

# Environment

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# Environmental Plan Package

## Structure of the Environmental Plan Package

Anticipating a time 30 years in the future, in October 2020 MITSUBISHI MOTORS formulated the Environmental Plan Package, which defines the directions and targets of its environmental initiatives. This package establishes the foundation for our directions on environment-related management strategy, outlining our objectives for realizing a sustainable society, including one that is carbon-neutral, as we conduct our business activities. The Environmental Plan Package comprises the Environmental Policy, which we have revised to incorporate our medium- to long-term perspective; the Environmental Vision 2050, which sets out our vision for society to be achieved by 2050 and directions for our initiatives; and the Environmental Targets 2030, which clarifies specific initiatives to be achieved by 2030 in accordance with this vision.

### Environmental Policy

Mitsubishi Motors recognizes that responding to environmental issues through its business activities is essential. Accordingly, we will engage proactively in specific and effective measures from a medium- to long-term perspective. (Directions of initiatives)

1. We will face three specific environmental issues head-on: climate change, resource depletion and environmental pollution.
2. Given that 2050 is an important landmark for climate change on a global scale, we have clarified levels to be achieved, in 10-year increments, and are pursuing initiatives to this end.
3. We will respond to environmental issues through the following activities:
  - Unique environmental contributions through our products
  - Initiatives at each stage of automobile production, sale and use
  - Collaboration with business partners, affiliated institutions, governments and local authorities
  - Initiatives targeting environmental issues rooted in the local community
  - Initiatives to determine and reduce environmental impact of all related business activities

## Environmental Policy

We have been acting in accordance with its Environmental Policy, which was formulated in 1999. However, in the 20 years that have passed since that time the operating environment has changed, prompting us to revise the policy in 2020 to reflect current social trends. We recognize that responding to environmental issues in our business activities is essential, and so have newly incorporated a medium- to long-term outlook into our policy.

Focusing specifically on climate change, resource depletion and environmental pollution, we aim to contribute to the preservation of water resources and biodiversity through initiatives in these areas.

## Environmental Vision 2050

Members of the Paris Agreement, adopted in 2015, agreed to limit the rise in average global temperatures to substantially less than 2°C above levels before the Industrial Revolution. From this basis, we

established initiatives to pursue from a long-term perspective, leading up to 2050. In 2018, the Intergovernmental Panel on Climate Change (IPCC) published the Special Report on Global Warming of 1.5°C, which calls for society as a whole to achieve a net-zero balance between human-caused greenhouse gas emissions and absorption.

As these measures illustrate, awareness of climate change and other environmental issues is rising each year. Companies are also being called upon to undertake more ambitious initiatives.

Against this backdrop, we formulated the Environmental Vision 2050, which sets out our vision for society to be achieved by 2050, as well as directions for our initiatives, with regard to climate change, resource circulation and pollution prevention.

### Working to Become Carbon Neutral by 2050

Regarding "action to climate change," we have stated our commitment toward helping to shape a society resilient to the impact of climate change by achieving net-zero CO<sub>2</sub> emissions. In September 2022, we revised Environmental Vision 2050, incorporating the goal of achieving carbon neutrality.

### Environmental Vision 2050

In December 2015, the Paris Agreement was adopted at COP21. Members of this accord agreed to curtail the rise in average global temperatures to 2°C above levels before the Industrial Revolution and to work to keep the rise to 1.5°C. Given such social demands, MITSUBISHI MOTORS believes it can contribute toward the realization of a sustainable society, achieving a balance between the progress of humankind and the global environment, through the proliferation of electrified vehicles and the promotion of their use in society.

#### Action to Climate Change

Through electrified vehicles and the increased use of renewable energy, we aim to become carbon neutral and contribute to the realization of a society that is resilient to climate change.

#### Resource Circulation

We will contribute to a resource-recycling-oriented society by minimizing input resources and maximizing resource efficiency.

#### Pollution Prevention

We will contribute toward a society free of environmental pollution affecting human health and the ecosystem by reducing the environmental impact of our products and the pollution resulting from our business activities.

## Environmental Targets 2030

MITSUBISHI MOTORS has formulated Environmental Targets 2030, which are items to be addressed over the next 10 years in line with the direction of society and initiatives to be pursued 30 years into the future, as set forth in our Environmental Vision 2050. In setting targets, we referred to scenarios published by the IEA\*<sup>1</sup> and the IPCC, as well as international frameworks such as the SDGs and the Paris Agreement.

We revised the Environmental Targets 2030 in February 2023, setting even higher targets in our "action to climate change" to demonstrate our commitment to achieving carbon neutrality. For Scope 1\*<sup>2</sup> and Scope 2\*<sup>3</sup>, we raised our target for reducing CO<sub>2</sub> emissions from business activities to the SBT\*<sup>4</sup> target equivalent to a 1.5°C level. For Scope 3\*<sup>5</sup>, in addition to an electrified vehicles sales ratio of "50% by FY2030," we added "100% by FY2035." We also added qualitative targets related to procurement and distribution. These revisions were approved by the Board of Directors.

\*1 IEA: Internal Energy Agency

\*2 Scope 1: A company's direct emissions (such as from burning fuel)

\*3 Scope 2: Indirect emissions, resulting from electricity, heat or steam provided by another company

\*4 SBT: Short for Science Based Targets, which are greenhouse gas emission reduction targets set by companies consistent with the Paris Agreement levels

\*5 Scope 3: Indirect emissions other than Scope 1 and Scope 2 (emissions from other companies and other sources related to the company's activities)

### Environmental Targets 2030

Issues	Targets 2030	
Climate Change	Average CO <sub>2</sub> emissions from new vehicles* <sup>6</sup>	-40% (compared with FY2010)
	Electrified vehicles* <sup>7</sup> sales ratio	50% FY2035 100%
	CO <sub>2</sub> emissions from business activities* <sup>8</sup>	-50% (compared with FY2018)
	Promoting CO <sub>2</sub> reduction activities with major suppliers	
	Promoting CO <sub>2</sub> reduction activities in cooperation with logistics companies	
Resource Circulation	Providing energy management services utilizing electrified vehicles and used batteries	
	Implementing measures to adapt to climate change	
	Expanding adoption of non-fossil-based plastic	
Pollution Prevention	Achievement of zero direct landfill waste (less than 0.5%)	
	Reuse of batteries used in electrified vehicles	
Environmental Management	Conformance to regulations on use of substances of concern in products	
	Promotion of LCA* <sup>9</sup>	
	Promotion of environmental management within the Group and at dealers	
	Enhancing disclosure of environmental information	
	Promotion of employee education and awareness activities	
	Collaboration with suppliers	
	Promotion of grass-roots community environmental preservation activities	

\*6 CO<sub>2</sub> emissions per new vehicle while driving. Tank to Wheel

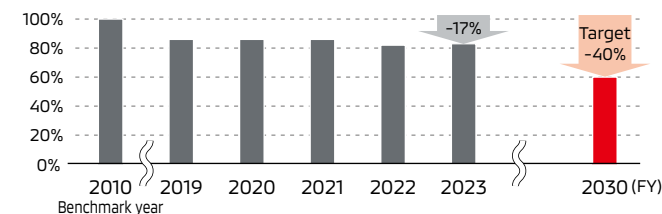
\*7 Battery Electric vehicles, plug-in hybrid electric vehicles (PHEV), and hybrid electric vehicles

\*8 Total of Scope 1 Scope 2

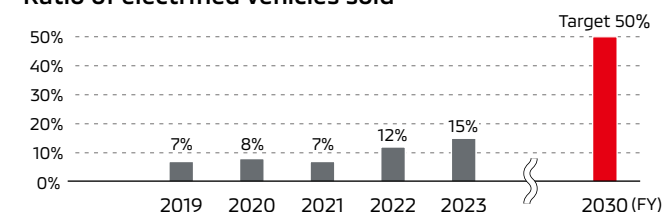
\*9 LCA stands for life cycle assessment, which is a technique for calculating and evaluating the environmental impact of a product from manufacturing to disposal.

### Principal Results for FY2023

#### Average CO<sub>2</sub> emissions from new vehicles

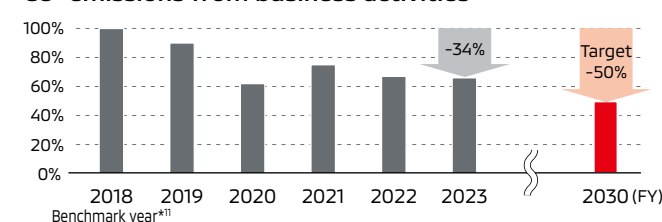


#### Ratio of electrified vehicles sold\*<sup>9</sup>



\*9 Based on number of wholesale units sold. MITSUBISHI MOTORS brand products only.

#### CO<sub>2</sub> emissions from business activities\*<sup>10</sup>



\*10 Scope 1 and Scope 2

\*11 The officially reported emission volume of FY2018 (the benchmark year), was 588 thousand t-CO<sub>2</sub>. This volume includes 43 thousand t-CO<sub>2</sub> emissions from some equity-method associates. For the purposes of target setting, we have revised our base figure to 545 thousand t-CO<sub>2</sub>, as our current method of selecting environmental management target companies excludes these equity-method associates.

## Structure for Consideration in Formulation

To clarify MITSUBISHI MOTORS' policies and plans in the environmental area and strengthen a series of initiatives, in 2018 we established a cross-company environmental working group to develop an environmental planning package.

After certain directions had been determined, a small circle chaired by the then-CEO moved forward to specifics. These were approved by the Board of Directors.

### <Structure for Consideration from July 2018 to December 2019>

#### Sustainability Committee

(Chair: CEO\*; members: Division general managers of relevant divisions)

#### Environmental Working Group

- Leader: Technical advisor to the chairman\*
- Subleader: Division general manager of the Development Management Division\*
- Secretariat: Sustainability Promotion Department
- Members:
- Corporate departments**
    - Strategy management
    - Human resources
    - Public and investor relations
  - Product and business activities departments**
    - Technology strategy
    - Production
    - EV business
    - Development management
    - Materials technology
    - Asset management
    - Finance
    - Logistics
    - Procurement
    - Overseas sales
    - Domestic sales
    - After-sales service

### <January–October 2020>

#### Board of Directors

#### Executive Committee

#### Small Circle

- Members:
- CEO\*
  - Co-COO (in charge of engineering)
  - Director in charge of production
  - Director in charge of sustainability
  - Head of corporate strategy
  - Division general manager of the Development Management Division
  - Division general manager of the Product Strategy Division
  - Division general manager of the Production Engineering Division

\* Positions as of March 2020

## Steps to Formulation

The Environmental Working Group we set up in FY2018 gathered data related to global social changes, such as economic growth and population increase, as well as environmental issues. In particular, the group looked for information on regions of importance to our business, ascertaining the status of local communities and government environmental policies. We also looked at unit sales and the number of vehicles owned in each country, arranging this data to match our business characteristics by looking at our business data and results of environmental initiatives. The group also summarized our efforts to date.

Using this data, we then verified each of the environmental issues and our relationship to them. We identified three environmental issues to face head-on: action to climate change, resource circulation and pollution prevention. We considered the long-term outlook for these environmental issues by studying external scenarios from the IEA and IPCC, as well as by running our own simulations. We then arranged the issues to be addressed by thinking about how to contribute in a manner tailored to local communities while maximizing our strengths, looking at each market from a regional perspective and considering plug-in hybrid electric vehicles (PHEV) and other business characteristics.

Based on this analysis, we clearly spelled out the directions for initiatives indicated in the Environmental Policy and Environmental Vision 2050 and set numerical targets for the items in the Environmental Targets 2030. In this way, we formulated the New Environmental Plan Package, which provides an overall summary of our environmental strategies.

In the final process of formulation, we incorporate the perspectives of our stakeholders by conducting reviews by external experts.

Going forward, we will continue to accumulate and analyze information on social trends and confirm the appropriateness of our Environmental Plan Package.

### Gathering of Information

- **Social and economic conditions**  
Such as economic growth and population increases
- **Status of environmental issues**  
Climate change, resource depletion, environmental pollution, loss of biodiversity and shortage of water resources
- **Trends in key regions (Japan, ASEAN, Oceania, others)**  
GDP, changes in the population, government environmental policies, etc.
- **Data related to automobile production and MITSUBISHI MOTORS**  
<Business>  
Unit sales and number of vehicles owned, globally and by region  
<Results of Environmental Initiatives>  
CO<sub>2</sub> emissions (Scope 1, 2, 3), amount of waste generated, etc.

### Analysis

- **Verify relationships between environmental issues and us**  
Identify environmental issues to face head-on
- **Consider long-term outlook for environmental issues**  
Gather external scenarios on CO<sub>2</sub> emissions, run our own simulations
- **Arrange initiatives to be taken, given our business characteristics (markets and products)**

### Formulation

- **Clearly spell out the Environmental Policy and Environmental Vision 2050**
- **Consider and formulate initiatives in the Environmental Targets 2030, as well as numerical targets**

### Review

- **Conduct review via outside experts**

# Environmental Management

## Basic Approach

Minimizing environmental impact is an essential element of MITSUBISHI MOTORS' sustainable growth. To this end, we recognize the importance of reinforcing our environmental management. We also believe that the costs of promoting related initiatives are an important investment from a long-term perspective.

In order to promote environmental initiatives reliably and efficiently, we have constructed a framework for environmental management. We are promoting

Group initiatives, including education and awareness activities for employees, and the acquisition of certifications for environment management systems among affiliated companies.

We also communicate our initiatives through our website and our Sustainability Report in order to promote understanding of our efforts among various stakeholders.

Please see page 121 for details on environmental accounting

## Management Structure

Since 1993, we have been holding an Environmental Council, which is attended by the Executive Officer, President & CEO and officers from each division. The Sustainability Committee, chaired by the Executive Officer, President & CEO, has met since FY2017, and environmental initiatives have been specified as key material issues for us. The committee discusses our environmental policies and targets and confirms the progress and results from the Environmental Targets 2030. Items of particular importance are reported to the Board of Directors.

For the management target companies, we have established selection criteria as a framework for the scope of environmental targets and the collection and publication of environmental data, and we review these criteria on a regular basis.

## Management Target Companies (20 Companies)

As of March 31, 2024

Country	Company Name
Japan	MITSUBISHI MOTORS CORPORATION

### Production Affiliates

Country	Company Name
Japan	Suiryo Plastics Co., Ltd.
Thailand	Mitsubishi Motors (Thailand) Co., Ltd. (MMTh) MMTh Engine Co., Ltd. (MEC)
Philippines	Mitsubishi Motors Philippines Corporation (MMPC) Asian Transmission Corporation (ATC)
Indonesia	PT Mitsubishi Motors Krama Yudha Indonesia
Vietnam	Mitsubishi Motors Vietnam Co., Ltd. (MMV)
Malaysia	MMC Manufacturing Malaysia Sdn. Bhd, (MMCM)

### Non-Production Affiliates

Country	Company Name
Japan	Mitsubishi Automotive Engineering Co., Ltd. Mitsubishi Automotive Logistics Technology Co., Ltd. Higashi Nihon Mitsubishi Motor Sales Co., Ltd. Nishi Nihon Mitsubishi Motor Sales Co., Ltd.
United States	Mitsubishi Motors North America, Inc. (MMNA)
Netherlands	Mitsubishi Motors Europe B.V. (MME)
UAE	Mitsubishi Motors Middle East and Africa FZE (MMMEA)
Australia	Mitsubishi Motors Australia, Ltd. (MMAL)
New Zealand	Mitsubishi Motors New Zealand Ltd. (MMNZ)
Canada	Mitsubishi Motor Sales of Canada, Inc. (MMSCAN)
Mexico	Mitsubishi Motors de México S.A. de C.V. (MMDM)

## Environmental Management System

In FY2010, MITSUBISHI MOTORS acquired companywide integrated ISO 14001 certification. (Previously, sites in Japan had acquired this certification individually.) We are leveraging the ISO 14001 framework and engaging in ongoing initiatives to improve business activities. The ISO 14001 framework is proving helpful in the companywide promotion of the Environmental Plan Package we formulated in FY2020.

Affiliates in Japan and overseas are also being encouraged to acquire ISO 14001 and Eco-Action 21<sup>\*1</sup> certification, and they are engaging in environmental management.

<sup>\*1</sup> Eco-Action 21 is a certification and registration system based on the Environmental Management Systems guidelines formulated by the Japanese Ministry of the Environment for medium-sized companies.

### Status of ISO 14001 Certification (As of May 31, 2024)

Development Companies
Mitsubishi Automotive Engineering Co., Ltd.
Production Companies
Suiryo Plastics Co., Ltd.
Mitsubishi Motors Philippines Corporation (MMPC)
Asian Transmission Corporation (ATC)
Mitsubishi Motors (Thailand) Co., Ltd. (MMTh)
MMTh Engine Co., Ltd. (MEC)
PT Mitsubishi Motors Krama Yudha Indonesia (MMKI)
Distribution and After-Sales Service Companies
Mitsubishi Automotive Logistics Technology Co., Ltd. (Maintenance Service & Logistics Business Division, Powertrain Department, Osaka Special Purpose Vehicle & Engineering Section of the Vehicle Business Department, Mizushima Maintenance Service Section of the Vehicle Business Department)

Please see page 42 for a list of the dealers that have received Eco-Action 21 certification.

## Promoting Life Cycle Assessment (LCA)

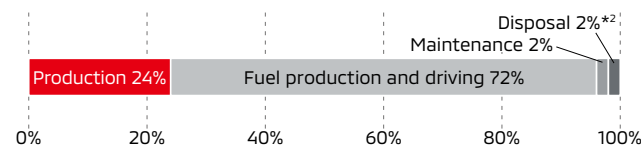
We perform LCA to determine the environmental impact across a product's life cycle. We evaluate total emissions, mainly of CO<sub>2</sub>, from such processes as extracting the resources used in parts and materials, producing materials, manufacturing parts, assembling vehicles, producing fuel, driving and disposing of disused automobiles.

We use LCA to develop advanced parts, electrified vehicles and new-model vehicles that help address the issues related to climate change and energy. We compare life cycle CO<sub>2</sub> emissions with those of previous parts and vehicles, and use this information in our activities to reduce CO<sub>2</sub> emissions throughout the supply chain.

### Examples of LCA Implementation in FY2023

Model	Objective
All-new "TRITON"	<ul style="list-style-type: none"> <li>Assessing the effect of reductions from the previous model</li> <li>Assessing the ratios for production, use and disposal</li> <li>Assessing the impact of components</li> </ul>

### LCA Results for the all-new "TRITON" (CO<sub>2</sub> emissions ratio)



<sup>\*2</sup> Excluding items that have been removed prior to disposal: bumpers, tires, lead batteries, etc.

In light of growing interest in the environmental impact across the entire life cycle in individual coun-

tries and regions, we will continue to strengthen our systems and build the foundations to ensure we remain abreast of developments related to regulations and incentives.

## Enhancing Disclosure of Environmental Information

We disclose information about our environmental initiatives through our website and sustainability report. We will continue to take leverage these initiatives to engage in dialogue with institutional investors and experts about environmental and other non-financial information.

### Release of Environmental Information on Website and in the Sustainability Report

We release information on the concepts and details of its environmental initiatives on our website and in the sustainability report in order to make its environmental initiatives more widely known.

For details, see the "Environment" section of our website.

(WEB) <https://www.mitsubishi-motors.com/en/sustainability/environment/>

### Communication with Investors

We engage in dialogue with investors, exchanging opinions about environmental and other non-financial information.

In FY2023, we engaged in dialogue and exchanged opinions with many Japanese and overseas institutional investors and other parties regarding the "Environmental Targets 2030," announced in "Challenge 2025," our mid-term management plan.

## Promoting Employee Education and Awareness Activities

MITSUBISHI MOTORS conducts sustainability-related awareness activities throughout the year as part of its aims of deepening the understanding of sustainability among all executives and employees and contributing toward the realization of a sustainable society through routine business activities. Environmental education and awareness are one aspect of these activities.

In FY2023, we conducted rank-based training and distributed videos to all executives and employees. In these ways, we sought to promote an understanding of our social responsibility for realizing a sustainable society, the relationship between sustainability and the environment, the relationship between environmental issues and our business activities, and our revised "Environmental Targets 2030."

Please see page 11 for details on our activities to promote an awareness of sustainability.

## Collaborating with Suppliers

Our suppliers cooperate with us in various initiatives, including meeting the requirements of our Green Procurement Guidelines. We believe that ongoing communication is an important part of the steady implementation of initiatives by suppliers. We explain the importance of environmental initiatives at our Suppliers Meetings, for example, which are attended by our suppliers, and strive to engage in communications to reduce the environmental impact of our entire supply chain.

Please see page 63 for details on the Green Procurement Guidelines.

## Promoting Environmental Preservation Activities Rooted in the Local Community

Recognizing the rich characteristics of life on land and the importance of our connection to this life, we promote environmental preservation activities that are rooted in the local community. Realizing that factory construction and other types of land use have a direct or indirect impact on biodiversity, we strive to preserve surrounding ecosystems. We do so by carefully maintaining connections between factories and the natural environments that surround them and by maintaining green spaces within factory sites. By participating in forest preservation projects in Japan and overseas, we strive to select species that are suitable to specific regions. In addition, employees work with local residents to plant and cultivate trees, engaging in activities connected to local communities.

Please see page 54 for details on our preservation of biodiversity.

## Environmental Risk Management

Having learned from past cases of failing to comply with environmental regulations such as those aimed at preventing pollution, we make every effort to comply with relevant regulations.

We sincerely respond to complaints from neighborhood residents after investigating the situation. In the event that environmental laws and regulations are violated or an environmental accident occurs (such as if regulatory values are exceeded), or if we receive a complaint, the corresponding division must submit a Legal Non-Conformity Report to the Compliance Department and take necessary measures against the cause.

The report clarifies the details of the case, measures and more, and appropriate countermeasures are taken. Furthermore, in order to prevent recurrence, initiatives are in place to improve work processes, enhance the supervision system, and increase employee awareness.

In FY2023, we were subject to no fines or administrative orders stemming from violations of environmental laws and regulations<sup>\*1</sup>, nor any instances of exceeding statutory values. However, voluntary internal checks and monitoring activities uncovered 10 cases of legal non-compliance (including delays in notification). We responded to these incidents by swiftly taking corrective action, introducing measures to prevent recurrence and sharing information with other related divisions about the incidents and countermeasures to stop the occurrence of similar cases.

<sup>\*1</sup> Refers to 31 environment-related laws and regulations identified by us, including the Water Pollution Prevention Act and the Air Pollution Control Act.

## Participation in External Associations and Initiatives

We are working with external organizations and initiatives to achieve carbon neutrality in 2050.

In March 2022 we endorsed, and in April 2023 we announced our participation in, the GX<sup>\*2</sup> League, based on the GX League Basic Concept, announced by the Ministry of Economy, Trade and Industry in FY2021.

In addition, in May 2023 we joined the Japan Climate Initiative (JCI), a network to disseminate information and strengthen collaboration among companies and others working to combat climate change toward the realization of a decarbonized society.

<sup>\*2</sup> GX: Green transformation

# Responding to Climate Change and Energy Issues



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## Progress in FY2023

Average CO<sub>2</sub> emissions from new vehicles  
(Tank to Wheel, compared with FY2010)  
[FY2022: -18%] **-17%**

Ratio of electrified vehicle sales  
[FY2022: 12%] **15%**

CO<sub>2</sub> emissions from business activities  
(Scope 1 and 2 total emissions,  
compared with FY2018)  
[FY2022: -33%]\*1 **-34%\***

Scope 3 emissions  
[FY2022: 28,710  
thousand t-CO<sub>2</sub>eq] **31,914  
thousand t-CO<sub>2</sub>eq**

Number of DENDO DRIVE STATIONS  
(As of end-March 2024) **97 branches**

- Expanded vehicle lineup: In addition to our new Kei-car segment commercial electric vehicle, the "MINICAB EV," we have launched HEV models for the "COLT," "XPANDER," and "XPANDER CROSS."
- In FY2023, we installed a total of 16.25MW of solar power generation equipment at plants in Japan and overseas.

\*1 Until FY2020, we included some equity-method associates in our environmental management target companies. However, these equity-method associates have been excluded since FY2021. We set the base value 545 thousand t-CO<sub>2</sub>, which is calculated by subtracting 43 thousand t-CO<sub>2</sub>, the emission amount made by the equity-method associates, from 588 thousand t-CO<sub>2</sub>, the officially reported volume of FY2018 (the benchmark year).

### <Related pages>

P12 MITSUBISHI MOTORS' Materiality  
P15, P17 Materiality  
P23 Environmental Plan Package  
P26 Environmental Management  
P118 Environmental Data Related to Products and Business Activities

## Basic Approach

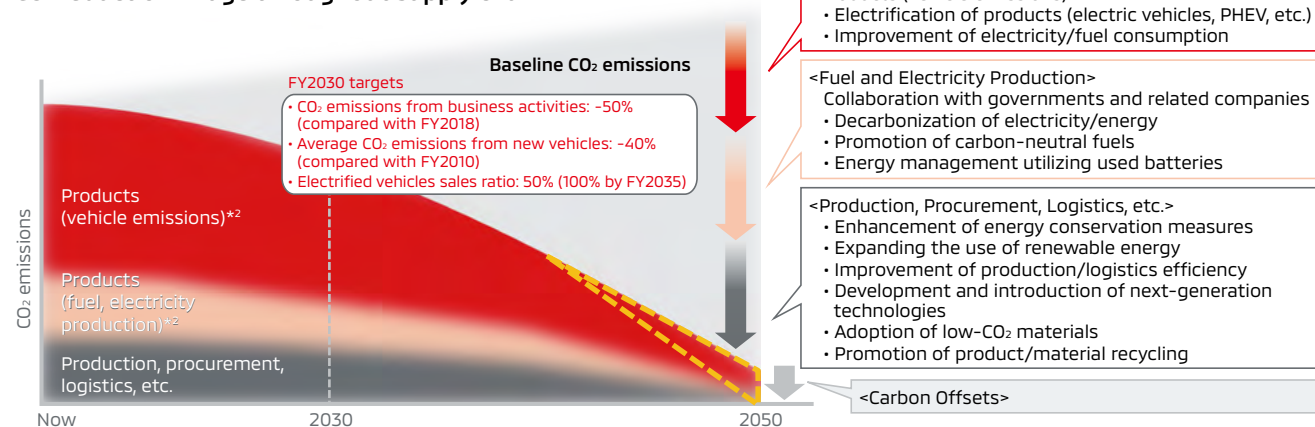
In recent years, extreme weather, such as heat waves, droughts and floods due to heavy rain, has caused disasters one after another around the world. The largest cause of these extreme-weather events is climate change, whose major factor seems to be global warming caused by increases in CO<sub>2</sub> and other greenhouse gases.

Global efforts to reduce CO<sub>2</sub> emissions are accelerating. As international frameworks for achieving a sustainable society such as the Paris Agreement and the United Nations Sustainable Development Goals (SDGs) progress, the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP28), held in November and December 2023, implemented the Global Stocktake and indicated the need to reduce greenhouse gas emissions by 43% by 2030 and 60% by 2035 compared to 2019 levels.

Automobiles generate CO<sub>2</sub> throughout the life cycle, from production to driving and disposal. For this reason, MITSUBISHI MOTORS has identified "responding to climate change and energy issues" as a material issue, taking into account its impact on the economy, environment and people. Furthermore, in the Environmental Plan Package, we position this as one of the important challenges to address directly, and are working to achieve carbon neutrality throughout its supply chain by 2050. We have set specific targets, and efforts are underway to achieve this goal. Furthermore, in the mid-term business plan "Challenge 2025," also includes "Working toward Carbon Neutrality" as one of the 3 major challenges, and we position it as a theme to be pursued by the entire company.

As for products, starting with our original plug-in hybrid electric vehicles (PHEV) and Kei-car segment commercial electric vehicles, we will promote electrification while leveraging the technologies of Alliance

## CO<sub>2</sub> reduction image throughout supply chain



\*2 Including new and stock vehicles



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

to proactively introduce the electrified vehicles that best meet the energy situation, infrastructure development status, and customer needs of each country and region. In parallel with our electrification efforts, we will work to improve our fuel efficiency technologies for vehicles powered by internal combustion engines. In our business activities, in addition to reinforcing energy saving measures as well as pursuing productivity-enhancing technologies, we will promote fuel conversion and the development and introduction of next-generation production technologies.

Furthermore, we will expand the use of renewable energy, centering on the introduction and expansion of solar power generation facilities at major plants.

To achieve carbon neutrality throughout the supply chain, it is essential for us to reduce CO<sub>2</sub> emissions in the production phase of raw materials and parts, as well as in the transportation of products. We will promote activities to visualize and reduce CO<sub>2</sub> emissions in cooperation with our suppliers. At the product disposal stage, we will promote recycling of products and materials through the adaptation of low-CO<sub>2</sub> materials and recycling-conscious design.

We will also explore various carbon offset options for CO<sub>2</sub> emissions that cannot be ultimately reduced through these efforts.

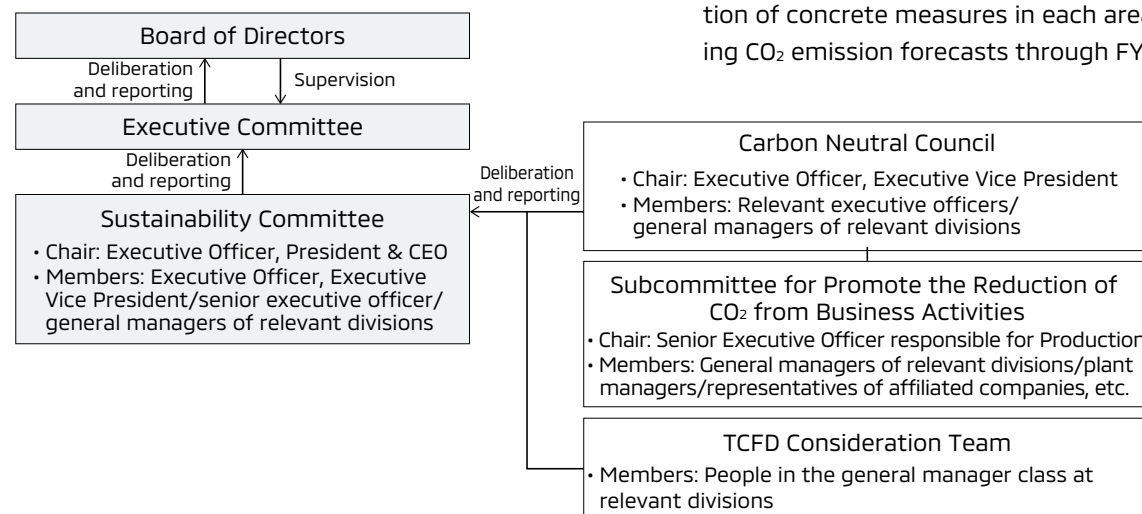
In addition, our electrified vehicles have large-capacity batteries that can be used in energy management and as emergency power sources in times of disaster. Through these measures, we are also engaging in measures to adapt to climate change.

As expectations for companies to curb climate change are expected to increase, we will continue reinforcing our efforts to further reduce CO<sub>2</sub> emissions.

## Structure of Promoting Carbon Neutrality

We are making progress on “Responding to Climate Change and Energy Issues” under our framework for promoting sustainability. The Sustainability Committee, chaired by the Executive Officer, President & CEO, deliberates on climate change risk and opportunity assessments and response measures and checks progress and performance toward our “Environmental Targets 2030.”

### Structure of Promoting Carbon Neutrality (As of April 2024)



	Roles	Meeting frequency
Sustainability Committee	Monitoring Progress toward the Environmental Targets 2030	Three times a year
Carbon Neutral Council	Meets three to four times a year, formulating medium- to long-term policies and targets for achieving carbon neutrality by 2050	Three to four times a year
Subcommittee for Promote the Reduction of CO <sub>2</sub> from Business Activities	Draft action plans for reducing CO <sub>2</sub> in areas of business activity, promotion of specific measures, etc.	Twice a year
TCFD Consideration Team	Identify and assess climate- related risks and opportunities, consider scenario analysis, etc.	Meets as necessary



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## Development and Spread of Electrified Vehicles

In our Environmental Targets 2030, MITSUBISHI MOTORS set the target of achieving a 40% reduction in average CO<sub>2</sub> emissions from new vehicles by 2030 (compared with FY2010 levels). To meet this target, we have raised our target ratio of electrified vehicle sales to 50% by 2030 and to 100% by FY2035. This change focuses our core technologies on responding to climate change and energy issues through electrified vehicles, which emit low CO<sub>2</sub> while driving, and concentrates on their development. Centering on our strength in plug-in hybrid electric vehicles (PHEV), we

will expand our lineup of electrified vehicles, thereby promoting their popularization and use in society and contributing toward the realization of a sustainable society.

### Electric Vehicles (EV)

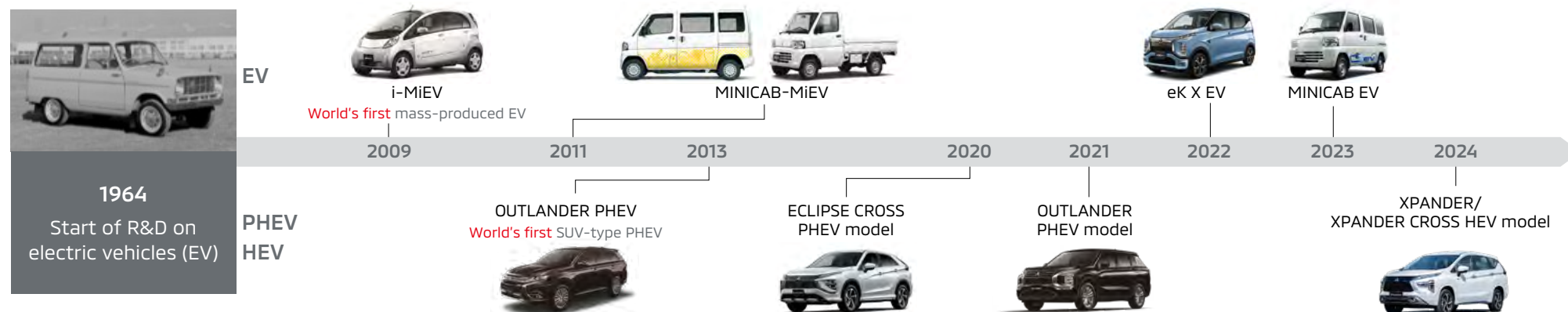
Electric vehicles (EV) are driven by electricity in battery, so they emit no exhaust gases such as CO<sub>2</sub> while driving.

We released the "i-MiEV" as the world's first mass-produced EV in 2009. In addition to its environmental performance, the "i-MiEV" performed better than conventional gasoline engine vehicles on quietness and acceleration starting from maximum

torque. In 2011, we launched the "MINICAB-MiEV," a Kei-car segment commercial electric EV. In 2012, we began offering the "MINICAB-MiEV TRUCK," also an EV in the Kei-car segment. These technologies are the foundation of next-generation EVs, such as PHEV.

We believe that expanding the lineup of Kei-car EVs, which are expected to be used in more everyday situations, will be the key to the spread of electrified vehicles. Accordingly, in June 2022 we launched the "eK X EV," a new EV in the Kei-car segment, and in December 2023 we launched the "MINICAB EV," new commercial EV in the Kei-car segment. We will continue to focus on the development of EV to contribute toward the realization of a carbon neutral society.

## Our History of Developing Electrified Vehicles





Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## TOPICS

### The "MINICAB EV," Our New Commercial Electric Vehicles in the Kei-Car Segment, Launches in Indonesia



The new "MINICAB EV," which launched in Japan in December 2023, is a commercial electric vehicle in the Kei-car segment. This model draws extensively on the development and maintenance expertise we have accumulated over the past 12 years with the "MINICAB-MiEV," which has sold some 13,000 units (as of end-October 2023). The "MINICAB EV" features substantial improvements, such as a driving range of 180km (in WLTC mode) on a single charge, up around 35% compared with previous models, as well as expanded safety and functional equipment.

In February 2024, MITSUBISHI MOTORS commenced sales in Indonesia of the "MINICAB EV" (known locally as the "L100 EV"), via its local joint venture, PT Mitsubishi Motors Krama Yudha Indonesia (MMKI).

As decarbonization efforts accelerate in various fields toward the realization of a carbon-neutral society by 2050, demand for commercial electric vehicles in the Kei-car segment is further increasing in the logistics industry and from local governments. Introducing the "MINICAB EV" will help reduce CO<sub>2</sub> emissions in the last mile of commercial use.

### Plug-in Hybrid Electric Vehicles (PHEV)

PHEV are powered by electricity stored in batteries and by the motor, using the engine to generate electric power when the battery level is low. PHEV combine the powerful driving performance, high level of quietness, and driving stability characteristic of electric vehicles, without the concern that battery capacity will limit the vehicle's driving range.

Our journey in PHEV began with the "OUTLANDER PHEV" in 2013, followed by the "ECLIPSE CROSS PHEV model" in 2020 and the launch of the All-New "OUTLANDER PHEV model" in 2021. At low to medium speeds, the PHEV system uses electric power from the battery, but when the battery level is low, it generates electric power during operation using the engine while also supplying power to the motor and battery. Furthermore, during high-speed driving, the vehicle is driven by the engine and simultaneously assisted by the battery-powered motor. In this way, the drive mode is automatically selected according to the situation. CO<sub>2</sub> emissions are substantially lower than conventional gasoline engine vehicles, delivering outstanding environmental performance.



"ECLIPSE CROSS PHEV model" and  
"OUTLANDER PHEV model"



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## The Values Plug-in Hybrid Electric Vehicles (PHEV) Provide:

### CO<sub>2</sub> Reduction

#### Production → Disposal

CO<sub>2</sub> emissions

■ Production/disposal ■ Driving



HEV\*<sup>1</sup>  
High level of CO<sub>2</sub> emitted  
during driving



PHEV  
Relatively less CO<sub>2</sub> emitted  
during production and driving\*<sup>3</sup>



EV\*<sup>2</sup>  
Higher level of CO<sub>2</sub> emitted during production\*<sup>3</sup>



Note: Based on MITSUBISHI MOTORS' estimate of actual CO<sub>2</sub> emissions in 2025. LCA values vary depending on such factors as CO<sub>2</sub> emissions during power generation and lifetime mileage.

Using the LCA\*<sup>4</sup> concept, which is based on calculations of total environmental impact from production to disposal, MITSUBISHI MOTORS believes PHEV system is the most environmentally friendly electrical drive systems.

\*<sup>1</sup> Hybrid electric vehicle

\*<sup>2</sup> Electric vehicle

\*<sup>3</sup> CO<sub>2</sub> emissions during driving include CO<sub>2</sub> emissions generated when electricity to charge the battery is generated.

\*<sup>4</sup> LCA stands for life cycle assessment, which is a technique for calculating the environmental impact of a product from manufacturing to disposal.

### Driving Range

Powered 100% by electricity  
for short trips



On longer trips, powered by electricity  
and sometimes gasoline



It is possible to use only the electric motor without consuming gasoline for short trips, such as for everyday commuting and shopping. The motor and engine can also be used in combination to extend the driving range, using the engine to generate the electricity when battery levels run low.

### Power Supply Capability

Supply electricity for up to **12 days**  
(Based on general household consumption)



Via a bi directional (V2H\*<sup>5</sup>) charger, the electricity in the battery and the engine's generating capabilities can be used in combination to supply electricity for up to 12 days\*<sup>6</sup>. It can also be used as an emergency power source in times of disaster.

\*<sup>5</sup> Short for "vehicle to home," V2H is a system that enables electricity stored in a car's battery to be supplied to the home.

\*<sup>6</sup> For the All-New "OUTLANDER PHEV model" Potential supply capacity is calculated by MITSUBISHI MOTORS (calculations assume approximately 10 kWh per day for general household power consumption and do not include the conversion efficiency of the V2H equipment and/or similar device).



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## Hybrid Electric Vehicles (HEV)

MITSUBISHI MOTORS' HEV system offers EV mode, series hybrid mode, parallel hybrid mode, and regenerative mode. The system automatically selects the optimal driving mode according to driving conditions and remaining drive battery capacity to achieve low fuel consumption and powerful and pleasant motor drive.

When starting off or at low speeds, in EV mode the vehicle runs on electric power alone, with the drive battery supplying power to the motor. In series hybrid mode, when the vehicle is climbing or accelerating, the engine is used to generate electricity, and the motor is used to drive the vehicle in combination with power from the drive battery. At higher speeds, the system switches to parallel hybrid mode, in which the car runs on engine power and is assisted by the motor. In regenerative mode, the vehicle recovers energy from deceleration, which it converts into electric power and stores in the drive battery.

In FY2023 we launched the "COLT HEV model" in Europe and the "XPANDER" and "XPANDER CROSS HEV model" in Thailand. In FY2024, we are launching the new "ASX HEV model," starting in Europe from June.

### TOPICS

#### Launch of "XPANDER" and "XPANDER CROSS" HEV Models in Thailand

The "XPANDER" and "XPANDER CROSS" HEV models that launched in February 2024 are manufactured at Mitsubishi Motors (Thailand) Co., Ltd. (MMTh), our production and sales company in Thailand.

Our HEV system, derived from PHEV, delivers the environmentally friendly and pleasant driving experience that only an electric vehicle can offer. Based on the FF 2WD, the system enables safe and reliable driving with unique four-wheel control technology, including Active Yaw Control\*1, ensuring optimal driving according to weather and road conditions with a variety of drive modes. Despite being an HEV, the user can also select an EV driving as a situationally appropriate override option, such as on early morning drives in quiet residential areas when engine noise may be a nuisance.

\*1 Active Yaw Control: This function controls the yaw moment resulting from the difference in braking force and driving force between the left and right wheels to improve maneuverability and stability on slippery road surfaces and when cornering.



"XPANDER HEV model"



"XPANDER CROSS HEV model"

## Promoting the Use of Electrified Vehicles as a Way of Adopting to Climate Change

By leveraging the large-capacity batteries on its electric vehicles (EV) and PHEV to supply electricity, we are contributing to measures in various countries and industries to adapt to climate change and energy issues. We are applying these to such areas as areas as energy management, V2X\*2 and use as emergency power sources in times of disaster.

\*2 A general term encompassing vehicle to home (V2H) and vehicle to grid (V2G), among others



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## TOPICS

### Launch of a Smart Charging Service Demonstration Project Employing Our Connected Technology for Electrified Vehicles

MITSUBISHI MOTORS, MC Retail Energy Co., Ltd., Kaluza Ltd. and Mitsubishi Corporation have begun a demonstration project to commercialize Japan's first smart charging service, which uses connected technology from our electrified vehicles.

Through this smart charging service, we aim to reduce energy costs for society as a whole and provide an attractive charging environment for users of electrified vehicles. The results of this demonstration project will be used in the development of this service.

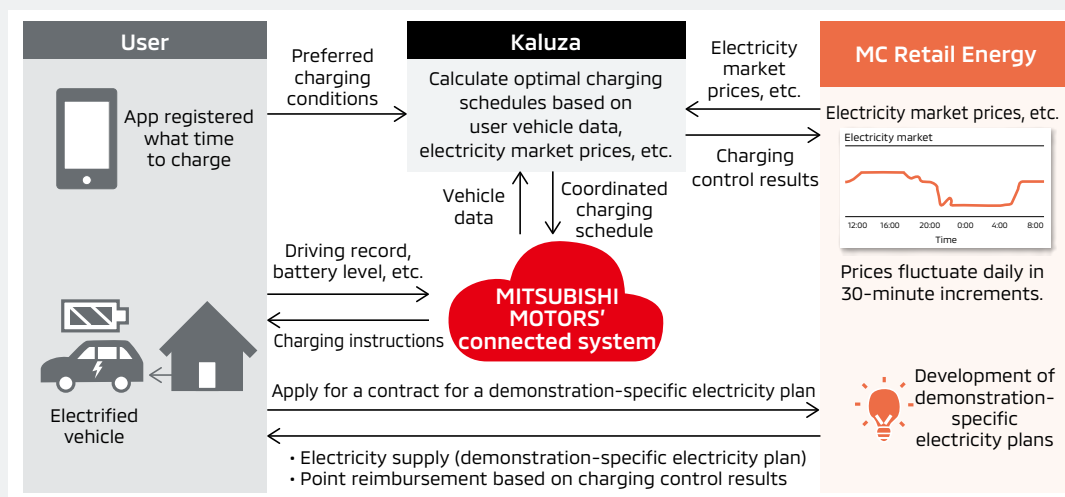
#### Overview of the Demonstration Project

The service automatically optimizes recharging for customers\*<sup>1</sup> who own the "OUTLANDER PHEV model" at times when market prices of electricity are low. Charging takes place by the time specified by the customer, using

a smartphone app and normal home electrical circuitry. The recharging employs an EV recharging control platform provided by Kaluza, an OVO Group company in which Mitsubishi Corporation has an equity stake.

During the demonstration period, customers will be able to save on charging costs based on charging control results by subscribing to a demonstration-specific electricity plan that MC Retail Energy will develop for this service. The service enables direct charging control from the Kaluza platform to the vehicle through our connected system, eliminating the need for charging facilities with communication functions (smart charging facilities).

\*<sup>1</sup> The service targets people who live in the service areas of TEPCO Power Grid, Inc. or Chubu Electric Power Grid Co., Inc., who register for our connected service ("MITSUBISHI CONNECT"), and who have regular home charging equipment installed.



## TOPICS

### Demonstration Testing of Two Concepts for Energy Storage Utilization in Conjunction with Chargers for Electrified Vehicles



Demonstration facility for utilizing used batteries

In January 2023, we installed demonstration facilities for two concepts linked to quick chargers and bi-directional chargers for electrified vehicles in the M-Tech Lab\*<sup>2</sup>, a smart grid demonstration facility at the Okazaki Plant, where we are conducting demonstration tests.



M-Tech Lab

Both systems utilize used battery modules. One is an energy storage system that connects to the power line of a quick charger and discharges stored power to reduce power peaks when fast-charging electrified vehicles. The other is an energy storage unit, which is connected to a bidirectional charger in a CHAdeMO\*<sup>3</sup> standard. This unit stores energy even when the electrified vehicles are away, facilitating efficient energy management. In the future, we will work with energy storage equipment manufacturers to introduce these systems at Group sales companies' shops and other locations.

\*<sup>2</sup> M-Tech Lab: Test equipment for a smart grid demonstration, our first initiative utilizing used batteries, began operating in April 2012.

\*<sup>3</sup> CHAdeMO: A quick-charging system for electric vehicles, a global standard that Japan led the way in standardizing in 2010



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## TOPICS

### Launch of Joint Demonstration of Movable Storage Batteries Utilizing Used Batteries

In September 2023, MITSUBISHI MOTORS and Hitachi, Ltd. have begun a joint demonstration of "Battery Cube\*<sup>1</sup>," a movable storage battery that utilizes used batteries from electrified vehicles. This is part of an effort to realize a circular economy for batteries installed in electrified vehicles.

This demonstration, which aims to verify the practicality of the Battery Cube, employs used batteries from the OUTLANDER PHEV, our plug-in hybrid vehicle. The demonstration, which assumes power outages due to a disaster across a wide area, connects a V2X\*<sup>2</sup> system from Hitachi Building Systems Co., Ltd. with the Battery Cube's CHAdeMO V2H\*<sup>3</sup> connector. Power from the Battery Cube is being used to drive the "Urban Ace HF," Hitachi's standard elevator. In addition to supplying power from electrified vehicles equipped with V2H functionality, which has been proven in the past, this combination using a Battery Cube should help to ensure continuous backup power supply in case of disaster.

We aim to begin working with Hitachi to reuse used batteries from electrified vehicles and commercialize Battery Cube in FY2024. We will work together to introduce Battery Cube to companies and local governments. We are also planning a joint demonstration for energy



Left: Battery Cube supplying electricity  
Right: Used batteries inside the Battery Cube

management that connects electrified vehicles and Battery Cube with solar panels and other devices to make effective use of renewable energy. In addition to reusing batteries from electrified vehicles, we will study concepts for subsequent recycling, in line with our aim of realizing a circular economy for electrified vehicle batteries.

\*1 Battery Cube: A registered trademark of Hitachi Building Systems Co., Ltd. in Japan

\*2 V2X (Vehicle to X): A generic term for technologies that connect and interoperate between automobiles and various objects. In the energy field, V2X systems are being put to practical use to enable the mutual supply of electric power by connecting electric vehicles to homes, buildings, and grid systems.

\*3 CHAdeMO V2H: A Vehicle to Home standard for CHAdeMO, a quick recharging method proposed as a standard by Japan's CHAdeMO Association.



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## TOPICS

### Demonstration Projects of Autonomous Street Lighting That Utilizes Used Batteries from Plug-in Hybrid Vehicles (PHEV)

MITSUBISHI MOTORS and MIRAI-LABO Co., Ltd. are developing an autonomous street lighting system using used batteries from PHEV in hopes of contributing to decarbonization through the increased use of renewable energy. Our autonomous street lighting systems store solar power generated during the day in used batteries from PHEV, using that power to illuminate LED lights at night. Since they do not require an external power supply, the streetlights do not go out in the event of a disaster or power failure. Used batteries mean that CO<sub>2</sub> emissions from battery production are lower than for streetlights using new batteries, and CO<sub>2</sub> emissions during operation are zero, as the electricity comes from solar power.

In FY2022 to FY2023, we commenced a demonstration project that involved installing 24 autonomous street lighting systems on the facilities of the Okazaki Plant, Mizushima Plant, Kyoto Plant, and Tokachi Research & Development Center. We are acquiring usage data on batteries and other components and verifying the practicality of the systems, looking at such factors as the number of non-sunlit days. We aim to bringing the system to market in FY2024.

#### Number of Autonomous Street Lighting Systems Installed (As of April 2024)

Locations	Number installed
Okazaki Plant	15
Mizushima Plant	2
Kyoto Plant	4
Tokachi Research & Development Center	3
<b>Total</b>	<b>24</b>



Okazaki Plant



Mizushima Plant



Kyoto Plant



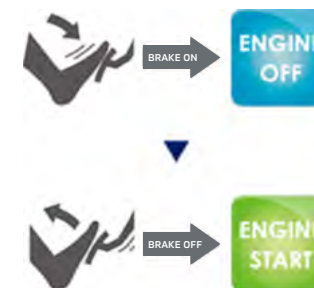
Tokachi Research & Development Center

### Development of Improving Fuel Economy Technologies

MITSUBISHI MOTORS is continuously promoting the development of powertrain technologies to reduce fuel consumption and improve energy efficiency.

#### Idle Reduction System "AS&G" (Auto Stop & Go)

AS&G is an idle reduction system that automatically stops and starts the engine. This has a major effect on improving the fuel economy because no fuel is consumed when at a stop. When fitted with a coasting stop function, AS&G stops the engine while decelerating.



#### Deceleration Energy Recovery (Power Generation Control)

This technology involves the intensive charging of the battery using electric power generated while decelerating. This reduces the amount of power required from the engine, thereby improving fuel economy.



Targets  
● 7.2  
● 7.3



Target  
● 9.4



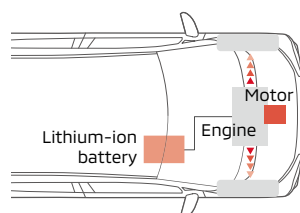
Targets  
● 13.1  
● 13.2  
● 13.3

## Hybrid System

The eK series (excluding the “eK WAGON”) uses MITSUBISHI MOTORS’ 12V BSG\*<sup>1</sup> hybrid system. The power produced by regenerative energy during deceleration is used to efficiently charge the lithium-ion battery, and the motor assists the engine during acceleration to achieve torque and fuel-efficient driving and smooth engine stopping and starting.

The new “OUTLANDER” uses 48V BSG hybrid system specifications, generating more power from the energy of deceleration.

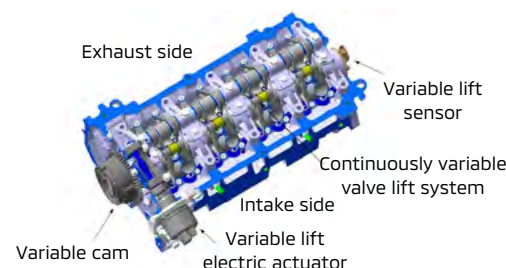
\*<sup>1</sup> Short for “belt-driven starter generator,” the BSG adds motor functionality to the generator, using a belt drive to assist engine startup and providing power assistance.



Hybrid system on the “eK X”

## Variable Valve Timing Mechanism

### Mitsubishi Innovative Value timing Electronic Control System (MIVEC)



MIVEC engine

The MIVEC is a variable valve timing mechanism for minimizing fuel consumption. The intake valve lift is continuously varied according to the operating condition to minimize air intake energy loss, resulting in improved fuel efficiency.

## Gasoline Direct-Injection Turbo Engine

The “ECLIPSE CROSS” adopts a 1.5L downsized direct-injection turbo engine (4B40). By precisely controlling in-cylinder injection and intake port injection based on driving circumstances, this engine delivers superior fuel economy and a clean exhaust gas. By combining an exhaust manifold integrated with the cylinder head, intake and exhaust MIVEC, and a compact turbocharger with an electric wastegate actuator, the engine optimizes supercharging pressure control to respond as the driver demands, thus delivering a comfortable and powerful driving.

The new “OUTLANDER” is also equipped with a next-generation 1.5L downsized direct injection turbocharged gasoline engine, which is an improved version of the 4B40 engine. Additionally, it is combined with a hybrid system that incorporates a 48V BSG. This system assists the engine during start-up and acceleration with the motor, achieving a high level of performance and fuel efficiency.



Direct injection turbocharged gasoline engine (4B40)

## Clean Diesel Turbo Engines

The new “TRITON” we launched in Thailand in July 2023 is equipped with a new 2.4L diesel turbo engine. The weight and friction losses of the engine are reduced due to the optimally designed key components such as the cylinder block, piston and connecting rods. Additionally, the fuel injection system has been upgraded to the next generation, providing high performance while achieving excellent fuel efficiency and clean exhaust gas characteristics.

In February 2024, we added a higher-output version of the engine with a two-stage turbocharger. With a maximum output of 150 kW and maximum torque of 470 Nm, it delivers powerful acceleration and abundant torque that rises responsively from low to mid-range speeds.

## New Gasoline Engine for Electrified Vehicles

The HEV models of “XPANDER” and “XPANDER CROSS” that went on sale in Thailand in February 2024 are powered by a newly developed 1.6L gasoline engine for electrified vehicles. A high expansion ratio cycle (Atkinson cycle\*<sup>2</sup>) is used to improve combustion efficiency, and an electric water pump has been adopted for the first time in a MITSUBISHI MOTORS engine to eliminate the auxiliary drive belt and reduce mechanical losses.



1.6L gasoline engine for electrified vehicles

\*<sup>2</sup> Atkinson cycle: A type of internal combustion engine that uses a higher expansion ratio than compression ratio to reduce exhaust heat and improve thermal efficiency.



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## TOPICS

### Equipped with a 2.4L Clean Diesel Turbo Engine

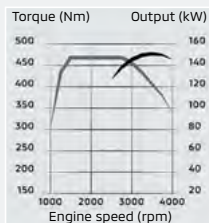


"TRITON"

After launching "TRITON" in Thailand in July 2023, MITSUBISHI MOTORS added a new variant in February 2024, which adopts a higher output version of its engine to respond to market diversification.

The new clean diesel engine with two-stage turbo-charger offers maximum output of 150 kW and maximum torque of 470 Nm. It delivers a powerful sense of acceleration and abundant torque that rises responsively from low to mid-range speeds.

In addition, the engine uses a "urea SCR\*1 system" that purifies nitrogen oxides (NOx) emitted from diesel engines by using AdBlue, an aqueous urea solution, thereby achieving clean emissions along with low fuel consumption and high power output.



2.4L clean diesel turbo engine

\*1 SCR: Selective catalytic reduction

\*2 AdBlue®: A registered trademark of the German Association of the Automotive Industry (VDA)

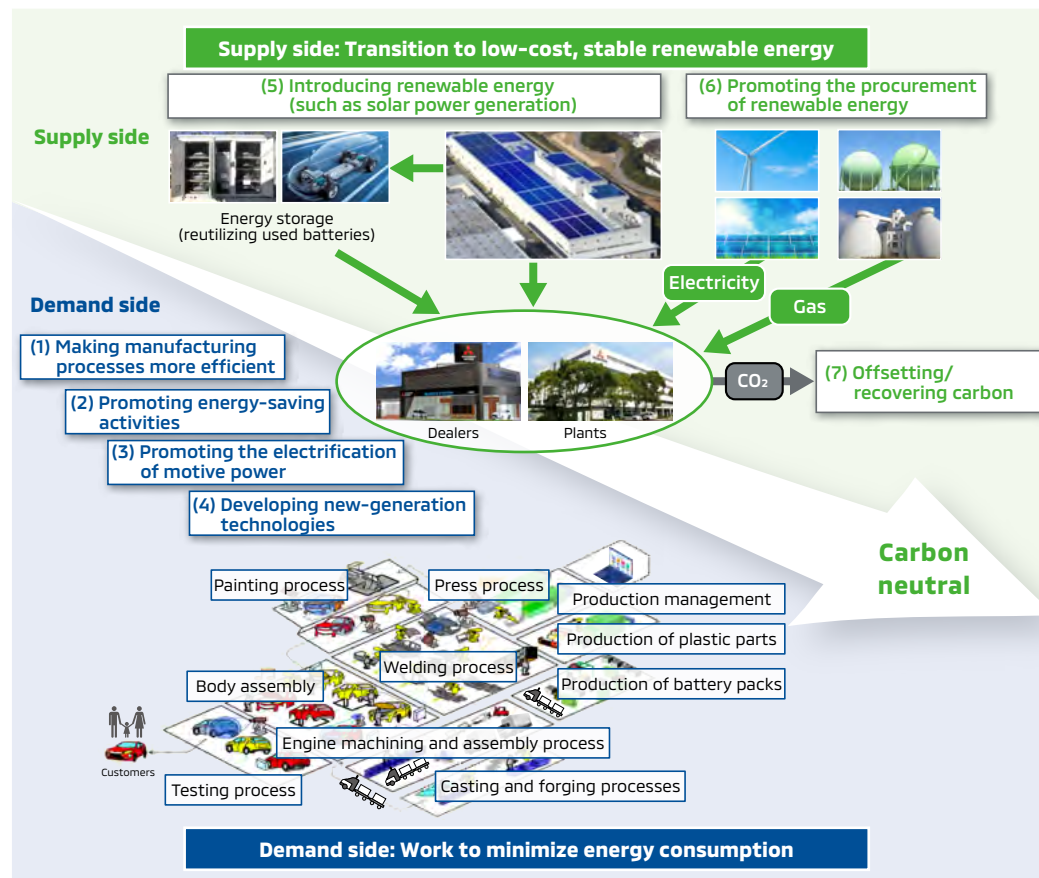
## Taking the Initiative in Business Activities Toward Carbon Neutrality

To become carbon neutral, MITSUBISHI MOTORS will approach the issue from both the "demand side" (energy consumption) and the "supply side" (energy generation and procurement). To ensure our activities

are carried out systematically, we have formulated a medium- to long-term roadmap toward carbon neutrality. Following this plan, we are working to develop future technologies, improve production processes and expand the introduction of renewable energy.

We have established the CO<sub>2</sub> Reduction Promotion Subcommittee as an infrastructure of the Sustainability Committee. The subcommittee, which has mem-

### "Seven Approaches" to Become Carbon Neutral





Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

bers from production, development and sales companies in Japan and overseas, aims to help the entire MITSUBISHI MOTORS Group achieve carbon neutrality in its business activities. The subcommittee shares information on the progress of action plans, actual CO<sub>2</sub> emissions, and other pertinent data. It also drafts reduction measures, considers future technologies, and deliberates the future energy mix.

(As of April 2024)

#### Subcommittee to Promote the Reduction of CO<sub>2</sub> (Chair: Senior Executive Officer in charge of Production)

Person in charge of the initiative: Division General Manager,  
Production Strategy Planning Division

In charge of promoting overall activities  
(Carbon Neutral Promotion Office)

#### Promotion structure and responsible parties

Production Engineering:  
Division General Manager,  
Production Engineering Division  
Domestic plants: Plant managers  
Overseas plants:  
People in charge of production companies overseas  
Development (business sites):  
Division General Manager,  
Development Management Division  
Sales companies: Presidents of sales companies  
Electricity procurement:  
Division General Manager,  
Procurement Communication Division  
Gathering/sharing of information:  
General Manager,  
Sustainability Promotion Department

## Introduction of Renewable Energy

MITSUBISHI MOTORS is actively seeking to use renewable energy in its operations, taking into consideration the energy situation at each site. To do so, we are introducing in-house renewable energy generation and purchasing renewable energy from energy suppliers.

We believe solar power offers us an important way to achieve carbon neutrality, and we are proactively introducing solar power generation at our locations. In addition, in FY2023 we began introducing CO<sub>2</sub>-free electricity derived from renewable energy sources for some of our domestic production facilities.

### TOPICS

#### Starting to Use Solar Power Generation Equipment (Rooftop of the Plant)

In FY2023, we introduced solar panels to supply 2.8MW of power at Mitsubishi Motors Philippines Corporation (MMPC), 1.7MW at Asian Transmission Corporation (ATC), and 1.3MW at the Mizushima Plant. We also added solar panels at other locations: 5.6MW at Mitsubishi Motors (Thailand) Co., Ltd. (MMTh), 2.0MW at MMTh Engine Co., Ltd. (MEC), and 5.6MW at PT MITSUBISHI Motors Kra-  
ma Yudha Indonesia (MMKI), bringing total Group generating capacity to approximately 30MW.



Solar power system at MMTh's  
No. 3 Plant

## Initiatives at Manufacturing Plants

To reduce CO<sub>2</sub> emissions from production activities, we have established a medium- to long-term roadmap to achieve carbon neutrality in each area of production technology—pressing, welding, painting, assembly and powertrain—and we are developing future technologies and improving production processes to this end.

We are sharing good practices among all sites and incorporating a variety of plans into our annual capital investment plans at individual bases and implementing them. We are improving the efficiency of production equipment, using electric equipment instead of the use of fuels, steam or compressed air, and upgrading general equipment to more energy-saving models.

In energy-saving activities involving participants from production sites and production technology and motive power departments, we are working to improve the operation of energy-intensive processes such as painting and casting. We also review the operation and management of power supply equipment such as boilers and compressors, and strive to prevent air leaks and other losses. These activities focus on operational improvements following the introduction of new facilities.



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## TOPICS

### Optimizing Operational Control of the Painting Process (Okazaki Plant)

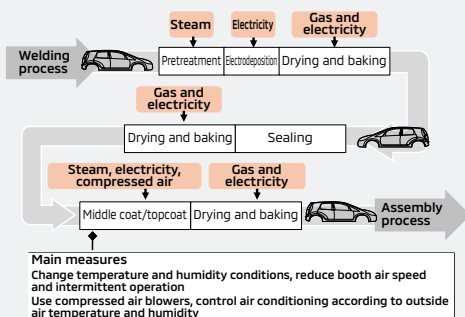
At the Okazaki Plant, MITSUBISHI MOTORS has substantially revised how we manage the painting process, and we are undertaking thorough initiatives toward energy conservation.

Quality control during the painting process requires that air control be closely monitored. We have carefully reviewed individual conditions and introduced revisions to temperature and humidity, reducing air speed and intermittent operation, employing blowers in processes that use compressed air, and controlling air conditioning in response to the temperature and humidity of the outside air.

As a result of these efforts, we expect to reduce energy consumption throughout the overall painting process by approximately 10% and reduce CO<sub>2</sub> emissions by 3,500 tons per year. Going forward, we will apply the knowledge we gain at the Okazaki Plant to other sites.



Bird's-eye view of the paint plant at the Okazaki Plant



Overview of the Painting Process and Energy Inputs

## TOPICS

### Efforts to Reduce Air Consumption (Kyoto Plant)

The compressors used to produce compressed air account for about 20% of the energy used by the Kyoto Plant. Accordingly, decreasing the plant's consumption of compressed air is a priority for reducing CO<sub>2</sub> emissions.

In FY2023, we focused on reducing the amount of compressed air wasted in the casting process. We introduce such measures as the intermittent use of air for cooling and cleaning. We also expanded the rotary water drainage system, which we found to be highly effective in FY2022, to other lines, and installed three new units. Furthermore, we upgraded our compressor, improving the energy efficiency of the compressed air supply.

These measures are expected to reduce compressor power consumption by more than 15% and CO<sub>2</sub> emissions by approximately 2,800 tons per year.



Upgraded inverter-type compressor

## Office Initiatives

We are also promoting the use of renewable energy and introducing various types of energy-saving equipment in areas other than manufacturing, such as at R&D and head office locations.

Part of the electric power used at the Research and Development Building (Okazaki, Aichi Prefecture) and head office (Minato-ku, Tokyo) is supplied by renewable energy, thanks to the erection of rooftop solar power system and making use of the Tradable Green Certificates System\*. Also, CO<sub>2</sub> emissions are being reduced by using energy-saving electrical equipment and air conditioners.

In July 2020, we began tracking electricity use and power generation per capita at our Research and Development Building, comparing these figures with other offices, and using digital signage to show year-on-year comparisons by month. In these ways, we are working to increase employee awareness about saving energy.



Digital signage at Research and Development Building (Okazaki)

\* This system is used to trade environmental added value of renewable energy generated from natural energy sources using renewable energy certificates issued by a certificate issuer and confirmed by a third-party organization.



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## Dealer Initiatives

**MITSUBISHI MOTORS encourages our dealers in Japan to acquire Eco-Action 21 certification and carry out activities such as reducing the amount of energy and water they use, lowering the amount of waste they produce, and promoting the widespread use of electrified vehicles.**

Eco-Action 21 is an environmental management certification and registration system based on guidelines recommended by Japan's Ministry of the Environment. Eco-Action 21 has the following three features.

- The environmental management framework is easy for small and medium-sized businesses to configure and operate.
- The system enables organizations to track and manage their CO<sub>2</sub> emissions, working toward zero CO<sub>2</sub>.
- The system facilitates thorough management of compliance with environmental laws and regulations.

For details on Eco-Action 21, please see the website of the system's central secretariat (only in Japanese).

**(WE)**
<https://www.ea21.jp/>

## Dealers That Have Acquired "Eco-Action 21" Certification (As of March 1, 2024)

Company		
Aomori Mitsubishi Motor Sales Co., Ltd.	Toyama Mitsubishi Motor Sales Co., Ltd.	Kyushu Mitsubishi Motor Sales Co., Ltd.
Higashi Nihon Mitsubishi Motor Sales Co., Ltd.	Toyama Diamond Motors Co., Ltd.	Oita Mitsubishi Motor Sales Co., Ltd.
Ibaraki Mitsubishi Motor Sales Co., Ltd.	Kumamoto Mitsubishi Motor Sales Co., Ltd.	Sobu Mitsubishi Motor Sales Co., Ltd.
Kyoto Mitsubishi Motor Sales Co., Ltd.	Nagasaki Mitsubishi Motor Sales Co., Ltd.	Tokai Mitsubishi Motor Sales Co., Ltd.
Nishi Nihon Mitsubishi Motor Sales Co., Ltd.	Ishikawa Chuo Mitsubishi Motor Sales Co., Ltd.	Sunen Mitsubishi Motor Sales Co., Ltd.
Shiga Mitsubishi Motor Sales Co., Ltd.*1	Mie Mitsubishi Motor Sales Co., Ltd.	Gunma Mitsubishi Motor Sales Co., Ltd.

\*1 Certification received for the Kyoto Mitsubishi Motor Sales Co., Ltd. Group

## TOPICS

### Rolling out the DENDO DRIVE STATION across Japan's Prefectures

### Nationwide map of DENDO DRIVE STATIONS

We seek to put DENDO DRIVE STATIONS into operation in prefectures across Japan. DENDO DRIVE STATIONS are next-generation dealerships where visitors can experience the appeal of electrified vehicles, including their use as power sources in times of disaster and their contribution to the environment.

In FY2023, we opened four stations\*<sup>2</sup>, bringing the nationwide total to 97.

By deploying DENDO DRIVE STATION branches across Japan, we will increase the significance of electrified vehicles by diversifying their energy sources and communicating their value as sources of electric power in times of disaster.

Please see our website for details on our next-generation dealerships, called DENDO DRIVE STATIONS. (only in Japanese)

**(WE)**
<https://www.mitsubishi-motors.co.jp/carlife/phev/dendo/index.html>

\*<sup>2</sup> The Shin-Nambu Branch of Kumamoto Mitsubishi Motor Sales Co., Ltd., the Saga Branch of Kyushu Mitsubishi Motor Sales Co., Ltd., and the Auto Mall Tarami and Sasebo branches of Nagasaki Mitsubishi Motor Sales Co., Ltd.

### Shin Nambu Branch, Kumamoto Mitsubishi Motor Sales Co., Ltd.



Exterior



Lifestyle Corner

In a corner designed to look like a typical household dining area, we conduct a "1500W experience demonstration" to show how daily life can go one, even during disasters, by using just a 100V AC power supply (1500W) from an electrified vehicle.



Electrified Vehicle Charging Facilities

Electricity generated by the solar power system is used to charge electrified vehicles through V2H\*<sup>3</sup> equipment.

\*<sup>3</sup> V2H: Vehicle to home, V2H is a system that enables electricity stored in a car's battery to be supplied to the home.



Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## Physical Distribution

### Capture and visualize Global Logistics CO<sub>2</sub> Emissions

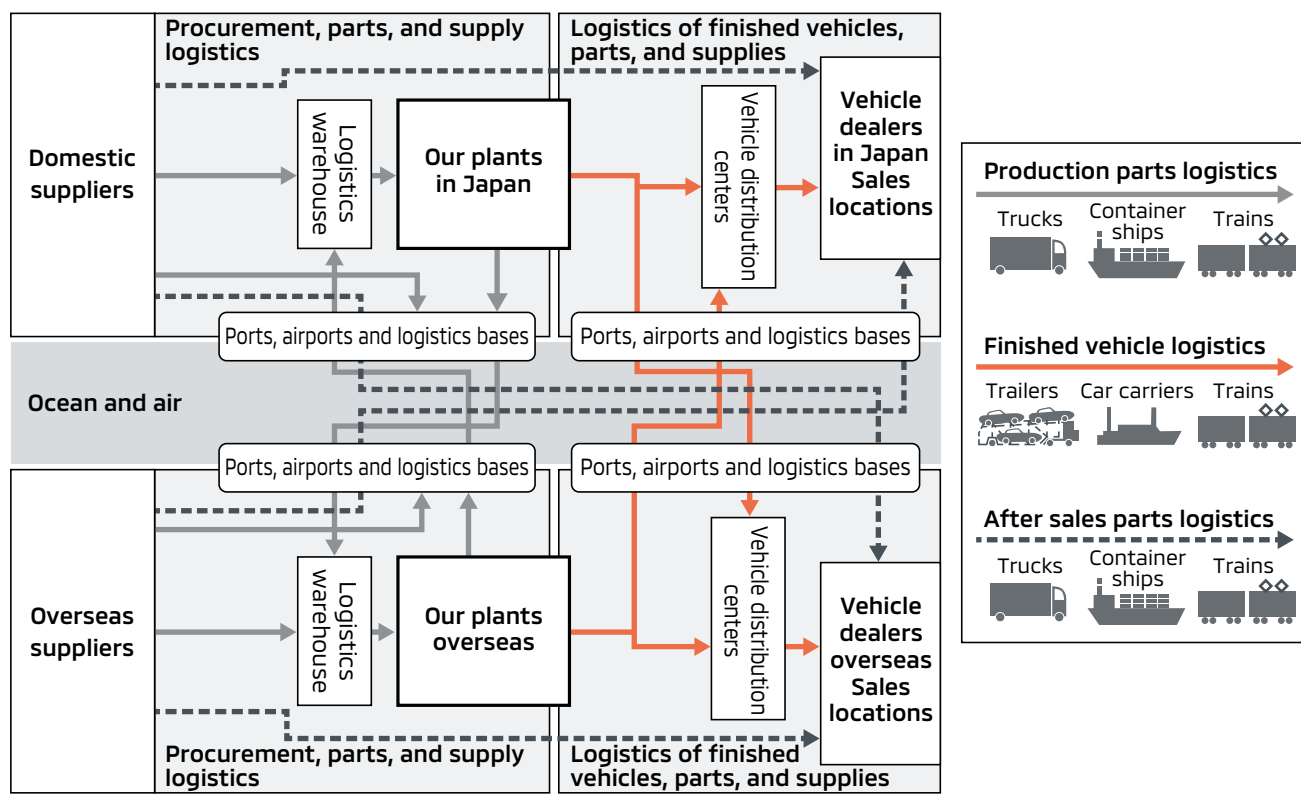
MITSUBISHI MOTORS is promoting to capture and visualize Global Logistics CO<sub>2</sub> emissions across the global supply chain, including overseas operations.

In addition to the ongoing efforts to understand Logistics CO<sub>2</sub> emissions from overseas production plants, in FY2023, we expanded the scope to include overseas vehicle sales subsidiaries. Furthermore, we are analyzing the visualized Logistics CO<sub>2</sub> emissions and promote initiatives to reduce emissions.

### Working to Reduce CO<sub>2</sub> Emissions from Logistics

We are promoting initiatives to reduce Logistics CO<sub>2</sub> emissions in the transportation of production parts, after sales parts, and finished vehicles. Key logistics efficiency measures include not only improvements driven by our own efforts, such as packaging improvements and increasing transport loading rates, but also active and comprehensive initiatives through collaboration with logistics partners. These include promoting eco-driving, increasing the size of transport equipment, modal shifts, reducing transport distances through joint transportation with alliance partners, and shared use of logistics facilities. In addition to these proactive and comprehensive measures, we are considering collaborating more closely with logistics partners to encourage the introduction of vehicles that run on non-fossil fuels.

#### Schematic of Our Global Logistics Domain





Targets  
● 7.2  
● 7.3



Target  
● 9.4



Targets  
● 13.1  
● 13.2  
● 13.3

## TOPICS

### Initiatives to Reduce CO<sub>2</sub> Emissions in Parts and Finished Vehicle Transportation

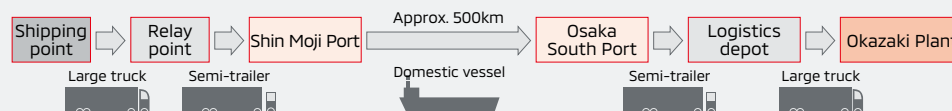
- Improvement Example 1: Enlarge transportation equipment: Introduced full trailers (Nakatsu, Oita Prefecture → Distribution center near MITSUBISHI MOTORS Mizushima Plant)



Distribution route: Nakatsu, Oita Prefecture → Distribution center near Mizushima Plant (Kurashiki, Okayama Prefecture), approx. 400 km

	Previously: Large trucks	After improvement: Full trailers	Improvement effect
Trips per month	40	22	Down by 18
Annual CO <sub>2</sub> Emissions	228t-CO <sub>2</sub>	150t-CO <sub>2</sub>	Down by 78t-CO <sub>2</sub>

- Improvement Example 2: Modal Shift That Utilizes Domestic Vessels\* (Shin Moji Port → Osaka South Port)



Target logistics route: Kitakyushu area → Okazaki Plant (Okazaki, Aichi Prefecture), approx. 750 km

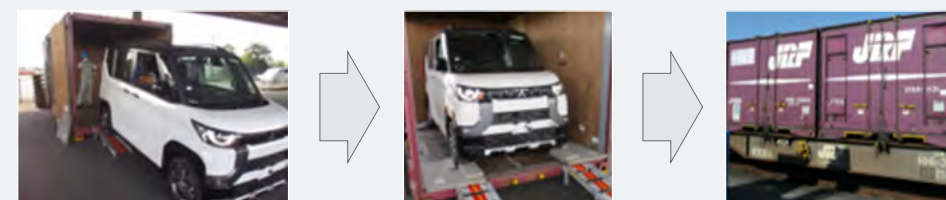
	Previously: Transported by large trucks	After improvement: Transported by domestic vessels	Improvement effect
Annual CO <sub>2</sub> Emissions	265t-CO <sub>2</sub>	111t-CO <sub>2</sub>	Down by 154t-CO <sub>2</sub>

\* Domestic vessel: Ship used for transport cargo within in Japan

In addition, our use of domestic vessels for modal shift (Shin Moji Port to Osaka South Port) was commended by the Director-General of the Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism as an excellent operator in the "FY2023 Eco-Ship Modal Shift Project" organized by the Japan Long-Course Ferry Association, and was awarded the "Eco-Ship Mark" certification.



- Improvement Example 3: Modal Shift: Use of Rail Freight Transportation (Mizushima Plant → Niigata Prefecture)



Target logistics route: Kurashiki Cargo Terminal Station → Niigata Cargo Terminal Station, approx. 790km

	Previously: Transported by trailer	After improvement: Transported by rail	Improvement effect
Annual CO <sub>2</sub> Emissions	10.8t-CO <sub>2</sub>	2.4t-CO <sub>2</sub>	Down by 8.4t-CO <sub>2</sub>

## Resource Recycling Initiatives

### Progress in FY2023

Direct landfill waste  
(Management Target  
Companies: 20)  
[FY2022: less than 0.5%]

Less than **0.5%**

- Promoted strengthening adoption of non-fossil-based plastic
- In 2023, installed demonstration equipment at the Okazaki Plant's M-Tech Lab for the demonstration of two concepts employing used batteries from electrified vehicles in conjunction with quick chargers and bidirectional chargers, and demonstrations are underway.
- In FY2022 and FY2023, installed 24 autonomous streetlights employing used batteries at our domestic facilities and conducted demonstration projects.

<Related pages>

P12 MITSUBISHI MOTORS' Materiality  
P15, P17 Materiality

P23 Environmental Plan Package

P26 Environmental Management

P120 Environmental Data Related to Products and  
Business Activities:

Generated waste, generated waste and externally  
disposed waste (MITUBISHI MOTORS alone),  
raw material inputs

### Basic Approach

The rise in populations and economic growth in emerging markets is leading to a rise in the consumption of minerals, fossil fuels and other resources.

MITSUBISHI MOTORS is working to use fewer resources and use them more effectively in manufacturing process, so that we can add more value to

vehicles. This belief underpins our belief that effective resource use is an important priority. The Environmental Plan Package positions resource recycling as an environmental issue to engage in directly, and we are contributing to a resource-recycling-oriented society by minimizing input resources and maximizing resource efficiency.

Countries and industry groups are formulating various initiatives in order to promote automobile recycling and correct processing. In response, we set targets to improve the ease of recycling, reduce the use of lead, and introduce recycled parts for new vehicles when the "MITSUBISHI MOTORS Recycling Initiative" was established in 1998. We have continued to engage in this initiative.

### Recycling-Based Design and Development

Under vehicle recycling legislation in Japan, Europe, China, and other countries, automobile manufacturers are obligated to consider recycling when developing products.

We conduct design and development that actively incorporates not just recycling, but all aspects of the 3Rs including reduction and reuse. We have implemented the 3Rs in the stage starting with conceptual design in accordance with our unique "Recycling Plan Guidelines."

With regard to wires and harnesses, and motors, we have improved detachability and ease of recycling in accordance with the "Harness Design Guidelines."

We are also promoting the increased use in other parts of recycled materials and non-fossil-based plastic used in vehicles, such as biomass plastics. Recycled

materials such as clothing are used for silencer parts such as dashboards, and biomass plastics are used for interior parts such as steering wheel garnishes.

At dealers, bumpers recovered or replaced during repairs are recycled for battery trays and other exterior parts.

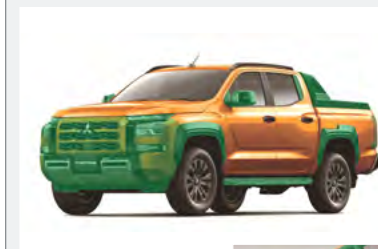
#### TOPICS

#### Using Thermoplastic Resin

The "TRITON," which was launched in 2023, uses easily recyclable thermoplastic resin\* for exterior and interior parts.

\* Thermoplastic resin: A plastic that resists deforming at room temperatures, but softens and becomes easy to mold when heated, and hardens again when cooled

Main parts (indicated in green)  
that use thermoplastic resin



Exterior



Interior


 Targets  
 ● 12.2  
 ● 12.5

## Promote recycling of end-of-life vehicles

MITSUBISHI MOTORS encourages the recycling of end-of-life vehicles to reduce the environmental impact of waste from these vehicles. In Japan, the European Union (EU) and other regions, we promote recycling in accordance with the automobile recycling laws of each country. We comply carefully with the evolving automobile recycling laws that are being introduced in emerging countries in Asia.

The Environmental Targets 2030 identify the reuse of batteries used in electrified vehicles as one item to be addressed. From the perspective of conserving resources, we are undertaking initiatives to utilize used batteries.

### Reuse of Batteries Used in Electrified Vehicles

Used electrified vehicle batteries retain sufficient storage capacity to make them useful for other applications, so from the perspective of conserving resources we are working to effectively reuse electrified vehicle batteries. To ensure these batteries can be effectively used for storage, we are conducting verification using a large-scale rooftop solar power system at the Okazaki Plant and built a power storage system that employs used batteries from the "OUTLANDER PHEV" (previous model).

In addition, we have begun a joint demonstration project with Hitachi, Ltd. of the Battery Cube<sup>\*1</sup>, a movable storage battery that utilizes used batteries from electrified vehicles. In this demonstration, used bat-

teries from our "OUTLANDER PHEV" (previous model) will be installed in the Battery Cube to verify its practicality in the event of a power outage caused by a wide-area disaster.

In January 2023, we installed equipment for the demonstration of two concepts employing used batteries in conjunction with quick chargers and bidirectional chargers at the Okazaki Plant, and we have begun the demonstration. Going forward, we will work with energy storage equipment manufacturers to introduce these systems at Group's sales companies' dealers and in other locations. (See P35 for details.)

<sup>\*1</sup> Battery Cube: Registered trademark in Japan of Hitachi High-Tech Corporation

In addition, with MIRAI-LABO Co., Ltd., we have begun the development of autonomous street lighting by reusing batteries from electrified vehicles. Our autonomous street lighting systems store solar power generated during the day in used electrified vehicle batteries, using that power to illuminate LED lights at night. From FY2022 to FY2023, we installed a total of 24 autonomous street lighting systems and conducted demonstration projects at the Okazaki Plant, the Mizushima Plant, the Kyoto Plant, and the Tokachi Research and Development Center, and we hope to begin commercial sales in FY2024.

In Japan, Europe and North America, we have begun creating a system for collecting used batteries. The aim is to develop recycling technologies for and properly dispose of batteries for electric vehicles and plug-in hybrid electric vehicles.

## Response to Automobile Recycling Laws in Japan

Since the End-of-Life Vehicle Recycling Law was enacted in Japan in 2005, we have been accepting used automobile shredder residue (ASR<sup>\*2</sup>), airbags, and fluorocarbons for recycling.

Regarding ASR recycling, we participate in ART<sup>\*3</sup> in order to jointly process ASR. As a result of the creation of new processing facilities and other measures, the ASR recycling rate in FY2023 was 96.5%, substantially above the statutory standard of 70% in effect since 2015. We will continue to develop new recycling facilities to ensure the stable processing of ASR.

We outsource the treatment of airbags and fluorocarbons to the Japan Auto Recycling Partnership (JARP).

In FY2023, our effective recycling rate for end-of-life vehicles<sup>\*4</sup> exceeded 99%, surpassing the government's stipulated effective recycling rate of 95%.

<sup>\*2</sup> Automobile shredder residue

<sup>\*3</sup> Automobile Shredder Residue Recycling Promotion Team established by 13 companies, including Nissan Motor Co., Ltd., Mazda Motor Corporation and MITSUBISHI MOTORS.

<sup>\*4</sup> Effective recycling rate: The recycling rate for end-of-life vehicles. The ratio recycled in the dismantling and shredding process is approximately 83% (cited from the materials of the 3rd joint meeting of the Automobile Recycling Expert Committee of the Central Environmental Council and the Automobile Recycling Working Group of the Industrial Structure Council in May 2003), multiplied by the remaining ASR ratio of 17% and the ASR recycling rate for the relevant fiscal year.

## Recycling Promotion in the EU

### Response to the EU's Directive on the Recycling of End-of-Life Vehicles

In the EU, in accordance with the End-of-Life Vehicles Directive\*<sup>1</sup> established in 2000, automobile manufacturers or importers must accept and recycle end-of-life vehicles.

MITSUBISHI MOTORS built a system of acceptance and recycling in line with the actual situation of EU member countries centering on our European subsidiary Mitsubishi Motors Europe B.V. (MME).

\*<sup>1</sup> "Directive of the European Parliament and of the Council on End-of- Life Vehicles"

### Provision of Dismantling Information

In the EU, automobile manufacturers must provide dismantling information for new model vehicles to treatment operators. We provide such information on a timely basis by using the International Dismantling Information System (IDIS) jointly developed by automobile manufacturers.

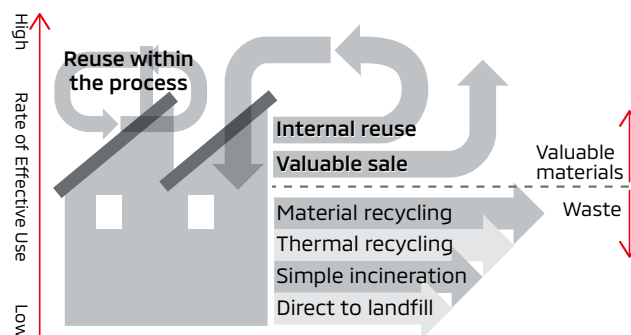
### Response to the EU's Directives on Approval for Vehicle Models for Recyclability

In the EU, satisfying the minimum 95% recyclability rate is a requirement for type approval of vehicle models, and we established a system that satisfies the requirements of this directive. Our vehicles sold in the EU meet the requirements of the directive under this system.

## Initiatives to Reduce Waste Generation and Reuse Resources in Production Activities

We are working to reduce the amount of waste generated through manufacturing by improving its production processes. As for the generated waste, we reduce treatment costs and continue to improve the sorting and treating methods to utilize it as resources.

### Effective Use of Resources and Recycling



### Responses Related to the Plastic Resource Circulation Act

In FY2023, our volume of industrial waste from products using plastic was 1,796 tons, and the recycling rate was 97%\*<sup>2</sup>.

We will continue to actively engage in the 3Rs (reduce, reuse, recycle) of waste plastic.

\*<sup>2</sup> Scope of application: MITSUBISHI MOTORS CORPORATION

## TOPICS

### Reducing Waste Volume by Upgrading Sludge Dewatering Equipment (Okazaki Plant)

We replaced a sludge dehydrator and sludge conveying equipment at the Okazaki Plant's integrated wastewater treatment plant with equipment that uses a different treatment method, thereby reducing emissions of industrial waste and saving energy.

In the past, sludge was dewatered using a centrifugal separation method. To lower the sludge's moisture content, we introduced a screw-type dehydrator and switched to an energy-saving sludge conveying system. As a result of these equipment upgrades, we reduced the volume of sludge discharged from the integrated wastewater treatment facility by more than 30%, and electricity consumption was reduced by more than 50%.



Newly installed screw-type sludge dewatering equipment

## Achievement of Zero Direct Landfill Waste

With regard to waste generated by our business activities, to achieve the goal set in Environmental Targets 2030 of "zero direct landfill waste (less than 0.5%)," we are working to reduce waste generated in external and reuse resources. In FY2023, our management target companies achieved zero direct landfill waste (less than 0.5%).

# Prevention of Pollution



## Progress in FY2023

- Obtained information on GADSL\*<sup>1</sup> regulated substances and upgraded our management system in order to properly manage hazardous substances in products.

\*1 Global Automotive Declarable Substance List, a list to facilitate the exchange of information on environmentally hazardous substances, created by consensus of a group of automotive manufacturers in various countries

<Related pages>

P12 MITSUBISHI MOTORS' Materiality

P15, P17 Materiality

P26 Environmental Management

P118 Environmental Data Related to Products and Business Activities

**(WEB)** Atmosphere/Wastewater Quality/PRTR-designated Pollutants Data (FY2023 Results)  
[https://www.mitsubishi-motors.com/en/sustainability/esg/factory\\_archive2024.html](https://www.mitsubishi-motors.com/en/sustainability/esg/factory_archive2024.html)

## Basic Approach

Vehicles are products that can affect human health and biodiversity through the emission of environmental pollutants and chemical substances during business activities or product use.

MITSUBISHI MOTORS aims to contribute to the realization of a pollution-free society and has positioned it as one of the key challenges in its Environmental Plan Package. We are working to reduce the environmental impact of our products and the pollution resulting from our business activities.

In the stage of product development, along with reducing noxious components of exhaust gases and promoting the development of fuel economy improving technologies and electrification technologies, we strive to manage hazardous substances. In production processes, we are endeavoring to reduce air pollutants emitted from our plants by voluntarily enacting activity standards that are stricter than legal requirements. In order to reduce the impact on the environment from air pollutants and chemical substances, we engage in the prevention of pollution throughout all our business activities.

## Purifying Exhaust Gas while Driving

In addition to developing and popularizing electrified vehicles, which emit little exhaust while driving, we are endeavoring to develop and improve gasoline and diesel vehicles that emit fewer hazardous substances.

## Improving Gasoline Engine Vehicles

In the 1960s, emissions of carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NOx) were restricted by regulations, and those restrictions have gradually been tightened since.

We have taken various measures since such regulations were first introduced. Currently, our products are compliant with strict emission regulations, thanks to the advanced technologies such as electronically controlled fuel injectors for combustion control, gasoline particulate filter (GPF) systems, and improved catalyst technologies.

## Improving Diesel Engine Vehicles

For diesel engine vehicles, emissions of CO, HC, NOx, and particulate matter (PM) \*<sup>2</sup> have been regulated in some countries and regions, such as Japan, United States and European countries, since the 1970s.

Since such regulations were first introduced, we have taken measures including improving the combustion technology. To comply with these regulations, we have developed and produced clean diesel engines by systemizing combustion control technologies such as variable geometry turbocharger and high pressure fuel injection system, as well as after-treatment technologies such as NOx trap catalyst, diesel particulate filter, and urea selective catalytic reduction system.

\*2 Micron-sized particles such as soot contained in exhaust gas



Target  
● 3.9



Target  
● 6.3



Targets  
● 12.4  
● 12.5

## Clean Diesel Engine Systems

### Variable Geometry (VG) Turbocharger

Continuously controlling the variable nozzle of the turbine optimally boosts power to the engine throughout its full operating range, improving fuel efficiency and reducing PM emissions.



### Common Rail Fuel Injection System

Particulate matter and NOx, which can be generated through heterogeneous combustion, are suppressed by using a high-pressure fuel pump, common rail accumulator that stores highly pressurized fuel, and electronically controlled fuel injectors.



### Diesel Particulate Filter (DPF)

DPF substantially reduces emissions of particulate matter by filtering and burning it.

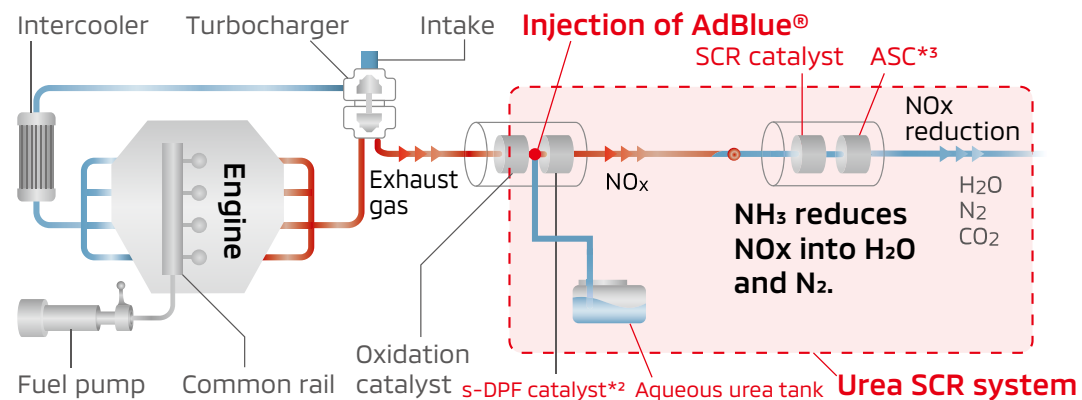


### Urea Selective Catalyst Reduction (SCR) System

NOx from diesel engines' emissions are reduced and purified using an aqueous urea solution (AdBlue®\*1), breaking them down into non-polluting nitrogen and water.

\*1 Registered trademark of the Verband der Automobilindustrie (VDA)

### [Clean Diesel Engine System (4N14 Engine)]



\*2 s-DPF: DPF with surface-coated selective reduction catalyst

\*3 ASC: Ammonia slip catalyst



## Reduction of Hazardous Substances

In accordance with the reduction targets of the Japan Automobile Manufacturers Association, Inc. (JAMA) and the EU's end-of-life vehicles directive (a recycling law), MITSUBISHI MOTORS is working to reduce the use of four substances (lead, mercury, cadmium, and hexavalent chromium). We are also taking measures to comply with individual countries' regulations on the use of hazardous substances, such as the EU's end-of-life vehicles directive, the REACH regulation\*<sup>1</sup> concerning substances and the Convention on POPs\*<sup>2</sup>.

At present, in addition to four substances and other heavy metals, the use of VOCs\*<sup>3</sup>, bromine-based flame retardants and various other substances is regulated. Regulations similar to European ones are being enforced in developing countries in Asia as well.

We are working to voluntarily reduce hazardous substances by setting internal technical standards.

\*1 REACH stands for "Registration, Evaluation, Authorisation and Restriction of Chemicals." Enacted on June 1, 2007, the REACH regulation is a general system to register, evaluate, authorize and restrict the use of substances

\*2 Persistent Organic Pollutants

\*3 Volatile Organic Compounds

►Data (p. 119): Emissions of Sulfur Oxide, Nitrogen Oxide, VOC (Volatile Organic Compounds) and Ozone-Depleting Substances

## Management of Material Data by IMDS

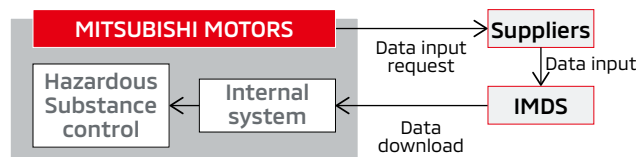
Data on the hazardous substances contained in vehicle parts delivered by suppliers are collected by the IMDS\*<sup>4</sup>, an international system for collecting such data. Together with overseas, we utilize the collected data under a globally centralized internal system for reducing hazardous substances.

In cooperation with suppliers, we are complying with the REACH regulation, a general system for the registration, evaluation, authorization, and restriction of substances used in the EU.

We have improved our internal management system to properly manage hazardous substances in products by incorporating information on GADSL-regulated substances. We collect IMDS data inputted by suppliers and utilize the system to automatically determine the compliance status with regulations if any newly regulated substances are found in components, based on the content and materials used. We are also introducing component replacement and design changes in accordance with regulations.

\*4 International Material Data System

### Flow of Data Collection through IMDS



## Reduction of In-Cabin VOCs

To provide customers with a healthy and safe cabin space, we work to reduce VOCs inside the cabin.

VOCs are organic compounds that are easily volatilized at room temperature such as formaldehyde and toluene. These compounds are thought to cause sick building syndrome, and may irritate the eyes, nose, and throat. In an automobile cabin, they are mainly generated by adhesives and paint used in interior parts.

Please see the JAMA website for details regarding the Voluntary Guidelines.

(WEB) <https://www.jama.or.jp/english/news/past/release/2005/050214.html>

## Progress

We are working to develop materials with low VOC emissions to reduce in-cabin VOCs.

### Example of Measures to Reduce VOCs

<b>Carpet</b>	Reduced aldehydes in pile adhesives
<b>Seat</b>	Reduced organic solvents in fabric adhesives
<b>Ornaments</b>	Reduced VOCs by using spun-dyed high-gloss interior parts

Target  
● 3.9Target  
● 6.3Targets  
● 12.4  
● 12.5

## Preventing Air Pollution

### Reduction of VOC Emissions from Production Processes

MITSUBISHI MOTORS is applying the waterborne 3WET paint method\*<sup>1</sup> to the painting process to reduce VOC emissions. In Japan, we use this method at the Mizushima Plant and the Okazaki Plant. Overseas, the system is used on the No. 3 paint line at Mitsubishi Motors (Thailand) Co., Ltd. (MMTh).

We are also upgrading our robotic and other painting systems, reducing the amount of paint used by adjusting production lots and collecting more used thinner. Through these moves, we are reducing VOC emissions from vehicle production.

\*<sup>1</sup> With this method, water-soluble paints are used for the middle and top coats. Solvent-based paint is used only for the clear overcoat.

► Data (p. 119): VOCs



Paint plant (MMTh)

### Management of Air Pollutants

We follow laws and regulations to manage the concentrations and amounts of such air pollutants as nitrogen oxides (NOx), sulfur oxides (SOx) and soot emitted in production processes.

In addition, we are promoting the replacement of equipment that uses fossil fuels such as kerosene with electric devices, including electric heat pumps, to simultaneously reduce air pollutants and CO<sub>2</sub> emissions.

## Management of Chemical Substances

### Appropriate Management of Chemical Substances

We have introduced a chemical substance management system for using chemical substances. Before deploying substances, we examine their physical and chemical properties and the details of usage plans, as well as legal requirements, conduct risk assessments. Finally, we judge whether they can be introduced and educate workers well. We also use this system to conduct centralized management of the most recent Safety Data Sheet (SDS) information. In addition, we use data from this system to ascertain the quantity of PRTR\*<sup>2</sup> substances used and report on their usage and emissions to Ministry of Economy, Trade and Industry, as well as other aspects of legal compliance.

\*<sup>2</sup> PRTR: Pollutant Release and Transfer Register

### Appropriate Management of Hazardous Waste

We manage hazardous waste to avoid importing or exporting hazardous waste that is restricted by the Basel Convention on the Control of Transboundary Movements of Hazardous and Their Disposal\*<sup>3</sup>.

We also transport and treat waste produced in Japan appropriately, based on various legal requirements.

\*<sup>3</sup> This convention stipulates international frameworks and procedures related to restrictions on international transfer of a certain types of waste.

### Appropriate Management of Waste Containing PCBs

Harmful polychlorinated biphenyls (PCBs) are contained as insulation oil in transformers and condensers that were manufactured a long time ago. We process waste containing PCBs appropriately, in accordance with the Act on Special Measures concerning Promotion of Proper Treatment of PCB Waste.

# Conservation of Water Resources



## Progress in FY2023

- Mitsubishi Motors (Thailand) Co., Ltd. (MMTh) has begun recycling condensate from air conditioners used at painting facilities.
- We installed a manhole-type oil-water separator at the Kyoto Plant-Kyoto.

<Related pages>

P12 MITSUBISHI MOTORS' Materiality

P15, P17 Materiality

P26 Environmental Management

P118 Environmental Data Related to Products and Business Activities

**(WEB)** Atmosphere/Wastewater Quality/PRTR-designated Pollutants Data (FY2022 Results)

[https://www.mitsubishi-motors.com/en/sustainability/esg/factory\\_archive2023.html](https://www.mitsubishi-motors.com/en/sustainability/esg/factory_archive2023.html)

## Basic Approach

Due to the increasing population and changes in the natural environment caused by climate change, water supply and demand are becoming tighter in more regions, and social concern for the preservation of water resources are increasing.

MITSUBISHI MOTORS requires a large amount of industrial water, city water, and groundwater, etc., for the automobile production process and discharge of water into sewage lines and rivers, etc. In regions where water risk is high, it is essential to consider the impact that water withdrawal and discharge from our business activities have on the surrounding environment.

At each plant, we comply with various legal requirements, such as the one on the quality of discharged water. In addition, we work to reduce water withdrawal amounts and introduce water recycling technologies based on the status of water resource management in individual countries and regions.

Water is required for the operations of our business partners. We are aware of the importance of water risk management throughout the entire value chain.

## Reduction of Water Withdrawal Volume

We are striving to reduce water withdrawal volumes by reusing washing water used in production processes for pre-washing and by circulating cooling water and temperature control water.

At the Okazaki Plant and at PT Mitsubishi Motors Krama Yudha Indonesia (MMKI), we have set up rain-water storage tanks in order to reuse rainwater.

At the Okazaki Plant, we have also set up equipment to filter groundwater so that it can be used to supply drinking water to employees and those who live nearby, in case any disasters occur.

► Data (p. 120): Withdrawn water volume

## Water Withdrawal Source and Drainage of Each Plant

Plant	Water Withdrawal Source	Drainage
Okazaki Plant (Okazaki, Aichi Pref.)	Yahagi River	Kanda River Tributary → Kanori River
Kyoto Plant -Kyoto (Kyoto, Kyoto Pref.)	Lake Biwa	Sewage line
Kyoto Plant -Shiga (Konan, Shiga Pref.)	Lake Biwa	Sewage line
Mizushima Plant (Kurashiki, Okayama Pref.)	Takahashi River	Hakken River → Mizushima Port
Mitsubishi Motors (Thailand) Co., Ltd. (MMTh)	Nong Pla Lai Reservoir, etc.	Sewage line
PT Mitsubishi Motors Krama Yudha Indonesia (MMKI)	Lake Jatiluhur	Sewage line



Rainwater storage tanks (Okazaki Plant)



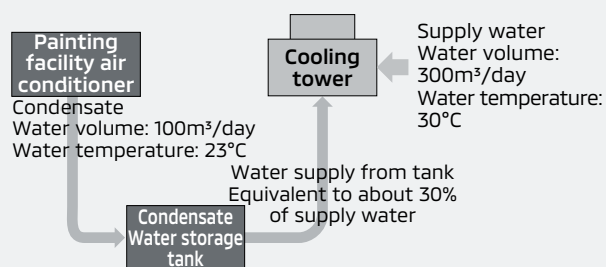
Groundwater membrane filtration equipment (Okazaki Plant)

## TOPICS

### Recycling Condensate from Air Conditioners Used at Painting Facilities (MMTh)

Mitsubishi Motors (Thailand) Co., Ltd. (MMTh) has begun recycling condensate from air conditioners used at its vehicle painting facilities.

The Thai environment is hot and humid throughout the year, so condensate is steadily obtained from the dehumidification process of air conditioners. This condensate is collected in a water storage tank and reused as part of the water supply to the cooling tower for the chillers, thereby reducing the water supply to the cooling tower by about 30%, or 100 m<sup>3</sup>/day. Furthermore, utilizing low-temperature (approx. 23°C) condensate helps to improve cooling towers' cooling efficiency.



Overview of condensate recycling



Installed condensate water storage tank

## Reuse of Discharged Water

The MITSUBISHI MOTORS Group has introduced wastewater recycling technologies, taking into consideration the situation regarding water resource management at each facility location. Currently, discharged water recycling plants are operational at PT Mitsubishi Motors Krama Yudha Indonesia (MMKI) and Mitsubishi Motors (Thailand) Co., Ltd. (MMTh).

MMKI has been utilizing a water recycling plant since its establishment in 2017. In FY2023, its wastewater recycling rate reached 67%.

In addition, in January 2022 MMTh began operating its first discharged water recycling plant, in conjunction with the start of operations of a new paint plant. In FY2023, the wastewater recycling rate rose to 84%.



Wastewater recycling plant (MMTh)

► Data (p. 120): Withdrawn water volume

## Prevention of Water Pollution

To prevent water pollution in areas surrounding plants, we measure and manage the quality of discharged water based on legal requirements. We also conduct surveys and confirmations regarding the quality of groundwater and soil pollution. In this way, we confirm that no toxic substances are being discharged to the outside area. In order to quickly detect abnormalities in discharge water quality due to such factors as rainfall, we set up a surface oil detector\* in front of outlets leading from the plant to public water and continuously monitor discharge water conditions. We carry out continuous monitoring so that water discharged from

the plant does not affect the environment outside the site. In the event of an accident, we respond quickly to prevent pollution from spreading, report to the local authorities and disclose information to the community.

\* Detects the presence of oil by capturing changes in reflectance as the reflectance of oil is greater than that of water



Observation well (Okazaki Plant)



Surface oil detector (Okazaki Plant)

## TOPICS

### Installation of a Manhole-Type Oil-Water Separator (Kyoto Plant)

At Kyoto Plant-Kyoto, we installed a manhole-type oil-water separator in front of the oil film detector as an enhanced measure to prevent the leakage of pollutants from road surfaces within the plant.

Oil film detectors have traditionally been used to monitor oil leakage from stormwater outlets at factories. However, after referring a "Non-Specified Pollution Source Countermeasures" case study of measures used for busy roads, factories, and commercial facilities, we installed a new manhole-type oil-water separator in front of the oil film detector in the rainwater drainage path. This allows for the separation and discharge of suspended solids and oil from road surface drainage during wet weather.



Manhole-type oil-water separator installed in the storm drainage path

# Preservation of Biodiversity

Target  
15.5

## Progress in FY2023

- Promoted preservation activities that leverage the results of ecosystem surveys at locations in Japan
  - Engaged in biotope\* maintenance and rare plant cultivation at Kyoto Plant
  - At Kyoto Plant-Shiga, engaged in wetland conservation and cultivation of rare white egret flower
- Conducted tree-planting and cultivation activities in Japan and overseas
  - Planted and cultivated trees at Pajero Forest (Yamanashi Prefecture)
  - Conducted tree-planting activities at the Okazaki Outlander Forest (Aichi Prefecture)
  - Completed an afforestation project in the Philippines (planted a total of 78,700 trees over 100 hectares)

\* A biotope is a space where organisms can live in natural surroundings.

### <Related pages>

P12 MITSUBISHI MOTORS' Materiality

P15, P17 Materiality

P26 Environmental Management

**(WEB)** Biodiversity Data

[https://www.mitsubishi-motors.com/en/sustainability/esg/biodiversity-related\\_data/](https://www.mitsubishi-motors.com/en/sustainability/esg/biodiversity-related_data/)

## Basic Approach

All living things are intricately connected in various relationships and live in balance. We benefit from this biodiversity in our lives.

The automotive industry both directly and indirectly impacts on biodiversity due to land use (including the construction of plants), the release of chemical substances from plants, and the greenhouse gas emitted from the use of our products and business activities. Meanwhile, climate change is transforming regional environments, which has a major direct impact on ecosystems. We believe it is a priority to enact climate change countermeasures, protecting biodiversity so that we can continue to enjoy its blessings.

We formulated the "MITSUBISHI MOTORS Group Guidelines for the Preservation of Biodiversity" in August 2010 and promote conservation activities.

Our business sites in Japan are not located in or adjacent to protected areas according to the Nature Conservation Act and prefectural codes. However, we conducted surveys on ecosystems in order to understand the impact our business activities have on biodiversity.

To protect water sources and fostering environmental awareness among our employees, we conduct forest preservation and interact with the local community through volunteer employee activities in Japan and overseas.

## MITSUBISHI MOTORS Group Guidelines for the Preservation of Biodiversity

The MITSUBISHI MOTORS Group will continue to track and reduce its impact on biodiversity, recognizing that the activities of humankind can both benefit from and affect the diversity of living organisms. To this end, the entire Group will take on initiatives for preventing global warming and environmental contamination, and promote the recycling and efficient use of resources, while engaging in activities that pay consideration to biodiversity.

### 1. Consideration to biodiversity in business activities

We will track and reduce the impact of business activities on biodiversity by conserving energy, reducing the generation of waste, and curtailing the release of chemicals. At the same time, we will also pay consideration to neighboring communities when making use of land for factory construction and other purposes.

### 2. Consideration to biodiversity in products

We will promote fuel efficiency, exhaust gas countermeasures and recycling-friendly design of our products, while striving to select and use materials that pay consideration to the environment.

### 3. Education, understanding and self-awareness

We will continue to educate the entire Group from management to employees on the front lines to share a common understanding and develop a self-awareness of the relationship between business activity and biodiversity.

### 4. Cooperation and collaboration with society

These activities will be promoted in cooperation with all stakeholders including the supply chain, stockholders, local governments, local communities, non-profit organizations (NPOs) and non-governmental organizations (NGOs).

### 5. Information disclosure

We will strive to disclose and disseminate the content and results of these activities to customers and local communities.

## Promoting Preservation Activities

### Ecosystem Surveys at Business Sites in Japan

Production of vehicles requires large-scale plants. MITSUBISHI MOTORS believes that assessing the impact that the use of land in company business has on local biosystems is important to our biodiversity protection initiatives. Based on this concept, we conducted ecosystem surveys at our domestic business sites with largescale land, such as our factories with support from consultancies related to biodiversity. Ascertaining biosystems not only in domestic business sites but also in the surrounding environment by means of field surveys and documentary research leads to maintenance measures that are in harmony with local biodiversity.

#### Locations Where Ecosystem Surveys Were Conducted

Fiscal Year	Location
2013	Kyoto Plant-Shiga
2015	Okazaki Plant
2017	Mizushima Plant/Kyoto Plant-Shiga*
2018	Tokachi Research & Development Center
2019	Kyoto Plant-Kyoto
2021/2023	Kyoto Plant-Kyoto*

\* A monitoring survey was conducted to confirm the preservation effects of the measures.

### Kyoto Plant-Kyoto Cultivating Rare Plants in Cooperation with the Local Community

Based on an ecosystem survey conducted, we learned that the Kyoto Plant, which is located in urban Kyoto, serves as a refuge where certain plants and insects can survive locally, and we found that this area was an important environment in terms of preserving regional diversity. To create a habitat for dragonflies and other insects, we built a biotope in the "Plaza of Relaxation," a green space on the campus. The pond

in the square nurtures water lilies and oval-leaved pondweed, while the square nurtures species that are native to the city of Kyoto, such as the Blackberry lily, Eupatorium japonicum, and Asarum caulescens.

In March 2024, we renovated the biotope pond in the aim of further increasing biodiversity at the Kyoto Plant. The pond, which was shaped like a cube, was re-shaped to resemble the leaf of the Asarum caulescens. We also varied the depth of the water in different locations to create an environment conducive to a variety of aquatic life. An observation deck and a perimeter path were also installed to allow visitors to safely observe the area.



Renovated biotope pond



Observation deck and pond vegetation

### Kyoto Plant-Shiga Preservation of Wetlands Where White Egret Flowers Bloom

We are working to protect the rare white egret flower by preserving wetlands located within the plant. Employees regularly remove invasive herbaceous plants such as broomsedge bluestem and maintain the wetland environment, which gives the white egret flower room to bloom every summer.



Employees clearing away  
invasive herbaceous plants



White egret flower blooming

## Forest Preservation Activities in Japan and Overseas

Since 2006, we have conducted forest preservation activities in the "Pajero Forest" (approx. 7.23 hectares) located in Hayakawa-cho, Yamanashi Prefecture, in collaboration with the town of Hayakawa and OISCA. As part of our FY2023 activities, in April new technical trainees helped maintain a forest trail, and in September, employees and their families joined them in September to extend the trail and build benches. In addition, in March 2023, we signed a "Forest Preservation Partnership Agreement" with Okazaki City, Aichi Prefecture, where the Okazaki Plant is located and as a part of the agreement, the designated city-owned forest in the Nukata area of Okazaki (approx. 50.7 hectares) was named "Okazaki Outlander Forest," and forest preservation activities have begun.

In collaboration with the Philippines Department of Environment and Natural Resources (DENR), Mitsubishi Motors Philippines Corporation (MMPC) initiated a reforestation project in March 2018, with a plan to plant a cumulative total of 100 hectares over a period of approximately five years. We completed this project in July 2023, having planted a total of 78,700 trees. That month, we planted bamboo, mangroves, and other trees on 38 hectares of land in Infanta, Quezon Province. Cultivating coastal forests in this way will also help prevent soil erosion in the surrounding area. With DENR's support, MMPC will continue to manage the forest, thereby contributing both to environmental protection and to the local community.



Trail maintenance in the Pajero  
Forest



MMPC's afforestation project