

## Earth

## Endeavor for Carbon Neutrality by 2050

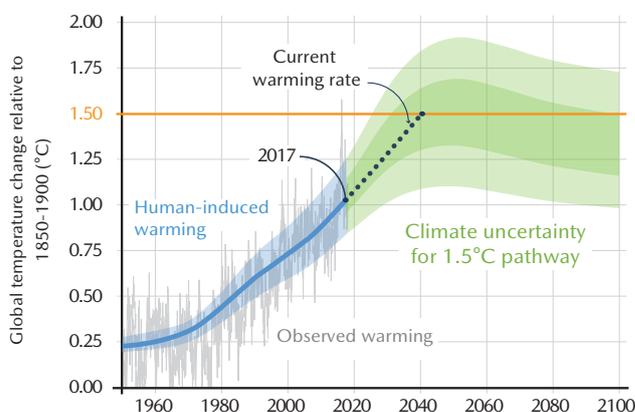
### Recognizing Social Issues

The average global temperature has already risen by about 1.0°C from pre-industrial levels. The Special Report on Global Warming of 1.5°C published by the Intergovernmental Panel on Climate Change (IPCC) states that if global warming continues to increase at the current rate and the rise in temperature far exceeds 1.5°C, there will be a significant impact on nature and human activities. The Special Report therefore points out the need to achieve net zero global carbon emissions by around 2050 in order to limit the temperature rise to 1.5°C.

In response to the above forecast, 124 countries (including Japan) and one region\* have declared their intention to achieve carbon neutrality by 2050, with nations around the globe stepping up their measures to design carbon pricing and other mechanisms and invest in the development of energy technologies. In the industrial world, initiatives have been accelerated to change the energy and industrial structures, promote decarbonization throughout the supply chain based on a life cycle assessment (LCA), and encourage the effective use of decarbonization/low-carbonization technologies to reduce greenhouse gas emissions.

\*As of January 20, 2021

Average anthropogenic temperature increase since the industrialization



"Frequently Asked Questions", Coordinating Editors: Sarah Connors, Ros Pidcock, p8, [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_FAQ\\_High\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_FAQ_High_Res.pdf)

### Mazda's Approach to Resolving Issues

#### Reasons for Addressing Social Issues

As for the trends regarding vehicles around 2030, Mazda predicts that the fuel economy of vehicles as a whole will be further improved though the combination of highly efficient combustion engines, electric device technologies, highly efficient transmission systems and reduced body weight. Mazda also foresees technological innovation accelerating in accordance with fuel diversification. In addition, electric vehicles will be selected more often in regions where electricity can be generated with renewable energy or other cleaner sources. Energy decarbonization/low-carbonization and related technologies will be further promoted, which will intensify society-wide efforts to reduce environmental impact toward the achievement of carbon neutrality by 2050.

As a proportion of Japan's total CO<sub>2</sub> emissions, the entire transport sector contributes approximately 20%, with the automotive industry accounting for about 90% of CO<sub>2</sub> emissions from the sector. Mazda understands that, as a company belonging to the automotive industry, it has a duty to reduce CO<sub>2</sub> emissions with the aim of curbing global warming. In order to preserve our beautiful planet for future generations, the Company will advance its initiatives toward the realization of a sustainable mobility society.

#### Approach to Resolving Social Issues

Mazda announced that it will endeavor to achieve carbon neutrality by 2050.

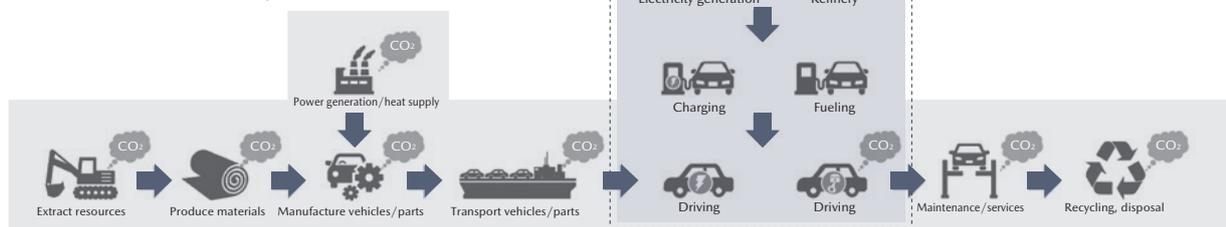
To accomplish this objective, the Company recognizes the importance of reducing CO<sub>2</sub> emissions throughout a vehicle's life cycle. For this reason, Mazda considers it necessary to provide multiple solutions that enable the Company to offer various power unit choices that adapt to each region's energy sources and power generation methods, from both the perspective of well-to-wheel and the perspective of life cycle assessment (LCA). In manufacturing and logistics, the Mazda Group strives for energy value maximization and energy diversification, aiming to achieve reductions in the global total CO<sub>2</sub> emissions from plants/offices and logistics operations. The Group will continue these efforts, which must be made throughout the entire supply chain, with the cooperation of local governments and other industries.\*

\* For details of the activities carried out by the Carbon Neutral Electricity Promotion Subcommittee in the Chugoku Region, refer to the following URL: <https://newsroom.mazda.com/ja/publicity/release/2021/202111/211130a.pdf> (Japanese only)

#### Mazda's perspective: "Well-to-Wheel" and "LCA"

##### Life-Cycle

Vehicle (product)-related cycle from resource extraction to disposal



##### Well-to-Wheel

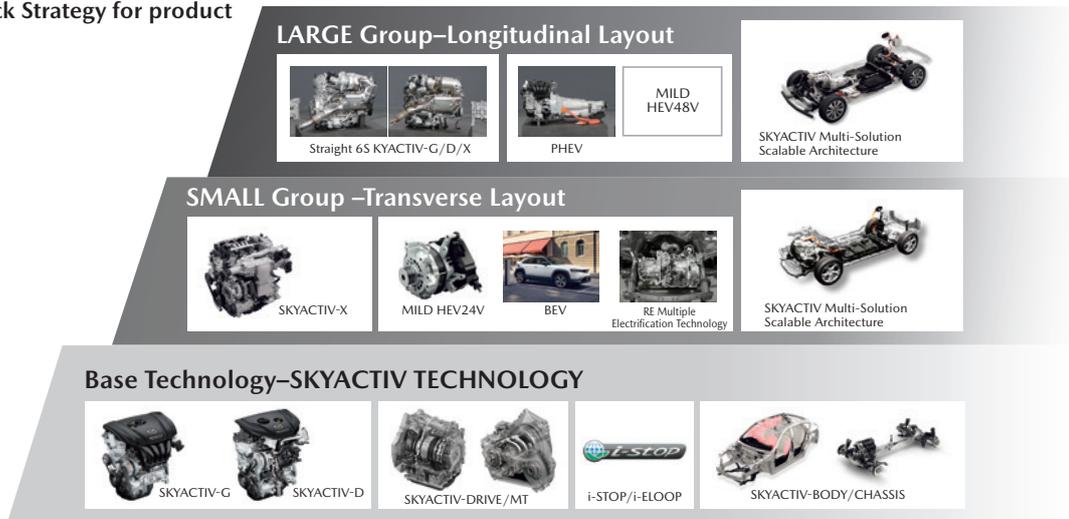
Fuel-related cycle from extraction to consumption during driving

## Mazda's Initiatives

### Accumulation of technological assets in line with Mazda's Building Block Strategy and their utilization for highly efficient manufacturing

Mazda has consistently followed its Building Block Strategy to efficiently deliver more superior technologies by building up electrification technologies in stages while refining fundamental technologies, including engines, transmissions and vehicle bodies. Mazda is continuously enhancing its internal combustion engines and electrification technologies as part of the "Skyactiv Multi-Solution Scalable Architecture." Based on this architecture, the Company will deliver multiple electrification solutions to meet various customers' needs, environmental regulations and the electric power generating infrastructure in each market. Mazda expects that 100% of its products will have some level of electrification, and its ratio of EVs will account by 2030. In addition, the Company plans to introduce its unique EV platform "Skyactiv EV Scalable Architecture" in 2025 for EVs with various vehicle sizes and body types. Based on these strategies, Mazda will refine its highly efficient development methods, namely Common Architecture, Bundled Planning and Model Based Development, to enrich its technological assets for the full-scale electrification era in collaboration with other companies.

### Building Block Strategy for product technologies



### TOPICS

#### Installation of Solar Power System at Hiroshima Plant

Mazda has been actively introducing and utilizing green electricity in its constant endeavors to achieve carbon neutrality by 2050. As part of its efforts to promote green manufacturing lines and offices at factories, the Company has installed solar panels at its plant in Hiroshima. In July 2021, Mazda initiated operation of the solar power generation system, which boasts an output of 1.1 MW of electricity. The power generated by the solar panels is used to charge the batteries of MX-30 EV models produced at the plant and for other manufacturing processes there.



Hiroshima Plant's rooftop solar panels



MX-30 EV battery charging stations

For the state of power generation, refer to the panels exhibited at the Mazda Museum and the following URL:  
[https://www.mazda.com/globalassets/ja/assets/sustainability/pv\\_system/pv\\_generated\\_energy.pdf](https://www.mazda.com/globalassets/ja/assets/sustainability/pv_system/pv_generated_energy.pdf) (Japanese only)

## Contribution to the SDGs

### Goals and Targets

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(3.9) Reduce illnesses and death from hazardous chemicals and pollution
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(7.2) Increase global percentage of renewable energy
- (7.3) Double the improvement in energy efficiency.
- (7.a) Enhance international cooperation to facilitate access to clean energy research and technology, and promote investment in clean energy technology.
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(9.4) Upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes.
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(11.6) Reduce environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
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(13.2) Integrate climate change measures into national policies, strategies and planning.