

E: Environment

Environmental Sustainability Vision 2050

The Mitsubishi Electric Group adopted its Environmental Vision 2021, which aims to create a low-carbon, recycling-based society that functions in harmony with nature, in 2007. The Group also has promoted its 9th Environmental Plan created from a medium- and long-term perspective in light of the Paris Agreement since fiscal 2019. In this plan, future water shortage measures are considered as well. In June 2019, the Group announced its Environmental Sustainability Vision 2050 to show its new long-term environmental management vision.

Having developed its business through interaction with many stakeholders including customers, business partners and employees and being deeply rooted in society, the Mitsubishi Electric Group is expected to assume responsibility for contributing to the environment. With this recognition, the Environmental Sustainability Vision 2050 is intended to aim for the future together with stakeholders.

"Protect the air, land, and water with our hearts and technologies to sustain a better future for all" has been adopted as an environmental declaration in the Environmental Sustainability Vision 2050. The air, land, and water are vital for the survival of every creature on Earth. Bearing these three elements in mind, we will continue considering to which element we will contribute in what business area of the Mitsubishi Electric Group and put ideas into practice. In addition, we share our commitment to the environment and technologies not only with those who work for the Mitsubishi Electric Group but also with all other stakeholders and contribute to the realization of a sustainable future under three action guidelines shown in the Environmental Sustainability Vision 2050, while striving to further improve our technological prowess.

Environmental Sustainability Vision 2050

Environmental Declaration

Protect the air, land, and water with our hearts and technologies to sustain a better future for all.



To solve various factors that lead to environment issues, the Mitsubishi Electric Group shall unite the wishes of each and every person, and strive to create new value for a sustainable future.

Three Environmental Action Guidelines

1

Apply diverse technologies in wide-ranging business areas to solve environmental issues

2

Challenge to develop business innovations for future generations

3

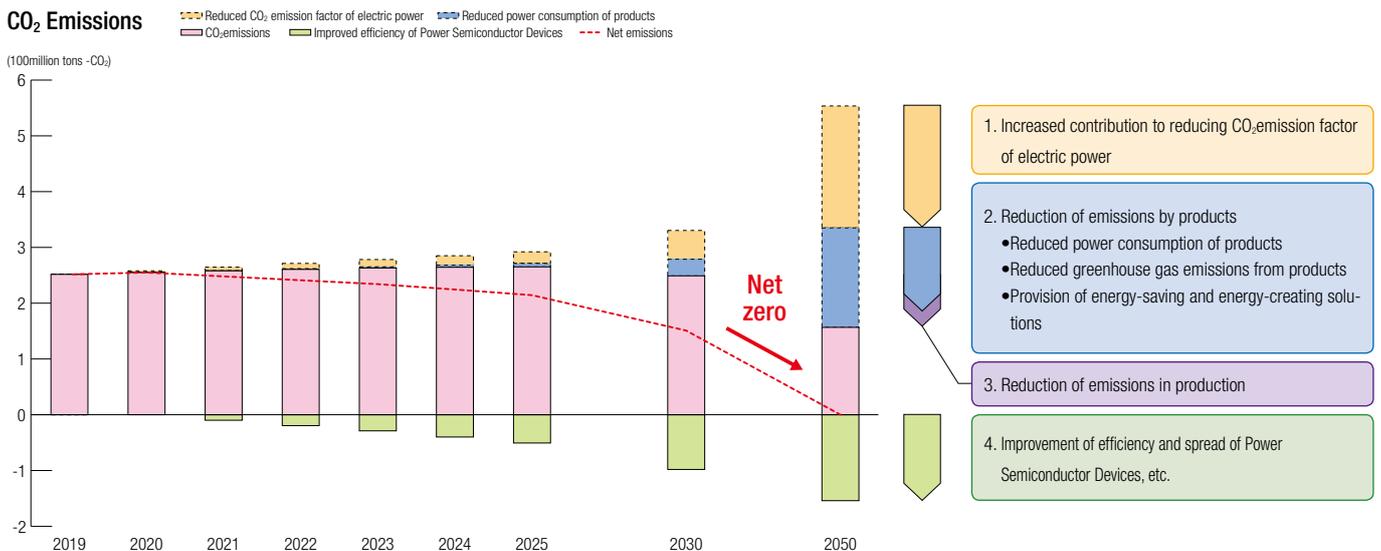
Publicize and share new values and lifestyles

Key Initiatives

<ul style="list-style-type: none"> - Climate Change Measures - Resource Circulation - Live in Harmony with Nature 	<ul style="list-style-type: none"> - Long-term Activities - Innovation - Nurturing Human Resources 	<ul style="list-style-type: none"> - Understanding Needs - Co-create and Disseminate New Values - Live in Harmony with the Region
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Initiative to Realize a Decarbonized Society

The Mitsubishi Electric Group will further enhance our initiatives to reduce greenhouse gas emissions toward the realization of a decarbonized society, aiming for virtually zero greenhouse gas emissions^{*1} in 2050.



^{*1} Achieve net-zero emission by increasing the proportion of contribution from improvement of efficiency and spread of Power Semiconductor Devices, etc. in reducing greenhouse gas emissions to a scale that outweighs the reduction in CO₂ emissions

Greenhouse Gas Reduction Targets Based on Scientific Grounds

It is recognized that the Mitsubishi Electric Group's greenhouse gas reduction targets for 2030 are based on scientific grounds to "Holding the increase in the global average temperature to well below 2°C above preindustrial levels" as stipulated in the Paris Agreement. We have obtained certification from the SBT (Science Based Targets)¹ initiative.

We will continue to promote the reduction of greenhouse gases through a variety of business areas in the Mitsubishi Electric Group.



¹ International initiative by the United Nations Global Compact (UNGC), the World Wildlife Fund (WWF), the Carbon Disclosure Project (CDP), and the World Resources Institute (WRI). The SBT initiative propels companies to set reduction targets that are consistent with insights of climate science with an aim to control the rise in the global average temperature due to climate change at most under 2°C compared with the temperature before the Industrial Revolution.

Reduction Targets of the Mitsubishi Electric Group

Scope 1 and 2	Mitsubishi Electric commits to reduce total scope 1 and 2 GHG emissions by 18% by 2030, compared to the base year of 2016.	Scope 3	Mitsubishi Electric commits to reduce total scope 3 GHG emissions by 15% by 2030, compared to the base year of 2018.
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- Scope 1** Direct emissions resulting from fuel use within the company.
- Scope 2** Indirect emissions associated with the use of externally purchased electricity and heat.
- Scope 3** Indirect emissions from the entire value chain other than Scope 1 and 2 emissions. (Category 11 (use of sold products) applies to our target.)

Financial information based on recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)

The Mitsubishi Electric Group has expressed its support for the recommendations of the TCFD (Task Force on Climate-related Financial Disclosures). In line with these recommendations, the Group discloses relevant information on climate change.



Strategy for Climate Change

The Group formulates a three-year Environmental Plan as an integral goal based on the corporate strategy and environmental vision for initiatives toward environmental issues including climate change. The plan sets out quantitative targets to be achieved, and the Executive Officer in charge of Corporate Total Productivity Management & Environmental Programs, who is responsible for environmental management, formulates the plan and shares it with each group organization. Each organization implements its own Environmental Action Plan (annual plan) based on the Environmental Plan.

The results of business execution are reviewed by the Executive Officer in charge of Corporate Total Productivity Management & Environmental Programs, and each organization reviews the Environmental Plan (three-year plan) and its Environmental Action Plan (annual plan) as necessary.

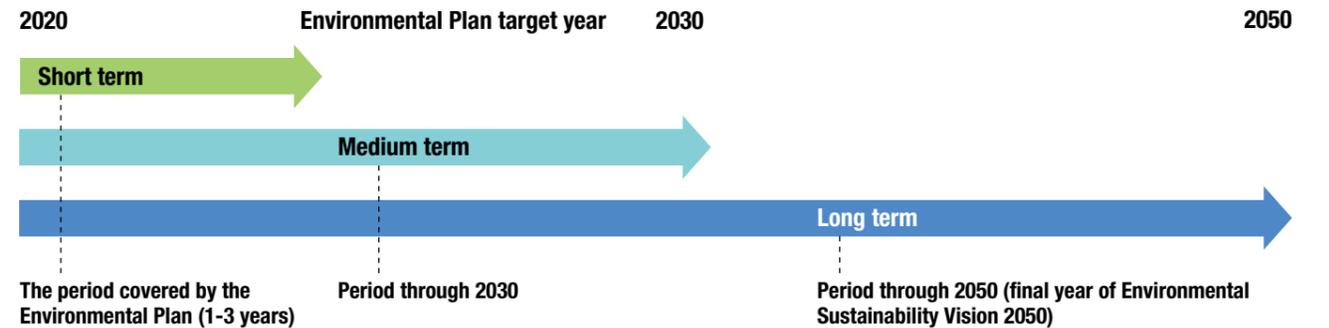


Overview of risk and opportunity assessment through scenario analysis

Through scenario analysis, we assess the corporate activities of the Group in terms of risks and opportunities.

The assessment is made based on two scenarios: a scenario to keep the increase in the global average temperature to below 2°C above pre-industrial levels (2°C scenario¹) and a scenario in case the temperature rises nearly 4°C as a result of continuing the conventional global warming countermeasures (4°C scenario²).

The period covered by the scenario analysis is up to 2050, and the periods are classified as shown below.



¹ Applied the IEA 450 scenario, etc.
² Applied the IPCC RCP 8.5 scenario, etc.

Examples of climate-related risks and responses by the Mitsubishi Electric Group

Risks	Examples of the Group's initiatives
Transition risks	
Policy and legal risks (short to long-term) <ul style="list-style-type: none"> Increase in carbon pricing Strengthened obligation of emission reports Orders and regulations for existing products and services by relevant authorities Litigation 	<ul style="list-style-type: none"> Reduction of GHG³ emissions through promotion of environmental plans and setting and taking initiative on science based targets, Promotion of environmentally conscious design (global warming, resource conservation, recyclability, hazardous substances, packaging) Capital investment related to environmental activities, including energy saving and global warming countermeasures Implementation of supply chain management (formulation and implementation of green procurement standards) Reporting of Scope 1, 2 and 3 emissions and implementation of third-party certification Acquisition and maintenance of ISO 14001 certification Confirmation of legal compliance through environmental audits Disclosure of initiatives related to climate change and other environmental issues
Technology risks (medium to long-term) <ul style="list-style-type: none"> Replacement of existing products and services with low-emission alternatives Failed investment in new technologies Cost of transition to low-emission technologies 	<ul style="list-style-type: none"> Development of new technologies through R&D investment Implementation of intellectual property activities Mobile capital investment mainly in growth driving businesses Capital investment related to environmental activities, including energy saving and global warming countermeasures
Market risks (medium to long-term) <ul style="list-style-type: none"> Changes in customer behavior Uncertainty in market signals Rise in raw material costs 	<ul style="list-style-type: none"> Promotion of environmentally conscious design Capital investment related to environmental activities, including energy saving and global warming countermeasures Market research and feedback on product development
Reputation risks (medium to long-term) <ul style="list-style-type: none"> Changes in consumer preferences Criticisms of the industrial sector Increased concerns among stakeholders, or negative feedback from them 	<ul style="list-style-type: none"> Reduction of GHG emissions through promotion of environmental plans and setting and taking initiative on science based targets, Capital investment related to environmental activities, including energy saving and global warming countermeasures Promotion of environmentally conscious design Response to environmental risk management Implementation of natural environment conservation activities, including the protection of local biodiversity Disclosure of initiatives related to climate change and other environmental issues
Physical risks	
Acute risks (short to long-term) <ul style="list-style-type: none"> Increased severity of extreme weather such as heavy rains and floods 	<ul style="list-style-type: none"> Formulation and periodic review of BCPs⁴ Implementation of supply chain management (formulation and implementation of green procurement standards, decentralization of production sites by purchasing from multiple companies, etc.)
Chronic risks (medium to long-term) <ul style="list-style-type: none"> Changes in precipitation patterns and extreme variations in weather patterns 	<ul style="list-style-type: none"> A certain amount of investment every year in environmental activities, including initiatives against climate change Reduction of GHG emissions through promotion of environmental plans and setting and taking initiative on science based targets,

³ Greenhouse gas
⁴ Business continuity plan

Examples of climate-related opportunities and initiatives by the Mitsubishi Electric Group

Social issues (opportunities)	Examples of the Group's initiatives
■ Resource efficiency <ul style="list-style-type: none"> • Use of more efficient modes of transport (modal shift) • Use of more efficient and resource-saving production and distribution processes • Promotion of recycling • Relocation to a more efficient building • Reduction in water usage and consumption 	<ul style="list-style-type: none"> • Development of products suitable for resource conservation, such as thinner materials and smaller tubes • Promotion of plastic recycling • Energy conservation and reduction of operation costs for buildings as a whole through ZEB (net Zero Energy Building), etc. • Development of coordinated control technology for in-building mobility and facilities • Provision of systems for water distribution management, water storage and discharge through dam management, and water intake management for agricultural water • Promotion of reclaimed water use by ozonizers • Strengthening of products and solutions that support e-F@ctory* • Promotion of a modal shift through the transportation systems business • Development of products and technologies that contribute to autonomous driving • Localization of production and sales bases
■ Energy source <ul style="list-style-type: none"> • Use of lower-emission energy sources • Use of new technologies • Shift toward decentralized energy generation 	<ul style="list-style-type: none"> • Effective use of electricity and response to needs for system stabilization accompanying the expansion of renewable energy and decentralization of power sources <ul style="list-style-type: none"> - Large energy storage systems - Smart medium voltage DC distribution network system D-SMiree* - Distributed power supply system/VPP system
■ Products and services <ul style="list-style-type: none"> • Development and/or expansion of low emission goods and services • Development of new products or services through R&D and innovation • Ability to diversify business activities • Shift in consumer preferences 	<ul style="list-style-type: none"> • Development of energy-saving products optimized for local climate conditions and needs • Development of innovative new products such as the Misola* , a lighting fixture that creates the illusion of a deep blue sky and natural light in indoor spaces. • Improvement of the energy efficiency of railway vehicles and effective utilization of regenerative electric power from braking • Demonstration of ZEB-related technologies, including the construction of demonstration facilities • Development of the EcoMBR** filtration membrane cleaning system for water treatment • Provision of smart meters • Development and supply of energy conservation equipment that facilitates the measurement of energy consumption and the collection and analysis of energy consumption data • Global supply of high-efficiency equipment, including electric power train systems • Development and supply of low-loss SiC devices • Establishment of the Business Innovation Group • Localization of production and sales sites • Balanced promotion of short-, medium- and long-term research and development
■ Resilience <ul style="list-style-type: none"> • Participation in renewable energy programs and adoption of energy efficiency measures • Resource substitutes/diversification 	<ul style="list-style-type: none"> • Effective use of electricity and response to needs for system stabilization accompanying the expansion of renewable energy and decentralization of power sources • Contribution to preventing global warming by using observation satellites, strengthening the monitoring of meteorological phenomena and the global environment, understanding of disaster situations, and promoting disaster prevention • Meteorological radar system • Field Edge® image-based water level measurement device • Provision of BCP solutions, such as data centers, teleworking, and video conferencing services

As a result of this assessment of climate-related risks and opportunities and our initiatives toward them, the Mitsubishi Electric Group can be said to have resilience against such risks under both the 2°C and the 4°C scenarios and the opportunity for sustainable growth through the solving of social issues arising from climate change¹.

¹ This conclusion is based on the scenario, and the future outlook may differ.

● Climate change indicators and goals

The Mitsubishi Electric Group's Environmental Plan

The Mitsubishi Electric Group has formulated an Environmental Plan every three years since 1993, setting specific action targets. The current 9th Environmental Plan (fiscal year 2018 to 2020 (1st April 2018 through 31st March 2021)) sets forth indexes and targets for reduction of CO₂ emissions from production, reduction of CO₂ emissions from product usage, effective utilization of resources, effective use of water, continuation of the "Mitsubishi Electric Outdoor Classroom" and "Satoyama Woodland Preservation Project," and biodiversity conservation at business sites, in line with the goals of "Creating a Low-Carbon Society," "Creating a Recycling- Based Society" and "Ensuring Harmony with Nature" that are specified in Environmental Vision 2021.