

Mitsubishi Electric Group Environmental Performance Review 2019

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



From the President

Towards Realizing Sustainable Societies Worldwide,
we are drawing on strengths within and outside of the Group,
and combining them to tackle various perplexing social issues.



Takeshi Sugiyama
President & CEO
Mitsubishi Electric Corporation

Promoting initiatives to achieve “Environmental Vision 2021”

The subject of environmental issues such as climate change, resource depletion, chemical substances, and marine plastics is increasingly growing as a topic of conversation amongst the general public. In response to this, the international community is working to comply with the Paris Agreement on Climate Change and the 2030 Agenda for Sustainable Development, in which there are 17 sustainable development goals commonly referred to in industry as “SDGs,”^{*1} and to realize a circular economy.^{*2} Under these circumstances, we strongly feel that manufacturers such as ourselves must contribute to those agreements and goals through our products and services. The Mitsubishi Electric Group has long been committed to contributing to the realization of an affluent society while simultaneously achieving “sustainability, safety, security, and comfort.” We are currently working to reduce CO₂ emissions from manufacturing processes and product use, ensure the effective use of resources, and preserve biodiversity, for which specific targets were set to be achieved by fiscal 2021 at the time of drafting “Environmental Vision 2021.”

Then, in fiscal 2019, we set targets for the effective use of water resources taking into consideration international laws and regulations would continue to grow stricter, and that we must enforce overall environmental management at our sites overseas.

As a result of these environmental activities, CDP^{*3} placed Mitsubishi Electric on the A List in two categories, “Climate Change” and “Water Security,” for the third consecutive year. Additionally, five products received the Energy Conservation Grand Prize from Japan’s Ministry of Economy, Trade and Industry, and the Power Distribution Systems Center became the first in the Group to be certified as a site engaged in distinguished greening

activities by SEGES^{*4} for its onsite biodiversity preservation activities. It is a great honor that our various products and initiatives have been highly recognized.

Contributing to SDGs through a wide variety of businesses

As we design and execute future business activities, we must be certain to always contribute to obtaining the SDGs. The 17 goals are interrelated, and by solving the environmental issues, we can contribute to achieve SDGs that approach to other issues.

As comprehensive electrical and electronics manufacturers, the Mitsubishi Electric Group is committed to developing technologies and manufacturing products and systems that will enable greater energy savings, more effective use of water and other resources, and further contribute to creating recycling-based societies. This will not be achieved solely through manufacturing, such as reducing product size and utilizing recycled materials, but also by utilizing resources more carefully such as minimizing parts replacement by improving product durability, increasing the percentage of product parts that can be recycled after use, and other initiatives.

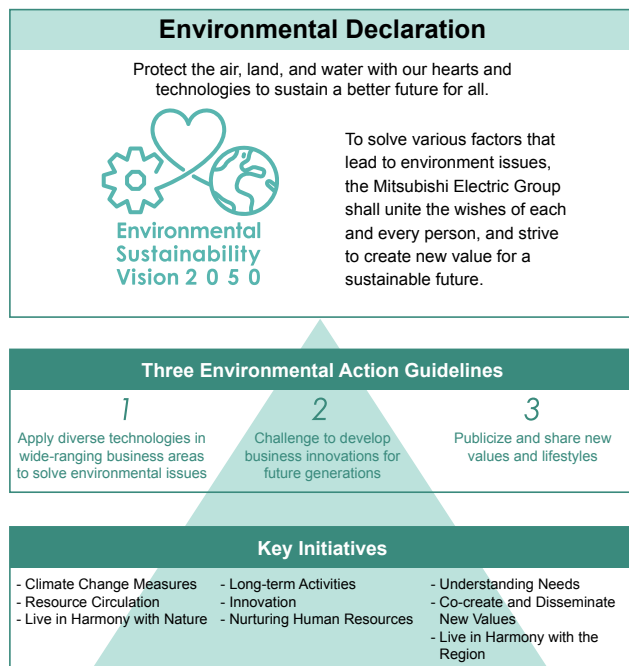
To successfully achieve our objectives and goals, it is indispensable for us to further expand collaboration with various entities outside of the Mitsubishi Electric Group. Many of the issues societies around the world are facing cannot be solved by the Mitsubishi Electric Group, or any other group, alone. We must reach out and listen to the opinions of local residents, local administrations, customers, and other companies and sources of information, and recognize the roles we are to play and reflect these in specific initiatives.

As I stated above, our intention is to focus on contributing to the realization of all SDGs in our activities and resolve perplexing social issues, including those related to the environment.

Announcement of “Environmental Sustainability Vision 2050” – Towards the Next 30 Years

In June 2019, the Mitsubishi Electric Group announced “Environmental Sustainability Vision 2050” and made an environmental declaration to “Protect the air, land, and water. With our hearts and technologies, sustain to a better future for all.” Our aim is to share ideas and technologies not only within the Mitsubishi Electric Group, but also with those outside in order to resolve issues related to air, land, and water. In doing so, we hope that all employees in the

Environmental Sustainability Vision 2050



Group and those we work with outside of it will passionately take action and work towards creating a sustainable future.

Three action guidelines have been formulated to actualize the targets stipulated in Environmental Sustainability Vision 2050.

Firstly, as comprehensive electrical and electronics manufacturers, the Mitsubishi Electric Group shall utilize diverse technological assets throughout wide-ranging business areas to solve various environmental issues. Secondly, as a Group, we shall draw on internal and external strengths, combine them when required to resolve difficult issues, and take on the challenge of developing technologies and business innovations for future generations. Furthermore, we shall promote active dialogue, collaboration, and co-creation with many people and entities outside the Group, publicizing and sharing new values and lifestyles that will result in living comfortably, in harmony with nature.

In order to implement these three guidelines and steadily progress forward, we will formulate a concrete action plan by fiscal 2022, the year we officially enact Environmental Sustainability Vision 2050.

My personal goal is to ensure that the employees of the member companies in the Mitsubishi Electric Group are truly motivated to contribute to preserving the environment, and that they too acknowledge the need for all members of society to be involved.

June 28, 2019

- *1 SDGs: Sustainable Development Goals: Included in the “2030 Agenda for Sustainable Development” formulated by the United Nations General Assembly in September 2015.
- *2 Circular economy: New economic activities that bring sustainability to both the environment and the economy by circulating resources and products.
- *3 CDP: formally called Carbon Disclosure Project. International nongovernmental organization (NGO) that investigates, evaluates, and discloses the environmental efforts of companies and cities.
- *4 SEGES: Social and Environmental Green Evaluation System: Accreditation system for evaluating green efforts by the Organization for Landscape and Urban Green Infrastructure.



Three Environmental Action Guidelines

Three Environmental Action Guidelines

1

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

The Mitsubishi Electric Group shall utilize diverse technological assets throughout wide-ranging business areas, and across the entire value chain, to solve various environmental issues, including climate change, resource recycling and coexisting harmoniously with nature.

Key Activities

Climate Change Measures

- Promoting and disseminating outstanding energy-saving products, systems, services and renewable energy businesses, together with our stakeholders, we will contribute to reducing greenhouse gases worldwide.
- Respecting long-term goals based on international agreements, we will promote the reduction of greenhouse gases throughout the value chain, from development, design, procurement of raw materials and production through sales, distribution, use and disposal. At present, our target is to reduce CO₂ emissions 30% by 2030 and more than 80% by 2050.
- Observing changes in the global environment, we will provide solutions that contribute to minimizing the risks of natural disasters.

Resource Circulation

- Reducing the size and weight of products, we will consider the use of recycled materials and recyclability rate of the products and systems we produce.
- Eliminating resource waste throughout the value chain, we will strive to maximize the effective use of resources.
- We will work to expand the supply of safe, clean water globally, as well as to enforce water treatment that does not pollute oceans and rivers.
- We will promote the effective use of water taking the water environment of each region into consideration.
- We will promote resource recycling businesses globally, such as reuse, repair of products/systems and waste reduction.
- We will aim to achieve 100% effective use of wastes, such as plastics, generated during manufacturing processes.

Live in Harmony with Nature

- Throughout the Group, we will carry out activities to preserve biodiversity in the mountains, rivers, and oceans, and at all business sites, and promote the development of local environments and human resources to be passed to future generations.
- We will work to control, suppress, substitute, and properly dispose of harmful substances that may affect the natural environment.

2

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

The Mitsubishi Electric Group shall utilize diverse technological assets throughout wide-ranging business areas, and across the entire value chain, to solve various environmental issues, including climate change, resource recycling and coexisting harmoniously with nature.

Key Activities

Long-term Activities

- We will set specific indices and action items while considering future prospects in the mid-term Environmental Plan formulated every three years.
- We will verify the validity of long-term goals approximately every five years, doing so considering international agreements, foreign affairs and business conditions.

Innovation

- We will cooperate with other companies and institutions, and use our technological assets, technologies and business synergies to create innovative technologies and solutions.
- We will proactively adopt innovational technologies and solutions that enable us to lead manufacturing in future generations.

Nurturing Human Resources

- We will foster a corporate culture in which employees, as ordinary citizens, take the initiative on creating new lifestyles in harmony with nature.
- We will develop highly specialized human resources who accept diverse values, and proactively work on environmental issues.



3 Publicize and share new values and lifestyles

The Mitsubishi Electric Group shall promote active dialogue, collaboration, and co-creation with all stakeholders, publicizing and sharing new values and lifestyles that will result in living comfortably, in harmony with nature.

Key Activities

Understanding Needs

- We will work to understand our customers' needs and expectations for the environment through sales activities, exhibitions, events, and other initiatives.
- We will hold discussions with stakeholders, and confirm the validity of our environmental targets and measures, to promote more effective environmental activities.

Co-create and Disseminate New Values

- We will propose new lifestyles that provide the pleasure of contributing to the environment through the use of our products, systems, and services.

Live in Harmony with the Region

- We will hold discussions with local residents and municipalities, and contribute to creating a better local environment, including Satoyama conservation and bio-diversity preservation activities at business sites.

Environmental Activities for a Sustainable Future

Mobility

Safe and comfortable car life free from traffic accidents and congestion



Safe and effective railway systems with high energy efficiency



Lifestyles

Space harmonious with nature where high energy efficiency and amenity coexist



Support next-generation communications with advanced technologies



Buildings and cities equipped with environment-friendly infrastructures



Contribute to the supply of clean, safe water for all



Thorough reduction of CO₂ and emissions from manufacturing processes



Manufacturing that optimizes productivity, quality improvement, energy use, etc.

Infrastructure

Industry

Fiscal 2019 Environmental Topics

Topic 1

Highest in CDP's "Climate change" and "Water" for 3rd consecutive years

We have been recognized by the CDP as an outstanding company in its activities and strategies for reducing emissions and mitigating climate change, as well as its responses and strategies for water resources. In fiscal 2017, 2018, and 2019, Our Company was selected as one of the "The A list" for the highest evaluations in the "Climate change" and "Water security" categories for 3rd consecutive years. In addition, it was selected as a "CDP Supplier Engagement Leader" in the "Supply chain" this year. We continue to take active initiatives to realize a sustainable society.

* CDP is an international NGO (nongovernmental organization) that surveys, evaluates, and discloses the environmental efforts of companies and cities.



Topic 2

Power Distribution Systems Center Acquires "SEGES" Certification

Power Distribution Systems Center (Marugame City, Kagawa Prefecture), has been certified as "SEGES Excellent Stage1 **" by Organization for Landscape and Urban Green Infrastructure, with recognitions for its environmental efforts such as biotope development, green louver installation, and Satoyama conservation activities.

We will continue to strengthen greenery management activities and biodiversity conservation activities, for the highest stage of the certification.

*1 SEGES Excellent Stage 1: Second step of four stages in three categories of SEGES (Social and Environmental Green Evaluation System) certifications; certification in this category is given to excellent preservation and creation activities in green areas of more than 300m² owned by the company.



SEGES

SEGES
Excellent Stage 1
Certification label



Biotope



Green louver

Topic 3

Received 5 awards in Energy Conservation Grand Prize in 2019

At the "FY2018 Energy Conservation Grand Prize for excellent energy conservation equipment" sponsored by The Energy Conservation Center, Japan (ECCJ), 4 entries in "Product and business model divisions" and 1 entry in "Energy-saving case study division" were awarded as below.

Product category & Business Model Category

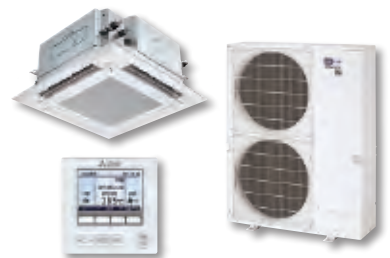
Director General Prize of Agency of Natural Resources and Energy

Room Air Conditioners
"Kirigamine Model 2019 FZ Series"



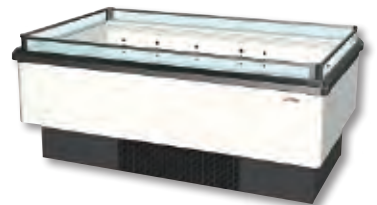
Chairman Prize of ECCJ

Package Air Conditioners for stores and offices
"Mr. Slim ZR Series"



Chairman Prize of ECCJ

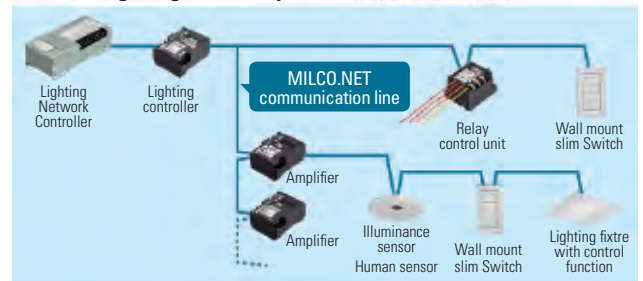
Compressors Built in Showcases
"Refrigerator and Freezer Flat SR-FF F Series"



Chairman Prize of ECCJ

"New lighting control system (MILCO.NET) and high-efficiency power supply"

Network lighting control system MILCO.NET



High efficiency power supply with DSP function



Energy Conservation Activity Category

Chairman Prize of ECCJ

"Company-wide energy-saving activities through OJT"

Topic 4

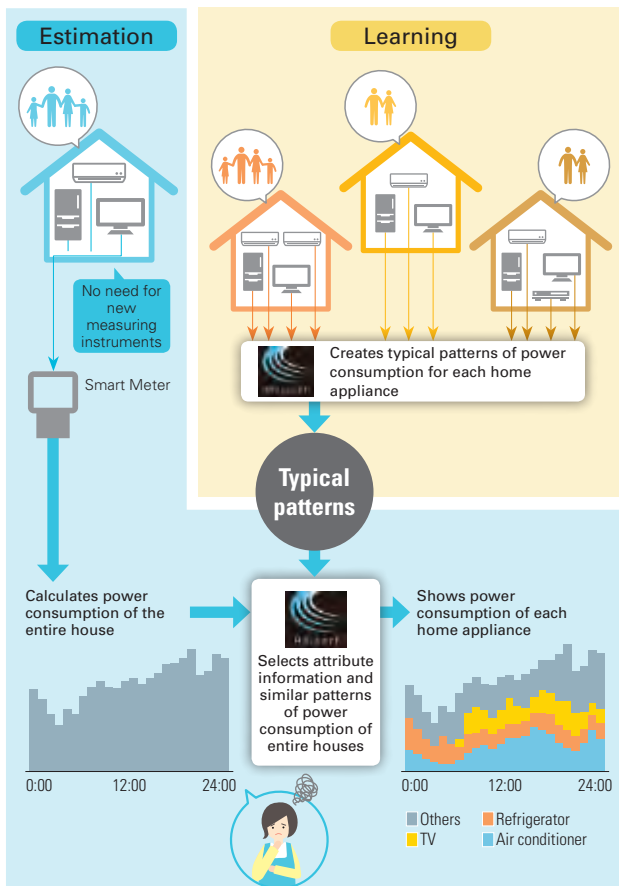
Development of the “Technology to Visualize Electricity Use by Each Home Appliance” Without the Need to Install Additional Measuring Instruments

In order to reduce residential energy consumption, it is important to understand when and how much electricity is used by each electrical/electronic home appliance. However, at present, it takes time and money to install a measuring instrument for each product.

Faced with this dilemma, in January 2019, Mitsubishi Electric announced the “Technology to Visualize Power Consumption by Each Home Appliance”. The result of joint research with Tohoku Electric Power Co., Inc., this new solution makes use of Mitsubishi Electric’s pioneering AI technology Maisart®*1 to estimate power consumption with a high degree of accuracy and doing so without the need to install new measuring instruments. Visualizing how electricity is being used could raise energy-saving awareness in the home and also help power companies offer new services.

The solution has already been adopted by an energy-saving assist service under the Customer-Assisted Smarter Project which Tohoku Electric Power Co., Inc. introduced in August 2018*2.

*1 Maisart®: Stands for “Mitsubishi Electric’s AI creates the State-of-the-ART in Technology”. Our AI-technology brand that aims at smarter use of all devices.
 *2 See Tohoku Electric Power Co., Inc.’s news release at www.tohoku-epco.co.jp/news/normal/1197475_1049.html



Topic 5

Construction of Net-Zero Energy Building Test Facility Decided

In January 2019, Mitsubishi Electric announced a plan to build a new test facility for net-Zero Energy Building (ZEB)-related technologies at its Information Technology R&D Center in Kamakura, Japan. It is scheduled to become operational in 2020.

ZEB is a building where net annual energy consumption is zero or near zero, with the primary power consumption offset by onsite energy generation (photovoltaic power, etc.). In such a building, a comfortable indoor environment is maintained while energy-saving measures such as advanced heat insulation, solar shading, and use of natural energy and high-efficiency equipment are implemented. With this test facility, our goal is to realize ZEBs; in particular, focusing on the ability to generate sufficient energy through equipment inside the building to cover all primary energy consumption.



Image of the ZEB test facility when completed

As an official ZEB Planner,*1 Mitsubishi Electric is contributing to the dissemination of ZEBs by offering plans and operational support for companies that aspire to create a ZEB. The construction of this test facility will help accelerate the development of ZEB-related technologies. We hope that the sequential introduction of such technologies to our businesses will contribute to further energy savings and the creation of more comfortable living spaces. Additionally, we will promote technological development based on our “ZEB+®*2” solution, which enables further sophistication of buildings, including services to maintain values such as productivity, comfort, user-friendliness and continual operations throughout the lifecycle of the building.

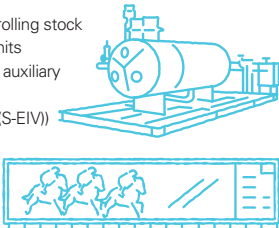
*1 Registration system set up by the Ministry of Economy, Trade and Industry (METI) in 2017 with the aim of disseminating ZEBs.
 *2 A solution offered by Mitsubishi Electric
 Note: ZEB+® is a registered trademark of Mitsubishi Electric.



01 Public Utility Systems Group

Main Products

- Inverter equipment for rolling stock
- Railcar air-conditioner units
- Railway station building auxiliary power units (Station Energy-Saving Inverter (S-EIV))
- Large-scale visual information systems
- Ozone generators
- Membrane bioreactors



Focusing on the SDGs



Supporting Sustainable Progress in Society by Developing and Providing Social Infrastructure Products, Systems, and Services that Contribute to Energy Conservation

The Public Utility Systems Group manufactures a host of social infrastructure products, systems, and services that support people’s lives. Mitsubishi Electric technologies in the areas of electric power and telecommunications have been developed in various fields, such as the onboard electrical systems for Shinkansen (bullet trains) and water treatment, among others. By integrating these technologies, we are contributing to greater efficiency and energy conservation.

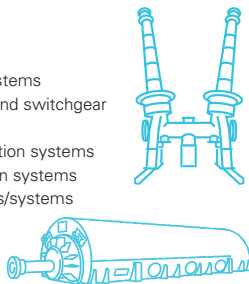
For example, we are the first company in the world to successfully produce inverters equipped with all-SiC power modules for use in rolling stock. The power modules are helping to increase energy savings in railway operations, both in Japan and overseas. Additionally, we manufacture equipment and systems for ZEBs,* contributing to advancements in a safe, secure, comfortable, and affluent society.

* ZEBs (net Zero Energy Buildings): Buildings where the net consumption of fossil fuel energy is zero or roughly zero, offset by energy savings and the utilization of renewable energy resources.

02 Energy & Industrial Systems Group

Main Products

- Turbine generators
- Protection and control systems
- Vacuum circuit breakers and switchgear
- Transformers
- Transmission and distribution systems
- Power system stabilization systems
- Power conversion devices/systems



Focusing on the SDGs



Contributing to the Creation of a “Safe, Secure, and Comfortable Sustainable Society” by Developing Environment-Friendly Devices and Systems

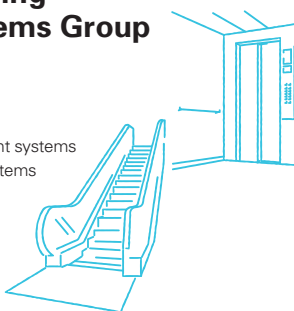
The Energy & Industrial Systems Group manufactures a wide range of systems and products that play vital roles in power generation, transmission, power distribution, and power retailing. On the product side, this includes generators, transformers, switchgear, and vacuum circuit breakers, while systems include plant monitoring, grid stabilization, grid protection and control systems, and direct-current technologies. Through these products and systems, we comprehensively support the establishment and operation of electric-power infrastructures.

With the realization of a sustainable society now an important theme globally, we are developing products that use less or no SF6 gas, which has high global-warming potential (GWP), as well as high-efficiency power generators, switchgear with less heat generation, and transformers with less heat loss. In addition to giving consideration to protecting the environment, we will continue to develop and produce high-performance devices and next-generation power systems capable of managing disasters, human threats and changes in the electric utility market. Our aim is to contribute to creating a “safe, secure and comfortable sustainable society”.

03 Building Systems Group

Main Products

- Elevators
- Escalators
- Building management systems
- Building security systems



Focusing on the SDGs



Providing Secure, Comfortable, and Efficient Solutions by Making the Most of the Mitsubishi Electric Group’s Advanced and Environmental Technologies

The Building Systems Group provides elevators, escalators, and building management systems. We always prioritize customer safety and security in the installation and maintenance of our products, and our mission is to achieve a comfortable, environment-friendly society. Accordingly, we are focused on the following environmental initiatives:

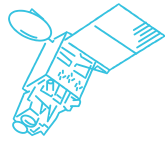
- Developing high-efficiency, resource-saving products, technologies and services
- Conserving energy and reducing waste emissions through the renewal of existing products
- Reducing energy used during the production and testing processes
- Offering one-stop ZEB solutions

* ZEB (net Zero Energy Building): A building where the net consumption of fossil fuel energy is zero or roughly zero, offset by energy savings and the utilization of renewable energy resources.

04 Electronic Systems Group

Main Products

- Communications, broadcast, and observation satellites
- Ground control systems for satellite operation
- Large telescopes
- Doppler Lidar
- Contact image sensors
- Millimeter-wave radar modules
- Mobile mapping systems



Focusing on the SDGs



Working to Develop Products that Help Solve Various Problems Related to Global Environment Protection and Urban Development

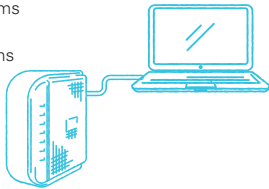
The products of the Electronic Systems Group play a vital role in solving humankind's shared environmental problems. This is achieved by further disseminating the use of renewable energies and contributing to the creation of cities that are more comfortable to live in.

For example, we were the primary contractor for manufacturing the "IBUKI" (GOSAT) and "IBUKI-2" (GOSAT-2), both of which are designed to observe the concentration and distribution of greenhouse gases. In addition to these two satellites, the DAICHI-2 Advanced Land Observing Satellite (ALOS-2) and geostationary meteorological satellites Himawari-8 and Himawari-9 contribute to safeguarding people's lives and solving environmental problems by observing global warming and weather phenomena. Meanwhile, high expectations are attached to our Doppler Lidar, which can remotely measure the moving speed of dust and particulates in the atmosphere. It is expected that this technology will contribute to the renewable energy domain through more efficient control of wind farms and extending the service life of wind turbines.

05 Communication Systems Group

Main Products

- Subscriber terminal equipment for optical access systems
- Gateway equipment
- Network camera systems



Focusing on the SDGs



Striving to Solve Social Issues, Including Reducing Environmental Impact through High Value-Added Systems

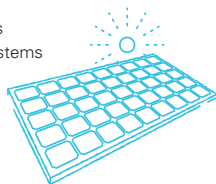
The Communication Systems Group manufactures communication infrastructure equipment that uses optical and wireless communication technologies and network camera systems that utilize imaging technologies such as video content analysis.

These products are now key elements of the social infrastructure that is essential to our daily lives, the growth of industry, and solutions to various social issues. Bearing in mind the roles we play in society, we will further refine our optical and wireless communication and imaging technologies, while manufacturing high value-added systems that utilize artificial intelligence (AI) and other technologies. In doing so, we will contribute to solving social issues, including reducing negative environmental impact.

06 Living Environment & Digital Media Equipment Group

Main Products

- Room air conditioners
- Retail and office/building air conditioning
- LED lighting
- Solar power generation systems
- Heat-pump hot-water supply systems



Focusing on the SDGs



Providing Products that Are Helpful for Society and the Environment in Wide Areas through Creating Comfortable Living Spaces and Reducing Environmental Impact during Production

The Living Environment & Digital Media Equipment Group is pressing forward with the expansion of operations in the room and package air-conditioner segment, one of Mitsubishi Electric's growth drivers. We are also creating new business and strengthening existing ones through synergies in technologies and business operations. We provide products and services helpful for the environment to customers over a wide-ranging area, including homes, offices, and factories. We also propose energy-saving solutions for systems as a whole, such as ZEH* and ZEB.

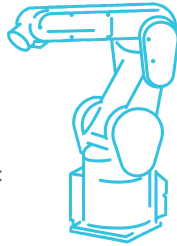
At our manufacturing sites, we are promoting energy conservation through the proactive introduction of energy-efficient products and improved productivity.

* ZEH (net Zero Energy House): A house where the net consumption of fossil fuel is zero or roughly zero, being offset by the use of renewable energy resources or other means.

07 Factory Automation Systems Group

Main Products

- Total factory automation solutions
- Programmable controllers
- Fiber 2D laser processing machines
- Industrial robots
- Energy-saving motors
- Energy measurement units
- Molded-case circuit breakers for DC circuits (up to 1000 VDC)



Focusing on the SDGs



Delivering Devices, Equipment, and Solutions that Help Reduce Energy Usage in Our Customers' Manufacturing Processes around the World

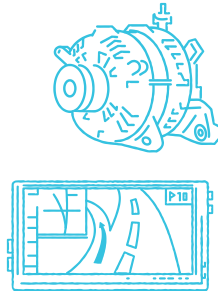
Mitsubishi Electric's Factory Automation Systems Group provides devices and systems that possess high energy-saving capability. They are essential to adding value and enhancing the competitiveness of business through quality and productivity improvements for customers in the manufacturing industry.

In addition to providing factory automation (FA) products with high energy efficiency, we propose cutting-edge e-F@ctory solutions, which make the most of technologies that connect FA and IT, and contribute to keeping our customers one step ahead of the competition. By doing so, we strongly support manufacturing and management optimization, and contribute to reducing energy consumption in manufacturing processes.

08 Automotive Equipment Group

Main Products

- Alternators
- Starters
- Electric power steering
- Engine control units
- Car navigation systems



Focusing on the SDGs



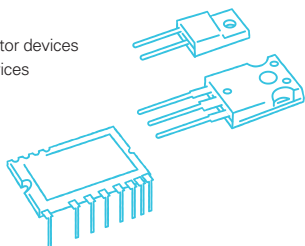
Contributing to Solving Environmental Issues through the Development of Low Fuel Consumption and Electrification Technologies for Vehicles

The Automotive Equipment Group provides automotive electronic products and car multimedia devices globally. As a full-support supplier, we work together with our customers to develop cutting-edge technologies and endeavor to provide a wide range services, from production, sales, and supply to spare parts and rebuilds. The Group is engaged in initiatives to reduce environmental impact both by installing its products in vehicles to achieve better fuel efficiency and electrification, and reducing energy consumption during manufacturing processes. We are also working on technological innovations for automotive products that will lead to the practical use of autonomous driving in coming years, and contribute to the creation of environment-friendly, accident-free, comfortable urban spaces.

09 Semiconductor & Device Group

Main Products

- Power semiconductor devices
- High-frequency devices
- Optical devices
- TFT-LCD modules



Focusing on the SDGs



Contributing to the Realization of a Low-Carbon Society by Providing Energy-Efficient Products

In order to achieve sustainable societies, it is imperative to use generated power while minimizing power loss in the process. The Semiconductor & Device Group delivers key devices that support low-carbon societies to customers around the world.

Power semiconductor devices that are incorporated into many power electronics play a significant role in reducing power loss. In recent years, Mitsubishi Electric's Semiconductor & Device Group has been manufacturing state-of-the-art products using silicon carbide (SiC), which can reduce power loss substantially. We also provide high-performance, high-efficiency, compact, high-frequency devices and optical devices that make full use of multiple semiconductor technologies, thereby supporting initiatives to reduce the amount of energy consumed by IT equipment. Our TFT color LCD modules provide a mercury-free, low-power consumption option owing to the LED backlight used in them.

More detailed information is available on the website, including a list of environmental issues that explains the risks and opportunities recognized and/or evaluated by each business group, messages from the group presidents, and social contributions through business operations.

Evaluation of the Importance of Environmental Issues in Business



www.MitsubishiElectric.com/en/sustainability/environment/policy/management/materiality_evaluation/index.html

Initiatives that Contribute to Addressing Social Issues

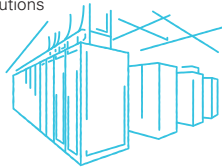


www.MitsubishiElectric.com/en/sustainability/csr/management/philanthropy/index.html

10 Information Systems & Network Service Group

Main Products

- Cloud services
- Security solutions
- ERP solutions
- Document management solutions
- RPA solutions



Focusing on the SDGs



Contributing to the Realization of a Low-Carbon Society Through the Promotion of Various IT Services

The Information Systems & Network Service Group is committed to enhancing customer satisfaction, helping achieve sustainable societies through solutions tailored to the management strategies and challenges of its customers, and developing solutions that contribute to solving social issues.

In recent years, we have been focusing on environmentally effective businesses, seeking to reduce environmental impact through the use of IT. In addition, efforts for saving energy in data centers also help companies to reduce CO₂ emissions from their business activities.

Going forward, in order to achieve smarter societies, we are committed to constructing next-generation information systems using the latest IT solutions.

SDGs

Sustainable development goals (SDGs) are targets to be achieved by 2030, as stipulated in “The 2030 Agenda for Sustainable Development” adopted at the United Nations Sustainable Development Summit in September 2015. SDGs are characterized by the agenda’s initiative to change in how advanced countries, including Japan, should behave, as well as including the promise to ensure that “no one will be left behind” in the process.

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



Environmental Considerations for Value Chain Management





Value Chain Greenhouse Gas Emissions

The Mitsubishi Electric Group refers to regulations such as the Greenhouse Gas (GHG) Protocol—an international standard for calculating greenhouse gas emissions—and the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain published by Japan’s Ministry of the Environment, to determine how to assess and calculate emissions from business activities (scopes 1 and 2, respectively) and indirect emissions from outside the range of its business activities (Scope 3).

Fiscal 2019 Greenhouse Gas Emissions

The “★” symbol denotes Mitsubishi Electric Group greenhouse gas emissions for which third-party verification has been carried out by SGS Japan Inc.

Scope	Category	Accounting / 10,000 tons-CO ₂ (Scope 3 Emission Rates)	Accounting summary *1
Scope1	Direct emissions associated with fuel use at our company	★ 30	Direct emissions from fuel use and industrial processes at our company*2
Scope2	Indirect emissions associated with use of externally-purchased electricity and heating		Indirect emissions associated with use of electricity and heat purchased by our company*3
	Market based	★ 98	Calculated using power emission coefficient based on contract
	Location based	★ 102	Calculated using average power-generation emission coefficient within the zone
Scope3	Indirect emissions outside the scope of our company’s operational activities		
	Category 1 Purchased goods and services	★ 705 (16%)	Emissions associated with activities up to the manufacturing of materials, etc. relating to raw materials, parts, purchased products, and sales*4
	Category 2 Capital goods	77 (1.7%)	Emissions generated by the construction and manufacturing of own capital goods
	Category 3 Fuel- and energy-related activities not included in Scope 1 or Scope 2	8.7 (0.2%)	Emissions associated with procurement of fuel necessary for power generation, heat supply, etc. and power such as electricity supplied by other parties
	Category 4 Upstream transportation and distribution	40 (0.9%)	Emissions associated with logistic processes up to the delivery to our company of materials, etc. relating to raw materials, parts, purchased products, and sales*5
	Category 5 Waste generated in operations	0.03 (0%)	Emissions associated with transporting and processing waste produced by our company*6
	Category 6 Business travel	★ 3.9 (0.1%)	Emissions associated with employee business travel*7
	Category 7 Employee commuting	★ 3.0 (0.1%)	Emissions associated with employees commuting to and from their respective workplaces*8
	Category 8 Upstream leased assets	—	Emissions associated with operation of leased assets hired by our company (Calculated by Mitsubishi Electric under Scope 1 and Scope 2)
	Category 9 Downstream transportation and distribution	0.6 (0%)	Emissions associated with the transportation, storage, cargo handling and retailing of products
	Category 10 Processing of sold products	0.2 (0%)	Emissions associated with the processing of interim products by business operators
	Category 11 Use of sold products	★ 3,645 (81%)	Emissions associated with the use of products by users (consumers / business operators)
	Category 12 End-of-life treatment of sold products	3.0 (0.1%)	Emissions associated with the transportation and processing of products for disposal by users (consumers/business operators)*4
	Category 13 Downstream leased assets	0.02 (0%)	Emissions associated with operation of leased assets
	Category 14 Franchises	—	Emissions at companies operating as franchises (Not applicable to Mitsubishi Electric)
Category 15 Investments	7.3 (0.2%)	Emissions associated with operation of investments	
	Scope 3 total	4,493 (100%)	

*1 Excerpt from Basic Guidelines published by the Japanese Ministry of the Environment and Ministry of Economy, Trade and Industry

*2 CO₂, SF₆, HFC, and PFC emissions associated with the use of gas, heavy oil, etc., and with product manufacturing

*3 CO₂ emissions associated with the use of electricity, etc.

*4 Excludes some regions

*5 CO₂ emissions associated with product distribution/circulation (sales distribution) Subject to accounting: 55 companies (production sites)

*6 CO₂ emissions associated with transportation of waste (waste distribution) Subject to accounting: Mitsubishi Electric

*7 Results for Japan. Excludes CO₂ emissions associated with actual use of taxis and accommodation

*8 Assuming that all employees use passenger rail services

Fiscal 2019 Environmental Data

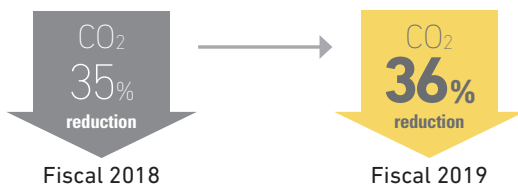


Contribution to Reducing CO₂ from Product Usage

We believe that reducing the electricity consumed by products when customers use them should lead to energy savings for society as a whole. Based on this perspective, we are committed to improving the energy efficiency of our products.

In fiscal 2019, we continued to improve the efficiency of our products, with a focus on power devices and air conditioners, as well as the sales of highly energy-efficient products. As a result, we improved our average CO₂ reduction rate from the previous fiscal year, achieving 36% compared to the level in fiscal 2001.

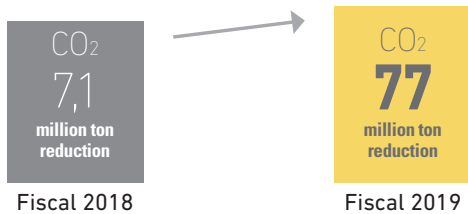
Reducing CO₂ from Product Usage through Improving Energy Efficiency



We are also trying to expand the reduction of CO₂ by visualizing the amount reduced as a result of replacing old products with their new counterparts that operate with higher energy efficiency. In fiscal 2019, contribution to reducing CO₂ from product usage grew to 77 million tons.

Contribution to Reducing CO₂ = Effect of reducing CO₂ from product usage per unit × Number of units sold during the fiscal year

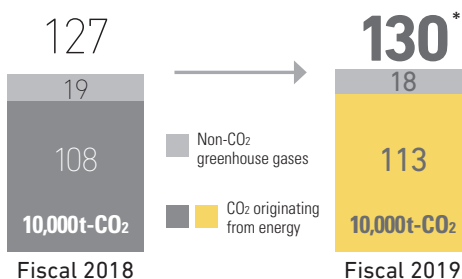
Contribution to Reducing CO₂ from Product Usage



Reducing CO₂ from Production

Owing to the introduction of high-efficiency devices, switching fuels, and making thorough progress in waste elimination, CO₂ emissions originating from energy which were expected to increase 100,000 tons due to rising production were controlled to an increase of 50,000 tons. In addition, we replaced non-CO₂ greenhouse gases (SF₆, HFC and PFC) with gases having lower global-warming potential and increased the amount of gases recovered during manufacturing processes. Consequently, emissions of non-CO₂ gases have also been reduced.

CO₂ Emissions from Production



* Emissions of CO₂ and non-CO₂ greenhouse gases are displayed in whole numbers after being rounded off to the nearest integer. As a result, there is a difference between the sum of these figures and total greenhouse gas emissions.



Effective Utilization of Resources

In fiscal 2019, we continued to focus on reducing our final disposal ratio. Toward a target final disposal ratio of 0.5% or less, improvements were made by implementing initiatives to promote sorting, recycling, biomass processing of organic wastes, and using the methane gas extracted during the biomass process as fuel.

The amount of waste was also reduced in Japan by making sure that hazardous wastes* are appropriately disposed of according to laws and regulations while actively promoting recycling. The amount of waste overseas, however, increased.

* The Mitsubishi Electric Group defines hazardous wastes as follows:
Mitsubishi Electric and affiliates in Japan: "Specially-controlled industrial wastes" specified by the Japanese Waste Disposal Law.
Overseas affiliates: Hazardous wastes defined by local laws and regulations.

Total Waste Output

Fiscal 2018	Fiscal 2019		
Mitsubishi Electric	8.8	Mitsubishi Electric	8.7
Affiliates in Japan	4.6	Affiliates in Japan	5.0
Overseas affiliates	8.1	Overseas affiliates	7.7

10,000 tons

Hazardous Wastes Emissions

Fiscal 2018	Fiscal 2019		
Mitsubishi Electric	2,612	Mitsubishi Electric	1,184
Affiliates in Japan	649	Affiliates in Japan	629
Overseas affiliates	5,042	Overseas affiliates	5,409

tons

Final Disposal Ratio

Fiscal 2018	Fiscal 2019		
Mitsubishi Electric	0.001%	Mitsubishi Electric	0.001%
Affiliates in Japan	0.01%	Affiliates in Japan	0.01%
Overseas affiliates	0.59%	Overseas affiliates	0.52%

Details of information on this page and other performance data are available on the "Environmental Report 2019" website.

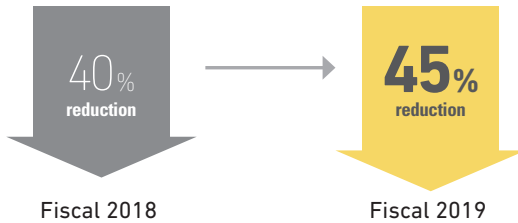
www.MitsubishiElectric.com/en/sustainability/environment/report/index.html



Reducing Resource Inputs

In fiscal 2019, there were steady reductions in resource inputs for all products in all segments. Consequently, an average reduction rate for the 64 target products was 45%, which was an improvement compared to the previous fiscal year.

Reducing Resource Inputs



Chemical Management and Reduced Disposal

Chemical substances contained in our products are controlled using a chemical management system called MelHARo-Web, which incorporates materials and parts procurement information both in and outside of Japan. By December 2018, we finished conducting contents surveys and completed switching to replacement substances for all products for which four phthalate compounds will be newly restricted by the EU RoHS Directive in July 2019.

Volume of Chemicals Handled*

Fiscal 2018		Fiscal 2019	
Mitsubishi Electric	1,505	Mitsubishi Electric	1,725
Affiliates in Japan	1,424	Affiliates in Japan	1,447
Overseas affiliates	1,323	Overseas affiliates	5,409

tons

* Mitsubishi Electric and its affiliates in Japan: Chemical substances subject to the "PRTR Law".
Overseas affiliates: Chemical substances of 18kg or more in handled volume that are controlled by Mitsubishi Electric.



Using Water Effectively

In fiscal 2019, we carried out initiatives to save water in Japan and overseas, including reusing the water used during manufacturing processes, treating wastewater and using it for flushing toilets, and using rainwater.

Total Water Usage (Water Recycling Volume)

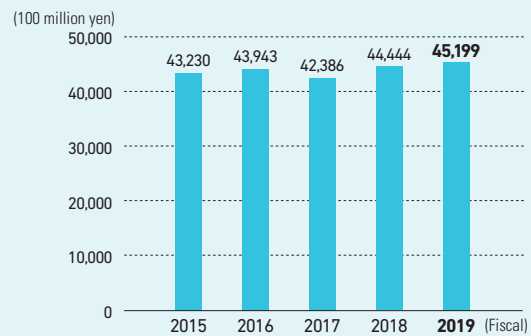
Fiscal 2018		Fiscal 2019	
Mitsubishi Electric	1,080 ⁽³²⁹⁾	Mitsubishi Electric	1,049⁽³⁴³⁾
Affiliates in Japan	269 ⁽¹⁰⁷⁾	Affiliates in Japan	277⁽⁹⁸⁾
Overseas affiliates	211 ⁽¹⁷⁾	Overseas affiliates	219⁽¹⁷⁾

10,000 m³

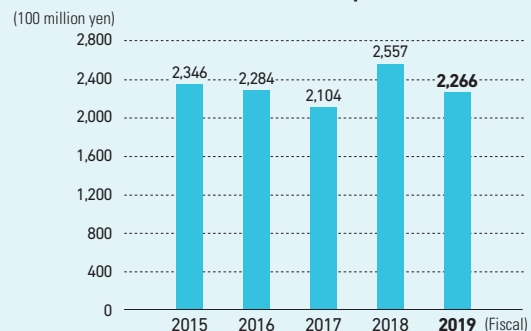
Corporate Profile (as of March 31, 2019)

Company Name : Mitsubishi Electric Corporation
Head Office Location : Tokyo Building, 2-7-3, Marunouchi, Chiyoda-ku, Tokyo 100-8310, Japan
Established : January 15, 1921
Paid-in Capital : ¥175,800 million
President : Takeshi Sugiyama
Number of Employees : Consolidated 145,817 Non-consolidated 35,203
Number of Affiliated Companies : Subsidiaries 206 Affiliates 37
Business Segments : Energy and Electric Systems, Industrial Automation Systems, Information and Communication Systems, Electronic Devices, Home Appliances, Others

Net Sales (consolidated)*



Net Income Attributable to Mitsubishi Electric Corp. stockholders (consolidated)*



* Figures for fiscal 2015 to 2017 comply with US accounting standards; figures for fiscal 2018 to 2019 comply with international accounting standards (IFRS).



Environmental Statement: “Eco Changes”

Eco Changes is the Mitsubishi Electric Group’s environmental statement, and expresses the Group’s stance on environmental management. Through a wide range of businesses for homes, offices, factories, infrastructure and even outer space, we are helping to contribute to the realization of a low-carbon society, recycling-based society and a society in harmony with nature.

In line with the Mitsubishi Electric Group’s corporate statement, “Changes for the Better,” which reflects our drive to always seek improvement and make changes accordingly, Eco Changes represents our efforts to work together with our customers to change the global environment for the better.

Behind these multifold improvements is our wish for each employee in the Group to instigate positive changes, and our strong desire to bring about a variety of changes in product development, production and shipping, in product, system and service usage, and in recycling.

Eco Changes is the Mitsubishi Electric Group’s commitment to continuously strive for a greener tomorrow through cutting-edge global environmental technologies and outstanding strength in manufacturing.

The Mitsubishi Electric global website contains more detailed information about the Group activities related to the “environment.”



MITSUBISHI ELECTRIC CORPORATION
<http://www.MitsubishiElectric.com>

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