Feature



## **Toward Achieving Carbon Neutrality**

#### Milestones on the Road to Achieve Carbon **Neutrality**

Amid growing calls for companies to curb climate change, in September 2022, MITSUBISHI MOTORS announced its intention of achieving carbon neutrality by 2050. Accordingly, we envisioned a scenario for achieving carbon neutrality by 2050, and examined the necessary responses to be taken as well as the directions we should pursue. Based on our consideration, as a milestone on the road toward achieving carbon neutrality by 2050, we revised the "Environmental Targets 2030" in February 2023, raising the CO<sub>2</sub> emissions reduction target of our business activities from the previous -40% compared with FY2014 to -50% compared with FY2018, setting a new target of 100% electrified vehicle sales ratio by FY2035\*1. Furthermore, in the new mid-term business plan "Challenge 2025" unveiled in March 2023, also includes "Working toward Carbon Neutrality" as one of the 3 major challenges, and we position it as a theme to be pursued by the entire company.

\*1 Please see page 31 for details about Environmental Targets 2030.

#### **Approaches toward Achieving Carbon Neutrality**

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

meet the energy situation, infrastructure development status, and customer needs of each country and region. In parallel with our electrification efforts, we will work to improve our fuel efficiency technologies for vehicles powered by internal combustion engines.

In our business activities, in addition to reinforcing energy saving measures as well as pursuing productivity-enhancing technologies, we will promote fuel conversion and the development and introduction of next-generation production technologies.

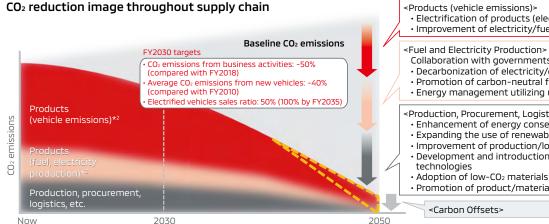
Furthermore, we will expand the use of renewable energy, centering on the introduction and expansion of solar power generation facilities at all major plants.

To achieve carbon neutrality throughout the supply chain, it is essential for us to reduce CO<sub>2</sub> emissions

in the production phase of raw materials and parts, as well as in the transportation of products. We will promote activities to visualize and reduce CO2 emissions in cooperation with our suppliers. At the product disposal stage, we will promote recycling of products and materials through the adaptation of low-CO<sub>2</sub> materials and recycling-conscious design.

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

In addition, beyond our supply chain, we will promote new mobility businesses that will contribute to achieve carbon neutrality across society, such as energy management and utilize electrified vehicles as well as used batteries.



\*2 Including new and stock vehicles

- · Electrification of products (electric vehicles, PHEV, etc.)
- Improvement of electricity/fuel consumption

Collaboration with governments and related companies

- Decarbonization of electricity/energy
- · Promotion of carbon-neutral fuels
- Energy management utilizing used batteries

Production, Procurement, Logistics, etc.>

- Enhancement of energy conservation measures
- Expanding the use of renewable energy
- Improvement of production/logistics efficiency
- Development and introduction of next-generation
- · Adoption of low-CO2 materials
- Promotion of product/material recycling



Sustainability Strategy Feature Governance



## MITSUBISHI MOTORS Taking up the Challenge of Becoming Carbon Neutral

## Pursuing the Possibilities Offered by **Electrified Vehicles**

MITSUBISHI MOTORS has positioned the mobility business as a potential fourth revenue pillar to complement its existing businesses in vehicle sales, financing (leasing) and after-market sales. We are working on new businesses utilizing vehicle data through connected functions and developing new businesses that contribute to carbon neutrality by utilizing connected functions to control vehicles remotely, such as charging electrified vehicle batteries at the optimal timing even when not in use. In addition, we have begun a demonstration project utilizing used batteries from secondhand vehicles. This can help reduce CO<sub>2</sub> emissions generated during the manufacture of products that use lithium-ion batteries, such as streetlights. The Company conducts all activities of this nature under its "With Partners" policy of collaborating with other companies and local governments.

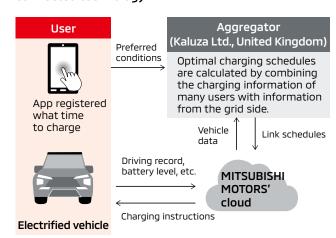
### Contributing to Carbon Neutrality through Energy Management

We are working with the Japan Post Group to use electrified vehicles in energy management, by using the batteries in vehicles and by utilizing used batteries to supply power during power outages caused by disasters, utilizing the Green Innovation Fund on these initiatives. Additionally, we are working with the city of Okazaki, in Aichi Prefecture, which has been designated as a leading region for decarbonization. We are promoting various initiatives that focus on

utilizing used batteries. Building on these experiences, we will expand our efforts to include many partners.

Furthermore, in partnership with Kaluza Ltd. of the United Kingdom we have developed a system that uses batteries and connected technology from our electrified vehicles to remotely control the charging of vehicles. This system allows vehicles to be charged at the optimal time without relying on expensive smart chargers. We will begin a demonstration project from FY2023. By charging vehicles during times when electricity rates are lower, we aim to reduce charging costs and reduce CO<sub>2</sub> emissions.

#### Remote charging system using batteries and connected technology



In FY2022, we began two demonstration projects at the Okazaki Plant employing used batteries from electrified vehicles.

#### Toward the Practical Application of Autonomous Street Lighting That Does Not Require External Power

We have begun working with MIRAI-LABO Co., Ltd., on the development of autonomous street lighting that uses battery modules. We installed the first unit at our Okazaki Plant in March 2023. 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. The aim is to for the lights to operate continuously without external power supplies, and a demonstration project is underway on the first unit at the Oka-

zaki Plant. Depending on test results, we hope to commence sales in FY2024, contributing toward carbon neutrality. We plan to introduce this system to local governments and factories that want to reduce the significant maintenance costs associated with traditional streetlights.



Autonomous street lighting at night

Sustainability Strategy Feature Governance



## MITSUBISHI MOTORS Taking up the Challenge of Becoming Carbon Neutral

### Proposing Two Concepts for Utilizing Energy Storage **Linked to Electrified Vehicle Chargers**

As part of our efforts to develop applications for used batteries, we have installed equipment for the demonstration of two concepts employing used batteries in conjunction with quick chargers and bidirectional chargers at the Okazaki Plant's M-Tech Lab\*1, which started the demonstration in January 2023.

Both systems utilize used battery modules. One is a storage system that connects to the power line of a quick charger and discharges stored power to reduce power peaks when fast-charging electrified vehicles. The other is a storage unit that connects to a bidirectional charger using the CHAdeMO\*2 standard, which can be used for V2H\*3 and other purposes. The unit can be charged even when the electrified vehicle is absent, facilitating efficient energy management. Moving forward, we will verify the effectiveness and

technical details of these concepts through demonstration tests. We aim to collaborate with manufacturers of energy storage equipment to introduce products at MITSUBISHI MOTORS Group sales outlets in the future.

- \*1 M-Tech Lab: Test equipment for a smart grid demonstration, our first initiative utilizing used batteries, began operating in April 2012.
- \*2 CHAdeMO: A guick-charging system for electric vehicles, a global standard that Japan led the way in standardizing in 2010
- \*3 Short for "vehicle to home," V2H is a system that enables electricity stored in a car's battery to be supplied to the home.



M-Tech Lab (conceptual diagram)



Demonstration facility for utilizing used batteries

# Electrified Vehicles and the Realization of a Resilient Society (DENDO Community Support Program)

We are promoting the DENDO Community Support Program, which uses the Company's plug-in electric vehicles (PHEV) to support local governments. After concluding disaster cooperation agreements with local governments, we provide support by delivering PHEV that can tap power they have generated themselves for use in emergencies. By combining the "power of PHEV to provide transportation" and the "power of electricity," we are making people's lives safer and more reliable.

#### **Examples of Activities**

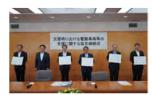
1. Disaster Cooperation Agreements with Municipalities In response to requests from local governments that have experienced power outages due to disasters, the Company, together with its affiliated dealers, is promoting efforts to conclude disaster cooperation agreements with local governments throughout Japan so that "OUTLANDER PHEV" and other electrified vehicles that can be used to supply electricity can be provided to disaster areas and evacuation centers as quickly as possible.

As of March 2023, we had cooperation agreements in 47 prefectures around Japan. We will continue to work with local governments to contribute to the peace of mind of local residents through the use of electrified vehicles.

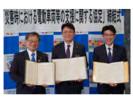
Commitment or Sustainability Strategy Feature Environment Social Governance ESG Data



## MITSUBISHI MOTORS Taking up the Challenge of Becoming Carbon Neutral



Tottori Prefecture (September 2022)



Naha, Okinawa Prefecture (March 2023)

# Agreements in Place with Municipalities around Japan (As of August 4, 2023)



◆ Recent agreement status (only in Japanese)

WEB https://www.mitsubishi-motors.co.jp/carlife/phev/dcsp/

\*1 Excluding two-party agreements between affiliated dealers and municipalities

## Participation in the City of Kawasaki's "Verification of Using Electric Vehicles (EVs) to Supply External Batteries for Artificial Respirators in the Event of Disaster"

MITSUBISHI MOTORS participated in a demonstration project in Kawasaki City, Kanagawa Prefecture, involving to dispatch electrified vehicles to the Kawasaki Comprehensive Rehabilitation Promotion Center where serves as a charging spot for medical equipment batteries, to prepare for long-term power outages in the event of a disaster. Project participants included medically vulnerable children who require daily care, such as those using artificial respirators, and their families. Participants had the opportunity to operate PHEV themselves to provide power\*2 to batteries used in the actual artificial respirators, confirming emergency response measures.

\*2 In this verification, dedicated batteries were removed from the medical devices for charging; they were not connected directly to the medical devices. This verification should not be construed as suggesting any change in interpretation of the warning statement in user manuals for the "OUTLANDER PHEV" and "ECLIPSE CROSS PHEV model," that the "100V AC Power Supply (1500W) (Cabin Equipment Section)" should "never be used for medical equipment."

No checks have been made except for the external batteries for the two types of artificial respirators used in the verification. External batteries of all artificial respirators have not been validated for use.

# 3. Signing Comprehensive Collaboration Agreements toward the Realization of a Carbon Neutral Society

We have signed comprehensive collaboration agreements with the cities of Kurashiki, in Okayama Prefecture, and Okazaki, in Aichi Prefecture, with a view toward realizing a carbon neutral society. As part of this effort, in March 2023 we signed a forest preservation activities collaboration agreement with the city of Okazaki. Such activities help preserve forests, which perform such functions as absorbing CO<sub>2</sub> and curtailing landslides.

Through these collaboration agreements, we will work together to build a decarbonized society centered on the spread of our electrified vehicles.

Key points of the collaboration

- (1) Working toward the realization of a carbon neutral society in the region
- (2) Promoting the spread of electrified vehicles
- (3) Fostering an understanding of how electrified vehicles are useful in decarbonization and disaster preparedness
- (4) In addition to the items mentioned above, contributing to objectives that are mutually agreed upon by both parties



Okazaki, Aichi Prefecture (June 2022)



Launch of a demonstration project for autonomous street lighting in cooperation with the city of Okazaki, Aichi Prefecture (April 2023)