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# Feature 1: The New Environmental Plan Package

MITSUBISHI MOTORS believes that to realize a sustainable society, we must strike a balance between preservation of the global environment and the progress of humankind. Based on this understanding, we have formulated the New Environmental Plan Package, which defines the directions and targets of our environmental directives. On this basis, we will endeavor to preserve the global environment by leveraging our strengths in such areas as plug-in hybrid electric vehicles and other electric vehicle technologies.

## **Basic Approach**

MITSUBISHI MOTORS' Vision is to "Create a vibrant society by realizing the potential of mobility," and one element of the Mission for realizing the Vision is to "Make positive contributions to the sustainable development of our society.

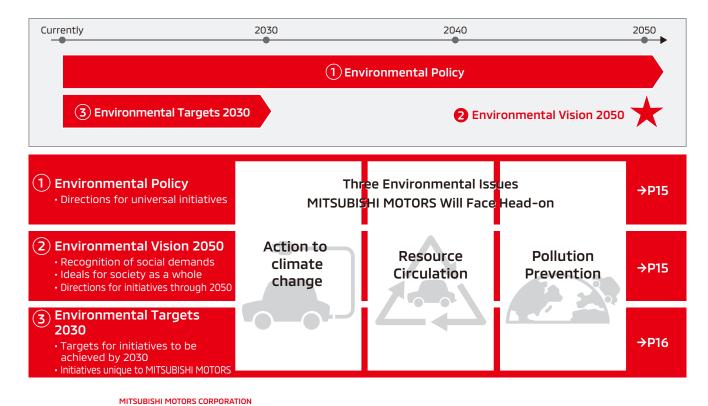
"Small but Beautiful," the mid-term business plan we unveiled in July 2020, identifies our challenges as "Conducting business with an emphasis on contributing to all stakeholders and society" and "Selection and concentration in line with our strengths and earnings area." On this basis, we will decisively complete structural reforms with a view to stabilizing our management foundation. Furthermore, we consider environmental issues to be material and believe they must be addressed without delay. Given that the problem of climate change is now becoming a reality and reflecting social trends, we formulated the New Environmental Plan Package based on our recognition of the need to define the direction of initiatives that anticipate society 30 years in the future.

Acknowledging our responsibility as a company that produces and sells automobiles, we will work toward specific targets in activities that reduce environmental impact. At the same time, we will reinforce our environmental technologies, hinging on plug-in hybrid electric vehicles, and encourage the spread of effective products and technologies. In this way, we will contribute toward the development of a vibrant and sustainable society.

#### Structure of the New Environmental Plan Package

Sustainability Report 2020

The New Environmental Plan Package has three components: the Environmental Policy, the Environmental Vision 2050 and the Environmental Targets 2030





## **Steps to Formulation**

The Environmental Working Group we set up in fiscal 2018 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 MITSUBISHI MOTORS, 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 the Company's 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<sup>\*1</sup> and IPCC<sup>\*2</sup>, 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 and other business characteristics.

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

In addition, we had outside experts review the draft package we had formulated, looking at it from a stakeholder perspective.

\*1: International Energy Agency

\*2: United Nations Intergovernmental Panel on Climate Change

#### 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.

- Automobile production and data related to the Company
- <Business>

Gathering of Information

Analysis

Formulation

Review

Unit sales and number of vehicles owned, globally and by region

<Results of Environmental Initiatives> CO<sup>2</sup> emissions (Scope 1, 2, 3), amount of waste generated, etc.

#### Verify relationships between environmental issues and the Company

- Identify environmental issues to face head-on
- Consider long-term outlook for environmental issues
   Cather external sequences on CO

Gather external scenarios on  $\mathsf{CO}_2$  emissions, run our own simulations

Arrange initiatives to be taken, given our business characteristics (markets and products)

 Clearly spell out the Environmental Policy and Environmental Vision 2050

• Consider initiatives in the Environmental Targets 2030, as well as numerical targets

Conduct review via outside experts

MITSUBISHI MOTORS CORPORATION Sustainability Report 2020

## Framework for Consideration

We formed the Environmental Working Group, made up of members from across the Company, and proceeded with considerations.

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

#### <July 2018 to December 2019 >

Sustainability Committee				
(Chair: CEO; members: Division general managers of relevant divisions)				
Environmental Working	g Group			
(Established July 201	8)			
Leader: Technical advisor to the chairman* <sup>3</sup>				
Subleader: Division general manager of the Development Management Division* <sup>3</sup>				
Secretariat: Sustainability Promotion D	Department			
Members: Corporate departments • Strategy management • Human resources • Public and investor relations	• Asset management • Finance			
Product and business activ • Technology strategy • Manufacturing • EV business • Development management • Materials technology	<ul> <li>Logistics</li> <li>Procurement</li> <li>Overseas sales</li> </ul>			
*3 Positions as of March 2020				

<From January 2020>

# Board of Directors Executive Committee

#### Small Circle

Members: • CEO

- Co-COO (in charge of development)
- Director in charge of manufacturing
- Director in charge of sustainability
- $\cdot$  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

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## **Environmental Policy**

MITSUBISHI MOTORS has 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 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 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 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 preventing environmental pollution.

#### 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 electric vehicles and the promotion of their use in society.

#### **Action to Climate Change**

Through electric vehicles and the increased use of renewable energy, we will contribute to net-zero CO<sub>2</sub> emissions and 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 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)

- We will face three specific environmental issues head-on: climate change, resource depletion and environmental pollution.
- 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 Targets 2030**

Environmental Vision 2050 sets out our vision for society in 30 years' time, as well as the directions for our initiatives. In line with this vision, we have formulated Environmental Targets 2030, which sets forth items to be addressed in the next 10 years.

Targets 2030		Main Initiatives	
CO₂ emissions from new vehicles*1: -40% (compared with fiscal 2010)		<ul> <li>Promotion of electric vehicles, centering on PHEVs (percentage of electric vehicles*<sup>2</sup>: 50%)</li> <li>Improved fuel efficiency of ICE vehicles</li> </ul>	
CO <sup>2</sup> emissions from business activities* <sup>3</sup> : -40% (compared with fiscal 2014)		<ul> <li>Promotion of energy conservation</li> <li>Introduction of renewable energy</li> </ul>	-
Implementation of measures to address climate change		<ul> <li>Promotion of V2X*4 (DENDO DRIVE STATION/HOUSE)</li> <li>Contribution to adaptation through agreements in times of disaster</li> </ul>	
Expanding adoption of plastic materials not derived from oil		<ul> <li>Development of material technologies</li> <li>Proactive use in parts</li> </ul>	
Achievement of zero direct landfill waste (less than 0.5%)		<ul> <li>Reduction of waste generation and promotion of reuse as resources</li> <li>Appropriate waste treatment</li> </ul>	
Reuse of batteries used in electric vehicles		<ul> <li>Promotion of recovery and use (BESS*<sup>5</sup>, etc.)</li> <li>Technology development with a view to reuse (battery packs, systems)</li> </ul>	
Conformance to regulations on regulations on use of hazardous substances in products		<ul> <li>Obtaining information on laws and regulations, enhancing the internal management structure</li> <li>Collaboration with suppliers</li> </ul>	
	CO2 emissions from new vehicles*1: -40% (compared with fiscal 2010) CO2 emissions from business activities*3: -40% (compared with fiscal 2014) Implementation of measures to address climate change Expanding adoption of plastic materials not derived from oil Achievement of zero direct landfill waste (less than 0.5%) Reuse of batteries used in electric vehicles	CO2 emissions from new vehicles* <sup>1</sup> : -40% (compared with fiscal 2010) CO2 emissions from business activities* <sup>3</sup> : -40% (compared with fiscal 2014) Implementation of measures to address climate change Expanding adoption of plastic materials not derived from oil Achievement of zero direct landfill waste (less than 0.5%) Reuse of batteries used in electric vehicles	C0: emissions from new vehicles*:       • Promotion of electric vehicles, centering on PHEVs (percentage of electric vehicles*:, 50%)         -40% (compared with fiscal 2010)       • Promotion of energy conservation         C0: emissions from business activities*:       • Promotion of energy conservation         -40% (compared with fiscal 2014)       • Promotion of renewable energy         Implementation of measures to address climate change       • Promotion of V2X** (DENDO DRIVE STATION/HOUSE)         Expanding adoption of plastic materials not derived from oil       • Development of material technologies         Achievement of zero direct landfill waste (less than 0.5%)       • Reduction of vaste generation and promotion of reuse as resources         Reuse of batteries used in electric vehicles       • Promotion of recovery and use (BESS*5, etc.)         • Technology development with a view to reuse (battery packs, systems)       • Obtaining information on laws and regulations, enhancing the internal management structure

#### **Environmental Management**

- Promotion of LCA\*6
- Collaboration with suppliers

• Promotion of environmental management within the Group and at sales outlets Expanded environmental information disclosure
 Promotion of employee education and awareness activities • Promotion of grass-roots community environmental preservation activities

\*1: CO<sub>2</sub> emissions per new vehicle while driving \*2: Electric vehicles, plug-in hybrid electric vehicles, and hybrid electric vehicles \*3: Scope 1 (direct emissions) and Scope 2 (indirect emissions)

\*4: A general term encompassing vehicle to home (V2H) and vehicle to grid (V2G), among others.

\*5: BESS stands for Battery Energy Storage System.

\*6: LCA stands for life cycle assessment, which is a technique for calculating the environmental impact of a product from manufacturing to disposal.

## Examples of Initiatives Unique to MITSUBISHI MOTORS

## Introduction of a Power Storage System **Employing Used Batteries from Electric Vehicles**

We have installed a large-scale solar power plant at the Okazaki Plant and built a power system that employs used batteries from the OUTLANDER PHEV. The system is currently undergoing verification. By making this shift to renewable energy, we aim to reduce the plant's  $CO_2$ emissions and lower its peak power consumption. In the event of a disaster-related power outage, electricity can

be routed from this system to our gymnasium, which can serve as a local evacuation center, contributing to community response in the face of disaster.



#### **Creating a Structure to Swiftly Provide Electric** Vehicles to Affected Areas in Times of Disaster

We are promoting the DENDO Community Support Program, under which we aim to create a structure for quickly providing our electric vehicles to local governments in times of disaster. Under this program, we aim to enter into disaster cooperation agreements with local governments throughout Japan by fiscal 2022.

By providing the OUTLANDER PHEV, which can operate on rough roads and supply electricity for extended periods, we will contribute to the nation's resilience.



## **PDCA Cycle**

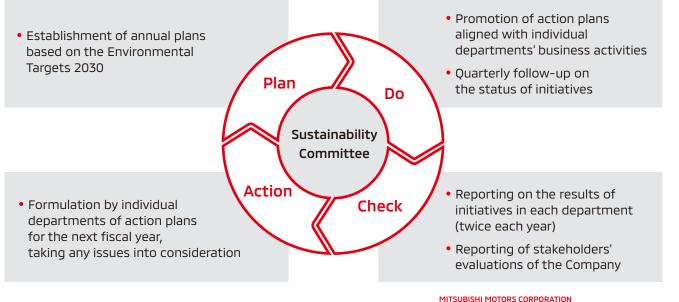
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We have positioned the environmental issues set forth in the New Environmental Plan Package as material issues for MITSUBISHI MOTORS. We are addressing these issues through a PDCA cycle, mainly via the Sustainability Committee, which the CEO chairs.

To realize the targets set in the Environmental Targets 2030, related departments draft annual action plans. These plans are gathered throughout the Group and approved by top management at the Sustainability Committee at the start of the fiscal year.

Based on these annual plans, individual departments work together to promote initiatives aligned with their business activities. We follow up each quarter on the status of these initiatives and seek to ensure effectiveness through reporting to the Sustainability Committee throughout the fiscal year. Results of initiatives and issues encountered during the previous fiscal year are reported to management via the Sustainability Committee at the start of the fiscal year. In addition to results during the fiscal year, on the topics of CO<sub>2</sub> emissions from new vehicles, percentage of electric vehicles and CO<sub>2</sub> emissions from business activities, in particular, we report forecasts based on our mid-term business plan and product plans. Discrepancies between these figures and the Targets 2030 are shared and reflected when formulating the next mid-term business plan. We also share the evaluations we receive from stakeholders, clarifying issues at the companywide level.

Taking on board any issues identified in this manner, individual departments take the lead in drafting plans for the next fiscal year. Management reviews these plans at the Sustainability Committee as part of our effort to ensure improvements are made.



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## **Environmental Management**

## Basic Approach

In order to promote environmental initiatives reliably and efficiently, MITSUBISHI MOTORS has constructed a framework for environmental management. We are promote Group initiatives, including education and awareness activities for employees, and the acquisition of certifications for environment management systems among affiliated companies.

We also dissemination information about initiatives on our website and through our sustainability report. We value opportunities to receive feedback from our various stakeholders.

## Management Structure

Since 1993, we have been holding an Environmental Council, which is attended by the CEO and officers from each division. The Sustainability Committee, chaired by the CEO, has met since fiscal 2017, and environmental initiatives have been positioned as key material issues for the Company. The committee discusses our environmental policies and targets and confirms the progress and results from the Environment Initiative Program. Items of particular importance are reported to the Board of Directors.

## Management Target Companies (21 Companies)

#### **Production Affiliates**

Country	Company Name		
Japan	Pajero Manufacturing Co., Ltd.		
	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	Mitsubishi Motors Krama Yudha Indonesia (MMKI)		
China	GAC Mitsubishi Motors Co., Ltd. (GMMC)		

#### **Non-Production Affiliates**

Country	Company Name				
Japan	Mitsubishi Automotive Engineering Co., Ltd.				
	Mitsubishi Automotive Logistics Technology Co., Ltd.				
	Higashi Kanto MMC Parts Sales Co., Ltd.				
	Higashi Nihon Mitsubishi Motor Sales Co., Ltd.				
	Nishi Nihon Mitsubishi Motor Sales Co., Ltd.				
United States	Mitsubishi Motors North America, Inc. (MMNA)				
	Mitsubishi Motors R&D of America, Inc. (MRDA)				
Puerto Rico	Mitsubishi Motor Sales of Caribbean, Inc. (MMSC)				
Netherlands	Mitsubishi Motors Europe B.V.(MME)				
Germany	Mitsubishi Motor R&D Europe GmbH (MRDE)				
UAE	Mitsubishi Motors Middle East and Africa FZE (MMMEA)				
Australia	Mitsubishi Motors Australia, Ltd. (MMAL)				
New Zealand	Mitsubishi Motors New Zealand Ltd. (MMNZ)				

 $\bigcirc$ : As planned  $\triangle$ : Delayed

## **Environment Initiative Program 2019**

In March 2018, MITSUBISHI MOTORS formulated the Environment Initiative Program 2019, an environmental action plan through fiscal 2019. The program had two pillars: enhancing environmental management and initiatives to address environmental issues. From fiscal 2020, we have been promoting activities toward the realization of our newly formulated New Environmental Plan Package.

#### Overview of Results for the Environment Initiative Program 2019

#### 1. Enhancing Environmental Management

				,
Field	Initiative	Implementation Items (Target Year: FY2019)	FY2019 Results	Evalua- tion
Environ- mental manage-	Promote the use of renew- able energy	Use renewable energy consider- ing local characteristics	Began operating renewable energy facility (solar power generation) at the Okazaki Plant	0
ment	Conserve water resources	Manage water risks at each pro- duction facility	Assessed amounts of water used at production facilities in Japan	0
	Environmental activities in purchasing	Deploy Green Procurement Guidelines to business partners of overseas plants	Deployed Green Procurement Guide- lines to business partners of overseas plants	0
	Environmental activities in sales Environmental data manage- ment	Assess environmental manage- ment conditions and CO <sub>2</sub> emis- sions of business partners	Assessed environmental manage- ment conditions and $CO_2$ emissions of business partners by means of CDP supply chain program (climate change)	0
		Promote the acquisition of Eco-Action 21 certification to our dealers	Four companies have newly acquired and are maintaining certification	
		Emphasize and publicize value of EV/PHEVs to widely expand their use	New deployment and ongoing oper- ation of DENDO DRIVE STATION at 19 dealers	
		Renew environmental data man- agement system	Commenced operation of new envi- ronmental data system	0
		Implementation of LCA* <sup>1</sup> for new vehicle models and improve reliability of evaluation methods for GHG <sup>*2</sup> emissions LCA	Considering assessment of produc- tion process data	

\*1 LCA stands for life cycle assessment, which is a technique for calculating the environmental impact of a product from manufacturing to disposal

\*2 Abbreviation of greenhouse gas

#### 2. Initiatives to Address Environmental Issues

Field	Initiative	Implementation Items (Target Year: FY2019)	FY2019 Results	Evalua- tion
to climate change	Reduce CO <sup>2</sup> emissions while driving	CO <sup>2</sup> emissions per new vehicle while driving: 8% reduction compared to FY2010	-14%	0
and energy issues	Develop technologies for next-generation environ- mentally friendly vehicles	Promote development of motor effi- ciency improvement methods	Promoted the develop- ment as planned	0
	Reduce amount of CO <sup>2</sup> emitted by production activities	CO <sup>2</sup> emissions at production facilities per production vehicle: 37% reduction compared to FY2005	-41%	0
	Reduce amount of CO <sup>2</sup> emitted by non-produc- tion activities	Unit CO <sup>2</sup> emissions in non-production facilities: 1% reduction compared to FY2018	-8.1%	0
	Reduce amount of CO <sup>2</sup> emitted by logistics activities	CO <sup>2</sup> emissions per unit of transporta- tion in Japan: 9% reduction com- pared to FY2010	-9.3%	0
Resource recycling	Commercialize and expand usage of re- source-conserving materials	Application of technology for reduc- tion in component waste production and expanded use of recycled com- ponent materials	Promoting develop- ment of components using recycling ma- terials	
	Reduce volume of dis- posal	Externally disposed waste of produc- tion activities per production vehicle: 52% reduction compared to FY2005	-53%	0
	Improve risk manage- ment system for haz- ardous substances in products	Thorough management of hazardous substances	Continued appropriate management, includ- ing response to legal trends	0
	Reduce use of hazardous substances	35g/m <sup>2</sup> or less of VOC* <sup>3</sup> emissions per painting area in production activities	36.5g/m <sup>2</sup>	
Environ- mental preserva-	Promote preservation of biodiversity	Conduct biological surveys and implement conservation activities at sites in Japan	Conducted ecosystem survey at the Kyoto Plant	0
tion		Plant and grow trees at Pajero Forest	Conducted activities twice a year	0
		Plant trees at overseas business sites	Planned tree-planting activities in the Phil- ippines	0

\*3 VOC stands for volatile organic compounds

## Environmental Management System

In fiscal 2010, MITSUBISHI MOTORS acquired companywide integrated ISO 14001 certification. Major affiliates in Japan and overseas have also acquired ISO 14001 and Eco-Action 21\* certification. As of fiscal 2019, approximately 55% of companies targeted for environmental management (including MITSUBISHI MOTORS) had received certification for their environmental management systems.

As of fiscal 2019, 23 dealers in Japan had received Eco-Action 21 certification.

\*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.

See page 32 for a list of the dealers that have received Eco-Action 21 certification.

#### Status of ISO 14001 Certification (As of June 30, 2020)

Development		
Mitsubishi Automotive Engineering Co., Ltd.		
Production		
Pajero Manufacturing Co., Ltd.		
Suiryo Plastics Co., Ltd.		
Mitsubishi Motors Philippines Corporation (MMPC)		
Asian Transmission Corporation (ATC)		
Mitsubishi Motors (Thailand) Co., Ltd. (MMTh)		
MMTh Engine Co., Ltd. (MEC)		
Mitsubishi Motors Krama Yudha Indonesia (MMKI)		
Distribution and After-Sales Service		
Mitsubishi Automotive Logistics Technology Co., Ltd.		

## Environmental Education and Awareness

The Company 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 fiscal 2019, we conducted rank-based training and e-learning to promote an understanding of our social responsibility for sustainability, the relationship between sustainability and the environment, and the relationship between environmental issues and our business activities.

Please see page 9 for details on our activities to promote an awareness of sustainability.

## External Environmental Communication

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

The Company releases information on the concepts and details of its environmental initiatives on the Company website and in the sustainability report in order to make its environmental initiatives more widely known.

Sustainability website: "Environment"

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 fiscal 2019, we participated in dialogue with people in charge of stewardship at institutional investors in Japan and overseas. Our executives in charge of various areas of sustainability listened to opinions on such matters as climate change risks and opportunities, response to TCFD, our CO<sub>2</sub> emissions and electric vehicles, among other topics.

## Environmental Risk Management

Having learned from past cases of failing to comply with environmental regulations such as those aimed at preventing pollution, MITSUBISHI MOTORS makes 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 fiscal 2019, we were subject to no fines or administrative orders stemming from violations of environmental laws and regulations\*. However, the plant twice exceeded statutory values provided under the Water Pollution Prevention Act, and we received two complaints related to odors and sound.

Other than those cases mentioned above, voluntary internal checks and monitoring activities uncovered 10 cases of legal non-compliance (including delays in notification and inadequate inspections).

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.

\*Refers to 31 environment-related laws and regulations identified by the Company, including the Water Pollution Prevention Act and the Air Pollution Control Act.

## Life Cycle Assessment (LCA)

We perform life cycle assessment (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 environment-friendly parts, electric vehicles and new-model vehicles, and compare their life cycle CO<sup>2</sup> emissions with those of conventional parts and vehicles. Recent examples have involved the ECLIPSE CROSS and the TRITON. Results are indicated in our sustainability report.

We recognize that concern about environmental impact throughout the life cycle is mounting in individual countries and regions. We are putting in place systems and infrastructures to facilitate our response to regulations and incentives.

#### **Examples of LCA Implementation**

	Examples of LCA Imple- mentation	Objectives
Components and technol- ogies	Body parts employing plastics	<ul> <li>Verifying the effect of weight reduction</li> </ul>
Vehicles	OUTLANDER PHEV	<ul> <li>Assessing the effect of improvement from the gasoline engine model</li> <li>Assessing the impact of components</li> </ul>
	ECLIPSE CROSS, TRITON	<ul> <li>Comparing the effects of improvement from the previous model and other vehicles in the same class</li> </ul>

## **Responding to Climate Change and Energy Issues**

## FY2019 Materiality Targets and Results

 $\bigcirc$ : As planned  $\triangle$ : Delayed

Details of Main Initiatives FY2019 Targets		Indicators	FY2019 Results	Self- Evaluation
Reduce CO <sub>2</sub> emissions while driving	$CO_2$ emissions per new vehicle while driving: 8% reduction compared to FY2010	CO <sub>2</sub> reduction (%)	-14%	0
Reduce amount of CO <sub>2</sub> emitted by produc- tion activities	CO <sub>2</sub> emissions at production facilities per production vehicle: 37% reduction compared to FY2005	CO <sub>2</sub> reduction (%)	-41%	0
Reduce amount of CO <sub>2</sub> emitted by non-production activities	Unit CO2 emissions in non-production facilities: 1% reduction compared to FY2018	CO <sub>2</sub> reduction (%)	-8.1%	0
Reduce amount of CO2 emitted by logis- tics activities	CO2 emissions per unit of transportation in Japan: 9% reduction compared to FY2010	CO <sub>2</sub> reduction (%)	-9.3%	0
Promote the acquisition of Eco-Action 21 certification to our dealers	New certifications: 5 dealers or more	Number of certified dealers	4	Δ

## 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 leading culprit behind these extreme-weather events is climate change, and global warming caused by CO<sub>2</sub> and other greenhouse gases is a major factor.

International frameworks for realizing a sustainable society, such as the Paris Agreement and the United Nations Sustainable Development Goals (SDGs) are making major progress. In particular, the Paris Agreement has set targets on climate change and fostered increased awareness toward corporate responsibility.

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 topmost material issue. In the New Environmental Plan Package, we have set new specific targets for addressing this issue.

To reduce energy consumption and CO<sub>2</sub> emissions in all business activities, including development, production and distribution, as well as at and offices, we are promoting various initiatives, such as electric vehicle technologies, the development of fuel-economy-improving technologies, the introduction of low-energy equipment in production processes and the use of renewable energy in offices and dealers.

Our electric 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.

## Our Risks and Opportunities Related to Climate Change and Energy Issues

Recent years have seen an increase in ESG investment<sup>\*1</sup> that utilizes non-financial information. Based on a final report by the TCFD<sup>\*2</sup>, investors are becoming significantly more aware of the long-term risks and opportunities for companies as a result of climate change.

MITSUBISHI MOTORS believes climate change presents the following risks and opportunities for its business.

\*1 Environment, social and governance (ESG) investment \*2 Task Force on Climate-related Financial Disclosures

#### Risks

The MITSUBISHI MOTORS Group's operating performance and financial condition could be affected significantly by interrupted factory operations due to meteorological disasters, as well as the need for investment to address increasingly stringent regulations related to automobile fuel efficiency and CO<sub>2</sub> emissions. Furthermore, if we fail to introduce sufficient measures to counter climate change, we could be forced to withdraw from the marketplace due to a lack of compliance with environmental regulations, and our reputation could suffer. As a result, we could experience a decrease in sales, significantly affecting our operating performance and financial condition. **Opportunities** 

Sales of electric vehicles and other highly fuel-efficient vehicles could grow, due to incentives set by various countries and regions and growing environmental awareness. Sales of electric vehicles could also expand due to their ability to serve as power sources in the event of meteorological disasters.

## **Developing Electric Vehicles**

Automobiles emit CO<sub>2</sub> throughout their life cycle, during production, driving and disposal. Emissions are particularly high during the driving phase.

MITSUBISHI MOTORS positions its technologies for producing electric vehicles, which emit little CO<sub>2</sub> while driving, as core technologies for "responding to climate change and energy issues," and we are focusing on development in this area.

#### **Electric Vehicles**

Electric vehicles are powered by electric motors, and so they emit no exhaust gases such as CO<sub>2</sub> while driving.

MITSUBISHI MOTORS released the i-MiEV as the world's first mass-produced electric vehicle in 2009. We are still improving it today. The i-MiEV performs much better than conventional gasoline engine vehicles, including environmental performance, acceleration starting with maximum torque, reduced noise by the electric motor, and stability with the battery unit beneath the floor. These technologies are the foundation of next-generation electric vehicles, such as plug-in hybrid electric vehicles.

#### TOPICS

#### 10th Anniversary of the i-MiEV Electric Vehicle

Governance



In 2011, we adapted the i-MiEV power train for commercial vehicles and launched the MINICAB MiEV, a minicar-class commercial electric vehicle. To date (as of March 31, 2020), sales of this model have reached more than 31,000 units.

Learning from the Great East Japan Earthquake the previous year, in 2012 we launched the MiEV power BOX. This model, which can power household devices through the electricity stored in its battery, set the stage for vehicle to home (V2H) applications.





## TOPICS

## Japan Post Using Mitsubishi Electric's EVs as Delivery Vehicles



Since fiscal 2019, MITSUBISHI MOTORS has been providing Japan Post Co., Ltd. with the MINICAB MiEV, a minicar-class commercial electric vehicle, for use as delivery vehicles. By the end of fiscal 2020, we expect the total number of vehicles delivered to reach 1,500. These vehicles are well suited for deliveries in large metropolitan areas, where travel distances are relatively short. They make up an estimated 30% of minicar-class electric vehicles used for deliveries.

The MINICAB MiEV is equipped with the drive battery and motor used in the i-MiEV. In addition to the superior environmental performance inherent to an electric vehicle, it excels in power, silence, comfort and more. It is highly effective as a delivery vehicle due to the driving range and payload capacity. By using vehicles that emit no CO<sub>2</sub> or other exhaust gas while driving, it is helping to promote environmental management by Japan Post, which aims to reduce the emission of greenhouse gases.

#### Plug-in Hybrid Electric Vehicles

Plug-in hybrid electric vehicles are powered by electricity stored in drive batteries and by the motor, using the engine to generate electric power when the battery level is low. Concern over the driving range is no longer an issue as it offers the advantages of EVs: powerful driving, superb quietness and high stability.

MITSUBISHI MOTORS released the OUTLANDER PHEV in 2013. At low to medium speeds, the Plug-in Hybrid EV System uses electric power from the drive 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.



We have launched the OUTLANDER PHEV in Indonesia, its first ASEAN market. Indonesia is introducing measures to curtail CO<sub>2</sub> emissions. Through the OUTLANDER PHEV, we are contributing to the country's national objectives. In ASEAN markets as well, through the OUTLANDER PHEV we aim to increase the value we contribute to society.



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

By leveraging the large-capacity batteries on its electric vehicles and plug-in hybrid electric vehicles to supply electricity, MITSUBISHI MOTORS is 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\* and use as emergency power sources in times of disaster.

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

#### TOPICS

## Commencing Trial Sales of the DENDO DRIVE HOUSE in Some Regions

We began offering the DENDO DRIVE HOUSE for sale at a particular dealer-



ship on a trial basis in October 2019.

DENDO DRIVE HOUSE is a bundled system that comprises solar panels and V2H equipment. Along with the purchase of an electric vehicle, we offer a one-stop service in which dealers provide sales, installation and after-sales maintenance. Clean, solar-derived electricity is used to power a customer's home and electric vehicle, reducing everyday fuel and electricity charges and contributing toward a low-carbon society. The solar panels can also be used to generate electricity during power outages, and the power stored in the electric vehicles can be supplied to the home.

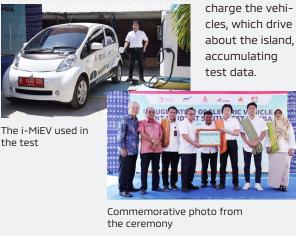
We plan to apply the knowledge gained from this initiative to help realize the new-energy society of the future.

### TOPICS

## Participating in Joint Study on Energy Management in Indonesia

We participated in joint study on energy management on the island of Sumba, in the Indonesian province of East Nusa Tenggara. Using solar power generation and electric vehicles, the test is aimed at finding a way to use energy efficiently in islands and other locations where gasoline is difficult to obtain.

This study, which was designed to deliver a stable supply of electricity generated from a renewable source, was conducted by Indonesia's Agency for the Assessment and Application of Technology and Kyudenko Corporation, with support from Japan's Ministry of the Environment. The test commenced in December 2017. In February 2018, MITSUBISHI MOTORS donated to the Indonesian government two i-MiEVs, eight OUTLANDER PHEVs and four quick chargers. One i-MiEV and one quick charger were used in the proofof-concept test. The solar power is being used to



#### TOPICS

## Implementation of V2G Demonstration Project by Using Electric Vehicles

MITSUBISHI MOTORS took part in the FY2019 V2G Aggregator Project, entrusted by the Ministry of Economy, Trade and Industry, with providing the employees' parking spaces at the Okazaki Plant as a demonstration site.

V2G is a scheme where the high-capacity batteries of electric vehicles are utilized to regulate the demand and supply of the power grid through an IT aggregation system.

In FY2019, the second year for this demonstration, we added 40 electric vehicles (for a total of 50) and established one of the largest demonstration sites in Japan. In addition, electric vehicles at multiple demonstration sites were simultaneously charged/discharged via online control, taking into consideration driving patterns restrictions, and we concluded that response speed could meet the requirements of power supply and demand directives.

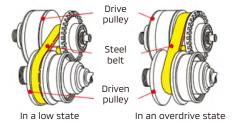
There are further needs to realize more stable power grid to keep the expansion of variable Renewable Energy resources. We believe the realization of V2G will increase the value of electric vehicles and could help to solve the environmental problems such as climate change and energy issues.



## Development of Improving Fuel Economy Technologies

MITSUBISHI MOTORS develops technologies to boost the fuel efficiency of vehicles powered by conventional engines. We are developing engine and vehicle body technologies to reduce fuel and energy waste.

#### Continuously Variable Transmission (CVT)



A continuously variable transmission (CVT) varies transmission ratio by seamlessly changing the effective diameter of the pulleys.

Based on throttle position information, driving power is controlled in accordance to the driving condition to achieve the most efficient balance between the engine and CVT.

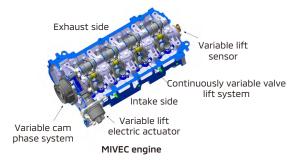
#### Idle-Stop "AS&G"

AS&G is an idling stop function that automatically stops and starts the engine when the vehicle stops or moves off. This has a major effect on im-



proving 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.

## Variable Valve Timing Mechanism Mitsubishi Innovative Value timing Electronic Control System (MIVEC)



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 reduce intake resistance. This minimizes air intake energy loss, resulting in improved fuel efficiency.

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

This technology controls power generation under various driving conditions such as idling, accelerating, and cruising by conducting intensive charging of the battery using electric power generated while decelerating. We are improving fuel consumption by reducing the load on the engine during charging and power generation.

#### TOPICS

#### New Models: the eK CROSS SPACE and eK SPACE

Our new mini-cars that launched in March 2020, the eK CROSS SPACE and the eK SPACE, are mounted with naturally aspirated and turbo engines that use a hybrid system. This is combined with a CVT to achieve a balance between acceleration performance and fuel efficiency. Furthermore, the AS&G fitted with a coasting stop function stops the engine when travel speed falls below around 13km/h.





## Efforts in Production

MITSUBISHI MOTORS is upgrading its production facilities, introducing new equipment and improving operations in an effort to conserve energy and reduce CO<sub>2</sub> emissions from production activities.

In fiscal 2019, at our production facilities we brought on line a servo locator for our body transport device, upgraded from a hydraulic to an electrical molding machine and introduced efficient replaceable coil to billet heater.

People involved with production sites, production technologies and power supply are also taking part in energy-conservation activities. We are improving the operation of production facilities by focusing on energy-intensive processes, such as painting and forging. We are improving the operation of boilers, compressors and other equipment that supplies power. Also, we are working to optimize the operation of various types of motor. In these ways, we are introducing measures, starting from areas where we expect results to be greatest.

In an effort to introduce renewable energy, we are also setting up solar power facilities at plants in Japan and overseas.

## TOPICS

## Establishment of a Large-Scale Solar Power Facility at the Okazaki Plant

Utilizing the energy solutions service provided by Mitsubishi Corporation and Mitsubishi Corporation Power Ltd., we installed a solar power plant capable of generating around 3MW (3GWh per year) at the Okazaki Plant, our mainstay factory for electric vehicles. The power generated there is used at the Okazaki Plant, creating a lower-carbon, cleaner production environment for electric vehicles. In fiscal 2020, we expect to expand the generating plant's capacity and introduce a power storage system (1MWh capacity) employing used batteries from the OUTLANDER PHEV that are produced and sold by the Okazaki Plant.

This initiative introduces a third-party ownership scheme for the solar power plant, in which Mitsubishi and Mitsubishi Corporation Power install and own the solar power plant and the power storage system that employs used batteries from electric vehicles, while Mitsubishi Motor provides the space for installation on the roof of its plant and buys the electricity produced by the plant. Rather than footing initial investment costs and owning the facility, under this scheme MITSUBISHI MOTORS pays only for the electric power charges and has access to CO<sub>2</sub>-free electricity.

This solar power plant and power storage system are expected to reduce CO<sub>2</sub> emissions by approximately 1,600 tons per year and reduce peak power consumption.



Large-scale solar power plant

## TOPICS

## Introducing Servo Locators to Body Transport Equipment

The body transport equipment used in the welding and assembly processes at the Okazaki Plant had previously used air cylinders for the section that receives the body. Instead, we adopted more general-purpose electric servo locators and robotic controls.

Transitioning the segment that had been driven by an air cycling powered by compressed air to electric power succeed in reducing demand on the air compressor, lowering CO<sub>2</sub> emissions by around 200 tons per year.



Body being transported



Newly introduced servo locators



## Efforts in Distribution

MITSUBISHI MOTORS sets reduction targets for unit CO<sub>2</sub> emissions (kg-CO<sub>2</sub>/1000t km) during the transport of procured parts and products to promote initiatives for achieving these targets.

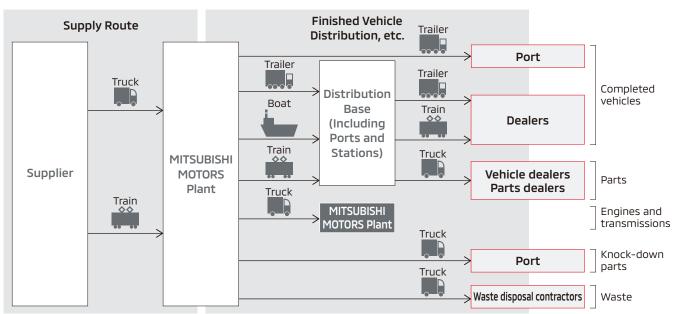
We strive to shorten transport distances through the use of less distant procurement sources and increasing direct deliveries. We also work to decrease the number of transport trips by improving the packing to increasing the load factor, and consolidating transport routes, reducing the number of trucks.

Other activities include modal shifts such as improving rail utilization rates and requesting the introduction of ecologically-friendly vehicles and promotion of eco-driving by our business partners' transport subcontractors.

# Collecting CO<sub>2</sub> Emissions Data in Distribution among Overseas Affiliates

We understand the importance of collecting and disclosing CO<sub>2</sub> emissions volumes throughout the supply chain, including overseas, and we are promoting initiatives in this regard.

Following on from the Mitsubishi Motors (Thailand) Co., Ltd. (MMTh) plant in fiscal 2018, in fiscal 2019 Mitsubishi Motors Krama Yudha Indonesia (MMKI) also began to collect and calculate CO<sub>2</sub> emissions in distribution including local land transport in Indonesia during sea/air transport.



Transportation of vehicles (Thailand)



Sea transport

#### Target Distribution Routes for CO<sub>2</sub> Emissions Results



### **Office Initiatives**

MITSUBISHI MOTORS is also promoting the use of renewable energy and introducing various types of energy-saving equipment in areas other than manufacturing, such as at research and head office locations.

Part of the electric power used at the Research and Development Building (Okazaki, Aichi Prefecture) and our head office (Minato-ku, Tokyo) is supplied by renewable energy, thanks to the erection of solar panels and making use of the Tradable Green Certificates System<sup>\*1</sup>. Also, CO<sub>2</sub> emissions are being reduced by using energy-saving electrical equipment and air conditioners.

\*1 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.

## Dealer Initiatives

We encourage the acquisition of Eco-Action 21 to our dealers in Japan. Dealers that have acquired certification 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 electric vehicles.

Also, we are promoting the development of the "DENDO DRIVE STATION" next-generation dealers to introduce the value brought by EV/PHEV toward the spread of electric vehicle. By fiscal 2019, we opened 83 DENDO DRIVE STATIONS nationwide.

"DENDO DRIVE STATION"

WEB https://www.mitsubishi-motors.co.jp/special/dendo/index.html

#### **Dealers That Have Acquired Eco-Action 21 Certification** (As of June 1, 2020)

#### Company

Hokkaido Mitsubishi Motor Sales Co., Ltd. Aomori Mitsubishi Motor Sales Co., Ltd. Yamagata Mitsubishi Motor Sales Co., Ltd. Higashi Nihon Mitsubishi Motor Sales Co., Ltd. Ibaraki Mitsubishi Motor Sales Co., Ltd. Sawara Mitsubishi Motor Sales Co., Ltd. Sobu Mitsubishi Motor Sales Co., Ltd. Tokai Mitsubishi Motor Sales Co., Ltd. Sunen Mitsubishi Motor Sales Co., Ltd. Nishiowari Mitsubishi Motor Sales Co., Ltd. Toyama Mitsubishi Motor Sales Co., Ltd. Toyama Diamond Motors Co., Ltd. Fukui Mitsubishi Motor Sales Co., Ltd. Kanazawa Mitsubishi Motor Sales Co., Ltd. Kyoto Mitsubishi Motor Sales Co., Ltd. Nishi Nihon Mitsubishi Motor Sales Co., Ltd. Shiga Mitsubishi Motor Sales Co., Ltd. Fukuyama Mitsubishi Motor Sales Co., Ltd. Kyushu Mitsubishi Motor Sales Co., Ltd. Oita Mitsubishi Motor Sales Co., Ltd. Kumamoto Mitsubishi Motor Sales Co., Ltd. Nagasaki Mitsubishi Motor Sales Co., Ltd. Kagoshima Mitsubishi Motor Sales Co., Ltd.



#### TOPICS

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

MITSUBISHI MOTORS seeks to put DENDO DRIVE STATIONs into operation in prefectures across Japan. In fiscal 2019, we opened these stations at seven locations, each of which were the first in their prefecture: Toyama Main Branch (Toyama Prefecture), Ichinoseki Interchange Branch (Iwate Prefecture), Yamagata Branch (Yamagata Prefecture), Nagasaki Main Branch (Nagasaki Prefecture), Tokushima Main Branch (Tokushima Prefecture), Hinode-machi Branch (Miyagi Prefecture) and Kisarazu Branch (Chiba Prefecture). By deploying DENDO DRIVE STATIONs across Japan, we will increase the significance of electric vehicles (EVs and PHEVs) by diversifying their energy sources and communicating their value as sources of electric power in times of disaster.



Ichinoseki Interchange Branch Iwate Mitsubishi Motor Sales Co., Ltd.



Yamagata Branch Yamagata Mitsubishi Motor Sales Co., Ltd.



Toyama Main Branch Toyama Mitsubishi Motor Sales Co., Ltd.



Nagasaki Main Branch Nagasaki Mitsubishi Motor Sales Co., Ltd



Tokushima Main Branch Tokushima Mitsubishi Motor Sales Co., Ltd.



Hinode-machi Branch Miyagi Mitsubishi Motor Sales Co., Ltd.



Kisarazu Branch Chiba Mitsubishi Colt Car Dealership Co., Ltd.

#### TOPICS

## Signing a Memorandum of Understanding on the Opening of DENDO DRIVE STATIONs in the Philippines

In January 2020, Mitsubishi Motors Philippines Corporation (MMPC), which is our automotive assembler and distributor in the Philippines, signed a Memorandum of Understanding with five MMPC's authorized dealers, on the opening of next-generation dealerships (DENDO DRIVE STATIONS). In addition to standard dealership functions (selling new vehicles and providing after-sales service), DENDO DRIVE STATIONs are equipped with solar power generation systems and V2H\* equipment. These stations can be used to charge electric vehicles from solar power generation. Alternatively, electric vehicles can provide power to the dealerships. Like Japan, the Philippines is prone to natural disasters. Our DENDO DRIVE STATIONs are expected to help build up the country's national resilience (ability to recover from disasters).

MMPC plans to launch the OUTLANDER PHEV in 2020. The company is undertaking efforts aimed at encouraging an understanding and affinity for electric vehicles. Rolling out the DENDO DRIVE STATION should facilitate this effort, as well as contributing to automotive industry and economic development initiatives in the Philippines. \*V2H stands for vehicle to home and this system can power household devices through the electricity stored in its battery.



Signing ceremony for a Memorandum of Understanding

## FY2019 Materiality Targets and Results

**Resource Recycling Initiatives** 

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Details of Main Initiatives	FY2019 Targets	Indicators	FY2019 Results	Self- Evaluation
	Application of technology for reduction in component waste production and expanded use of recycled materials		Developing parts made of recycled materials	
Reduce waste material in production activities	Externally disposed waste from production activities per production vehicle: 52% reduction compared to FY2005	Reduction of external waste disposal	-53%	0

## **Basic Approach**

The consumption of resources is increasing due to the rise in populations and economic growth in emerging countries. Countries and industry groups are formulating various initiatives in order to promote automobile recycling and correct processing.

Based on the above, MITSUBISHI MOTORS considers effective resource use as our task and promotes initiatives for recycling and resource conservation.

MITSUBISHI MOTORS 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, which we are engaged in continuously.

At production plants, with the aim of realizing a recycling-oriented society that gives consideration to the environment and resources, we are promoting the effective use of resources. We are achieving a landfill waste disposal rate of zero\* at every plant by converting industrial waste materials generated from production processes into reusable resources and reducing the volume of waste discharged. \*Land reclamation rate below 0.1%

## Recycling-Based Design and Development

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

MITSUBISHI MOTORS conducts design and development that actively incorporates not just recycling, but all aspects of the 3Rs including reduction and reuse. Since 1999, 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.

At dealers, bumpers replaced during repairs are recycled for undercovers and battery trays. We are also increasing the use of recycled materials in other parts. TOPICS

#### Using Thermoplastic Resin

DELICA D:5, which was launched in 2019, uses easily recyclable thermoplastic resin for exterior and interior parts.

## Main parts (indicated in green) that use thermoplastic resin



## End-of-Life Vehicle Recycling

MITSUBISHI MOTORS encourages the recycling of endof-life vehicles to reduce the environmental impact of waste from these vehicles. In Japan, the European Union 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.

## Response to Automobile Recycling Laws in Japan

After the End-of-Life Vehicle Recycling Law was enacted in 2005, the company has been accepting used automobile shredder residue (ASR), airbags, and fluorocarbons for recycling.

Regarding ASR recycling, we participate in ART<sup>\*1</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 fiscal 2019 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.

The company outsources the treatment of airbags and fluorocarbons to the Japan Auto Recycling Partnership (JARP).

In addition, for the effective use of recycling fees deposited from customers, we proactively works on

increasing the recycling rate by conducting efficient recycling and proper processing of these three items.

\*1 Automobile Shredder Residue Recycling Promotion Team established by Nissan Motor Co., Ltd., Mazda Motor Corporation, MITSUBISHI MOTORS and others.

#### **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>2</sup> established in 2000, automobile manufacturers or importers must accept and recycle end-of-life vehicles. Also, in 2003, the ELV Directive\*<sup>3</sup> was enacted, specifying ease of recycling as a certification requirement.

The company 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).

\*2 "Directive of the European Parliament and of the Council on End-of- Life Vehicles"

\*3 Abbreviation of End-of-Life Vehicles.

#### **Provision of Dismantling Information**

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

> MITSUBISHI MOTORS CORPORATION Sustainability Report 2020

## 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 the company 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. We will continue to acquire recyclability approval for all new models sold in the EU.

## Collection of Drive Batteries in Electric Vehicles/Construction and Operation of the Recycling System

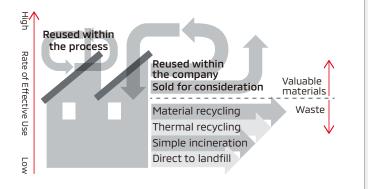
In Japan, Europe, and North America, the company established and operates a battery collection system for the purpose of recycling technology development and proper treatment of end-of-life batteries in electric vehicles and plug-in hybrid vehicles.



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

By improving its production processes, MITSUBISHI MOTORS is working to reduce the amount of waste it generates through manufacturing. For the waste we do generate, while curtailing treatment costs we continue to review and improve the ways in which we sort and treat waste, using it more effectively as resources.

#### Effective Use of Resources and Recycling



#### TOPICS

## Reducing Waste Generation by Transitioning Casting to the Aluminum Die-Casting Process

In recent years, aluminum die casting has been widely adopted in the manufacture of engine blocks for passenger cars to make them more lightweight than when using conventional cast iron. The die-casting of aluminum generates substantially less waste casting sand than the casting of iron.

At the Kyoto Plant, which mainly manufactures engine and powertrain parts, we are moving to consolidate our production line for cast iron engine blocks, as the production of aluminum die-cast parts is growing while that of cast-iron products is decreasing. Our last cast iron line ceased operations in June 2019, and we stopped producing cast iron engine block at the Company. As a result, the amount of waste casting sand we generate fell by around 10,000 tons per year.



Production line for cast iron engine blocks

**Deploying Supply Chain Sustainability Initiatives (Environment)** 

# 

 $\bigcirc$ : As planned  $\triangle$ : Delayed

#### FY2019 Materiality Targets and Results

Details of Main Initiatives	FY2019 Targets	Indicators	FY2019 Results	Self- Evaluation
Reinforcement of CSR in the supply chain	<ul> <li>Expansion of Supplier CSR Guidelines to MITSUBISHI MOTORS' overseas production bases</li> <li>Support for supplier CSR evaluations by third-party organization.</li> </ul>	Guidelines	<ul> <li>Rolled out Supplier CSR Guidelines to the business partners of MMTh/MMKI/MMPC</li> <li>Explained the purpose of third-party evaluations to business partners and have begun conducting evaluations</li> </ul>	0

## **Basic Approach**

Automobiles are composed of a wide variety of materials and parts which are developed and produced by our business partners. For that reason, MITSUBISHI MOTORS believes that it is important to reduce the impact on the environment not only from our own business activities but also in all other processes from the production of materials and parts to delivery. Insufficient responses could put us into conflict with various national and regional regulations and harm our reputation, affecting our operations.

Under the basic concept of purchasing materials and parts with low impact to the environment from suppliers who continuously work to reduce their environmental impact, Parts Purchase Agreement we enter into with business partners stipulate compliance with our Green Procurement Guidelines. Our Supplier CSR Guidelines and Green Procurement Guidelines are posted on our portal site for suppliers, which they can readily access. In these ways, we are working to reduce the environmental impact of our entire supply chain and address risks to our business on the environmental front.

## Expansion of Green Procurement Guidelines

We requests business partners to acquire and renew of external certifications of environment management systems, as well as to manage hazardous substances, promote the 3Rs (reduce, reuse and recycle), submit LCA data to allow us to understand the lifecycle environmental impact, reduce environmental impact in business activities, and reduce their environmental impact related to logistics.

In addition to Japan, we have introduced the Green Procurement Guidelines at major bases overseas–Mitsubishi Motors (Thailand) Co., Ltd. (MMTh), Mitsubishi Motors Krama Yudha Indonesia (MMKI) and

Mitsubishi Motors Philippines Corporation (MMPC)—to ascertain conditions in each country and operational details at each location. These companies are also applying the guidelines to their business partners.



Green Procurement Guidelines Collection of Materials and Hazardous Substance Data through IMDS

Applying the International Material Data System (IMDS), we ask business partners to disclose hazardous substance data, etc. regarding materials and parts based on the Green Procurement Guidelines. We also have our business partners construct their own internal management systems for hazardous substances.

Through these processes, we confirm compliance with use regulations regarding hazardous substances used in new vehicles and vehicles in ongoing production, and we confirm that their usage decreases.

## Communicating with Suppliers

Our business partners 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 business partners. We explain the importance of environmental initiatives at our Suppliers Meetings, for example, which are attended by our business partners, and strive to engage in communications to reduce the environmental impact of our entire supply chain.

## **Conservation of Water Resources**

#### FY2019 Materiality Targets and Results

Details of Main Initiatives	FY2019 Targets	Indicators	FY2019 Results	Self- Evaluation
-		Understanding the amount of water used	Determined the amount of water used at produc- tion facilities in Japan	0

## **Basic Approach**

Due to the increasing population and changes in the natural environment caused by climate change, the demand for water is expected to increase, 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 fiscal 2019, we conducted water risk surveys in regions where our main production plants are located. 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.

Also, as water is required for the operations of our business partners. MITSUBISHI MOTORS is aware of the importance of water risk management throughout the entire value chain. As an initiative to preserve water resources in each country and region, we strive to reduce the amount of water withdrawal and to monitor the quality of discharged water, for example.

#### Water Withdrawal Source and Drainage of Each Plant

Plant	Water With- drawal 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
Pajero Manufacturing Co., Ltd. (Sakahogi-cho, Gifu Pref.)	Kiso River	Kiso River
Mitsubishi Motors (Thailand) Co., Ltd. (MMTh)	Nong Pla Lai Reservoir, etc.	Sewage line
Mitsubishi Motors Krama Yudha Indonesia (MMKI)	Lake Jatiluhur	Sewage line

## 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, rainwater storage tanks have been set up in order to reuse rainwater. We have also set up equipment to filter groundwater so that it can be used to supply drinking water during disasters to employees and people nearby the plant.





Rainwater storage tanks (Okazaki Plant)

Groundwater membrane filtration equipment (Okazaki Plant)



## Reuse of Discharged Water

Mitsubishi Motors Krama Yudha Indonesia (MMKI) is making efforts to recycle wastewater and reuse rainwater in order to reduce water withdrawal. In fiscal 2019, roughly 50% of the water processed in its wastewater treatment plant is reused within MMKI.

In line with the construction of a new paint plant, Mitsubishi Motors (Thailand) Co., Ltd. (MMTh) is moving forward with a project to upgrade its wastewater treatment plant. On this project, as well, plans call for the introduction of a system to reuse treated water.



Industrial water and wastewater treatment plant (Indonesia)

## Prevention of Water Pollution

In order to take precautions against any effects on the areas surrounding plants, we regularly 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. If contamination is found, we take immediate measures to prevent its dispersion, report to authorities, and disclose the information to the communities.

In order to detect abnormalities in discharge water quality, surface oil detectors\* have been set up in front of outlets leading from the plant to public water. We carry out continuous monitoring so that water discharged from the plant does not affect the environment outside the site.

\*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)



General effluent treatment facilities (Okazaki Plant)



Surface oil detector (Okazaki Plant)

MITSUBISHI MOTORS CORPORATION Sustainability Report 2020

## TOPICS

#### Improving the Combined Wastewater Method

In old sewer systems, rainwater and domestic wastewater flow together and are eliminated through the same pipes as "combined sewerage." During typhoons and heavy rains, water volumes can exceed the capacity of downpipes and water treatment facilities. In such cases, water is diverted into rivers and other public waterways. This pollution load is an issue from the standpoint of environmental preservation.

Remnants of this old sort of combined sewerage system were intact at the Kyoto Plant (established in 1944). To address this situation, we are proceeding with phased construction to install new wastewater-specific piping to allow for the complete separation of rainwater and other wastewater. In fiscal 2019, we had completed construction to separate piping at around 30% of our site area. We plan to finish this construction in fiscal 2020.



Underground construction to install separate wastewater piping (Kyoto Plant)

For details on the issues with combined sewerage, see the City of Kyoto website (Japanese only).
(WEB) https://www.city.kyoto.lg.jp/suido/page/000008679.html



## **Prevention of Pollution**

## FY2019 Materiality Targets and Results

 $\bigcirc$ : As planned  $\triangle$ : Delayed

Details of Main Initiatives	FY2019 Targets	Indicators	FY2019 Results	Self- Evaluation
Properly manage hazardous substances in products	Properly manage hazardous substances	Reflection in in-house management system	Continued correct management including legal movements	0
activities	35g/m² or less of VOC* emissions per painting area in pro- duction activities *: VOC stands for Volatile organic compounds	VOC emissions	36.5g/m²	

## **Basic Approach**

It is possible that the air pollutants and chemical substances emitted due to business activities will have an impact on human health and biodiversity.

In order to contribute to the realization of a sustainable society, MITSUBISHI MOTORS considers the prevention of pollution to be one of the material issues for the Company. In the stage of product development, along with promoting the development of fuel economy improving technologies and electric vehicle technologies, we strive to manage to hazardous substances. In production processes, we are endeavoring to reduce air pollutants emitted from out 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 of our business activities.

## Purifying Exhaust Gas while Driving

Vehicles powered by gasoline and diesel engines inevitably emit combustion gases from the engine while driving.

In addition to developing and popularizing electric vehicles, which emit little exhaust while driving, we are endeavoring to develop and encourage the use of gasoline and diesel vehicles that have emissions containing fewer hazardous substances.

#### **Improving Gasoline Engine Vehicles**

Since the 1960s, emissions of carbon monoxide, hydrocarbons, and nitrogen oxides (NOx) have been steadily restricted by regulations.

MITSUBISHI MOTORS has taken various measures since such regulations were first introduced. We currently comply with these regulations by applying electronically controlled fuel injectors and advanced catalyst technologies to the combustion control system.



### **Improving Diesel Engine Vehicles**

For diesel engine vehicles, carbon monoxide, hydrocarbons, NOx, and particulate matter have been regulated in some countries, 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 technology such as VG turbochargers, controlling combustion with a common rail fuel injection system, introducing after-treatment using NOx trap catalysts, and diesel particulate filters.

#### VG Turbocharger

The VG turbocharger helps to improve fuel economy and suppress emissions of particulate matter through optimum supercharging across the engine's operating range.



#### **Common Rail Fuel Injection System**

Particulate matter and NOx can be generated due to incomplete combustion. In MITSUBISHI MOTORS vehicles, this is suppressed using a high-pressure fuel pump, common rail accumulator that stores highly pressurized fuel, and electronically controlled fuel injectors.



**Diesel Particulate Filter (DPF)** This substantially reduces particulate matter.



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#### TOPICS

#### The Clean Diesel Engine on the ECLIPSE CROSS



The ECLIPSE CROSS, which launched in June 2019, is equipped with a clean diesel engine. Its 2.2-liter common-rail DI-D<sup>\*1</sup> clean diesel turbo engine achieves a balance between environmental and driving performance.

A urea SCR\*<sup>2</sup> system is used to purify the diesel engine's emissions. Nitrous oxides (NOx) are stably purified by AdBlue<sup>®\*3</sup>, an aqueous urea solution.

\*1 Abbreviation of direct-injection diesel

- \*2 Abbreviation of selective catalytic reduction
- \*3 AdBlue<sup>®</sup> is a registered trademark of Verband der Automobilindustrie (VDA).



## Reduction of Hazardous Substances

In accordance with the reduction targets of the Japan Automobile Manufacturers Association, Inc. (JAMA) and EU end-of-life vehicles directive, MITSUBISHI MO-TORS is working to reduce the use of four substances (lead, mercury, cadmium, and hexavalent chromium). We have established internal technical standards to voluntarily reduce hazardous substances. We are also taking measures to comply with regulations on the use of hazardous substances in each country in compliance with the REACH regulation\* concerning substances. At present, in addition to four substances and other heavy metals, the use of VOCs (volatile organic compounds), 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.

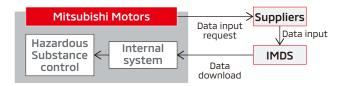
\*REACH stands for "Registration, Evaluation, Authorisation and Restriction of Chemicals." Enacted on June 1, 2007, the REACH regulation is a general system to register, evaluate, authorize and restrict the use of substances

## Material Data Control by the International Material Data System (IMDS)

Data on the hazardous substances contained in vehicle parts delivered by suppliers are collected by the International Material Data System (IMDS), an international system for collecting such data. Together with overseas plants such as Mitsubishi Motors (Thailand) Co., Ltd. (MMTh), 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.

#### Flow of Data Collection through IMDS



## Reduction of In-Cabin VOCs

To provide customers with a healthy and safe cabin space, MITSUBISHI MOTORS works to reduce volatile organic compounds (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.

JAMA established voluntary guidelines for reducing vehicle cabin VOC concentration levels applicable to new model passenger cars marketed starting from the 2007 fiscal year. Please see the JAMA website for details regarding the Voluntary Guidelines.

WEB) http://www.jama-english.jp/release/release/2005/050214.html

#### Progress

We are working to reduce in-cabin VOCs by developing materials with low VOC emissions and technologies to reduce VOCs generated inside the cabin.

#### Example of Measures to Reduce VOCs

Carpet	Reduced aldehydes in pile adhesives
Seat	Reduced organic solvents in fabric adhesives
Ornaments	Reduced VOCs by using spun-dyed high-
	gloss interior parts
Air-	Reduces VOCs with clean air filter with de-
conditioner	odorizing function



### Preventing Air Pollution

## Reduction of VOC Emissions from Production Processes

MITSUBISHI MOTORS is applying the waterborne 3WET paint method<sup>\*1</sup> to its 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). MMTh also plans to use this approach at a new paint plant it is constructing.

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

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



Deodorizing equipment for electrodeposition drying furnaces to reduce VOC emissions (Okazaki Plant)

#### 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. (For details, see the ESG Data on page 97.)

To lower NOx emissions, we introduce low-NOxcontent boilers and burners when upgrading or installing new equipment. To reduce Sox emissions, we are transitioning to the use of lower-sulfur boiler fuels, such as kerosene or natural gas

## Management of Chemical Substances

#### Appropriate Management of Chemical Substances

When using chemical substances, we employ a system of examining substance toxicity before introducing them. We examine their physical properties and the details of usage plans, as well as legal requirements, conduct risk assessments, judge whether they can be used and educate workers. In fiscal 2019, augmenting the functionality our conventional system, we updated our chemical substance management system by introducing systematic risk assessment of chemical substances and centralized management of the most recent Safety Data Sheet (SDS) information. We are using this system to manage chemical substances appropriately.

#### Appropriate Management of Hazardous Waste

MITSUBISHI MOTORS manages 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>\*2</sup>.

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

\*2 This convention stipulates international frameworks and procedures related to restrictions on the movement of certain types of waste across national boundaries.

## 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. Based on the Act on Special Measures concerning Promotion of Proper Treatment of PCB Waste, we promote the correct processing of equipment that uses low-concentration PCB and waste that contains PCB, and we plan for disposal by the processing deadline.

 $\bigcirc$ : As planned  $\triangle$ : Delayed



## Preservation of Biodiversity

### FY2019 Materiality Targets and Results

Details of Main Initiatives	FY2019 Targets	Indicators	FY2019 Results	Self- Evaluation
Conduce ecosystem surveys and expand the scope of biodiversity preservation activities at domestic business sites	<ul> <li>Conduct ecosystem survey at the Kyoto Plant</li> <li>Plant and grow trees at Pajero Forest (Yamanashi Prefecture)</li> <li>Plant trees in the Philippines</li> </ul>	Conducted	<ul> <li>Conducted ecosystem survey at the Kyoto Plant</li> <li>Performed activities twice during the year</li> <li>Planned afforestation activities in the Philippines</li> </ul>	0

## **Basic Approach**

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

MITSUBISHI MOTORS 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 the company's products and business activities. We believe it is a priority to protect biodiversity so that we can continue to enjoy the blessings of biodiversity.

The company formulated the "MITSUBISHI MOTORS Group Guidelines for the Preservation of Biodiversity" in August 2010 and promotes conservation activities. None of our business sites in Japan are located in or adjacent to protected areas according to the Nature Conservation Act and prefectural codes. However, we have been progressively conducting surveys on ecosystems in order to understand the impact our business activities have on biodiversity. MITSUBISHI MOTORS is collaborating with OISCA to preserve forests in Hayakawa-cho, Yamanashi Prefecture, while interacting with the local community through volunteer employee activities. These activities aim to protect metropolitan water sources and spread awareness of the environment among our employees. We are also promoting preservation activities at affiliated companies 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.



## Ecosystem Surveys at Business Sites in Japan

Production of vehicles requires largescale 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 conduct 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 of past initiatives

			Kyoto Plant-Kyoto		
			Tokachi Research & Development Center	Tokachi Research & Development Center	
		Mizushima Plant	Mizushima Plant	Mizushima Plant	
	Okazaki Plant	Okazaki Plant	Okazaki Plant	Okazaki Plant	
Kyoto Plant-Shiga	Kyoto Plant-Shiga	Kyoto Plant-Shiga	Kyoto Plant-Shiga	Kyoto Plant-Shiga	
2013	2015	2017	2018	2019	

## TOPICS

#### Ecosystem Survey at the Kyoto Plant

The Kyoto Plant is located in the Kyoto metropolitan area, surrounded by numerous houses and factories. At first glance, the environment appears inhospitable to living things, but we conducted a survey from April through October 2019 to ascertain the impact of land use at the Kyoto Plant on the area's biodiversity and in an effort to preserve that biodiversity.

As a result of the survey, we discovered 367 varieties of flora and fauna at the Kyoto Plant. Although we discovered no rare species or alien species of a particularly urgent nature, we did find Ranunculus japonicas and Carex doniana, species that grow mainly in mountain villages but are unusual in urban areas. We assume the plants are a legacy of the mountainous environment that formerly surrounded the area.

Another factory stood on this location before the Kyoto Plant was established in 1944. At that time, the surrounding area was dotted with paddy fields. The area around the Kyoto Plant later urbanized, and the environment that supported this mountain flora gradually disappeared. However, some remnants of this greenery has survived on our premises despite the urbanization. As we have regularly cut the grass and otherwise managed the area, it has managed to survive to this day.

Accordingly, we believe the Kyoto Plant serves as a refuge where certain plants can survive locally. We consider this an important environment in terms of preserving regional biodiversity.

On the site of the Kyoto Plant, we work to preserve the region's biodiversity through such efforts as cultivating Asarum caulescens, a native species that is deeply rooted in the culture of Kyoto. Going forward, we will also nurture the connections between the Kyoto Plant and the natural surroundings we discovered during this survey. Through ongoing maintenance of the site's greenery, we will maintain biodiversity and strive to preserve the regional ecosystem. Unusual Flora Discovered in the City during Our Survey



Ranunculus japonicus



Carex doniana



## **Overseas Preservation Activities**

The overseas affiliate Mitsubishi Motors Philippines Corporation (MMPC) and the Department of Environment and Natural Resources (DENR), in accord with the Sustainable Integrated Area Development (SIAD), began a joint afforestation project in March 2018. This project aims to realize sustainable development that is essential for people in poverty, who are particularly susceptible to climate change, and local communities that have been left behind by society. The plan is to plant trees in a total area of 100 hectares in approximately five years in Luzon.

In the second phase of this project, in fiscal 2019 we signed a memorandum of understanding with DENR regarding land preparation, afforestation and farmland production on a 30ha site in Laguna Province.



Signing the Memorandum of Understanding