Disclosure based on the TNFD Framework

January 2025

"K" LINE
川崎汽船株式会社

Biodiversity Conservation Initiatives and Information Disclosure Based on the TNFD Framework

As our business is dependent on natural capital, mainly from the ocean, not only climate change issues, but also biodiversity conservation efforts, especially in the ocean, are important themes for our business activities. Therefore, in order to assess and address environmental risks and nature-related economic impacts, we have adopted the LEAP approach based on TNFD guidance. By adopting the LEAP approach, we aim to strengthen our risk and opportunity management based on a more comprehensive understanding of climate change and natural capital related to our business, promote coexistence with nature, and proactively work towards building a sustainable future. The formal framework of the TNFD was issued in September 2023. These analyses of our biodiversity have been in progress since April 2023.The LEAP approach was conducted based on the beta version of the framework (versions 0.1 to 0.4) prior to the official publication of the TNFD, and the results of our current assessment and analysis, as well as our response measures, were compiled and disclosed as information.

The results of the evaluation and analysis at the time of the report and the measures to be taken are summarized and disclosed as information. This time, based on the TNFD approach, The analysis is based on the TNFD approach, with an emphasis on "Locate" (region), because the shipping business covers all ocean areas where ships navigate**.** However, given the nature of the maritime business, which covers all ocean areas where vessels operate, we determined that ocean-centered biodiversity measures that do not specify. This information has been verified by Socotec Certification Japan that the LEAP approach has been properly implemented. Ltd. In order to respond to future changes, we will continue to evaluate and analyze our activities and consider and implement specific measures that contribute to biodiversity conservation. We will continue to evaluate and analyze the results and consider and implement specific measures that will contribute to biodiversity conservation in the future.

Participation in the TNFD Forum and Adopter Registration

In November 2023, we joined the Taskforce on Nature-related Financial Disclosures(TNFD) forum*1. Additionally, in March 2024, we registered as a “TNFD Adopter,”*2 committing to early adoption of the TNFD disclosure recommendations published in September 2023.

*1 The TNFD is an international initiative aimed at building a framework for appropriate assessments and disclosure of risks and opportunities related to natural capital and biodiversity. The TNFD Forum is a group of stakeholders consisting of business enterprises , financial institution , research organization , and other entities. It was set up for the purpose of supporting discussion at the TNFD to help build a framework. Please refer to the following website of the TNFD Forum for details :https://tnfd.global/

*2 TNFD Adopters are companies and organizations that have registered on the TNFD website their intention to disclose information in accordance with the TNFD recommendations and are required to do so for either FY2024 or FY2025.https://tnfd.global/engage/tnfd-adopters/

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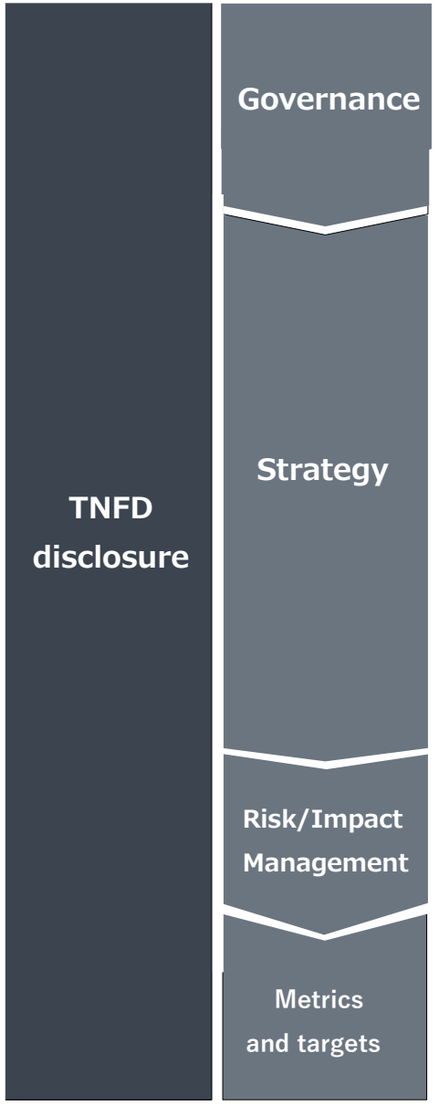


Governance

【Governance】

（1） Supervision by the Board of Directors and the Role of Management

Board of Directors

Amid global changes in values and behavior, as well as increasing awareness of the need to reduce the burden of climate change on the environment, “K” Line considers sustainability management a priority issue for enhancing corporate value over the medium to long term and discusses the issue as necessary at Board of Directors’ meetings.

President & CEO

To strengthen management focused on the issue of reducing environmental impact, we have established the Corporate Sustainability Management Committee and the GHG Reduction Strategy Committee, chaired by the president & CEO.

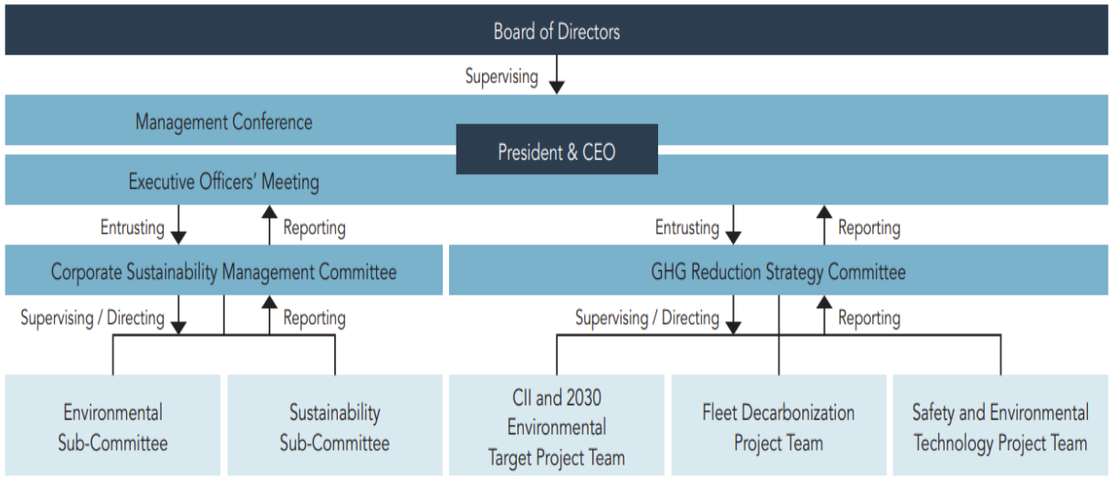
「Corporate Sustainability Management Committee」

The Corporate Sustainability Management Committee is enhancing corporate value by reviewing and formulating a promotion system for the “K” LINE Group’s sustainability management. The general managers of each business group, who are heads of the relevant departments responsible for the material issues identified by the Group, are members of the Sustainability Sub-Committee, a subcommittee under the Corporate Sustainability Management Committee. The Sustainability Sub Committee monitors the implementation of initiatives related to materialities and regularly reports on their progress to the Corporate Sustainability Management Committee. Assessment and management of dependencies, impacts, risks and opportunities for ecosystem services are carried out under this structure, with final reporting of significant matters to the Board of Directors.

「GHG Reduction Strategy Committee」

The GHG Reduction Strategy Committee formulates strategies for reducing GHG emissions, with a focus on fuel conversion for the Group among urgent environmental issues. It also creates and implements comprehensive response strategies, as well as policies related to adopting technologies, such as equipment selection, and preparations for smooth operations. Under this governance structure, the “K” LINE Group advances effective sustainability management.

■ Sustainability Governance Structure



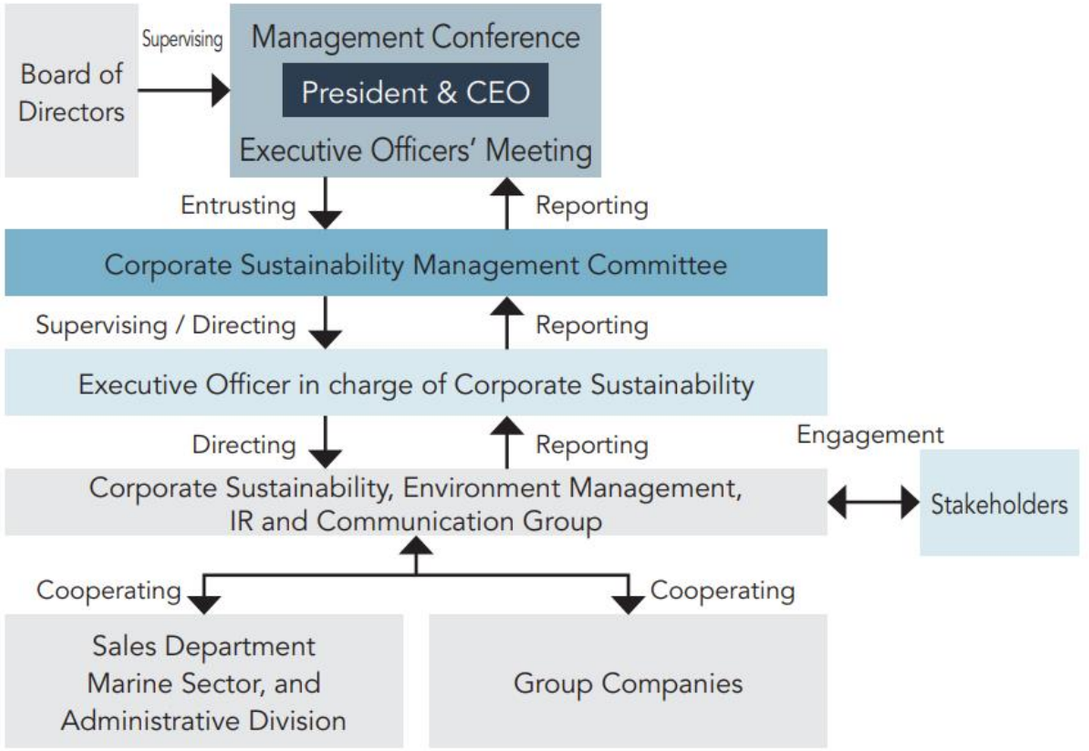
（2） Respect for human rights with regard to stakeholders

“K” The LINE Group has stated ‘Respect for Human Rights’ at the beginning of its ‘Group Charter of Corporate Behavior’ and signed the United Nations Global Compact in 2020, stating “to support and respect the protection of human rights” and “to make sure that we are not complicit in human rights abuses”. We also expressed our support for labor principles such as “the elimination of forced and compulsory labor,” “the effective abolition of child labor,” and “the elimination of discrimination in respect of employment and occupation.”

Based on the “K” LINE Group Basic Policy on Human Rights formulated in 2022, under the supervision of the Corporate Sustainability Management Committee and the direction of the executive officer responsible for corporate sustainability, the Corporate Sustainability, Environment Management, IR and Communication Group has become in charge of implementing human rights due diligence, including the drawing up of measures as well as analysis and assessment of human rights risks related to the business activities of the “K” LINE Group.

The Kawasaki Kisen Kaisha Group Basic Policy on Human Rights declares in section “3. Human Rights Due Diligence and Remedy” that the Group will establish a system to minimize negative impacts on human rights that encompasses all stakeholders inside and outside the Group.

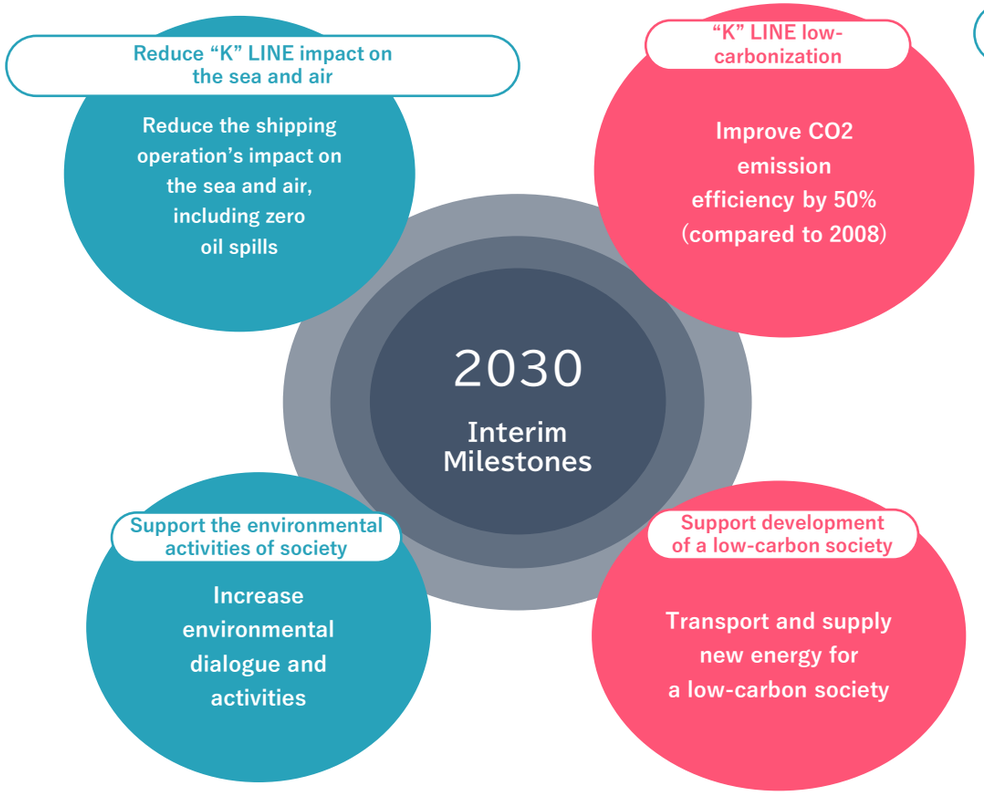
■ Human Rights Due Diligence System



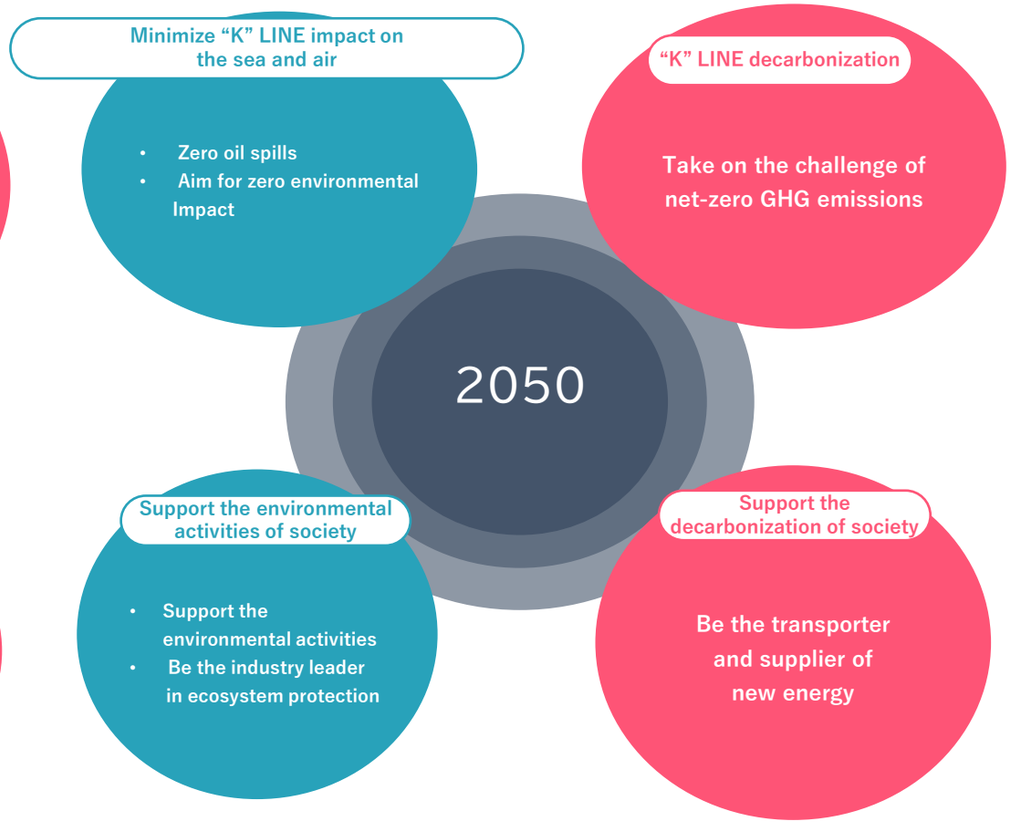
Strategy

（1） Sustainability Policy

“K” LINE Group has earned the trust of its customers by providing safe and reliable marine transportation and logistics services in the marine transportation industry, which is the foundation of the logistics infrastructure that supports global economic activities. Among the various businesses that we operate, we focus on our main business, marine transportation, and furthermore, as part of our “K” LINE Environmental Vision 2050, we have disclosed our "2030 Mid-term Milestones" and "2050 Goals" to our stakeholders. Based on these goals, we have examined the issues to be analyzed.

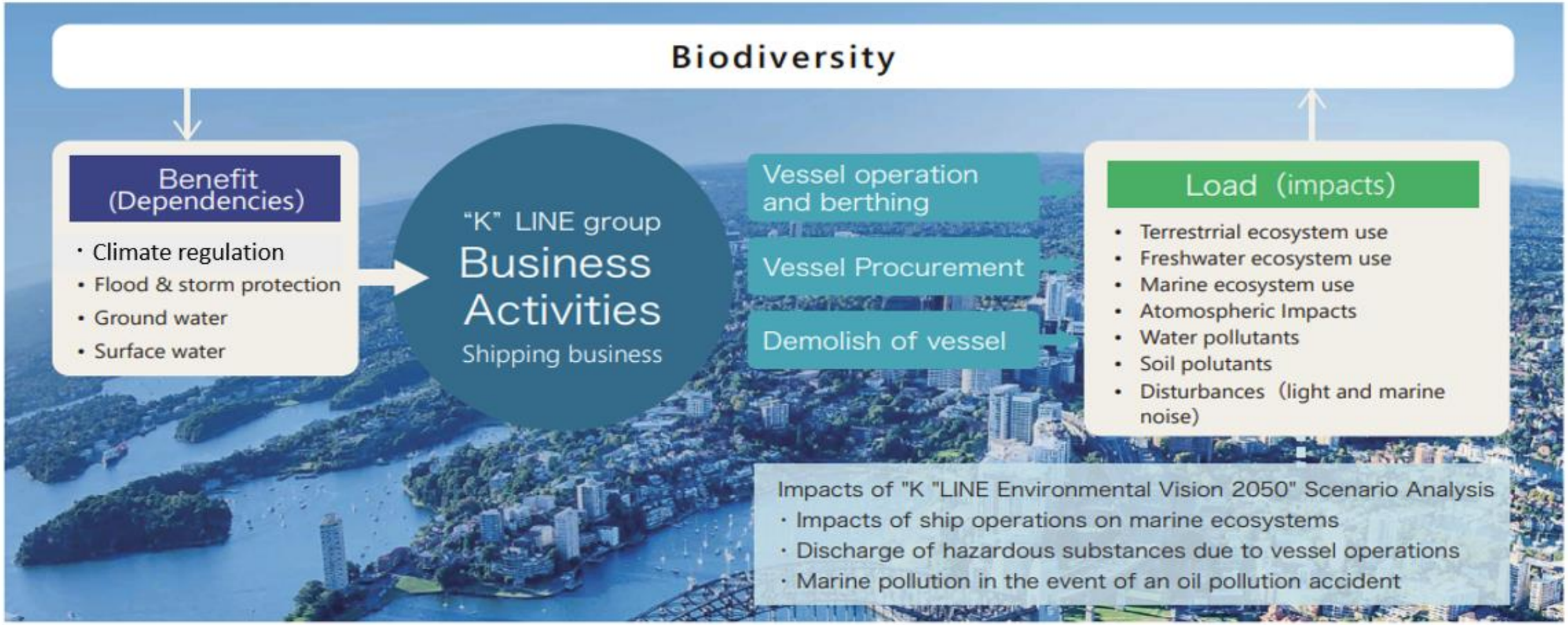


「2030 Interim Milestones」



「2050 Goal」

（2）Business Activities and Relationship with Nature



Based on the TNFD approach, the analysis focuses on “Locate” (region). Considering the characteristics of the marine transportation business, which covers all marine areas navigated by vessels, we evaluated that marine-centered biodiversity measures without specifying marine areas would be the basic response.

（3）Nature-related dependence and impacts-1

Overview of LEAP Approach

Our steps to disclosure in accordance with the LEAP approach are as follows. In the Locate phase, priority areas were identified in terms of ecosystem integrity, biodiversity importance, and water stress (mainly marine pollution), taking into account the footprint of our operations and its relationship to nature. In the Evaluate phase, we analyzed the impact of the items identified in ENCORE(*) as having high dependency/impact in the priority areas identified in the Locate phase. We then identify and evaluate the risks and opportunities in the Assess and Prepare phases, and revise our goals and strategies.

Heatmap on dependence and impact

First, we used ENCORE to create heat maps to screen nature-related risks and opportunities in our shipping and port operations to understand dependencies and impacts in the sector.

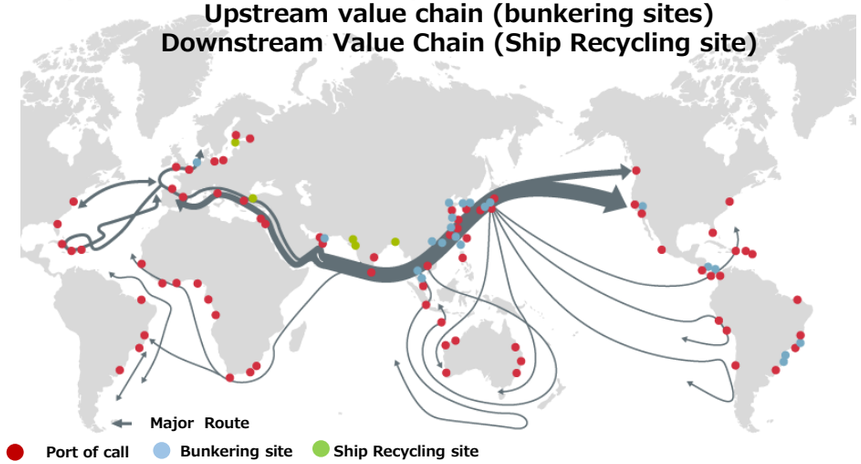
※ ENCORE
A tool to help financial institutions better understand, assess, and integrate natural capital risk into their activities. Also used in LEAP analysis, as it can illustrate the degree of dependence and impact on ecosystems by sector. 。

Sector	Dependence (ecosystem services)							Impact (Key Factors of Impact)							
								Utilization			Pollution			Obstruction (noise, light)	Solid waste
	Climate control	Protection from floods and storms	Underground water	Surface water	Water quality	Maintaining water flow	Mass stabilization and erosion control	Marine ecosystem	Freshwater ecosystem	Terrestrial ecosystem	Atmosphere	Soil	Water quality		
Marine transport	H	H			L			H			H		H	H	
Ports, Ship recycling yards and services	M	M	L	H	L	M	M	H	H	H	H	H	H	H	M

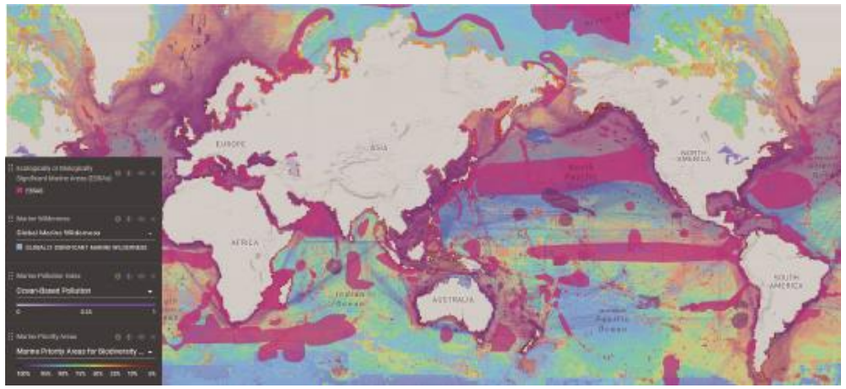
H: High Impact
M: Middle Impact
L: Low Impact

（3）Nature-related dependence and impacts-2

Our Business Footprint (Key Areas)
Scope of assessment: Direct operations (routes operated by KLINE)
Upstream value chain (bunkering sites)
Downstream Value Chain (Ship Recycling site)



Map of Sensitive Sea Areas



source ：UN Biodiversity Lab(※)

※UN Biodiversity Lab
An analytical tool to support the United Nations Biodiversity Laboratory's (UNBL) assessment and impact efforts for nature conservation and sustainable development.

Priority areas

We selected priority areas for each business site and operation location based on the frequency of vessel routes and port calls by our group (direct operations) and the upstream value chain (Bunkering sites) and downstream value chain (Ship Recycling sites). (left figure: our business footprint) In addition, we used the UN Biodiversity Lab* to identify sensitive marine areas (areas of high biodiversity importance, low ecosystem integrity, and high water stress (sea water pollution). We also identified priority areas where our business activities have more contact with nature by comparing the results of the UN Biodiversity Lab and the UN Biodiversity Lab (see figure below left: Biodiversity Importance Map).

Materiality location
Business Footprint.List of regions prioritized (frequency of routes, number of locations, and business activities)

×

Sensitive location
Direct operations and locations where key value chain assets and activities come into contact with the nature of

- High biodiversity importance
- Low ecological integrity
- High water stress (seawater pollution)

Main Areas of Analysis

（3） Nature-related dependencies and impacts -3

Diagnosis of dependence and impact in priority areas

For the priority areas determined in the Locate phase, we evaluated the nature-related dependencies and impacts related to our business._We used the ENCORE tool EXPLORE MAP to identify and deep dive into the data layers that were highly dependent on the results of the ENCORE assessment of sectoral dependencies and that were indicators of each ecosystem service. The same analysis was performed for impacts. The results are presented in the table below. Apart from the below, a list of endangered species in priority areas was also prepared by checking the IUCN Red List.

IUCN Red List
Provides a variety of information on species. It is an important indicator of the health of the world's biodiversity. A tool for informing business decision-making for policies that are essential to biodiversity conservation and the protection of essential natural resources.

	Area	Dependencies & Impacts
A	India	The region is highly dependent on marine ecosystems, freshwater ecosystems, and seasonal differences in precipitation, making it highly dependent on flooding events.Since we mainly conduct demolition in this region, it is important to take measures to prevent pollution runoff because of the potential impact on marine and freshwater ecosystems. Thorough environmental measures in the dismantling yards are needed.
B	Southeast Asia	The region has high GHG emissions and a high impact on marine ecosystems. As we often navigate to this region, we need to pay particular attention to measures for discharging hazardous substances from vessels and the impact on marine ecosystems caused by ballast water and oil spillage due to accidents must be paid particular attention.
C	Japan	The region can be said to have a high degree of impact on freshwater ecosystems, marine ecosystems, and water pollution. The marine ecosystems are particularly important for our marine-based business. The region is assessed as having a significant impact on marine ecosystems, especially for our marine-based business. It is necessary to pay attention to countermeasures against marine pollution caused by oil spills in ship accidents.
D	California	High GHG emissions and high impact on marine ecosystems, freshwater ecosystems, and water pollution. As we often sail to this region, we need to pay attention to countermeasures against hazardous substances from ships and marine pollution caused by oil spills in case of ship accidents. We need to pay attention to countermeasures against toxic substances from ships and marine pollution caused by oil spills in the event of ship accidents. In addition, there is a whale sanctuary in the area, and since slow steaming is recommended in the area, it is necessary to pay attention to the disturbance to marine organisms.

（4） Assessment of nature-related risks and opportunities -1

Analysis of nature-related risks

In the risk analysis, risks that were considered to have a significant impact were organized in terms of migration risk and physical risk. As a result, we consolidated and identified four materialities that apply to all priority areas: oil pollution, air quality impacts, migration of marine organisms, and impacts on mammals.

Risk classification		Potential Risks and Impact on Business	Impact on Nature	Key Risks
Transition risk	Regulations and Laws	Vessel operations will increase GHG and SOx and NOx emissions, and stricter emissions regulations at the operator level will increase response costs.	Air pollution	Atmospheric Impacts
		The discharge of ballast water and the migration of organisms attached to the bottom of the vessel could affect the aquatic ecosystem of the area, leading to a collapse of the ecosystem of fishery resources and affecting the local fishing industry, which could result in the need for fisheries compensation. It could also create a threat to the conservation of endangered species and could result in lawsuits from the target countries and NGOs.	Biological Interference/Alteration	Migration of marine organisms
	Reputation	Increased emissions of SOx and NOx, which cause photochemical smog and acid rain, due to vessel operations will damage the company's social reputation among suppliers and stakeholders.	Air pollution	Atmospheric Impacts
		During ship operations, which can cause collisions with whales and other marine mammals that can be physically harmful to the organisms. In addition, undersea noise can harm communication between marine organisms, cause stress, and adversely affect the ecosystem. It may cause damage and stress to living organisms, and in the worst case, death, resulting in lawsuits from neighboring countries, NGOs, etc., and public notoriety.	Disturbance (light, noise)	Effects on Mammals
Physical risk	chronic	The oil pollution associated with the dismantling needs to be addressed.	Water and soil contamination	Oil pollution
	acute	Accidents in marine transportation cause oil pollution, which affects the marine ecosystem and reduces the catch of fishery resources, necessitating compensation to fishery-related businesses and neighboring countries.	Water and soil contamination	Oil pollution

【Strategy】

（4） Assessment of nature-related risks and opportunities -2

Assessment of nature-related opportunities

The TNFD defines nature-related opportunities as activities that produce positive outcomes for the organization and nature by creating positive impacts on nature or reducing negative impacts on nature. Based on this definition, we evaluated the importance of activities that create nature-related opportunities in the TNFD in each of the four materialities of “oil pollution control,” “air quality impact mitigation,” “marine life migration prevention,” and “mammal impact mitigation”.

1. Oil pollution

Risk Mitigation Management	Opportunity Management	Materiality assessment of risks and opportunities
Ship hull strengthening / Promotion of safe operation through the integrated ship operation and performance management system "KIMS" / Installation of overflow pipes in fuel tanks / Electricity for deck equipment / Use of indirect cooling system (central cooling system) / Seafarer training / Strengthening of dialogue with port facility managers / Lobbying IMO (International Maritime Organization) on treaty aspects in collaboration with relevant ministries. ※Financial impact is mitigated by marine insurance coverage	Promotion of safe operation through the integrated ship operation and performance management system "K-IMS" / Construction of a fleet compatible with new transport technologies / Environmental protection through enhanced support for green ship recycling	Nineteen endangered species inhabit Southeast Asia, and oil pollution from ship accidents, etc., is of high importance because of its potentially devastating impact on the ecosystem. On the flip side of risk, the expansion of safe operation measures and oil pollution prevention measures that take these into account and the insistence on such measures are highly important as they provide an opportunity to contribute to the enhancement of reliability as a ship operator that takes biodiversity conservation into consideration.

【Target】	
Zero oil pollution accidents	Promotion of efforts to prevent oil pollution accidents: Strengthening of safe navigation measures, strengthening of hull strength, strengthening of all safety measures including human resource development, strengthening of green ship recycling measures, etc.

2. Atmospheric Impacts

Risk Mitigation Management	Opportunity Management	Materiality assessment of risks and opportunities
Initiatives to Develop Next-Generation Technologies to Clear Tier III NOx Emissions Regulations / Expanded Introduction of LNG-Fueled Vessels / Participation in the Port of Bergen, Norway, Initiative to Reduce NOx Emissions from Ships at Berth by Installing Onshore Power Supply Equipment / Awards for the Port of Los Angeles and Port of Long Beach, USA, Slow Navigation Program / Further expansion measures for LNG-fueled vessels / Introduction of LPG-fueled vessels / Introduction of zero-emission vessels such as ammonia- and hydrogen-fueled vessels	Proactive biodiversity assessment and information disclosure ahead of competitors in TCFD scenario analysis and TNFD prototypes / Improvement of profitability by enhancing efficient operation through introduction of energy-saving equipment, etc. / Reduction of burden by commercialization of ships with new fuel and propulsion technologies that are low-carbon and decarbon	Highly important because GHG emission sources are an important aspect of the factors causing climate change and can affect marine ecosystems by increasing sea water temperature, affecting ocean currents, and leading to changes in weather phenomena. SOx and NOx emissions are highly important because they cause photochemical smog and acid rain, which may affect not only marine ecosystems but also human health. On the flip side of the risks, low-carbon ship operations that take these factors into account, compliance with regulations, and assertion of such are highly important because they provide an opportunity to contribute to the credibility of the ship operator as one that takes biodiversity conservation into account.

【Target】	
Reduction and minimization of impact on the surrounding environment	Promote initiatives to prevent air pollution and reduce GHG emissions: slow steaming, use of low-sulfur fuels, introduction of SOx scrubbers, introduction of NOx reduction equipment, etc.

（4） Assessment of nature-related risks and opportunities-3

3. Marine organism migration

Risk Mitigation Management	Opportunity Management	Materiality assessment of risks and opportunities
Use of environmentally friendly paints: When marine organisms adhere to the hull of a ship, they increase the resistance of the hull, which not only increases fuel consumption and CO_2 emissions, but may also affect the ecosystem by bringing the adhered organisms to other waters. In order to reduce fuel consumption and prevent marine organisms from attaching to ships, MHI is actively promoting the use of low-friction paints, especially on new ships, in an effort to reduce CO_2 emissions and preserve biodiversity. In addition to conventional paints, low-friction paints are also being used on vessels in service in consideration of the environment	Marine ecosystem conservation through proper treatment of ballast water.	26 endangered marine species have been identified in India, 19 in Southeast Asia, 13 in waters around Japan, and 10 in waters around California. The disruption of ecosystems due to ballast water discharge and the movement of organisms attached to ship bottoms could pose a risk to endangered species and have a significant impact on catches. For these reasons, the risks associated with ballast water are of high importance. On the flip side of the risks, the expansion of ballast water measures that take these factors into account and the use of environmentally friendly paints and their claims are highly important because they provide an opportunity to contribute to the enhancement of reliability as a ship operator that takes biodiversity conservation into consideration.

【Target】 Reduce and minimize impact on the surrounding environment	Promotion of efforts to prevent marine organisms from migrating: Maintain 100% ballast water treatment equipment installation rate, continue introduction of environmentally friendly paints, etc.

4. Impact on mammals

Risk Mitigation Management	Opportunity Management	Materiality assessment of risks and opportunities
Reduce the impact of vessel operations on marine mammals (in the 12-mile area along the California coast, vessels are required to operate at reduced speeds, contributing to reduced collision and noise risks) / Establish noise measurement methods and standards and ensure that they are below standards when built / Engage with governments, UN, NGOs, etc. for policy engagement / Install and research noise reduction devices	Reduction of the burden on marine mammals by vessel operations that contribute to impact reduction/ Ecosystem conservation through more specific and effective measures regarding undersea noise, such as the impact of vessel noise on whales, etc.	Vessel operations may cause collisions whales and other marine mammals, resulting in physical harm to the creatures. In addition, the degree of impact of noise on whales is high in the Mediterranean and California waters, and is of high importance to stakeholders, especially considering the presence of a whale sanctuary in the California waters. On the flip side of the risks, the expansion and advocacy of safe navigation measures, oil pollution prevention measures, and operational reviews that take these considerations into account is highly important because it provides an opportunity to contribute to improving the credibility of the company as a ship operator that takes biodiversity conservation into account.

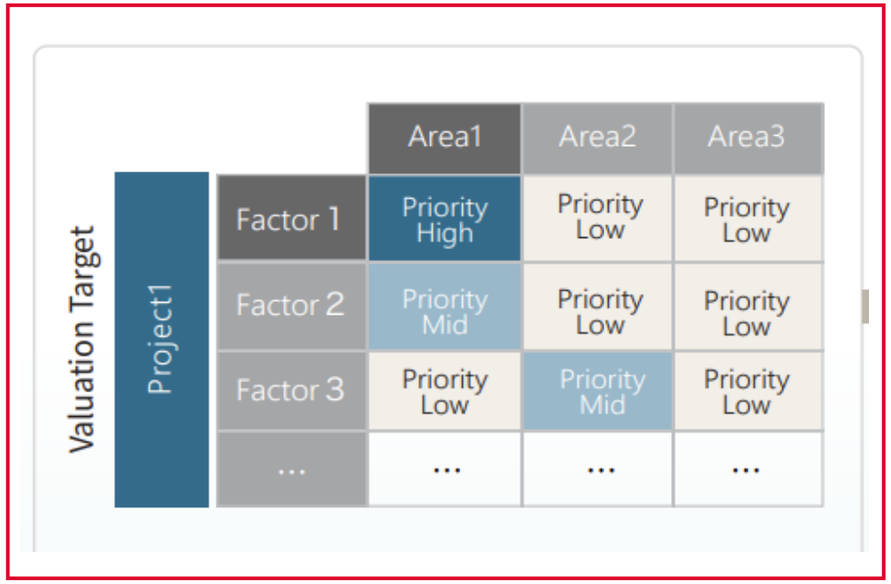
【Target】 Reduce and minimize impact on the surrounding environment	Reducing the Impacts of Vessel Operations on Marine Mammals: Participation in California's Slow Travel Program to Protect Whales

Risk and Impact Management

【Risk and Impact Management】

（1） Identification and assessment process for nature-related risks

“K” LINE Group will follow the steps of the LEAP approach to identify and evaluate nature-related dependencies, impacts, risks, and opportunities based on TNFD disclosure recommendations . In the Scoping phase, we develop a working hypothesis, and in the Locate phase, we identify the contact points between our operations and nature and identify priority areas in terms of ecological integrity and importance, and water stress (mainly the degree of marine pollution) In the Evaluate phase, we analyze whether the items identified as having a high degree of dependence and impact will have an impact on nature in the priority areas identified in the Locate phase. In the Evaluate phase, the business activities in the priority areas identified in the Locate phase are analyzed to determine the natural impacts of the business activities. In the Assess phase, risks and opportunities are identified and evaluated, and goals and strategies are reviewed in the Prepare phase.



■ Assessment Team

Corporate Sustainability and Environmental Management, IR and Communication Group

To strengthen our sustainability management structure, we have integrated the Environmental Management Group into the existing Sustainability Promotion, Investor Relations, and Public Relations Groups, bringing E (Environment), S (Society), and G (Governance) into one group. This group identifies and assesses nature-related dependencies, impacts, risks, and opportunities based on the LEAP approach.

（2） Process for managing nature-related and other risks

"K" LINE Group has the following organizations responsible for the practical implementation of sustainability management promotion: Corporate Sustainability and Environmental Management, IR and Communication Group, Carbon Neutral Promotion Group, GHG Reduction Strategy Group, Fuel Strategy & Procurement Group, Advanced Technology Group. These groups are accelerating sustainability initiatives through practical operations. Sustainability Sub-Committee reports to Corporate Sustainability Management Committee, a higher-level committee, on important matters in the LEAP evaluation of the Sustainability, Environmental Management Promotion, Investor Relations, and Public Relations Groups. Finally, the President & CEO, who chairs the Sustainability Management Promotion Committee, submits the report to the Board of Directors for company-wide management.

Metrics and targets

【 Metrics and targets】

（1） Main responses to nature-related risks

“K “LINE Group, as a company that enhances ‘natural capital,’ mainly of the ocean, one of the six capitals of the ‘K ’LINE Group, in order to achieve both our continuous development and contribution to a sustainable society, we are committed to the ‘’K “LINE Environmental Vision 2050”, we are working to reduce the environmental impact of our company and society.

In the implementation of the LEAP approach, which is a part of our efforts, we were able to once again understand the relationship between our business activities and nature-related dependence and impacts, and evaluate nature-related risks and opportunities, which will strengthen our risk management in terms of management strategy and confirm that we will continue with our current measures and other directions. The assessment of the risks and opportunities identified**,** and the goals of the project were also reviewed. Although the risks and targets identified include qualitative assessments, we will continue to monitor them while seeking and considering quantitative information in the future.

Key Risks	Correspondence details	Purpose	Targets and Indicators
Oil pollution	Promotion of efforts to prevent oil pollution accidents: Strengthening of safe navigation measures, strengthening of hull strength, strengthening of all safety measures including human resource development, strengthening of green ship recycling measures, etc.	Zero oil pollution accidents	Zero oil pollution accidents
Atmospheric impacts （GHG、SOx、NOx）	Promote initiatives to prevent air pollution and reduce GHG emissions: slow steaming, use of low-sulfur fuels, introduction of SOx scrubbers, introduction of NOx reduction equipment, etc.	Reduction and minimization of impact on the surrounding environment	All ship types Emissions per ton-mile transported Environmental Data | Environmental | Sustainability | Kawasaki Kisen Kaisha, Ltd.
Prevention of marine organism migration	Promotion of efforts to prevent marine organisms from migrating: installation of ballast water treatment equipment, introduction of environmentally friendly paints, etc.		Maintain 100% ballast water treatment system installation rate, continue introduction of environmentally friendly paints
Impact on mammals	Reducing the Impacts of Vessel Operations on Marine Mammals: Participation in California's Slow Travel Program to Protect Whales		Continued participation in the slow steaming program in California, U.S.A.

(2)

Future Biodiversity Conservation Initiatives

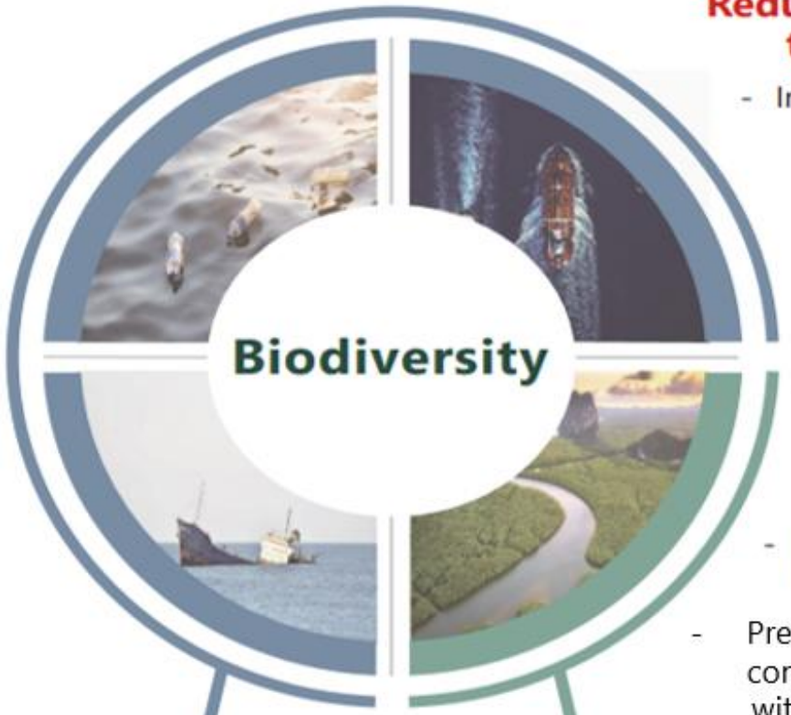
In order to reduce the environmental impact of our ship operations on the oceans and atmosphere to zero, we are already implementing various initiatives in each region from the viewpoint of biodiversity preservation as follows.

Avoidance and minimization of marine pollution

- Promote initiatives to eliminate oil pollution accidents (strengthen safe navigation measures, strengthen hulls)

Reclamation and conversion of resources for recycling

- Dispatch employees to Ship Recycling's dismantling yard to conduct independent assessments, including prevention of pollutant spills
- Minimizing waste and promoting recycling related to marine and land-based operation



Reduction/minimization of load on the surrounding environment

- Introduction of SOx / NOx reduction equipment
  - FuelUse of environmentally friendly low-friction paints
  - Appropriate treatment of ballast water
  - Participation in the U.S. state of California slow steaming program to protect whales

Restoring and Preserving the Environment and Ecosystems through Cooperation and Collaboration with Society

- Joint research on plastic waste with Tokyo University of Marine Science and Technology
- Preserving an undeveloped woodland near a village conservation and coastal cleanup activities in collaboration with Chiba University Environmental ISO Student Committee.

Bringing the negative to zero

Turning Zero into Positive

（2） Future Biodiversity Conservation Initiatives

▶ Case ① Safety in Navigation and Cargo Operations Based on “Human Capabilities”

Cutting-Edge Digital Technologies That Complement the Power of People

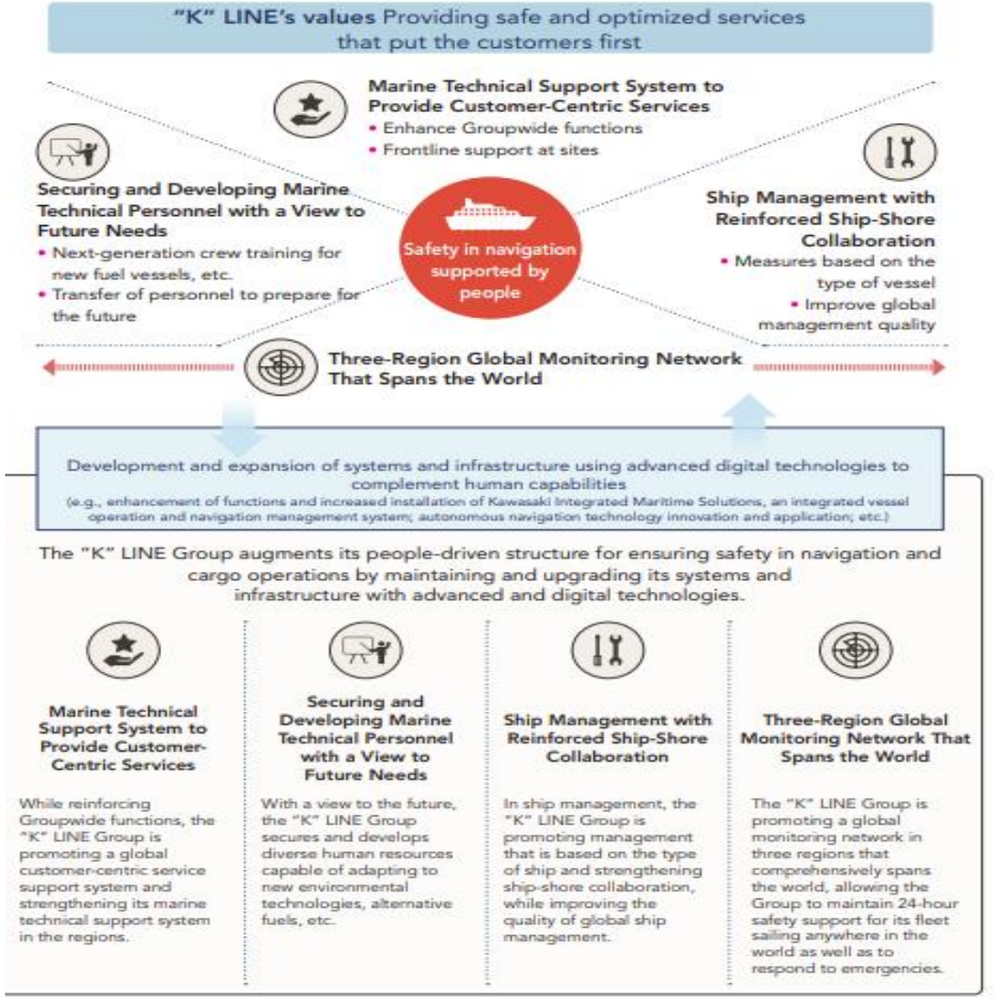
K-Assist Project

The K-Assist Project is a technology development project related to automated ship operation. It covers three fields: support for sentry duty and ship navigation, support for safe berthing and unberthing, and support for engine plant operations. The Advanced Safety Berthing/Unberthing Assistance System automatically detects any outside force applied to the hull when entering or leaving a port. Use of a ship motion model to predict ships’ future positions with high accuracy is expected to enable safer ship maneuvering in the future. The amount of tensile force applied to mooring lines during berthing varies greatly based on cargo loading status, and in the past, it was not possible to attain a quantitative measurement of that tensile force while aboard the ship. To address this, we jointly developed and installed the Tension Monitoring System for Mooring Line that enables the digital visualization of tensile force applied to mooring lines to improve safety relative to the past while simultaneously lowering crew member workload.

Optimum Weather Routing System

Climate change in recent years has resulted in an uptick in typhoons, explosive cyclogenesis (“weather bombs”), and other weather events even out of season, with more problems being caused by stormy weather. To avoid such problems and ensure safe ship operation, it is important to set up proper routes based on weather and ocean condition forecasts.

We support the safe and economical operation of ships using the KAWASAKI Integrated Maritime Solutions Navigating System for Optimal Navigation, which makes route recommendations based on operational performance models for each vessel with weather forecast.



（2） Future Biodiversity Conservation Initiatives

▶ Case② Reinforcement of Response to Green Ship Recycling

- We are working on ship dismantling and resource recycling with full consideration for environmental preservation and occupational health and safety.
- Various types of metal are used in ships. The metals collected after dismantling ships are valuable resources and can be recycled into new products and used for new services to support local lives and the development of employment. The "K" LINE Group strives for responsible dismantling and recycling of resources also in the ship scrapping stage.
- In 2017, ”K” LINE established the company rules "Operating Rules for Ship Recycling" and "Detailed Operating Rules for Ship Recycling" to ensure that the dismantling work is carried out in consideration of environmental protection and occupational safety and health.
- Dismantling of vessels owned by our company requires to be conducted only at our certified yards selected according to our own evaluation criteria in consideration of the conformity requirements of the HKC and our own perspective in addition. The evaluation is conducted at on-site audit in cooperation with our local supervisors.
- When dismantling a ship, we inspect the dismantling yard and conduct an environmental impact assessment using our own checklist to ensure that the work is performed safely, that substances and other materials that may affect the human body and the environment are collected, and that the surrounding environment is not affected.

Interview with the yard managers

Ship recycling yard on work

（2） Future Biodiversity Conservation Initiatives

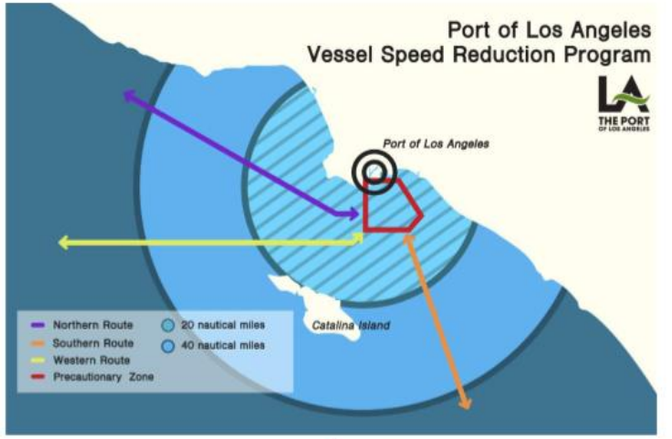
▶ Case③ Prevent Air Pollution through Slow-Speed Navigation

「 Participation in the Port of Los Angeles and Port of Long Beach slow steaming program in the U.S.」

- Kawasaki Kisen Kaisha, Ltd. (“K” LINE) is honored to have received recognition from the port authorities of Long Beach and Los Angeles, both in the United States, for recording high level of compliance throughout 2023 with voluntary speed reduction by “K” LINE’s car carriers and dry bulk carriers in the two ports’ respective programs in order to reduce coastal air pollution by slowing ships within the designated water.
- Ships participating in the program are asked to comply with speed limit of 12 knots within 40 miles (about 74 kilometers) from the coast of each port in order to reduce emissions of exhaust gases containing nitrogen oxide (NOx), sulfur oxide (SOx), particulate matter (PM) as well as CO2 that cause (global) warming from ships.
- We have participated since the inception of the program in 2005, and as a result of this year’s achievement, “K” LINE has been honored to receive this award from the Port of Long Beach for 19th consecutive years and from the Port of Los Angeles for 16th consecutive years since 2008 when their awards were commenced, respectively.

「Unique decelerated navigation in Ise Bay and Mikawa Bay in Japan」

- We voluntarily reduce the speed of our car carriers to 12 knots or less when navigating in Ise Bay and Mikawa Bay. This enables us to reduce the impact of ship navigation on the surrounding atmospheric environment, both on land and at sea. We also control emission of PM (including soot) while ships are in harbor by removing soot from the boiler before entering the ports. After entering the ports, we assure that the load on the electricity generator is appropriate to maintain a good combustion state.



（2） Future Biodiversity Conservation Initiatives

▶ Case④ Promoting the use of environmentally-friendly paints.

We are promoting the use of environmentally-friendly paints.

- When sea creatures attach to the hull, the resistance of the hull increases, and fuel consumption increases. This results in an increase in CO_2 emission.
- When those attached sea creatures are brought into other sea areas during voyage, it will affect the ecosystem (of those areas).
- Our company encourages adoption of low friction paint for new ships to reduce fuel consumption and prevent attaching of sea creatures and are also trying to reduce CO_2 emissions and maintain the biological diversity.
- We also encourage use of low friction paint, as well as existing paint, for ships that are already in service.

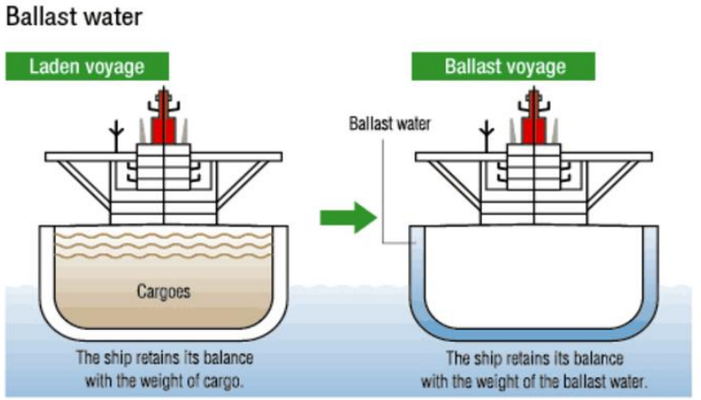
A ship being coated with silicone paint (red color) at the Dry dock

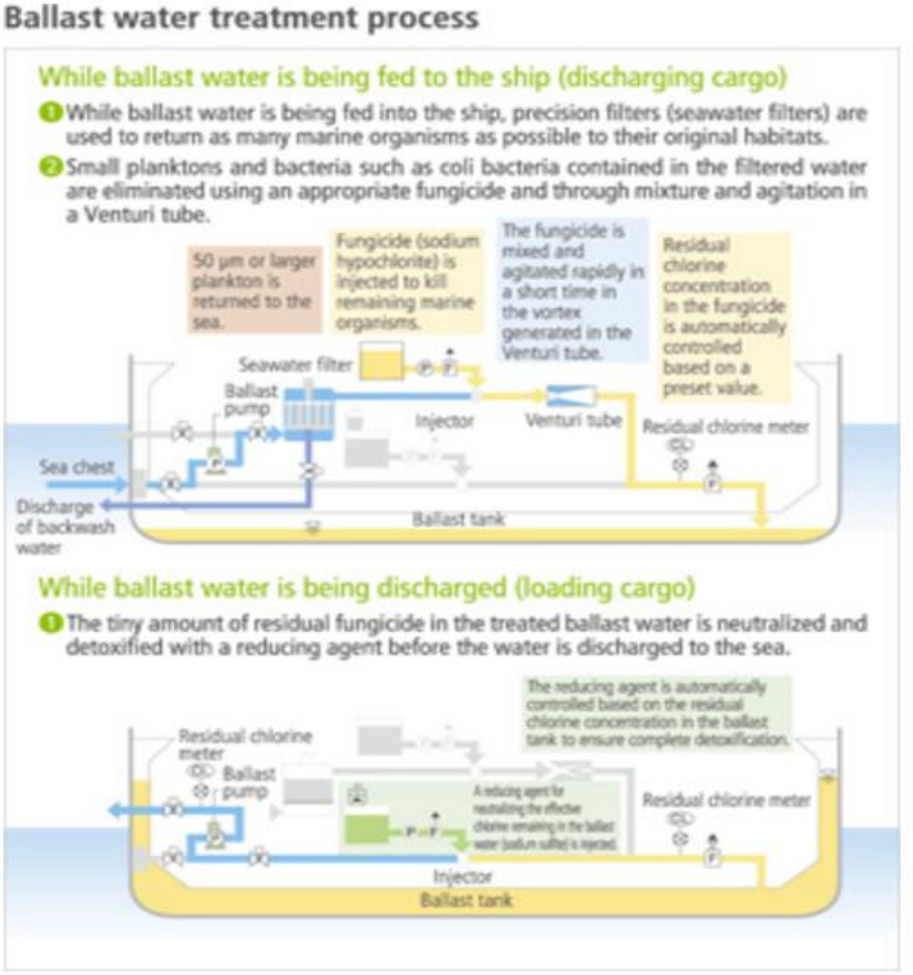
（2） Future Biodiversity Conservation Initiatives

▶ Case⑤ Appropriate treatment of ballast water

Vessels store seawater (ballast water) to keep the hull stable at sea.

- In 2017, the International Maritime Organization (IMO) has entered into force the "International Convention for the Control and Management of Ships' Ballast Water and Sediments " because the discharge of ballast water from vessels can affect marine ecosystems.
- Specifically, it requires the installation of a treatment system (BWMS: Ballast Water Management System) for sterilizing ballast water.
- We will continue to operate vessels that are cleared of regulations and strive to protect biodiversity so that marine life and ecosystems as they originally are.





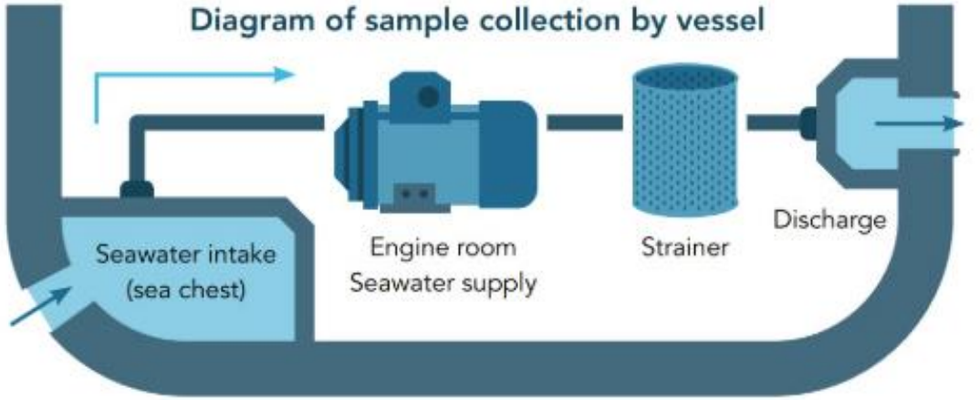
（2） Future Biodiversity Conservation Initiatives

▶ Case⑥ Participation in Collection of and Research on Marine Plastic Waste

We are conducting joint research on marine plastic debris with Tokyo University of Marine Science and Technology, a national university corporation.

- The joint research will evaluate how much plastic waste can be collected from common seawater intake that is filtered by ships on voyages.
- Specifically, “K” LINE vessels will take samples from the seawater intake line with a strainer while the ship is running, and then the university will collect plastic particles from the samples and analyze their material, size, and other properties.
- The aim for this project is that it will lead to further research, such as the collection of microplastics in the open sea using ocean- going vessels and the establishment of a system for monitoring the density of microplastics in specific areas.

Proposed method for sample collection to be carried out by “K” LINE vessels



（2） Future Biodiversity Conservation Initiatives

▶ Case⑦ Promotion of Environmental Volunteer Activities

We engage in various activities to raise the environmental consciousness of our employees further, including initiatives to protect biodiversity and create pleasing landscapes. We also are collaborating with the NPO Chiba University Students Committee for Environmental Management System, and Coastal cleanups, support for seaweed bed restoration activities by the general incorporated association “Moaibu”, etc to protect community nature areas and to clean up business sites and seashores.

「Forest Conservation Activities in Numata City, Gunma Prefecture 」

- With the cooperation of the Tone Numata Forestry Association, and in collaboration with the Chiba University Environmental ISO Student Committee, a non-profit organization with which we have long cooperated in satoyama conservation activities, we have been conducting forest conservation activities since November 2023 in a mountain forest we own in Numata City, Gunma Prefecture, Japan.

「 Beach cleanup 」

- Employees from Group companies in Japan and overseas participate in volunteer beach cleanup activities around the world.

「 Support for seaweed bed restoration activities」

- Through the participation of our employees in volunteer activities for seaweed bed restoration, we are supporting a seaweed bed restoration project promoted by the “Moaibu,” a general incorporated association, in Minami Town, Tokushima Prefecture.

Donation presentation ceremony held in Minami Town, Tokushima Prefecture, Japan

Coastal cleanup at Makuhari Beach, Chiba Prefecture, Japan

【Disclaimer】

This material is provided solely for the purpose of providing information to assist in investment decisions and is not intended as a solicitation to buy or sell shares of the Company. This document is not intended as a solicitation to buy or sell our stock. Investors are advised to make investment decisions at their own discretion.

【Cautionary Statement Concerning Forward-Looking Statements】

This document contains forward-looking statements that are based on management's assumptions and beliefs in light of the information currently available to it, and are subject to change depending on economic trends, shipping industry supply and demand, fuel prices, currency exchange rates, and other factors.

"K" LINE
川崎汽船株式会社