

MONOZUKURI

(ENGINEERING AND MANUFACTURING)

Mazda is creating unique value through *Monozukuri* (engineering and manufacturing) initiatives centered on the reduction of its environmental impact to zero (pursuit of carbon neutrality, promotion of electrification, resource circulation, and disclosure based on the recommendations of the Task Force on Climate-related Financial Disclosures [TCFD]), human-centric research, the joy of driving, and the provision of safety and peace of mind (safety and quality).

PASSION: THE JOY OF DRIVING

No matter how the times or people's lives and values change, Mazda believes that emotion in motion is a constant. As the Company seeks to contribute to a more sustainable mobility society by working toward carbon neutrality and to realize an automotive society that offers safety and peace of mind, Mazda will strive to continue to deliver the joy of driving in a manner that is matched to the times.

In its *Monozukuri* initiatives, the Company will place emphasis on people, examine their desires and emotions, and create vehicles that link emotion in motion and uplifting experiences.

Special Feature / TOPIC

- P37 Creation of New Customer-Oriented Value
- Establishment of Electrification Business Division (e-Mazda)
- P41 Research on Microalga-Derived Biofuel and Carbon Capture Technologies
- P41 Cutting-Edge Battery Technology Research and Development

FOSTERED STRENGTHS

Human-Centric Research for Better Understanding Emotions

Mazda emphasizes human-centric research to the same degree as it emphasizes technology development with the aim of connecting human characteristics with technologies to better provide the joy of driving to everyone. The Company's designs also incorporate elements that express that joy of driving.

Building Block Concept for Layering Moving Technologies

Mazda has created and steadily evolved the Building Block concept for layering technologies over the long term to allow it to deliver both the joy of driving and outstanding environmental and safety performance.

Culture of Co-Creating Moving Products

Mazda has forged ahead with cross-departmental co-creation activities that leverage its strengths to achieve high-efficiency engineering and manufacturing. Not limiting these efforts to systems and processes, the Company is developing a streamlined, cross-departmental system by cultivating a culture of development and production utilizing co-creation from the initial concept stage.

FUTURE INITIATIVES

Evolution of Human-Centric Research and Deepening of Understanding to Provide Uplifting Experiences

Mazda is further evolving its human-centric research in order to develop a better understanding of people's emotions. In addition to conventional research that focuses on the elements of workings of the human body including build, strength, and capabilities, Mazda is looking into areas connected to brain activity and emotions. In doing so, the Company is attempting to elucidate how different sensory stimuli are tied to different emotions.

Evolution and Enhancement of Building Block Concept for Layering Technologies to Provide Uplifting Experiences

Electrification technologies are becoming an indispensable part of efforts to achieve carbon neutrality. For this reason, Mazda is advancing its multi-solution strategy. Under this strategy, the Company is working to efficiently develop and produce the hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), and ultimately battery electric vehicles (BEVs) of the future that everyone will want to drive, through which they can experience a new age of Mazda design and the joy of driving.

Evolution and Enhancement of Co-Creation Using Digital Technologies to Accommodate Diversifying Experience Value

Great progress is being made in digital technologies, and the development of the electricity and electronic architecture needed to support these technologies is also rapidly increasing in scale. In response to these trends, Mazda is effectively applying software technologies while working with partners including other automotive manufacturers and suppliers to develop highly effective platforms with the minimum necessary investment.

MESSAGE FROM EXECUTIVE OFFICER



Naohito Saga
Executive Officer
In charge of
R&D Strategy Planning,
Carbon Neutrality
and Cost Innovation

As an automobile manufacturer, Mazda is obligated to help address the global issues of pursuing carbon neutrality, recycling resources, and otherwise combating global warming. We also must contribute to the realization of a society that offers safety and peace of mind. These are obligations we should seek to fulfill while creating new value. Faced with a once-in-a-century period of change, Mazda is undertaking a steady transition in preparation for the coming era. As we move forward with this transition, I think it will be important that we don't try to change everything, but rather transform ourselves while protecting those elements that should be preserved. Examples of elements of Mazda that should be preserved include the strength of our human-centric research and our Building Block concept. Conversely, areas where we should pursue change include the focus of our *Monozukuri* activities. Specifically, as digital technologies evolve, it will be crucial for us to focus more on software and services than on vehicles and other tangible items. I envision an approach in which human-centric research is conducted to pinpoint the value to be provided and then software control technologies are utilized to determine how specific items should be positioned within a vehicle. We could then apply technologies layered through the Building Block concept when creating the actual physical vehicle. However, this approach would require us to practice cross-departmental co-creation to an even greater degree. One venue through which we are promoting such co-creation is the Electrification Business Division, casually referred to as "e-Mazda," which was established in 2023. At the same time, it is vital to maximize the potential of all of our people. For this purpose, we are expanding the scope of prior model-based development and research activities, and have also begun actively adopting AI. These initiatives should enable us to move forward with the development of carbon capture, next-generation battery, and other distinctly Mazda technologies while delivering emotion in motion in any era.

SPECIAL FEATURE

CREATION OF NEW CUSTOMER-ORIENTED VALUE
ESTABLISHMENT OF ELECTRIFICATION BUSINESS DIVISION (e-MAZDA)



All members of e-Mazda (Center: Ryuichi Umeshita, Managing Executive Officer, in charge of Electrification Promotion)

As stated on the previous page, Mazda's future tasks and initiatives will be framed by its quest to deliver uplifting experiences. To accomplish this objective, the Company will be moving ahead with research on human-engineering mechanisms, the Building Block concept for layering technologies, and co-creation through the utilization of digital technologies. One facet of our efforts to accelerate progress on this front was the establishment of the Electrification Business Division (casually referred to as "e-Mazda").

PROMOTION OF CROSS-ORGANIZATIONAL CO-CREATION

Since the establishment of e-Mazda in November 2023, we have continued to move forward with a

rapid shift in resources toward this organization to allow for the quick advancement of its initiatives. This move resulted in the staff of this division growing to around 300 people in a mere six months.

Mazda is committed to providing seamless experiences that go beyond the products that are its vehicles to include sales, ownership, and all other areas of the vehicle life cycle. Brisk co-creative action aimed at achieving this goal is commonplace at e-Mazda. This type of coordination is made possible by its staff of individuals with diverse insight and experience gathered from all of the Company's 22 divisions, resulting in e-Mazda housing representatives from development as well as from sales, marketing, production, and quality assurance divisions. The following

are comments from some of the members of e-Mazda's staff.

"There are major benefits to be had by having representatives from various divisions gather in one place. This close proximity makes it possible to confirm a person's progress or ask a question immediately. I feel that this type of close-knit coordination is a strength that is unique to a smaller player like Mazda, and something our rivals cannot mimic."

"At e-Mazda, all members of a project gather together and work in a single room. The result is a sense of speed that eclipses that of the prior method, which was primarily centered around online meetings. For example, when engineers need to talk about something, everyone can quickly assemble in front of a whiteboard to take part in a lively exchange of words and sketches. This new environment has proved to be incredibly stimulating for me, especially considering I was only really involved in online meetings during the time of the COVID-19 pandemic."

The activities of e-Mazda are not constrained to Hiroshima. Rather, members of this division team up with overseas sales companies to pursue greater levels of purchasing and ownership experience value for customers around the world. Through such teamwork, the division engages in collaboration with a

wide range of partners, including those from other industries. e-Mazda is thereby consolidating the wisdom of both internal and external partners to create unprecedented new value.

DEVELOPMENT OF NEW TYPES OF ORGANIZATIONS AND WORK PROCESSES

To facilitate effective initiatives by e-Mazda while maximizing the motivation of team members, Mazda is undertaking the development of new types of organizations and work processes. Specific measures to this end include massive reductions in the number of hierarchical levels and the removal of barriers separating organizations. The Company thereby aims to foster an organizational culture of openness and communication to contribute to faster decision-making. To develop new work processes while supporting such organizational culture reforms, Mazda will evolve its digital technology-powered co-creation efforts through means

such as redesigning the IT tools that underpin work processes and practicing integrated information management. At the same time, the Company will move forward with a wide range of other reforms including trial and official introductions of new personnel systems designed to encourage team members to tackle new challenges.

TARGETED VALUE PROPOSITION

The electrification provisions of the Management Policy up to 2030 include plans to introduce battery electric vehicles (BEVs) using Mazda's first dedicated EV platform in 2027. There is no doubt that many drivers have concerns with regard to BEV ownership and use. To ensure that as many customers as possible are able to choose BEVs with confidence, Mazda seeks to ensure that its BEVs meet the necessary standards in terms of basic performance and practicality based on its Building Block concept for layering its accumulated electrification technologies. In addition, human-centric research will be

advanced to allow the Company to provide vehicles that deliver the striking designs and joy of driving characteristic of Mazda cars, even in the era of BEVs.

Together with its partners around the world, Mazda is working to provide consistent experiences that encompass everything from stores and websites to charging stations. The Company aspires to offer a unique sense of hospitality through all of its touchpoints with customers, including physical touchpoints like the stores that offer the experiences of sales and services and digital touchpoints such as websites and the My Mazda app. This expression of *Omotenashi* is anticipated to help alleviate the concerns and stress of customers when purchasing a Mazda vehicle and throughout their ownership. Moreover, this diligence will help us provide timely responses to the needs of individual customers and to expand our lineup of products and services that heighten the value of Mazda ownership.

In these manners, e-Mazda is diligently creating new value in terms of products as well as in various other areas related to customer experiences. Based on the belief that delivering uplifting experiences to customers requires employees to first feel empowered in their work, our team is uniting to tackle new challenges with the vision of shaping a new Mazda.



Members of e-Mazda staff engaged in co-creation with overseas sales company

e - MAZDA

PURSUIT OF ZERO ENVIRONMENTAL IMPACT

CARBON NEUTRALITY AND ELECTRIFICATION INITIATIVES

SPECIFICATION OF MEDIUM-TERM TARGETS AND ROAD MAP TOWARD ACHIEVING CARBON NEUTRALITY

Mazda has specified its medium-term targets and road map toward achieving carbon neutrality at its plants and operational sites in Japan, which account for approximately 75% of its global total CO₂ emissions, as part of its efforts to achieve carbon neutrality at all Mazda plants globally by 2035 and across the whole supply chain by 2050. The medium-term goal is to reduce, by FY March 2031, its CO₂ emissions by 69% in comparison to the level in FY March 2014, and to achieve a usage

rate of electricity generated from non-fossil fuel sources of 70% or more by the same year.

Mazda has defined three pillars for its efforts to achieve carbon neutrality—energy conservation, shifting to renewable energy, and introducing carbon neutral fuels. As indicated below, the Company has also specified the road map and the initiatives related to these pillars for its domestic plants and operational sites, which have a strong effect on its ability to achieve carbon neutrality.

For more information, please refer to the following news release.
<https://newsroom.mazda.com/en/publicity/release/2023/202312/231214a.html>

Details of Initiatives

	Approach	Major initiatives contributing to the achievement of our medium-term goal for FY March 2031 (Scope 1 and Scope 2)
Energy conservation	Mazda is working steadily to achieve improvements in all of these areas, including production and indirect departments such as infrastructure	<ul style="list-style-type: none"> Accelerating facilities investment through the introduction of Internal Carbon Pricing (ICP) Improvement of productivity, quality, and operational efficiency (operation improvement, simulation verification, etc.) Improve efficiency of our facilities (switch lights to LEDs, introduce inverter control into motor-driven facilities, improve efficiency of air conditioning units etc.) Technical innovation (improve efficiency of paint spraying process, reduce temperature of heat treatment furnace etc.)
Introduce renewable energy	Achieve decarbonization of power generation within our plants, and procure power from third parties	<ul style="list-style-type: none"> Switch fuel for Hiroshima plant's power source from coal to liquid ammonia Make use of corporate power purchase agreement concluded with local parties in each region Purchase renewable energy and other non-fossil fuel-derived energy from power companies
Introduce carbon neutral fuels	<ul style="list-style-type: none"> Introduce carbon neutral fuels for in-company transportation needs Make use of CO₂ credits, etc. 	<ul style="list-style-type: none"> Switch fuel used for in-company transportation to next-generation biofuel, etc. Acquire J-Credits generated in the Chugoku region (forestry CO₂ absorption)

CONCLUSION OF SALES AND PURCHASE AGREEMENT FOR J-CREDITS GENERATED BY FORESTS IN THE CHUGOKU REGION WITH MITSUI

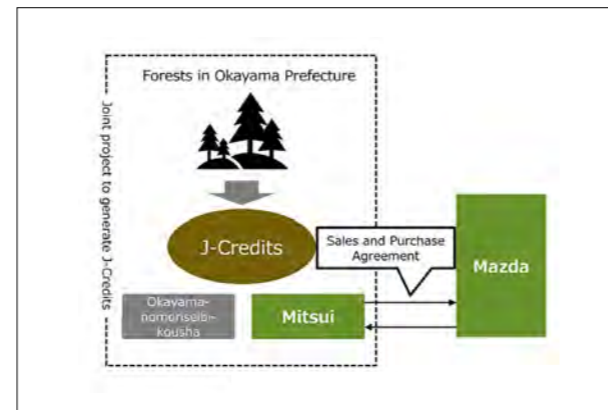
Mitsui & Co., Ltd. and Mazda have concluded a sales and purchase agreement covering J-Credits generated through appropriate forest management that target the creation of a carbon-neutral society. The credits are certified by the Japanese government under the J-Credit Scheme.

The credits will be generated through a joint project^{*1} between Mitsui and Okayamanomriseibikousha.^{*2} Digital technologies employed in Mitsui's Forests in Japan, including aerial surveying and satellite data, and the associated expertise will be used to monitor forests to generate J-Credits at applicable forests. Some of the income provided by the credits will be used through the joint project to develop and manage forests and enhance natural disaster preparedness in order to promote sustainable forestry activities. As the first company to use these credits, Mazda will purchase credits based on the absorption of CO₂ through forest conservation over an eight-year period from FY March 2023 to FY March 2030.

Mazda decided to purchase the J-Credits to contribute to CO₂ absorption and decarbonization in the Chugoku region, where the Company is based, while also protecting and nurturing regional forest resources, developing industries, and maintaining employment.

*1 The Okayamanomriseibikousha Forest Management Project

*2 A public interest incorporated association engaged primarily in profit-sharing forestry activities in Okayama Prefecture



Structure of the Credit scheme

ESTABLISHMENT OF AND FUND PROCUREMENT THROUGH SUSTAINABLE FINANCE FRAMEWORK

Mazda has established its sustainable finance framework for use in procuring funds to promote sustainability-related initiatives. In March 2024, transition loan agreements were concluded with three financial institutions based on this framework, and the Company has also determined conditions for issuing transition bonds with its main securities firm. The funds procured through this framework will be used for the development and production of battery electric vehicles (BEVs) and plug-in hybrid electric

vehicles (PHEVs) as well as for promoting carbon neutrality at Mazda factories worldwide and for other projects that meet the criteria defined by the framework.

Moreover, the sustainable finance framework utilizes the Technology Roadmap for "Transition Finance" in Automobile Sector released by the Ministry of Economy, Trade and Industry. This resulted in Mazda becoming the first domestic automobile manufacturer to be selected for the ministry's climate innovation finance promotion project. The Company was also the first Japanese automobile manufacturer to procure funds through transition finance.

ADVANCEMENTS UNDER MULTI-SOLUTION APPROACH

Unveiling of Two New EVs at Beijing International Automotive Exhibition 2024

In April 2024, Mazda unveiled, for the first time, the all-new Mazda EZ-6 electrified vehicle and the Mazda 創 Arata, a design electrified vehicle concept model, at Beijing International Automotive Exhibition 2024.

The Mazda EZ-6 is the first of a series of new electrified vehicles (new energy vehicles) developed and manufactured by Changan Mazda Automobile Co., Ltd. in cooperation with Chongqing Changan Automobile Co., Ltd. and Mazda. This vehicle will be launched in China by the end of 2024. In addition, the concept model Mazda 創 Arata, unveiled at the same time, is scheduled to be mass produced as the second in this series of new electrified vehicles and launched in the Chinese market by the end of 2025. In China, where electrification is rapidly advancing, Mazda will expand its lineup of electrified products to win the favor of a wider range of customers.



MAZDA EZ-6



MAZDA 創ARATA

Declaration by Subaru, Toyota, and Mazda of Commitment to New Engine Development for the Electrification Era in Pursuit of Carbon Neutrality

In May 2024, Subaru Corporation, Toyota Motor Corporation, and Mazda announced their commitment to developing new engines tailored to electrification and the pursuit of carbon neutrality.

In announcing this declaration, Mazda President Masahiro Moro commented, "We will continue to offer customers exciting cars by honing internal combustion engines for the electrification era and expanding the multi-pathway possibilities for achieving carbon neutrality. Given the rotary engine's compatibility with electrification and carbon-neutral fuels, Mazda will

continue to develop the technology through co-creation and competition to ensure it can contribute broadly to society."



PURSUIT OF ZERO ENVIRONMENTAL IMPACT

CARBON NEUTRALITY AND ELECTRIFICATION INITIATIVES

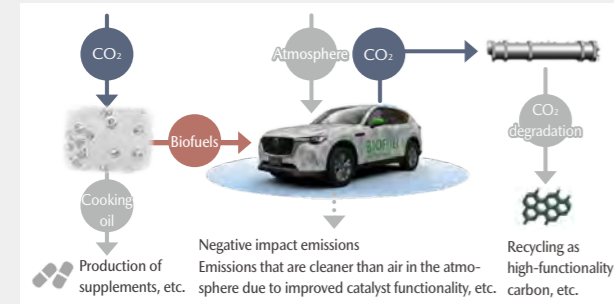
TOPIC

Interview with Toshihide Yamamoto, General Manager of Technical Research Center, about Cutting-Edge Research on Carbon Neutrality and Electrification Technologies

Toshihide Yamamoto
General Manager,
Technical Research Center



Research on Microalga-Derived Biofuel and Carbon Capture Technologies

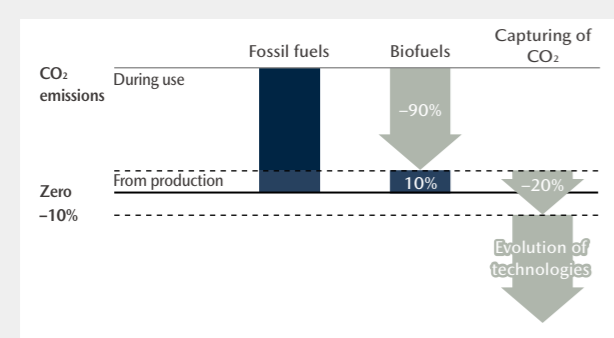


Creation of environmental integration ecosystem

Theoretic Ability of Biofuels to Prevent Increases in CO₂ in the Atmosphere

Microalgae and other biofuel materials absorb CO₂ as they grow via photosynthesis, and the CO₂ emitted during the combustion of these fuels is no more than the CO₂ absorbed through this process. Accordingly, in theory, biofuels do not contribute to increases in CO₂ in the atmosphere and could therefore be considered to be carbon neutral.

CO₂ Emissions Associated with Energy Use during Biofuel Production

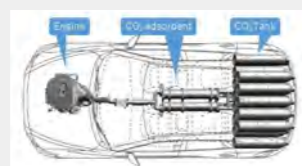


Carbon negative policy

The oils produced by microalgae must be processed before they can be used as fuel. This production process requires energy, and CO₂ may be emitted to generate this energy. The amount of CO₂ emitted for energy generation is estimated to be around 10% that emitted during fuel combustion. Accordingly, biofuels contribute to a 90% reduction in total CO₂ emissions when compared to fossil fuels.

Meaning of Capturing CO₂ Emitted during Biofuel Combustion

Direct air capture is a decarbonization technology used to capture CO₂ directly from the air. This technology could also be applied to internal combustion engines, which emit CO₂ and therefore have greater concentrations of CO₂ than the air and would thus allow for more efficient capture of CO₂. If even 10% of the CO₂ emitted during the combustion of biofuels,



Carbon capture mechanism

which, in theory, do not increase the amount of CO₂ in the atmosphere, could be captured, it would offset the CO₂ emitted during the production process, making these fuels completely carbon neutral. Moreover, larger amounts of carbon capture would mean that, in theory, vehicles using biofuel could contribute to greater reductions in the amount of CO₂ in the atmosphere the more they drive, becoming effectively carbon negative. This potential for decarbonization is something that is unique to internal combustion engines and not found in battery electric vehicles (BEVs).

Future Challenges

As Mazda's carbon capture technology entails capturing CO₂ from exhaust gas, there is a need to lower the temperature of exhaust gas to a level at which CO₂ can be captured more efficiently and then to store and later extract the captured CO₂. However, this creates challenges that will need to be addressed, such as the increase to vehicle weight or the decrease to in-vehicle space that could result from the introduction of additional equipment to perform these functions. It is also necessary to find a use for the captured CO₂. Possible uses for the automotive industry include use in photosynthesis processes for cultivating microalgae for biofuel production or as a raw material for creating e-fuel, a type of synthetic fuel. Going forward, Mazda is committed to providing the joy of driving in a manner that contributes to decarbonization.

Cutting-Edge Battery Technology Research and Development

Mazda is engaged in a project for developing large-capacity, high input and output next-generation lithium-ion batteries that has been selected for support by the Green Innovation Fund. In this project, Mazda is seeking to improve battery performance and reduce costs while also achieving higher performance levels and conserving materials from material phase, and achieving practical application of sophisticated recycling technologies.

Reason for In-House Battery Research and Development

Mazda is applying the manufacturing capabilities it has fostered in relation to automobiles to the development of EV technologies in order to achieve efficient development and thereby provide new value to customers and society in the form of distinctive EVs and plug-in hybrid electric vehicles (PHEVs).

Schedule and Investment

After an eight-year R&D period, Mazda plans to commercialize its battery technologies around 2033. A total of ¥14.0 billion is expected to be needed to fund all of the Company's business activities and research and development costs up until FY March 2030, and Mazda will be responsible for providing approximately ¥4.0 billion of this amount.

R&D Systems and Division of Roles

Based on the commitment of management, Mazda has established a number of R&D teams in a dedicated organization. Assembling research and manufacturing staff in a single organization allows for efficient model-based development. Moreover, the Company partners with companies, universities, and other external organizations and adopts systems and divisions of roles that take advantage of the characteristics of these partners to promote efficient development.

For more information, please refer to the following website (in Japanese only).
<https://green-innovation.nedo.go.jp/pdf/next-generation-storagebatteries-motors/item-001-1/vision-mazda-002.pdf>

RESOURCE CIRCULATION

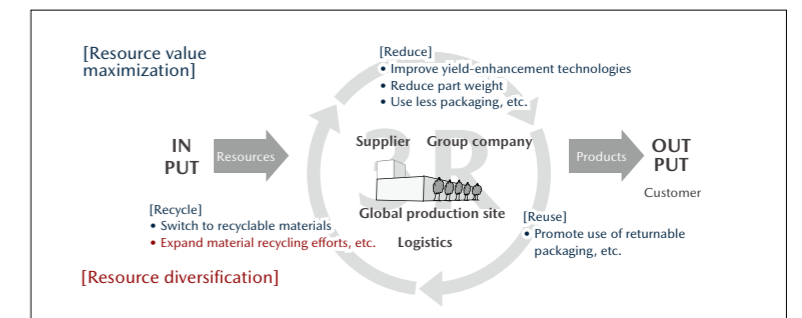
GLOBAL PURSUIT OF ZERO EMISSIONS AND EXPANSION OF RESOURCE RECYCLING

The Mazda Group continues to expand its global efforts to achieve zero emissions and recycle resources through such means as efficiently using resources to prevent waste and promoting the 3Rs.

Material-Related Targets

2030	2050
Achieve zero emissions in manufacturing and logistics processes on a global basis	Achieve zero emissions through expanded resource recycling initiatives in manufacturing and logistics processes on a global basis
<ul style="list-style-type: none"> Reduce the ratio of landfill waste to 0.1% or lower of the total waste generated (zero emissions achieved by Mazda Group companies in Japan in 2018) 	<ul style="list-style-type: none"> Break away from dependence on thermal recycling and other combustion-based recycling methods Expand material recycling

Vision



PRODUCTION AND LOGISTICS INITIATIVES

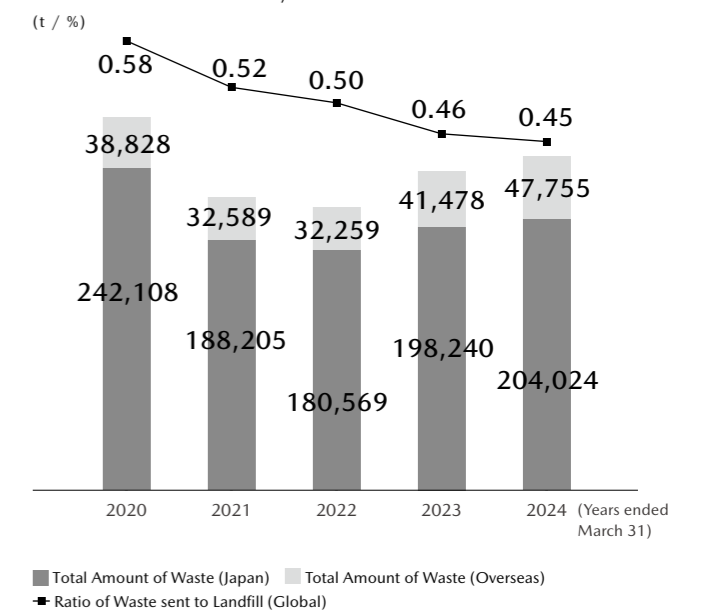
Maintenance of Zero Landfill Waste Emissions

Mazda is promoting reductions in the volume of manufacturing by-products and waste, more rigorous sorting of waste, and recycling at its four principal domestic sites.^{*1} The Company has thereby been able to maintain zero landfill waste emissions from FY March 2009 to FY March 2024. The Company has also been recycling materials to ensure that packaging materials used in the vehicle and transmission assembly processes can be reused as raw materials through stricter sorting of packaging by material and quality.

Furthermore, Mazda has been proactively utilizing recycled materials for the plastic pallets used to transport parts overseas. Currently, the Company is examining the possibility of reusing plastic waste generated at its plants as a recycled material for the production of plastic pallets.

*1 Head Office (Hiroshima); Miyoshi Plant; Hofu Plant, Nishinoura District; and Hofu Plant, Nakanoseki District (including non-manufacturing areas such as product development)

Total Amount of Waste / Ratio of Waste Sent to Landfill



PRODUCT AND TECHNOLOGY DEVELOPMENT INITIATIVES

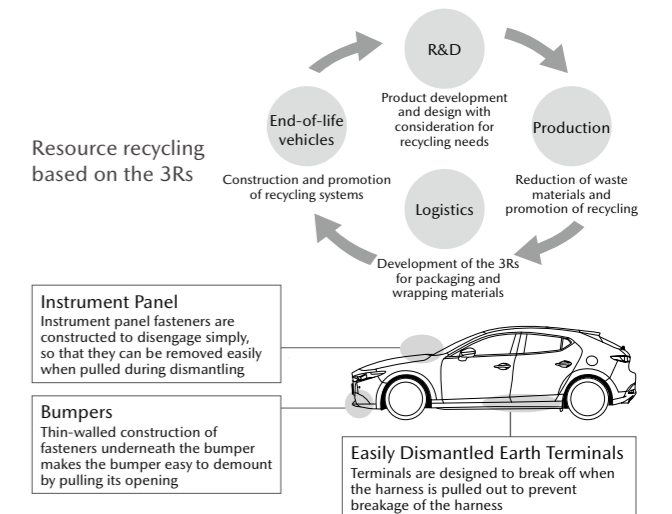
Product Development and Design with Consideration for Recycling Needs

Many limited resources, such as steel, aluminum, plastics, and rare metals, are used to manufacture vehicles. Mazda is incorporating 3Rs design into all vehicles currently under development to increase the recyclability of its new vehicles.

Specific Initiatives

- Research into vehicle design and dismantling technologies that simplify dismantling and separation to make recyclable parts and materials easier to remove
- Use of easily recyclable plastics, which constitute the majority of automobile shredder residue (ASR)^{*2} by weight

*2 ASR refers to the residue remaining after the crushing or shredding of what is left of the vehicle body (following the removal of batteries, tires, fluids, and other parts requiring appropriate processing as well as the removal of engines, bumpers, and other valuable parts) and separating and recovering metals.



PURSUIT OF ZERO ENVIRONMENTAL IMPACT

—RESPONSE TO TCFD

In May 2019, Mazda declared its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)^{*1} and joined the TCFD Consortium,^{*2} showing its commitment to strengthening its efforts to address climate change. For the latest information disclosed based on TCFD recommendations, please refer to the following document.

<https://www.mazda.com/en/sustainability/environment/tcfd/>

GOVERNANCE

Transition Risks
(Management System for Promoting Carbon Neutrality)

Taking on the challenge of achieving carbon neutrality by 2050, Mazda has assigned a director to oversee its decarbonization strategy and executive officers to be in charge of carbon neutrality. Under the leadership of a department charged with promoting carbon neutrality strategies, a specialized team made up of members from multiple departments formulates strategies and implements plans aimed at achieving carbon neutrality.

Reports pertaining to carbon neutrality strategies are provided to and discussed at the Executive Committee Meeting and meetings of the Board of Directors, which are attended by the president.^{*3} Also, issues concerning climate change and other sustainability-related matters are reported to the Board of Directors in a timely and appropriate manner. In addition, in order to facilitate the Companywide implementation of plans, Mazda has adopted a management approach that integrates carbon neutrality initiatives into the existing ISO 14001-compliant environmental management system.

Physical Risks
(Emergency Risk Management Structure)

Measures for responding to torrential rains, an acute physical risk associated with climate change, is managed as part of our business continuity plan (BCP) through our emergency risk management structure. In addition, in response to concerns about storm surges and water depletion, which are chronic physical risks, the Company is promoting reinforcement of seawall infrastructure and water resource conservation efforts as part of the activities of specialized departments.

STRATEGY

Major Opportunities and Risks

Based on IPCC and IEA scenarios, policy and regulatory trends, and industry trends, Mazda has formulated a scenario based on its own assumptions and identified the following major opportunities and risks.

Major Risks and Opportunities

Transition Risks	Policy and Legal	• Stricter regulations on fuel economy and exhaust gas emissions and carbon pricing, including introduction of carbon tax
	Technology	• Increase in resources to develop electrification technologies, including electric drive systems or batteries
	Market	• Rise in raw material prices for electrification and weight reduction and tight procurement situation for semiconductor components • Energy price spikes and supply instability due to tight fossil fuel and renewable energy supplies caused by political conditions and market forces
	Reputation	• Implications on ESG-minded investment decisions by investors
Physical Risks	Acute	• Damage by torrential rain, production halts caused by supply chain disruptions, and health hazards caused by heat waves
	Chronic	• Increasing impact of production halts due to more severe and frequent natural disasters and higher frequency of high tide caused by rising sea levels, water resource depletion and rising prices of water necessary for operations, and spread of tropical diseases
Opportunities	Resource Efficiency	• Efficient use of raw materials through thorough material recycling
	Energy Resource	• Stable supply of carbon-neutral electricity secured by promoting the expansion of demand and supply of electricity in coordination with local communities • Diverse selection of renewable energy sources
	Products, Services, and Markets	• Deployment of products that suit each region through Building Block concept and multi-solution approach • Diversification of products that accommodate next-generation automobile fuels (alternative fuels such as biofuels, synthetic fuels, etc.) • Expansion of market opportunities through deployment of products that suit each region and diversification of products

*1 The TCFD is a private-sector organization set up by the Financial Stability Board in response to a request from the G20 Finance Ministers and Central Bank Governors.
*2 The TCFD Consortium is an organization established in Japan for the purpose of holding discussions on effective corporate information disclosure related to climate change and efforts for tying disclosed information to appropriate investment decision-making by financial institutions and other entities. The Ministry of Economy, Trade and Industry, the Financial Services Agency, and the Ministry of the Environment participate in the consortium as observers.
*3 As of June 2024, five reports have been submitted to and discussed by the Board of Directors.

SPECIFIC INITIATIVES

Mazda is implementing the following initiatives as part of its efforts to seize opportunities and avoid, or minimize the impact of, the risks it faces.

Seizing of opportunities	Products	Development of electrification technologies: Promotion of electrification over three phases leading up to 2030 P24
	Manufacturing	Pursuit of carbon neutrality at global factories by 2035 based on three pillars of initiatives P24
Transition risk avoidance	Supply Chain	• Collection of data on Scope 1 and Scope 2 CO ₂ emissions by major domestic and overseas supplies (Tier 1 suppliers) as well as CO ₂ emissions from logistics for delivery to Mazda commenced in 2021 • Award system established to honor the efforts of business partners in FY March 2024
	Physical risk avoidance and minimization	• Ongoing improvement of disaster response capabilities in both tangible and intangible aspects in anticipation of natural disasters as part of the BCP • Introduction of SCR (Supply Chain Resiliency) Keeper supply chain risk management system to speed up initial response by quickly gathering on-site information in the event of a disaster through coordination with business partners
Physical risk avoidance and minimization	Establishment of System for Rapid Response to Torrential Rains	• Annual reinforcements and maintenance work carried out on seawalls • Completion of construction of seawalls for protection against flooding damages caused by the highest tide level and maximum tsunami height estimated by prefectural government agencies in the event of an earthquake in the Nankai Trough
	Future-Oriented Measures for Maintaining Seawalls	• Annual reinforcements and maintenance work carried out on seawalls • Completion of construction of seawalls for protection against flooding damages caused by the highest tide level and maximum tsunami height estimated by prefectural government agencies in the event of an earthquake in the Nankai Trough
	Water Resource Conservation in Preparation for Water Resource Depletion	Testing of the water resource reuse and recycling initiatives to be deployed on a wider scale in 2030 at a domestic model plant to eliminate wasteful water use and circulate water resources by treating used water to restore it to the same quality as when it was taken from nature

RISK MANAGEMENT

Transition Risks

A specialist team is implementing a biweekly risk identification and assessment process while sharing the progress of initiatives and information on identified issues in relation to the identified major opportunities and risks. Mazda also shares climate-related information with its suppliers periodically through a shared platform.

Physical Risks

Mazda manages physical risks through an emergency risk management system that forms part of its BCP. In addition to these measures, given that the severity and frequency of torrential rains are increasing in recent years, Mazda strives to improve its ability to gather weather forecast data and to allow for decisions to be made swiftly in response to disasters based on preset schedules.

METRICS AND TARGETS

Global Warming Response

Mazda has set the following targets to guide it in achieving carbon neutrality throughout its entire supply chain by 2050. Furthermore, in December 2023 the Company announced its targets for reducing emissions at domestic factories and operating sites by 2030.

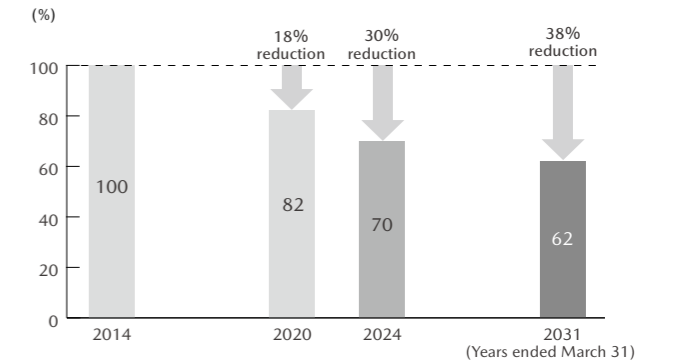
Products	• Target: Achieving carbon neutrality by 2050 • Medium-term metric for 2030: EV ratio (projection that 100% of Mazda global sales vehicles will be electrified and the BEV ratio will be 25–40%)
Manufacturing	• Target: Achieving carbon neutrality at Mazda's factories worldwide by 2035 (Medium-term target: Reducing CO ₂ emissions at domestic factories and operating sites by 69% from the level seen in FY March 2014 by FY March 2031) • Metrics: Factory decarbonization progress ratio

Conservation of Water Resources

Water is essential in automobile manufacturing processes such as cooling (e.g., cooling furnaces in casting), dilution (dilution of the mother liquor used for cutting and cleaning in the machining process), and cleaning (e.g., cleaning of vehicle bodies in the painting process). Mazda has put forth the following targets with regard to the conservation of water resources.

Manufacturing	• Target: Reducing water intake by all Mazda Group companies in Japan by 38% in FY March 2031 compared with FY March 2014 • Metrics: Water intake reduction ratio
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Domestic water intake



HUMAN-CENTRIC RESEARCH AND THE JOY OF DRIVING

HUMAN-CENTRIC RESEARCH FOR BETTER UNDERSTANDING PEOPLE'S EMOTIONS

Mazda advances *Monozukuri* based on its human-centric philosophy to create moving experiences in driving and mobility for people's everyday lives as described in its Purpose.

- Evolution of Mazda's *Kodo* design approach grounded on a philosophy of bringing cars to life and raising car design to the level of art to enrich people's emotional lives
- Pursuit of a *Jinba-ittai*—a sense of oneness between driver and vehicle—driving feel that unlocks people's potential and uplifts them mentally and physically

KODO: SOUL OF MOTION DESIGN PHILOSOPHY

For Mazda, vehicles are more than just lumps of metal, they are living, breathing things. The relationship between driver and car is akin to the emotional connection a rider has with their horse. At Mazda, designs that embody this connection are labeled "*Kodo* design."

Kodo design goes deeper than conventional design, and focuses on a "less is more" aesthetic that cherishes space and prioritizes elements to create simplicity of form. The challenge then is to bring the vehicle to life via carefully honed reflections on the body surface.

The CX-80, launched in 2024, is based on the design concept of "graceful toughness," with a form emphasizing the toughness of an SUV while also having a strikingly elegant presence. With a cabin crafted to provide an abundance of space and an elegant

atmosphere, the CX-80 exemplifies Mazda's brand value with a spacious design befitting of its stature.



CX-80

THE PURSUIT OF *Jinba-ittai*: Vehicle Dynamics Control Technologies

G-Vectoring Control (GVC), a unique control technology, was developed with the goal of allowing more drivers to experience the joy of feeling *Jinba-ittai*—a sense of oneness between driver and vehicle—regardless of their driving skill. GVC allows drivers to remain relaxed and feel peace of mind, while also allowing them to maneuver their vehicle however they please under a wide variety of driving conditions, ranging from low-speed everyday driving to winding roads and expressways and even when taking emergency action to avoid an accident. In 2020, the Company introduced electric G-Vectoring Control Plus (e-GVC Plus), designed to take advantage of its electrification technologies to enhance the consistency of vehicle response to control inputs in all directions and realize seamless transitions between forces along multiple vectors of acceleration (G forces). This technology contributes to even smoother vehicle motion.

Self-empowerment Driving Vehicles

Self-empowerment Driving Vehicles were developed to empower people to travel and act independently, helping them enjoy richer, more fulfilling lives.

In developing these vehicles, Mazda interviewed a large group of individuals with lower-limb disabilities about their difficulties. The insight propelled development forward with the focus on driving, entering the vehicle, and wheelchair loading to address commonly faced challenges and deliver the joy of driving Mazda has to offer to everyone.

The MX-30 Self-empowerment Driving Vehicle, which was launched in 2022, is a vehicle with hand controls that was developed with the goal of helping more people lead their own lives, so that anyone can go where they want, when they want. In other words, so everyone can enjoy exciting lives in which they act and move as they wish.



MX-30 Self-empowerment Driving Vehicle

Large-Product Technologies and Value

For the CX-60 and subsequent large products, the Skyactiv-Multi-Solution Scalable Architecture has been applied for use in longitudinal power unit orientations to increase output and environmental performance. This approach has made it possible to introduce electrification technologies for newly developed straight-6-cylinder gasoline and diesel engines as well as for mild hybrid electric vehicles (MHEVs) and plug-in hybrid electric vehicles (PHEVs). In addition, Mazda has introduced newly developed technologies for transmissions, platforms and suspensions and positioned the batteries for PHEVs under floors to lower the center of gravity of vehicles in order to provide nimble vehicle movement in all models.

Going forward, Mazda will continue to embrace a *Monozukuri* approach aimed at delivering enjoyable driving experiences for all aspects of everyday driving to help our customers feel the joy of *Jinba-ittai* driving.

REALIZATION OF AN AUTOMOTIVE SOCIETY THAT OFFERS SAFETY AND PEACE OF MIND

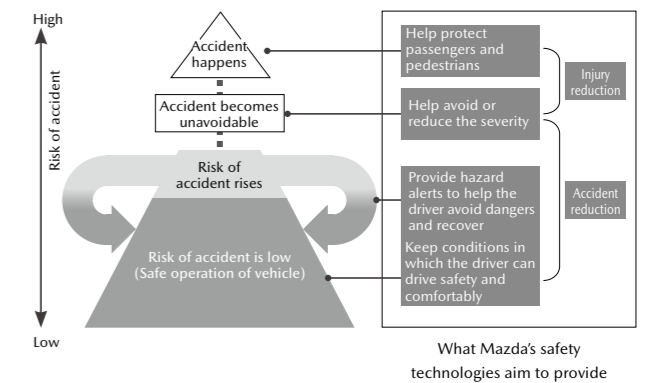
—GOAL OF ACHIEVING ZERO DEATHS FROM NEW VEHICLES

Based on an original safety concept, Mazda Proactive Safety, Mazda is continuing to develop advanced driving support technologies that utilize IT. The Company is also working to create vehicles that enhance the safety and peace of mind for drivers, passengers, and everyone else. In terms of what Mazda can accomplish between now and 2040 through automotive technologies, the Company aims to achieve zero deaths resulting from its new vehicles.

MAZDA PROACTIVE SAFETY CONCEPT

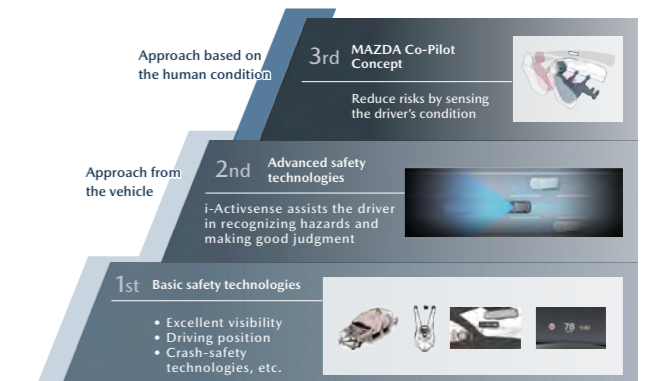
Ensuring safe driving under a variety of circumstances requires one to operate their vehicle while predicting potential risks of accidents and making appropriate decisions. However, no matter how careful people are, some accidents cannot be avoided. To address such accidents, Mazda is utilizing the insight gained through years of human-centric research to develop advanced safety technologies that reduce the risk of being exposed to dangerous circumstances, as opposed to responding once a dangerous circumstance has arisen. These technologies are offered to drivers under the name Mazda Proactive Safety.

Mazda Proactive Safety: Mazda's Safety Philosophy



BUILDING BLOCK CONCEPT FOR LAYERING SAFETY TECHNOLOGIES

Based on the belief that the very act of spreading technologies throughout society is a way of demonstrating the value it offers, Mazda applies the Building Block concept to the development of safety technologies in a manner similar to the approach used for environmental technologies as it continues to refine its safety technologies.



ADVANCED DRIVING SUPPORT TECHNOLOGY THE MAZDA CO-PILOT CONCEPT

By analyzing and modeling the mechanisms of people's bodies and brains through human-centric research, Mazda has created the Mazda Co-Pilot Concept for sophisticated driving support technologies for preventing risks associated with driver drowsiness, illness, or other circumstances. Technologies based on this concept are designed to allow people to enjoy driving and be revitalized mentally and physically through the process while

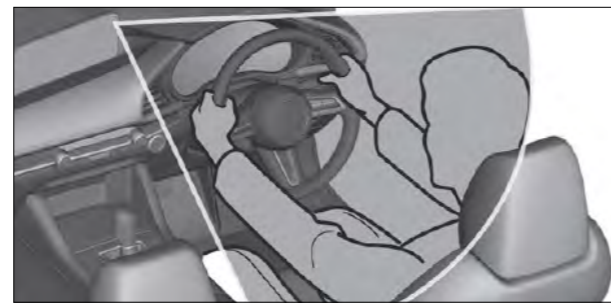
enabling vehicles to track all the movements of the driver and the vehicle itself through a system in which the vehicle is driving "virtually" in the background at all times. Under this system, if the unexpected occurs, such as the driver suddenly losing consciousness, the vehicle can take control to drive to a safer location that does not present a threat to other people or to the surroundings while also automatically contacting emergency services. The Mazda Co-Pilot Concept thereby enables vehicles to prevent accidents and ensure the safety of the surroundings.

REALIZATION OF AN AUTOMOTIVE SOCIETY THAT OFFERS SAFETY AND PEACE OF MIND

GOAL OF ACHIEVING ZERO DEATHS FROM NEW VEHICLES

DRIVER MONITORING

In 2019, the Company equipped the Mazda3 with two new Driver Monitoring functions: escalating warnings issued when driver drowsiness is detected and an earlier frontal collision warning issued when careless driving is detected. The CX-60, meanwhile, can detect drowsy driving with the driver's eyes closed, notice a sudden change in the driver's condition based on changes in their posture or the position of their head, and issue warnings against careless driving. The accuracy of Driver Monitoring's detection of both drowsiness and changes in the driver's condition has been increased through comprehensive judgment based on various factors, including the state of driving.



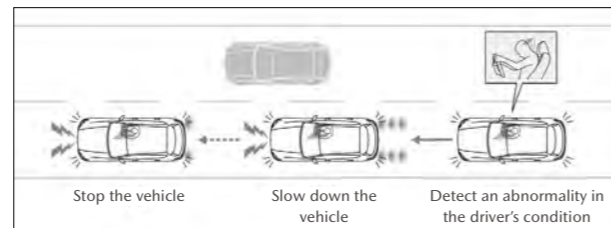
Detecting the driver's condition by Driver Monitoring

Mazda3 (from 2019 onward)	Detection of careless driving			Directions of the eyes and face	Detecting careless driving from the directions of the driver's eyes and face
	Detection of drowsy driving			Movement of the eyelids	Detecting drowsy driving from the movement of the driver's eyelids
CX-60 (from 2022 onward)	Detection of the driver's abnormal conditions	Closed eyes		Closed eyes	Detecting the driver's closed eyes from the distance between their upper and lower eyelids
		Abnormal position		Steering	Detecting the driver not holding the steering wheel from their abnormal position
				Position (location and angle)	Detecting abnormalities in the driver's position in comparison with their usual driving position

DRIVER EMERGENCY ASSIST SYSTEM

The CX-60 is equipped with the Driver Emergency Assist (DEA)^{*1} system, an advanced safety technology that can detect abnormalities in the driver's condition to help avoid an accident or reduce damage and injuries. Working with Driver Monitoring, the DEA system will slow down and stop the vehicle if it becomes difficult for the driver to continue to drive due to a sudden sickness or for other reasons, regardless of whether the vehicle is running on an expressway or an ordinary road. This system therefore helps avoid accidents and reduce accident damage and injuries. In April 2023, the system was recognized with an Ichimura Industrial Achievement Award at the 55th Ichimura Industrial Awards (organized by the Ichimura Foundation for New Technology).

Steps in the operation of the DEA system



^{*1} This system is designed to complement the driver's safe driving; it will function only under certain conditions, and its functions have limitations. No safety system or combination of such systems can prevent all accidents. This system is not a replacement for safe and attentive driving. Please drive carefully at all times and do not rely on technology to prevent an accident. For details, please ask dealer staff or refer to Mazda's website.

TRAFFIC & CRUISING SUPPORT EMERGENCY STOP SUPPORT FUNCTION

The CX-70, scheduled for release in the North American market, is equipped with the latest Traffic & Cruising Support (CTS) emergency stop support function.^{*2} CTS is a system the issues escalating warnings to drivers when it detects that they have removed their hands from the steering wheel, closed their eyes, or are driving carelessly. If no change is detected in the driver's behavior, even after warnings, the system will decelerate and stop the vehicle to prevent or reduce damages from accidents.

^{*2} CTS features vary based on market and vehicle grade. This system will function only under certain conditions, and its functions have limitations. No safety system or combination of such systems can completely prevent a collision or a vehicle driving off the road. Drivers have an obligation to drive safely, and responsibilities associated with the activation of this system lie solely with the driver. Please drive carefully at all times and do not rely on technology to prevent an accident.

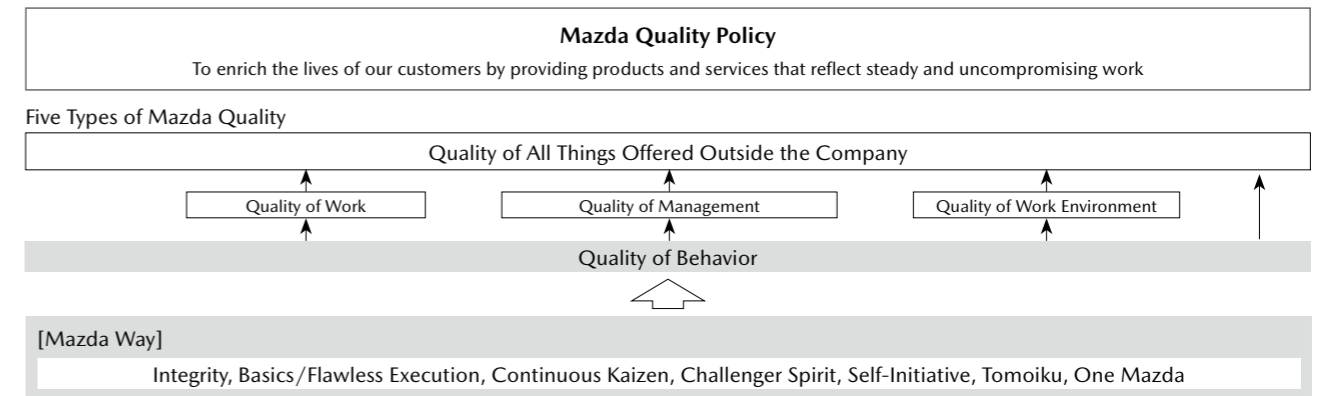


CX-70

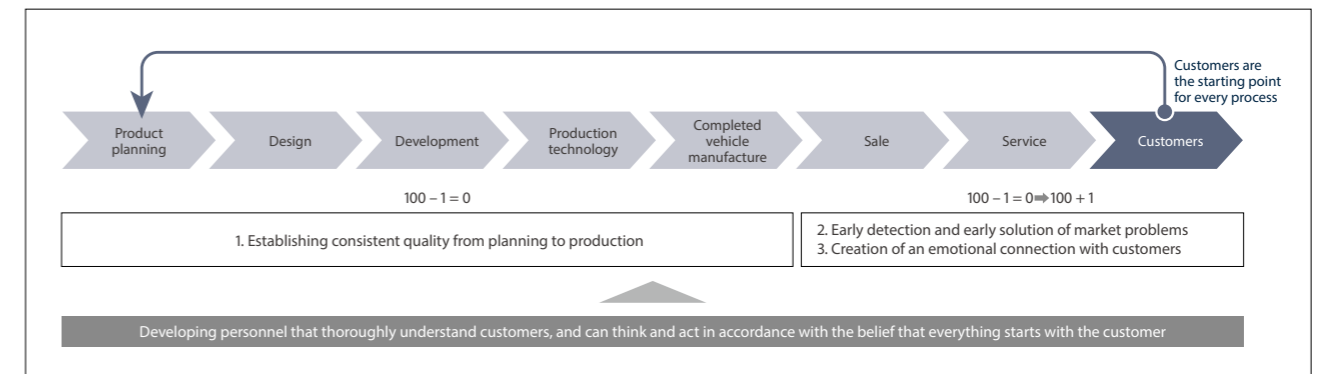
IMPROVEMENT OF QUALITY UNDERPINNING PEACE OF MIND

BASIC APPROACH TOWARD IMPROVING QUALITY OF ALL THINGS OFFERED OUTSIDE THE COMPANY

In line with its quality policy, Mazda continues to evolve its initiatives to better exercise its corporate philosophy. The Company has defined the Five Types of Mazda Quality: "quality of work," "quality of management," "quality of work environment," "quality of behavior," and "quality of all things offered outside the Company," which is underpinned by the preceding four. With this framework, Mazda is promoting united collaboration among all areas of operation to further improve quality.



VEHICLE PRODUCTION BASED ON THE "100 - 1 = 0" BELIEF AND INITIATIVES FOR THE PROCESS OF CHANGING "100 - 1 = 0" TO "100 + 1"



Vehicle production based on the "100 - 1 = 0" belief

1. Establishing consistent quality from planning to production

The "100 - 1 = 0" belief expresses Mazda's strong desire to provide good quality to all customers under the belief that if even only one out of 100 vehicles is found to be defective, the vehicle has no value for the customer. Mazda aims to achieve zero defects. In keeping with the basic principles of manufacturing and based on a full understanding of its mechanisms, all related departments work in close collaboration to establish consistent quality in all processes, ranging from planning to production.

In response to quality issues identified with regard to the CX-60 and other large products, the Company took steps to address all known issues with the CX-60 in 2023. In addition, the timing of the start of mass production of the CX-80 has been changed and production of certain CX-90 models has been ceased to allow for exhaustive quality control.

Initiatives for the process of changing "100 - 1 = 0" to "100 + 1"

2. Early detection and early solution of market problems

To prepare for unpredictable problems in the market ("100 - 1 = 0"), Mazda promotes quality assurance activities for the early detection and early solution of any trouble pointed out by customers.

3. Creation of an emotional connection with customers

Through consistently earnest engagement with customers as well as close communication, we aim to forge special bonds with customers based on enduring trust ("100 - 1 = 0" → "100 + 1").