
11. Environmental Protection Policies

(1) Initiatives regarding global environmental problems

[Environmental Principles] (Established in 1992, revised in 2005)

"Mazda Group aims to promote environmental protection and contribute to a better society, while maintaining harmony with nature in our business activities all over the world."

[Basic Policy]

- We will contribute to society by creating environmentally friendly technologies and products.
- We will use the Earth's resources and energy sparingly, and never overlook environmental considerations when conducting our business.
- We will play our part in improving the environment, hand in hand with local communities and society at large.

(Development of promotional framework)

April 1992: Mazda Global Environmental Charter adopted.

March 1993: "Environment-Related Activity Promotion Plan (Mazda Environmental Voluntary Plan)" formulated.

March 1993: "Mazda Global Environmental Conference" (Chair: President of Mazda Motor Corporation) established.

April 2005: "Mazda Global Environmental Charter" revised and expanded to the entire Mazda Group.

June 2005: Assigned senior executives to be in charge of environmental issues.

March 2007: Mazda's Long-Term Vision for Technology Development, 'Sustainable Zoom-Zoom', is announced.

(2) Environmental technology Initiatives

Mazda continues its efforts to develop environmentally-friendly technologies, and, together with our customers, will strive to attain a "sustainable society" in the future by contributing toward the achievement of a better global environment.

① Development of alternative fuel vehicle

Mazda is engaged in the development of vehicles which can run on new types of fuel, or alternatives to gasoline, such as hydrogen and electricity.

- Hydrogen rotary engine
- RX-8 Hydrogen RE
- Premacy Hydrogen RE Hybrid
- Tribute Hybrid

② Low fuel consumption and low emissions

Mazda introduces technologies that bring the joy of driving, but is in harmony with great fuel economy and clean emissions..

- Direct Injection gasoline engine
- Smart Idling Stop System
- Clean diesel

③ Biotechnology

Using plant-derived materials, consumption of fossil fuels can be reduced so that the CO₂ emissions, one of the causes of global warming, can be reduced.

- Bioplastic

④ Promotion of vehicle recycling

Mazda removes the paint from reclaimed bumpers with unique technologies, which raises the recycle vehicle

- Bumper to bumper recycle

⑤ Reducing the environmental impact of production

Mazda developed technologies to significantly reduce CO₂ and VOC emissions and waste during production process, and also reduced the energy necessary for production.

- Near dry machining
- Three-Layer Wet Paint System
- High throwing power e-coating

Overview of the Mazda Green Plan 2010

Initiatives	FY2010 targets	FY2006 results
1. Creation of environmentally sound technologies and products		
Cleaner exhaust emissions	Japan—Achieve the SU-LEV (★★★★) standard in most of its passenger vehicles.	Achieved SU-LEVs (★★★★) in 90.5% of passenger vehicles.
	United States—Promote introduction of low-emission vehicles that meet Tier2/LEV2 regulations.	All vehicles conformed to Tier2/LEV2 regulations.
	Europe—Develop and launch next-generation clean diesel vehicles.	New diesel engines under development.
Improved fuel economy	Japan—Continue to meet the fuel efficiency standards for 2010 for all weight classes of passenger vehicles and promote further improvements in fuel economy for the Japanese market.	The 2010 fuel efficiency standards were achieved for all passenger vehicles except for the 1.5-ton passenger vehicle class.
	United States—Continue to meet the Corporate Average Fuel Economy (CAFE) regulations, which are expected to become stricter in the future.	CAFE regulations achieved.
	Europe—Promote reduction of the corporate average CO ₂ emissions.	Reduced CO ₂ emissions through such methods as introducing minor changes on the Mazda3.
Vehicle weight reduction	Achieve Mazda's target vehicle weight.	By optimizing the body structure of the new Demio and using high tensile steel, among other measures, achieved average 100kg weight reduction from previous models.
Vehicle noise reduction	Meet Mazda's voluntary standards for noise reduction, which are stricter than the latest noise regulations.	The vehicle noise reduction level for all vehicles, such as the new CX-7, met Mazda's voluntary standard figures.
Development of alternative fuel vehicles	Develop and introduce more vehicles equipped with the hydrogen rotary engine.	Leased 5 of the RX-8 Hydrogen RE cars (total 7 vehicles leased).
	Continued hybrid vehicle development.	<ul style="list-style-type: none"> • Provided 26 Tribute Hybrid vehicles to firefighting organizations in the United States (cumulative total: 36 vehicles). • Displayed the new Tribute Hybrid as a reference exhibit in the January 2007 North American International Auto Show.
	Promote development of alternative fuel technologies for biomass fuels and synthetic fuels.	Launched vehicles compatible with B5 and E10 fuels.
Reduce the use of environmental substances of concern	Eliminate hexavalent chromium.	Eliminated in February 2007.
	Eliminate lead, mercury and cadmium, except for exempt parts.*1	Eliminated, except for exempt parts.
	Reduce the amount of refrigerants used in car air conditioners: reduce the use of hydro fluorocarbons (HFCs) by 20% or more from the FY1995 level.	Achieved reductions in the new Demio and other models.
	CFC alternatives: Promote development and application of new alternative air-conditioner refrigerants less harmful than CFCs, such as HFC134a.	Promoting development of new environmentally friendly air-conditioner refrigerants.
Reduce amount of volatile organic compounds (VOCs) in vehicle cabin space	Conform with the indoor aerial concentration guideline values stipulated by the Japan Ministry of Health, Labour and Welfare in all all-new models.	Developed VOC reduction technologies in the new Demio that meet the stipulated values.
End-of-life vehicle recycling (at the development stage)	Promote the development of bioplastics that have sufficient quality, strength and heat resistance to be used for interior parts.	Developed technologies for use in the Premacy Hydrogen RE Hybrid.
	Develop state-of-the-art bumper recycling technology and to use recycled materials for new vehicle parts.	Greatly expanded use of recycled materials on new models.
	Create new vehicles that are easy to disassemble and recycle.	New CX-7 and other models achieved a recyclability ratio of 90% or more.*2

*1 Exempt parts: Lead solder, batteries and free-cutting steels using lead; liquid-crystal displays, discharge headlamps and other parts using mercury

*2 Calculated based on the Japan Automobile Manufacturers Association's Guidelines on the Definition and Calculation of Recyclability Ratios in New Models (1998)

Initiatives	FY2010 targets	FY2006 results
2. Corporate activities to conserving resources and energy		
Reduction of waste substances	Eradicate all landfill waste from domestic production operations.	Direct landfill waste was reduced to less than 0.3% (232 tons/year) of FY1990's figure.
	Reduce the consumption of packaging and wrapping materials by 30% from the FY1999 level.	Reduced the consumption of packaging and wrapping materials by 26.2.% from the FY1999 level.
Prevention of global warming	Cut domestic production operations' CO ₂ emissions by 10% compared with FY1990.	Achieved 21.6% CO ₂ emissions cut compared to FY1990.
	Cut logistics operations' CO ₂ emissions by 15% compared with FY1999.	Achieved 14% CO ₂ emissions cut from logistics operations compared to FY1999.
Vehicle recycling promotion	<ul style="list-style-type: none"> • Achieve 2015 regulation values ahead of time. • Promote further increases in the ASR recycling ratio (the total vehicle recycling ratio). 	ASR recycling ratio of 70%; total vehicle recycling ratio of 95% achieved.
	Collect more waste bumpers from Mazda dealerships in Japan.	Collected 56,851.
3. Corporate activities in pursuit of a clean environment		
Reduce VOC emissions	Reduce VOC emissions to 30 g/m ² of coated surfaces.	VOC emissions were reduced to 32.7 g/m ² of coated surfaces.
4. Working with others in our business activities to create a better environment		
Promotion of cooperative activities with suppliers	Promote the creation of environmental management systems (EMS) at suppliers; maintain and improve EMS for suppliers.	<ul style="list-style-type: none"> • 100% establishment of EMS at suppliers. • 71% of local automotive-related suppliers who are members of business associations have established EMS.
Promotion of environmental protection activities by dealerships	Create EMS in consolidated dealers (18 companies) from 2007; progressively extend to other Mazda and Mazda Anfini dealerships.	Completed expansion of MECA21 to all dealerships.
Promotion of environmental protection activities with parts dealers	Introduce Mazda EMS at Mazda parts dealers (13 companies).	Started drafting EMS manuals at 2 pilot companies.
Promotion of environmental education activities	<ul style="list-style-type: none"> • Vigorously disseminate environmental information to raise employees' environmental awareness. • Host and positively participate in environmental events. • Hold environmental events involving other Group companies. 	<ul style="list-style-type: none"> • Thorough "Cool-Biz" Policy. • President's Message. • In-house campaign to design and distribute "Idling Stop" sticker. • "Stop Idling" publicity boards placed at car parks (Yokohama).
5. Creating a better environment in cooperation with local communities and society		
Promotion of communications with society as a whole	Host and positively participate in environmental events.	<ul style="list-style-type: none"> • Held environmental exhibition at Mazda Museum. • Established permanent environmental exhibit corner. • Exhibited at the EcoCar World and the Hiroshima 'Stop Global Warming Fair'. • Renewed official WEB site.
Promotion of social contribution activities	<ul style="list-style-type: none"> • Participate actively in voluntary neighborhood clean-up activities. • Dispatch lecturers for environmental education. 	<ul style="list-style-type: none"> • A total of 3,141 volunteers took part in neighborhood clean-up activities. • Dispatched lecturers for environmental education.