



- Over 80% of the greenhouse gas (GHG) emissions in the automotive sector are Scope 3 emissions (primarily GHG emissions from running vehicles). Therefore, when setting our targets, we covered Scope 3, Category 11<sup>1</sup> emissions (indirect) as well as Scope 1 and 2 emissions (direct).
- The required initiatives and transition pathways for automotive companies differ between Scope 1 and Scope 2, and Scope 3. In order to raise the effectiveness of our decarbonization initiatives, we set separate targets for Scope 1 and 2 emissions (based on absolute GHG emissions) and for Scope 3 emissions (based on GHG emission intensity).

Overview of automotive sector targets		
Targeted value chain	Companies whose primary business is (finished) vehicle production	
Targeted assets	Loans (corporate finance) <sup>2</sup>	
Target year	Base year: FY2021      Target year: FY2030	
Targeted emissions	Scope 1, 2	Scope 3 (Category 11 <sup>1</sup> )
Metrics	Absolute GHG emissions (ktCO <sub>2</sub> e)	Average GHG emission intensity for new LDVs <sup>4</sup> (gCO <sub>2</sub> e/vkm) (Well-to-Wheel <sup>5</sup> ) * Emissions per distance traveled
Metric formula	$\sum \left( \frac{\text{GHG emissions of each company}}{\text{Corporate value}^3 \text{ of each company}} \times \text{Balance of loans from Mizuho to each company} \right)$	$\sum \left( \frac{\text{GHG emission intensity of each company}}{\text{Total loan balance across the target portfolio}} \times \text{Balance of loans from Mizuho to each company} \right)$
Benchmark scenarios	1.5°C-aligned scenario under the SBTi absolute-based approach	(1) IEA Net Zero Emissions by 2050 Scenario (NZE) <sup>6</sup> [1.5°C] (2) SBTi (IEA ETP) Beyond 2°C Scenario (B2D) <sup>7</sup> [Well-below 2°C]
Numerical targets	<b>FY2030: Reduce by 38% from FY2021 level</b>	<b>FY2030: Reduce by 31% (2) – 43% (1) from FY2021 level</b>
Base-year result	FY2021: 740 ktCO <sub>2</sub> e	FY2021: 198 gCO <sub>2</sub> e/vkm <sup>8</sup> (of which) Well-to-Tank (energy production process): 40 Tank-to-Wheel (running vehicle emissions): 158
Data sources	Information disclosed by clients, etc.	S&P Global Mobility, 2023, etc.

1. Emissions from use of sold products.

2. Aggregate for Mizuho Bank and Mizuho Trust & Banking.

3. According to the PCAF Standard, EVIC (enterprise value including cash) for public companies, and net assets + interest-bearing liabilities (book value) for closed companies.

4. LDV (Light-Duty Vehicle) refers to any passenger vehicle weighing 6t or less, including small-sized commercial vehicles.

5. Emission metric covering emissions from energy production process and emissions from running vehicles.

6. Calculation based on IEA World Energy Outlook 2022.

7. As of September 2023.

8. Well-to-Wheel absolute emissions amount to 33 MtCO<sub>2</sub>e.

# 1. Financed emissions: (1) Approach to medium-term targets for the automotive sector



<p><b>Reasons for selecting the automotive sector</b></p>	<ul style="list-style-type: none"> <li>● The automotive sector is a large GHG emitter, <b>accounting for approximately 16% of global CO<sub>2</sub> emissions from energy consumption</b>, as well as almost 8% of Mizuho's financed emissions<sup>1</sup>.</li> <li>● Given that automobiles are essential for people's living and economic activities, and that <b>demand for automobiles is expected to rise toward 2050</b>, <b>decarbonizing this sector is crucial if we are to encourage the transition of the real economy.</b></li> </ul>
<p><b>Approach to targeted value chain and scope of emissions</b></p>	<ul style="list-style-type: none"> <li>● We <b>focus on companies whose primary business is (finished) vehicle production</b>, since these companies account for almost 80% of Mizuho's financed emissions in the automotive sector.</li> <li>● Since running vehicles are an overwhelming source of GHG emissions in the automotive value chain, we decided to include Category 11 of Scope 3 (use of sold products) in addition to Scope 1 and 2, which mostly cover emissions from automotive production activities.</li> </ul>
<p><b>Approach to metrics</b></p>	<ul style="list-style-type: none"> <li>● Compared with Scope 1 and 2 emissions, Scope 3 emissions require different actions and transition pathways by the entities concerned. In order to raise the effectiveness of our decarbonization initiatives, we set separate emission targets for Scope 1 and 2, and for Scope 3.</li> <li>● <b>In line with the SBT Guidelines, among others, targets for Scope 1 and 2 are set in terms of absolute emissions to promote reduction in the total amount of emissions.</b></li> <li>● Meanwhile, <b>Scope 3 targets are set in terms of GHG emission intensity per unit of activity (distance traveled) so as to promote decarbonization while meeting the rising demand for automobiles.</b> <ul style="list-style-type: none"> <li>- For the purpose of reducing overall emissions from the automotive sector, <b>targets are set in Well-to-Wheel<sup>2</sup> terms, which includes emissions from the energy production process</b>, so as to <b>align the decarbonization of automobiles to decarbonization of energy supply based on the characteristics of each region.</b></li> </ul> </li> </ul>
<p><b>Benchmark scenarios</b></p>	<ul style="list-style-type: none"> <li>● To <b>pursue efforts to limit the temperature rise to 1.5°C</b>, we adopted <b>the IEA NZE scenario and the SBTi 1.5°C-aligned criteria as benchmark scenarios.</b></li> <li>● However, because the IEA NZE scenario assumes a rapid transition to electric vehicles (EV) and because <b>transition of the real economy requires initiatives that take into account distinct local energy characteristics</b>, we set our target for Scope 3 emissions within the range between the IEA NZE scenario and SBTi (IEA ETP) B2D scenario.</li> </ul>
<p><b>Initiatives for achieving targets</b></p>	<ul style="list-style-type: none"> <li>● <b>We verify our clients' actions taken for transition and support the execution of our clients' decarbonization and vehicle electrification strategies based on the engagement with our clients:</b> <ul style="list-style-type: none"> <li>- Support for carbon-neutral factory (shift to renewable energy and enhance energy efficiency);</li> <li>- Support for the supply chain development and sale of low-emission vehicles in light of local energy characteristics.</li> </ul> </li> <li>● In an effort to <b>reduce emissions on the supply side of energy (electric power, oil and gas sectors)</b>, we set medium-term targets (in May 2022 for electric power and in December 2022 for oil and gas) and promote engagement with, and support for actions by clients in each sector.</li> </ul>

1. Share of our actual financed emissions measured for FY2021 in the Scope 1 and 2 emissions of the beneficiaries.

2. Well-to-Wheel: a metric for emissions equal to the sum of emissions in the energy production process (Well-to-Tank) and emissions from running vehicles (Tank-to-Wheel). In the case of electric vehicles: Well-to-Wheel = Well-to-Tank (emissions pertaining to the production of electricity used, as calculated from the power source mix of the country of sale) + Tank-to-Wheel (zero for running EV)

# 1. Financed emissions: (2) Setting medium-term targets for the maritime transport sector



- We set targets for emissions from vessel operation, which is the source of 98% of GHG emissions in the maritime transport sector.
- In considering targets for the maritime transport sector, we referred to the concept of portfolio carbon intensity measurement under the International Maritime Organization (IMO) Strategy on Reduction of GHG Emissions<sup>1</sup> and the Poseidon Principles<sup>2</sup>, and decided to set targets for ship finance in terms of GHG emission intensity.

Overview of maritime transport sector targets	
Targeted value chain	Vessel operation (covering vessels of 5,000 gross tonnage and above, excluding domestic shipping vessels)
Targeted assets	Finance secured by vessel mortgages
Target year	Base year: FY2021 Target year: FY2030
Targeted emissions	Scope 1 (vessel operation)
Metric	Portfolio climate alignment score <sup>3</sup>
Metric formula	$\sum \left[ \begin{array}{c} \text{Climate} \\ \text{alignment score} \\ \text{of each vessel} \\ \text{((2) below)} \end{array} \times \frac{\text{Balance of loans from Mizuho} \\ \text{to each vessel}}{\text{Total loan balance across target portfolio}} \right]$
Formula for climate alignment score	<p>Calculate AER<sup>4</sup> (1) for each vessel and then the portfolio-level weighted average of climate alignment score (2), defined as the difference between AER and the decarbonization trajectory for each vessel.</p> $(1) \text{ AER} = \frac{\text{Annual CO}_2 \text{ emissions for voyage}}{\text{Annual distance traveled} \times \text{Deadweight at maximum summer draught}^5}$ $(2) \text{ Climate alignment score} = \frac{\text{AER of each vessel (①)} - \text{Trajectory for each vessel}}{\text{Trajectory for each vessel}}$
Benchmark scenarios	IMO's GHG reduction target / CII regulation value set in line with the target <sup>6</sup>
Numerical target	Climate alignment score in FY2030: 0% or less (whole portfolio aligned with decarbonization trajectory)
Base-year result	Portfolio climate alignment score in FY2021 <sup>6</sup> : +1.82% (cf.) Absolute emissions: 3.5 MtCO <sub>2</sub> e
Data sources	VesselsValue, a Veson Nautical solution

1. In 2018, IMO adopted a Strategy on Reduction of GHG Emissions as a uniform emission reduction target for international maritime transport. In 2023, it revised the target to achieving net zero GHG emissions by around 2050.

2. The Poseidon Principles are a voluntary agreement reached among financial institutions in 2019 designed to help achieve IMO's GHG reduction target through finance.

3. Climate alignment score indicates how much the GHG emission intensity of a vessel diverges from the decarbonization trajectory.

4. AER (Annual Efficiency Ratio) refers to average CO<sub>2</sub> emissions for a 1-mile voyage carrying 1t of cargo.

5. Under the CII regulation, gross tonnage is used for vehicle carriers, ro-ro cargo ships and ferries.

6. IMO regulation on ship's energy efficiency. Since the regulation was not in place in FY2021, actual performance was calculated using an original benchmark: (Reference Line × 3% reduction rate).

# 1. Financed emissions: (2) Approach to medium-term targets for the maritime transport sector



<p><b>Reasons for selecting the maritime transport sector</b></p>	<ul style="list-style-type: none"> <li>● Decarbonization of the maritime transport sector is essential for transition of the real economy as it accounts for almost 2% of global GHG emissions from energy consumption and of Mizuho's financed emissions<sup>1</sup>, with <b>demand for maritime transport expected to increase toward 2050</b>.</li> <li>● IMO has developed a global common GHG reduction strategy for the maritime transport sector. Operations in this sector thus entail <b>transition in line with the decarbonization pathways set by the IMO strategy</b>.</li> </ul>
<p><b>Approach to targeted value chain and scope of emissions</b></p>	<ul style="list-style-type: none"> <li>● We focus on <b>GHG emissions from vessel operation, which accounts for 98% of the total emissions</b> from ships.</li> <li>● With reference to the technical guidance to the Poseidon Principles<sup>2</sup>, we <b>cover finance secured by mortgages of vessels of 5,000 gross tonnage and above, excluding domestic shipping vessels</b>.</li> </ul>
<p><b>Approach to metrics</b></p>	<ul style="list-style-type: none"> <li>● <b>We adopted GHG emission intensity per unit of activity (distance traveled x deadweight at maximum summer draught) to promote the decarbonization of ships while supporting the rising demand for maritime transport.</b></li> <li>● In order to measure and assess the reduction in emission intensity depending on the type and size of the ship, we use the <b>"portfolio climate alignment score" as a measure of target setting</b> with reference to the technical guidance to the Poseidon Principles<sup>2</sup>.</li> </ul>
<p><b>Benchmark scenarios</b></p>	<ul style="list-style-type: none"> <li>● We <b>set targets in line with the IMO Strategy on Reduction of GHG Emissions</b>, a global standard for international maritime transport.</li> <li>● We <b>use the reference values of the Carbon Intensity Indicator (CII) regulation as a benchmark for calculating climate alignment scores<sup>3</sup></b>, as IMO has introduced the regulation as a rating scheme for the fuel efficiency of individual vessels to facilitate the achievement of targets set under its Strategy on Reduction of GHG Emissions.</li> <li>● We will consider applying any revised reference values under the CII scheme to target-setting in view of amendments to the IMO Strategy on Reduction of GHG Emissions.</li> </ul>
<p><b>Initiatives for achieving targets</b></p>	<ul style="list-style-type: none"> <li>● <b>We monitor our clients' actions taken to respond to CII regulation and the status of our clients' transition, and support decarbonization initiatives:</b> <ul style="list-style-type: none"> <li>- Arrangement of finance for higher fuel efficiency of vessels and the introduction of low-carbon fuel ships;</li> <li>- Provision of information on industry-wide carbon-neutral trends and initiatives across the sector such as shipbuilders, shipowners, operators and shippers.</li> </ul> </li> <li>● <b>We provide financial and non-financial support for early realization of next-generation technologies such as carbon-neutral fuel (hydrogen, ammonia) and zero-emission ships.</b></li> </ul>

1. Share of our actual financed emissions measured for FY2021 in the Scope 1 and 2 emissions of the beneficiaries.

2. Poseidon Principles Technical Guidance Version 4.2

3. Since the CII regulation is applicable in 2023 and beyond, we set original reference values for 2021 and 2022 as reduction rates vs. the base year.

Year	2019	2021	2022	2023	2024	2025	2026
Reduction rate	Base year	<b>3%</b>	<b>4%</b>	5%	7%	9%	11%

# 1. Financed emissions: Common approach to medium-term targets (both sectors)



- We have set our medium-term targets with reference to the NZBA's guidelines for climate target setting<sup>1</sup>, and they have been approved by the Board of Directors of Mizuho Financial Group.
- We will continue striving to enhance our setting of medium-term targets and our monitoring of performance based on the following approach.

<b>Methods for including companies and projects in the portfolio</b>	<ul style="list-style-type: none"> <li>● We select the companies or projects whose primary businesses are in the relevant sector value chain as our target portfolio (For the maritime transport sector, however, we select the relevant finance transactions as our portfolio regardless of the industry to which clients belong.)</li> <li>● We determine sectors and primary businesses based on the clients' largest component of the sales from business activities.</li> <li>● Regarding our classification method, we determine sectors based on the industry type classification established by the Bank of Japan.</li> </ul>									
<b>Measurement coverage ratio</b>	<ul style="list-style-type: none"> <li>● When we are not able to obtain emissions data, production data, financial data, or other such data for companies in the target portfolio and are consequently unable to calculate the necessary metric (GHG emission intensity or absolute GHG emissions), we consider them outside the scope of measurement.</li> <li>● We have been able to cover the following percentages of the portfolio loan balances for the sectors for which we have set new targets. Through engagement, we regularly confirm and update our records of our clients' primary businesses. Because of this, the portfolio and percentage of the portfolio subject to measurement may change going forward.</li> </ul> <table border="1" data-bbox="851 750 1518 837"> <tr> <td>Automotive sector</td> <td>100%</td> </tr> <tr> <td>Maritime transport sector</td> <td>97%</td> </tr> </table>	Automotive sector	100%	Maritime transport sector	97%					
Automotive sector	100%									
Maritime transport sector	97%									
<b>Data quality score</b>	<ul style="list-style-type: none"> <li>● Following the Partnership for Carbon Accounting Financials' Global GHG Accounting &amp; Reporting Standard for the Financial Industry, we calculated the average GHG emissions data quality weighted by amount of lending<sup>2</sup>. The results are as follows.</li> </ul> <table border="1" data-bbox="515 933 2027 1061"> <tr> <td></td> <td>Absolute GHG emissions (Scope 1 and 2)</td> <td>GHG emission intensity (Scope 3)</td> </tr> <tr> <td>Automotive sector</td> <td>1.2</td> <td>3.0</td> </tr> <tr> <td>Maritime transport sector</td> <td colspan="2">GHG emission intensity 3.0</td> </tr> </table>		Absolute GHG emissions (Scope 1 and 2)	GHG emission intensity (Scope 3)	Automotive sector	1.2	3.0	Maritime transport sector	GHG emission intensity 3.0	
	Absolute GHG emissions (Scope 1 and 2)	GHG emission intensity (Scope 3)								
Automotive sector	1.2	3.0								
Maritime transport sector	GHG emission intensity 3.0									
<b>Approach to carbon offsets</b>	<ul style="list-style-type: none"> <li>● We do not currently take carbon offsets into account.</li> <li>● We will continue to look into approaches to them while tracking the direction of international discussions and development of international standards.</li> </ul>									
<b>Ongoing data enhancement</b>	<ul style="list-style-type: none"> <li>● Calculating financed emissions requires relevant data on emissions and production aligned with consistent global standards. At present, consistent corporate disclosure data is limited. We have had to rely on data from external vendors with expert insight into the automotive sector and the maritime transport sector to calculate our results.</li> <li>● Our figures for GHG emissions and GHG emission intensity may change going forward as companies expand and enhance their emissions disclosures. We will continue endeavoring to improve the accuracy of our methods for collecting data and aggregating results in line with our findings from engagement with clients, the development of our clients' disclosures, and other factors. We will consider revising our results and targets as needed.</li> </ul>									

1. Net-Zero Banking Alliance (NZBA)'s Guidelines for Climate Target Setting for Banks.

2. A score of 1 indicates high data quality (data from disclosures, certified by a third party) and a score of 5 indicates low data quality (data from estimates, based on asset balances).