

Resource Recycling Initiatives



Progress in FY2023

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

Less than **0.5%**

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

<Related pages>

P12 MITSUBISHI MOTORS' Materiality
P15, P17 Materiality

P23 Environmental Plan Package

P26 Environmental Management

P120 Environmental Data Related to Products and

Business Activities:

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

Basic Approach

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

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

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

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

Recycling-Based Design and Development

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

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

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

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

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

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

TOPICS

Using Thermoplastic Resin

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

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

Main parts (indicated in green)
that use thermoplastic resin



Exterior



Interior


 Targets
 ● 12.2
 ● 12.5

Promote recycling of end-of-life vehicles

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

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

Reuse of Batteries Used in Electrified Vehicles

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

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

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

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

^{*1} Battery Cube: Registered trademark in Japan of Hitachi High-Tech Corporation

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

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

Response to Automobile Recycling Laws in Japan

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

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

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

In FY2023, our effective recycling rate for end-of-life vehicles^{*4} exceeded 99%, surpassing the government's stipulated effective recycling rate of 95%.

^{*2} Automobile shredder residue

^{*3} Automobile Shredder Residue Recycling Promotion Team established by 13 companies, including Nissan Motor Co., Ltd., Mazda Motor Corporation and MITSUBISHI MOTORS.

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

Recycling Promotion in the EU

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

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

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

*¹ "Directive of the European Parliament and of the Council on End-of- Life Vehicles"

Provision of Dismantling Information

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

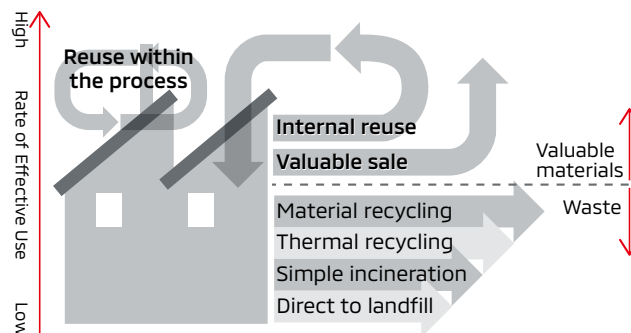
Response to the EU's Directives on Approval for Vehicle Models for Recyclability

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

Initiatives to Reduce Waste Generation and Reuse Resources in Production Activities

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

Effective Use of Resources and Recycling



Responses Related to the Plastic Resource Circulation Act

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

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

*² Scope of application: MITSUBISHI MOTORS CORPORATION

TOPICS

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

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

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



Newly installed screw-type sludge dewatering equipment

Achievement of Zero Direct Landfill Waste

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