

Sustainability Highlights

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Sustainability highlights

Our Roadmap for the Three Key Reforms

We give serious weight to the findings and recommendations of the Investigative Committee and the Governance Review Committee with regard to the improper quality control practices that have come to light, and the entire Group is working to prevent recurrence. In October 2021, we formulated Three Key Reforms (quality assurance, organizational culture, and governance), including measures to prevent recurrence, and the entire company is working to implement fundamental reform initiatives while deepening and developing the Three Key Reforms to restore confidence in the company.

Regarding the progress of the Three Key Reforms and other efforts, we established the "Monitoring Committee for the Three Key Reforms" under the Board of Directors in December 2022 and started monitoring on the supervisory side with the participation of outside experts.

On our website, we disclose the details of the progress of measures to prevent recurrence as of the end of FY2023.

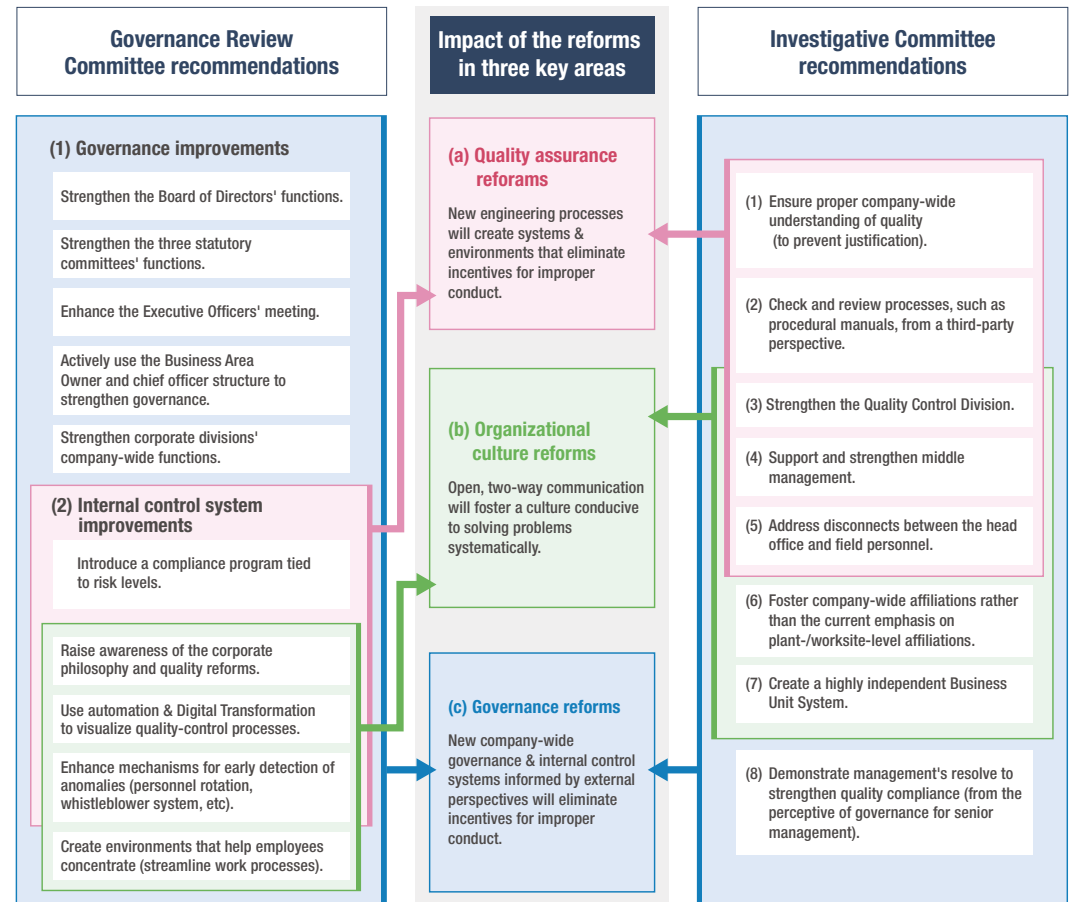
We plan to continue to announce the progress on our website.

 Restoring trust: Our roadmap for reform



Overall Concept of Recurrence Prevention Measures

Based on the surface causes, true causes, and proposed countermeasures brought to attention by the Investigation Committee and the Governance Review Committee to date, we will steadily promote reforms in the three areas of quality assurance, organizational culture, and governance at the company-wide level to prevent recurrence.



Sustainability highlights

Our Roadmap for the Three Key Reforms

Enhancement and Development of the Three Key Reforms

Prevent the recurrence of improper quality control practices and restore trust

Quality assurance reforms

- Revising engineering processes -

- Creation of a manufacturing management environment (optimization of resources, control span and health diagnosis for plants, etc.)
- New design review method, designer training program
- Data-driven quality control, development of rules, and monitoring

Organizational culture reforms

- Facilitating two-way communication -

- Coaching for executives, town meetings, and communication via internal social media
- Rotation, 1-on-1 meetings, psychological safety, "On-Site Capabilities and Cultural Reform" workshops
- Behavioral changes initiated by management that lead to organizational solutions

Governance reforms

- Building a compliance system focused on preventive measures -

- Enhancement of the management monitoring function of the Board of Directors (making the majority outside directors)
- Establishment of an internal control system that emphasizes predictive and preventive measures, and enhancement of the company-wide risk control function
- Monitoring of the implementation of the Three Key Reforms by the Board of Directors

Progress

Generally, we are making progress as planned with respect to system building and implementation of activities for each item. We have also confirmed progress in spreading quality compliance awareness through the employee awareness surveys, and we will continue to work to get quality compliance activities to take root and spread.

In addition, since December 2021, the Quality Governance Subcommittee (chaired by the General Manager of the Corporate Legal & Compliance Division) has been monitoring and checking the effectiveness of each initiative carried out under the quality assurance reform on a regular basis with the advice of outside experts.



Discussions among employees



Internal social media community

Progress

With regard to strengthening communication skills, we are actively providing a variety of training programs for employees and increasing opportunities for executives to deliver messages directly to employees.

While we will continue our efforts to review the control span and authorities of middle managers, we have already established a framework for the personnel system as planned, including implementation of the rotation system among offices and positions as well as the establishment of an internal recruitment system and a career consulting office, and we will continue to make efforts to get these activities to take root.

Progress

Regarding the monitoring of the Board reforms and company-wide reforms, we have completed the construction of the framework, and the implementation phase will begin in FY2024. We have already started a variety of studies to improve the internal control system, and in FY2024, we will formulate the details of compliance strategies.

Sustainability highlights

Initiatives for the second year of the Team Sousei (Creation) project

Everything Starts with Communication Transformation

As part of a company-wide effort to reform the organizational culture, we did a full-scale launch of the company-wide reform project Team Sousei (Creation) in October 2021.

Here is the latest initiatives on the project, now in its second year.

In 2022, the Mitsubishi Electric Group took another step forward in its reform that began the previous year.

We proposed the "Robust Policies" formulated in April 2022 and launched reform projects in each business group, branch office, and Works, and we are strengthening the promotion system to ensure initiatives are carried out to reform the negative corporate culture (from minus to zero) and to build a new corporate culture (from zero to an even better tomorrow).

Among these initiatives, we planned measures concerned with "communication transformation" in FY2023. We have begun a variety of initiatives in diverse locations to foster the culture that we envision.

Addressing everyone by "san"

~ To spread an open atmosphere throughout the company in which all employees can build a relationship of trust regardless of rank ~

As the first initiative of the Team Sousei project, we launched an initiative to address everyone by the neutral honorific "san," though previously supervisors were addressed as "XX Kacho" (section chief) and so forth.

This practice has spread at an accelerated pace after the president encouraged all employees to make this a basic behavior together with sharing greetings and showing appreciation. This initiative has led to significant changes throughout the company, such as lowering barriers to and making the internal environment more facilitating for conversations as well as making the tone in emails more casual.

Townhall Meeting



Town hall meeting between President Uruma and employees (Power Device Works)

Provided a total of 314 opportunities for two-way dialogue between top management and employees to deepen understanding

We have held dialogue-style discussions based on our belief that to promote cultural reform, it is important to have two-way conversations rather than top-down, one-way communication. In FY2023, the president and general managers visited business sites and held this style discussions 314 times in total.

The top management's intention to change Mitsubishi Electric is starting to resonate with employees, who see how seriously the company is attempting to change and the direction that the company is going to change.

 Direct dialogue between management and employees

Grassroots Activities

Opportunities for dialogue are expanding among nation-wide business sites

Having also launched the reform project in business groups and divisions, each workplace is conducting a variety of activities.

We provide opportunities to facilitate dialogue across ranks and divisions, including workshops where all participants think together about how each workplace will tackle the organizational culture reform. These programs are designed to enable participants to talk as frankly as possible, including by providing opportunities for directors and employees to chat and consult with each other as well as for employees of the same rank to share information in order to help solve problems at their workplaces.



Meeting for section chiefs to share information (High Frequency & Optical Device Works)



Cross-rank/-division workshop

Sustainability highlights

Realize a Sustainable Global Environment



Promote Carbon Neutrality by Sharing Renewable Energy among Sites

In recent years, there has been growing demand for companies to use renewable energy. Mitsubishi Electric's new solutions support companies in pursuing carbon neutrality.

Multi-Region EMS*1 to Promote Effective Use of Renewable Energy

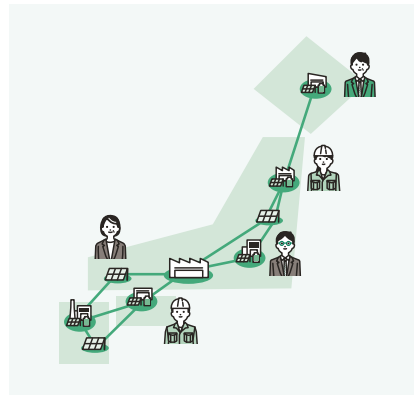
In April 2023, we began offering a Multi-region EMS that makes corporate efforts towards carbon neutrality more efficient and transparent. We will support to achieve company's decarbonization targets at a locational level by dispatching distributed renewable energy from other sites through a self-service wheeling*2 and by using battery storage control system.

*1 Official name: Multi-region digital power supply system

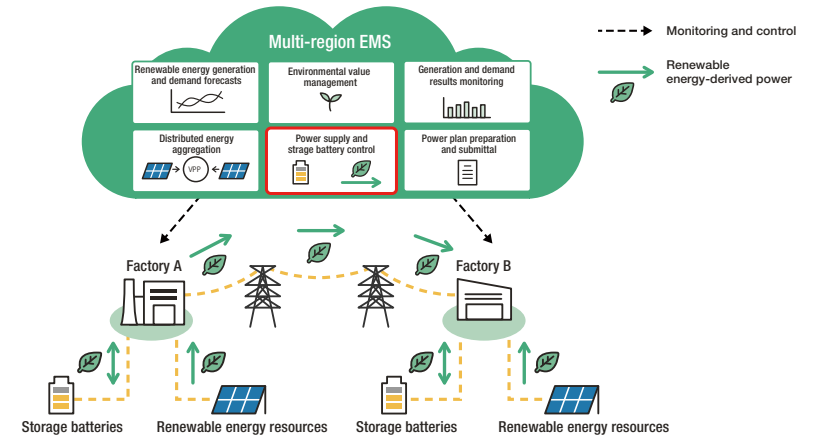
*2 A system in which energy from the company's own generation facilities is transmitted to other sites of demand within the company using a power transmission and distribution network owned by electrical utilities.

What is self-service wheeling, which enables power to be distributed to other sites?

Self-service wheeling means to consume electricity from the company's own generation facilities in remote locations. If the power generated by solar panels and other renewable energy resources can be distributed to other sites through self-service wheeling, in addition to reducing the cost of electricity, the company will also be able to demonstrate to society a high level of environmental awareness. While the number of companies and local governments adopting self-service wheeling is increasing, the task to use this system is considered to be complicated, and multi-region EMS is a notable solution to this challenge.



Multi-region EMS structure



Transmission of distributed power to priority sites using self-service wheeling

Using a system that controls and operates distributed energy resources make it possible to instantly transfer such energy where it is needed. Decarbonization targets can be met on a site-by-site basis by overcoming challenges such as space limitation to install generation facilities and fluctuations in power generation due to changes in weather or time of day.

Large capacity batteries control ensures stable operation

Installing large-capacity storage batteries allows for the intermittency of renewable energy output to be adjusted on a millisecond basis. This ensures stable power supply system operation, which is a challenge for large-scale renewable energy resources generation facilities.

Utilizing renewable energy without waste by optimizing operations

It is possible to optimize the combination of self-service wheeling, on-site consumption, and battery recharging in 30-minute increments by taking into account highly accurate generation forecasts as well as electricity demand forecasts, storage battery capacities, and the prices of environmental certificates.* This optimizes utilization of renewable energy value without waste.

* Environmental certificates are certified by an accredited body to demonstrate the environmental value and greenhouse gas emission reduction benefits achieved by renewable energy generation. In Japan, these are currently non-fossil certificates, J-credits, and green power certificates.

All-in-one representation of complicated tasks in system operation

The demand and supply of electric power is required to be balanced on a 30-minute basis as a rule, and demand forecast and generation and transmission plans must be reported every 30 minutes. Not only does this perform these complicated tasks on behalf of the customer, it also automates the power planning tasks required for self-service wheeling, which streamlines the operations.

[Mitsubishi Electric Biz Timeline, seven key words you need to know to solve energy problems \(in Japanese text\)](#)

Voice

Bringing together advanced power technologies to help companies achieve carbon neutrality

Multi-region EMS is a cloud service for companies and municipalities to manage decarbonization targets for their own sites. In the development process, we made numerous improvements based on our understanding of user needs. We also promptly responded to power system changes brought about by increasing environmental awareness. We then created a solution to share renewable energy value among sites, optimizing their environmental value management in 30-minute increments. This technology is unique to our company, which operates in all domains related to energy. In addition to helping companies achieve carbon neutrality, we also hope to contribute to solving climate change issues.



Seiya Nakano

Energy & Industrial Systems Group
Energy Systems Center,
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Application Development Section 1

Sustainability highlights

Realize a safe, secure, and comfortable society



Three Health Technologies to Monitor the Elderly while Ensuring Privacy

For the era of rapid aging, the Mitsubishi Electric Group has begun to offer services that provide gentle care for the elderly. Here, we present three initiatives that provide peace of mind and reduce the burdens imposed on family members and nursing staff while respecting the privacy of those being monitored.

Privacy Space Silhouette Footage Monitoring

kizkia-Knight

The kizkia-Knight makes it possible to monitor toilets, where cameras cannot be installed for privacy reasons. A built-in infrared sensor captures temperature data, transmits it to the cloud, and converts to a silhouette footage. Monitoring can be implemented while respecting privacy without using a real video footage. In addition, AI analysis of the silhouette footage detects toilet use and duration as well as conditions such as falls and stooping, and notifies staff members via their smartphones. Even if no staff member is nearby, a staff member can quickly be dispatched to the site.

[Nursing care robot AI x Monitoring service kizkia-Knight \(in Japanese text\)](#)

A Subscription Service that Uses Home Appliances to Provide Monitoring Services to Family Members who Live Far Away

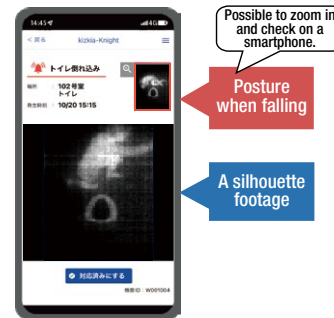
MeAMOR

For family members who live far away may be concerned about elderly people living alone. Mitsubishi Electric provides MeAMOR,* a subscription service that enables customers to monitor the conditions of elderly people living alone and others in similar situations through the use of home appliances, the indoor temperature, and others. If the air conditioner, the refrigerator, or the water heater is not used for an extended period or another unusual trend is detected, the system notifies the connected application to alert family members living far away. Use of home appliances makes it possible to monitor the living conditions of elderly family members without invading their privacy.



* AMOR is a word coined by our company to encourage communication among family members inspired by the Latin word for love (affection).

[Elderly monitoring service MeAMOR \(in Japanese text\)](#)



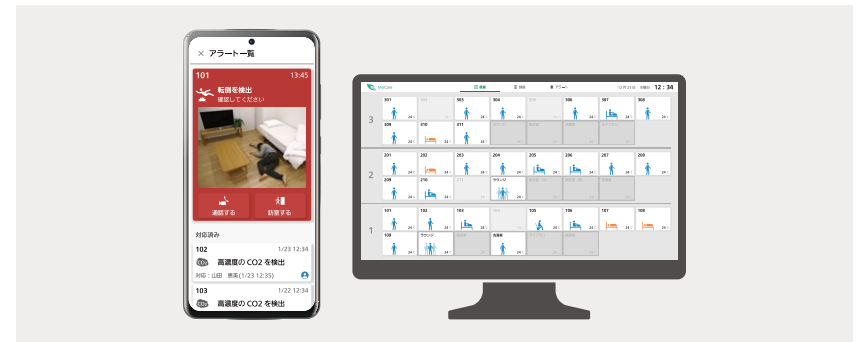
When an event occurs

Installing the infrared sensor is simple and requires no installation or relocation work. In the event of a fall or other accident, images taken at the time of the event as well as the current status can be viewed. Image review reduces staff workloads by helping them to determine the necessity and priority of rushing to the scene.

Monitoring Elderly People in Their Residences and Reducing the Burden of Nursing Staff

MelCare

In addition to ensuring resident safety and security, staffing and streamlining of operations have been identified as major concerns for nursing facilities. MelCare, which uses sensors and the cloud, is a solution for monitoring residents to prevent falls as well as for reducing regular patrolling of the premises by staff members. The system reduces the workload for staff members through streamlining of monitoring operations by sending the status of in-room information to each staff member's smartphone or other device. This service enables residents to be observed naturally without the stress of feeling that they are being observed.



MelCare's three major monitoring functions

Fall monitoring

An alert is issued if a resident falls in their room. Staff can quickly rush to rooms where something is wrong. "Video confirmation" and "calling out for peace of mind" can also be done from smartphones.

Fresh air monitoring

Anomalies in room temperature, humidity, and CO₂ concentration are detected, leading to rapid discovery of inappropriate air conditioning operations and heat stroke risk.

Life rhythm monitoring

Based on sensor information, the system tracks sleep patterns, getting up from bed, and bathroom usage frequency to prevent accidents and detection delays by visualizing residents' conditions.

[Mitsubishi Electric's MelCare for safe, reliable monitoring support \(in Japanese text\)](#)

Sustainability highlights

Realize a Safe, Secure, and Comfortable Society



Comfortable Air and Light that Enriches People's Lives and Creates Well-Being in Interior Spaces

Now that we have experienced the COVID-19 pandemic, the need for interior spaces is becoming more diverse. With the growing demand for spaces that are not only safe but also comfortable, Mitsubishi Electric is committed to contributing to people's well-being through our products.



Kirigamine Year 2023 Model Z Series

The world's first^{*1}

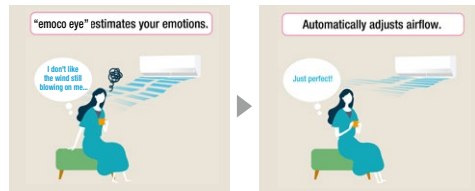
Caring for People's Emotional State and Controlling Air Quality^{*2} Pursue Comfort with "emoco tech"

In February 2023, Kirigamine's Z-Series room air conditioners were equipped with the world's first "emoco tech" technology, which controls air quality by measuring your emotional state. The air conditioning system uses information on windchill temperature measured by the conventional infrared sensor "move eye mirA.I.+" and information on a person's pulse measured by the newly developed vital signs sensor "emoco eye" to assess even emotions and controlling the air quality accordingly. The key to our air conditioning system is the "emoco eye", a revolutionary sensor developed in collaboration with three companies that measures a person's pulse without contact and estimates feelings of comfort or discomfort and the amount of brain activity based on how the pulse fluctuates. We continue to evolve toward an air conditioning system that is more in tune with human comfort.

*1 In air conditioning equipment (as of February 17, 2023, according to internal research); a technology that controls temperature and airflow by measuring the pulse of a person in a room in a non-contact manner in order to estimate the person's emotions based on their pulse.

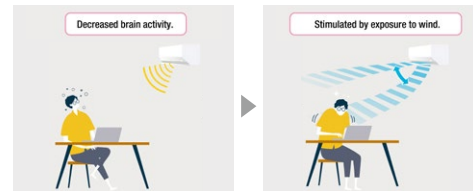
*2 Estimates the emotion of the person from the pulse by non-contact measurement of the person's pulse and controls the temperature and air flow. Effects vary depending on conditions of use, etc. and may differ from person to person.

When you need to relax and unwind



"emoco eye" estimates emotions based on a person's pulse and automatically adjusts the wind direction if it determines that the person is feeling discomfort. Temperature and airflow are controlled to achieve a comforting flow of air.

When you want to feel refreshed (Fresh Mode)



"emoco eye" estimates brain activity based on the pulse, and when it determines that the activity level is low and the person's mood is sluggish, it applies wind to the person to stimulate them and to create an air flow that encourages mental sharpness.

Voice

Providing real comfort for our customers

As a pioneer brand of infrared sensors, Kirigamine has been used to measure wall, floor, and ceiling temperatures, the position of people, surface temperatures, and other factors for comfort control. "emoco tech" was born from the idea that "we can make people more comfortable." Developing the sensor was never an easy task. We made strenuous efforts to find collaborators after many phone calls, and we finally found collaborators, which resulted in the creation of an unprecedented technology for the estimating emotions. Looking beyond comfort in pursuit of better living, we aim to apply our products to a wide range of fields, including air conditioning, thereby contributing to well-being.



Jiro Nakasu
Living Environment &
Digital Media Equipment Group
Shizuoka Works, Sales Department
Room Air Conditioner Sales Planning Group

[Mitsubishi Electric Room Air Conditioner "emoco tech" \(in Japanese text\)](#)

The latest Jet Towel with Health Air[®] Function to Clean Even the Space

Hand dryers, which have sometimes been discouraged in the wake of the COVID-19 pandemic, do not spray water droplets directly and are safe to use with regular cleaning. Jet Towel Slim Type (Enhanced Hygiene Model) strengthens the hygienic aspect even more than conventional models. The air is circulated and cleaned 24 hours a day by a circulating fan equipped with the Health Air[®] technology. It is also effective in deodorizing troublesome odors. In addition, the body is made of antiviral resin for improved hygiene, and the two-stage nozzle structure prevents water droplets from splashing onto the user.

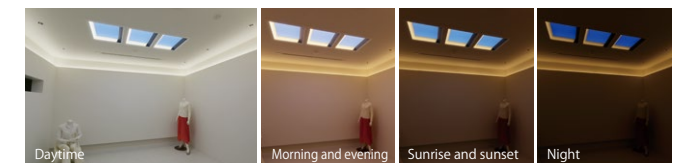
[Jet Towel Slim Type \(Enhanced Hygiene Model\) \(in Japanese text\)](#)



Jet Towel Slim Type
(Enhanced Hygiene Model)

Provide a Sense of Openness with the "misola" Lighting that Makes It Appear as if It Is a True, Real Blue Sky

Blue-sky Lighting "misola" was born from the idea of bringing lighting that mimics the blue sky into the lives of people who want to feel comfortable in a natural environment. In pursuit of the reproducibility of the blue sky, we developed a scatter panel that expresses an endlessly expanding blue sky with no visible light points. We even intended to create a shadowed part of the frame to express the natural light streaming through the frame, which is designed to look like sunshine. This effect brings a sense of openness to rooms even without windows, and serves as a means of stimulating communication and helping to create a restful atmosphere, and has therefore been delivered to many clients.



Expresses not only the blue sky of the daytime, but also the changing expression of the sky in the morning, evening and night. In addition to scene changes, it is also possible to change the atmosphere according to the application.

[Blue-sky Lighting "misola" \(in Japanese text\)](#)