solar power generation equipment at the Company's production bases	Plan underway at a total of 15 bases in Japan and overseas, with the aim of extracting results in fiscal 2024
Promote upgrade to high-efficiency equipment	Replace production facilities, air conditioning, and lighting equipment with latest models
Purchase renewable energy	Increase purchase of renewable energy

Supply Chain GHG Emissions and Reductions (million tons)

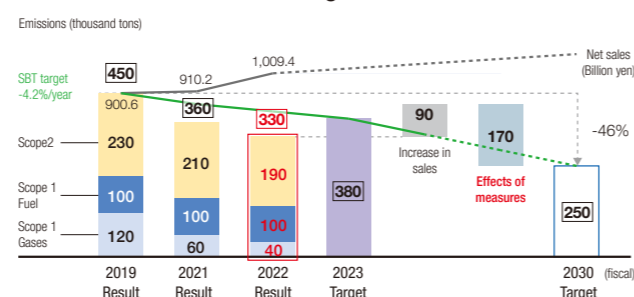


Contributions to CO₂ Emissions Reduction in Society through Products (million tons)

In addition to the above measures, we aim to increase the percentage of renewable energy among company-wide electricity consumption* (6.2% in fiscal 2022) to 40% by fiscal 2030 by increasing the amount of purchased renewable energy in the future.

* Electricity consumption: Electricity purchased + solar power generated internally

Trends in GHG Emissions during Production



● Contributions to CO₂ emissions reductions in society through our products

Fuji Electric aims to contribute to the achievement of carbon neutrality together with our customers through our energy and environmental businesses. The indicator is the contributions to CO₂ emissions reduction in society through our products, which we began calculating in fiscal 2009. The difference in power consumption between cases where existing products continue to operate and cases where products with superior environmental performance are implemented to replace them is converted into CO₂ equivalent figures. For products shipped in and after fiscal 2009 during their operation period, the amount of CO₂ reduction of the product operated for one year is calculated as the amount of contribution. We intend to increase our contribution amount by increasing the sales weight of new products that maximize the reduction of power loss in addition to increasing sales of equipment that generates clean energy.

Main Contributing Products and Contribution Amounts (Fiscal 2022)

Segment	Main Contributing Products and Contribution Amounts
Power Electronics 26.4	Low-voltage inverters (25.8), Rotating machines (0.3) FA components (0.1), Power supply and facility systems (0.1)
Semiconductors 5.8	Industrial modules and discrete (5.8)
Power Generation 16.5	Thermal (biomass, etc.) and geothermal power generation (13.1) Hydro power generation (1.8), Solar power generation, etc. (1.6)
Food and Beverage Distribution 1.1	Vending machines (0.4) Store facilities and equipment (0.7)

(Unit: million tons)

<Start reviewing the scope of reduction contribution>

In fiscal 2023, we have started reviewing the scope of products subject to the reduction contribution amount. We plan to raise the composition ratio of target products by clarifying the concept of the amount of contribution and reviewing the target product groups, as well as revising the Fiscal 2030 Target if necessary.

Main Non-target Businesses (as of fiscal 2022)

- Power Electronics: Energy management, Substation system, Switchboards, Equipment installation, IT solutions, etc.
- All segments: On-site repairs and other service-related matters, etc.

Sales Composition Ratio of Contributing Products (Fiscal 2022)

	Power Electronics	Semiconductors	Power Generation	Food and Beverage Distribution	Total
Net sales of contributing products	50.5	122.8	21.7	43.2	238.2
Total net sales	617.5	206.2	87.3	95.3	1,009.4
Composition ratio	8%	60%	25%	45%	24%

(Unit: Billion yen)

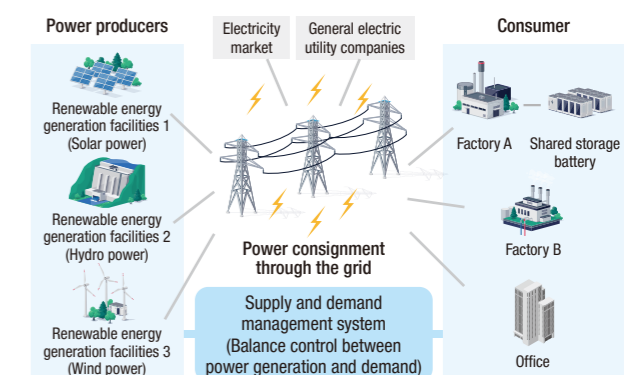
TOPICS Off-site renewable energy supply model

Customers are increasingly requesting for stable procurement of renewable energy over the long term. Fuji Electric offers a variety of products that are indispensable for the stable supply of energy. By leveraging this advantage to install renewable energy generation equipment at customers' facilities and connect power producers with our customers, we offer on-site PPAs* that allow customers to procure stable renewable energy over the long term.

However, the space available for installation on the customer's site is limited. As such, off-site PPAs are expected to grow significantly in the future. An off-site PPA is a structure in which renewable energy generation facilities are installed on remote sites and the electricity generated at such sites is sent to customers via the power transmission and distribution network. Fuji Electric will contribute to the stable supply of renewable energy in the future by providing the products required for the off-site renewable energy supply model,

* PPA: Power Purchase Agreement

such as renewable energy generation facilities, substation equipment, storage battery systems, and supply and demand management systems, in cooperation with off-site PPA operators to meet customer needs.



Initiatives to Achieve a Recycling-Oriented Society and a Society in Harmony with Nature

Fiscal 2022 Results and Progress

Reduction of waste, water, and chemical substance emissions during production

FY2030 Target	FY2021	FY2022			FY2023
	Result	Target	Result	Key measures and activities	Target
Ratio of waste sent to landfills*1 1.0 (%)	2.3	1.2 or less	0.5 <Achieved>	• Establishment of a disposal method for inorganic sludge from semiconductors at Fuji Electric (Malaysia) Sdn. Bhd.	1.0 or less
Water consumption per unit of sales 1.8 or less*2 (1,000 m ³ /100 million yen)	1.1	1.8 or less	0.9 <Achieved>	• Discontinuation of production of magnetic disks at Fuji Electric (Malaysia) Sdn. Bhd.	1.8 or less
Volatile organic compound emissions 1,694 or less*2 (t)	617	1,694 or less	625 <Achieved>	• Operation of solvent recovery equipment at Shenzhen plant	1,694 or less

*1 Ratio of waste sent to landfills: Waste sent to landfills ÷ Total waste *2 Target value is the value of the base fiscal year (to be reviewed in fiscal 2023).

Initiatives toward 2030

In recent years, there has been a growing demand for a circular economy in which resources are used in a cyclical manner. Therefore, Fuji Electric intends to reinforce its initiative to achieve zero emissions by 2050. Traditionally, the focus has been on reducing the amount of waste generated during production and sent to landfill and reducing the amount of water consumption. In addition to our existing activities, we will take initiatives to shift to a highly recyclable product model, including a review of design, with the aim of creating products that do not generate environmental impact throughout their entire lifecycle. Specifically, we will establish new goals in fiscal 2023 from a medium- to long-term perspective, and incorporate measures into the plan. Ultimately, we aim to minimize the burden on nature by reducing the amount of waste generated during the life cycle and sent to landfill as well as the discharge of wastewater and chemical substances generated during production to near zero, thereby achieving a recycling-oriented society and a society in harmony with nature.

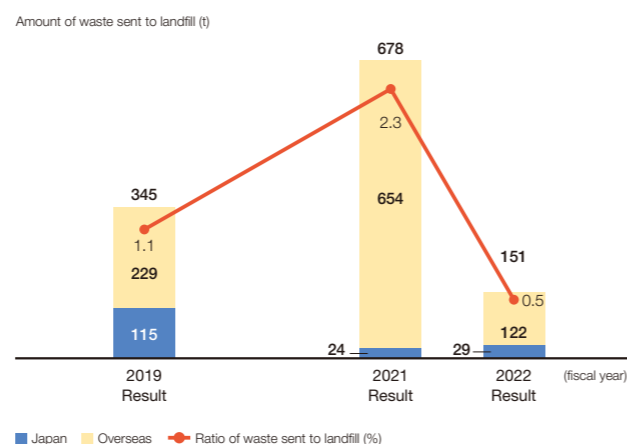
<Issues to be addressed to reduce waste sent to landfill>

To reduce the amount of waste sent to landfill to less than 1.0% on a stable basis, overseas bases are an issue. In fiscal 2023, we will clarify issues regarding overseas bases where the ratio of waste sent to landfill remains high and initiate countermeasures.

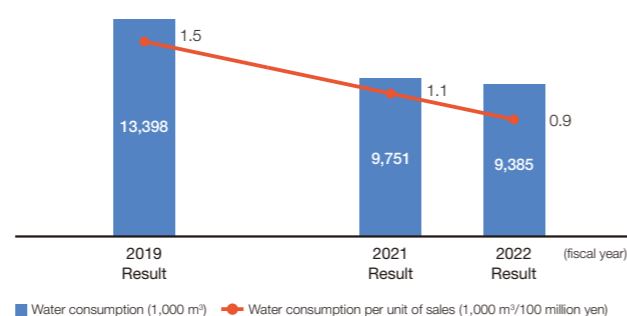
<Compliance with the New Plastics Law>

In Japan, the new plastics law (Act on Promotion of Resource Circulation for Plastics) came into effect in April 2022. The purpose of this law is to promote resource recycling in the sales channels of plastics, from product design to waste disposal. Therefore, we recognize the importance of expanding waste plastic management and reduction activities not only during production but throughout the entire supply chain. As such, we have begun to study the true state of emissions outside of production and identify countermeasures to deal with such emissions.

Amount of Waste Sent to Landfill within Japan and Overseas



Water Consumption and Water Consumption per Unit of Sales during Production



Approach to Disclose Information in Accordance with TCFD Recommendations

Since declaring support for the Task Force on Climate-related Financial Disclosures (TCFD) recommendations in June 2020, we have reflecting the results of our analysis of risks and opportunities arising from climate change in our business strategies and have updated our disclosures in line with TCFD recommendations. In March 2022, the Company disclosed significant risks and opportunities as well as adaptation measures. Of these risks, we recognize that the risks with

especially great impact on our business are (1) suspension of production activities due to flooding and other damage caused by frequent extreme weather events under the “4°C” scenario and (2) increased environmental investments and expenses to reduce GHG emissions in production activities under the “1.5°C” scenario. Therefore, we identified the specific impact of these two risks and examined and calculated the countermeasures and financial effects.

Significant Risks and Opportunities Identified by Fuji Electric and Adaptive Measures to Be Taken

	Risks	Opportunities	Adaptation Measures
4°C	<ul style="list-style-type: none"> Delays in procurement of parts Cost increases due to wind and flood damage countermeasures in response to frequent extreme weather events Delays in outdoor construction and service work Delays in product delivery due to the disruption of logistics network and influence to production 	<ul style="list-style-type: none"> Increased demand resulting from active investment in business continuity plan (BCP) measures by customers 	<ul style="list-style-type: none"> Promote multi-sourcing of parts (identify parts with high procurement risk due to the disasters, and diversify risks) Reinforce wind and flood protection measures for factory buildings in Japan and overseas located mainly in bay areas and areas covered by hazard maps
1.5°C	Suppliers	<ul style="list-style-type: none"> Promotion of parts standardization and unification Expanded use of recycled materials in products 	<ul style="list-style-type: none"> Promote multi-sourcing Support for decarbonization of key suppliers
	Development and Design	<ul style="list-style-type: none"> Delays in technology development to meet decarbonization requirements 	<ul style="list-style-type: none"> Increased demand for technologies needed to promote decarbonization
	Manufacturing	<ul style="list-style-type: none"> Cost increases associated with decarbonization of production facilities (plant and equipment investment and other costs, purchase of renewable electricity) 	<ul style="list-style-type: none"> Accelerate R&D of new technologies related to decarbonization, release them to the market in a timely manner, and reduce their costs Expand parts recycling through collaboration with customers and recycling companies Strengthen reduction of greenhouse gas emission at production facilities
	Logistics	<ul style="list-style-type: none"> Promotion of “local production for local consumption” (inventory reduction, logistics cost reduction, tax saving) 	<ul style="list-style-type: none"> Respond to increased demand by increasing production capacity [Semiconductors] Shift resources to renewable energy business [Power generation]
Customers and Markets	<ul style="list-style-type: none"> Loss of business opportunities due to lack of support for 100% usage of renewable energy during production Decrease in demand for thermal power generation 	<ul style="list-style-type: none"> Increased demand for renewable energy and energy-saving products Increased demand for renewal of thermal power generation services due to changes in fuel types for thermal power generation and the spread of CCS and CCUS 	

Significant Risks Identified by Fuji Electric, Adaptive Measures and Financial Impact

	Risk Identification	Adaptive Measures and Financial Impact
Frequent extreme weather events (4°C)	<p>Flooding risk at production bases Target: All 44 production bases in Japan and overseas Result: 6 bases (3 domestic and 3 overseas) are at risk</p> <ul style="list-style-type: none"> Risk assessment was conducted by Tokio Marine dR Co., Ltd. and was scrutinized internally For bases with a flood hazard of 0.5 m or more confirmed by official hazard information and bases without any hazard information, we have assessed them as “at risk of flooding” when flooding risk is considered high due to topographical conditions and other factors. <p><Reference Materials></p> <ul style="list-style-type: none"> Japan: Web-Based Flood Simulation Search System at an Arbitrary Point (Ministry of Land, Infrastructure, Transport and Tourism), Hazard maps (each municipality) Overseas: Aqueduct Water Risk Atlas (WRI) 	<ul style="list-style-type: none"> At production bases at risk of flooding, we will formulate flooding countermeasures to minimize damage and review BCPs Even at bases that are considered low-risk, we will promote flood countermeasures as necessary We will take initiatives to stabilize the supply of parts in the event of a natural disaster by establishing a supply system from multiple bases while identifying flooding risks in the supply chain
Increased environmental investments and expenses (1.5°C)	<p>Estimate environmental investments and expenses required to achieve the Fiscal 2030 Target (GHG reduction in production activities: over 46% reduction from fiscal 2019 levels)</p> <ul style="list-style-type: none"> Install solar power generation equipment within the Company’s factory Upgrade facilities (production facilities, air conditioning, lighting, etc.) Purchase electricity and credits derived from renewable energy sources 	<p>Total environmental investments and expenses associated with reducing GHG emissions during production</p> <ul style="list-style-type: none"> Fiscal 2022: Approximately 2.5 billion yen Fiscal 2023-2030 (cumulative total): Approximately 13 billion yen (including the risk of higher purchase unit prices for renewable energy and credits) <p>* This financial impact should be reviewed in the event of a revision of the business plan or sudden changes in the environment.</p>

Please refer to our website for detailed disclosure requirements of the TCFD recommendations on Governance, Strategy, Risk Management, and Metrics and Targets.
https://www.fujielectric.com/company/csr/global_environment/management_02_03.html