

INTEGRATED TCFD / TNFD DISCLOSURE

Message from the Chief Sustainability Officer

Since it was founded, MOL Group has engaged in marine transport as its core business, supporting people's lives as it fulfills its social responsibility and contributing to international logistics. In recent years, we have expanded our business from transporting goods to various associated businesses originating from marine transport, and non-shipping businesses that contribute to improving people's well-being and lifestyle, such as community development. We provide social value as infrastructure that supports people's lives and receive rewards for them. The pride we have in this business started by our forebears has remained unchanged and will continue to be the foundation of the value we create, both economically and socially, even as our business scope and scale expands globally.

The source of the value we create lies in the various strengths possessed by our Group, such as our diverse human resources (human capital), advanced maritime skills, technological capabilities, and project management expertise (intellectual capital), as well as our strong partnerships with customers and society (social and relationship capital). These natural capitals are sustained through the interdependencies between the climate system and ecosystems, and form a critical foundation supporting our business activities. Amid growing global concerns over environmental issues such as the intensification of climate change and biodiversity loss, the degradation of such natural capital may progress in tandem with climate change, with mutually reinforcing impacts. This could ultimately pose a material risk to the continuity of our business.

In order to operate social infrastructure businesses, including the shipping industry, it is essential to respond flexibly to weather and oceanic conditions such as gusty winds, fog, high waves, and ocean currents. Therefore, among the various forms of natural capital, the stability of the “climate” and the “ocean” is particularly important. To maintain these, it is necessary to recognize and address a range of environmental issues, including climate change, biodiversity loss, and air pollution.

While shipping supports a large portion of global trade as an efficient means of transporting large volumes of cargo at once, maritime transport also contributes to significant greenhouse gas (GHG) emissions. Climate change is therefore one of the environmental issues most closely related to our business. Thus, we

believe that reducing GHG emissions not only helps prevent the intensification of extreme weather and oceanic conditions, but also contributes to mitigating negative impacts on the marine environment, thereby ensuring stable business operations.

As outlined above, climate change and natural capital are no longer separate environmental issues, but interrelated management priorities that are directly linked to corporate value. Climate is an integral part of nature. The degradation of natural capital amplifies climate-related risks, while climate change, through its impacts on biodiversity and water cycles, can undermine the very foundations of our business. Through our integrated TCFD and TNFD disclosures, we will not manage climate and nature as separate topics. Instead, we recognize them as interconnected risks and opportunities driven by their interdependencies, and clearly articulate our commitment to incorporating these considerations into our decision-making.

The outcomes of these analyses are also reflected in our management plan, “BLUE ACTION 2035”, and “MOL Group Environmental Vision,” and are utilized in integrated management decision-making beyond sustainability considerations alone. Addressing climate- and nature-related issues cannot be achieved by our Company alone. Through dialogue and collaboration with a diverse range of stakeholders—including customers, suppliers, financial institutions, local communities, and policymakers—we share risks and opportunities and translate a sustainable transition into concrete actions. This report is positioned as a starting point for such engagement. Going forward, we will progressively enhance our integrated analysis of climate- and nature-related risks and opportunities, the quantification of financial impacts, as well as our metrics and targets.

We will continue to fulfill our responsibilities as a company connected to the sea by recognizing and addressing various environmental issues, including climate change. By doing so, we aim to protect the ocean, our source of value creation, while operating our business stably and growing as a sea-based social infrastructure company that supports people's lives.



Toru Hikima

Executive Officer
Chief Sustainability Officer
(CSuO)

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OVERVIEW

Approach to this Disclosure

The MOL Group is committed to minimizing the environmental impact of its business activities and promoting concrete actions toward the realization of a sustainable society. We have conducted an analysis using the frameworks of the Task Force on Climate-related Financial Disclosures (TCFD) and the Taskforce on Nature-related Financial Disclosures (TNFD) to assess how our business activities relate to climate-related and natural capital issues, as well as the associated risks and opportunities. The results of this analysis indicate that while the strengthening of regulations related to air pollution and greenhouse gas (GHG) emissions may increase compliance costs, there are also opportunities to establish competitive advantages through the adoption of environmentally friendly technologies and low- and zero-carbon fuels. In addition, evolving global trends such as the energy transition present opportunities to capture new business domains. Furthermore, our nature-related analysis has identified interlinkages between climate change, natural capital, and the marine environment. We will continue to deepen and expand our initiatives to mitigate risks and capture opportunities, while strengthening collaboration with diverse stakeholders across society to ensure that these efforts are embedded as sustainable practices.



We have established the “Sustainability Committee” as a subordinate body of the Management Committee, where particularly important matters are deliberated and resolved by the Management Committee and the Board of Directors. In addition, we conduct ongoing monitoring of the “MOL Group Environmental Vision,” and have introduced an executive compensation system linked to climate-related performance.



For climate change, we assessed climate-related risks and opportunities based on multiple scenario assumptions and examined corresponding response measures. In addition, for the analysis of physical risks, we also considered scenarios assuming a temperature increase of 3.0° C or higher. In quantifying financial impacts, we estimated profit and loss fluctuations under each scenario. For natural capital, we conducted an analysis based on the LEAP approach, the assessment methodology recommended by the TNFD. Based on these results, we will present a concrete pathway toward achieving our environmental targets, drawing on the transition plan set forth in the “MOL Group Environmental Vision.”



We mapped key company-wide risks affecting our overall business operations based on their impact and likelihood. In addition, we have established management structures and internal rules for each identified risk.



Long-term target

With the concerted effort throughout the Group, achieve net zero GHG emissions by 2050

Mid-term target

Reduce GHG emissions intensity by 45% by 2035 (versus 2019)

Short-term target

- Reduce GHG emission intensity by 1.4% per year (versus 2019)
- Sector-specific KPIs and milestones with defined timelines are established to achieve short-, med-, and long-term GHG reduction targets.

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GENERAL REQUIREMENTS

In this disclosure, climate change- and natural capital-related information is organized in an integrated manner using the TNFD general requirements framework. This approach enables comprehensive coverage of both TCFD and TNFD recommended disclosures, while ensuring consistent disclosure of risks and opportunities across the entire business under a common evaluation framework.

(1) The Application of Materiality

The MOL Group identifies “Safety & Value,” “Environment,” “Human & Community,” “Innovation,” and “Governance” as “Sustainability Issues (Materiality)” as key issues for sustainable growth with society through realization of the Group Vision. This was identified with an awareness of not only the impact of the environment and society on the group, but also the two aspects (double materiality) of the group’s impact on the environment and society. With regard to “Environment,” we have identified climate change countermeasures, preservation of marine environments, protection of biodiversity, and prevention of air pollution as themes for action, and we are striving to enhance the corporate value of the group by pursuing these initiatives.

(2) Scope of disclosures

In this disclosure, the scope of analysis covers the Group’s core business, the shipping business. With regard to upstream and downstream activities of the shipping business, the scope has been defined, taking into account factors such as data availability and the difficulty of substituting locations. Specifically, upstream activities include the shipbuilding stage, while downstream activities include the ship recycling stage.

Details of the scope of identified risks and opportunities are described in “02. Strategy,” sections (2) Climate-related Analysis and (3) Nature-related Analysis.

(3) The location of nature-related issues

In line with the LEAP approach*, the identification and assessment recommended by the TNFD, we analyzed the regions (priority locations) with nature-related issues in our business from the regions involved in the shipbuilding, ship operation, and ship recycling stages in terms of their business significance and ecological sensitivity. Details of the analysis method and assessment results are described in “03. Strategy.”

(4) Integration with other sustainability-related disclosures

In FY2026, from a business strategy perspective, efforts were made to advance an integrated approach to addressing climate change and natural capital by deepening analysis with a focus on common elements between the two, with the aim of achieving more cohesive disclosures. Going forward, alignment with the Sustainability Standards Board of Japan (SSBJ) and international disclosure requirements will be continuously ensured, while enhancing the transparency of both financial and non-financial information from the perspectives of climate and nature.

(5) The time horizons considered

Time Horizons: Short- to med-term FY2026–2030, Long-term: FY2031–2050

The time horizons at which risks and opportunities may materialize are aligned with our TCFD-aligned disclosures, in which 2050 is defined as the long-term horizon. In this report, risks and opportunities are assessed over the short to med term (FY2026–2030) and the long term (FY2031–2050).

(6) The engagement of Indigenous Peoples, Local Communities and affected stakeholders in the identification and assessment of the organization’s nature-related issues

The MOL Group established its human rights policy based on its Corporate Mission, Group Vision, and Rules of Conduct and conducts human rights due diligence. The group has also established several advisory and reporting service desks to promptly address human rights-related concerns. Details are described in “01. Governance.”

* Developed as an integrated approach for assessing nature-related issues such as contact with nature, dependencies on nature, impacts, risks, and opportunities, and used to prepare for TNFD disclosure by steps of Locate (Discover), Evaluate (Diagnose), Assess (Evaluate), and Prepare, through scoping.

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01

GOVERNANCE

MOL has established a management structure led by the President & CEO as the highest responsible officer and has been addressing sustainability issues in an integrated manner. In preparing the integrated disclosure for FY2026, the oversight function of the Board of Directors and the roles of management have been further clarified. A governance structure has been established to enable cross-cutting deliberation of risks and opportunities across both climate and nature, and to integrate these into management decision-making.

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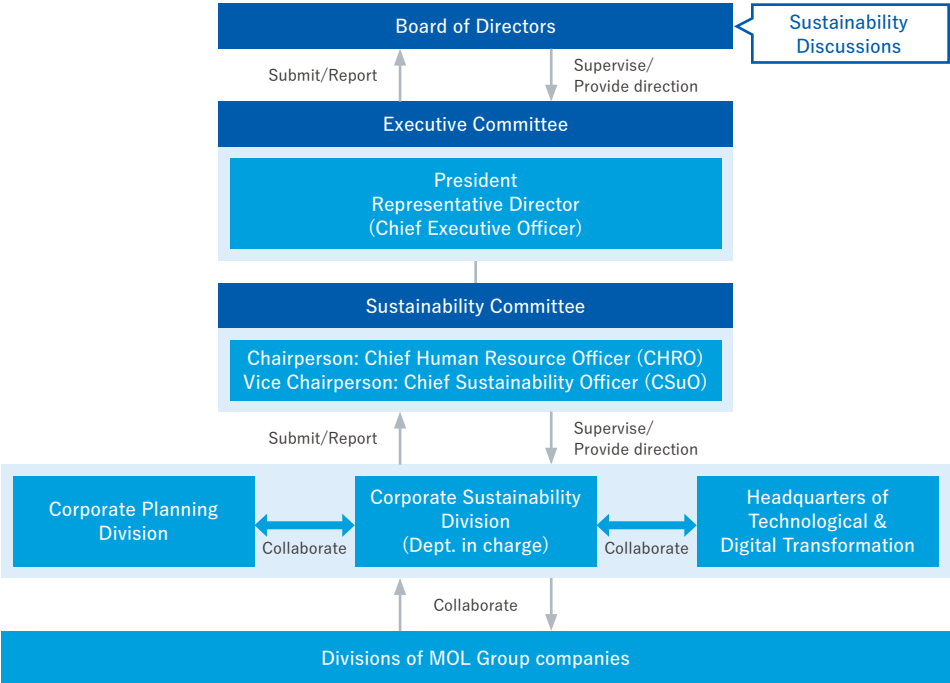
(1) Role of the Board of Directors in Climate- and Nature-related Risks and Opportunities

The Group considers environmental issues such as climate change, marine environment, biodiversity, and air pollution prevention, as well as issues related to sustainability in general, to be important management issues and has established a management structure with the CEO as the decision maker. The Chief Sustainability Officer (CSuO) oversees environmental initiatives, including climate change measures, and the Sustainability Committee (formerly the Environment and Sustainability Committee, renamed from FY2024), which is subordinate to the Executive Committee, is the main deliberation body. The Committee is chaired by the Chief Human Resource Officer (CHRO) and vice-chaired by the Chief Sustainability Officer (CSuO). Matters discussed by the Committee are reported to the Executive Committee and the Board of Directors as appropriate, and matters of particular importance are discussed and approved by the Executive Committee and the Board of Directors prior to implementation.

The Environment and Sustainability Committee convened a total of eight times in FY2022, six times in FY2023, ten times in FY2024 and thirteen times in FY2025 to discuss key sustainability matters, with a particular focus on climate change. Of these, the Committee discussed in particular the enactment of “MOL Group Environmental Vision,” which was followed by reports and resolutions at Board of Directors meetings and management meetings. At these meetings, the management team, led by the Representative Director, makes decisions.

To further strengthen the involvement of the Board of Directors in the formulation and review of sustainability management policies and strategies, a “Sustainability Committee” has been newly established since FY2024, separate from regular agenda items for resolution and reporting at Board meetings, with the participation of all Board members.

To promote an integrated approach to sustainability issues across MOL Group, “Environment Sustainability Strategy Division (currently the Corporate Sustainability Division)” was newly established in FY2021. In addition, sustainability initiatives were integrated into the management plan “BLUE ACTION 2035,” and a framework has been developed to embed environmental initiatives—centered on climate change measures—into business strategy. Furthermore, the “MOL Group Environmental Vision” was formulated to advance comprehensive efforts addressing a broad range of environmental issues. Progress against this vision is monitored on a regular basis and reported to the “Sustainability Committee” and other relevant bodies. Furthermore, within the Group, the GHG emissions intensity reduction target is positioned as a core KPI of the management plan “BLUE ACTION 2035,” and its progress is incorporated into the executive compensation framework. Accordingly, the progress of sustainability-related initiatives is reflected in executive remuneration.



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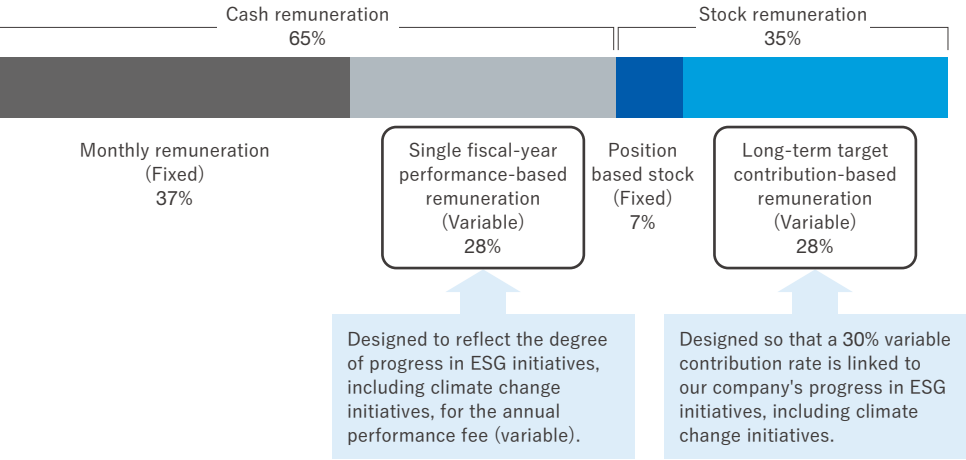


Conference organization	Roles	Members	Achievements
Board of directors	- Discussion and resolution on fundamental policies and the most critical matters pertaining to the management of the Group - Decision-making on particularly important environmental policies, transition plans and management plans "Sustainability Discussion" on the development and review of sustainability management policies and strategies.	10 directors (including President, CEO, and 5 outside directors) * For more information on members, see the "Governance Data" page	16 meetings in FY2025 - Examples from past agendas: supervision and approval of plans for - Management plan "BLUE ACTION 2035" "MOL Group Environmental Vision 2.2" - MOL Sustainability Plan (MSP) - Identification of the Group's sustainability issues (materiality) - Scenario for Long-Term Transition to Decarbonization in Shipping
Executive Committee	- Highest decision-making organization at the operational level - Discussion and resolution on key environmental policy and transition plan indicators and targets	9 persons (including 4 directors and 5 executive officers), with the CEO as the chair	- Weekly meetings. Discusses numerous climate change related issues - Examples of past agendas: - Initiatives to Enhance Sustainability Management - Revision of Sustainability Issues (Materiality) for "BLUE ACTION 2035" Phase 2 - Revision of the Environmental Vision and Environmental Action Plan for "BLUE ACTION 2035" Phase 2 - Approval of Key Investments Related to Climate Change - Decision on the Internal Application of ICP in Investment Decision-Making
Sustainability Committee (formerly Environment and Sustainability Committee)	Discussion and formulation of policies to address major sustainability issues, particularly climate change	Chief Human Resource Officer (CHRO) as Chair and Chief Sustainability Officer (CSuO) as Vice Chair, and executive officers related to the managed fields of committee (Including CFO, CCO, CSO, CTO, CDIO, and the Executive Officer in charge of the Fuel GX Business and Tanker Business)	10 meetings in FY2024 13 meetings in FY2025 - Formulate "MOL Group Environmental Vision" and monitor progress of KPIs by action - Review of MOL Sustainability Plan (MSP) - Non-financial information disclosure policy, including environmental information

* Please refer to the "Corporate Governance Organizational Structure" page for details, including those not related to climate change.
* Corporate auditors and executive officers who participate in the Board of Directors and Management Committee are appointed with the experience, insight, and expertise necessary for the Group's decision-making. Please refer to the "Governance Data" page for the skill map of the management team.

(2) Executive compensation linked to climate change

As part of its governance initiatives, the Company has implemented a system in which executive remuneration is linked to climate change-related results. The evaluation of the President and CEO and other executive directors is based on the progress of climate change measures and other ESG-related initiatives. Please refer to "Remuneration."



(3) Engagement with stakeholders

The MOL Group stipulates that it shall engage in transparent dialogue with all stakeholders, including local communities. In the "MOL Group's Three Basic Principles of Corporate Governance" and the "MOL Group Corporate Governance Policy (Article 3). In addition, the "MOL Group Human Rights Policy," expresses our respect for the human rights of all people involved in our business activities, striving to identify and mitigate human rights risks, including human rights violations against indigenous peoples and local communities, through our initiatives on human rights due diligence. Furthermore, we have established several advisory and reporting service desks that can be used when specific concerns arise. All of these desks ensure the anonymity of the person seeking consultation and the confidentiality of the reported information, and guarantee that no disadvantageous treatment will result from submitting a report. For external stakeholders, we have built a system to respond appropriately while ensuring fairness and transparency by establishing a multilingual external service desk and accepting consultations through impartial third parties.

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02

STRATEGY



MOL has been advancing analyses and examining response measures for climate change in line with the TCFD, as well as for natural capital in line with the TNFD. Through these efforts, it has been recognized that climate change and natural capital are interrelated and exhibit complex interactions. Accordingly, it is considered important to address these issues in an integrated manner rather than as separate topics. For example, initiatives to improve fuel efficiency, promoted as part of climate change measures, are expected not only to reduce GHG emissions but also to contribute to marine environmental protection. In addition, in the procurement of biofuels, efforts are made to consider not only GHG reduction effects but also impacts on nature throughout feedstock production and supply chains, thereby advancing responses that take into account the interlinkages between climate and nature. For further details, please refer to the column on p.12. Based on this recognition, quantitative analyses include the assessment of financial impacts associated with climate change- and natural capital-related risks and opportunities. For those identified as having particularly high materiality, response measures are examined and deliberated. The key risks and opportunities identified through TCFD scenario analysis, as well as those identified through TNFD LEAP analysis, are summarized on the following page.

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(1) Overview of Climate- and Nature-related Risks and Opportunities

MOL strives to identify a wide range of potential risks and opportunities related to climate change and natural capital. The “Sustainability Committee” monitors the identification and response status of these risks and opportunities, and assesses their potential impacts on MOL’s business from a long-term perspective. Specifically, scenario analysis is conducted for climate-related issues, while dependency and impact analyses are conducted for nature-related issues. Based on these analyses, the overall landscape of key transition risks, physical

risks, and opportunities identified through each assessment is summarized as follows. Details of the analytical methodologies are provided in the following sections: “(2) Climate-related Analysis” and “(3) Nature-related Analysis”. In addition, “(4) Examples of Responses to Risks and Opportunities” outlines measures to avoid and mitigate risks and to capture opportunities based on the analysis results, while “(5) Transition Plan” presents MOL’s initiatives and action plans derived from these response measures.

【Table 2-1: Overview of Identified Key Risks and Opportunities】 * For detailed risks, opportunities, and responses, see “(4) Examples of Responses to Risks and Opportunities.”

Main assumed risks and opportunities	Category	Events	Specific examples of risks and opportunities	Materializa- tion timing	Climate	Nature	Opportunity acquisition strategies
Transition risks	Policy and legal risks	Regulatory tightening on GHG emission (Carbon Tax and Emissions Trading, FuelEU Maritime*)	Cost Increases from Carbon Taxes and Emissions Trading (EU-ETS, IMO net-zero frame)	Short/mid	○	○	• Impacts are mitigated through measures such as the introduction of alternative fuel vessels. • Careful communication with customers is also undertaken.
		Regulatory tightening on GHG emission (EEDI, EEXI)	Increase in capital investment	Short/mid	○	○	Same as above
		Regulatory reinforcement (water pollution)	Increased costs for installing machinery/equipment required for regulatory compliance, increased operating costs for waste disposal, etc.	Short/mid		○	Compliance with international regulations and establishment of appropriate waste management systems.
		Regulatory reinforcement (air pollution)	Increased costs for installing equipment that complies with regulations, etc.	Short/mid		○	Reduction in the use of hazardous substances and implementation of slow steaming.
	Reputation	Decline in brand image due to negative impact on nature caused by fuel spills, etc.	Decline in image may adversely affect transactions with charterers and shippers	Short/mid		○	Ensuring safe vessel operations, compliance with international regulations, establishment of waste management systems, and formulation of the “MOL Group Environmental Vision,” procurement policies, and guidelines.
	Technology	Spread of new marine fuel engines	Obsolescence of fossil fuel-powered vessels	Long	○		Mitigation of impacts through measures such as the introduction of alternative fuel vessels.
	Markets	Change in energy mix	Decrease in fossil fuel transport volume and increase in business risks associated with this	Short/mid	○		Optimization of business regions in response to changes in energy supply and demand structures, enhancement of flexibility in the fleet and business portfolio, and strategic investment in new fuel transportation.
		Increased electrification	Decrease in crude oil transport volume associated with decline in demand for gasoline	Long	○		Monitoring regulatory and policy developments in anticipation of fuel shifts in land transport, and establishment of operational structures aligned with the scale of operations.
		Increase in newbuild vessel prices	Pressure on shipyard operations from growing demand for alternative fuel-powered vessels accompanied by increase in newbuild vessel prices	Long	○		Formulation of a fleet development plan aligned with the “MOL Group Environmental Vision,” with ongoing review based on demand outlooks.

* FuelEU Maritime:An emissions regulatory framework introduced by the European Union targeting international shipping operating in European waters.

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Main assumed risks and opportunities	Category	Events	Specific examples of risks and opportunities	Materialization timing	Climate	Nature	Opportunity acquisition strategies
Physical risks	Acute risks	Flood/typhoon	・ Temporary obstacles to transport due to supply chain disruptions ・ Increased operation days and fuel consumption due to evacuation from typhoons	Short/mid	○	○	Promotion of the use of meteorological and oceanographic data for optimal route selection, and strengthening of information gathering on cargo supply chains.
	Chronic risks	Drought	Changes in transport routes associated with changes in grain production areas	Short/mid	○		Maintenance and enhancement of responsiveness to alternative trades and cargoes in preparation for localized declines in cargo movements, while taking into account diversification of grain market impacts.
Opportunities	Products/ Services Markets	Introduction of alternative fuel-powered vessels	Increased demand from shippers seeking lower-carbon supply chains	Short/mid	○	○	Continued promotion of GHG emissions reduction measures, including the introduction of various alternative fuel vessels and route optimization.
		Efficient operations and energy-saving facilities	Spread of efficient operation technology and energy-saving facilities (wind propulsion devices, etc.)	Short/mid	○		Promotion of energy efficiency investments through internal carbon pricing, expansion of wind-assisted propulsion technologies, and operational optimization to achieve both decarbonization and profitability.
	Markets	Increase of ocean transport demand	Increase in transport volume of decarbonization-related cargos such as ammonia and hydrogen	Long	○	○	Advancement of business participation to capture cargo opportunities in clean energy transportation, and response to increasing demand for EV-related components.
		Increased electrification	Increase in transport volume of raw materials used in EVs and their components such as lithium and copper	Long	○		Strengthening of information gathering across cargo supply chains, and establishment of operational structures while closely monitoring regulatory and policy developments.
		Spread of clean energy	Building supply chains for offshore wind power generation, ammonia, and hydrogen	Short/mid	○	○	Participation across the offshore wind power value chain by leveraging expertise in marine infrastructure developed through shipping operations.

Time Horizons:
Short- to med-termFY2026–2030, Long-term: FY2031–2050

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COLUMN

Improvement of Fuel Efficiency

Co-benefits for the Marine Environment from Climate Change Mitigation Measures

MOL's "DarWIN Project" is an initiative aimed at reducing fuel consumption and GHG emissions by improving the fuel efficiency of existing vessels. The project is based on the analysis of vessel operational data, meteorological and oceanographic conditions, and fuel consumption using digital technologies. It is implemented in a systematic manner through a combination of three approaches—"Specification Improvements," "Maintaining Optimal Condition," and "Operational Optimization." These include the introduction of systems that support the visualization of operational conditions and optimal voyage decision-making, reduction of resistance through hull and propeller cleaning, and the installation of devices that enhance energy efficiency.

Measures such as reducing hull and propeller resistance have primary benefits as climate change mitigation actions through the reduction of fuel consumption and GHG emissions. In addition, the IMO Guidelines for the Reduction of Underwater Noise from Ships (2023) also recognize such measures as contributing to the reduction of underwater noise. While MOL promotes the DarWIN Project primarily as a climate change mitigation initiative, it also recognizes that its implementation can generate additional benefits for the preservation of the marine environment. These co-benefits are regarded as an important aspect of the initiative, and efforts are continuously advanced under the "MOL Group Environmental Vision."



Hull Cleaning Operation

Source: KUNITOMI Co., Ltd.

COLUMN

Procurement of Biofuels

Alignment of Climate Change Mitigation and Nature Considerations

As part of its efforts to transition to low- and zero-carbon fuels, MOL is promoting the use of biofuels. While biofuels contribute to the reduction of GHG emissions at the point of fuel use, their production and procurement may have potential impacts on natural capital. In particular, issues such as land-use change, deforestation, and impacts on water resources are recognized as potential risks that may arise with the expanded use of biofuels. In light of this, MOL selects biofuels not only based on their GHG reduction potential but also from a life-cycle perspective, taking into account feedstock origin and procurement processes. Specifically, MOL focuses on the procurement of second-generation biofuels derived from non-edible biomass that does not compete with food, and that are certified with Proof of Sustainability. At present, priority is given to the procurement of

biofuels derived from waste materials.

Looking ahead, in cases where the use of plant-based feedstocks such as non-edible oil crops is considered, feedstock selection will be conducted with due care. This includes addressing potential impacts such as food competition and CO₂ emissions associated with indirect land-use change (ILUC), as well as broader effects on natural capital, including biodiversity. These initiatives form part of MOL's risk management approach to fuel procurement, based on the recognition that climate change mitigation and considerations for natural capital are closely interrelated. MOL positions biofuels not merely as a means of decarbonization, but as a "responsible fuel choice" that takes into account its relationship with natural capital, with the aim of contributing to the realization of sustainable shipping over the long term.



Sample Analysis of Biofuel
Derived from Used Cooking Oil

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(2) Climate-related Analysis

a) Overview of Scenario Analysis

The MOL Group initiated scenario analysis on the financial impacts of climate change following the agreement of the Paris Agreement in 2015. Based on the results of this analysis, the long-term strategy “MOL Group Environmental Vision” was formulated and positioned as a core pillar of the Group’s management strategy. Since then, the content of the vision has been updated on an ongoing basis in response to changes in the external environment. This section provides an overview of the scenario analysis, together with how the results have been reflected in business planning.

■ Scope of verification for scenario analysis

- Transportation demand for commodities related to the international shipping business (e.g., energy, automobiles, and grain)
- Business environment across the entire supply chain of the above commodities (including upstream and downstream)
- Business environment of the shipbuilding sector as part of the shipping business supply chain

【Table 2-2: Business environment assumed in each scenario】

		1.5°C scenario	3.0°C scenario
Reference scenarios		IEA, “Net Zero Emission by 2050 Scenario (NZE)” (World Energy Outlook 2025)	IEA, “Current Policies Scenario (CPS)” (World Energy Outlook 2025)
Assumed business environment	Risk	Materialization of transition risks predominantly • Cost increases due to tighter regulation Increase in costs such as carbon tax due to the further tightening of EEDI and EEXI regulation and the introduction of carbon pricing schemes. Capital expenditures also increase as action on alternative fuel-powered vessels becomes a matter of urgency • Decrease in transport volume of carbon-related cargoes Transport volume of carbon-related cargoes such as oil and coal decreases as a result of the mass adoption of renewable energy and increased electrification	Materialization of physical risks predominantly • Supply chain disruptions caused by floods and typhoons Situations in which supply chains are temporarily disrupted by floods and typhoons occur more frequently • Changes in ports of loading due to the occurrence of droughts The occurrence of droughts leads to changes in the production areas of major agricultural products such as soybean, wheat and corn and changes in transport routes
	Opportunities	• Increase in clean energy business opportunities Increase in new business opportunities relating to the creation of new supply chains such as the offshore wind power supply chain and the ammonia and hydrogen transportation supply chain • Introduction of alternative fuel-powered vessels Market share increases due to quick response to needs of shippers who prefer low-carbon transport • Changes in supply chain structure Growing demand for ferrous scrap used to charge electric furnaces and EV-related components, driven by increased electrification, leads to increased transport volumes	• Increased demand in existing business segments: market expansion centered on LNG • Introduction of alternative fuel vessels: in regions where environmental measures are more advanced, opportunities broadly equivalent to those under the 1.5°C scenario are expected, although the degree of realization is considered to be lower

In addition to the above, please refer to RCP7.0 for physical risk verification.

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		1.5°C scenario	3.0°C scenario
Key External Environment Indicators (as of 2050)	Carbon tax	US\$ 480/ton-CO ₂ (Assuming contribution unit prices based on the IMO Net-Zero Framework*)	US\$ 87/ton-CO ₂ (Based on IEA CPS values for advanced economies)
	Fossil fuel prices	Crude oil prices: US\$ 25/bbl, LNG prices: US\$ 386/ton	Crude oil prices: US\$ 106/bbl, LNG prices: US\$ 854/ton
	Zero-Emission Fuel Price	Significant Reduction	Remain High
All assumptions are based on IEA scenarios. LNG prices are derived by converting average regional natural gas prices into LNG price equivalents.			
Outlook for Maritime Transport Demand		• Significant decline in transportation demand for all fossil fuels, including LNG • A downward trend in demand for steel-related raw material transportation, driven by the expansion of electric arc furnaces and hydrogen-based direct reduced iron • At the same time, growth in demand for finished product transportation (container vessels and chemical tankers), as well as other dry bulk cargoes (including grain, mineral resources, and steel products), is expected to offset these declines • Overall cargo demand is projected to increase by approximately 23%	• Significant decline in coal transportation demand • In contrast, LNG transportation demand is expected to increase substantially, while oil transportation remains relatively robust • Demand for finished product transportation and dry bulk cargoes is also projected to grow steadily • Overall cargo demand is projected to increase by approximately 43%
Direction of Response Measures under Both Scenarios		• Large-scale introduction of alternative fuel vessels: through the execution of investments in line with the fleet transition plan “GHG Reduction Roadmap,” approximately 80% of MOL-operated vessels are expected to be replaced by dual-fuel vessels capable of operating on ammonia, methanol, LNG, and other fuels by 2050 • Promotion of efficiency improvement measures: including the deployment of wind-assisted propulsion devices (Wind Challenger), installation of various energy-saving devices, and implementation of related initiatives such as the “DarWIN Project” • Pursuit of new business opportunities related to decarbonization: including offshore wind-related businesses and transportation of hydrogen and ammonia	• Limited introduction of alternative fuel vessels: focusing on measures with higher economic viability, such as LNG-fueled vessels • Implementation of emissions reduction measures centered on efficiency improvements (same as described above) * For physical risks, see “(2)-C.”

* Under the IMO Net-Zero Framework, GHG intensity targets are defined for both the Base Target and the Direct Compliance Target, with contribution payments specified in cases where each target is not achieved. The values are estimated assuming a scenario in which the maximum contributions are incurred for both targets.

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b) Financial Impacts (Quantitative Analysis)

(1) Results of the Quantitative Analysis of Financial Impacts

MOL evaluates the quantitative impacts on its business under each scenario. Among the various risks and opportunities identified, the most material impacts are associated with policy and regulatory risks—such as increased costs due to carbon taxes and emissions trading, as well as capital expenditures related to the introduction of alternative fuel vessels. In addition, technology risks may lead to changes in fuel costs through the adoption of new marine fuel engine technologies, while market risks are expected to affect transportation volumes, particularly through a decline in fossil fuel cargoes. Furthermore, significant opportunities are anticipated in emerging business areas such as offshore wind-related businesses and the transportation of ammonia. Accordingly, the quantitative assessment of financial impacts focuses particularly on the following key factors.

Profit and Loss Impacts Driven by External Factors (Impact in the Absence of Mitigation Measures)	(1) Changes in Cargo Volume
	(2) Changes in Fuel Prices
	(3) Strengthening of Carbon Taxes and Emissions Trading
Measure: Introduction of next-generation fuel vessels	(4) Alternative Fuel-Related Costs
	(5) Increase in Vessels
	(6) Avoidance of Carbon Taxes
Measure: Passing through cost increases to freight rates	(7) Passing through Carbon Taxes and Fuel Costs to Freight Rates
Measure: New business opportunities	(8) Additional Revenue from Increased Transportation Volumes
Measure: Operational efficiency improvements	(9) Improvements through More Efficient Operations

The factors contributing to financial impacts under each scenario toward 2050 are assessed as shown below. Figures are presented on an ordinary profit basis and represent annual impacts rather than cumulative amounts.

* For the impacts of further intensified physical risks—such as floods, typhoons, and reductions in forest areas—please refer to the following section “(2)-c Detailed Analysis of Physical Risks.”

Examples of New Business Opportunities



MOL's Involvement in Offshore Wind Power in Taiwan



Concept Image of an Ammonia Carrier

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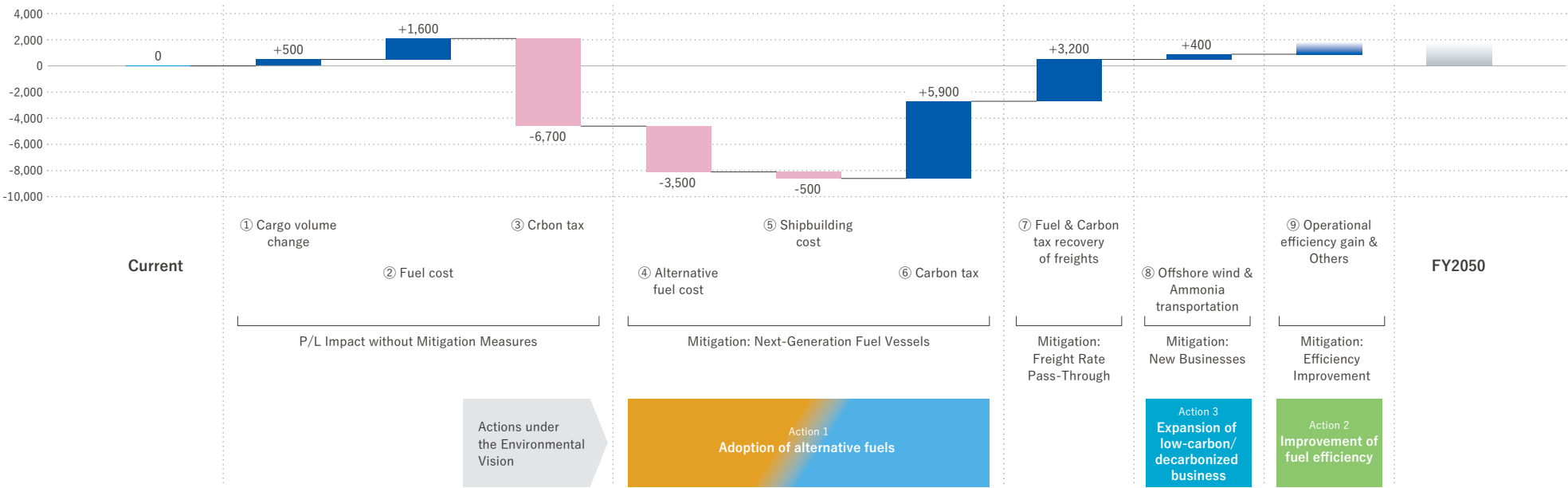
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Factors affecting profit/loss from now to 2050 (1.5° C scenario, unit: JPY 100 million, single-year basis)



Under the 1.5° C scenario, factors affecting MOL's profit and loss through 2050 are expected to be complex and driven primarily by transition risks. In this scenario, the rapid advancement of decarbonization policies and the energy transition is expected to significantly reduce transportation demand for fossil fuel-related cargoes, such as oil and coal. At the same time, demand for product transport and new energy-related cargoes is expected to increase, and changes in the business portfolio are expected to affect profit and loss (①). In addition, declining demand for fossil fuels is expected to place downward pressure on fuel prices, contributing positively to earnings (②). Conversely, the most significant factor placing pressure on earnings in this scenario is the increase in costs associated with the introduction and strengthening of carbon pricing mechanisms, including carbon taxes (③). To mitigate this impact, MOL will work to reduce GHG emissions through the introduction of alternative fuel-capable vessels (④–⑥), thereby limiting exposure to carbon pricing. While the use of alternative fuels is expected to increase fuel costs (④), and the introduction of vessels equipped with new fuel engines is expected to increase shipbuilding costs (⑤), these impacts can be partially offset through

the avoidance of carbon pricing costs (⑥). Furthermore, MOL will seek to pass through additional costs, including carbon pricing costs, fuel costs, and shipbuilding costs, to freight rates through market mechanisms, while promoting appropriate cost-sharing across the value chain, as has traditionally been the case (⑦). This scenario also assumes rapid growth in demand in clean energy sectors, including offshore wind and the transportation of hydrogen and ammonia. MOL expects to capture earnings opportunities in these areas by leveraging expertise developed through its shipping business (⑧). In addition, MOL will continue to promote operational optimization and the introduction of energy-saving technologies to improve efficiency and enhance profitability (⑨). Taking these factors and corresponding measures into consideration, although transition risks are expected to exert substantial upward pressure on costs, MOL expects to secure sufficient profitability in 2050 through strategic investments and the transformation of its business portfolio.

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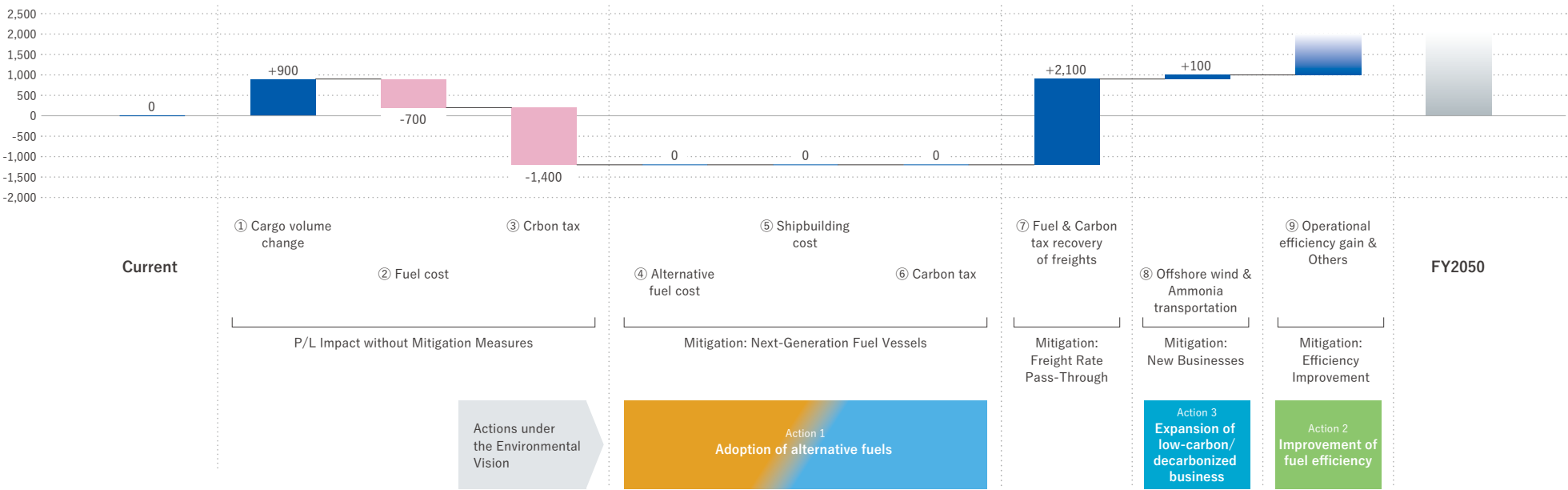
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Factors affecting profit/loss from now to 2050 (3.0° C scenario, unit: JPY 100 million, single-year basis)



Under the 3.0° C scenario, factors affecting MOL's profit and loss through 2050 in relation to climate transition risks can be assessed in a relatively straightforward manner*. In this scenario, transportation demand for conventional energy-related cargoes is expected to be maintained through 2050, with LNG cargo volumes in particular projected to increase further. Together with growth in product and chemical transportation demand, these trends are expected to have a positive impact on profit and loss (①). Higher fossil fuel prices are expected to increase fuel costs (②), placing pressure on earnings. However, MOL will work to pass through these additional costs to freight rates based on market principles, consistent with prevailing commercial practices, thereby promoting appropriate cost-sharing across the value chain (⑦). Compared with the 1.5° C scenario, cost increases associated with carbon pricing (③) are expected to remain at a relatively moderate level. In line with the principle that MOL's emissions reductions directly contribute to reducing emissions across customers' supply chains, MOL will continue to promote the appropriate pass-through of these costs to freight rates, as with fuel costs (⑦). Under this scenario, fossil fuels are expected to remain widely used even in 2050, and conventional heavy fuel

oil is likely to retain a cost advantage as a marine fuel in many cases. As a result, the financial impact of introducing next-generation fuel vessels is expected to be limited. For the purpose of simplification, this factor is not reflected in the analysis (④–⑥). In practice, however, MOL intends to continue pursuing decarbonization by implementing economically viable measures, including the introduction of LNG dual-fuel vessels. In addition, opportunities for earnings growth are expected to emerge in new business fields, including offshore wind-related sectors in certain regions (⑧). Furthermore, regardless of the regulatory environment, MOL will continue improving fuel efficiency through various operational efficiency measures, including the use of wind-assisted propulsion technologies (⑨). Taking these measures into consideration, MOL expects its profit and loss in 2050 to exceed current levels by a significant margin.

* This page focuses primarily on transition risks. For the analysis of financial impacts related to physical risks, please refer to the separate page.

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(2) New business opportunities related to climate change

Global expansion in demand for clean energy is generating a wide range of new business opportunities that have a high affinity with the expertise MOL has developed in its existing businesses. As one of the Three Actions in MOL Group Environmental Vision, MOL has adopted “Action 3 Expansion of low-carbon/decarbonized business through the collective efforts of the entire Group” and is working to develop new business domains with contributing to the reduction of society’s GHG emissions.

As the world builds a new clean energy supply chain, MOL aims to increase value at each stage of the clean energy supply chain and contribute to the decarbonization of society via the social implementation of decarbonization projects.

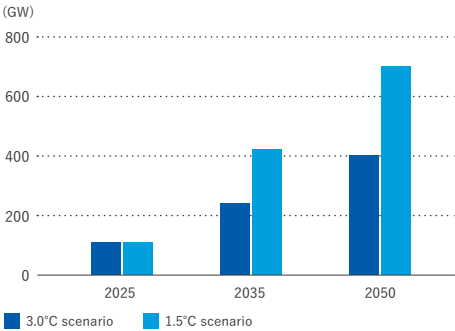
As of FY2025, MOL provides transportation services using alternative fuels as part of its sustainable services, accounting for approximately 7% of the total.

Here we will highlight new business opportunities in the offshore wind power related business field and the ammonia and hydrogen transportation business field as typical examples.

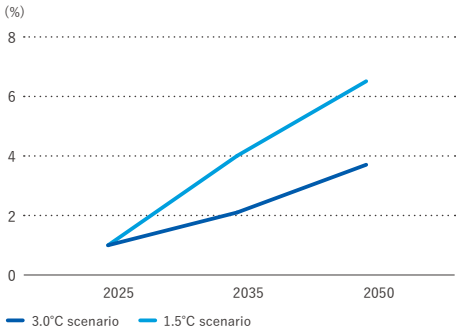
● Offshore wind power

Offshore wind is widely expected to be one of the fastest-growing sectors within the renewable energy industry. According to the IEA, global demand for offshore wind power is projected to increase significantly under all scenarios. Under the 1.5°C scenario, cumulative new offshore wind capacity additions are expected to reach approximately 700 GW by 2050, while even under the 3.0°C scenario, demand for new offshore wind installations is projected to total approximately 400 GW.

Offshore wind generation capacity outlook



Ration of offshore wind in global power supply



Source: Estimated by MOL based on IEA, Offshore Wind Outlook 2019.

Offshore wind is also expected to become an important source of electricity generation. By 2050, offshore wind is projected to account for approximately 6.5% of global power generation under the 1.5°C scenario and just under 4% under the 3.0°C scenario. Leveraging the expertise developed through its shipping business in supporting the development of marine infrastructure, MOL aims to participate across the offshore wind value chain and has already commenced operations in selected areas. Through these efforts, and based on assumptions applied in the scenario analysis, MOL expects the offshore wind business field as a whole to provide the following earnings opportunities by 2050.

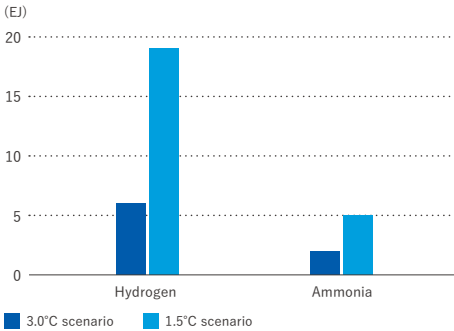
	3.0°C scenario	1.5°C scenario
Offshore wind power-related business (Billion yen)	9.0	24.0

● Ammonia and hydrogen transportation business

Ammonia and hydrogen are expected to play an important role as next-generation energy carriers, replacing fossil fuels in a decarbonized society. According to the IEA, total final energy demand for ammonia and hydrogen is projected to reach 24.3 EJ by 2050 under the 1.5°C scenario, accounting for approximately 7% of global final energy consumption and representing a major form of energy use.

In addition to utilizing ammonia and hydrogen as fuels for its own vessels, MOL aims to

Hydrogen/Ammonia demand outlook (2050, Final consumption)



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participate across the ammonia and hydrogen value chain by capturing business opportunities arising from new transportation demand for these commodities. MOL has already commenced operations in selected areas of these businesses. Through these efforts, and based on assumptions applied in the scenario analysis, MOL expects the ammonia and hydrogen transportation business field as a whole to provide the following earnings opportunities by FY2050.

	3.0°C scenario	1.5°C scenario
Ammonia and hydrogen transportation related business (Billion yen)	1.0	11.0

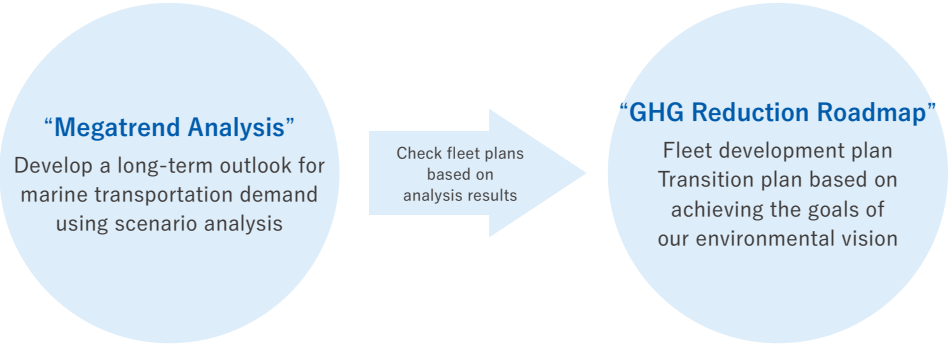
(3) Analysis of the risk of stranded assets

As the world transitions toward a decarbonized society, increasing attention is being paid to the risk that certain assets may lose value as a result of the transition (“stranded asset risk”). In the shipping industry, a typical example of stranded asset risk is the potential decline in the value of vessels transporting fossil fuels as demand shifts toward new energy sources. For example, a reduction in oil demand could lead to lower demand for oil tankers, resulting in impairment of the value of tanker assets already on order.

To address this risk, MOL develops long-term transportation demand outlooks for its major cargo segments through 2050 under multiple scenarios reflecting different levels of progress in climate change mitigation measures (please refer to “Megatrend Analysis” for details).

In addition, MOL formulates an ultra-long-term fleet development plan aligned with the emissions reduction targets set out in the “Environmental Vision,” including the “GHG Reduction Roadmap” and vessel fleet plans by segment through 2050. Under this framework, MOL regularly reviews the resilience of its fleet plans against changes in the external environment by referencing transportation demand projections for each business segment under the various scenarios developed through the megatrend analysis, and has established a process to confirm that its fleet portfolio remains sufficiently resilient under a range of future conditions.

Megatrend Analysis and Fleet Development Planning



Trends in transportation demand and the direction of fleet development plans

Cargo segment	Corresponding assets	[Megatrend analysis] Cargo movement trends		[GHG reduction roadmap] Direction of our fleet development plan (mid- to long-term)
		2.0° C scenario	1.5° C scenario	
Coal	Coal carrier	↘	↘	↘
Oil	Tanker	↘	↘	↘
LNG	LNG carrier	↗	↘	→
Ammonia	Ammonia carrier	↗	↗	↗
Iron ore	Dry bulker	→	↘	→
Automobile	Car carrier	→	→	→

Avoid stranded asset risk through periodical review to ensure that the fleet plan to be aligned with cargo trends

By monitoring transportation demand trends on a regular basis, we can identify potential issues and implement a business process for all shipping segments that allows us to swiftly adjust fleet plans in response to changes in demand. This ensures that we are adequately prepared for the risk of stranded assets.

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c) Detailed Analysis of Physical Risks

(1) Basic approach to physical risk (Direct risk and indirect risk)

The physical risk assessment generally covers buildings, factories, and other real estate owned by companies. Since our main business is international maritime, the assessment covers vessels (movable property) that sail freely at sea. Movable goods such as ships are subject to two types of risks: direct risk, in which natural disasters such as floods and typhoons damage the ship itself, and indirect risk, in which disrupted supply chain of cargo for shipping would lead to reduced transportation demand.

Compared to land-based real estate, direct risk is inherently resistant due to its ability to navigate freely at sea. In addition to not being directly affected by acute risks on land such as floods, droughts, and wildfires, it is possible to avoid direct risks by avoiding severe weather even in the case of typhoons at sea. In addition, we can directly reduce risks by establishing a network that provides accurate forecasts of weather and sea conditions, instantly sharing the information with all operating vessels, and maintaining a business process to select the appropriate route. There is a possibility that this will be exposed in the form of an increase in marine insurance premiums over the long term, but the impact is currently considered to be limited.

On the other hand, indirect risk has the potential to manifest itself in various ways. In general shipping companies such as our company, the transported cargo spans a wide variety of industries, such as automobiles, steel raw materials, grains, and fossil fuels. The risk of supply chain fragmentation varies depending on the industry. Therefore, indirect risks are expected to have a wider range of risk events and require detailed consideration.

【Table2-3: Summary of Key Risks and Business Impacts】

Type of risks	Overviews	Impacts on our business
Direct risks	• The risk that natural disasters such as floods and typhoons damage the ship itself in the form of disruptions to operating routes and damage to ships. • Risk of increased fuel consumption/GHG emissions due to typhoon evacuation.	Unlike land-based real estate, it is possible to avoid and minimize damage by moving based on appropriate weather and sea forecasts.
Indirect risks	Risk of disrupting the supply chain of cargo for shipping, leading to reduced transport demand.	Impact analysis is important because the impact varies depending on the characteristics of the cargo and uncertainty is high.

(2) Indirect risks that vary depending on the cargo

Since the impact of indirect risks on our business varies greatly depending on the cargo to be transported and the risks to be generated, we are conducting comprehensive analysis of major cargo and risk events.

We believe that the impact of indirect risks in each business can be determined by three characteristics: A. cargo, B. transport vessels, and C. transport contracts.

It can be considered that the following characteristics are likely to lead to supply chain disruption due to climate change: the production/demand base of the target cargo is biased (ubiquity), there is no alternative commercial material (lack of versatility), the vessels used can be applied only to specific cargo (rigidity), and the transportation contract is difficult to switch (rigidity).

【Table 2-4: Indirect Risk Impacts on Cargo Demand】

	Overviews	Examples of high indirect risk	Examples of low indirect risk
A. Cargo	• [Ubiquity of bases] If production and demand bases are biased to a specific region, one of the bases may malfunction due to a disruption in the supply chain caused by a natural disaster, thereby affecting transportation demand. • [Versatility of cargo] Grains such as rice and soybeans can be replaced in the event of a temporary supply chain disruption but the cargo that is difficult to be replaced such as automobiles may affect transportation demand.	Automobile	Coal Grain
B. Transport vessels	[Rigidity of vessels] When the transportation demand of the target cargo decreases, such as for LNG carriers, it is difficult to load the substitute cargo and the operation rate of vessels may decrease.	LNG-fueled ocean-going vessel	Dry bulk vessel
C. Transport contracts	[Rigidity of contract] For LNG carriers and other vessels with long-term charter contracts, physical risk may reduce the utilization rate.	Long-term ship contract	Spot contract

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02 Strategy

A. Type of cargo

The higher the fluidity of the commodity is, the more flexible it is to respond to supply chain disruptions in general. Even if one production site is damaged, the supply chain is maintained by transferring the site to another. Shifting production base will affect shipping companies, but it is unlikely to lead to a complete supply disruption, and cargo movement, which is a demand for shipping companies, will be maintained above a certain level. For commodities such as oil, coal, and grain which international market transactions are generally conducted, even if physical risks occur in certain regions, the impact on cargo movement is likely to be relatively minor as other regions substitute functions, and even if there is a temporary decrease in demand, it is unlikely to lead to a situation in which the operation of the ship itself stops (Risk of inactivity). On the other hand, in the case of finished automobiles where a specific model is produced at a limited production site for a specific demand location, the impact of supply chain disruption is likely to lead directly to supply disruption, and the risk of temporary ship outage is higher than in the case of general-purpose commodities.

B. Type of transport vessels

If the supply chain of the target cargo is disrupted and the demand for freight transportation fluctuates, a versatile ship type (e.g., a dry bulk ship) can load cargo categories other than the relevant cargo to avoid non-operation.

As an example, the main target cargo of a dry bulk ship includes coal, grain, and ore. However, even if the ship temporarily loses its cargo due to damage to the coal supply chain, the ship can still carry other cargo.

Fluctuations in demand for target cargo naturally affect the shipping business, but the impact is limited because the availability of ships is kept at a certain level due to the presence of substitution demand.

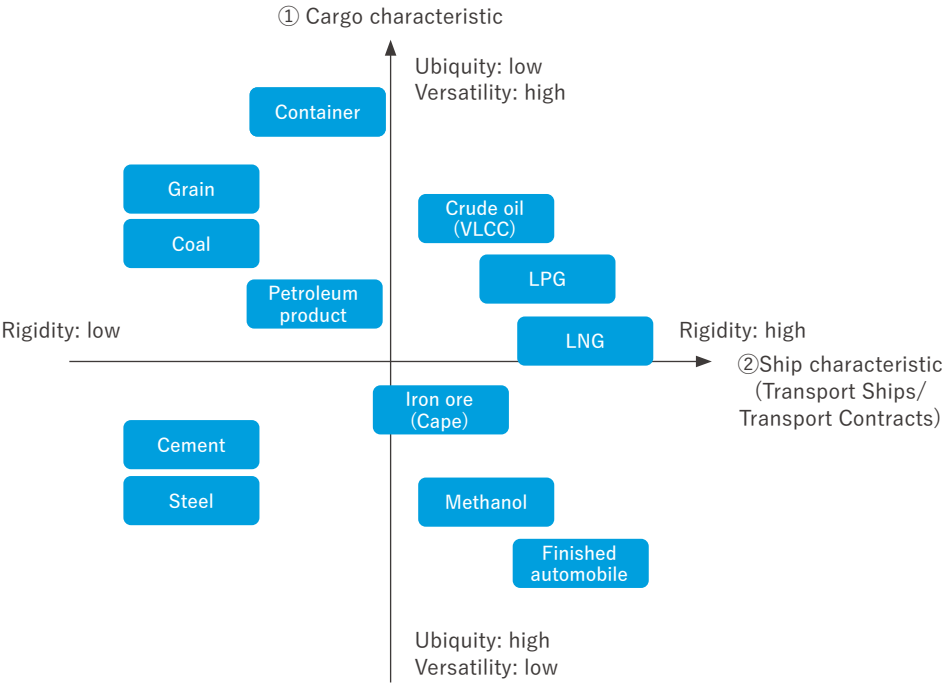
On the other hand, in the case of an exclusive ship type with low versatility (e.g., an LNG carrier), there is no option to load an alternative cargo when the supply of the cargo is interrupted because the target cargo is limited to LNG. This type of ship is prone to the risk of non-operation, and the impact is significant.

C. Transport contracts

In addition to the type of freight, the impact of indirect risk varies depending on the type of transportation contract.

A vessel of a spot contract can immediately switch to another cargo even if the supply chain of one target cargo is interrupted. However, a vessel engaged in a long-term exclusive contract cannot flexibly and quickly change cargo.

Compared to ship types for which ship market with high fluidity has been formed, ship types for which the ratio of long-term exclusive contracts is large and generalization has not progressed (Some LNG carriers, methanol carriers, etc.) have a relatively large risk of non-operation.



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(3) Effect of indirect risk — Combined and Two-sided Impact —

When an event such as a supply chain disruption occurs, the event often has a multifaceted impact with mixed results in the shipping industry and does not necessarily have a negative impact on our business.

As an example, if the supply chain of an item is disrupted, as long as the demand side is not damaged, an alternative supply will be developed over time, thereby restoring load movement. If the replacement supply comes from further afield than before, the realignment of the supply chain could increase the tonnage demand, leading to a surge in market conditions. In addition, if demurrage occurs due to supply disruptions, there may be a shortage of vessels to be sent to other ship demand areas, resulting in an increase in the unit cost of transportation due to tight transportation demand. Therefore, the impact can be both positive and negative.

As such, the unique situation in the shipping industry of operating assets that inherently move across regions can have multiple and double-sided consequences for risk events.

(4) Indirect Risk Case Study

Physical risk exposure in the shipping industry is very broad, and its impact is two-sided. In our company, case studies are conducted with reference to past cases and the IPCC RCP7.0 scenarios to assess the impact of indirect risks on our company. Since the impact of chronic risks such as sea level rise is small due to the fact that the sea can be freely navigated, this case study focuses on acute risks only.

Risk Case 1

Major flooding in inland Thailand causes submergence of automobile production plants (acute risk)

Risk Case Summary

In July 2030, Thailand was hit by record torrential rains that caused massive flooding. Damage occurred in a wide area of Thailand, and 10 industrial parks in the surrounding area, especially in Bangkok, were submerged for 3 months over a wide area. In Thailand, flooding occurred frequently during the rainy season, and submergence happened by several centimeters which is equivalent to the height of a car.

However, this time, many roads in Bangkok were interrupted, and railway operations starting from Bangkok were suspended, which had a significant impact on transportation and traffic in Thailand. The water completely receded around January of the following year, half a year after the disaster occurred.

Impact of Risks on our Business

Negative impact on our business: Reduction in transportation volume due to temporary production failure: Automobile and parts factories located in the flooded industrial park were severely damaged and operations were suspended. In addition to the finished automobile, the equipment of the assembly plant was damaged, and the restoration requires the same investment as a new plant. Even if the factory itself is not damaged, production activities will not be able to continue as usual due to difficulties in parts procurement and shipment.

In the short term, it will take about a year to restore the production base and resume production. During that period, finished automobiles will not be able to be shipped, resulting in a net reduction in sea transportation from Thailand. In addition, demand for the transportation of steel products to Thailand may be affected as well, and there are concerns that this will spread to related industries.

Positive Impact on our business: New Demand Due to Transport Route Changes: In the shipping business, we believe that the relocation of production bases due to the fragmentation of supply chains would not have only a negative impact. In FY2022, Thailand produced approximately 1.7 million automobiles, with 950,000 exported and 750,000 sold in Thailand. Even after the suspension of production in Thailand, demand in Australia and other export destinations has remained unchanged, resulting in new shipping demand from alternative shippers. In addition, due to the malfunction of the production base, it is necessary to meet the demand for 750,000 units/year of sales in Thailand by importing before production resumes, thereby creating new shipping demand to Thailand from other production sites.

In our company's finished automobile transportation business, it is expected that during the period of alternative shipments, the number of vehicles transported by alternative routes, such as those from the Far East to Australia, will increase.

Example of quantitative evaluation: In our finished automobile transportation business, while there is a net decrease in the transportation of finished vehicles from Thailand in the short term, we will incorporate new transportation demand from Japan, South Korea, and China to Australia as an alternative demand to prevent a major drop in the number of vehicles transported throughout our company. As an example, when we estimate the impact on services from Thailand to Australia, the impact on our company's ordinary income would be + 100 million yen if approximately 50,000 vehicles were switched from Thailand to the Far East, and if we were able to change the shipping route efficiently.

As such, due to the nature of the international maritime business, we believe that the impact of flooding on our business is not necessarily unidirectional, could be positive and negative, and we will continue to analyze the impact.

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Risk Case 2

A large-scale typhoon in coastal China damages port infrastructure (acute risk)

Risk Case Summary

From August to September in 2040, one of the world’s largest typhoons made landfall around Shanghai, maintaining its strength. More than 100,000 people were killed and major impacts occurred, including damage to port facilities necessary for shipping and major changes to navigation routes.

Shanghai Port, a major port in China, was badly damaged, and cargo handling facilities such as gantry cranes were damaged beyond repair, resulting in long-term effects that required one to two years to restore the port.

Impact of Risks on our business

As the port of Shanghai is severely damaged, it will be difficult to unload various types of cargo, especially dry bulk transportation such as iron ore vessels. However, it is possible to cope with this by changing the transportation route which means unloading at ports where unloading is possible, such as the nearby Ningbo Port, and carrying out land transportation.

Thus, there is a potential risk of alternative transportation via land and air transportation routes for the failure of port functions. However, we believe that China already has sufficient resilience against the risk of port dysfunction because there are many ports and it is possible to establish a new supply chain in which raw materials are unloaded from other ports and shipped ashore. Although there may be some loss due to the onshore route, it will be relatively small compared to the overall transportation revenue and the impact on our business is expected to be very limited.

Risk Case 3

Decreased water level in the Panama Canal reduces transit capacity (acute risk)

Risk Case Summary

In 2030, repeated droughts caused the water level of Lake Gatun, which provides water to the Panama Canal, to drop. In response, the Panama Canal was severely restricted, and its capacity was greatly reduced. This resulted in a significant drop in capacity of the Panama Canal. Vessels waiting for passage through the Canal were forced to stay at both ends of the Canal, and some of the vessels had to change their routes, resulting in a significant increase in the distance they had to travel.

Impact of Risks on our business

Immediately following the event, shipping companies are expected to experience a negative impact on profits and losses due to temporary delays in the Panama Canal and increased operating costs resulting from changes in shipping routes. Conversely, if the situation persists and delays and route changes become a regular occurrence, freight and charter rates are expected to adjust upwards to reflect this. If the market does in fact experience a surge, it can be assumed that this will have a positive impact on the profit and loss of the shipping company. Consequently, the impact is two-sided and difficult to evaluate simply.

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COLUMN

The European Union Emissions Trading System (EU-ETS) was extended to international shipping in 2024. Under the scheme, shipping companies are required to purchase emission allowances not only for voyages within Europe but also for a portion of CO₂ emissions generated on voyages between European and non-European ports, making it a direct cost factor for maritime transportation services. MOL is addressing the financial impact of the scheme primarily through (1) reducing compliance costs through GHG emissions reductions and (2) passing on costs through freight rates. As a result of these initiatives, the financial impact of the EU-ETS on MOL is currently considered to be limited.

■ Example of Financial Impact After Full Implementation of the Regulation

Initially, the EU-ETS was introduced with a phased implementation approach, under which only a portion of emissions was subject to compliance obligations. The coverage ratio has subsequently increased on an annual basis, and the scheme will be fully implemented from 2026. Following full implementation, the potential financial impact on MOL will depend on both emissions volumes and carbon allowance prices. For example, assuming annual EU-ETS-covered emissions of 400,000 t-CO₂ and a carbon allowance price of USD 80/t-CO₂, the annual compliance cost could amount to approximately JPY 5 billion.

■ Mitigation Measures

However, as described below, these costs can be managed through both (1) reducing the volume of emissions subject to compliance obligations through emissions reduction initiatives and (2) recovering costs through freight rate pass-through mechanisms. Accordingly, MOL does not consider the EU-ETS to have a material adverse impact on its financial performance, either currently or in the future.

(1) Reducing Compliance Costs Through Emissions Reductions

MOL is effectively mitigating the financial impact of the scheme through the use of low- and zero-carbon fuels and initiatives to improve fuel efficiency. Specifically, in addition to introducing LNG-fueled vessels, MOL is expanding the use of zero-emission fuels such as biodiesel and bio-LNG. By utilizing these fuels on European trade routes, MOL reduces the volume of emissions subject to EU-ETS compliance obligations, thereby lowering the cost of purchasing emission allowances. Fuel selection is carried out with due consideration given to the balance between emissions reduction benefits and additional fuel costs. In addition, MOL continues to reduce fuel consumption and GHG emissions through voyage optimization and the adoption of energy-saving

technologies, thereby achieving both regulatory compliance and improved operational efficiency.

(2) Cost Recovery Through Freight Rate Pass-Through

The EU-ETS requires shipping companies to purchase emission allowances based on their emissions and therefore represents a direct source of additional costs. At the same time, the shipping industry operates within a market structure in which fuel cost fluctuations and regulatory costs are often reflected in freight rates through market mechanisms. Through ongoing dialogue with customers, MOL appropriately communicates the costs associated with the EU-ETS and is implementing cost pass-through mechanisms, including surcharges. As a result, the additional costs arising from the scheme are not borne solely by MOL, but are shared across the supply chain. Such commercial practices are widely adopted across the shipping industry, and EU-ETS-related costs are generally incorporated into pricing in a rational manner within a competitive market environment.

■ Conclusion

The EU-ETS represents a transition risk with the potential to increase operating costs. However, MOL has implemented appropriate measures to effectively manage the associated impacts. In addition, growing demand for low-carbon transportation presents an opportunity to strengthen MOL's competitive position through its environmental initiatives and capabilities. Accordingly, MOL considers its response to the EU-ETS to be a factor that will contribute to the enhancement of corporate value over the medium to long term.

Outlook for the IMO Net-Zero Framework

Discussions at the International Maritime Organization (IMO) are progressing on a new regulatory framework aimed at reducing GHG emissions from international shipping, including the potential introduction of carbon pricing mechanisms. While the details of the framework remain under development, it is recognized as a transition risk, as it may result in additional costs based on emissions levels in the future. However, through its response to the EU-ETS, MOL has accumulated experience in managing regulatory costs through both emissions reductions and freight rate pass-through mechanisms. Accordingly, even if a similar framework is introduced by the IMO, MOL believes that the associated impacts can be effectively managed through similar approaches. In addition, MOL intends to leverage the growing demand for low- and zero-carbon transportation as an opportunity to strengthen its competitiveness and enhance corporate value over the medium to long term.

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(3) Nature-related Analysis

a) Dependencies and Impacts

Under the TNFD “Strategy” pillar, organizations are recommended to explain the nature-related dependencies, impacts, risks, and opportunities they have identified, as well as the implications of these factors for their business, strategy, and financial planning. The Strategy pillar also covers the resilience of strategy under different scenarios and the priority locations across operations and the value chain. In identifying risks and opportunities, MOL expanded the scope of assessment beyond the maritime shipping value chain to include business areas in which it is pursuing growth, with the aim of capturing a broader range of potential impacts and opportunities. To ensure a comprehensive evaluation from social, technological, economic, environmental, and political perspectives, MOL conducted an external environment analysis using the STEEP*1 framework. The analysis identified risks associated with increasing compliance costs resulting from stricter regulations on air pollution and GHG emissions. At the same time, it highlighted opportunities to establish competitive advantages through the adoption of environmentally friendly technologies and low- and zero-carbon fuels, as well as to capture new business opportunities arising from global trends such as the energy transition. To mitigate these risks and capitalize on emerging opportunities, MOL will continue to strengthen and expand its initiatives. In addition, MOL actively promotes the protection and restoration of marine environments and ecosystems, including mangroves and coral reefs. Going forward, MOL intends to deepen collaboration with a wide range of stakeholders across society and further embed these initiatives as sustainable, long-term efforts. MOL Group’s commitment to protecting the marine environment and conserving biodiversity is set out in the “MOL Group Environmental Charter.” In addition, the sustainability plan, “MOL Sustainability Plan,” includes the objective of “Reducing Negative Impacts on the Marine Environment and Biodiversity.” MOL continuously works to enhance its initiatives by monitoring progress against related KPIs and action plans. For further information, please refer to the Environmental Management and Sustainability Issues (Materiality) sections.

*1 A framework for companies to assess their external environment. It considers social, technological, economic, environmental, and political factors.

Dependencies and Impacts

We conducted an analysis using ENCORE, a tool developed by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and others to grasp the dependence of our business on nature and its impact. The analysis covers the group's main business, the shipping industry. With regard to the upstream and downstream of the shipping industry, we covered the shipbuilding stage in the upstream and the ship recycling stage in the downstream, in consideration of the availability of data and the difficulty of replacing bases for shipbuilding and recycling.

Based on the analysis, it has been demonstrated that the direct operations of the shipping industry rely on climate regulation services (the function of stabilizing and adjusting weather and waves through the natural force of restoration), the stable supply of surface water (the function of assisting in maintaining water levels in canals and ports through the stable supply of natural water resources), and at upstream and downstream stages, the mitigation of natural disasters and noise reduction functions (the functions provided by forests and other natural features in the vicinity of our activity bases, such as preventing or mitigating landslides and absorbing noise). Regarding impact, the emission of GHGs and the leakage of oil and hazardous substances have been identified throughout the value chain.

[Table 2-5: Dependence/Impact on Nature in MOL Value Chain]

	Dependence	Impact
Upstream (shipbuilding stage)	• Stable supply of surface water for cooling and cleaning • Mitigation of natural disasters and noise, etc.	• GHG emissions from large cranes. • Water used for cooling and cleaning • Release of hazardous substances into soil and waterways
Direct operation (operational stage)	• Climate stability of marine weather, waves, water levels, and salinity • Maintenance of water levels, purification of water quality, and smoke prevention functions provided by the forests and water resources surrounding the canal. • Stable supply of surface water	• GHG emissions from vessel navigation. • GHG emissions associated with cargo handling and berthing related to vessel navigation. • Damage to ecosystems caused by vessels colliding with marine mammals, introduction of alien species, anchoring, etc. • Oil spills in sea areas
Downstream (ship recycling stage)	• Stable supply of surface water for cooling and cleaning • Mitigation of natural disasters and noise, etc.	• Water used in ship recycling • Oil and hazardous substances spilling into soil and waterways • Generation of solid waste

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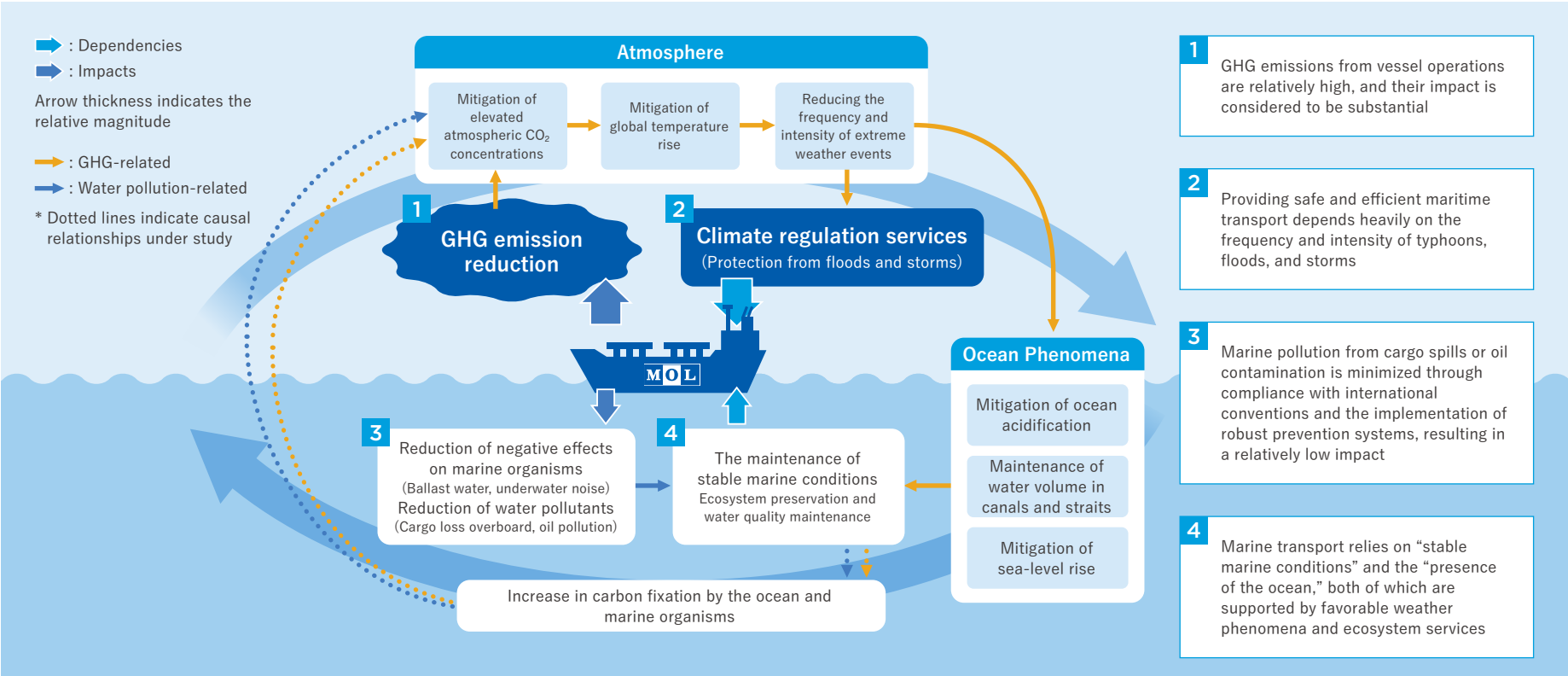
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While all of these dependencies and impacts are recognized as important, analyses conducted using tools such as ENCORE indicated that impacts associated with GHG emissions are relatively more significant than other identified dependencies and impacts. Understanding the relationship between the ocean and climate is essential for mitigating these impacts and reducing adverse effects on the natural systems upon which MOL depends. As illustrated in the figure below, MOL's relationship with nature is characterized by significant impacts arising from GHG emissions, as well as substantial dependence on a stable marine environment supported by ecosystem services such as climate regulation and the maintenance of water quantity and quality. In addition, MOL examined the interconnected pathway through which GHG emissions reductions

contribute to climate mitigation and, in turn, support not only more stable weather patterns and sea conditions through climate regulation, but also the mitigation of ocean acidification and sea-level rise, as well as the maintenance of water levels in canals and straits, ultimately contributing to the preservation of marine environments and ecosystems. This assessment was developed with reference to the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report. By properly recognizing these interrelationships, MOL believes it can implement more effective and efficient measures while contributing to the health of the oceans, which form the foundation of its business activities.

Shipping Business Dependence on and Impacts on Nature/Relationship between Climate and the Marine Environment



Source: Provided by MOL based on an analysis using the online tool ENCORE and the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)

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b) Identification of Priority Locations

TNFD recommends the identification and disclosure of priority locations concerning direct operations and sites involved in the value chain. Priority locations refer to areas or sites that a company should particularly focus on when assessing its relationship with nature. In this disclosure, we have targeted the upstream, direct operations, and downstream aspects of the shipping industry. We have used criteria such as “business significance” and “ecologically sensitive locations with respect to biodiversity importance” to identify sites. Locations that were deemed high in either criterion have been extracted.

<Examples of locations that are important for business significance*2 or ecologically sensitive*3>

Upstream: Shipyards mainly located in Asia
Direct operation: Straits and canals (Suez Canal, Panama Canal, etc.)
Downstream: Ship recycling yards mainly located in India, etc.

When we cross-referenced the sites identified above with the results of (1) dependence and impact, we found that, for climate regulation services and GHG emissions-which showed high levels of dependence and impact-it is necessary to consider these factors across all regions relevant to our business. Additionally, since there were no significant differences in ecological sensitivity among the identified sites, it was concluded that further examination is required to determine the priority sites for our shipping business. We will continue to closely monitor the situation and conduct reviews as necessary.

*2 Locations deemed to be of high importance in business operations (e.g., difficulty of substitution, port call duration, etc.)
*3 Locations situated in areas that have been assessed as having a very high ecological sensitivity (e.g., refer to the dataset indicated by TNFD / Table 2-2). It should be noted that for maritime transport routes, further scientific knowledge and research outcomes are necessary to measure and evaluate specific dependencies and impacts in order to analyze risks and opportunities. Therefore, these routes were not included as candidates for locations.
*4 We comprehensively selected evaluation criteria based on the availability of data from the data sets listed in the TNFD LEAP Guidance, the natural capital subject to evaluation, etc.
*5 Ecosystem integrity : The IUCN defines it as the existence of viable and ecologically functioning populations of species within habitats of sufficient quality and extent.

[Table 2-6: External databases on the importance of biodiversity used in the evaluation]

Requirements for Ecologically Sensitive Bases		Summary	Dataset used for evaluation (9 types)*4
1. Biodiversity Importance		Areas where biodiversity is important (protected areas, scientifically important areas, habitats of endangered species, etc.)	(1) World Database on Protected Areas (WDPA): A database that comprehensively summarizes protected areas on land and in the ocean around the world. (2) Key Biodiversity Areas (KBAS): Areas scientifically recognized as important for biodiversity. (3) Important Marine Mammal Areas (IMMAs): Data on important habitats for marine mammals. (4) IUCN Red List of Threatened Species: A compilation of endangered species around the world.
Ecosystem Integrity *5	2. High Integrity	Areas with high ecosystem integrity (the degree to which the composition, structure, and functions of ecosystems remain within natural ranges of variation)	(5) Biodiversity Intactness Index: An index that indicates the integrity of ecosystems at certain bases around the world on a scale of 0 to 1. (6) IUCN Red List of Ecosystem database: A database that integrates data on ecosystem areas and ecosystem integrity and summarizes trends in the risk of ecosystem collapse by geography.
	3. Rapid Decline	Areas where the resilience of ecosystem services is declining due to the rapid loss of ecosystem Integrity	(5) Biodiversity Intactness Index: An indicator of ecosystem integrity that assesses the time trends by country using changes in ecosystem integrity (indicators are the same as above).
4. Ecosystem Service Delivery Importance		Areas where ecosystem services provided by indigenous communities and local communities are important	(7) ENCORE: A map showing hotspots of decline and depletion of natural capital that is important for providing ecosystem services. (8) LANDMARK: A platform that provides information on land ownership at specific bases around the world, including indigenous peoples and local communities.
5. Water Physical Risk		Areas with high water physical risks, such as water use restrictions, flooding, and water quality deterioration	(9) Aqueduct: A comprehensive water risk score calculated by combining 13 water risk indicators, such as water quantity, water quality, and reputational risk at a given location.

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c) Detailed Analysis of Risks and Opportunities

Assumptions for Analysis

In order to comprehensively identify nature-related risks and opportunities that may affect our business, we utilized the analysis results regarding our business’s dependence on and impact on nature described in the previous sections, and, in addition, conducted a STEEP analysis to identify potential events from social, technological, economic, environmental, and political perspectives that may arise now or in the future.

[Risk evaluation axis]

Financial impact: Decreased revenue and increased costs.

Probability of occurrence: The likelihood of risk materialization (with a time horizon up to 2050), based on the occurrence of similar risk events over the past ten years and publicly available information on various regulations.

[Opportunity evaluation axis]

Financial impact: Effects of increased revenue and reduced costs

Potential to utilize our company's strengths: Status of management resources that give our group a competitive advantage and proximity to existing businesses

Evaluation Results

Among the risks and opportunities identified through the assessment process, those assessed as having the greatest significance based on risk evaluation criteria, including potential financial impact and likelihood, and opportunity evaluation criteria, including financial impact and alignment with MOL’s strengths, were risks associated with GHG emissions and climate change. These risks have already been assessed under the TCFD framework, and relevant mitigation measures are being implemented.

Effective implementation of these measures requires not only avoiding and mitigating risks but also creating and capturing opportunities. For example, GHG emissions reduction initiatives serve as risk mitigation measures while also enabling MOL to respond proactively to customer demand for low-carbon transportation services, thereby contributing to the potential expansion of market share. As described in the previous section, climate change initiatives contribute not only to reducing GHG emissions but also to the conservation and restoration of nature, including marine ecosystems. For example, MOL has participated in a mangrove restoration and conservation project in Indonesia since 2022. In addition to removing and absorbing CO₂ through mangrove planting, the project is expected to generate co-benefits*6 for nature and local communities, including the conservation of biodiversity and the protection of coastal communities from high waves and storm surges. Other initiatives can also generate multiple benefits. For instance, slow steaming can reduce GHG emissions while potentially lowering the risk of vessel collisions with marine species and reducing underwater noise. In addition, through

compliance with relevant international conventions and regional regulations, as well as the maintenance and enhancement of safe operation systems, MOL seeks to minimize adverse impacts on nature. For further information, please refer to the “Air Pollution Prevention” and “Marine Environmental Conservation and Biodiversity Protection” sections on the MOL website.

*6 Secondary benefits: This refers to the positive effects that a particular measure taken for one aspect of nature can also have on other aspects of nature.

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(4) Examples of Responses to Risks and Opportunities

In order to demonstrate resilience in all scenarios, we will take the following various measures.

* Timelines for implementation of countermeasures: All measures are to be implemented in a short period of 5 years or less unless otherwise stated.
* Coverage of Plans for Adapting to Transition and Physical Risks: 97%

【Table 2-7: Examples of Measures for Transition and Physical Risks】

Risk Category	Risk Event	Example		Domain		Financial Impact	Likelihood	Measures
		Product	Impact Summary	Climate	Nature			
Transition Risk	Change in energy mix	LNG	• Under the 2.6°C scenario and well-below 2°C scenario, the level of demand will increase between now and 2050. Under the 1.5°C scenario, demand will trend down. Demand trends will differ from region to region.	○	—	High	Mid	Based on the outlook for changes in the energy mix over a very long period through 2050, we prepare for scenarios for changes in demand by area, and the areas to focus on will be identified based on the scenarios. (See Reference ① for an overview of Long-term megatrend analysis)
		Crude oil	• Decrease in demand for gasoline due mainly to the evolution of EVs → Decrease in transport volume • The risk of assets becoming stranded due to anticipated decline in transport volumes will increase worldwide. However, the increase or decrease in demand will vary depending on the area.	○	—	High	High	
		Thermal coal	• Under all scenarios, transport volume is expected to decrease as a result of weaker demand. • Increase in business risks due to the short duration of contracts	○	—	Low	High	• Seek to shift away from specialized carriers towards general-purpose carriers. • Hedging risks by adjusting business portfolios as demand decreases
		Hydrogen/ Ammonia	• Transport volumes can be expected to increase as a result of the spread of hydrogen/ammonia mixed combustion	○	—	High	High	Focused resources on ammonia and hydrogen transport business development by specialized departments
		Steel raw materials	• Demand for crude steel is expected to remain firm in the medium and long term. • The transport volume of ferrous scrap will increase due to the rising electric furnace ratio.	○	—	Mid	High	Quality of transportation demand may change in preparation for an increase of iron scrap transportation. Arrange systems to meet high frequency and short distance transportation needs.
		Coking coal	• Demand for coking coal used in steel works as a reducing agent may decrease in the long term. • Widespread use of hydrogen reduced iron could lead to changes in iron production bases depending on the area of hydrogen production → Possibility of changes to transport routes	○	—	Mid	High	Establish fleet planning that allows us to adapt to changes in reducing agents used at steel works (coking coal → hydrogen, etc.)
	Electrification	Automobiles	• Increase in cargo movements due to spread of affordable Evs: The spread of cheap EVs evident in China could be seen in other regions such as Africa in the future. Cargo movements on a volume basis are expected to increase. • Increased cargo movements due to the difference between combustion vehicles and EVs in terms of weight. EVs are heavier than combustion vehicles, restricting the number of vehicles that can be loaded onto a single PCC → The number of voyages and the number of ton-miles may increase. • Depending on developments in terms of regulations and subsidies, sales volume could fall → Transport volume could also fall. In the worst-case scenario, no subsidies are granted despite tighter regulation and EVs are not widely adopted. In this case, gasoline-powered vehicles would not sell well either and overall demand would fall.	○	—	Low	High	Increased intelligence to ensure fuel transition trends in land transportation. Mainly monitoring regulatory and policy trends as key items in long-term megatrend analysis and developing operation systems in line with increases and decreases in the scale of operations.

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Risk Category	Risk Event	Example		Domain		Financial Impact	Likelihood	Measures
		Product	Impact Summary	Climate	Nature			
Transition Risk	Change in consumer preferences	Grain	• Demand for soybeans used to make vegan meat will increase. • Demand for corn as livestock feed will decrease as a result of decline in demand for livestock.	○	—	Low	Mid	Monitor vegan meat development trends and establish fleet planning that allows us to adapt to changes in production areas/demand areas.
	Regulatory reinforcement (GHG emissions)	Common	• Increased costs due to the installation of regulatory compliance machinery/equipment and carbon taxes	○	○	High	High	Continuous promotion of measures to reduce GHG emissions, such as the introduction of next-generation fuel vessels and efficient operation
	Regulatory reinforcement (water pollution)	Common	• Increased costs for installing machinery/equipment required for regulatory compliance, increased operating costs for waste disposal, etc.	—	○	Mid	High	Compliance with the MARPOL Convention, minimization of onboard waste in accordance with IMO international regulations, establishment of a waste disposal system, adoption of environmentally friendly bottom paint, thorough maintenance, installation of ballast water treatment system, establishment of our unique Superior Ship recycling Standards (SSS), and establishment and strengthening of the safe operation management system (See Reference ② for an overview of Establishment of the Superior Ship recycling Standards (SSS)) (See Reference ③ for an overview of International Conventions and Regional Regulations)
	Regulatory reinforcement (air pollution)	Common	• Increased costs for installing equipment that complies with regulations, etc.	—	○	Mid	Mid	Equipping vessels with NOx removal devices, adoption of SOx-compliant fuel, slow steaming
	Decline in brand image due to negative impact on nature caused by fuel spills, etc.	Common	• Decline in image may adversely affect transactions with charterers and shippers.	—	○	High	Mid	• Ensure safe vessel operations through compliance with the MARPOL Convention, adherence to IMO regulations, minimization of materials brought on board, establishment of waste management systems, adoption of antifouling coatings, and enhancement of operational safety frameworks • Steadily implement "MOL Group Environmental Vision" and establish procurement policies and guidelines
Physical risks	Intensification of floods and typhoons	Common	• Acute risk of direct damage, including disruption of shipping routes and vessel damage caused by typhoons • Acute risk of increased voyage days, fuel consumption, and GHG emissions due to route deviations to avoid typhoons	○	○	Low	High	Reduce risks by improving the accuracy of weather and ocean condition forecasting, establishing a network that enables real-time information sharing across the fleet, and implementing operational processes for selecting appropriate navigation routes (See Reference ④ for an overview of Safety Operation Supporting Center) (See Reference ⑤ for an overview of risks associated with the operation and operation of ships, offshore plants, etc.)
		Common	• Acute risk of disruption to shore-to-ship instructions and operational support due to damage to onshore facilities	○	○	Low	High	Establish and implement emergency response frameworks and contingency plans for natural disasters (See Reference ⑥ for an overview of risks related to natural disasters and epidemics)
		Common	• Indirect acute risk of declining transportation demand due to disruptions to cargo supply chains	○	○	Low	High	• Strengthen business intelligence across cargo supply chains to appropriately identify business-specific risks, recognizing that risk exposure varies by vessel type, cargo, and contract structure • Diversify risks by maintaining and strengthening comprehensive transportation and commercial capabilities without excessive dependence on any single cargo • Diversify regional risks through a global fleet deployment network • Reduce operational risk exposure through transportation contract arrangements • Maintain loss-of-hire insurance coverage (See Reference ⑦ for an overview of risk diversification)

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Risk Category	Risk Event	Example		Domain		Financial Impact	Likelihood	Measures
		Product	Impact Summary	Climate	Nature			
Physical risks	Drought	Dry Bulk (Grain)	• Chronic risk of reduced cargo volumes due to declining grain yields	○	—	Low	High	While localized declines in cargo volumes may occur, grain trade is supported by diverse trade patterns, and impacts are expected to vary across regions and routes on a global basis. MOL addresses localized impacts by maintaining and strengthening its comprehensive capabilities to respond across multiple trades and cargo types.
	Reduction in Forest Area	Dry Bulk (Wood Chips)	• Chronic risk of changing trade patterns due to shifts in major wood chip supply sources	○	—	Low	Low	Maintain and strengthen a global fleet deployment network to respond to changes in trade patterns (See Reference ⑧ for an overview of global shipping network)
	Sea Level Rise	Common	• Chronic risk of impacts on port operating conditions	○	—	Low	Mid	Potential positive effects include increased cargo capacity at ports with strict draft restrictions. By FY2050, sea level rise is expected to remain limited to several tens of centimeters even under scenarios with more pronounced climate change, and no material business impacts are anticipated beyond this level. However, impacts could become more significant over a longer time horizon, and developments will continue to be closely monitored. (Implementation timeline for measures: over the long term, exceeding 10 years.) (See Reference ⑨ for an overview of sea level rise scenario assumption)
	Ecosystem Change	Common	• Chronic risk of increasingly stringent quarantine requirements, similar to those arising from stink bug infestations affecting car carrier operations	○	○	Low	Low	Enhance operational practices to respond to increasingly stringent quarantine requirements and differentiate through certification of response frameworks (See Reference ⑩ for an overview of measures against stink bugs in our company)

Reference ① Long-term megatrend analysis (Climate Change)

As the business environment surrounding our group continues to change rapidly, in the process of preparing our company’s medium- to long-term management plan “BLUE ACTION 2035,” which was announced in March 2023, we conducted a long-term megatrend analysis to imagine the world and society structure in the future and to identify future scenarios that we consider as a company-wide project.

The project aims to develop multiple scenarios for long-term macro-external environmental changes, such as population growth, changes in regional population ratios, slowing of global economic growth, responses to climate change issues, energy shifts (progress in electrification: expansion of renewable energy), and technological evolution, and analyze these impacts on our group’s business environment, lead to strategic considerations. Specifically, the impact on our business that emerges in the form of stricter environmental regulations, improved energy efficiency, reduced demand for fossil energy and increased demand for new energy is grasped from multiple perspectives, widely shared at the management level, and used to verify the resilience of our strategy over a very long period of time.

Reference ② Establishment of the Superior Ship recycling Standards (SSS) (Nature Capital)

Recycled steel from ship recycling supports the demand for steel in various countries and regions, and demand is also increasing in response to growing environmental awareness to reduce the burden on the environment.

On the other hand, challenges related to the management and disposal of hazardous substances during ship dismantling, environmental impacts, and worker health and safety have been internationally recognized. In response, the International Maritime Organization (IMO) adopted the “Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships” in 2009, which came into force in 2025.

In addition to complying with this convention, we have newly established and implemented the Superior Ship recycling Standards (SSS)-our own ship recycling yard selection criteria-in fiscal year 2023 to promote sustainable ship recycling in line with the above background. For details on SSS, please refer to “Initiatives for ship recycling” under “Responsible Procurement.”

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【Table 2-8: Examples of Relevant Environmental Regulations】

Regulated/Applicable Treaties	Summary of regulations
SOx (sulfur oxides) PM (particulate matter) <MARPOL Annex VI>	Regulation of sulfur content in fuel oil to reduce SOx and PM emissions in exhaust gases
NOx (nitrogen oxides) <MARPOL Convention Annex VI>	Gradual regulation of NOx emissions from engine exhaust gases
Oil, hazardous liquid substances, and hazardous substances from ships <MARPOL Convention Annexes I, II, and III>	Appendix I: It sets forth regulations to prevent marine pollution caused by oil, such as crude oil, fuel oil, and lubricating oil. Annex II: It stipulates the methods for cleaning cargo tanks and the procedures for discharging wash water and other substances when transporting relevant materials in bulk by ship. Annex III: Provisions specifying methods for packaging hazardous substances transported in containers, etc.
Sewage from ships <MARPOL Convention Annex VI>	Regulations specifying the discharge of sewage on a ship, inspections, issuance of certificates, etc.
Waste from ships <MARPOL Convention Annex V>	Regulations specifying the disposal of garbag/waste on a ship.
Ballast water <Ballast Water Management Convention>	A treaty to mitigate and prevent the transboundary movement of organisms and certain pathogens through ship ballast water.
Prohibition of the use of specified hazardous substances in bottom paints <AFS Convention>	Prohibits the use of products containing organotin compounds in anti-fouling paints used to mitigate and prevent marine organisms from attaching to ship hulls to protect the marine environment and human health.
Ship Recycling Convention	It establishes rules to ensure that ship recycling and dismantling are conducted safely and with consideration for the environment. (Effective from June 2025.)

Reference ③ International Conventions and Regional Regulations (Nature Capital)

The MARPOL Convention, officially known as the 1978 Protocol to the 1973 International Convention for the Prevention of Pollution from Ships, is a treaty designed to prevent marine pollution caused by ship operations and accidents. It currently includes six annexes that stipulate methods for discharging SOx and NOx from ships, as well as oil, hazardous liquid substances, hazardous materials, sewage, etc., and we comply with these regulations. For information on other relevant international treaties, etc., please refer to “Regulations.”

Reference ④ Safety Operation Supporting Center (Climate Change) (Nature Capital)

The Safety Operation Supporting Center (SOSC) was established in February 2007 with the motto “Do not leave captains alone” with 24 hours, 365 days support and help desk function. Currently, two people, including an actual captain are on duty all the time to keep track of the latest positions and weather and sea information of all operating vessels in real time and to provide information to the vessel. Keeping in mind the lessons learned from past accidents, we are making every effort to prevent serious accidents in order to achieve the world's highest level of safe operation.

For details, please refer to the corresponding page of the website (Organization to support Safe Operation).

Reference ⑤ Risks associated with the operation and operation of ships, offshore plants, etc. (Climate Change) (Nature Capital)

In order to prevent marine accidents, our company has taken various measures in terms of software and hardware, including education and guidance for seafarers and the preparation of hull specifications to ensure safety, in close cooperation with the Safety Operation Headquarter, the respective sales headquarters, shipowners and ship management companies. In addition, in the event of damage to our company itself or any other party caused by an unavoidable accident despite our best efforts, we have provided the necessary amount of insurance (liability insurance, hull insurance, war insurance, non-working loss insurance) to avoid a significant impact on our business performance and to secure sufficient sources of compensation.

Furthermore, in order to reduce reputation risk, we conduct emergency training once a year on how to respond to serious marine accidents and disseminate information in the event of an accident, and employ media consultants when necessary.

For details, please refer to the appropriate page of the website (Risk Management > Risks Associated with Operations of Vessels and Offshore Plants).

Reference ⑥ Risks related to natural disasters and epidemics (Climate Change) (Nature Capital)

We have formulated a Business Continuity Plan (BCP) to prepare for the possibility that large-scale disasters, etc. may cause damage to our company’s facilities, equipment, and employees, thereby interfering with our business activities. The BCP has developed a response organization, authority etc. for the implementation of operations related to the maintenance of safe operation of vessels, the performance of transport contracts and charter contracts, financial provision, and the securing of personnel, and has compiled specific implementation procedures into manuals. We also have a backup system for satellite offices and systems.

For details, please refer to the appropriate page of the website (Risk Management > Natural Disaster and Epidemic Risks).

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Reference ⑦ Risk diversification (Climate Change) (Nature Capital)

Our group operates dry bulk ships, oil carriers, LNG carriers, automobile carriers and container ships, and carries various types of cargo in a range from resources to finished products. Market conditions for freight rates or rents are formed for each type of cargo, ship type, and business. While some of these are highly correlated, some economic conditions cancel out each other's fluctuations. By expanding a wide range of ship types and businesses, we aim to achieve stable management that is not affected by market fluctuations in specific ship types or businesses.

For details, please refer to the appropriate page of the website (Risk Management > Dispersing risks).

Reference ⑧ Global shipping network (Climate Change)

Our company has established sales offices in 41 cities in 29 countries and maintains a global ship-distribution network. The entire world is divided into five regions (Europe/Africa, East Asia, Southeast Asia/Oceania, South Asia/Middle East, Americas), each of which has a regional general representative in charge of the executive officer. Under this system, regional organizations with corporate, marketing, and sales functions are established to promote business development led by regional organizations.

For details, please refer to the corresponding page of the website (MOL Group > List by Location).

Reference ⑨ Sea level rise scenario assumption (Climate Change)

The assumption of sea level rise, which is a prerequisite for risk analysis, is based on the description in the Sixth Assessment Report of the IPCC (Working Group I). In the 2050 section, the assessment is described in the above table. However, it is pointed out that the possibility of a significant sea level rise of about 2-5 m in some scenarios cannot be ruled out in the period up to 2150, although the degree of certainty is low (SSP5-8.5). In the case of sea level rise on such a scale, there are concerns about severe social and economic impacts on the world, and it cannot be ruled out that there will be huge impacts on the shipping industry beyond changes in port usage conditions. In this sense, we will keep a close eye on developments in related discussions not only on the TCFD's range of 2050, but also on its impact in the ultra-long term.

Reference ⑩ Measures against stink bugs in our company (Past case) (Climate Change) (Nature Capital)

In order to prevent stink bugs from invading crops such as fruits and vegetables, the Australian Ministry of Agriculture has strengthened the quarantine of oceangoing vessels visiting Australia. In September 2020, after extensive consultations with agricultural pest experts, Australian authorities, and other stakeholders, our company became the first Japanese shipping company to obtain certification from the Australian Ministry of

Agriculture to certify that the various activities carried out by its fleet on routes from Japan and Korea to Australia meet the standards set by the Australian Ministry of Agriculture. As a result, quarantine inspections at ports in Australia are smoother and the risk of delayed unloading of loaded vehicles has been reduced.

For details, refer to the corresponding page of the website (Press Release > MOL Becomes 1st Japanese Car Carrier Operator to Obtain VSPS Certificate from Australia" Department of Agriculture).

Opportunity

Opportunities assessed as having relatively significant impacts, together with the corresponding actions to capture them, are presented in Table 2-9.

【Table2-9: Nature-related opportunities】

Opportunity Type	Opportunity phenomenon	Specific examples of opportunities	Financial impact	Strengths of the company	Opportunity acquisition strategies
Products/ Services Acquisition Strategy	Introduction of alternative fuel vessels	Increased demand from shippers seeking lower-carbon supply chains	High	High	Continuous promotion of measures to reduce GHG emissions, such as the introduction of various alternative fuel ships and route optimization
	Efficient operations and energy-saving facilities	Spread of efficient operation technology and energy-saving facilities (wind propulsion devices, etc.)	High	High	Promote energy-efficiency investments through internal carbon pricing, while expanding the adoption of wind-assisted propulsion systems and enhancing operational efficiency to achieve both decarbonization and profitability.
Market	Increase of ocean transport demand	Increase in transport volume of clean energy and decarbonization-related cargo	High	High	・ Participation in businesses at each level of the energy supply chain to acquire new transport cargo such as clean energy ・ Various measures in response to increased demand for EV-related components aimed at decarbonization
	Increased electrification	Increase in transport volume of raw materials used in EVs and their components such as lithium and copper	Mid	Mid	Strengthen information gathering across commodity supply chains and establish operational frameworks while monitoring regulatory and policy developments.
	Promotion of clean energy	Building a supply chain for offshore wind power generation	High	High	Participation in each layer of the offshore wind power generation value chain, leveraging expertise in marine infrastructure development accumulated through traditional shipping operations

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We also consider the following ongoing initiatives to be leading to the acquisition of nature-related opportunities.

Contributing to the development of marine science and technology through cooperation in research and surveys

We gather, share, and cooperate in the use of data and expertise obtained through our business activities regarding the ocean, which is considered to lack environmental data compared to land.

For example, meteorological agencies around the world, including the Japan Meteorological Agency, create weather data such as weather maps based on meteorological observation data provided by vessels underway, as it is difficult to collect data from meteorological observations at sea. This data is not only used to provide daily weather forecasts and marine forecasts but is also widely used on a global scale for monitoring and researching global warming and climate change. We contribute to the development of meteorological services, as well as to marine safety and the preservation of the global environment, through the continuous provision of marine weather data.

We also dispatch outfitting personnel (who are assigned to shipyards to confirm compliance with shipbuilding specifications and quality standards and identify defects) and operation services for the Arctic research vessel *Mirai II*, which is currently under construction by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC)*. The *Mirai II* will conduct comprehensive observations of the atmosphere, weather, oceans, sea ice, and other phenomena in the Arctic region, contribute to the sustainable development, utilization, and conservation of the Arctic region by enriching observational data and scientific knowledge, and aims to contribute to the development of personnel such as researchers and engineers. We will contribute to a better future for the planet by leveraging the expertise and human resources that the group has accumulated in operation on the Arctic route and handling of LNG fuel for the operation of *Mirai II*.

In addition, we cooperate in the transport of loggerhead turtles for migration pattern surveys and provide marine data collected by vessels to the Japan Coast Guard. We believe these activities will contribute to the development of marine science and technology, and ultimately to the sustainability of the oceans, which are the arena for our business.

* Natural Environment Restoration and Conservation Project and Contribution to Local Communities in Mauritius

Natural Environment Restoration and Conservation Project and Contribution to Local Communities in Mauritius

In response to running aground off the island of Mauritius and leaking bunker oil in 2020, a fund was established with the aim of supporting environmental restoration and conservation, as well as providing assistance to the local community. This fund supports

various projects led by local NGOs and Japanese academic institutions.

In 2024, employees from our group worldwide will participate in on-site training in Mauritius to deepen their understanding of marine pollution prevention and natural environment protection, reaffirming the importance of contributing to local communities through our business activities. Moving forward, we aim to expand the scope of these activities to other regions closely connected to our business, thereby further supporting and promoting solutions to social issues.

Additionally, we are conducting campaigns at our global locations to focus on various social contribution activities, including environmental conservation. We are collaborating on research into the migratory routes of loggerhead turtles using our operated vessels and organizing survey and research events supervised by coral experts. Furthermore, to promote the regeneration of seaweed beds, our employee cafeteria offers menus that effectively utilize fish that consume seaweed. These initiatives aim to foster awareness among our staff and contribute to nature through cooperation in research activities with high scientific and social significance, while also enhancing corporate value through building relationships with local communities.

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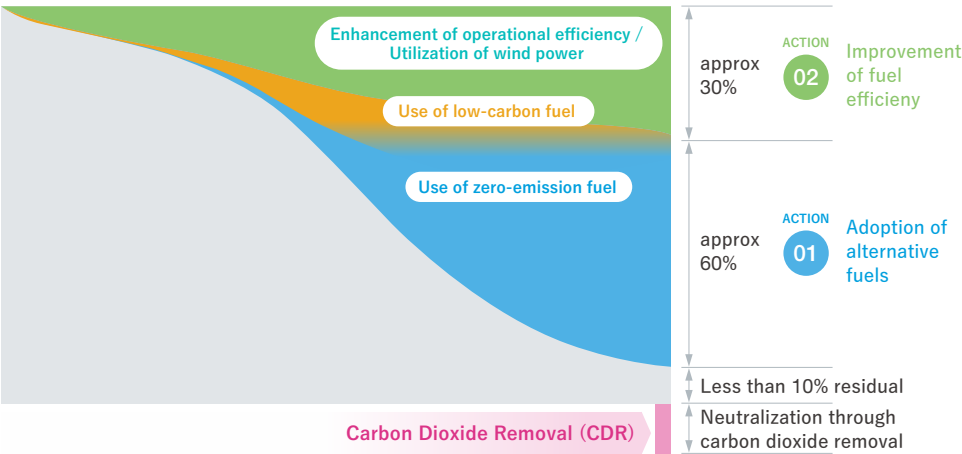
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Climate Change Response and Natural Capital (Marine Conservation)

MOL recognizes that climate change initiatives are important not only for reducing greenhouse gas emissions, but also for protecting natural capital through the conservation of marine environments and the maintenance of ecosystems. Taking these interrelationships into account, MOL will further advance its climate change initiatives to contribute to the realization of a sustainable society.

(1) MOL group Environmental Vision

MOL formulated a GHG emissions reduction scenario for achieving net zero GHG emissions by 2050 as part of MOL group Environmental Vision, and this scenario is consistent with the 1.5°C scenario. We will also monitor trends in matters which have a significant bearing on implementation of the transition plan such as carbon tax and GHG emission rules and periodically review the plan taking factors such as technology trends into consideration.

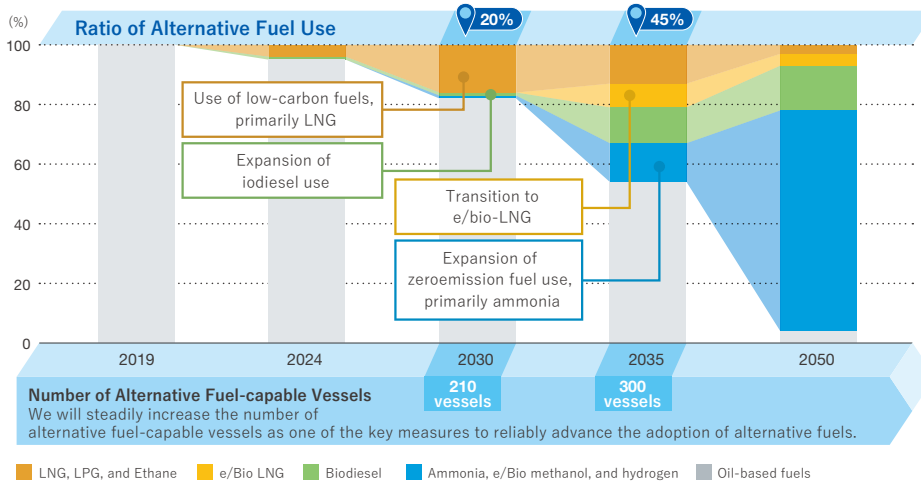


MOL has established an interim target of a 45% reduction in GHG emission intensity from transport by 2035 and indicated a specific pathway for achieving net zero GHG emissions by 2050.

We have established three actions for reducing GHG emissions, including the adoption of clean energy, enhancement of energy-saving technologies, and expanding decarbonization projects and have set a target of investing around 650 billion yen in the

decarbonization field over the three years from 2023 to 2025 (reduction of our own GHG emissions: 350 billion yen; contribution to reduction of society's GHG emissions: 300 billion yen). As of the end of March 2025, we have already achieved our target of 958.8 billion yen in investments, including those for decision making.

Conceptual Diagram of Alternative Fuel Adoption



MOL recognizes the transition of its fleet composition by fuel type as a key element in achieving GHG emissions reductions from its own operations. As part of this transition, MOL has identified the commencement of operations of net-zero emission oceangoing vessels in the latter half of the 2020s as a near-term goal and has set a milestone of introducing 210 alternative-fuel vessels by 2030. In domestic shipping, MOL has already developed an electric-propulsion net-zero emission vessel, which entered service in April 2022. For further details on MOL's transition plan and progress, please also refer to the "MOL Group Environmental Vision" available on the MOL website.

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RISK MANAGEMENT

MOL operates a wide range of businesses around the world and is exposed to various risks. Climate change risks and nature-related risks are recognized as key risks and are managed through the MOL Group's risk management process.

As part of its enterprise-wide risk management framework, MOL has established a management structure led by the President & Chief Executive Officer (CEO). Climate change-related risks identified by each department are consolidated, assessed, and evaluated by the Sustainability Strategy Division. Key risks are centrally managed through regular reporting to management meetings and their subordinate committees, enabling the implementation of risk mitigation measures and other necessary decision-making and responses.

Details of the enterprise-wide risk management framework are provided on the following page.

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Overview of Risk Management

Under its management plan, “BLUE ACTION 2035,” MOL aims to become a global social infrastructure company and expand its business into a broad range of fields beyond traditional shipping. At the same time, challenges in new business areas and the pursuit of growth opportunities require robust risk management. To further enhance its risk management framework, MOL has categorized the various risks it faces into two groups: “Emerging Risks” and “Business Execution Risks.” Through discussions on strategy and vision, the Board of Directors seeks to establish a risk management framework that supports appropriate risk-taking by management while further enhancing the effectiveness of its oversight.

Risk Management Structure

The status of risk management by each responsible management body is regularly reported to the Management Council, and matters of particular importance are escalated to the Board of Directors, enabling centralized oversight of information as well as necessary decision-making and responses. For significant decisions, including new investment proposals, the relevant business division first identifies and assesses associated risks. Proposed investments are then reviewed by dedicated internal review functions and, depending on the nature of the transaction, by specialist departments such as the Finance Division and Legal Division before entering the formal decision-making process. Depending on the importance and nature of the matter, prior deliberations are conducted by one of six committees established under the Management Council, allowing for in-depth risk assessment and clarification of key issues. Matters of the highest importance are further reviewed by the Management Council before being submitted to the Board of Directors for deliberation and decision-making with due consideration of risk management. (For details on the agendas and meeting frequency of these governance bodies, please refer to “01. Governance.”)

Emerging Risks and Business Execution Risks

“Emerging Risks” refer to risks arising from changes in the external environment that may affect the MOL Group’s business, where the likelihood of occurrence and potential impacts cannot be quantitatively assessed. For such risks, the Board of Directors discusses their potential impact on the MOL Group’s business and possible response measures based on early signs and expert insights, in line with the Company’s basic management policies. The Board also considers the opportunity aspects of these risks and reflects them in the formulation of management plans and business strategies. In contrast, “Business Execution Risks” refer to risks associated with business operations, including market fluctuation risks, credit risks, and operational risks.

New risk classifications		
Risk classification	Risk management method	Significant risk items facing our business
I. Emerging risks	Cross-company management based on risk scenarios	① Geopolitical risks
		② Climate change risks
II. Business execution risks	Management by executive officers based on their functional responsibilities	① Operational risks
		② Cybersecurity risks
		③ Natural disaster and infection risks
		④ Group governance risks
		⑤ Compliance risks
		⑥ Risks related to official regulations
		⑦ Risks related to human rights and various risks in value chains
		⑧ Technological innovation risks
		⑨ Shipping market fluctuation risks, customer credit risks, and country risks
		⑩ Exchange rates, interest rates, and bunker price fluctuation risks

Climate change is recognized as one of MOL’s principal Emerging Risks, and the Board of Directors and Executive Officers engage in extensive discussions to support the formulation of management plans and business strategies. In particular, “carbon pricing” and “changes in cargo demand” have been identified as high-priority risks due to their potentially significant impacts and high likelihood of occurrence. For further details on MOL’s risk management framework, please also refer to the “Risk Management” section of the MOL website.

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METRICS & TARGETS

The MOL Group has established targets and metrics based on the TCFD and TNFD frameworks, including achieving net-zero emissions by 2050, reducing GHG emissions intensity per transport unit by 45% by 2035, and reducing total Scope 1 and Scope 2 emissions by 40%. The Group also monitors progress through indicators such as the share of alternative fuels used, improvements in fuel-efficiency performance, and the number of vessels equipped with the Wind Challenger. In addition, from the perspective of natural capital and biodiversity, the MOL Group discloses management indicators including SOx emissions intensity, ballast water treatment system installation rates, mangrove conservation area, and the number of environmental incidents and regulatory violations, thereby monitoring its efforts to reduce impacts on the marine environment and contribute to nature restoration. Furthermore, MOL has introduced Internal Carbon Pricing (ICP) as a management tool to advance climate change initiatives and utilizes it in investment decision-making and the promotion of environmental investments.

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04 Metrics & Targets

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KPIs related to reducing GHG emissions

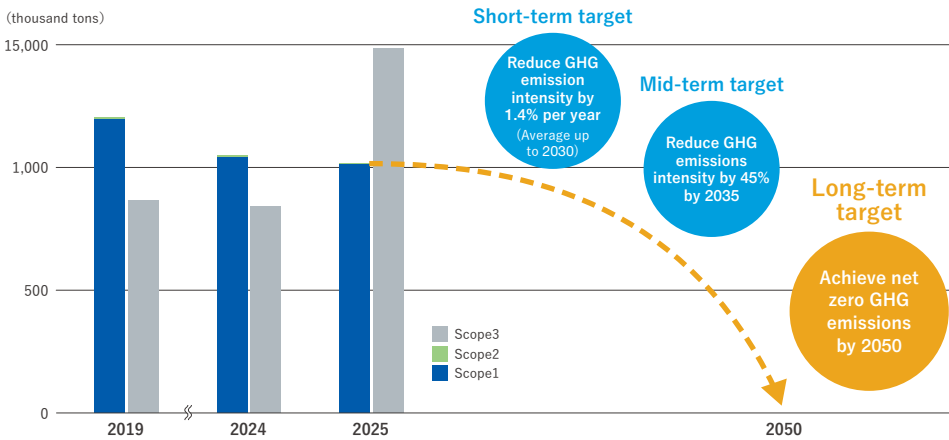
As part of MOL Group effort to reduce GHG emissions, we have established the following targets. The medium- and short-term targets have been set as milestones toward achieving our long-term goal of net zero emissions by 2050. These targets have been calculated and established based on the necessary and achievable levels of GHG emission reductions required to attain net zero emissions. Furthermore, the reduction target for the shipping industry set by the International Maritime Organization (IMO) in July 2023 is “to reach net zero GHG emissions from international shipping by around 2050.” MOL Group long-term target is aligned with this level.

- Long-term target
- With the concerted effort throughout the Group, achieve net zero GHG emissions by 2050

Mid-term target

Short-term target

*1 In addition to Scope 1, part of Scope 3 covered (international marine transport operated by MOL). Scope 2 emission reduction target was set in “MOL group Environmental Vision.”
*2 In addition to Scope 1, part of Scope 3 covered (international marine transport operated by MOL). Average up to 2030.



* For detailed GHG emissions results, please refer to “Sustainability Data.”
* For more information on our policy regarding SBTi, please click here.

①GHG emissions: Results and targets

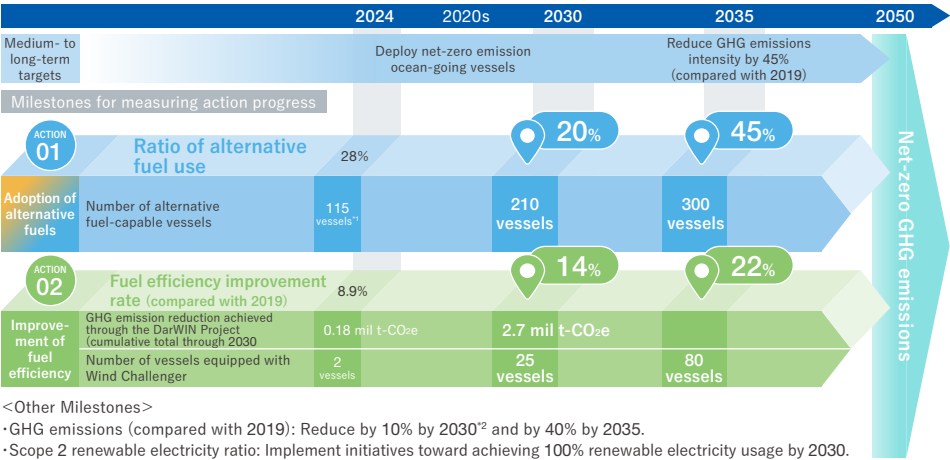
		Result				Target
		FY2019	FY2023	FY2024	FY2025	
GHG emissions (thousand tons)	Scope 1	11,990	10,780	10,428	10,148	Net zero Scope 1, 2, 3
	Scope 2	—	18	19	14	
	Scope 3	8,666	7,520	8,409	14,824	

②GHG emission intensity: Results and targets

		Result				Target
		FY2019	FY2023	FY2024	FY2025	
GHG emission intensity (g/ton-mile)		12.12	11.25	10.95	10.65	6.67 (-45% reduction against FY2019)

③Milestones for Tracking Progress on Actions

To achieve the MOL Group’s GHG emissions reduction targets, the Group is implementing a range of initiatives as outlined below. Milestones have also been established to track progress against these initiatives.



<Other Milestones>
•GHG emissions (compared with 2019): Reduce by 10% by 2030*2 and by 40% by 2035.
•Scope 2 renewable electricity ratio: Implement initiatives toward achieving 100% renewable electricity usage by 2030.

*1 Includes 89 LNG carriers equipped with LNG-fueled engines.
*2 Represents a level that incorporates fleet expansion and increased transport volume based on business plans, assuming continued medium- to long-term reduction efforts.

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(2) Nature-related Metrics and Targets

The global core metrics for nature-related disclosures are presented in the table below. These metrics are aligned with global policy goals, including the Global Biodiversity Framework (GBF).

[Table 4-1: Core global disclosure metrics]

Category	Measurement Indicators (unit)	FY2025 results	Examples of countermeasures
Pollution and pollution mitigation	NOx emissions (tons)	214,983	Equipped with NOx removal device, use of SOx-compliant fuel
	SOx emissions (tons)	25,225	
	Total waste (tons)	4,775	Minimizing the amount of materials brought on board in accordance with IMO international regulations, establishing waste management systems both on board and on shore, and implementing water conservation measures.
	Hazardous waste generation (tons)	0.02	
Resource utilization/replenishment	Total water intake (M3)	577,849	
Liability risk	Violation of Environmental laws and regulations-Number of cases (cases)	0	Compliance with regional and various international treaties
	Violation of Environmental laws and regulations-Fine (million yen)	0	
Invasive alien species	Ballast water management system installation rate (%)	100%	Installation of ballast water management systems
Changes in use of land, fresh water, and ocean	Mangrove conservation areas (Ha)	1,011	Involvement in mangrove conservation and reforestation projects

The following additional metrics are disclosed to track progress in risk mitigation efforts, as shown in the table below.

[Table 4-2: Additional global disclosure metrics]

Category	Measurement Indicators (unit)	FY2025 results	Examples of countermeasures
Pollution and pollution mitigation	SOx emission intensity (g-SOx/ton-mile)	-1.2	Reduction of air pollutant emissions through the use of SOx-compliant fuel, etc.
	Number of serious marine incidents Number of ocean oil pollution Number of serious cargo damage	0	Measures to reduce the risk of fuel oil and cargo loss overboard spills through the maintenance, implementation, and establishment of Safety Operation Management System
	Absorption and removal system (Carbon credit usage volume)	4,761	Contribution to the reduction of society's CO ₂ emissions through involvement in mangrove conservation and reforestation projects

(3) Internal Carbon Pricing (ICP)

Internal carbon pricing (ICP) has been applied since fiscal year 2021.

Overview of rule In anticipation of future carbon pricing schemes in the oceangoing shipping industry, MOL has established an internal carbon price based on a fixed amount per ton of CO₂ emissions. This serves as an economic indicator in investment decision-making. In addition to the direct costs that future carbon pricing may impose on MOL, the assessment also considers the potential impacts of such pricing on market conditions. Investment evaluations are therefore conducted based on changes in overall economic viability, including both costs and revenues, and this approach has been established as a company-wide standard for investment decision-making.

Target businesses Applied to all investment approval processes related to the oceangoing shipping business. For investment projects outside the oceangoing shipping business, application is determined on a case-by-case basis through internal review and discussion.

CO₂ price
January 2023 to December 2034: US\$65/t-CO₂
January 2035 to December 2044: US\$175/t-CO₂
From January 2045 onward: US\$200/t-CO₂

* The price levels are based on the IEA Sustainable Development Scenario ("Below 2° C Scenario").

Examples Since its introduction, Internal Carbon Pricing (ICP) has been applied to numerous investment decisions. It has been utilized in projects identified as key climate change mitigation measures under the MOL Group Environmental Vision, including the introduction of LNG-fueled vessels and the deployment of the Wind Challenger energy-saving technology.

For example, installation of the Wind Challenger requires additional capital expenditure (CAPEX). At the same time, however, the technology delivers fuel savings through improved energy efficiency and contributes to reductions in CO₂ emissions. By incorporating ICP into investment evaluations, the economic value of CO₂ emissions reductions can be appropriately reflected in project assessments. This enhances the overall attractiveness of such investments and shortens the payback period for the additional capital expenditure required. MOL will continue to review its internal carbon price as appropriate, taking into account information from external organizations such as the IEA, as well as developments in carbon pricing schemes applicable to international shipping, including the EU-ETS. Any revisions will be made while ensuring alignment with the various conditions and assumptions used in the scenario analysis described above.

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