



2024 PAN OCEAN ESG REPORT

Pan Ocean Co., Ltd., is dedicated to enhancing company and shareholder value through practical and transparent management. Our objective is to become a global leading shipping & logistics company.



ABOUT THIS REPORT

About This Report

This report is the third annual sustainability report of Pan Ocean Co., Ltd. ("Pan Ocean"). It is published to transparently disclose the company's sustainable management direction and economic, environmental and social accomplishments to all stakeholders. Pan Ocean will continue to publish annual sustainability reports and use them as a channel to share and communicate details on the company's sustainable management.

Period and Scope

This report covers activities and performances from January to December 2023. For certain major activities, it also refers to data up to the first half of 2024. Quantitative data was compiled based on data from the past four years (2020-2023) to analyze changes in trends. The reporting scope of this report includes Pan Ocean's domestic headquarters and offices, as well as the activities of its overseas subsidiaries and offices, including its subsidiary POS SM. Any discrepancies in the reporting scope, if present, have been clearly indicated.

Principles

This report adheres to the GRI (Global Reporting Initiative) Standards 2021, the international benchmark for sustainability reporting. In addition, it incorporates indicators from the ESRS (European Sustainability Reporting Standards), SASB (Sustainability Accounting Standards Board), and TCFD (Task Force on Climate-related Financial Disclosures). Financial performance data has been prepared in accordance with the consolidated financial statements under the Korean International Financial Reporting Standards (K-IFRS).

Reliability

To ensure reliability and fairness, this report underwent third party verification by an independent external organization, Korea Management Register, in accordance with the AA1000AS international verification standards.

Considerations for Forecasting Data

This report has been prepared with reference to disclosure practices that ensure comparability and reliability and that are tailored to meeting the information needs of stakeholders. It contains pivotal information pertinent to stakeholders, taking into account both domestic and international regulations, market dynamics and industry structures. However, it is important to note that predictive information, based on estimates or assumptions regarding events, situations, or plans, may be subject to change due to shifts in the business environment, many of which are beyond our control or our ability to predict accurately. In addition, some quantified information in this report is derived from estimations using proxy indicators and methodologies available in the current market, so it may differ from actual measurements obtained using various methodologies.



Cover Story

This cover story emphasizes our journey towards sustainability and environmental stewardship by showcasing Pan Ocean's vision and commitment as a global leading shipping & logistics company and eco-friendly enterprise.



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Chapter. 1



OVERVIEW

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Letter to Stakeholders



Dear Stakeholders,

As the CEO of Pan Ocean Co., Ltd., I am pleased to present our third ESG report. My name is Ahn Joon Ho, and I would like to express my sincere gratitude for your continued support and encouragement since our inaugural report in 2022.

The year 2023 has presented significant challenges due to persistent global issues such as high interest rates, high inflation and low growth. These challenges were further compounded by geopolitical risks, including the Panama Canal transit restrictions due to weather anomalies, the ongoing Russia-Ukraine war, the Israel-Hamas conflict, and attacks on Red Sea vessels by Yemeni rebels. Despite this challenging business environment, the MEPC (Marine Environment Protection Committee) of the IMO (International Maritime Organization) adopted an enhanced strategy for carbon emissions during its 80th session. This strategy commits the shipping industry to the 2050 Carbon Net-Zero initiative. Furthermore, the EU (European Union) implemented the ETS (Emissions Trading System) in order to address the climate crisis. In addition, the year saw the first rulings on violations of the Serious Accidents Punishment Act, which was implemented in 2022, and the revision of the Corporate Governance Report Guidelines by the Korea Exchange. These developments reflect a growing trend towards more comprehensive and transparent disclosure of non-financial performances by corporations. In this uncertain environment, we did not use the strengthening of laws and regulations as an excuse to alter our established ESG management policies or delay our mid- to long-term plans. Instead, we proactively identified areas for improvement, developed solutions, and refined and specified our long-term plans. This report is intended to share our achievements in 2023 and outline our future plans.

Firstly, we have significantly enhanced our approach to climate change risk management. We conducted a comprehensive analysis of key risks and opportunities, evaluating them across eight categories and forecasting potential financial impacts for each. Our goal is to perform a more in-depth analysis to meet the standards set by the SBTi (Science Based Targets initiative). Since our 2021 commitment to carbon neutrality by 2050 and the subsequent unveiling of a detailed implementation roadmap, we have continued to take practical measures to reduce carbon emissions, resulting in improved reduction performance. In 2023, our greenhouse gas emissions intensity was 5.94 gCO₂/ton-mile, surpassing our target of 6.11 gCO₂/ton-mile and increasing the likelihood of achieving our 2030 interim target of 5.59 gCO₂/ton-mile. Furthermore, we are engaged in research on eco-friendly ship operations, including the adoption of new technologies such as autonomous navigation and AI, both in national projects and private initiatives.

Secondly, as a result of our ongoing efforts to establish a safe working environment for our employees, we obtained the international standard certification for occupational health and safety (ISO 45001) in December 2023. In accordance with our safety and health management policy, we will continue to strengthen our safety and health

management system and increase related investments to ensure that all employees can work in a healthy and safe environment. On top of that, we are extending our ESG management efforts to our supply chain. In 2023, we established the Supplier Code of Conduct, shared it during supplier selection, and conducted diagnostic evaluations through written inquiries with key suppliers urging them to join our ESG management efforts. We will continue to improve the due diligence process for selecting and evaluating suppliers to prevent any ESG-related deficiencies within our supply chain.

Finally, we are committed to enhancing our ethical and compliance management, proactively managing risk, and establishing a more transparent governance structure. In 2022, we implemented the Self-Compliance Program and have operated it since to strengthen all employees' understanding of fair trade. To date, we have maintained zero violations of fair-trade laws, and we will continue to adhere to ethical management practices that exceed legal standards. In 2023, both inside and independent directors achieved a 100% attendance rate at board meetings, which has reinforced responsible management. We have also increased the three-year dividend guideline to enlarge shareholder returns and continue our efforts to improve corporate governance. However, we recognize areas for improvement, such as the lack of a board evaluation system and procedures for improving cash dividends. We will not rest on our current achievements, but will continue our efforts to improve corporate governance.

In our inaugural report, I highlighted that Pan Ocean Co., Ltd., had attained the status of a "good company" based on past standards of "profit generation." However, I also noted that it was still lacking in terms of future standards represented by ESG. Since then, we have consistently strived to become a more exemplary company, and have achieved notable progress in several areas. Nonetheless, we recognize that we still fall short of global standards. All employees, including myself, are keenly aware of these shortcomings. We will continue our steady progress with a long-term perspective. We will not stop our steps toward change, no matter how slow they may seem. We believe that your interest and encouragement will greatly support our journey. On behalf of all our employees, I express my heartfelt gratitude and here conclude my remarks.

Thank you.

June 2024

CEO **Ahn Joong Ho**

Company Overview

Since 1966, Pan Ocean has been a leading provider of maritime transportation services worldwide, specializing in bulk carriers, container ships, LNG carriers and more. Our fleet encompasses a range of vessels, from smaller units to advanced gas carriers and VLCCs (very large crude carriers), which have been strategically optimized to meet the diverse needs of our customers. Our subsidiary, POS SM, provides comprehensive ship management solutions, including vessel and crew management, newbuilding supervision, safety solutions and quality management services. With our extensive technical expertise and experience, we lead the ship management industry in ensuring safer and more efficient operations. Pan Ocean is committed to advancing as a global leading shipping & logistics company by leveraging its diversified business portfolio, which includes grain distribution, LNG bunkering and LNG carrier operations.

Pan Ocean Overview

As of December 31, 2023

Company	Pan Ocean Co., Ltd.	Establishment	May 1966
CEO	Kim Hong Kuk, Ahn Joong Ho	Head Office	Tower 8, 7, Jong-ro 5-gil, Jongno-gu, Seoul, Republic of Korea
Employees	1,161 employees (Excluding Foreign Crews)	Fleet	230 Vessels (Owned 109, Chartered 121)
Main Business	Maritime logistics (bulk carriers, containers, tankers, LNG), agri-trading		

Financial Results

Consolidated Basis (Unit: KRW 100 million)



ESG Results

As of December 31, 2023



Overall Rating **A**

*Environment A+, Social A, Governance A



Overall Rating **BB**

*Environment A, Social B, Governance A



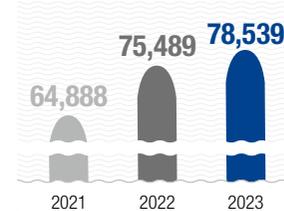
BB



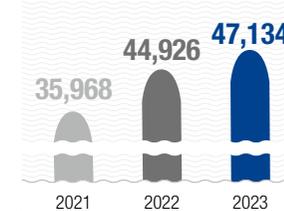
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*Climate Change

Total Assets



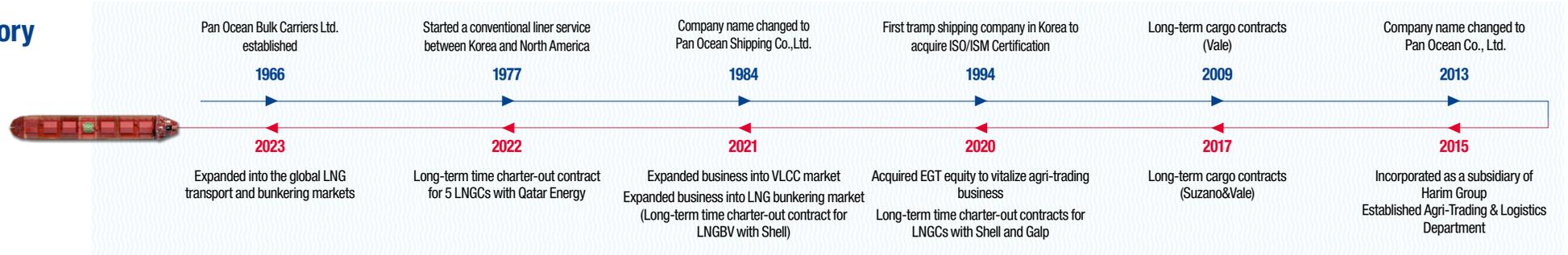
Total Equity



Credit Rating



History



Company Overview

Vision and Core Values

VISION
Global Leading Shipping & Logistics Company

01

A Future Leader

Pioneering minds that drive the industry forward.



02

A Partner to Customers

We foster growth alongside our valued customers and stakeholders, celebrating collective accomplishments together.



03

A Global Corporate Citizen that Fulfills Social Responsibility

We value safety more than anything. By complying with environmental laws and regulations, we pursue sustainable management guided by corporate social responsibility.



04

Corporate Culture that Respects Talents

We train talent with specialized expertise and diversity, creating an environment of opportunities where they can freely unleash their capabilities with fair and reasonable treatment.



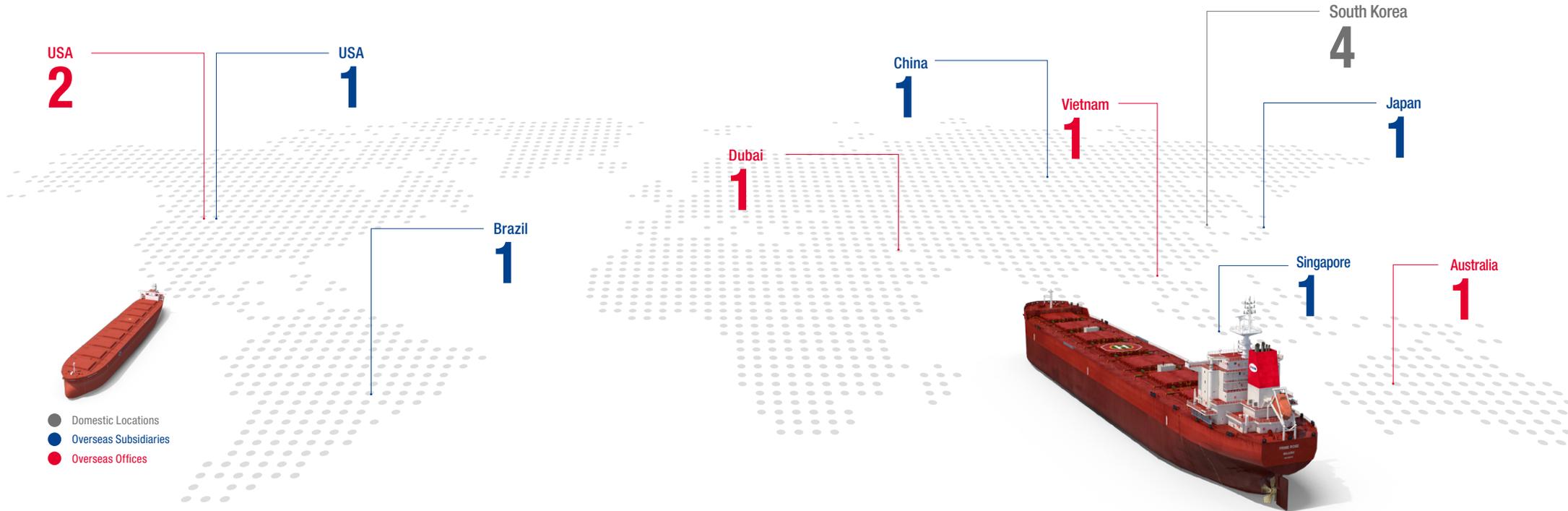
PAN OCEAN

Mission
Value Creation of Life & Sharing Happiness



Global Network

Pan Ocean continuously enhances its global bases and network to deliver top-tier maritime transport services with the aim of becoming a leading entity in the global shipping industry. As of the end of 2023, Pan Ocean operated one headquarters and three domestic offices in Korea, five overseas subsidiaries across Asia, the Americas, and five additional overseas offices.



Global Key Business Network

Headquarters and Domestic Offices

4



Overseas Subsidiaries and Offices

10



Global Sales Status

As of December 31, 2023

Region	Sales (KRW 100 million)*	Sales (USD thousand)
Asia	24,569	1,881,032
Oceania	6,061	464,065
Europe	713	54,627
North America	4,223	323,357
South America	7,138	546,477
Africa	905	69,326
Total	43,610	3,338,883

* Rounded to the nearest KRW 10 million

** Regional classification allocated based on the country where the port of loading is located

Global Employee Status

As of December 31, 2023

Region	No. of Employees
Asia	180
Oceania	1
Europe	-
North America	11
South America	3
Africa	-

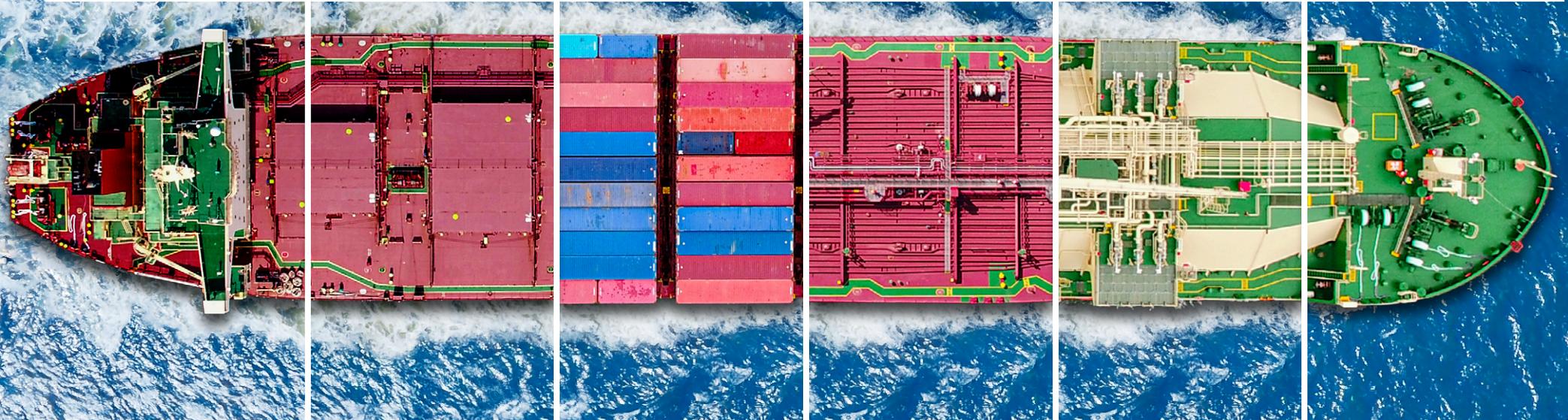
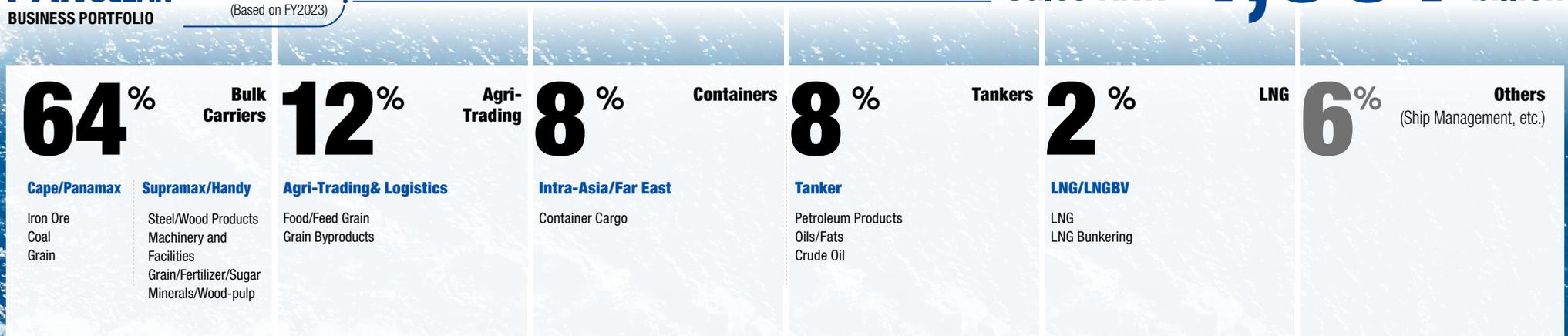
Business Portfolio

As one of the world's leading shipping companies, we specialize in dry bulk carriers and offer a wide range of maritime transport services, including container, tanker, heavy lift and LNG vessels. Committed to providing safe and reliable maritime transportation, we are leveraging our expertise and extensive global network to explore new opportunities, including agricultural trade and logistics. Our ambition is to become a global leading shipping & logistics company by securing sustainable growth drivers.

Sales KRW **4,361** billion

PAN OCEAN
BUSINESS PORTFOLIO

Sales by Business Sector
(Based on FY2023)



Business Portfolio

Providing Specialized Shipping Services

Bulker Service

Bulker Service

Expanding Worldwide Services Using an Excellent Fleet

Based on over 50 years of experience in bulk cargo transportation, Pan Ocean has established trust with major shippers worldwide. With this expertise, we have secured long-term cargo contracts with clients such as POSCO, Hyundai Steel, KEPCO Power Generation Subsidiaries and major overseas steel mills and resource developers. We are also dedicated to strengthening local customer-focused marketing activities and providing differentiated services to attract new clients. At the same time, we are focused on building a strategic portfolio comprising both short- and long-term cargo contracts to ensure a stable foundation for growth.

Providing Transportation Services for All Types of Dry Bulk Cargo

Our tramper service is specialized in providing tailored transportation solutions optimized for the routes and schedules required by global shippers for various types of dry cargo. Notably, we maintain a strong market presence in grain transportation along routes connecting North America and Australia. Furthermore, we have gained recognition as a leading carrier linking the Pacific and Oceania (Australia/New Zealand) regions for the transportation of coal, ores, fertilizers, timber, alumina, and various other commodities, and are renowned for our operational excellence. In the Atlantic Ocean, we compete with European carriers and are expanding our influence based on high-quality navigation services for the transportation of grains, ores, steel, fertilizers, scrap metal and pulp. The tramper service will focus on driving both qualitative and quantitative growth by securing long-term, cost-effective chartered vessels and additional transportation contracts. The goal is to develop new growth opportunities, such as tapping into the Australian/Southeast Asian mineral market and the Central American grain market.



Business Portfolio



Expanding Intra-Asia Routes Based on Korea-China-Japan Services

Container Service

Container Service

Providing Efficient Service and Customer Value

Starting with the Korea-Japan container service in 1984, we expanded our reach to Korea-China routes in 1994 and further to Southeast Asia (Vietnam, Thailand, Philippines) in 2005, solidifying our position as a leading intra-Asia carrier. In 2020, we joined the K-Alliance to enhance our competitiveness in the Southeast Asian market by strengthening cooperation with national carriers. We are continuously upgrading our IT system (EasyCon) to provide more efficient services and enhance customer value based on our accumulated experience. At the same time, we are strengthening our internal capabilities and operating our own CRM (customer relationship management) system.

Enhancing Our Global Network

The container shipping business places a high priority on securing excellent vessels, including green ships, optimizing vessel operations for efficiency, and maintaining a strong focus on schedule adherence. We continually explore new routes to meet diverse customer needs and have improved our global network services through the implementation of a faster and more accurate customer and service management system, further strengthening our position as a leading carrier in the intra-Asia region.

Business Portfolio



Operating VLCCs and Small- and Medium-Range Tankers

Tanker Service

Tanker Service

Providing a High-Quality Tanker Service Using MR Tankers

Our tanker service provides on-time delivery of crude oils, petroleum products, petrochemicals and palm oils. We operate the largest fleet of MR tankers in the country and have established strong partnerships with global oil majors (such as SHELL, BP, EXXON MOBIL, CHEVRON and TOTAL) and oil traders (such as VITOL, TRAFIGURA and MERCURIA), solidifying our position as South Korea's leading tanker shipping company. Our chemical tankers, primarily serving the Middle East-Asia and Far East-Southeast Asia routes, safely transport key petrochemicals such as benzene, toluene, xylene, base oil and caustic soda.

Expanding Our Business Foundation

In addition to its existing fleet of MR tankers and chemical tankers, Pan Ocean has enhanced its crude oil transportation capabilities and global competitiveness with the addition of two VLCCs (very large crude carriers) built in 2021. We are expanding our operations to the West Coast of the United States and South America while strengthening our service routes in the Middle East, Asia and Oceania. By building trust with major global oil companies, oil traders, major domestic refiners (S-OIL and SK Energy) and major food companies (Dongseo, Lotte, Nongshim, Ottogi, Samyang Foods and Curexo), we are steadily adding new long-term cargo contracts.

Business Portfolio

Expanding LNG Business Portfolio

LNG Business

LNG

Diversifying into Global LNG Transportation

Since December 2008, the 153,000 CBM-class LNG carrier LNG KOLT has been deployed in the LNG import business of KOGAS (Korea Gas Corporation). It transports approximately 1,500,000 CBM of LNG annually from major LNG loading ports in the Middle East including Yemen, Qatar and Oman, as well as from Southeast Asia, Russia and Australia to domestic LNG terminals. Recognized for its years of experience in LNG vessel operation and management, Pan Ocean has entered into long-term LNG charter contracts for 174,000 CBM-class vessels with global oil majors such as Shell and Portugal's largest energy company, GALP, starting from 2020. In 2022, Pan Ocean participated in the first LNGC project of Qatar, the world's largest LNG exporter, and added vessels under long-term charter contracts. As a result, by the end of 2025, our gas carrier fleet (including LNG bunkering vessels) is expected to expand to 13 vessels. Along with the ongoing expansion of vessels, our gas carrier business will continue to strengthen strategic partnerships with leading gas energy shippers both domestically and internationally, along with ongoing fleet expansion.

Venturing into the LNG Bunkering Business

Pan Ocean is strategically advancing beyond its traditional LNG transportation operations to embrace LNG bunkering and transportation in Europe, the United States, Singapore and other regions. The company has inked long-term charter contracts with global oil giant SHELL for two LNG bunkering vessels, signaling its commitment to expansion. Our proactive approach includes ongoing vessel orders and the pursuit of long-term contracts with global energy stakeholders to ensure sustained growth in our LNG bunkering business.



Business Portfolio

Leaping to the Top: Korea's Premier Grain Trader

Agri-Trading & Logistics



Agri-Trading

Successfully Entering the Agri-Trading Business

Since establishing a dedicated organization for grain trading business, we have successfully entered the market and are selling over 1.5 million tons of corn, soybeans, wheat, PKE and DDGs annually. Despite the relatively short timeframe, we have expanded into new markets beyond Korea, including China, Taiwan and Vietnam. We remain committed to exploring further opportunities in markets such as Malaysia and Indonesia.

Establishing a Foundation for Stable Growth

Currently over 85% of domestic grain demand is fulfilled from abroad, with up to 97% of wheat, corn and soybean consumption dependent on imports. Considering this situation, Pan Ocean's entry into the grain trading business will serve as a crucial driver of future growth and is closely aligned with the government's grain procurement system for food security. To activate our grain distribution business, we acquired shares in the grain export elevator EGT on the West Coast of the U.S. in September 2020. We will prioritize expanding our worldwide sales routes by utilizing our existing global network, thus establishing a stable foundation for growth and enhancing our influence in the global grain market.

Chapter. 2



ESG IMPACT

016 / ESG Management

017 / ESG Performance

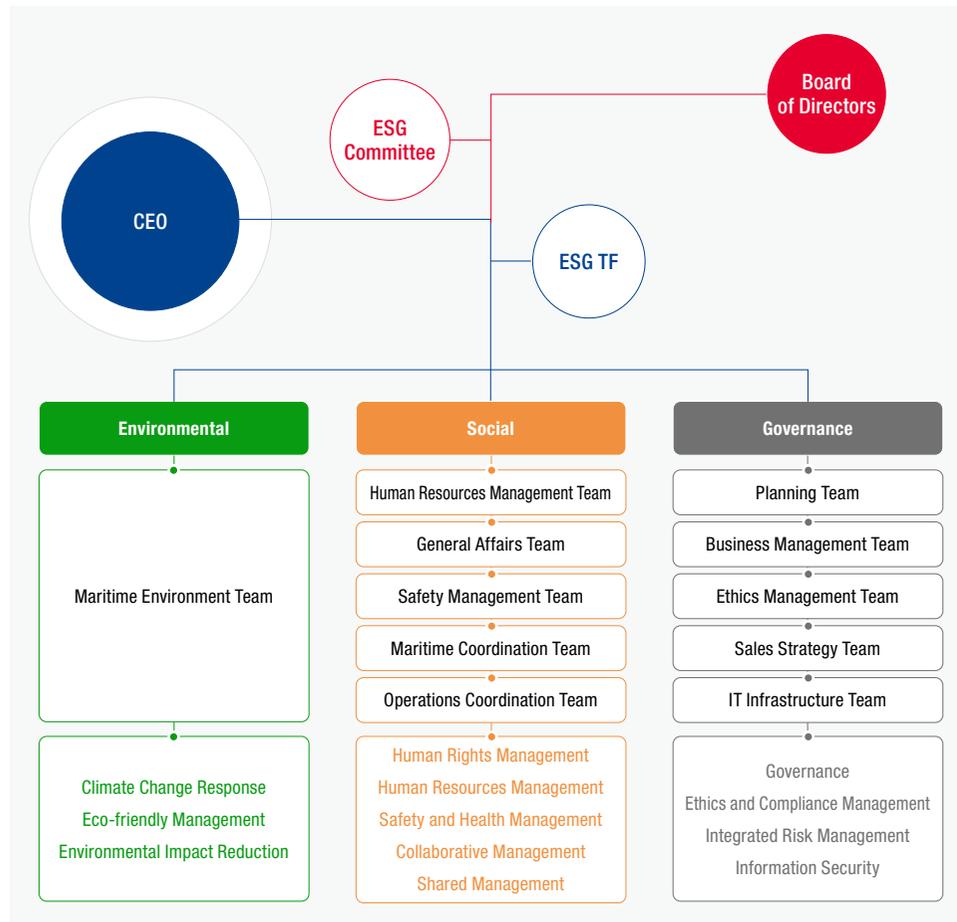
018 / Stakeholder Engagement

019 / Materiality Assessment

ESG Management

Recognizing the critical importance of ESG management, Pan Ocean established the ESG Committee within the board of directors in May 2022 to deliberate on important ESG-related matters at the board level. The ESG TF discusses non-financial performances and plans for areas related to ESG, such as climate change, safety and health, human rights management and fair trade, on an ongoing basis, and the ESG Committee reviews and reports major resolutions to the BOD. In addition, we strive to internalize ESG management by setting targets for each ESG issue and reflecting them in the KPIs (key performance indicators) of each department and employee. The ESG TF, which oversees all ESG management activities, collaborates with relevant departments to establish goals and strategies for comprehensive ESG management. This includes disclosure, evaluation responses and external cooperation.

ESG Governance



ESG Roles & Responsibilities

[ESG Committee Operating Regulations Link](#)

Pan Ocean has implemented company-wide ESG management under the supervision of the board of directors and executive management. The ESG Committee formulates and oversees mid- to long-term strategies for overall ESG management, including the response to the climate crisis, employee health and safety management, and ethics & compliance management. The CEO approves execution plans for achieving ESG management objectives and develops detailed strategies. The committee holds regular semi-annual meetings to review and discuss ESG-related agenda items, such as the vision and strategies for environmental management and the establishment of a code of conduct for suppliers.

Summary of Key ESG Committee Agendas

Date	Agenda	Status
June 16, 2023	Approval of the Environmental Vision and Implementation Strategy	Approved
June 16, 2023	Approval of the 2022 Environmental Management Results and 2023 Goals	Approved
Aug. 9, 2023	Approval of Supplier Code of Conduct Development	Approved
Feb. 8, 2024	Approval of the 2024 Safety and Health Management Plan (Draft)	Approved
June 19, 2024	Report on the Environmental Management Achievements of 2023 and Approval of the Environmental Management Goals for 2024	Approved

ESG Performance

Pan Ocean is committed to achieving sustainable growth by identifying and addressing ESG issues that affect the lives of its employees and stakeholders. The KCGS (Korea Institute of Corporate Governance and Sustainability) recognized these efforts by awarding us an A grade or higher in all ESG categories in the 2023 evaluation. In particular, we have invested approximately KRW 8.1 billion in environmentally friendly facilities, thereby reinforcing our commitment to green management. We successfully reduced the accident rate among maritime employees to 0.4% and established a code of conduct for suppliers and secured commitments from 11 key suppliers. In addition, we achieved 100% compliance in self-compliance surveys and conducted ethics and compliance training for all employees as we strive to internalize ethics and compliance management throughout the company.

2023-2024 ESG Highlights

Environmental

- KRW 8,171 million** Investment in Eco-Friendly Equipment
- 95%** Installation Rate of Ballast Water Treatment Systems
- 381,367 kg** YoY Reduction in NOx (Nitrogen Oxides) Emissions
- A+ Grade** 2023 KCGS Rating

Social

- 0.40%** Offshore Employee Accident Rate (Exceeded the Target of 0.74%)
- 24 times** No. of activities by the Eco-Clean Volunteer Group in 2023
- 25,020 hours** Safety and Health Training hours (Onshore, Offshore Employees)
- A Grade** 2023 KCGS Rating

Governance

- 4 agendas** Resolutions Approved by the ESG Committee in 2023
- 100%** Compliance Check Execution Rate
- 100%** Pan Ocean Ethics and Compliance Training Completion Rate
- A Grade** 2023 KCGS Rating



Stakeholder Engagement

Pan Ocean defines its key stakeholders as employees, customers, suppliers, shareholders and investors, and the local community, all of whom significantly impact its business activities. The company actively gathers feedback from these diverse stakeholders and maintains ongoing, dynamic communication with them. Stakeholders' opinions were actively incorporated during the process of identifying important issues, and Pan Ocean is dedicated to continuously identifying and managing the primary concerns of each stakeholder group to ensure these concerns are effectively integrated into the company's sustainable management strategies.

Stakeholder Communication Facilitation Process



Stakeholder Communication Channels

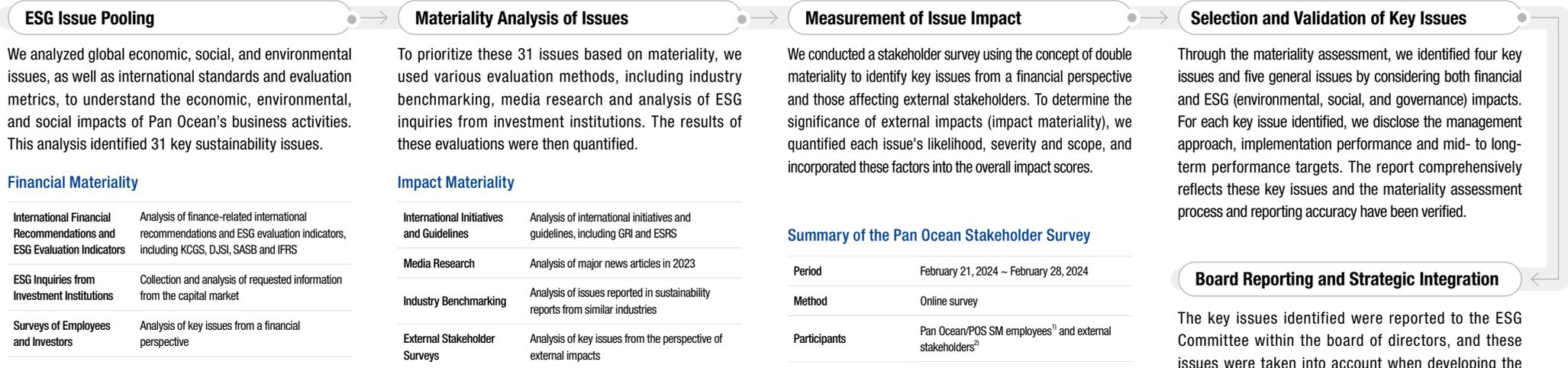
Group	Definition	Key Channels	Topics of Interest	Related Issues	Value Creation and Distribution
Employees	Internal stakeholders crucial to Pan Ocean's business activities and performance who also help to fulfill the company's social responsibilities to external stakeholders	<ul style="list-style-type: none"> · Labor Management Council · Grievance handling system · Employee satisfaction survey · Intranet, internal messenger, newsletter 	<ul style="list-style-type: none"> · Acquiring and retaining talent Facilitating professional development and growth · Improving the work environment and organizational culture · Ensuring human rights and promoting diversity 	<ul style="list-style-type: none"> · Safety and health management · Human resources management · Human rights management · Information security 	<ul style="list-style-type: none"> · Salary and bonuses: KRW 156.9 billion · Retirement pay: KRW 10.2 billion · Other pay (welfare benefits, etc.): KRW 111.7 billion
Customers	Stakeholders who receive Pan Ocean's services and form the foundation of the company's economic and corporate value creation	<ul style="list-style-type: none"> · Website · Helpline · Customer satisfaction survey 	<ul style="list-style-type: none"> · Collecting customer opinions and feedback · Providing high-quality services 	<ul style="list-style-type: none"> · Quality management 	<ul style="list-style-type: none"> · Sales revenue: KRW 4,361 billion
Suppliers	Essential cooperative relationships that support Pan Ocean's sustainable growth and play a vital role in the company's business activities	<ul style="list-style-type: none"> · Purchase portal site · Helpline 	<ul style="list-style-type: none"> · Selecting and evaluating companies fairly · Establishing win-win cooperative relationships · Complying with laws and regulations 	<ul style="list-style-type: none"> · Collaborative management · Information security · Safety and health management · Ethics and compliance management 	<ul style="list-style-type: none"> · Charter fees: KRW 706.8 billion · Port fees: KRW 375.9 billion · Cargo fees: KRW 203 billion · Fuel costs: KRW 1,014 billion · Voyage charter hires: KRW 148.5 billion · Depreciation and amortization: KRW 490.3 billion · Vessel costs: KRW 105.3 billion
Shareholders and Investors	Providers of the financial capital necessary for Pan Ocean to maintain sustainable growth and who are affected by the company's management and profitability	<ul style="list-style-type: none"> · Shareholders' meeting · IR (Investor Relations) · Domestic and international NDRs (non-deal roadshows) and conferences 	<ul style="list-style-type: none"> · Disclosing management performance and financial information · Enhancing shareholder communication · Transparently disclosing governance systems · Promoting ethics and compliance management 	<ul style="list-style-type: none"> · Transparent governance structure · Integrated risk management 	<ul style="list-style-type: none"> · Dividends: KRW 45.4 billion · Creditors: KRW 117.1 billion
Local Communities	Local communities or organizations affected by Pan Ocean's operations and to whom we are accountable for our impact on the community	<ul style="list-style-type: none"> · Seoul Senior Welfare Center · Seoul National Cemetery · Local community contribution programs 	<ul style="list-style-type: none"> · Stimulating the local economy · Supporting for socially vulnerable groups · Fulfilling environmental responsibilities · Expansion of social infrastructure 	<ul style="list-style-type: none"> · Shared management 	<ul style="list-style-type: none"> · Donations and social contribution investments: KRW 570 million



Materiality Assessment

Based on the materiality assessment results, the following key issues have been identified: greenhouse gas and energy management, enhancement of safety and health management, establishment of ethics and compliance management, and collaborative growth activities and supply chain sustainability management. The first three issues were also top key issues identified in the previous report. Of particular note is the increased interest from stakeholders in greenhouse gas and energy management, which was driven by the increasing carbon regulations in the shipping industry. Furthermore, this year's incorporation of ESG-related inquiries from investment institutions in the materiality assessment identified collaborative growth activities and supply chain sustainability management as a key issue.

Materiality Assessment Process



Application Method of Double Materiality



Materiality Assessment

Double Materiality Assessment Results

Materiality Assessment Matrix



No.	Financial Materiality	Impact Materiality
1	E Greenhouse Gas and Energy Management	E Greenhouse Gas and Energy Management
2	S Enhancement of Safety and Health Management	S Collaborative Growth Activities and Supply Chain Sustainability Management
3	G Establishment of Ethics and Compliance Management	S Enhancement of Safety and Health Management
4	E Management of Environmental Pollutants (Including Spill Risks)	G Establishment of Ethics and Compliance Management
5	E Climate Change Response	S Establishment of a Human Rights Management System
6	S Establishment of a Human Rights Management System	E Climate Change Response
7	E Strengthening of Environmental Management Systems	E Investment in Eco-Friendly Vessels
8	S Respect for Diversity and Prohibition of Discrimination	G Securing of New Growth Drivers

Management of Key Issues

Issue	Stakeholder	Inward/Outward		Impact		Page
		Financial	Social-Environmental	Likelihood	Type	
E Greenhouse Gas and Energy Management	Environment, Local Communities	●	●	Actual	Positive	24-32, 90
S Enhancement of Safety and Health Management	Suppliers, Customers	●	●	Actual	Positive	44-51, 98, 100
G Establishment of Ethics and Compliance Management	Suppliers, Customers	●		Actual	Positive	75-80, 103-104
S Collaborative Growth Activities and Supply Chain Sustainability Management	Suppliers, Customers		●	Actual	Positive	52-53, 101
E Climate Change Response	Environment, Customers	○	○	Actual	Positive	24-32, 90
S Establishment of a Human Rights Management System	Suppliers, Customers	○	○	Actual	Positive	54-57, 98
E Management of Environmental Pollutants (Including Spill Risks)	Environment, Local Communities	○		Actual	Positive	40-42, 92-93
E Investment in Eco-Friendly Vessels	Environment, Suppliers		○	Actual	Positive	37-39, 93-94
S Respect for Diversity and Prohibition of Discrimination	Suppliers, Local Communities, Customers	○		Potential	Complex	58-65, 95-97, 99, 101

* In scoring the results of the materiality assessment, we set thresholds for both financial and social/environmental materiality, and then classify issues as ● High or ○ Low based on the scores.

Materiality Assessment

Issue 1 Greenhouse Gas and Energy Management

Impact on Business

With the increasing impact of climate change, policy regulations are being strengthened. The IMO (International Maritime Organization) is preparing technical (EEDI, EEXI), operational (CII rating), and market-based (carbon trading schemes) measures to achieve greenhouse gas reduction targets. Moreover, in 2017, the European Union implemented regulations to monitor, report and verify greenhouse gas emissions from ships, and in 2023, included the shipping sector in the EU ETS (Emissions Trading System).

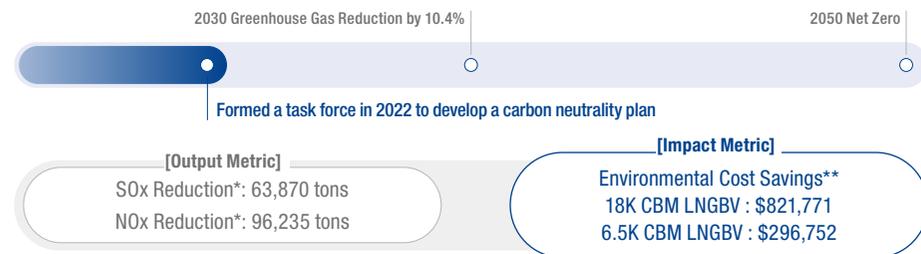
Impact on External Stakeholders

Pan Ocean aims to mitigate negative environmental impacts through efforts to reduce greenhouse gas emissions and improve energy efficiency, including resource recycling and biodiversity conservation. By establishing eco-friendly logistics infrastructure, we not only enhance our environmental performance but also positively influence customers and local communities within our value chain, thereby contributing to the creation of a better society.

Goals and Implementation Status

In 2022, to lead the carbon neutrality efforts in the bulk shipping industry, Pan Ocean declared its commitment to 2050 carbon neutrality. Pan Ocean has established and is pursuing the 2030 Carbon Reduction Strategy, a concrete action plan. The company plans to align with the SBTi (Science-Based Targets initiative) by 2024, adhering to the 1.5°C scenario and revising its overall environmental roadmap accordingly.

Goal: Establish and Implement a Carbon Neutrality Plan



* The reduction metrics were calculated by comparing the greenhouse gas emissions from Pan Ocean's existing HFO ships with those from newly introduced LNG ships. For details, please refer to page 37.

** Source: TU Delft, Eco-costs emissions 2022 V1.1

Issue 2 Enhancement of Safety and Health Management

Impact on Business

Pan Ocean holds the safety and health of its employees and stakeholders as its top priority. To this end, the company has established the Safety Management Office, a dedicated organization focused on safety and health. By declaring its safety and health objectives and management policies, Pan Ocean has committed to establishing a safety management system, setting safety goals, providing systematic training, proactively preventing accidents, strengthening cooperative frameworks with stakeholders, and ensuring employee communication and participation.

Impact on External Stakeholders

We place significant emphasis on safety and health management in providing logistics infrastructure services. Strengthening internal safety and health management helps protect employee safety and health while boosting productivity. For customers, we ensure a safe logistics environment to guarantee business continuity and build trust while also fostering a culture of safety throughout the industry by promoting safety and health management practices among suppliers.

Goals and Implementation Status

To advance as a global leading shipping & logistics company that prioritizes safety and health, we have set a goal of maintaining zero serious occupational accidents. The company has developed strategies and action plans to build a systematic framework for managing safety and health goals. In 2023, the major accident rates for both land and sea operations were 0%, with onshore employee accident rates at 0% and offshore employee accident rates at 0.4%. Pan Ocean also conducts risk assessments to further reduce accidents among suppliers. In the first half of 2023, 56 companies were evaluated, and in the second half, 55 companies.

Goal: Achieve Zero Serious Occupational Accidents



* LTIFR: Lost time injury frequency rate (per million hours)

Materiality Assessment

Issue 3 Establishment of Ethics and Compliance Management

Impact on Business

Pan Ocean is committed to building trust with stakeholders through ethical management. In line with its anti-corruption policy, the company strictly prohibits any form of direct or indirect political contributions. Violations of the ethical management guidelines are addressed immediately and in accordance with company regulations, and we have a zero-tolerance policy. In addition, compliance with key ethical requirements, such as the prohibition of bribery, solicitation and insider trading, is assessed as part of employee performance reviews, and the results are directly tied to the compensation system.

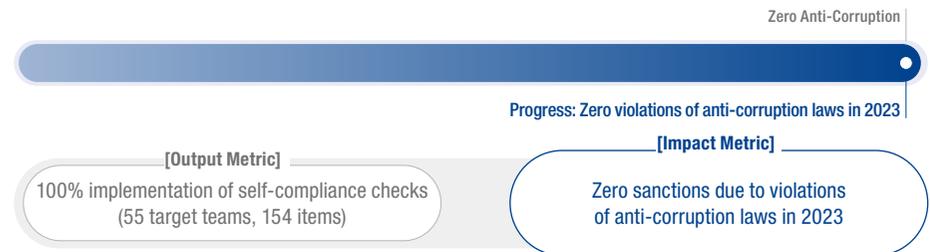
Impact on External Stakeholders

Pan Ocean actively mitigates compliance risks through robust ethics and compliance management, thereby enhancing its credibility with shareholders and investors and increasing shareholder value. In addition, Pan Ocean is strengthening its reputation by improving the satisfaction of external stakeholders, including customers and suppliers, which has a positive impact on financial performance.

Goals and Implementation Status

Recognizing the importance of integrity and ethical management for corporate sustainability, Pan Ocean has implemented an AP (Anti-corruption Program). The company conducts regular risk assessments to identify potential corruption risks and develop response strategies, and aims to establish a system that effectively prevents and addresses corruption.

Goal: Achieve Zero Ethical Violations (Anti-Corruption)



Issue 4 Collaborative Growth Activities and Supply Chain Sustainability Management

Impact on Business

Pan Ocean manages supply chain risks and opportunities by integrating sustainability into every stage of supplier selection, operation and evaluation as it strives for mutual growth with its suppliers. The company has established a code of conduct for suppliers that covers safety, human rights, the environment, ethics and management systems, and requires voluntary compliance. Through these signed compliance agreements, we ensure the sustainability of the supply chain.

Impact on External Stakeholders

Pan Ocean collaborates with its numerous suppliers to manage sustainability and mitigate supply chain risks. Through collaborative growth initiatives, Pan Ocean helps to boost the competitiveness of its suppliers, leading to positive outcomes and increased customer satisfaction through efficient supply chain management.

Goals and Implementation Status

Pan Ocean selects key suppliers based on various factors, including purchase volume and financial criteria, and applies advanced management procedures to these suppliers. In 2023, the company distributed its code of conduct and obtained signed compliance agreements from 51 designated key suppliers. We plan to expand the code of conduct signing process across the entire supply chain to further strengthen sustainability.

Goal: Ensure Compliance with the Supply Chain Code of Conduct



Chapter. 3



ENVIRONMENTAL



024 / Climate Change Response (TCFD Report)

033 / Environmental Management

040 / Environmental Impact Reduction

Climate Change Response

Pan Ocean proactively addresses climate change at the organizational level. We continuously identify and assess risks and opportunities and establish key strategies through climate change governance. Based on this approach, we analyze the impact of climate change on the shipping industry and respond to macro-environmental changes, such as changes in laws and regulations. In addition to risk management, Pan Ocean’s climate change initiatives also uncover various opportunities. By proactively developing eco-friendly ship technologies, we are actively responding to evolving market demands.

Climate Change Governance

Role of the BOD

Pan Ocean’s ESG Committee within the board of directors determines, approves, manages, supervises, evaluates and reviews climate change-related business plans and monitors climate change-related improvement activities. The ESG Committee operates through regular semi-annual meetings and as-needed ad hoc meetings, and reviews the business impacts of climate risks and Pan Ocean’s response measures.

Role of Management

CEO

Pan Ocean’s CEO, who also serves as the ultimate decision-maker and chairperson of the board, holds overall responsibility for addressing climate change issues. The CEO reviews the environmental management system at least once per year, setting environmental goals, and determining implementation plans. The CEO also oversees the overall climate change response status by managing the budget and evaluating investments necessary for climate change initiatives.

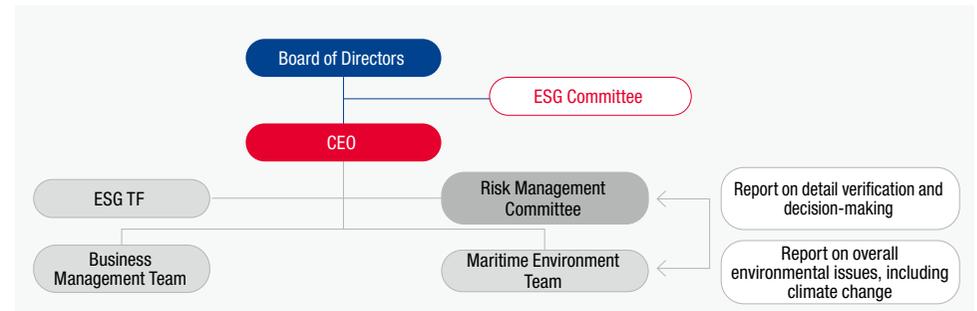
Risk Management Committee

Pan Ocean addresses climate change issues following the operational processes of the Risk Management Committee. Under the leadership of the CRO (Chief Risk Officer), the committee meets quarterly to regularly manage issues. In the case of urgent matters, the committee convenes as needed to ensure a prompt and coordinated response to climate change risks.

Role of the Maritime Environment Team

Pan Ocean manages climate change issues through its dedicated environmental response team, the Maritime Environment Team. This team plans environmental policies and handles regulatory compliance tasks to manage and review environmental risks and opportunities. In addition, they are responsible for managing greenhouse gas inventories for climate change mitigation, introducing new technologies for greenhouse gas and energy savings, and maintaining environmental management systems. They report on climate change-related environmental issues to the Risk Management Committee on a quarterly basis and support management decisions.

Climate Change Governance Organizational Chart



Climate Change Items Deliberated and Decided on by the ESG Committee

Date	Agenda	Approval Status
June 16, 2023	Establishment of an environmental vision and strategy	Approved
June 16, 2023	2022 environmental management performance and 2023 targets	Approved

Compensation System Tied to Climate Change KPIs

Subjects	Incentive	KPIs
CEO	Monetary rewards (Consideration in bonus calculation)	· ESG environmental assessment results
Head of Maritime Technology	Monetary rewards (Consideration in bonus calculation)	· ESG environmental assessment results
Employees (Maritime Environment Team)	Monetary rewards (Consideration in bonus calculation)	· Compliance with climate change regulations · Implementation of internal training · Greenhouse gas reduction rate



Climate Change Response

Climate Change Strategy

Climate Change Risk and Opportunity Analysis

Pan Ocean selects climate change-related issues through a materiality assessment, and identifies key risk factors and opportunities for each issue. After establishing response strategies for each issue, we predict the potential financial impact to minimize risk factors and maximize opportunities.

Type	Issue	Risk Factors	Opportunity Factors	Response Strategies	Potential Financial Impacts
Technology	<ul style="list-style-type: none"> Rapid development of eco-friendly ships and fuels 	<ul style="list-style-type: none"> Potential revenue decline for fossil fuel ships due to the expansion of future fuel ships [Medium and Long Term] 	<ul style="list-style-type: none"> Strengthen of fleet competitiveness through optimized operational efficiency [Medium and Long Term] 	<ul style="list-style-type: none"> Expand investments in LNG transportation and LNG bunkering 	<ul style="list-style-type: none"> Anticipated revenue of approximately \$281 million from long-term charter of two LNGBVs Expected fuel cost savings due to increased fuel efficiency
Market	<ul style="list-style-type: none"> Increasing demand for eco-friendly fuels Increasing stakeholder demand for carbon reductions 	<ul style="list-style-type: none"> Decrease in fossil fuel transportation due to reduced fossil fuel usage [Medium and Long Term] 	<ul style="list-style-type: none"> Increased demand from shippers for high-efficiency ships due to the importance of managing Scope 3 emissions [Medium and Long Term] Expansion of business portfolio related to eco-friendly ships and fuels [Medium Term] Increased access to capital due to meeting market demands for eco-friendliness through green bond issuance [Short Term] 	<ul style="list-style-type: none"> Introduce high-efficiency ships and install ESDs Invest in LNG ships and research eco-friendly fuel Make efforts to achieve top ratings in green bond certifications Secure competitiveness through the introduction of eco-friendly shipping services 	<ul style="list-style-type: none"> Annual energy cost savings of \$57 million due to ESD installation Anticipated ship financing support for the transition to eco-friendly ships
Reputation	<ul style="list-style-type: none"> Increased investor and customer concerns and negative feedback 	<ul style="list-style-type: none"> Potential decrease in external market reputation due to greenhouse gas emissions during ship introduction and disposal [Medium Term] 	<ul style="list-style-type: none"> Improved investment conditions when transitioning to eco-friendly, high-efficiency ships [Long Term] 	<ul style="list-style-type: none"> Develop skills and acquire expertise to effectively respond to climate change Provide stakeholder communication support for eco-friendly activities 	<ul style="list-style-type: none"> Revenue loss due to funding constraints if eco-friendly criteria are not met by investors, resulting in reduced customer preference
Legal	<ul style="list-style-type: none"> Litigation related to climate change issues 	<ul style="list-style-type: none"> Business activity restrictions due to climate change-related litigation [Medium Term] 	<ul style="list-style-type: none"> Market preemption through proactive responses to climate change regulations [Long Term] 	<ul style="list-style-type: none"> Enhance proactive response to regulations and stakeholder engagement activities 	<ul style="list-style-type: none"> Increased financial burden due to stakeholder engagement activities
Current Regulations	<ul style="list-style-type: none"> Existing regulations on greenhouse gas emissions from ships (EEDI, EEXI, IMO DCS, EU MRV) 	<ul style="list-style-type: none"> Increased capital investment due to the enforcement of the IMO EEDI/EEXI regulations and the Ballast Water Management Convention [Short Term] 	<ul style="list-style-type: none"> Cost reduction in regulatory compliance through innovations in greenhouse gas reduction technology [Long Term] 	<ul style="list-style-type: none"> Implement EPL and minimize operational delays Install BWMSs (ballast water management systems) in all ships 	<ul style="list-style-type: none"> Cost of \$3.4 million for EPL work under EEXI regulations and estimated damages of approximately \$5.3 million due to operational delays Installation costs of approximately \$5 million for BWMSs by 2024
Future Regulations	<ul style="list-style-type: none"> New regulations on greenhouse gas emissions from ships (CII, EU ETS) 	<ul style="list-style-type: none"> Cost increase due to carbon taxes and emissions trading under the EU ETS and FuelEU Maritime regulations [Short and Medium Term] Rapid depreciation of low-grade ships due to CII regulations, increasing the risk of scrapping [Short Term] 	<ul style="list-style-type: none"> Strengthening of high-efficiency fleet competitiveness in response to low-grade ship regulations (CII) [Medium and Long Term] Revenue generation through market trading when reducing carbon emissions [Long Term] 	<ul style="list-style-type: none"> Negotiations on EU ETS burdens with long-term, develop EU ETS management systems, and hedging of EUA price volatility Introduce high-efficiency ships and install ESDs 	<ul style="list-style-type: none"> Emission trading costs under EU ETS (2024: \$2.2 million, 2025: \$3.8 million, 2026 onwards: \$5.5 million) Annual energy cost savings of \$57 million due to ESD installation Risk of scrapping rather than selling used low-grade ships due to their rapid depreciation
Physical (Short Term)	<ul style="list-style-type: none"> Extreme weather (heavy rain, typhoons) 	<ul style="list-style-type: none"> Increased risk of ship accidents due to the increased frequency of tropical depressions [Short Term] 	<ul style="list-style-type: none"> Increased market share through stable product supply compared to competitors [Medium and Long Term] 	<ul style="list-style-type: none"> Subscribe to marine and liability insurance 	<ul style="list-style-type: none"> Increased costs for ship insurance, ship repair and cargo damage compensation
Physical (Long Term)	<ul style="list-style-type: none"> Global warming causing average temperature and sea level rise 	<ul style="list-style-type: none"> Safe operation of crew and cargo due to rising temperatures and sea level caused by global warming [Long Term] Impact on ship operating patterns (routes, speed/fuel consumption) due to changes in sea conditions (currents, wave height, sea winds) [Long Term] 	<ul style="list-style-type: none"> Business expansion opportunities through alternative port searches [Long Term] 	<ul style="list-style-type: none"> Develop and operate ship operation and weather monitoring systems Search for alternative ports in anticipation of restrictions at main ports 	<ul style="list-style-type: none"> System development costs of approximately \$2.8 million Increased cooling costs to maintain internal temperatures of ships, containers and buildings Increased costs associated with searching for alternative ports

Climate Change Response

Climate Change Scenario Analysis

Transition Risk Scenario Analysis

The shipping industry is also participating in the global 2050 carbon neutrality initiative. The IMO (International Maritime Organization) continues to implement greenhouse gas reduction regulations, such as EEXI and CII, to achieve carbon neutrality. In light of these developments, Pan Ocean has analyzed transition risks to proactively comply with these regulations.

Response to Transition Risks

The EEXI (Energy Efficiency Existing Ship Index) is a regulatory measure that applies to existing international vessels over 400 GT. It calculates the carbon dioxide emissions per ton-mile of cargo transported to ensure that emissions do not exceed established standards. Implemented in 2023, the EEXI targets vessels built before 2013 that were not covered by the EEDI regulations. Pan Ocean has developed its own greenhouse gas calculation system to comply with EEXI requirements. In addition, the company is installing EPL (Engine Power Limitation) devices to increase the energy efficiency of its ships, although this may lead to financial impacts due to the costs of installation and related operational delays.

Physical Risk Scenario Analysis and Response

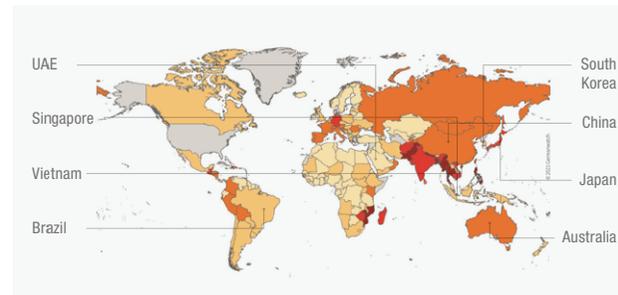
Pan Ocean has conducted an analysis of extreme climate risks associated with global warming based on the RCP 4.5 scenario. This involved assessing the climate risk exposure of Pan Ocean's offices in South Korea, China, Japan, Vietnam, Singapore, Australia, the United Arab Emirates, the USA and Brazil using the 2021 International Climate Risk Index. Given the nature of the shipping industry, we examined the impact on various segments of our operations, including crew members, facilities (ships), revenue, and risks within the production process, assuming a baseline scenario of 1% annual growth. The findings indicated that the financial impact of physical climate change on each segment is manageable, ranging from approximately 0.01~0.03%. Although these results are not considered a significant threat, we plan to conduct continuous assessments to mitigate risks.

Assessment of Physical Risk Exposure

Pan Ocean has assessed the climate risk exposure of its domestic and international business sites using the Global CRI (Climate Risk Index). The CRI, published by the international environmental organization Germanwatch, analyzes and ranks the impacts of severe climate events such as storms, floods and heatwaves. A lower CRI score indicates a higher climate risk. Pan Ocean evaluated the climate risk exposure by linking CRI scores with its business sites in each region.

Global Climate Risk Index

Country	No. of Offices	CRI SCORE	RANK
Japan	1	14.50	4
Australia	1	28.00	19
Brazil	1	33.67	27
China	6	42.83	32
Vietnam	1	50.17	38
South Korea	4	64.00	60
UAE	1	118.00	130
Singapore	2	118.00	130



Climate Risk Exposure Assessment



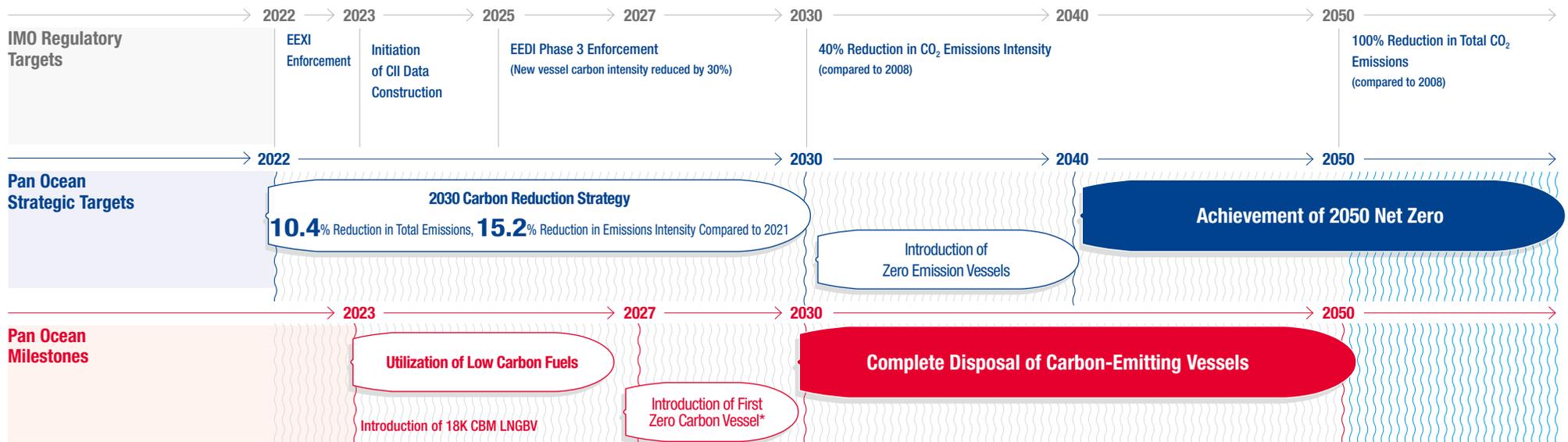
* The lower the score, the higher the climate risk
 ** The darker the color, the higher the climate risk.
 *** The more offices there are, the higher the business impact

Climate Change Response

2050 Carbon Neutrality

Pan Ocean has positioned itself as a leader in achieving carbon neutrality within the shipping industry, having announced its 2050 Carbon Neutrality initiative in 2022. The company has outlined and is actively implementing its 2030 Carbon Reduction Strategy, which is a detailed plan of action. In 2024, Pan Ocean plans to evaluate joining the SBTi, aligning its efforts with the 1.5°C scenario and adjusting its transition strategy accordingly. By 2030, the company will assess both the effectiveness of its carbon reduction measures and the progress in technology development and infrastructure expansion. These assessments will inform the development of a comprehensive carbon neutrality strategy for all business sectors, leading us to achieve complete carbon neutrality by 2050.

Road to Decarbonization



* Zero carbon vessels: Vessels which eliminate carbon emissions completely according to WW standards, such as methanol/ammonia-powered vessels or vessels with CCUS equipment.

<p>Environmental Targets</p>	<p>Decarbonizing Pan Ocean by 2050</p>	<p>We aim for net zero by 2050 as a key environmental target, and have integrated this commitment within our ESG (environmental, social, and governance) management framework.</p>	<p>Strategic Targets</p>	<p>By 2030_ Implement the 2030 Carbon Reduction Strategy</p>	<ul style="list-style-type: none"> Reduce total emissions by 10.4% and emissions intensity by 15.2%, using 2021 as the base year. Pursue external validation from the SBTi (Science Based Targets initiative) to align with the 1.5°C target.
<p>Commitments</p>	<p>Leading the Decarbonization of the Bulk Shipping Industry</p>	<p>By leading the charge in decarbonization, we are setting the course for a sustainable future in the industry. We have implemented comprehensive decarbonization policies and are vigorously applying them. Our aim is to progress together with our customers and stakeholders, ensuring they benefit from these initiatives as well.</p>		<p>By 2050_ Emission Reduction Targets</p>	<ul style="list-style-type: none"> Achieve net zero emissions across all business areas. Provide all customers and stakeholders with comprehensive net zero solutions.



Climate Change Response

2030 Carbon Reduction Strategy

Pan Ocean is actively implementing practical carbon reduction initiatives across Scope 1, 2, and 3. The company also plans to explore further and execute additional reduction activities in the future.

Scope 1 Qualitative Objective	Details
Respond to Shipping Regulations	<ul style="list-style-type: none"> · IMO EEXI Regulation: Complete EPL (Engine Power Limitation) implementation for all regulated vessels (40 ships) · IMO CII Regulation: Introduce high-efficiency vessels, optimize operation patterns, etc. · Market-based Regulations such as EU ETS and Fuel EU Maritime: Trial and evaluate introducing low-carbon biofuels produced from biomass and consider transitioning to zero-carbon vessels
Optimize operation patterns for efficiency	<ul style="list-style-type: none"> · Implement measures for internal combustion engines such as vessel speed reduction and cruising to maximize emission reduction effectiveness · Develop a route monitoring system that uses data for long-term efficiency in operation patterns in progress
Initiate high-efficiency vessel replacement and ESD equipment introduction (2022-2026)	<ul style="list-style-type: none"> · Dispose of existing low-efficiency vessels (26 ships) · Order new vessels with eco specifications for hull design, PBCFs (propeller boss cap fins), etc. (24 ships) · Select effective ESD equipment such as RTS, ALS for existing vessels
Transition to Zero-Carbon Vessels (2027-2030)	<ul style="list-style-type: none"> · Dispose of existing carbon-emitting vessels (10 ships) · Cease orders for carbon-emitting vessels · Introduce zero-carbon vessels (6 ships)
Scope 2 Qualitative Objective	Details
Explore Opportunities in the Korean RE100	<ul style="list-style-type: none"> · Actively evaluate the possibility of joining a campaign that aims to supply all internal electricity needs from renewable sources · Review various approaches for implementation, including the acquisition of RECs (Renewable Energy Certificates) or the consideration of third-party PPAs (Power Purchase Agreements)
Scope 3 Qualitative Objective	Details
Reduce Capital Goods Emissions in Shipping	<ul style="list-style-type: none"> · Collaborate continuously with shipyards to increase the adoption rate of eco-friendly products during ship construction to reduce carbon emissions · Negotiate with manufacturers and management companies to reduce carbon emissions during the manufacturing and transportation processes of ship components
Reduce the Fuel Consumption of Chartered Vessels	<ul style="list-style-type: none"> · Make efforts to reduce carbon emissions during the chartering process by selectively chartering high-efficiency vessels
Reduce Waste	<ul style="list-style-type: none"> · Increase recycling rates and minimize waste during the disposal of general ship waste and sludge · Continue company-wide campaigns to reduce the use of disposable products by distributing and encouraging the use of personal tumblers (2023 onwards)



Climate Change Response

Activities to Improve Product Efficiency

EnMS (Energy Management System)

Pan Ocean is enhancing energy-saving efforts for its ships by increasing awareness of energy-related issues. To support this, the company has implemented and is operating an EnMS (Energy Management System) based on the PDCA (plan-do-check-act) cycle. In addition, to continuously reinforce energy responsibility, energy policies have been posted across all vessels.

ECO Steaming

Pan Ocean optimizes fuel efficiency by maintaining optimal routes and operating at economic speeds (eco steaming) during cargo transportation. To guarantee the most efficient economic speeds for our vessels, we have installed real-time navigation monitoring systems.

Management of the Vessel Energy Efficiency Index (CII)

In order to manage both the inherent and operational energy efficiency of ships, we have developed a system capable of analyzing and compiling the CII (Carbon Intensity Indicator) for each vessel. This system enables us to simulate expected CII values and rating changes for all Pan Ocean vessels up to 2030. Using this data, we intend to respond flexibly and promptly to the IMO (International Maritime Organization) CII regulations, which took effect in 2023.

Management of the Energy Efficiency Design Index (EEDI/EEXI)

Pan Ocean adheres to the IMO (International Maritime Organization) regulations regarding the EEDI (Energy Efficiency Design Index) for new ships. The company measures the energy efficiency index of vessels constructed after 2013 and documents these indices in each ship's SEEMP (Ship Energy Efficiency Management Plan). In anticipation of the EEXI (Energy Efficiency Existing Ship Index) regulations, which took effect in 2023, Pan Ocean developed an in-house system for calculating the EEXI for each vessel and aggregating the results. The company commenced a phased implementation of EPL (Engine Power Limitation) procedures in 2023 based on the data presented. This initiative is designed to enhance the energy efficiency of Pan Ocean's existing fleet.

Use of Fuel Additives

Pan Ocean enhances combustion efficiency and reduces fuel consumption by incorporating fuel additives into the fuel oil utilized on its vessels. These additives help disperse sludge, act as combustion catalysts, prevent filter blockages by disrupting the aggregation of asphaltene components, and reduce sludge formation. This process not only decreases the amount of sludge but also enhances combustion efficiency with finely dispersed fuel oil. Since confirming approximately 3% fuel savings in 2012, we have continued to distribute these additives and pursue additional efficiency improvements.

Hull Resistance Reduction

To reduce hull frictional resistance, the largest obstacle to vessel operational efficiency, we apply antifouling paints to minimize the impact of hull fouling. We also regularly conduct hull inspection and performance analysis to continuously monitor vessel conditions.



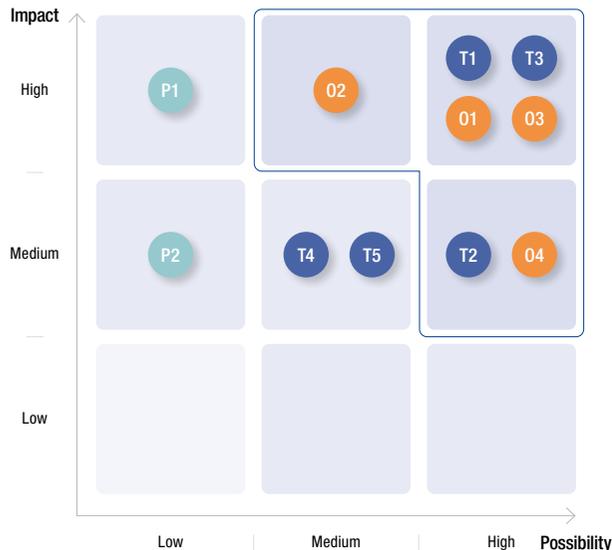
Climate Change Response

Climate Change Risk Management

Climate Change Risk Management Process

To assess and manage the potential financial and strategic impacts of climate change on Pan Ocean, the company has instituted a climate risk response system led by the Maritime Environment Team. The team manages legal risks associated with climate change and conducts institutional-level risk responses through environmental policy planning. They are also responsible for tasks such as managing the greenhouse gas inventory and implementing energy-saving technologies. Furthermore, they facilitate assessments of the significance of climate change impacts to ensure that climate change risk management procedures are implemented throughout the entire organization.

Climate Change Materiality Assessment Matrix



[Possibility X Impact] => Identification of Key Risks/Opportunities

Materiality Assessment of Climate Change Risk and Opportunity Factors

Pan Ocean conducts biannual significance assessments to measure the likelihood and impact of climate change-related risks and opportunities. The company systematically tracks regulatory, technological, legal, market, reputational and environmental changes and evaluates their potential impacts and likelihood using a severity matrix. Risks and opportunities assessed as 'high' in significance are considered to have a significant impact. The likelihood rating is based on the timing of regulatory enforcement and the level of discussion in the market concerning major issues. The impact rating is determined by the financial implications of each issue and the frequency of reports to the CEO. Issues identified as having a significant impact are managed according to their position in the value chain (operated facility, upstream, downstream) and temporal criteria.

Significant Climate Change Risks/Opportunities

Risk/Opportunity	Category	Issue	NO	Value Chain	Time Frame
Transition Risk	New Regulation	IMO EEXI Regulations	T1	Directly Operated Facilities	Short-term
	New Regulation	IMO CII Rating Regulations	T2	Directly Operated Facilities	Short-term
	New Regulation	EU ETS, FuelEU Maritime	T3	Directly Operated Facilities	Short-term
	Reputation	Greenhouse gas emissions from ship introduction	T4	Upstream	Medium-term
	Reputation	Greenhouse gas emissions after ship disposal	T5	Downstream	Medium-term
Physical Risk	Acute	Rising temperatures and sea levels caused by global warming	P1	Directly Operated Facilities	Short-term
	Chronic	Changes in maritime conditions (currents, waves, etc.) due to global warming	P2	Directly Operated Facilities	Long-term
Opportunity	Energy Source	IMO CII Rating Regulations	O1	Directly Operated Facilities	Short-term
	Market	IMO Greenhouse Gas Reduction Strategy	O2	Directly Operated Facilities	Medium-term
	Market	Significance of managing environmental and climate change issues	O3	Directly Operated Facilities	Short-term
	Resource Efficiency	Necessity for introducing eco-friendly and high-efficiency ships	O4	Directly Operated Facilities	Short-term

* Time Frame : Short-term 0-2 years, Medium-term 3-5 years, Long-term 6+ years

Climate Change Response

Climate Change Indicators and Goals

Detailed 2030 Carbon Reduction Goals

Through its 2030 Carbon Reduction Strategy, Pan Ocean is actively implementing achievable carbon reduction measures across Scopes 1, 2, and 3, and is systematically managing these efforts by setting related goals. Quantitative targets for total emissions have been established only for Scope 1, with specific reduction pathways for Scopes 2 and 3 to be developed in the future. The quantitative target for unit emissions, which represents the amount of greenhouse gases emitted per ton of cargo transported over one mile, is also set only for Scope 1.

2030 Carbon Reduction Goals

Total Emissions	Unit	2021 Result (base year)	2030 Target	Target Reduction	Target Reduction Rate
Scope 1*	CO ₂ e	2,745,000 tons	2,458,000 tons	286,000 tons	10.4%
Emissions Intensity	gCO ₂ /ton-mile	6.59	5.59	1.00	15.2%

* For Scope 1 targets, emissions from incineration of waste by incinerators and fuel consumption of company vehicles are currently omitted and will be added in the future

Emission Reduction Measures	Total Emissions		Emissions Intensity	
	Reduction	Reduction Rate	Reduction	Reduction Rate
Optimization of Operating Patterns	216,000 tons	10.5%	0.62	9.6%
Replacement with High-Efficiency Fleet and Introduction of ESD Equipment*	(93,000 tons)	(18.9%)	1.26	16.7%
Transition to Zero-Carbon Ships**	163,000 tons	85.5%	3.51	100%

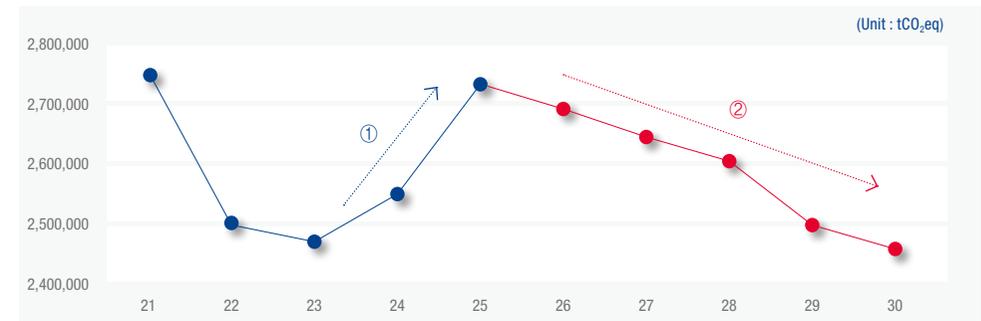
* Total emissions may increase due to the larger size of the replaced vessels, but emissions intensity is expected to decrease

** Plan to introduce a total of six vessels by 2030, including methanol/ammonia-powered ships or ships equipped with CCUS

2030 Annual Expected Carbon Reduction Pathway

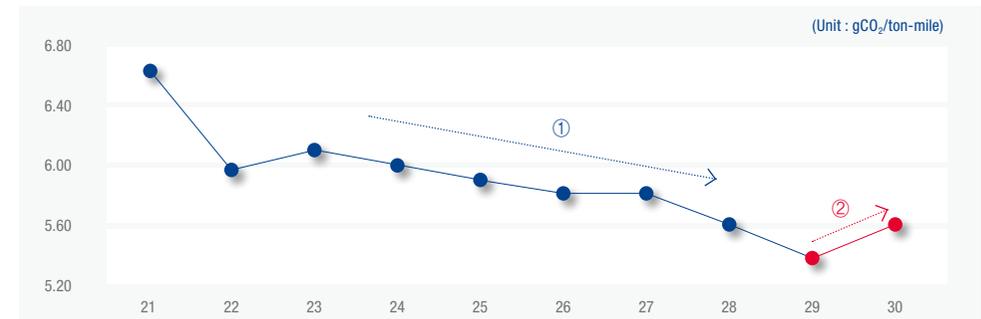
Total Emissions Trend

- ① Temporary increase due to fleet expansion with large vessels, including seven 174K CBM LNGCs
- ② Continuous reduction through sale of low-efficiency vessels and acquisition of zero-carbon ships



Emissions Intensity Trend

- ① Continuous mitigation from 2021 through optimization of operating patterns, replacement with high-efficiency fleets, and introduction of ESD equipment
- ② Temporary increase in 2030 due to sale of small carbon-emitting vessels such as chemical tankers





Climate Change Response

GHG Emissions Management

Category	Unit	2020	2021	2022	2023
Scope 1*					
Mobile Combustion (Ships + Vehicles)	tCO ₂ eq	2,382,970	2,757,404	2,669,080	2,678,713
Vessels**	tCO ₂ eq	2,382,921	2,757,356	2,669,026	2,678,663
Vehicles	tCO ₂ eq	49	48	54	50
Scope 2***					
(Power Purchased)	tCO ₂ eq	569	539	483	580
Scope 1+2	tCO ₂ eq	2,383,539	2,884,436	3,738,975	2,679,293
Scope 3 Subtotal	tCO ₂ eq	1,453,048	2,884,436	3,738,975	4,511,253
Purchased goods and services	tCO ₂ eq	-	22,191	9,532	2,399
Upstream leased assets	tCO ₂ eq	1,453,048	2,232,155	2,219,848	1,977,601
Upstream distribution	tCO ₂ eq	-	629,965	1,509,302	2,531,001
Business travel	tCO ₂ eq	-	42	188	140
Employee commuting	tCO ₂ eq	-	83	105	112
Sales	KRW 100 million	21,029	40,692	57,004	38,115
GHG emissions intensity****	tCO ₂ eq/ (KRW 100 million)	113.346	67.776	46.831	70.295

(Scope 1, 2, 3 estimates include : CO₂, CH₄, N₂O)

* Scope 1: Pan Ocean's self-owned fleet, corporate cars

** Total fuel consumption and incinerator usage in vessels. In the case of incinerator usage, the data from 2019-2020 are excluded as aggregation and verification began in 2021

*** Scope 2: Power consumption by Pan Ocean's domestic operations

**** (Scope 1+2 emissions) / Sales based on Pan Ocean's separate financial statements

Energy Consumption Management

Category	Unit	2020	2021	2022	2023
Owned fleet fuel consumption (Scope 1)	TOE	758,189	884,038	848,531	857,571
HFO (B-C oil)	TOE	302,587	388,916	390,570	401,113
LFO (B-C oil)	TOE	412,382	406,961	401,750	388,919
DO (B-A oil)	TOE	43,220	54,518	53,870	51,425
LNG	TOE	-	33,643	2,341	16,114
Corporate vehicles fuel consumption (Scope 1)	TOE	17	17	19	17
Gasoline	TOE	16	16	18	15
Diesel	TOE	1	1	1	2
Electricity (Scope 2)	TOE	305	293	240	289
Chartered fleet fuel consumption (Scope 3)	TOE	463,336	711,485	707,854	630,910
HFO (B-C oil)	TOE	15,176	42,680	81,489	67,423
LFO (B-C oil)	TOE	423,059	622,398	549,357	505,436
DO (B-A oil)	TOE	25,101	46,407	77,008	58,051
Total energy consumption* (Scope 1+2)	TOE	758,511	884,348	848,790	857,877
Sales	KRW 100 million	21,029	40,692	57,004	38,115
Energy intensity (per unit of sales)**	tCO ₂ eq/ KRW 100 million	36.070	21.733	14.890	22.508

* Includes energy consumption by vessels and domestic operations; Scope 3 excluded from total energy consumption and intensity estimation

** (Scope 1+2 energy consumption) / Sales based on Pan Ocean's separate financial statements

Environmental Management

Pan Ocean is dedicated to promoting eco-friendly management practices with the goal of reducing greenhouse gas emissions to protect the marine environment, conserve biodiversity and prevent air pollution. In addition, we proactively address environmental issues through communication with stakeholders as we strive to protect the natural environment while pursuing sustainable growth.

Environmental Management System

Environmental Management Strategy

To provide environmentally responsible shipping services, Pan Ocean sets targets for climate change mitigation, marine environment protection, biodiversity conservation and air pollution prevention. Each year, we conduct environmental risk assessments to establish environmental management goals and detailed action plans.

Environmental Management Policy

Since the introduction of the Pan Ocean Environmental Management Policy in 2012, the company has consistently enhanced its environmental management framework. To become an eco-friendly company, we set specific annual goals and plans under the guidance of the ESG Committee that align with our environmental management policy. These efforts are designed to create a sustainable environment for future generations and reinforce our commitment to eco-friendly practices. Pan Ocean maintains a comprehensive environmental management policy and adheres to the following principles to ensure its effective implementation.

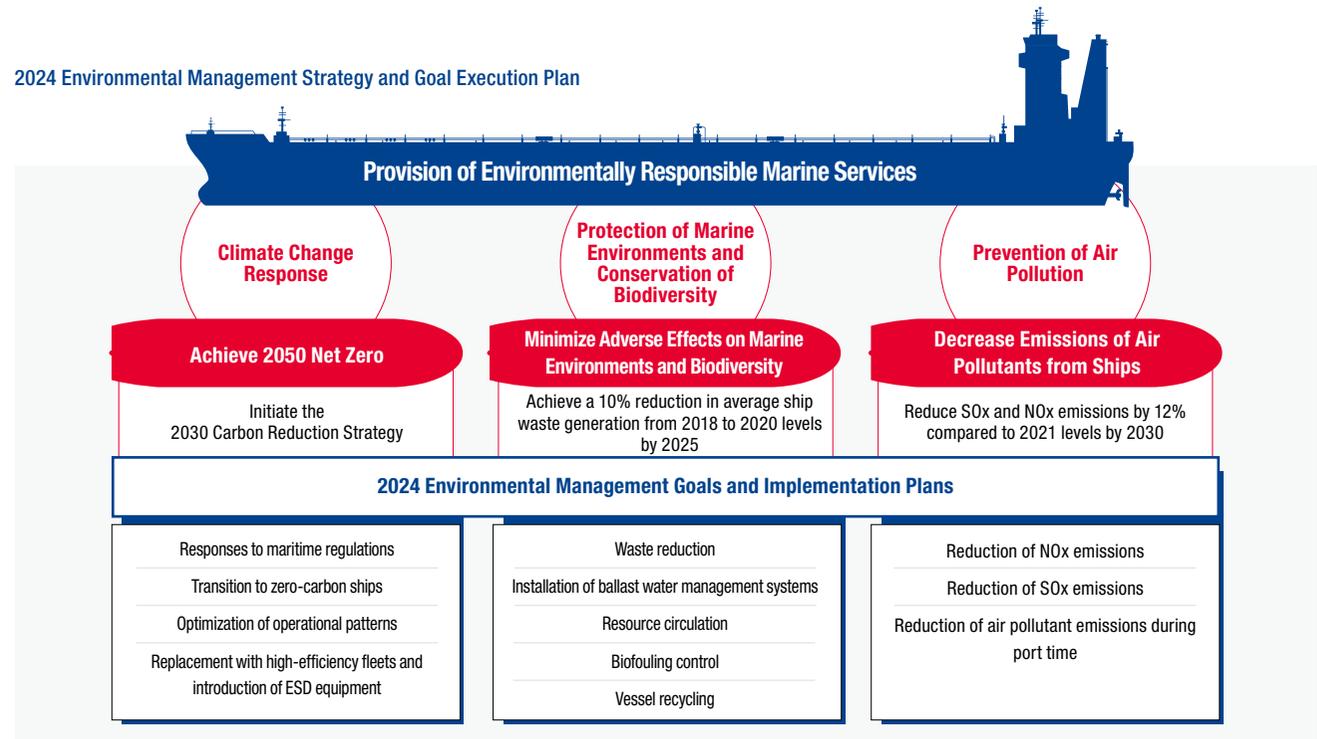
Pan Ocean Environmental Management Policy

1. We are committed to providing sustainable maritime services.
2. We proactively pursue carbon neutrality to lead the industry towards a more sustainable future.
3. We are dedicated to ongoing efforts to protect marine environments and preserve biodiversity.
4. We strive to reduce emissions of air pollutants and ensure compliance with all relevant environmental regulations.
5. We maintain open lines of communication with our stakeholders to foster understanding and responsiveness to environmental challenges.

Participation in Environmental Initiatives

To minimize the environmental impact of its operations, Pan Ocean takes part in various initiatives. Specifically, the company participates in VSR (Vessel Speed Reduction) programs at major domestic ports to reduce greenhouse gas and fine dust emissions from ships. In addition, Pan Ocean is involved in the CDP (Carbon Disclosure Project), which transparently shares strategies and performances related to climate change mitigation across the industry.

2024 Environmental Management Strategy and Goal Execution Plan





Environmental Management

Environmental Management System

Pan Ocean is dedicated to providing environmentally responsible transportation solutions that are aligned with the highest standards of safety and vessel operation. In order to promote a more systematic approach to environmental management, we obtained ISO 14001 certification in 2010 and have consistently maintained it since. POS SM is also ISO 14001 certified. Pan Ocean manages its overall environmental impact in accordance with the PDCA (plan-do-check-action) cycle. The Maritime Environment Team is wholly committed to ensuring comprehensive environmental management through continuous improvement activities. These activities include the establishment of environmental goal plans, the provision of environmental education, the monitoring of environmental performance, the implementation of corrective actions for non-conformities, and the implementation of management reviews.

Progress on the 2023 Environmental Targets and Implementation Plans

Category	KPI	2023 Target	2023 Result
Climate Change Response	Scope 1 GHG emissions	2,481,640 tCO ₂ e	2,678,713 tCO ₂ e
	Emissions intensity (Vessel)	6.11 gCO ₂ /ton-mile	5.94 gCO ₂ /ton-mile
	Energy consumption	829,641 TOE	857,877 TOE
	CII system enhancement		Development completed
	EU ETS monitoring system development (Economic feasibility)		Development completed
	GHG inventory management system development		Development completed
Marine Environment Conservation	Replacement with 3 eco-friendly vehicles (Hybrid)		Replacement completed
	Vessel waste oil (Sludge) generation	10.53 m ³ /vessel	14.52 m ³ /vessel
	Vessel waste oil (Bilge) generation	181.92 m ³ /vessel	139.59 m ³ /vessel
	Reduction in vessel plastic waste	11.82 m ³ /vessel	12.60 m ³ /vessel
	Reduction in vessel refrigerant use	66.06 kg/vessel	73.96 kg/vessel
	Reduction in vessel food waste	2.89 m ³ /vessel	3.14 m ³ /vessel
Biodiversity Conservation	Zero marine pollution incidents	0 cases	0 cases
	BWMS installation	7 installations	9 installations
Air Pollution Prevention	HULL cleaning	70 implementations	95 implementation
	NOx emissions	68,417,927 kg	70,867,753 kg
	SOx emissions	8,042,747 kg	8,337,383 kg
	Installation of an NOx reduction device	1 installation	1 installation
Supplier Management and Compliance with Initiatives	Fuel oil sample tests	Conduct at every bunkering	In progress
	Evaluate suppliers	Twice Implement internal environmental management score	Implementation and evaluation completed
	Eco-friendly social contribution activities	Eco-Clean Volunteer Corps: 24 times Cleanup at Seoul National Cemetery: 2 times	· 24 implementations completed · 2 implementations completed

Smart Environmental Management System

In response to growing demand for ESG assessments and evaluations from external stakeholders, Pan Ocean has implemented an environmental information system to enhance the reliability and efficiency of environmental data collection. The system collects

and stores key data items related to greenhouse gas and energy management, environmental impact reduction and eco-friendly investment details. In line with the strengthening of ESG best practice standards, we plan to further advance this system by developing improvement plans for any identified shortcomings to ensure timely responses to various demands.

Environmental Risk Assessment

To predict and analyze the impact of Pan Ocean's business activities on the environment and proactively prevent pollution, we conduct an annual environmental risk assessment that includes climate change. Each environmental risk is evaluated for its likelihood and potential consequences, and an environmental impact severity rating is calculated. Identified risks with significant environmental impacts are actively incorporated into the environmental goals for the following year. The environmental objectives and detailed indicators established through the risk assessment are evaluated annually, and improvement areas are identified through internal and external audits and are reflected in the subsequent year's environmental goals.

2024 Environmental Objectives and Detailed Action Plan

Category	KPI	2024 Target
Climate Change Response	GHG emissions (Scope 1)	2,549,417 tCO ₂ e
	GHG emissions intensity (Vessels)	6.01 gCO ₂ /ton-mile
	Energy consumption	866,324 TOE
	Painting management system for existing fleet	Development completed within the year
	TES system enhancement & company-wide opening	Development completed within the year
	Waste oil (Sludge) generation	Average 10.30 m ³ /ship
Marine Environment Conservation	Waste oil (Bilge) generation	Average 178.05 m ³ /ship
	Plastic waste reduction	Average 11.57 m ³ /ship
	Refrigerant usage reduction	Average 64.66 kg/ship
	Food waste reduction	Average 2.83 m ³ /ship
Biodiversity Conservation	Zero marine pollution accidents	0 cases
	BWMS installation	14 installations
	Hull cleaning implementation	80 implementations
Air Pollution Prevention	NOx emissions	68,960,893 kg
	SOx Emissions	8,084,450 kg
	NOx reduction device (SCR, EGR) installation	6 installations
	Implementation of fuel oil sample testing	Implemented at every bunkering
Supplier Management and Compliance with Initiatives	Supplier evaluation	· 1 Supplier Code of Conduct diagnosis · 2 evaluations and code of conduct guidance sessions bi-annually
	Eco-clean Volunteer Group	· Volunteer activities 24 times · Cleanup at National Seoul Cemetery 2 times

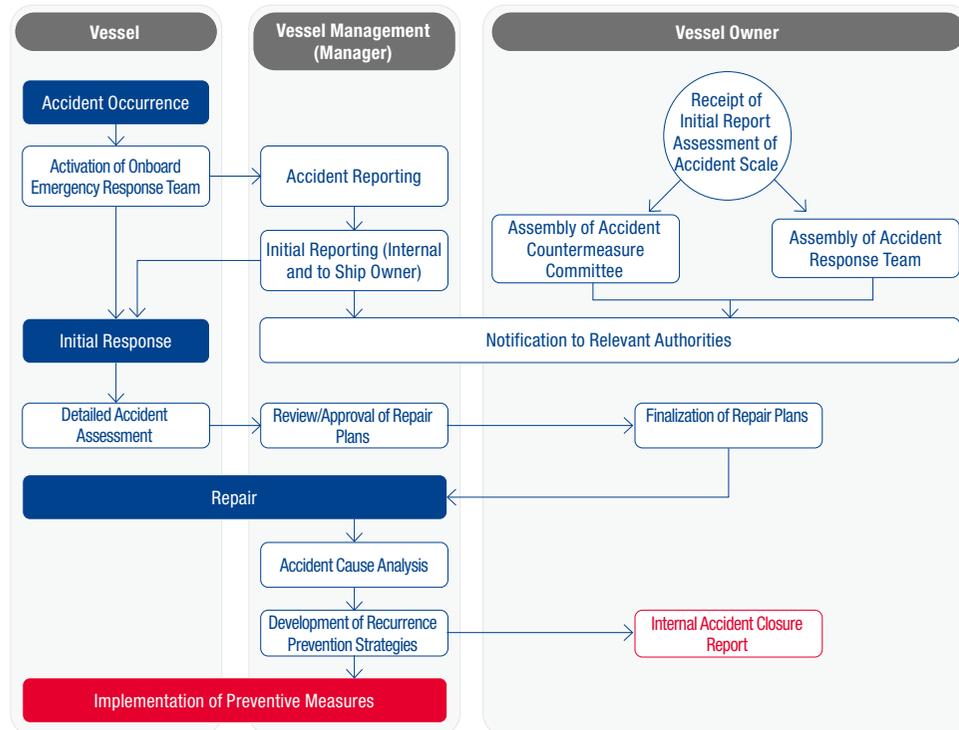
Environmental Management

Raising of Environmental Awareness

Response to Environmental Incidents

When incidents pose a critical risk to marine environmental safety, we classify them as major accidents and respond by forming an emergency response team (Accident Countermeasure Committee). Pan Ocean has established an emergency response process that prioritizes human safety and the prevention of marine environmental pollution. We conduct joint emergency response drills between sea and land at least once a year. These drills involve training both offshore and onshore accident response teams according to simulated maritime accident scenarios and improving the emergency response process. We will continue to hold various emergency response drills based on different maritime accident scenarios to prevent harm to stakeholders and protect the marine environment from pollution.

Emergency Response Process for Vessel Accidents



Environmental Education

Pan Ocean conducts environmental training to internalize environmental awareness among employees, share information on environmental regulations, and prevent environmental accidents. For our offshore employees, we hold regular training sessions on marine pollution prevention and hazardous liquid management. In addition, OJT (on-the-job training) and computer-based training programs are provided both before and during service. For onshore employees, we provide seminars on environmental regulations and offer training opportunities in maritime research fields, such as clean fuels and eco-friendly ships. These initiatives help foster a company-wide consensus on the implementation of environmental management.

Status of Environmental Training for Onshore Employees

Date	Contents	Target Audience	Participants
Jan. 9, 2023	Response Plan for VLOC Ship CII	Dedicated Ship Business Team	5
Feb. 1, 2023	Implementation of and Orientation on Speed Reduction Guidelines for the Fleet	Sales/Operations Team Members	11
May 24, 2023	Development Status of Next-Generation Fuel Engines (Methanol, Ammonia)	Investment Planning Team, Maritime Administration Department	11
Aug. 8, 2023	Seminar on IMO and EU Environmental Regulations	All Employees	65
Nov. 9, 2023	EU ETS Orientation	All Employees	49

Status of Environmental Training for Offshore Employees

Content	Target Audience	Training Hours per Person	Participants		
			2021	2022	2023
Marine Pollution Prevention Manager	Engineering officers	16	27	80	65
Hazardous Liquid Pollution Prevention	Deck officers	16	26	22	12

Environmental Management

Environmental Risk Management

Compliance with Environmental Laws and Regulations

Response to IMO DCS, EU MRV Regulations

Pan Ocean has implemented an internal reporting system to ensure compliance with the IMO DCS (Data Collection System) and EU MRV (Monitoring, Reporting and Verification) regulations. This system allows for the annual reporting and certification of fuel oil consumption and greenhouse gas emissions for all vessels.

1) DCS (Data Collection System): A legal requirement to report the fuel oil usage of each vessel.
 2) MRV (Monitoring, Reporting and Verification): Collection of greenhouse gas emissions information for ships calling at EU ports.

GHG Inventory Management

Pan Ocean has developed a greenhouse gas inventory system to identify and manage emission sources. This system consolidates real-time greenhouse gas emissions, including those from fuel oil utilized on each vessel. By measuring emissions by individual vessel, vessel type and year, we are continuously exploring ways to reduce total emissions and emissions intensity.

Violations of Environmental Regulations

Category	Unit	2021	2022	2023
No. of Environmental Law Violations	cases	0	0	0

Environmental Laws and Response Strategies

Regulation	Details	Response Strategy
IMO EEXI	Energy efficiency regulation based on existing ship specifications	Completed EPL (Engine Power Limitation) installation for all regulated ships (40 vessels)
IMO CII	Calculation and rating of energy efficiency based on existing ship operations	Developed a CII rating monitoring system within the SOM (Sales Operations Management) system
EU ETS	Inclusion of the maritime sector in the EU ETS from 2024	Negotiated the emissions allowance burden with long-term charterers (\$2.2 million+ in 2024), developed an EU ETS management system, and hedged emissions allowance purchase/price fluctuation risks
Ballast Water Management Convention	Obligation to discharge treated ballast water	Install ballast water management systems on all vessels by 2024 (95% installed as of the end of 2023)

Conservation of Biodiversity

BWMS Installation

The IMO (International Maritime Organization) has mandated the installation of BWMSs (Ballast Water Management Systems) to prevent ecological disturbances caused by the transfer of microorganisms through ballast water. In a proactive move, Pan Ocean began installing BWMSs on its vessels a year before the regulation took effect. We monitor the sterilization process and results of discharged ballast water in real-time. As of the end of 2023, BWMSs had been installed on a total of 104 vessels, and plans are in place to expand this to all vessels by 2024.

Fouling Prevention

To protect marine ecosystems and prevent the transfer of foreign marine species, Pan Ocean ensures that vessel hulls are cleaned, and anti-fouling paint is applied during every docking. While ships are in navigations, we regularly inspect the degree of hull fouling according to set procedures. Moreover, we are making efforts to reduce the negative impact on marine ecosystems caused by alien species by regularly removing hull-attached organisms (hull cleaning) from the ship's surface.

Biodiversity Conservation Activities

Conservation Activities	2023 Activities
BWMS Installation	<ul style="list-style-type: none"> BWMS installation was completed on a total of 104 ships as of the end of December 2023 Plan to complete installation on all vessels by 2024
Hull Cleaning Implementation	In 2023, a total of 95 kg of hull-attached organisms were removed through hull cleaning



Environmental Management

Expansion of Sustainable Portfolio Diversification

Increase in Sustainable Investments

Investment in Green Equipment

We have identified various eco-friendly facilities through the SEEMP (Ship Energy Efficiency Management Plan) for standard ships and analyzed their effects. Based on these results, the company is actively investing in equipment aimed at reducing hull resistance, improving propulsion efficiency and enhancing engine efficiency. We incorporated hull designs that minimize water resistance and utilized low-friction coatings to achieve fuel efficiency in 15 new vessels. Moreover, we have installed various devices to enhance energy efficiency, such as high-efficiency LED lighting.

Investment Status and Plans for Green Equipment

(Unit: KRW million)

Category	2021	2022	2023**	2024 TARGET
BWMS	23,814	25,989	4,377	5,797
SOx Reduction Equipment	-	-	2,468	-
AMP	573	-	-	-
Vessel Speed Restriction Device	-	-	1,326	214
Others*	-	-	-	769
Total	24,387	25,989	8,171	6,780

* Others: VFD, scrubber damper

** In 2023, 95% progress in compliance with BWMS regulations and the completion of compliance with SOx Reduction Equipment have led to a decrease in investment amounts.

Issuance of Green Bonds

Pan Ocean was the first domestic shipping company to issue a KRW 50 billion green bond. Recognized by Korea Ratings Corporation for directing funds to environmentally friendly projects, Pan Ocean received the highest ESG green bond rating of G1. The funds secured through the bond issuance have been invested in the introduction of LNG bunkering vessels, resulting in a significant reduction of environmental pollutants, and the installation of ballast water treatment systems, contributing to the preservation of biodiversity. Pan Ocean identifies and evaluates investment projects based on the principles of its internal ESG financial management system and plans to continuously pursue ESG projects that will have a positive environmental impact in the future.

Introduction of Sustainable Ship Fuel (LNG) Bunkering Vessels

Pan Ocean has introduced two LNG bunkering vessels, New Frontier 1 and New Frontier 2, with capacities of 6,500 CBM and 18,000 CBM, respectively, to expand its environmentally friendly marine fuel transportation business and contribute to the reduction of greenhouse gas emissions. The funds for the acquisition of these vessels were raised through the issuance of green bonds. Comparing the pollutant emissions of the LNG delivery capacity of these vessels to an equivalent amount of HFO (Heavy Fuel Oil) of the same calorific value, Pan Ocean has achieved cost savings of \$1,118,523 in environmental expenses.

Cost Savings in Environmental Expenses for LNG Bunkering Vessels*

Category	Environmental Pollutant Emissions (tons)			Environmental Cost Savings (Total, \$)
	18K CBM	6.5K CBM	Total	
SOx Emissions from LNG Combustion	25	9	34	-
SOx Emissions from HFO Combustion	46,950	16,954	63,904	-
Annual SOx Emissions Reduction	46,925	16,945	63,870	582,494
NOx Emissions from LNG Combustion	6,638	2,397	9,035	-
NOx Emissions from HFO Combustion	77,341	27,929	105,270	-
Annual NOx Emissions Reduction	70,703	25,532	96,235	536,029
Total Emissions Reduction (SOx, NOx)	117,628	42,477	160,105	1,118,523

* Calculation Basis: TU Delft, Ecocosts Emissions 2022 V1.1

Environmental Management

Purchase of Green Products

Pan Ocean procures and supplies eco-friendly consumables for its vessels. Our current product range includes EAL (Environmentally Acceptable Lubricants) and biodegradable chemicals that meet the standards of the United States Environmental Protection Agency. We intend to gradually expand our range of eco-friendly products in the future.

Eco-Friendly Corporate Rental Vehicles

We have replaced our corporate rental vehicles with eco-friendly alternatives to reduce greenhouse gas emissions. Of our eight corporate rental vehicles, three were replaced with hybrid vehicles, making 37.5% of the vehicles eco-friendly. Pan Ocean will continue to actively enhance energy efficiency at its business sites by expanding the use of eco-friendly vehicles.

Green Product Purchase Record

(Unit: KRW million)

Category	2021	2022	2023
Green Lubricants	264	269	416
Green Chemicals	36	59	93
Amount of Green Product Purchases	300	328	509
Total Purchases	57,197	82,894	88,940
% of Green Product Purchases	0.5%	0.4%	0.6%

Green Service Revenue

(Unit: KRW million)

Category	2021	2022	2023
Green Service Revenue	14,305	97,106	91,375

Investment in Green Vessels

Vessel Operation Optimization System

Pan Ocean and POS SM monitor the location, speed, route and fuel consumption of each vessel in real-time through their Fleet Operation e-Center, a dedicated ship operation control center. This facilitates smooth two-way communication between sea and land, which helps to reduce OPEX (operating expenses). Using the data generated, they derive optimal routes, prevent safety accidents and enable immediate initial responses. In 2024, with the aim of expanding autonomous navigation digital solutions, they plan to collaborate with Samsung Heavy Industries to conduct a trial run of the LNG carrier NEW APEX, which is equipped with an AI-based ship management and optimization solution.



Expansion into the LNG Bunkering Business

In light of the increasing uncertainty and volatility of the shipping market and the need to address carbon reduction requirements, Pan Ocean has made a strategic investment in eco-friendly, high-efficiency LNG (liquefied natural gas) bunkering vessels. In July 2023, we introduced the New Frontier 2, a vessel equipped with a dual-fuel engine that uses both MGO (Marine Gas Oil) and LNG. This engine offers enhanced safety and fuel efficiency compared to traditional LNG bunkering vessels, while reducing harmful gas emissions. The New Frontier 2 is a super-large LNG bunkering vessel with the capacity to supply up to approximately 7,500 tons of LNG per trip to large container ships and tankers. Pan Ocean has entered into a long-term contract with Shell for the supply of LNG via STS (ship-to-ship) transfer to LNG-powered vessels in the Gulf of Mexico.

LNG Bunkering Vessel Christening Ceremony





Environmental Management

Research on Autonomous Ships for Eco-Friendly Vessel Operation

National Program for Autonomous Ship Technology Development

Pan Ocean and POS SM are participating in the Autonomous Ship Technology Development Project overseen by the Ministry of Trade, Industry and Energy and the Ministry of Oceans and Fisheries. In 2020, we signed an MOU with the objective of developing core autonomous ship technologies and establishing a commercialization foundation by 2025. Pan Ocean has committed to providing a demonstration vessel equipped with an autonomous navigation system and supplying operational data. In February 2024, we successfully conducted a trial run with the autonomous navigation system installed on the 1800 TEU container ship POS SINGAPORE. Pan Ocean anticipates that this technology will result in increased fuel efficiency and reduced greenhouse gas emissions. Our objective is to collect and continuously enhance autonomous navigation system data through the official operation of Korea's inaugural autonomous demonstration vessel.

Energy Control Dashboard



Demonstration Ship Construction (STEEL CUTTING)



Joint Research on Autonomous Navigation Systems

In March 2023, Pan Ocean and POS SM initiated a joint research project on autonomous navigation systems with Avikus, HD Hyundai Heavy Industries and the Korean Register. In October 2023, Pan Ocean successfully installed and tested the AI autonomous navigation system HiNas 2.0 on the SEA SHANGHAI, a 325K VLOC. This system autonomously analyzes optimal routes and controls speed. The operational data obtained from this trial has been granted Basic Certification (AiP) by the KR (Korean Register) for the fuel savings evaluation methodology of its autonomous navigation. Multiple trials have demonstrated a reduction in fuel consumption of up to 15% and an anticipated reduction in greenhouse gas emissions of 10%. Pan Ocean is committed to proactively addressing carbon emission regulations through its research into autonomous ships.

AiP Certification for Fuel Savings Evaluation Methodology



Operation of an Autonomous Navigation Solution



Comprehensive Digital Solution Collaboration

In September 2023, Pan Ocean and POS SM signed an MOU with Samsung Heavy Industries for collaboration on the development of a comprehensive digital solution. We decided to equip the 174K CBM LNG carrier New Apex with a digital twin platform for demonstration purposes. This digital solution integrates and optimizes all systems of an operating vessel, enabling real-time data synchronization, AI-driven diagnostics and predictive maintenance. Pan Ocean expects this collaboration on a digital twin solution to reduce OPEX (operating expenses), maximize fuel efficiency and prevent major accidents.

MOU for Comprehensive Digital Solution Collaboration



Environmental Impact Reduction

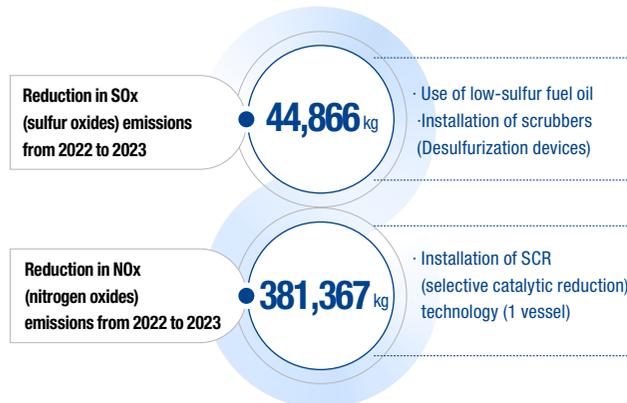
Pan Ocean is committed to minimizing the marine environmental impact of its ship operations by reducing pollutants and waste. We also focus on sustainable shipping through the effective management of ship discharged water and the use of eco-friendly products. We will continue to develop diverse strategies to further mitigate environmental impacts, comply with regulations and lead eco-friendly shipping practices.

Pollutant Management

Air Pollutant Management

In accordance with the IMO(International Maritime Organization)'s 2020 SOx (sulfur oxides) regulations, Pan Ocean utilizes LSFO (low-sulfur fuel oil) with a sulfur content of 0.5% or less. Furthermore, some vessels are equipped with scrubbers to ensure compliance with these regulations. In addition, we have committed to reducing NOx (nitrogen oxides) emissions by installing SCR (selective catalytic reduction) systems on new ships. Furthermore, Pan Ocean minimizes unnecessary air pollutant emissions during port stay by equipping vessels with shore power (AMP) systems, which allows them to receive electricity from the shore. To further reduce particulate matter, we participate in the Incheon Port VSR (Vessel Speed Reduction) program. Pan Ocean continues to explore and implement various measures to reduce air pollutant emissions.

Reduction in Air Pollutant Emissions (2023)



Water Resource Management

Marine Water Resource Management

Pan Ocean actively participates in international conventions and regulations related to ship discharged water management, such as those established by the IMO. The company conducts real-time monitoring of data on pH, turbidity, PAH and nitrates for wash water discharged from scrubbers, which reduce sulfur oxides in ship exhaust, to ensure compliance with regulations. As for greywater and sewage discharged from ships, we use shipboard sewage treatment systems to sterilize the sewage before discharge or stores and manages it in separate holding tanks.



Hazardous Chemicals Management

Hazardous Chemical Management Process

Pan Ocean manages hazardous chemicals in accordance with the IMDG Code (International Maritime Dangerous Goods Code) and the IBC Code (International Code for the construction and Equipment of ships Carrying Dangerous Chemicals in Bulk). For all hazardous chemicals handled, information such as characteristics, hazards and emergency measures is pre-identified in accordance with the MSDS (Material Safety Data Sheet) requirements of the Industrial Safety and Health Act. All chemicals are thoroughly reviewed to determine whether they fall under shipping restrictions or prohibitions, and are then classified based on their packaging status and quarantined or separated appropriately.

Prevention and Management of Hazardous Chemical Accidents

A PPE (Personal Protective Equipment) matrix tailored to the characteristics of hazardous chemicals has been established to ensure that proper safety equipment is worn. Regulations are strictly followed to prevent accidents during the transportation and storage of hazardous chemicals. Daily checks include monitoring cargo temperature, adding stabilizers, checking oxygen concentration inside cargo tanks, and overseeing void spaces. The effectiveness of these hazardous chemical management processes is verified twice a year through internal and external audits.



Environmental Impact Reduction

Waste Management

Waste Management System

To minimize waste generation, Pan Ocean has established a waste management manual that reflects international regulations such as the ISM Code (International Safety Management Code) and MARPOL. Separate manuals have been prepared for general, oily and packaging waste, and the entire process—from waste generation to discharge, transport and treatment—is monitored. Waste disposal companies contracted by Pan Ocean are also required to handle waste in accordance with these manuals.

General Waste

For general waste from vessels, the entire waste treatment process—including documentation, collection, separation, storage and disposal—is monitored to ensure proper treatment in compliance with international agreements. We have also established waste disposal targets and review whether these targets are met. To minimize waste discharged to land and water, we encourage the use of onboard incinerators and supply plastic shredders and presses to facilitate waste recycling.

Oil Waste

The treatment of oil waste (bilge, oily bilge and sludge) on board is strictly managed. Pan Ocean utilizes an ETS (environment tag system) to track the operation of environmental equipment and the processing of oil waste on its vessels, thereby ensuring adherence to international regulations. In addition, we assess standardized criteria, including environmental standards and relevant port permits, to centrally select oil waste disposal companies for key port calls. This initiative aims to ensure consistent utilization across all vessels.

Packaging Material Waste

To reduce packing material waste from goods loaded on board, we encourage businesses to minimize packing materials unless they are necessary to prevent damage. As part of our waste management process, we collaborate with suppliers to ensure that recyclable packing materials are promptly collected or recycled.

Waste Emissions

(Unit: ton)

Category	2021	2022	2023
Total generated waste	28,405	29,695	31,489
General Waste from Vessels (Non-hazardous)	2,297	2,575	2,883
Food waste	348	350	364
Domestic waste	1,949	2,225	2,519
Cargo residues	-	-	-
Others	-	-	-
Designated Waste from Vessels (Hazardous)	26,108	27,118	28,604
Waste oil	23,437	25,113	26,632
Oily Rags	922	440	386
Plastics	1,306	1,452	1,462
Ash	443	113	124
Others	-	-	-
Office Waste	3.02	1.96	2.40
Head Office	2.21	1.39	1.77
Busan Office Sales Team	0.63	0.56	0.21
Pohang Office	0.05	-	0.42
Dangjin Office	0.13	-	-
Gwangyang Office	-	-	-
Waste Recycling	9,604	10,159	11,901
General waste (non-hazardous) - Office	-	-	-
Designated waste (hazardous) - Vessel*	9,604	10,159	11,901
% Total Waste Recycled	33.81	34.21	37.79

* Plastics and sludge from vessels

Environmental Impact Reduction

Vessel Recycling

Green Recycling Policy

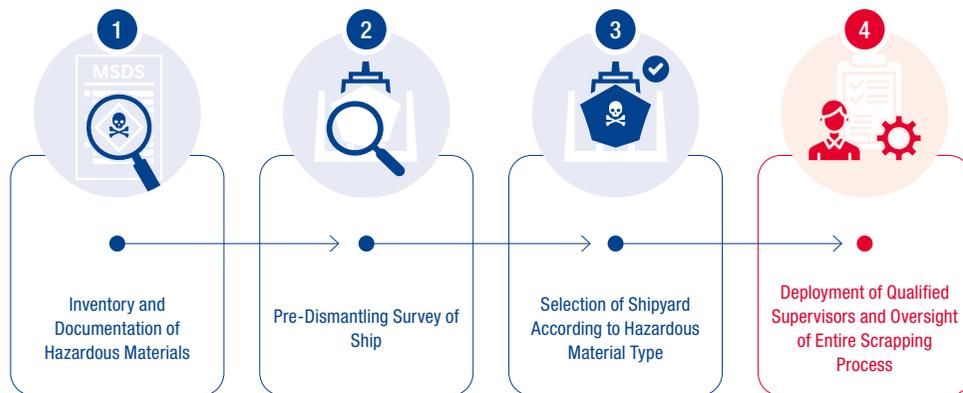
Pan Ocean has established a green recycling policy in accordance with the Ship Recycling Convention,* which will take effect in 2025, to ensure safe and environmentally sound ship dismantling. By implementing this policy, we aim to minimize land and marine pollution caused by ship recycling (dismantling) and to protect the human rights of workers involved in ship dismantling.

* Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009

Green Recycling Process

Pan Ocean follows systematic ship dismantling procedures to protect the health of workers from hazardous materials on ships destined for recycling and to protect the environment. We conduct three inspections to identify hazardous materials on these vessels and compile an inventory of hazardous materials, including operational waste and stored materials such as fuel oil, lubricants and paint. After the final inspection, we submit a ship recycling plan and select an appropriate shipyard based on each vessel's specific characteristics and inventory.

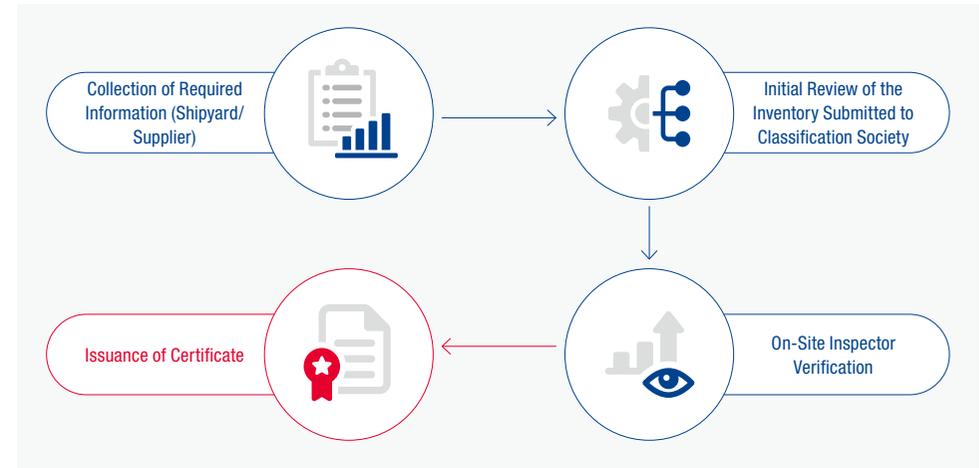
Ship Recycling Process



Management of Ship Hazardous Materials Inventories

We maintain an inventory of hazardous materials such as asbestos and heavy metals found on each vessel and obtain government certificates, and keep these documents on board. For vessels destined for recycling (dismantling), we compile an additional hazardous materials inventory, which includes operational waste and stored materials such as fuel oil, ballast water and lubricants. Through rigorous management of hazardous material inventories, we strive to prevent safety incidents during ship recycling operations and to prevent the unauthorized disposal of pollutants and hazardous materials.

Process for Compiling the Hazardous Materials Inventory





Chapter. 4 

Social

044 / Safety and Health Management

052 / Collaborative Management

054 / Human Rights Management

058 / Human Resources Management

066 / Shared Management

Safety and Health Management

Pan Ocean places the utmost importance on the lives and safety of all stakeholders, particularly its employees, who are considered core assets. We drive continuous improvement in safety and health by adhering to principles and standards. Under our safety-first management policy, we have obtained ISO 45001 (occupational health and safety management system) certification and are establishing a robust safety and health management framework in our workplaces. We identify and mitigate hazards and risks to improve the health and working environment for all types of employees. We also set long-term health and safety goals and actively allocate the necessary human and physical resources to achieve our performance targets.

Safety and Health Governance

Role of the BOD

Pan Ocean collaborates with POS SM's Safety and Quality Team annually to secure approval for safety and health plans from the board and ESG Committee. The board acts as the highest decision-making body, overseeing the operation of the safety and health system, monitoring progress against objectives, and supervising execution plans and key results. The major safety and health management plan approved by the board in 2024 encompasses performance results for safety and health management activities in 2023, as well as safety and health budgets and objectives for 2024.

Role of Management

Pan Ocean has appointed its head of safety management as the CSHO (Chief Safety and Health Officer) to establish a decision-making framework for safety and health management. Each year, the goal of maintaining a zero-accident workplace is set as a KPI for the CSHO, supervisors and dedicated teams, ensuring responsible safety and health management.

Role of the Dedicated Organization

Pan Ocean operates a dedicated safety and health team to support the CSHO's duties. This team is responsible for developing workplace accident prevention plans, drafting and amending safety and health management regulations, and assisting with employee health management. Pan Ocean is committed to ensuring that all employees and contractors can work safely at our sites and return home without incident.

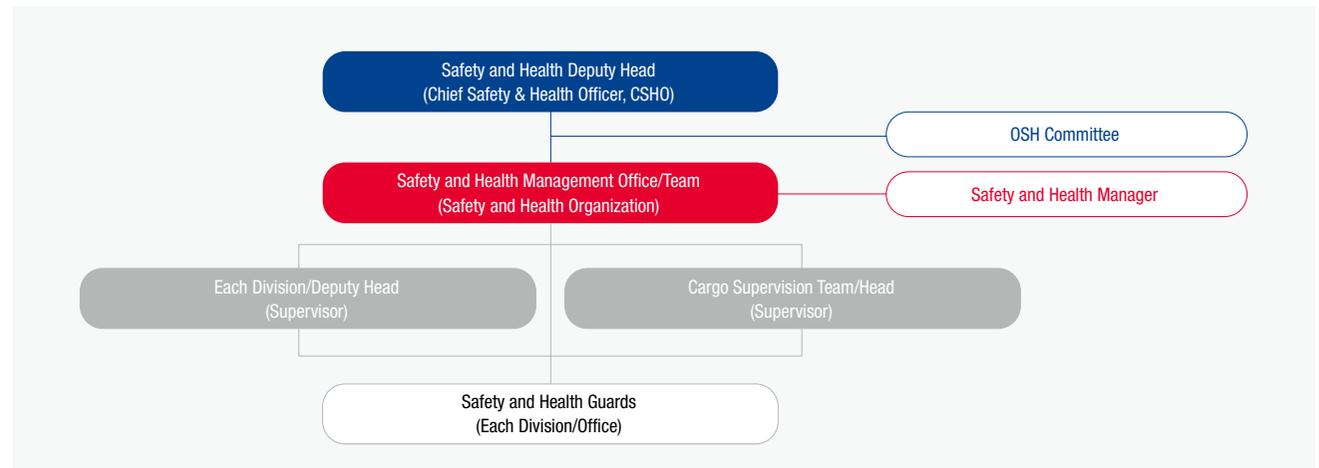
OSH Committee

The Pan Ocean OSH (Occupational Safety and Health) Committee holds quarterly meetings to oversee safety and health management. Chaired by the CSHO (Chief Safety and Health Officer), the committee includes five employee members and five employer members. The committee's responsibilities include deliberating and making decisions on key safety and health matters, revising safety and health management rules, developing comprehensive safety and health plans, conducting safety and health training for employees, organizing health examinations, investigating serious accidents and implementing recurrence prevention plans. These efforts ensure a strong and effective safety and health framework within the organization.

Onshore Safety and Quality Meetings

Organized by POS SM's Safety and Quality Team, the onshore safety and quality meetings review and identify issues in onshore safety activities and business procedures. Key agenda items include accident statistics, quarterly safety management system monitoring and amendments to manuals. To enhance communication between onshore and offshore employees, off-duty masters and chief engineers are invited to share their firsthand experiences and promote the exchange of opinions.

Safety and Health Management Organizational Chart



Safety and Health Management

Safety and Health Strategy

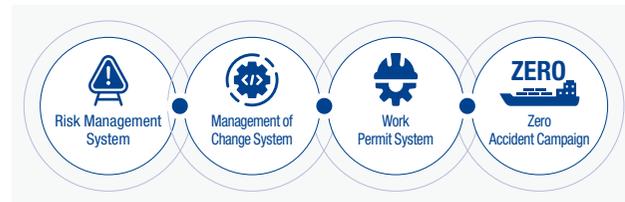
Onboard Safety and Health Management System

Pan Ocean has developed and distributed a safety and health manual to promote a culture of safety within the onboard working environment. Regular meetings of the Safety and Health Environment Committee are held on board to address related issues. At the headquarters, safety management measures meetings are conducted to discuss onboard safety and health matters and develop measures to prevent the recurrence of accidents and ensure their implementation.

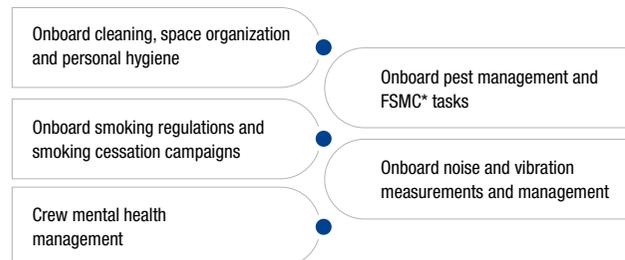
Stop Work Policy

POS SM maintains a work stoppage policy, which is communicated through safety training for new recruits and quarterly safety sessions during crew embarkation. Monthly discussions on the work stoppage policy are also conducted during onboard SHEQ meetings.

Onboard Safety Management System



Onboard Health Management System



* FSMC: Flighted spongy moth complex

Establishment of a Safety and Health System

[Safety and Health Policy Link](#)

Pan Ocean achieved ISO 45001 certification in December 2023 as part of its endeavors to develop an advanced safety and health management system aligned with international standards. Our continuous efforts focus on enhancing safety and health by addressing risk factors. We have established foundational policies for maritime safety and crew health and well-being that cover safety and quality, environmental sustainability, health and welfare, social responsibility and cybersecurity. These policies underscore our commitment to prioritizing health and safety and form a comprehensive safety and health management framework. Furthermore, POS SM has established an integrated safety and health system based on adherence to global safety and health management standards and the acquisition of ISO 45001 certification for ship management and safety services.

ePOS Computer System

POS SM has introduced an ePOS computer system to enable real-time sharing of safety management activities, including risk assessments and near-miss reporting, between onshore and offshore operations. This system ensures concurrent safety management at both the field and company levels, promoting systematic data management through computerization. Key information and guidelines are communicated via the LOC (letter of company), and the follow-up function is used to monitor and ensure compliance with onboard instructions. In addition, the system efficiently handles vessel maintenance history and facilitates requests for onshore support and necessary actions.

Seafarers Management System

As part of its integrated ship management approach, POS SM employs a seafarers management system to provide efficient support between onshore and onboard operations. This system allows seamless online integration, reducing potential risks associated with physical distance and enabling prompt task management through effective communication. Furthermore, POS SM has developed a comprehensive database for ship equipment and supplies, thereby enhancing information reliability and ensuring smoother operations.



ISO 45001 Certification: Pan Ocean's Safety Commitment



On December 8, 2023, Pan Ocean obtained the ISO 45001 (occupational health and safety management system) international standard certification. This certification was awarded by the internationally recognized institution KR (Korean Register) in recognition of our efforts to create a safe work environment. These efforts included developing and disseminating safety and health management policies, conducting risk assessments and improvements, operating the Occupational Safety and Health Committee, and fostering a safety and health-oriented organizational culture. Going forward, we will continue to build a robust safety management system, create a safe work environment, and strengthen safety leadership and education to instill a sense of responsibility for safety and health in all employees.

Safety and Health Management

Direction of Safety and Health Promotion

Medium- to Long-Term Safety and Health Management Goals

To become a global leading shipping & logistics company that prioritizes safety and health, we have set our safety and health goal as "ZERO serious occupational accidents." We have also established a safety and health goal management system by devising key initiatives and detailed action plans to attain this objective.

2024 Targets and Medium-Term Goals for Safety and Health

2024 Target	<ul style="list-style-type: none"> Maintain ZERO occurrences of serious accidents. Achieve a 100% resolution rate for safety and health complaints from contracted workers. Maintain a ZERO injury rate for onshore employees. Maintain the previous year's injury rate for offshore employees.
Medium-Term Safety and Health Goals	<ul style="list-style-type: none"> Achieve ZERO occurrences of serious accidents. Attain a 100% resolution rate for safety and health complaints from contracted workers. Maintain a ZERO injury rate for onshore employees. Reduce the injury rate for offshore employees by 5% annually compared to the average rate from 2017 to 2021.

Safety Regulation Risk and Opportunity Analysis

Pan Ocean conducts annual risk assessments for internal and external issues, as well as compliance evaluations for legal requirements, in accordance with the ISO 45001 requirements. We utilize relevant data as part of our management review materials.

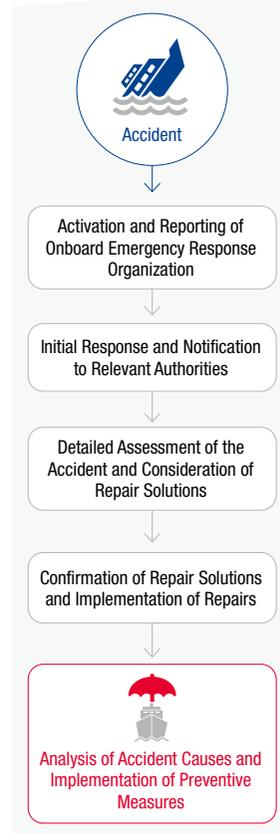
Expansion of Safety and Health Investment

Pan Ocean has been expanding its investments in occupational health and safety since 2022 to strengthen its safety management system. The company aims to progressively increase the budget allocated for safety and health and utilize it for safety facilities and training expenses.

Personnel Accident Emergency Response Process



Vessel Accident Emergency Response Process

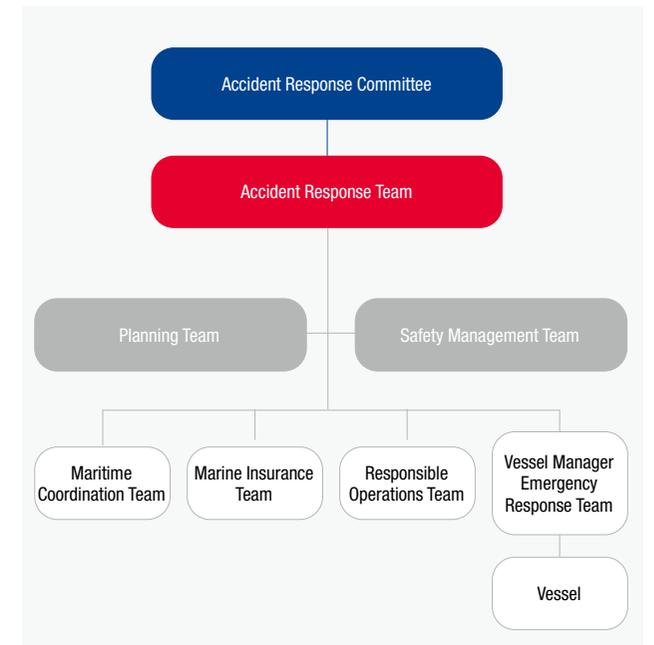


Emergency Response System

Emergency Response Structure and Procedure

Pan Ocean has established the Accident Response Committee to act as a control center in the event of a vessel or personnel accident. To ensure a swift response and efficient management of accident records, we maintain a BCP (Business Continuity Plan) manual and a maritime accident response manual. With these manuals, we aim to minimize damage by activating an immediate and effective emergency response in the event of an incident. For medical emergencies and marine casualties, we implement urgent first aid and initial response measures. After resolving the incident, we conduct a detailed post-accident analysis to devise preventive measures to avoid recurrence.

Emergency Response Organization



Safety and Health Management

Business Continuity Management System (ISO 22301)

At POS SM, we have implemented a business continuity management system to ensure the continuity of operations in the face of unexpected crises, including disasters, emergencies, terrorism and infectious diseases. Our goal is to facilitate the swift recovery of essential functions should there be any risk of business interruption. We have developed mitigation measures in accordance with our business continuity plans that are specifically designed to address significant disruptions affecting both land and maritime operations. In 2023, we established operational targets for both land and maritime activities, and achieved an impeccable performance record. This success was supported by our completion of quarterly joint land and sea drills, as well as annual disaster exercises.



Joint Land and Maritime Training and Annual Disaster Training

Joint Onshore and Offshore Emergency Response Drills

Under the supervision of Pan Ocean's Safety Management Office, POS SM conducted joint onshore and offshore emergency response drills in February and April of 2023. These joint onshore and offshore emergency response drills were designed to indirectly simulate the emergency response and handling processes of ship and shore accident response teams based on hypothetical maritime accident scenarios, thereby enhancing the emergency response and handling capabilities of both onshore and offshore personnel. We monitored the entire exercise process and comprehensively evaluated all aspects of accident handling, and are considering improvement measures for identified issues. In the future, we plan to actively prepare for emergencies by providing training for various scenarios.

Infectious Disease Response System

At POS SM, we identify risks in both onshore and offshore environments, then prioritize the most significant ones and establish corresponding business continuity management plans. For example, to address the risk of infectious diseases, categorized as a major onshore disaster, we have developed an infectious disease response system. This system involves analyzing the status, outbreak areas and emerging trends of infectious diseases along with the geographical characteristics of affected regions. It encompasses mitigation measures, specific action plans and response protocols to minimize potential impacts on key processes.

Overview of Infectious Disease Risk Scenario Analysis

Outcome of Infectious Disease Risk	· Rapid transmission of the infectious disease leading to multiple casualties
Impact on Key Processes	· Personnel management: Operational disruptions possible due to shortages of essential staff and insufficient manpower · Resource management: Potential for closure of office facilities to prevent the spread of the infectious disease
RTO* (Recovery Time Objective)	· 2 days

* RTO(Recovery Time Objective) : The target time for recovering the information system after a disaster occurs

Mitigation Measures for Infectious Disease Risk

Mitigation Measures	Prevention/Preparation	<ul style="list-style-type: none"> · Enhancing work capacity and developing backup personnel through rotating shifts · Identifying critical job positions and conducting cross-training for designated substitutes and backups · Identifying activities within the organization that can be outsourced or relocated · Implementing IT infrastructure to enable remote work options · Leasing business center offices and IT equipment
	Response/Recovery	<ul style="list-style-type: none"> · Prioritizing essential tasks for resource reallocation from support functions · Assigning frontline employees such as retirees or internal auditors to handle routine tasks
	Responsible Department	· POS SM Business Management Team Control

Safety and Health Management

Safety and Health Program

Pan Ocean supports health management and psychological well-being programs for onshore and offshore employees to promote health and prevent occupational diseases based on job tasks and timing. We conduct ongoing activities to identify and mitigate risks with the aim of preventing occupational diseases.

Safety and Health Program for Onshore and Offshore Employees

Onshore Employees	Health Service Room	<ul style="list-style-type: none"> First aid, self-testing kits, health consultations High-risk group management for those with symptoms and those who need attention
	Health Examinations	<ul style="list-style-type: none"> Annual health examinations with results retained for five years
	Brain/Cardiovascular Disease Prevention	<ul style="list-style-type: none"> Cardiovascular disease risk assessments and provision of smoking cessation and walk-on programs in collaboration with health centers
	CPR & AED Operations and Training	<ul style="list-style-type: none"> Monthly self-inspections with results reported to the public health center and provision of emergency training to employees
	Safety Management Notice Board	<ul style="list-style-type: none"> Employees of affiliated companies
	Building Fire and Disaster Response	<ul style="list-style-type: none"> Incorporation of building management safety and health policies in safety and health plans and disaster prevention and damage alleviation plans
	Stretching Posters and Safety and Health Signs	<ul style="list-style-type: none"> Encouragement of office stretching for daily health management Signs indicating hazardous areas and substances
	Security Cameras in Offices and Emergency Staircases	<ul style="list-style-type: none"> Installation of CCTVs in emergency stairwells identified as blind spots for disasters
	Outsourcing and Operation of Counseling Services	<ul style="list-style-type: none"> Work stress prevention for the mental health of employees
	Mental Health Care	<ul style="list-style-type: none"> Work stress assessments and operation of the Home Fit Program
	Accident Prevention Incentive System	<ul style="list-style-type: none"> Rewards for setting and achieving safety accident prevention goals
	Employee Feedback System	<ul style="list-style-type: none"> Suppliers: Customer service on the website Employees: Safety management notice board on the intranet

Offshore Employees	Maritime Emergency Medical Center	<ul style="list-style-type: none"> Referral to specialized maritime 119 medical center and remote consultations
	Health Examinations	<ul style="list-style-type: none"> Annual health examinations
	Counseling Services for the Psychological Well-being of Offshore Employees	<ul style="list-style-type: none"> Counseling for improving onboard organizational culture and mental health
	Resilience Activities	<ul style="list-style-type: none"> Facilitation of communication and empathy through group activities among crew members for stress management, etc.
	Fitness Facilities in Vessels	<ul style="list-style-type: none"> Promotion of physical fitness and well-being among offshore employees
	Safety and Health Response for Individual Vessels	<ul style="list-style-type: none"> Safety and health policies for offshore employees and vessel managers integrated into safety and health plans and manuals
	Supervision and Inspection of Ship Management Personnel	<ul style="list-style-type: none"> Inspections conducted at least twice a year
	Provision of PPE	<ul style="list-style-type: none"> Essential PPE including a safety helmets, safety shoes, work clothes, and winter jackets



Employee Resilience Program

In September 2023, POS SM launched the three-phase Employee Resilience Program aimed at enhancing employee resilience and preventing safety incidents through effective stress management. This program included various initiatives such as team-building activities through group photoshoots, onboard meals to foster communication, and the provision of positive feedback through commendations. We remain committed to supporting employee resilience and stress management, and to fostering a healthy organizational culture through the development of additional effective programs.



Safety and Health Management

Increase in Safety and Health Awareness

Strengthening of Corporate Safety and Health Training

Since 2022, Pan Ocean has implemented regular safety and health training for onshore employees (including supervisors) in accordance with the Industrial Safety and Health Act. In addition, we provide job-specific training for safety and health management officers and managers. For offshore employees, safety management training is included in workshops for masters and chief engineers, as well as in job-specific training for crew members and induction training for new cadets. Furthermore, we offer specialized courses such as the Safety Management Officer Training Program and the ISO 45001 Internal Auditor Course.

Implementation Status of Safety and Health Education

Category	Unit	2021	2022	2023
Onshore Employees				
Training Hours	hours	-	4,694	4,616
Training Participants	persons	-	376	364
Offshore Employees				
Training Hours	hours	17,110	19,772	20,404
Training Participants	persons	1,339	2,227	1,899

Publication of POS VIEW

Pan Ocean distributes the quarterly newsletter POS VIEW on board its vessels to share key issues, safety management activities and health and disease-related information. By sharing lists of accident-free vessels, Pan Ocean promotes a culture of shared commitment to achieving a zero-accident environment. We also operate reward programs for outstanding cases selected from near-miss and non-conformity reports. In this way, Pan Ocean emphasizes the importance of safety by sharing important vessel news, risk incident cases and mental health information across the fleet, thereby reinforcing the value of safety as a top priority.

Safety and Health Risk Management

Safety and Health Management Policy

Compliance with Lockout-Tagout Requirements

All work must be immediately suspended upon the discovery of any condition or behavior that poses a significant risk to people, facilities or the environment. At Pan Ocean, all personnel have the right and obligation to refrain from performing duties and activities that may pose serious risks. We enforce lockout-tagout procedures and empower workers to halt work activities whenever they identify potential risks. This practice underscores our commitment to maintaining a safe working environment for all employees.

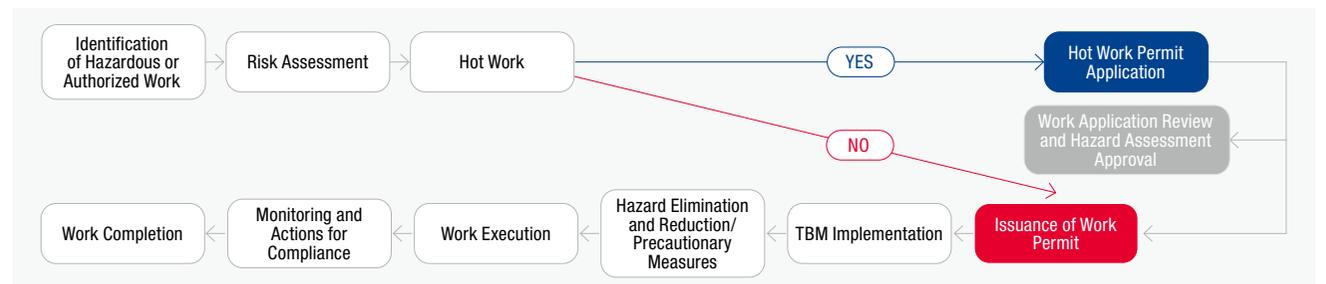


Safety Poster Production



We designate high-risk tasks such as confined-space work, hot work, scaffolding and rigging operations, electrical work and equipment handling as critical tasks. To maintain ongoing awareness of key safety points, we display safety posters in designated areas.

Operating Process of the Safe Work Permit System



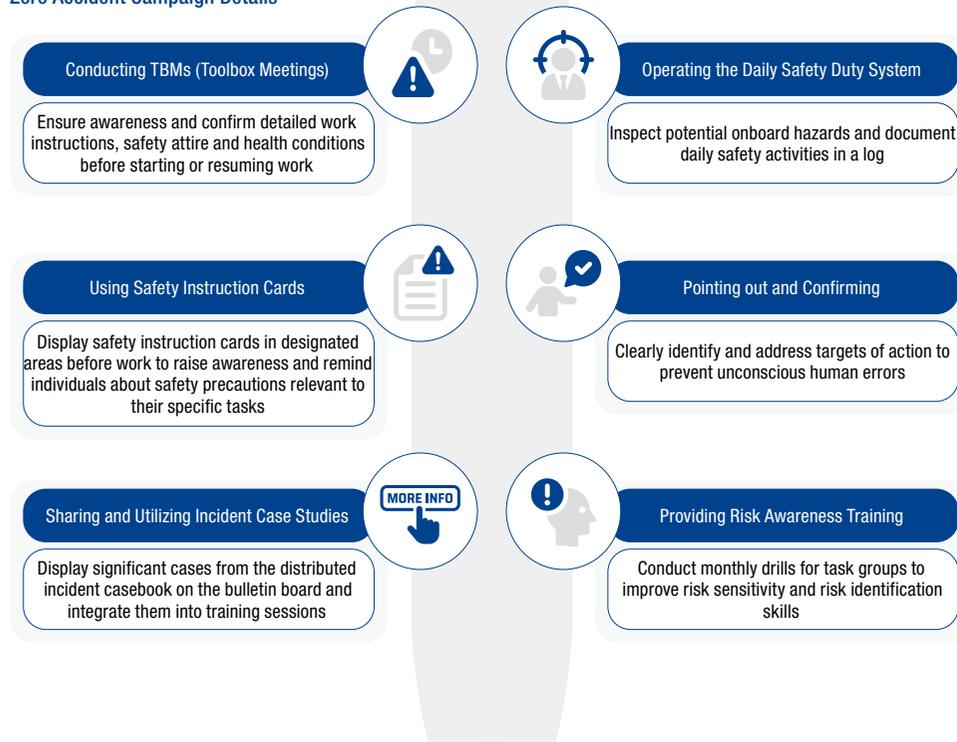
Safety and Health Management

Initiatives for Preventing Major Accidents in the Workplace

Zero Accident Campaign (POS-4P)

Pan Ocean promotes the Zero Accident Campaign (POS-4P) to spread a culture of safety on board and to internalize safety awareness. This initiative was launched in 1992, following the declaration of the company-wide TQC (total quality control) movement, with the aim of achieving zero accidents and zero injuries among vessels and maritime personnel. We reward accident-free vessels every 600 days, and the SUPER FORTE has achieved 4,800 consecutive accident-free days.

Zero Accident Campaign Details



Strengthening of Safety and Health Management among Supplier Companies

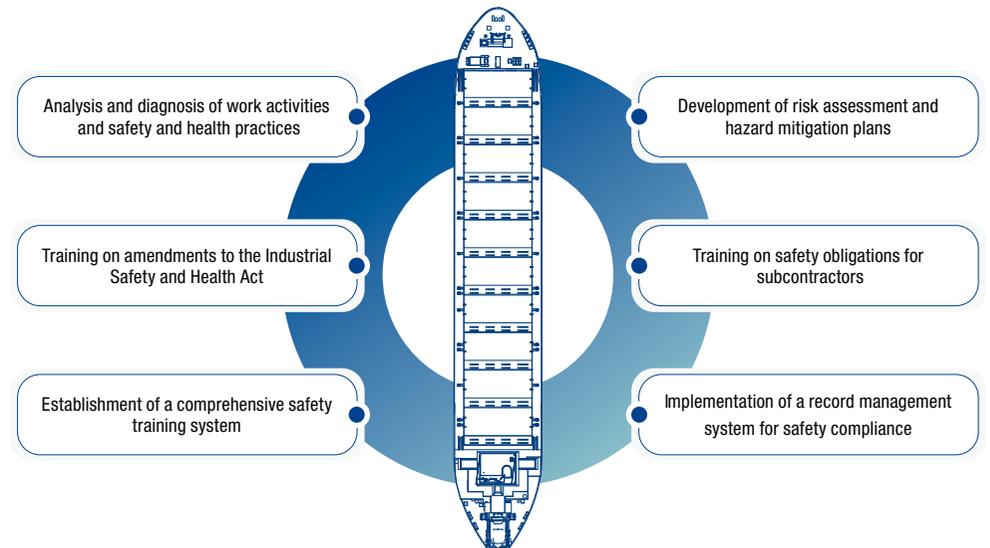
Risk Assessments for Supplier Companies

Pan Ocean requires a risk assessment report when contracting with a supplier, and requests an updated report if there are any changes during the contract period. If the assessment identifies areas for improvement, corrective actions are required. Pan Ocean's suppliers are required to inform their employees of potential hazards prior to commencing work and to implement safety measures and training to eliminate hazardous factors to prevent occupational accidents.

Safety and Health Evaluations for Supplier Companies

To prevent industrial accidents, Pan Ocean conducts semi-annual safety and health evaluations of its supplier companies. These evaluations are based on criteria such as safety and health management systems, implementation levels, operational practices and incident rates. Additional points are awarded to companies that demonstrate exemplary safety and health activities. In the first half of 2023, 56 companies were evaluated, and in the second half, 55 companies were assessed. We are committed to continually encouraging our supplier companies to enhance their safety management activities.

Management Criteria for Safety and Health Evaluations of Supplier Companies



Safety and Health Management

Safety and Health Indicators and Objectives

KPI	2023		Mid-Term Goals
	Performance	Target	2026
 <p>ZERO major land or maritime accidents</p>	0 cases	0 cases	0 cases
 <p>Onshore employee accident rate of ZERO</p>	0 %	0 %	0 %
 <p>Offshore employee accident rate reduced by 23% compared to the 5-year average (2017-2021) of 0.86%</p>	0.40 %	0.74 %	0.67 %
 <p>ZERO major accidents of supplier companies</p>	0 cases	0 cases	0 cases
 <p>Safety and health opinion processing rate of 100% for supplier company workers</p>	100 %	100 %	100 %

Collaborative Management

Pan Ocean is committed to fostering symbiotic relationships and achieving sustainable growth through comprehensive supply chain management. We analyze supplier companies from various perspectives and categorize them as general or key suppliers to optimize supply chain efficiency. In addition, we enforce ethical standards and encourage suppliers to enhance their ESG capabilities through rigorous screening. Pan Ocean plans to strengthen collaborative management by refining risk assessment methods, conducting on-site inspections and implementing improvement measures.

Supply Chain Management Governance

Role of the BOD

To foster mutual growth with its 1,150 suppliers, Pan Ocean deliberated on and approved the Supplier Code of Conduct through the ESG Committee in 2023. This code includes safety management, human rights management, environmental management, ethical management and management systems, and comprehensively reflects the essential requirements of ESG. We ask our key suppliers to sign and adhere to this code of conduct. In the future, we aim to expand the scope of signatories to cover a wider range of our supply chain, thereby promoting ESG management both within the company and throughout the supply chain.



Supply Chain Management Strategy

Supplier Management System

Pan Ocean categorizes and manages its key suppliers, including shipping agents, tugboat operators, material suppliers and cargo handlers. Key suppliers are defined based on various factors such as purchasing volume, price competitiveness and financial soundness. In particular, POS SM encourages its suppliers to comply with its environmental and ethical management policies and regulations. Specifically, pre-meetings are held prior to any shipboard operations to ensure a thorough understanding of the SHEQ (safety, health, environment and quality) content, with operations commencing only after the confirmation form has been signed.

Certified Excellent Shipping Company and Shipper

The Ministry of Oceans and Fisheries introduced the Certified Excellent Shipping Company and Shipper scheme to eradicate unfair trade practices between shipping companies and shippers and facilitate shared growth between them by establishing mutually beneficial and cooperative relationships. In recognition for our fair and stable shipping service quality and willingness to pursue shared growth with shippers, we obtained the Excellent Shipping Company certification.

Certified Company of Excellence in Shipping and Port Industry

POS SM has been recognized for its outstanding ship management capabilities and service excellence by being the first company in South Korea to be selected as a Certified Company of Excellence in Shipping and Port Industry. This certification program, overseen by the Ministry of Oceans and Fisheries, assists potential ship management companies in developing international competitiveness. Through this certification, POS SM has qualified to be prioritized in government support programs for overseas market exploration and overseas business network establishment, as well as seafarer training and welfare programs. In addition, foreign-flagged vessels managed by POS SM are eligible for port facility fee reductions when entering domestic ports.

Collaborative Management

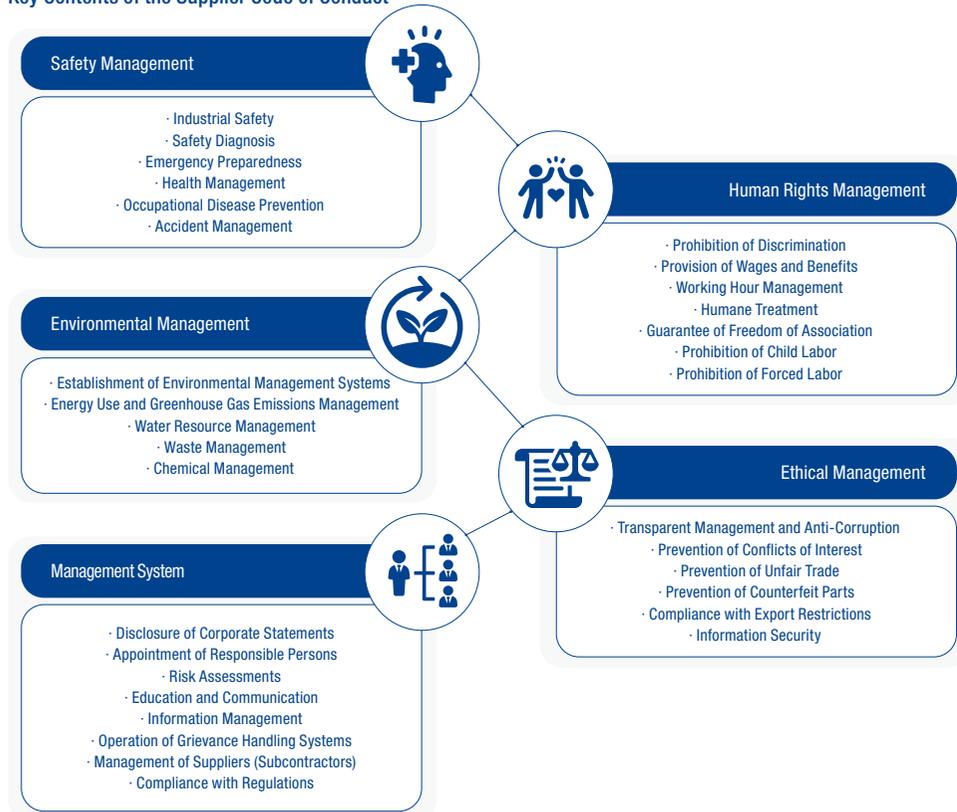
Supply Chain Risk Management

Compliance with the Supplier Code of Conduct

[Supplier Code of Conduct Link](#)

Pan Ocean has established the Supplier Code of Conduct to guide compliance during contract execution. This code outlines the basic requirements that suppliers must adhere to, thereby ensuring that all suppliers comply with laws and ethical standards related to the environment, human rights, social contributions, ethics and fair trade, health and safety, and quality management. This protects stakeholders and members alike. In addition, we support mutual growth activities to help suppliers implement and comply with ESG management practices tailored to their specific circumstances.

Key Contents of the Supplier Code of Conduct



Selection and Evaluation of Suppliers

Pan Ocean conducts comprehensive assessments in supplier selection and evaluation by considering both quantitative and qualitative factors. To strengthen the sustainability of the supply chain, evaluation criteria include financial stability, such as revenue and credit rating, as well as compliance with health and safety standards and level of implementation. POS SM only allows companies registered in its supplier management system to participate in bidding processes. Companies with existing relationships undergo renewal assessments at least twice a year, with transaction volume adjustments and alerts based on the assessment results. New suppliers are evaluated not only on financial criteria, but also on other factors such as quality, health and safety compliance, ISO environmental certification, health and safety training management, and occupational injury records.

ESG Risk Assessment of Suppliers

Assessment Process

Pan Ocean conducts ESG risk assessments of its supply chain using a written method. By utilizing unique ESG risk assessment indicators and survey formats, we efficiently identify potential ESG risks among suppliers. Moving beyond written procedures, Pan Ocean plans to enhance supplier risk management by conducting on-site inspections and reviewing improvement measures based on assessment outcomes. Ultimately, our goal is to establish a comprehensive monitoring system that includes assessment and improvement procedures to proactively prevent risks.

Human Rights Management

In June 2023, Pan Ocean established its Human Rights Management Guidelines with the objective of establishing a corporate culture that respects human rights. These guidelines adhere to the principles of global initiatives such as the UN Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, and declarations of the International Labor Organization. The company's goal is to clearly recognize the fundamental principles of human rights and safeguard the rights of all employees and stakeholders. We will continue to refine our human rights assessment and corrective action measures to further reinforcing our commitment to human rights management.

Human Rights Management Governance

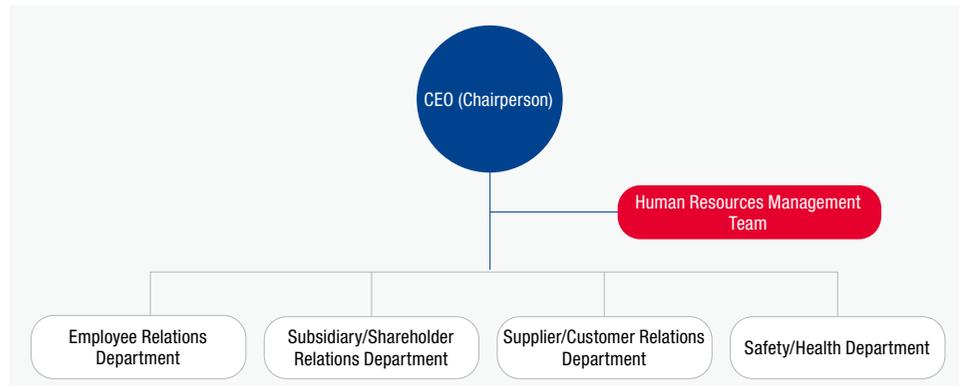
Role of Management

We operate the Human Rights Management Committee, which includes relevant business departments, the Human Resources Management Team and the CEO. Chaired by the CEO, the committee assesses the suitability of human rights risks identified across departments and the efficacy of implemented mitigation measures. It also ensures the integration of human rights concerns into the company's overall risk management strategy for comprehensive and systematic human rights management.

Role of the Dedicated Organization

The Human Resources Management Team, which acts as the dedicated human rights management team, is responsible for disseminating and implementing the company's human rights management objectives. It has developed methods and indicators for assessing human rights risks and conducted an evaluation in 2023. The team identifies significant findings from inspections, evaluates necessary improvements and issues reports. Moreover, it engages in various activities to promote the internalization of human rights management, including providing education and reporting on the outcomes of various efforts.

Human Rights Management Committee Organization Chart



Human Rights Management Strategy

Human Rights Management Guidelines

[Pan Ocean Human Rights Management Policy Link](#)

In order to build a corporate culture that respects human rights, Pan Ocean established the Human Rights Management Guidelines in June 2023. These guidelines are based on principles from global initiatives such as the UN Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, and declarations of the International Labor Organization. Pan Ocean is committed to clearly understanding the basic principles of human rights and to working to protect the rights of all stakeholders, including employees. We will continue to strengthen our human rights management system by improving human rights assessment methods and remediation measures.

Respect for Diversity and Non-discrimination

Pan Ocean is committed to ensuring that the values of human rights and respect for diversity are realized in all of its business activities. Given the global nature of our operations, we strive to understand and respect different races, nationalities and cultures. To achieve this, we carefully manage all processes, including recruitment and evaluation, to avoid any form of disadvantage. We are committed to non-discrimination and ensure fair treatment based on merit and performance. These values are clearly stated in Pan Ocean's Code of Ethics and Human Rights Management Guidelines. Our goal is to create a progressive corporate culture through non-discriminatory treatment.

Fundamental Principles of Human Rights Management

- | | |
|--|--|
| 1. Non-discrimination | 6. Guarantee of freedom of association and collective bargaining |
| 2. Compliance with working hours and labor laws | 7. Guarantee of a safe work environment |
| 3. Prohibition of forced labor | 8. Protection of environmental rights |
| 4. Prohibition of child labor and protection of minors | 9. Protection of the rights of local communities |
| 5. Humanitarian treatment | 10. Protection of stakeholder rights |

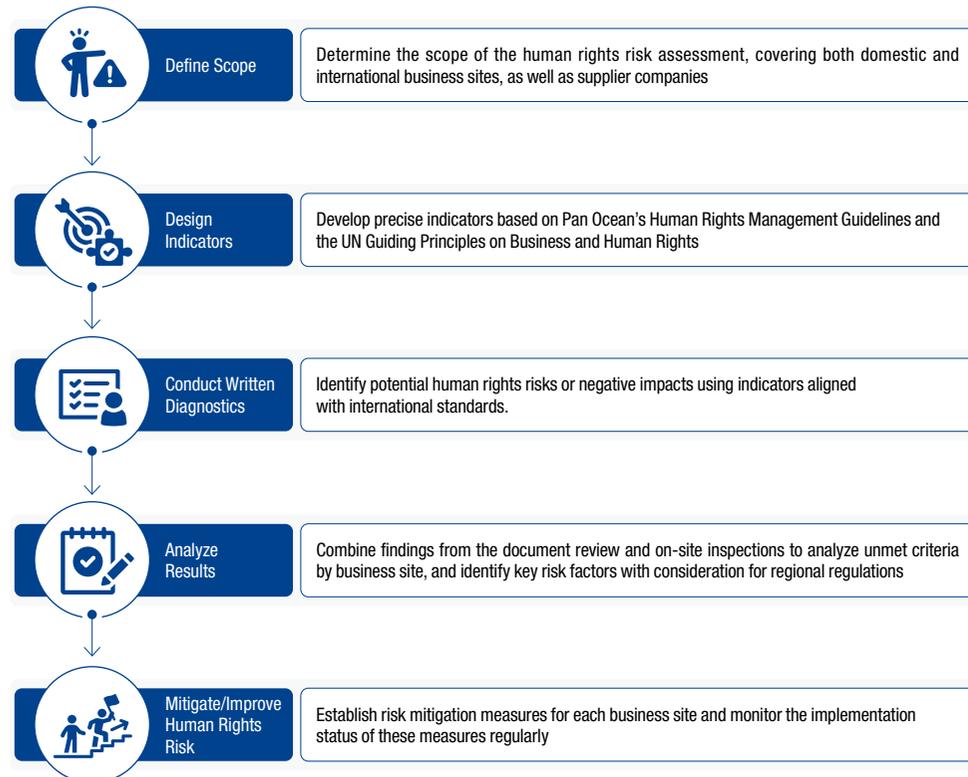
Human Rights Management

Human Rights Risk Management

Human Rights Risk Management Process

Pan Ocean's evaluation indicators and processes are grounded in the core principles of the company's Human Rights Management Guidelines. We also incorporate the UN Guiding Principles on Business and Human Rights, as well as the National Human Rights Commission's Human Rights Management Guidelines and checklist. The Human Rights Management Department supervises this process by conducting annual evaluations to identify potential human rights risks. We also conduct yearly monitoring of human rights risk assessments and the implementation of corrective actions to ensure their effectiveness.

Human Rights Risk Assessment Process



Determination of the Human Rights Risk Assessment Scope

Before conducting written diagnostics and on-site inspections for human rights risks, we thoroughly investigate both internal and external environments. This investigation includes reviewing regional human rights laws and regulations, reports from domestic and international organizations and media, and industry literature, and gathering feedback through interviews with on-site personnel. Through this comprehensive approach, we can predict potential risks to employees, women, children, migrant workers, supplier company employees and local communities.

Design of Human Rights Risk Assessment Indicators

We employ a multi-step process to design our human rights risk assessment indicators. First, the company references its own human rights charter and international standards to establish assessment criteria. Next, industry initiatives and relevant laws are integrated into the indicator design process. Historical human rights issues and cases are then analyzed to anticipate potential current and future risks. When necessary, we collaborate with third-party experts to refine these indicators. This meticulous process ensures a comprehensive and effective human rights risk assessment, contributing to the protection and respect of human rights in all business activities.

Composition of Human Rights Risk Assessment Indicators

Area	Assessment Criteria
Establishment of a Human Rights Management System	Distributing and providing education on the human rights management guidelines
Prohibition of Discrimination	Ensuring equal promotions and educational opportunities
Prohibition of Forced Labor	Inspecting working conditions for foreign workers
Prohibition of Child Labor	Inspecting working conditions for young workers
Humane Treatment and Prevention of Harassment	Protecting personal information and preventing harassment
Guarantee of Freedom of Association and Collective Bargaining	Guaranteeing the right to collective bargaining
Guarantee of Workplace Safety	Conducting regular safety inspections
Protection of Environmental Rights	Establishing environmental management systems
Protection of the Rights of Local Communities	Protecting the property rights of local communities
Protection of Stakeholders' Rights	Respecting the privacy and security of stakeholders



Human Rights Management

Written Human Rights Risk Diagnostics

From December 2023 to April 2024, Pan Ocean conducted a self-diagnosis based on its human rights risk assessment indicators and criteria. The diagnosis identified potential human rights risks across various worker groups using 39 indicators to pinpoint specific areas of concern. Where issues are identified, we discuss potential improvements and incorporate them into our practices. We also aim to establish a system for early identification of potential future risks.

Preliminary Human Rights Risk Assessment Results

Assessment Area	Assessment Result	Assessment Area	Assessment Criteria
Establishment of a Human Rights Management System	No Issues	Guarantee of Freedom of Association and Collective Bargaining	No Issues
Prohibition of Discrimination	No Issues	Guarantee of Workplace Safety	No Issues
Prohibition of Forced Labor	No Issues	Protection of Environmental Rights	No Issues
Prohibition of Child Labor	No Issues	Protection of the Rights of Local Communities	Not applicable
Humane Treatment and Prevention of Harassment	No Issues	Protection of Stakeholders' Rights	Guidance on and inspection of human rights protection obligations needed for subsidiaries and suppliers

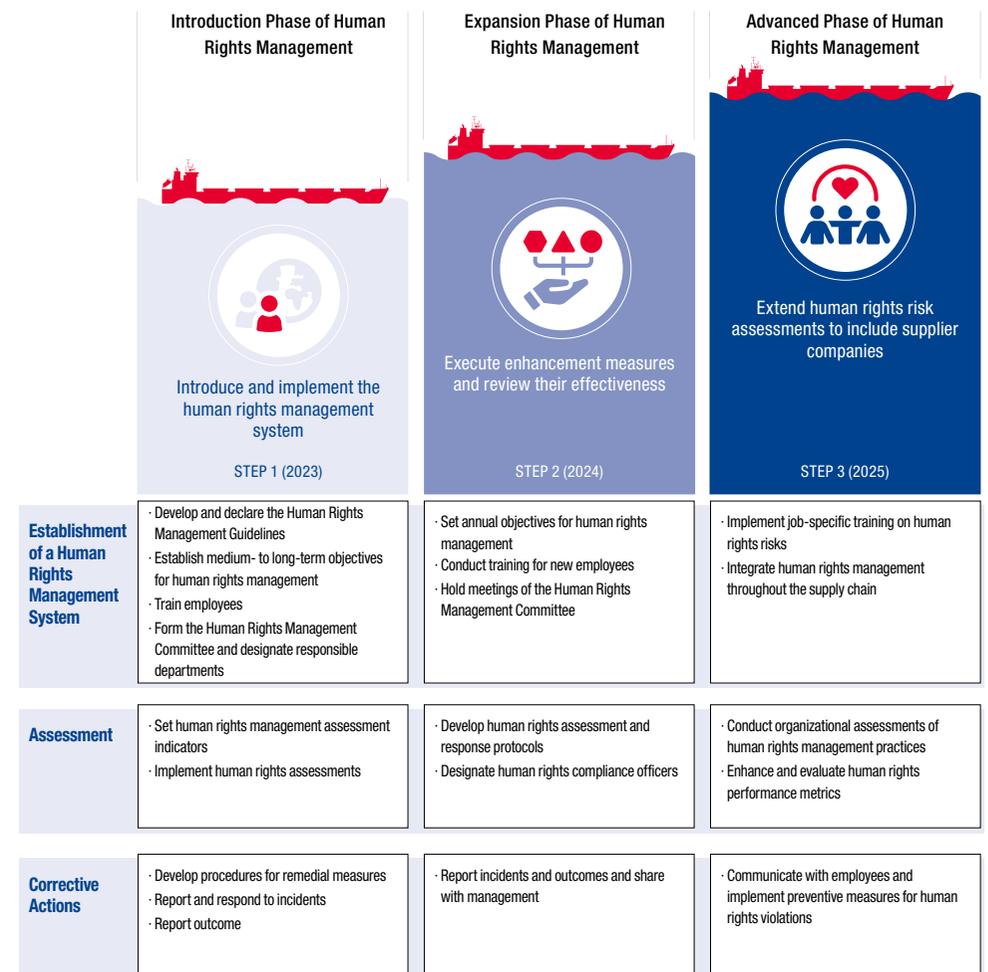
Potential Vulnerable Groups*

Categories	Identified Vulnerable Groups					
	Employees	Women	Children	Migrant Workers	Contract Workers	Local Communities
Prohibition of Discrimination and Humane Treatment	Low risk	Low risk			Potential risk	Low risk
Prohibition of Forced Labor and Child Labor	Low risk	Low risk			Low risk	Low risk
Guarantee of a Safe Working Environment and Protection of Environmental Rights	Low risk	Low risk	Not applicable		Low risk	Low risk
Protection of the Rights of Local Communities and Stakeholders	Low risk	Low risk			Potential risk	Low risk

*Pre-screening conducted based on the 2023 ITUC Global Rights Index

Human Rights Indicators and Goals

Medium to Long-term Targets of Human Rights Management





Human Rights Management

Human Rights Training Activities

Pan Ocean provides training to foster human rights awareness among its employees and cultivate a culture of respect. This includes training to prevent workplace bullying and sexual harassment, and to improve disability awareness for both onshore and offshore employees. In 2023, the completion rate for these training programs was 100%. In addition to mandatory human rights education, new employees receive separate human rights training during their orientation. Since July 2023, officers have also received specialized training on the labor rights and human rights of seafarers. As of December 2023, a total of 491 individuals had completed this training.

Training Programs for the Protection of Seafarers' Labor Rights and Human Rights

No.	Topic	Curriculum
1	Understanding the Human Rights of Offshore Employees	Standard
2	Understanding the Labor Rights of Offshore Employees	Standard
3	Privacy Rights for Offshore Employees on Board	Basic/Advanced
4	Indifference (Bystander Effect)	Standard
5	Addressing Discrimination against Foreign Offshore Employees	Basic/Advanced
6	Obligation to Protect the Human Rights of Female Seafarers and Cadets (Safety and Health)	Standard
7	Preventing Physical Harassment	Standard
8	Prevention of Bullying and Verbal Abuse	Standard
9	Managing Stress and Preventing Suicide	Standard
10	Enhancing Gender Sensitivity	Standard
11	Coping Mechanisms for Victims (Reporting Procedures)	Basic/Advanced
12	Managing Human Rights and Providing Remedies on Board	Advanced

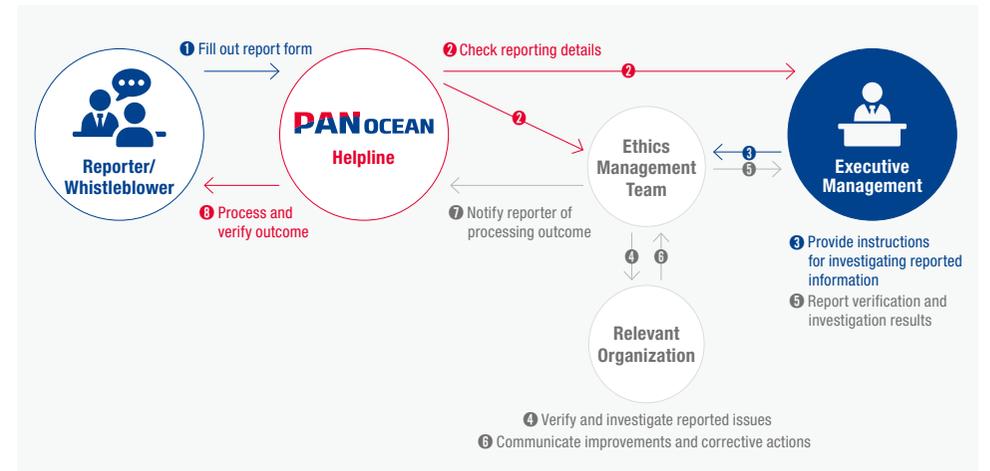
Human Rights Training Performance

Onshore	Average training time per employee	1.05 hours
	Training participation rate	100 %
Offshore	Average training time per employee	3 hours
	Training participation rate	100 %

Operation of Human Rights Reporting Channels



We operate a grievance handling system where employers and employees can share their conflicts or concerns and receive feedback. We also have an anonymous whistle-blowing system (Help Line) that is accessible to employees and third parties for filing reports. If an offshore employee experiences infringements of their legitimate rights, such as working condition violations, inadequate medical treatment or overdue wages, they can rely on the onboard grievance handling system (Open Reporting). At least one grievance/complaint handling officer elected by offshore employees as well as an onshore committee consisting of safety managers and offshore personnel officers are designated to address these grievances.



Performance of Human Rights Reporting Channels

Number of Reports Received Offshore: 5 / Number of Cases Resolved: 5
 All reports underwent separate investigations, and disciplinary actions were taken in accordance with company regulations through the Offshore Employee Personnel Committee.

Categories	Unit	2021	2022	2023
No. of Human Rights Reports	cases	5	6	5*
No. of Resolved Human Rights Cases**	cases (%)	5 (100)	6 (100)	5 (100)

* Five reports related to discrimination and harassment were received and resolved.
 ** Cases found not to pertain to human rights issues were excluded from the resolved count.

Human Resources Management

Pan Ocean prioritizes people as its core value and fosters innovative talent to create new value through unity with its employees. The company will help shape a better future through employee-centered personnel management and organizational development. To achieve this, we promote a healthy organizational culture founded on fairness and respect.

Talent Management System

Talent Recruitment

We develop an annual workforce plan and recruitment strategies to efficiently manage the hiring process and have established a detailed recruitment process to attract outstanding talents who align with our values. We promote our opportunities widely by leveraging various channels such as social media, YouTube, and recruitment platforms. In addition, to ensure fairness and transparency, practical interviews are conducted as blind evaluations. For offshore staff, we focus on converting contract-based senior officers to permanent positions with the aim of ensuring long-term operational stability and reliable business operations.



Performance Management and Evaluation System

Onshore Employee Performance Evaluation

In 2023, Pan Ocean worked with external consultants to conduct a comprehensive review of its employee evaluation system with the aim of establishing a fairer and more rational framework. The previous competency/multi-faceted evaluation was restructured into a growth review that assesses actual work methods and collaborative attitudes. The results of these assessments are provided to employees in the form of diagnostic reports, facilitating open communication about the results. The feedback period and grievance procedures remain to ensure ongoing dialog. In 2024, Pan Ocean further refined its performance evaluation by transitioning to a performance review. This new approach evaluates organizational contributions and individual impacts through the Quick Note/Quick Review mechanisms.

Offshore Employee Performance Evaluation

The performance evaluation for offshore employee is divided into one evaluation for masters and chief engineers, and another for other crew members. For masters and chief engineers, ship managers conduct competency evaluations (biannually) and performance evaluations (annually). These evaluations assess overall leadership and command abilities, and if any deficiencies are identified, additional training support is provided. For other crew members, evaluations are conducted by two senior officers and are divided into job performance and character assessments. These evaluations comprehensively assess job skills and adaptation to life at sea. The character assessment includes factors that impact overall conduct, such as work attitude, ethics, sobriety and diligence. Evaluation results are thoroughly explained to the employees, and necessary consultation procedures are followed.

Employee Performance Evaluation Process

Category		Details
Onshore Employees	Growth Review	Diagnosis · General Employees: Conduct peer evaluations and downward evaluations within the same organization and across different organizations · Team Leader : Conduct peer and downward evaluations, in addition to upward evaluations from team members to assess leadership competencies
		Evaluation · Absolute evaluation with grade determination based on and standardized criteria
	Performance Review	Process Management · Team Members : Regularly record individual work tasks and performance notes (Quick Note) · Team Leader : Review team members' performance notes and provide ongoing feedback (Quick Review); conduct mandatory mid-year 1:1 interview
		Evaluation · Self-review of work followed by absolute evaluation with grade determination based on standardized criteria
Offshore Employees	Master and Chief Engineer Evaluation · Competency Evaluation: Assess command and leadership abilities; provide additional training if leadership is deemed insufficient · Performance Evaluation : Evaluate job performance over a specified period to achieve company or individual goals	
	Evaluation of Other Crew Members · Job Performance: Evaluate the competencies required to perform assigned duties based on the crew position · Character Evaluation: Assess factors affecting overall conduct at sea, including work attitude, ethics, sobriety and diligence	

Human Resources Management

Cultivation of Core Talent

Maritime Talent Development

Provision of Recruitment and Employment Information

We embrace our responsibility and mission to cultivate maritime professionals. As part of this commitment, we participate in annual job fairs at Korea Maritime & Ocean University and Mokpo National Maritime University, where we conduct recruitment presentations. During these events, we provide essential corporate information such as key financial data, business areas, fleet status, details about the recruitment process for entry-level officers and our welfare benefits. These sessions are designed to share information and foster mutual understanding with potential candidates.

Recruitment of Industry-Academia Scholarship Students

In order to develop and secure excellent maritime officers at an early stage, we operate a scholarship program in cooperation with Korea Maritime & Ocean University and Mokpo National Maritime University. Each year, approximately 15 fourth-year students from these universities are selected and awarded scholarships and certificates, and we also select a significant number of graduates during the annual recruitment of entry-level officers. We provide extensive support for the education and skill development of recruits to help them advance to senior officer positions.

Industry-Academia Mentoring Programs

Pan Ocean provides senior students at maritime universities with valuable opportunities to engage in mentor-mentee relationships with alumni. The mentors, drawing on their practical experiences and expertise, offer guidance to the students regarding career paths and help them build a comprehensive understanding of the shipping industry. This initiative aims to foster industry-academia cooperation by creating platforms for knowledge sharing and professional development.

Cadetship Program

Pan Ocean annually commissions 40 third-year students, known as cadets, from Korea Maritime & Ocean University and Mokpo National Maritime University to participate in six-month onboard training programs. Our goal is to cultivate talented Korean offshore employees, whom we view as potential future Pan Ocean maritime personnel. We prioritize creating a supportive and safe learning environment for these cadets by providing them with exceptional education and training opportunities. Upon completion of their cadet training, the maritime university students undergo performance evaluations, and the collected data is utilized during the selection process for industry scholarships in the first semester of their fourth year and for new officer recruitment in the second semester. In addition, we maintain ongoing mentorship activities with our onshore staff to ensure continuous support and guidance.

Job Training

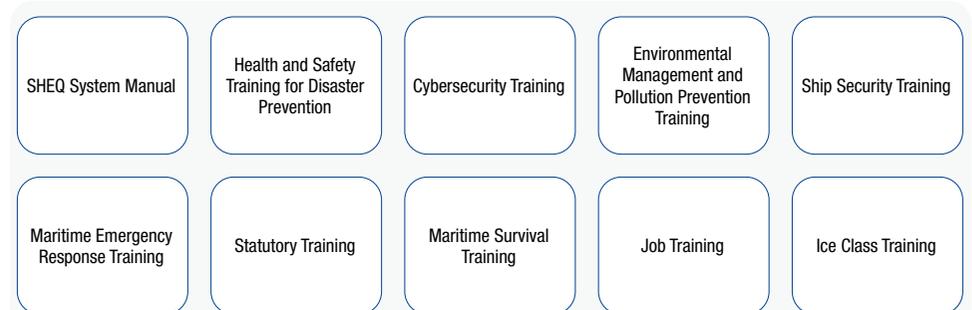
Offshore Employee Training

Pan Ocean provides a customized training system optimized to enhance the capabilities of its crew members. To ensure smooth onboard operations, we operate various mandatory training programs for those slated for promotion to master and chief engineer positions, new officer training, and training on the acquisition of new or second-hand vessels. In addition to job-specific training, we conduct safety-related training such as emergency response drills for maritime accidents, survival training, and health and disaster prevention training before and after embarkation. We are committed to improving the quality and efficiency of our training programs by adapting our training system to meet the needs of the field and the evolving internal and external environment.

Offshore Employee Training Courses



Onboard Education and Training for Maritime Staff

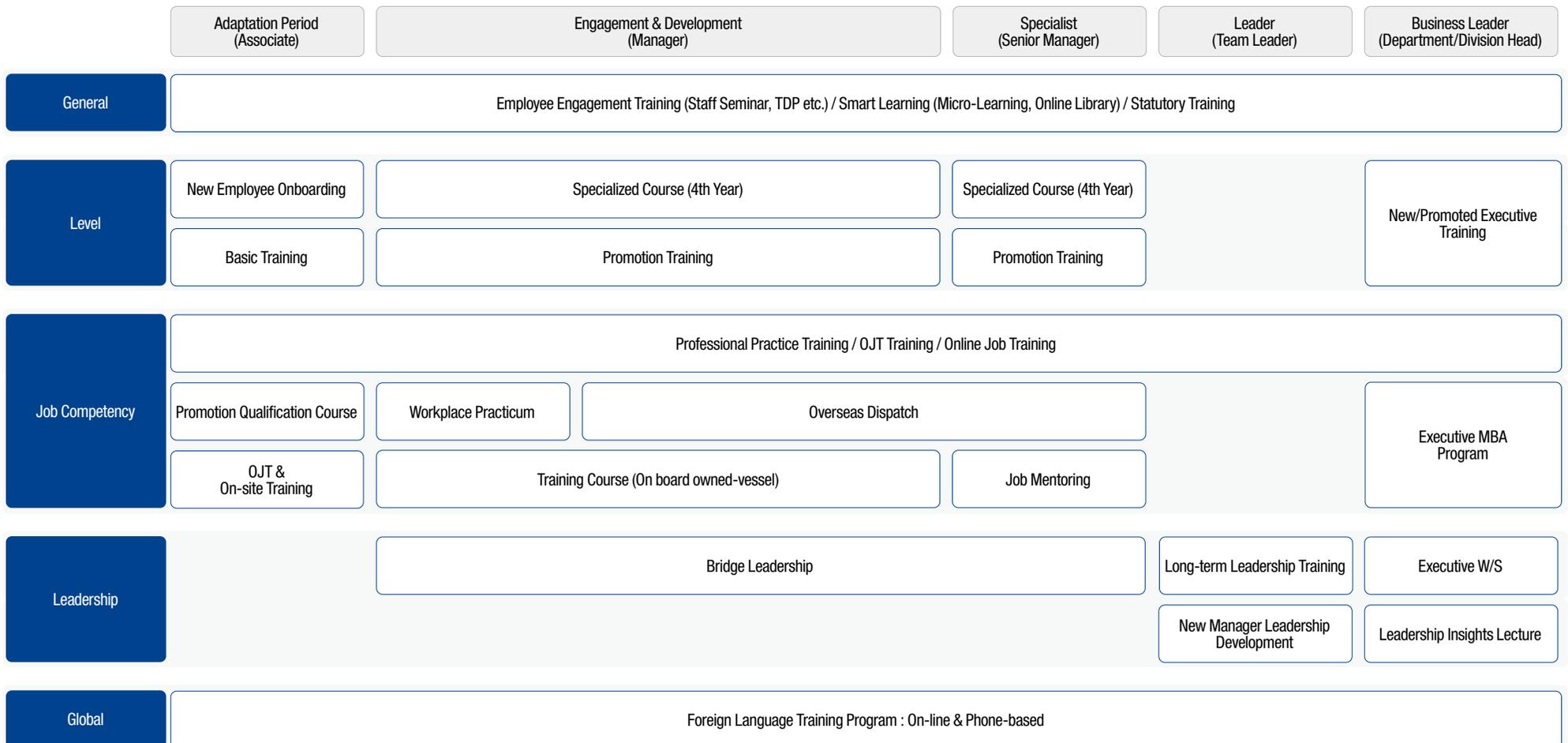


Human Resources Management

Onshore Employee Training

We restructured our training system, shifting from a rank and job-based approach to one that focuses on the employee life cycle and job-centered training. This change is aimed at enhancing the commitment and practical skills of employees by emphasizing their roles and responsibilities within the organization, rather than just their job titles. We also offer specialized and differentiated training tailored to the unique characteristics of the maritime industry. Onshore employees gain a deeper understanding of maritime operations and improve their communication skills through on-board training programs.

Onshore Employee Training System Diagram



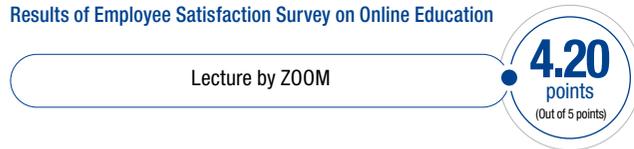
Human Resources Management

Online Training

Culture of Self-Directed Learning

To enhance accessibility and efficiency in education, Pan Ocean uses an online training platform to facilitate learning. The platform includes both e-learning and smart learning, which focus on longer and shorter content, respectively, to cultivate a culture of ongoing learning. The e-learning system, available to all employees, supports the development of job-specific skills and language proficiency and promotes personal growth. Smart learning helps employees quickly gain insights to adapt to changing trends. It provides concise microlearning content in various areas, including management, economics, industry trends, leadership, communication, humanities, and contemporary topics to encourage self-directed learning during commute times. In addition, we contribute to personal development and employee welfare by maintaining a digital library that provides access to e-books, audiobooks and academic papers.

Results of Employee Satisfaction Survey on Online Education



Seagull: Online Training Program for Offshore Employees

In 2021, we introduced Seagull, an online training program for offshore employees. This program makes e-learning accessible via the web and personal mobile devices, greatly enhancing accessibility. Besides workstations, we have also equipped vessels with CBT (computer-based training) materials. These CBT materials are used for fire extinguishing, evacuation drills and onboard safety training. We monitor course completion status and measure the effectiveness of the training through subject-specific tests. This approach ensures that the same high-quality training is provided to all seafarers, regardless of nationality, location or time, thereby increasing the efficiency of seafarer training.

Healthy Organizational Culture

Strengthening of Organizational Commitment

Employee Satisfaction Surveys

We conduct annual satisfaction surveys for both onshore and offshore employees. The results are analyzed to identify areas for improvement and incorporated into the following year's action plans. For onshore employees, we ensure independence by using an external agency for the survey. The survey covers detailed indicators in areas such as corporate vision, organizational efficiency and effectiveness, corporate culture and human resources management. We review the results by specific indicators to develop improvement measures, and each organization is tasked with implementing the action plans. In addition, in-house job satisfaction surveys are conducted twice a year. For offshore employees, we carry out internal satisfaction surveys targeting masters, chief engineers, officers and engineers. The survey items are broken down into various categories, including management, communication, training, operation management and safety and quality management, and these categories are further divided by position, nationality and fleet. This approach helps us identify the factors that most significantly impact the satisfaction of both Korean and international seafarers and derive areas for improvement.

Survey Results

Category	Unit	2021	2022	2023
Onshore Employee	points	4.16	4.02	3.95
Offshore Employee	points	68.7	70.2	71.8
POS SM	points	3.69	3.57	3.57

(Onshore/POS SM: out of 5 points, Offshore: out of 100 points)

Mindfulness Training for Seafarers

Considering the extended periods seafarers spend on board, Pan Ocean has implemented the Mindfulness Training program to support their mental well-being. This psychological training is conducted during pre-boarding consultation meetings and workshops with masters and focuses on teaching effective communication skills for managing stress and resolving conflicts among crew members. In a satisfaction survey conducted by the Korea Seafarer's Welfare & Employment Center, 120 out of 140 respondents indicated that they found the program helpful.

Key Contents of the Mindfulness Training Program

Category	Content and Objectives	
Stress Management	Wise Onboard Life	Managing onboard stress, improving adaptability to new environments, and establishing a professional mindset
	Wise Leadership Life	Understanding and applying suitable leadership to reduce onboard stress
Self-esteem Improvement	Happiness Investment	Understanding the concept and meaning of happiness, and providing methods to apply it in daily life

Motivating Employees

Pan Ocean rewards long-term employees (10, 20, and 30 years) with tokens of celebration and encouragement. We also recognize and reward outstanding employees and teams within the organization. Long-term employees receive extra benefits such as additional paid leave and long-term service allowances. When they retire after a certain period, we support them with retirement benefits and paid leave to ensure they get adequate rest. By recognizing retiring employees for their long-term commitment, we hope to enhance their satisfaction and appreciation.

Human Resources Management

Mentoring Program

Pan Ocean operates a mentoring program to support the early adaptation of new hires and newly recruited experienced professionals. Each month, we organize themed activities for mentors and mentees to engage in together. At the end of each mentoring cycle, we conduct anonymous satisfaction surveys. The feedback and suggestions gathered from these surveys are incorporated into the planning of the following year's program. In 2023, 11 new employees and recruits participated in the mentoring program. This program fosters communication between senior and junior staff, as well as peers, promoting a positive corporate culture.

Overview of the Mentoring Program

Category	New Hires	Experienced Professionals
Mentees	Recent graduates (new hires)	New recruits (experienced professionals)
Mentors	Manager - Senior manager	Senior manager - Team Leader
Duration	6 months	3 months
Type	Mentee/mentor 1:1 matching	Mentee/mentor 1:1 (or 2:2) matching
Orientation	Minimum 2 activities per month + @	
Monthly Program	1 st : Mentor/Mentee Ice-breaking 2 nd : Understanding my mentor's job and position 3 rd : Meeting with colleagues in other job positions 4 th : Reverse mentoring (Self Leadership) 5 th : haring hobbies and experiencing cultural activities 6 th : Group mentoring (Wrap-up)	1 st : Mentor/Mentee Ice-breaking 2 nd : Networking with colleagues in other job positions 3 rd : Group mentoring (Wrap-up)
Report	Monthly activity report by mentee/mentor (free format for mentees)	

* The above methods and programs are based on 2023 standards and are subject to change annually depending on external conditions.

Establishment of a Collaborative and Trust-Based Labor Relationship

Facilitation of Labor-Management Council Meetings

Pan Ocean strives to establish a mutually beneficial labor-management relationship based on mutual trust and cooperation with the aim of achieving shared goals. Since declaring labor-management harmony in 2013, we have made every effort to promote shared growth and maintain a harmonious working environment without labor disputes. In accordance with Article 12 of the Act on the Promotion of Employees' Participation and Cooperation, as well as Chapter 12 of the Pan Ocean Collective Agreement, we hold quarterly Labor-Management Council meetings to negotiate wages, discuss benefits and develop welfare programs.

Performance of the Labor-Management Council

Category	Onshore	Offshore
No. of Meetings	4	4
Participants (Employer/Employee)	Total 12 people	Total 4 people

* Excludes POS SM

Enhancement of Labor-Management Communication

For offshore employees, we regularly hold management briefings and rank-specific meetings to establish communication channels. We also actively operate training programs for experienced new officers, ratings and rank-specific promotions as communication channels. Even while they are on board, we ensure that the voices of offshore employees are heard through regular captain review reports, a suggestion system for improvements and a reporting system for non-conformance issues. We strive to gather employee feedback and enhance labor-management relations through these various communication channels.



Human Resources Management

Work and Life Balance

Pan Ocean is dedicated to enhancing the well-being and welfare of its employees to ensure that they can concentrate on work during business hours and enrich their personal lives outside of work. To boost morale and motivation, Pan Ocean promotes work engagement by offering flexible working hours, financial stability support, personal development opportunities and leisure activities. These diverse welfare programs are designed to help employees engage more in their work and pursue a better quality of life.

Benefits and Welfare Programs

Customized Working System 	Selective Working Hours	In cases where it is difficult to predict periods of high workload, and an increase in work hours is expected at certain times (such as time zone differences in sales or long-term projects), implement core and flexible work hours
	Flexible Working Hours	In cases where it is possible to predict periods of high workload (such as month-end close tasks or short-term projects), set daily work hours in advance to accommodate the increase or decrease in workload
	Flex Time Work	Employees can adjust their start and end times to avoid peak commuting hours or accommodate special job-related tasks
Living Stability Support 	Child Tuition Support	Support for the tuition and educational expenses of children (kindergarten to university)
	Housing Support	Loans for stable living and enhanced welfare
	Communication Fee Support	Monthly support for personal cell phone expenses
	Meal Support	Lunch and dinner expenses supported at various restaurants near the office (over 100 options)
Personal Development and Leisure Activities 	Recreational Facilities	Access to resort memberships and hotel discounts for employee vacations
	Club Activities	Funding for internal club activities to promote a healthy and enjoyable life (e.g., soccer, baseball, skiing, tennis, cycling, table tennis, concerts)
	Language Learning	Tuition fee support when registering classes at private language institutions for personal and professional growth
	Fitness	Partnerships with fitness centers to enhance employee fitness
Maritime Industry Benefits 	Family Boarding	Safe travel arrangements for family visits during long voyages
	Family Visits	Visits by family members to the ship during port calls will be allowed only upon application for boarding permission
	Recreation Allowances	Support vessel with individual and group recreational activities while onboard, such as purchasing books, music, and exercise equipment
Other Welfare Benefits 	Welfare Cards	Annual welfare amount (KRW 1~2.5 million) provided at the beginning of the year, to be used with the welfare card
	Health Examinations	Comprehensive health check-ups that include additional tests not covered in regular check-ups; coverage for the employee's immediate family
	Birthday Vouchers	Gift vouchers worth KRW 50,000 for employee birthdays
	Family Events	Support for weddings, funerals and other significant events, including monetary gifts and items

Human Resources Management

Work and Life Balance

Work-Family Balance Support System

Category	Policy	Key Details
Maternity 	Reduced Working Hours for Pregnant Employees	Female employees can reduce their working hours by up to two hours per day during the first 12 weeks or after the 36th week of pregnancy, upon request
	Pre- and Post-Maternity Leave	A minimum of 90 days of maternity leave is guaranteed (120 days for multiple births) At least 45 days of leave provided after childbirth (60 days for multiple births). The first 60 days of maternity leave, or 75 days for multiple births, are paid leave
	Miscarriage and Stillbirth Leave	Available with a medical certificate in accordance with labor laws for employees who have experienced a miscarriage or stillbirth
	Paternity Leave	10 days of paid leave (to be used within 90 days of childbirth)
	Infertility Treatment Leave	Up to 3 days of leave granted per year upon request (the first day is paid leave)
Childcare 	Parental Leave	When a pregnant employee wishes to protect her maternity, or when an employee with a child under 8 years old or in the second grade or below of elementary school wishes to take leave for childcare, up to one year of leave is permitted. This leave can be split into two separate periods (note that periods taken for maternity protection are not included). During this leave, the employee can apply for and receive parental leave benefits. If the full leave period is utilized and additional leave is needed for the same child, extra leave of up to one year is permitted, but this can only be taken once
	Reduced Working Hours for Childcare	Employees with children under the age of 8 or in the second grade or below can request reduced working hours for childcare (between 15 to 35 hours per week) for up to one year
	Women's Facilities	A dedicated rest area within the workplace for female employees
Employee Health 	Workplace Stress Management	Operation of a health promotion program (Home Fit) every Thursday Installation and operation of company lounges equipped with coffee machines, CERAGEM and massage chairs
	Support for Sports and Health Activities	Support for various activities, such as cycling, soccer, tennis, table tennis, skiing, baseball, etc.; company fitness center partnerships
Family Care 	Family Care Absence	Up to 90 days of family care absence per year (with a minimum period of 30 days if taken intermittently) Up to 10 days of family care leave can be taken in increments.

Human Resources Management

Support for a New Chapter: Life After Retirement

Rehiring of Retirees

Pan Ocean evaluates the health and work ability of retired seafarers in order to re-employ them as contract employees. For retirees between the ages of 60 and 70, we evaluate their readiness to return to duty, job performance, and health examination results to determine their re-employment and boarding status. From the age of 65, the health examination includes additional tests for cardiovascular disease to ensure a thorough assessment. In 2023, we rehired 148 retired seafarers. By supporting re-employment after retirement, we promote the employment of experienced and skilled elderly individuals and contribute to the creation of jobs for the older workforce.

2023 Reemployment Status of Retired Employee

(Unit: person)

Category	Personnel	
Captain	33	
Chief Engineer	45	
Ratings	Deck	30
	Steward	12
	Engine	28
Total	148	

Retirement Pension System

Pan Ocean operates a retirement pension system for all employees to help them prepare for life after retirement. The system is managed in a DC (defined contribution) format. We provide education about the pension product to participants and support them in leading a stable life after retirement through various means.

Net Defined Benefit Liabilities and Net Defined Benefit Assets

(Unit: KRW million as of December 31, 2023)

Category	2023	2022
Present Value of Defined Benefit Obligations	18,115	14,722
Fair Value of Plan Assets	(19,897)	(18,097)
Net Defined Benefit Assets on Balance Sheet	(1,782)	(3,375)



Interview with a Reemployed Retiree: Captain Kim In Jo (Age 63)



Having spent my entire career at sea and accumulated extensive experience, I had hoped to continue my seafaring career if my health conditions permitted. While it is common for people to retire from frontline work at the age of 60, Pan Ocean allowed me to extend my seafaring life through reemployment. I am grateful for the opportunity. Most of my friends have already retired, so they are envious that I am still working, and my family is proud of me. To make the most of this opportunity, I am always mindful of any decline in my work skills due to age and strive to work

harder than I did in my younger days. Living and working at sea presents significant challenges. I still remember the feeling of helplessness when it was difficult to provide quick assistance to crew members who fell ill or were injured during ocean voyages. Despite these challenges and the tough voyages, we were able to continue our journeys by working together as a team. The cooperation among the crew ensured that we successfully completed our voyages without any major incidents, which always gave me a great sense of accomplishment. The company's support has also allowed me to continue my seafaring career without much of a burden. Pan Ocean offers special benefits and welfare to retirees to help them successfully start their new chapter in life. For example, even when I am on leave, the company continues to support me with health monitoring. The company's health checkups are an invaluable benefit that provides a detailed insight into my health status. This is an excellent benefit for people returning to work in their later years. I am also grateful for the health assessments available for my immediate family members. In the future, I hope the company will provide additional support for retirement planning. I believe that dedicating time to workshops or meetings with Pan Ocean for lectures and programs related to retirement life will enhance the value of my seafaring career.

Shared Management

In today's business landscape, companies are increasingly expected to engage in strategic and impactful social contributions that create sustained value for key external stakeholders, especially local communities. As interest in corporate environmental and social responsibility grows, so do expectations for businesses to give back to their communities. Pan Ocean is dedicated to meeting its responsibilities by fostering positive, mutually beneficial relationships with local communities through collaborative management. Our goal is to create lasting positive impacts that benefit both our company and the communities we serve. By working together, we strive to ensure that our social responsibility initiatives generate real value and support the long-term well-being of local communities.

Blueprint for Social Contribution Initiatives

Social Contribution Strategy

To achieve its corporate vision of becoming a "global leading shipping & logistics company", Pan Ocean has embraced its mission of "enriching lives and spreading happiness" as its guiding principle for social responsibility. In line with this, we conduct a variety of strategic social contribution activities. In April 2023, we refined our social contribution strategy by assessing our current activities and benchmarking them against other companies. This process led us to identify community co-prosperity as our top priority for 2023. Accordingly, Pan Ocean has detailed specific action items to enhance its social responsibility activities and community contributions. We have chosen volunteer activities and charitable donations as key initiatives and have set concrete goals for each program.

Community Co-Prosperity Activities: Achievements and Future Goals

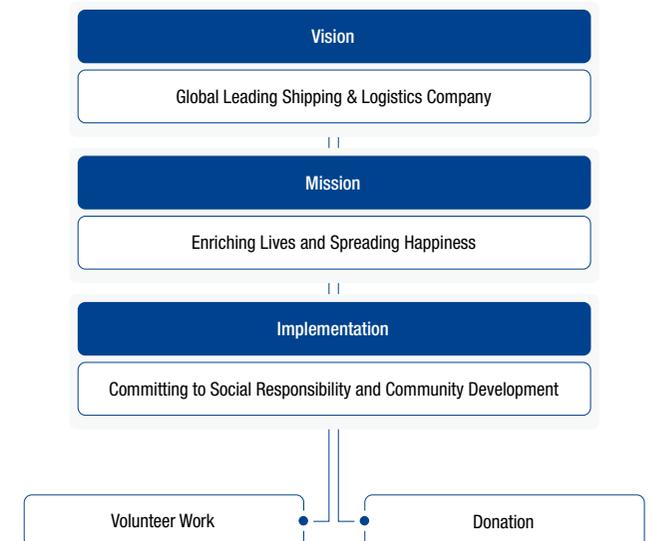
Program	Details	2023 Performance	Social Value*	2024 Goal	2025 Goal
Eco-Clean Volunteer Corps	Eco-clean volunteer activities	24 times	KRW 257,456,400	24 times	24 times
	Employee participation	2 times	KRW 2,102,744	3 times	4 times or more
Seoul National Cemetery	Floral tributes and environmental cleanup activities	2 times	KRW 3,905,096	2 times	2 times or more
Seoul Senior Welfare Center	Meal support activities	2 times	KRW 7,209,408	2 times	2 times or more
	Special food ingredient donations	2 times	KRW 12,892,000	2 times	2 times
Social Contribution Mileage System	Annual volunteer hours per person	1 hour	KRW 901,176	2 hours	2 hours or more
	Cumulative annual mileage-based donations		KRW 2.19 million	KRW 10 million	KRW 10 million or more
Industry-Academia Scholarships	Selection of students from Korea Maritime & Ocean University/ Mokpo National Maritime University	14 students	KRW 49,000,000	20 students	20 students
Maritime Security Agency Donations	Donations to navy/coast guard		KRW 4.94 million	Under review	Under review

* For volunteer activities, social value is calculated by multiplying the average hourly wage of employees by the total volunteer hours for each activity.

Promotion of Social Contribution Activities among Employees

To encourage voluntary participation in social contribution activities, Pan Ocean has implemented a social contribution mileage program. Employees are rewarded with mileage points for engaging in social contribution activities such as blood donations, monetary donations, environmental cleanup activities and talent donations. Points can be redeemed for monetary or in-kind incentives based on the accumulated mileage. The objective of this program is to encourage active involvement from all employees in making a positive social impact.

Social Contribution Strategy



Shared Management

Social Contribution Story

Eco-Clean Volunteer Corps

Pan Ocean collaborates with KD Tech, a workplace for individuals with disabilities, to operate the Eco-Clean Volunteer Corps. This group conducts bi-monthly activities such as cleaning parks, tourist sites, and subways, sharing meals with the underprivileged, and tidying the homes of elderly people living alone. Our employees actively participate in these initiatives alongside people with disabilities as we strive to create an inclusive society. In 2023, Pan Ocean expanded its efforts to include cleaning the Anyangcheon walking trails and parks, maintaining recycling bins in Yeongdeungpo District, and preserving cultural heritage by maintaining the interior of Hamnyeongjeon Hall in Deoksugung Palace. These efforts reflect Pan Ocean's ongoing dedication to community well-being.



Environmental Cleanup Activities by the Eco-Clean Volunteer Corps

Pan Ocean Day of Practicing Filial Piety

Pan Ocean employees volunteer at the Senior Welfare Center of Seoul, providing meal service and dishwashing assistance. During key times such as Chobok, Chuseok, and Senior Citizens' Day, the company also donates special meals to ensure elderly individuals receive nutritious food. In 2023, during Chobok and Chuseok, 60 Pan Ocean employees visited the Seoul Senior Welfare Center and served 2,000 special meals prepared by the company. Pan Ocean remains committed to supporting local communities through ongoing volunteer and donation activities.



Filial Piety Volunteer Activities on Chuseok

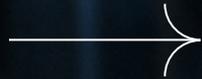
Floral Tribute at the Seoul National Cemetery

Pan Ocean honors the patriotism of soldiers and national heroes through a partnership with the Seoul National Cemetery. The company regularly conducts floral tributes and cleanup activities at the cemetery. In 2023, on Memorial Day and Armed Forces Day, approximately 60 employees participated in a tribute at the Memorial Tower, followed by cleaning and floral tributes at the company's adopted gravesites. Pan Ocean's regular maintenance and cleanup visits are aimed at instilling a sense of social responsibility and patriotism in employees.



Volunteer Activities at Gravesites in Preparation for Armed Forces Day

Chapter. 5



GOVERNANCE



069 / Transparent Governance Structure

075 / Ethics and Compliance Management

081 / Integrated Risk Management

085 / Information Security



Transparent Governance Structure

Pan Ocean operates its board of directors with a commitment to accountability, and emphasizes the principles of responsible governance. In our pursuit of establishing a sound governance framework, we prioritize enhancing the board's independence, expertise and diversity, which are essential for fostering sustainable governance required by a socially responsible corporate entity. To this end, we meticulously select independent directors with verified independence and expertise and conduct a range of comprehensive education initiatives for the board. Furthermore, we strive to uphold shareholder rights and enhance corporate value by fostering a deep understanding of our various stakeholders, including shareholders and customers. We remain steadfast in our dedication to realizing responsible management and are continually striving to uphold a healthy governance system that safeguards stakeholder interests and fuels corporate growth.

Board of Directors

Governance Principles



Our objective is to establish a governance structure that reflects the principles of ethical management and mutual growth. In order to further enhance our governance practices, we enacted a Corporate Governance Charter in February 2022. This charter, designed to ensure the utmost independence, defines the independence of the board of directors and establishes principles for board operations. We strive to maintain diversity and expertise in the governance structure by ensuring that board members do not represent specific common backgrounds or interests. In addition, we publish an annual corporate governance report to enhance transparency and safeguard shareholder rights.

Director Appointments

All directors at Pan Ocean are appointed through a resolution at the general meeting of shareholders, with independent directors selected from candidates recommended by the Independent Director Recommendation Committee. Candidates recommended by the Independent Director Recommendation Committee undergo deliberation by the board of directors to be finalized as candidates, who are then presented individually to the general meeting of shareholders for appointment as directors. We do not impose restrictions based on gender, nationality, age, etc., especially in terms of conflicts of interest or independence disqualifications for independent director candidates. Independent directors may not hold concurrent positions as directors, executive officers or auditors in two or more other companies.

Board Composition

To ensure transparency in management and effective oversight of the board, Pan Ocean has a total of seven directors (three inside directors and four independent directors). In particular, to maintain the independence of the board, we structure it so that the number of independent directors exceeds the majority of the total number of directors, as required by Article 542-8, Paragraph 1 of the Commercial Act. Currently, 57% of board members are independent directors.

Board Composition Status

(As of June 30, 2024)

Category	Name	Gender	Initial Appointment Date	Tenure	Professional Profiles	Expertise
Inside Director	Kim Hong Kuk	Male	July 18, 2015	July 18, 2015 – Mar. 28, 2025	Current) CEO of Harim Co., Ltd. / Graduate School of Business Administration, Jeonbuk National University	Business Management
Inside Director	Ahn Joong Ho	Male	Mar. 30, 2020	Mar. 30, 2020 – Mar. 29, 2026	Current) CEO, President of Pan Ocean., Ltd. / Global MBA, Korea University	Shipping/Business Management
Inside Director	Cheon Se Gi	Male	July 18, 2015	July 18, 2015 – Mar. 28, 2025	Current) Head of the Management Support Team, Harim Holdings Co., Ltd. / Department of Commerce and Trade, WonKwang University	Finance/Law
Independent Director	Jeong Hak Soo	Male	Mar. 30, 2021	Mar. 30, 2021 – Mar. 29, 2027	Current) President of the East-Asia Agricultural Association / Master of Agricultural Economics, Texas A&M University	Agriculture/Grain
Independent Director	Oh Kwang Soo	Male	Mar. 27, 2019	Mar. 27, 2019 – Mar. 28, 2025	Current) Managing Partner at DR&AJU LLC. / Doctor of Law, Sungkyunkwan University Law School	Law
Independent Director	Koo Ja Eun	Female	Mar. 29, 2023	Mar. 29, 2023 – Mar. 29, 2026	Current) Associate Professor in the Department of Business Administration, University of Suwon / Ph.D. in Taxation, University of Seoul	Accounting/Taxation
Independent Director	Kim Young Mo	Male	June 16, 2023	June 16, 2023 – June 16, 2026	Former) CEO, President of KDB Capital / MBA, Pennsylvania State University	Finance



Transparent Governance Structure

Committees within the Board



Pan Ocean's board committees include the Independent Director Recommendation Committee, the Audit Committee, the Internal Transactions Committee, the Remuneration Committee, and the ESG Committee. Each committee maintains independence in accordance with domestic commercial law and internal board regulations and meets the required ratio of independent directors. Furthermore, each committee comprises experts in its respective fields to ensure specialized division of tasks and processes. These committees, established to enhance the expertise and efficiency of board operations, disclose attendance rates and voting results on agenda items through the company's business reports.

Independent Director Recommendation Committee

To ensure fairness and transparency in the independent director nomination process, Pan Ocean operates the Independent Director Recommendation Committee. This committee, composed entirely of independent directors, is responsible for recommending candidates for independent director positions at the annual general meeting of shareholders. In accordance with Article 542-6, Paragraph 2 of the Commercial Act, should a candidate be duly nominated through the shareholder proposal right, the committee is mandated to include that candidate in the list of recommended independent director nominees.

Internal Transactions Committee

The Internal Transactions Committee undertakes the prior review of significant related party transactions in accordance with the laws governing monopolies and fair trade. It also deliberates and decides on transactions requiring approval from the board of directors, as mandated by Article 542-9, Paragraph 3 of the Commercial Act. Moreover, it enhances external controls by shareholders and other stakeholders to augment oversight efficiency over unfair support practices. The committee comprises one inside director and four independent directors to ensure fairness and transparency in its proceedings.

ESG Committee

In 2022, Pan Ocean established the ESG Committee, which serves as a substantive control tower in ESG management and is responsible for deliberating and deciding on ESG policies, plans and key activities. The ESG Committee actively engages in various initiatives aimed at improving Pan Ocean's sustainable management practices, including efforts to enhance transparency within the board of directors, expand shareholder communication, and address ethical issues related to employees.

Audit Committee

The Audit Committee was instituted for the purpose of ensuring independence in the audit process. Comprised of four independent directors, including the Audit Committee chair, the committee ensures the integrity of independent decision-making within its specialized domain. It incorporates two experts in accounting or finance, and is tasked with verifying the legality of the directors' and management's activities, overseeing the soundness and validity of corporate financial activities, and ensuring the accuracy of financial reporting. Furthermore, it examines matters pertaining to the selection, alteration and dismissal of external auditors, as well as other issues stipulated by laws, the company's articles of incorporation and the operating regulations of the Audit Committee.

Remuneration Committee

The Remuneration Committee supports the impartiality and transparency of the process for determining the compensation of registered directors. In addition, it fulfills the role of deliberating and deciding on matters related to the compensation limit and compensation structure for registered directors. Comprising solely independent directors, the committee ensures fairness and transparency in remuneration.

Committee Status

Category	Composition							No. of Meetings	No. of Agendas
	Kim Hong Kuk Inside Director	Ahn Joong Ho Inside Director	Cheon Se Gi Inside Director	Jeong Hak Soo Independent Director	Oh Kwang Soo Independent Director	Kim Young Mo Independent Director	Koo Ja Eun Independent Director		
Independent Director Recommendation Committee	-	-	-	Member	Chairperson	Member	Member	2	2
Audit Committee	-	-	-	Member	Member	Member	Chairperson	4	18
Internal Transactions Committee	-	Member	-	Chairperson	Member	Member	Member	4	4
Remuneration Committee	-	-	-	Member	Chairperson	Member	Member	1	3
ESG Committee	-	-	-	Chairperson	Member	Member	Member	2	5

Transparent Governance Structure

Board Independence

Pan Ocean strictly adheres to the legal standards for the independence of its independent directors as required by the South Korean Commercial Act. According to the Commercial Act, individuals serving as directors, executive officers or auditors in Pan Ocean are prohibited from concurrently holding positions in two or more other companies. We have regulations governing the operation of the Independent Director Recommendation Committee to ensure compliance with the independence criteria outlined in the Corporate Governance Charter. In addition, the Independent Director Recommendation Committee, primarily composed of independent directors, recommends candidates who meet the standards and qualifications stipulated by relevant laws and regulations, ensuring they possess both expertise and independence. We are committed to strengthening the functions of the Audit Committee to foster a transparent and equitable corporate governance framework.

Board Expertise

Our board of directors comprises professionals proficient in key business-related laws, finance, accounting and maritime transportation. They diligently execute decision-making and managerial oversight functions to enhance the company's competitiveness. As of March 2024, the board consisted of seven members, including independent directors with specialized knowledge of Pan Ocean's grain distribution business segment. In particular, Directors Kim Hong Guk and Ahn Joong Ho, along with Independent Director Jeong Hak Soo, possess extensive experience in related industries according to the GICS industry classification system. Their profound insights are expected to contribute to Pan Ocean's sustainable growth.



Board Diversity

We are dedicated to practicing sustainable management and increasing diversity among board members to incorporate perspectives from various stakeholders, including shareholders and customers. The composition of the board is not restricted by gender, nationality or age, as stipulated in the Corporate Governance Charter and the policies on board independence and diversity. In 2023, Ms. Koo Ja Eun was appointed as a female independent director, further exemplifying this commitment. Ms. Koo Ja Eun is a financial expert with qualifications as a certified public accountant. She possesses extensive experience gained from her tenure at Samil PwC and the Korea Institute of Taxation. Her expertise in accounting and finance have contributed significantly to enhancing Pan Ocean's financial stability.

Board Training

The company conducts various educational programs to enhance the expertise of independent directors and foster knowledge in risk management. In 2023, education sessions were held covering topics such as understanding ESG and key accounting issues. In addition, regular site visits and seminars are arranged for newly appointed independent directors to provide detailed insights into the company's operations and to elevate the board's understanding.

Independent Director Training in 2023

Date	Training Content
Mar. 20, 2023	Orientation for newly appointed independent directors (Koo Ja Eun, Kim Tae Hwan)
June 13, 2023	Orientation for newly appointed independent directors (Kim Young Mo)
Aug. 10, 2023	Internal control over financial reporting, key accounting issues, understanding ESG, role of the Audit Committee (Jeong Hak Soo, Oh Kwang Soo, Kim Young Mo, Koo Ja Eun)



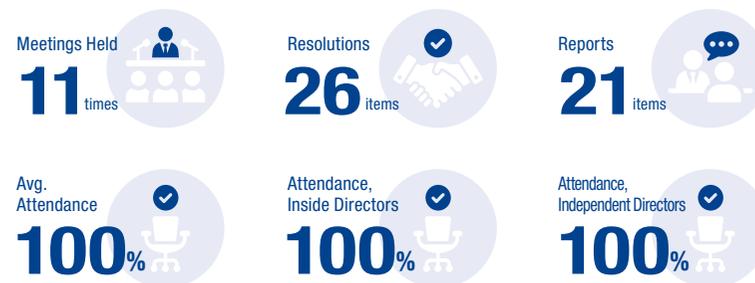
Transparent Governance Structure

Board Operations

In accordance with Article 6 of Pan Ocean's Board Operation Standards, regular board meetings are held at least once every quarter, with additional meetings convened as necessary for urgent matters. The chairperson calls the board meetings; however, if necessary, any director may request the chairperson to convene a meeting. In 2023, a total of 11 board meetings were convened, during which 47 items were deliberated. The attendance rate for both inside and independent directors, as well as the overall board attendance rate, was 100%. Board resolutions are passed with the approval of a majority of the directors present. The minutes of the meetings transparently disclose the attendees, the resolution outcomes, the opinions for and against each item, and the identities of those who voiced their opinions.

[Board Operating Regulations Link](#)

Board Operations in 2023



Board Attendance Rate in 2023

Key Agenda Items for the Board of Directors 2023

Meetings	Date	Agenda	Status	Approval Rate	Attendance Rate
		Approval of the 2023 Business Plan	Approved	100%	100%
		Approval of the Date, Venue and Agenda for the 57th Annual General Meeting of Shareholders	Approved	100%	100%
		Approval of the 2022 Financial Statement	Approved	100%	100%
		Approval of the Cash Dividend	Approved	100%	100%
		Approval of the 57th Business Report	Approved	100%	100%
		Approval of Director and Audit Committee Member Appointments	Approved	100%	100%
		Approval of the 2023 Director Compensation Limits	Approved	100%	100%
1	Feb. 10	Approval of the CEO Performance Evaluation and Management Incentive Criteria for 2023	Approved	100%	100%
		Approval of the Executive Compensation Determination for 2023	Approved	100%	100%
		Approval of the Capital Increase for the Singapore Subsidiary	Approved	100%	100%
		Establishment of AP (Anti-corruption Program) Regulations and Appointment of AP Administrator	Approved	100%	100%
		Report on Audit Committee Resolutions	Reported	-	100%
		Report on the Operating Status of the 2022 Internal Accounting Control System	Reported	-	100%
		Compliance Control Standard Validity Assessment	Reported	-	100%
		Self-compliance Program Operation and Audit Results	Reported	-	100%
		Appointment of the CEO and Chairperson of the Board	Approved	100%	100%
2	Mar. 29	Appointment of Board Committee Members	Approved	100%	100%
		Approval of Q2 2023 Intercompany Transactions	Approved	100%	100%
		Approval for Convening an Extraordinary General Meeting of Shareholders	Approved	100%	100%
		Appointment of Directors and Audit Committee Members	Approved	100%	100%
		Report on Audit Committee Resolutions	Reported	-	100%
3	May, 9	Report on the Q1 2023 Financial Statements	Reported	-	100%
		Report on Shipbuilding Contract Execution	Reported	-	100%
		Report on Used Vessel Acquisition	Reported	-	100%
		Vessel Sale Report	Reported	-	100%

Meetings	Date	Agenda	Status	Approval Rate	Attendance Rate
		Appointment of Board Committee Members	Approved	100%	100%
		Approval for a Joint Cost Increase in the Group Internal Accounting Control System Service	Approved	100%	100%
		Approval of Q3 2023 Intercompany Transactions	Approved	100%	100%
4	June, 16	Report on ESG Committee Resolutions	Reported	-	100%
		Report on the Corruption Risk Map Development for the Corruption Prevention Program (AP)	Reported	-	100%
		Report on the H1 2023 Activity of the Risk Management Committee	Reported	-	100%
		Vessel Sale Report	Reported	-	100%
		Report on the H1 2023 Financial Statements	Reported	-	100%
5	Aug. 9	Report on ESG Committee Resolutions	Reported	-	100%
		Report on the Signing of a Shipbuilding Contract	Reported	-	100%
6	Aug. 16	Report on Other Significant Business Operations	Reported	-	100%
7	Sept. 20	Approval of Q4 2023 Intercompany Transactions	Approved	100%	100%
		Vessel Sale Report	Reported	-	100%
		Approval of Long-term Contract Bidding	Approved	100%	100%
8	Oct. 16	Financing Approval for Four 174,000 CBM LNG Carriers	Approved	100%	100%
		Shares Disposal Approval	Approved	100%	100%
		Approval of an Increase in the Intercompany Transaction Limit for 2023	Approved	100%	100%
9	Nov. 9	Report on the Q3 2023 Financial Statements	Reported	-	100%
		Vessel Sale Report	Reported	-	100%
10	Nov. 20	Approval of Participation in Bidding for the Acquisition of Shares in Other Entities	Approved	100%	100%
11	Dec. 21	Approval of 2024 Intercompany Transactions	Approved	100%	100%
		Report on the H2 2023 Activities of the Risk Management Committee	Reported	-	100%



Transparent Governance Structure

Board Evaluation

Pan Ocean conducts evaluations of independent directors during their reappointment process, assessing factors such as meeting attendance, contributions and independence. Based on these evaluations, the Independent Director Recommendation Committee and the board of directors determine whether reappointment is appropriate. Future policies regarding the fairness and specific evaluation methods for assessing independent director activities will be thoroughly discussed and decided upon by the board of directors.

Board Compensation Disbursement

The company fairly compensates inside and independent directors based on internal criteria considering factors such as job role, rank, tenure, expertise and contribution to the company. Performance bonuses are also determined based on executive performance incentive criteria, with consideration of financial performance metrics such as revenue and operating profit as well as comprehensive consideration of ESG (environmental, social, and governance) KPIs (key performance indicators) related to areas such as the environment, health and safety, risk management and fair trade. Director compensation for both inside and independent directors is managed within established limits, taking into account factors such as job responsibilities and industry standards, and the total amount of director compensation is subject to shareholder approval and transparently disclosed in the annual report. The total compensation limit for 2023 is KRW 5 billion.

Compensation History

(As of 2023, Unit: KRW million)

Category	Total Compensation	Avg. Amount per Person	Avg. Amount per Person
CEO	2,474	1,237	2
Inside Directors	200	200	1
Independent Directors	171	45	4
Employees	120,800	106	1,161

* Ratio of the CEO's pay to the average employee's pay: 12

** Excluding foreign crews

Shareholder

Shareholder Composition

Pan Ocean ensures the protection of basic shareholder rights in accordance with the Commercial Act and related regulations and stipulates matters related to shareholder rights in internal regulations such as the Corporate Governance Charter to facilitate the smooth exercise of rights. The company strives to promote long-term shareholder value enhancement by consistently managing issues related to fair information disclosure, support for voting participation, and dividend rights for all shareholders.

Shareholder Meeting Notice

Pan Ocean complies with the Commercial Act by publicly announcing the details of its annual general meeting of shareholders four weeks in advance. These details include the date, time, location, agenda and specifics of director appointments, which are shared through both online and offline channels. We also make efforts to schedule shareholder meetings on days when meetings are not concentrated to enhance shareholder participation.

Shareholder Status

Shareholder Name	No. of Shares	% of Shares
HARIM Holdings Co., Ltd.	292,533,115	54.7
National Pension Service	35,795,331	6.7
Individuals and others	206,241,066	38.6
Total No. of Issued Shares	534,569,512	100.0

* No golden shares held by government agencies.

Executive Shareholding Status

Category	No. of Shares Held	Valuation Amount (KRW)	Share Amount/Base Salary (%)
Kim Hong Kuk (Inside Director)	-	-	-
Ahn Joong Ho (Inside Director)	8,120	30,328,200	9.0

* Based on the closing price (Common shares: 3,735 won) as of December 28, 2023

Agenda for the 2023 Annual General Meeting

The 57 th Annual General Meeting of Shareholders for the Fiscal Year 2023		Status
Agenda 1	Approval of the 57 th Financial Statements (Including the Appropriation of Retained Earnings)	Approved as proposed
Agenda 2	Appointment of Directors (1 Inside Director, 2 Independent Directors)	Approved as proposed
· Agenda 2-1	Appointment of Inside Director Ahn Joong Ho	Approved as proposed
· Agenda 2-2	Appointment of Independent Director Koo Jae Eun	Approved as proposed
· Agenda 2-3	Appointment of Independent Director Kim Tae Hwan	Approved as proposed
Agenda 3	Appointment of Audit Committee Members (2 Members)	Approved as proposed
· Agenda 3-1	Appointment of Audit Committee Member Koo Jae Eun	Approved as proposed
· Agenda 3-2	Appointment of Audit Committee Member Kim Tae Hwan	Approved as proposed
Agenda 4	Approval of Director Compensation Limit	Approved as proposed



Transparent Governance Structure

Protection of Shareholder Rights

Encouragement of Shareholder Participation

We actively encourage shareholder engagement and provide various channels for shareholders to exercise their rights. Since the 2019 general meeting of shareholders, we have implemented an electronic voting system and introduced an electronic proxy voting system to enhance shareholder participation in voting. Furthermore, we notify shareholders of the general meeting and relevant agenda items four weeks in advance to ensure they receive ample information about the meeting date, location and proposed matters well in advance.

Status of Support for Minority Shareholders and Systems for the Active of Exercise Shareholder Rights

Category	Details	Introduction Status
Cumulative Voting	Equal voting rights per share provided when electing two or more directors	X
Written Voting System	Enables shareholders to exercise voting rights through written means when absent	X
Proxy Voting Encouragement System	Regulations promoting procedures and methods for proxy voting, ensuring accurate provision of necessary information and disclosure of related documents	0
Shareholder Proposal Right	Shareholders' right to directly propose agenda items at the general meeting	0

Establishment of the Dividend Policy and Guidelines

Pan Ocean has established a dividend policy and publicly disclosed its three-year dividend guidelines. Any decisions or revisions concerning the shareholder return policy, including dividends, will be promptly communicated through timely public disclosures to provide shareholders with detailed information. We are also committed to raising shareholder awareness of our initiatives aimed at enhancing shareholder interests, including the shareholder return policy. Pan Ocean is dedicated to maximizing shareholder returns to the best of its abilities.

Dividend Policy and Guidelines

Category	Details
Dividend Policy	Pan Ocean will distribute cash dividends to shareholders by allocating financial results in a prudent and equitable manner to ensure the availability of investment resources while preserving the integrity of its financial structure.
Dividend Guidelines (2024–2026)	Pan Ocean will maintain a range of 15% to 25% of the current net profit (excluding one-time non-operating income) based on K-IFRS Separate Financial Statements.
Regular Review of the Dividend Policy and Guidelines	In order to maintain and enhance shareholder value, Pan Ocean will conduct a review of its dividend policy and guidelines every three years.

Shareholder Returns for the Past 5 years

Year	Type	Dividend	Cash Dividend			Dividend Payout Ratio	
			Dividend per Share	Total Dividend (KRW 100 million)	Dividend Yield	Consolidated	Individual
2023	Common stock	-	KRW 85	454.3	2.2%	18.5%	19.0%
	Preferred stock	-	-	-	-		
2022	Common stock	-	KRW 150	801.8	2.5%	11.8%	11.9%
	Preferred stock	-	-	-	-		
2021	Common stock	-	KRW 100	534.5	1.8%	9.7%	10.2%
	Preferred stock	-	-	-	-		
2020	Common stock	-	KRW 50	267.3	1.1%	29.5%	29.4%
	Preferred stock	-	-	-	-		
2019	Common stock	-	-	-	-	-	-
	Preferred stock	-	-	-	-		

Ethics and Compliance Management

Pan Ocean endeavors to fulfill its economic and legal responsibilities to various stakeholders, including customers, shareholders, suppliers, and the local community, by promoting ethics and compliance management and adhering to fair trade practices. To mitigate potential corruption risks, we have operated an internal AP (anti-corruption program) including ethics education and reporting channels. These initiatives ensure that all employees comply with ethical management regulations and self-assess their adherence to such regulations. We are committed to conducting business in a lawful and ethical manner to fulfill our social responsibility and cultivate a transparent and ethical organizational culture.

Ethics and Compliance Governance

Role of the BOD

The board of directors at Pan Ocean is the highest decision-making body within the company. It is responsible for deliberating and deciding on critical matters of business operation, including ethics and compliance issues. The board conducts independent and objective assessments of ethical and compliance matters, such as fair trade and compliance, and considers these issues in making significant decisions that impact management strategy. The Ethics Management Office provides the board with regular reports on related activities and performance, enabling them to monitor the status of ethics and compliance risk management. Key deliberations approved by the board in 2023 include the establishment of operating rules for the AP (anti-corruption program), the appointment of an AP manager, the reporting on the creation of a corruption risk map related to the AP, assessment for self-inspection for compliance with laws and regulations.

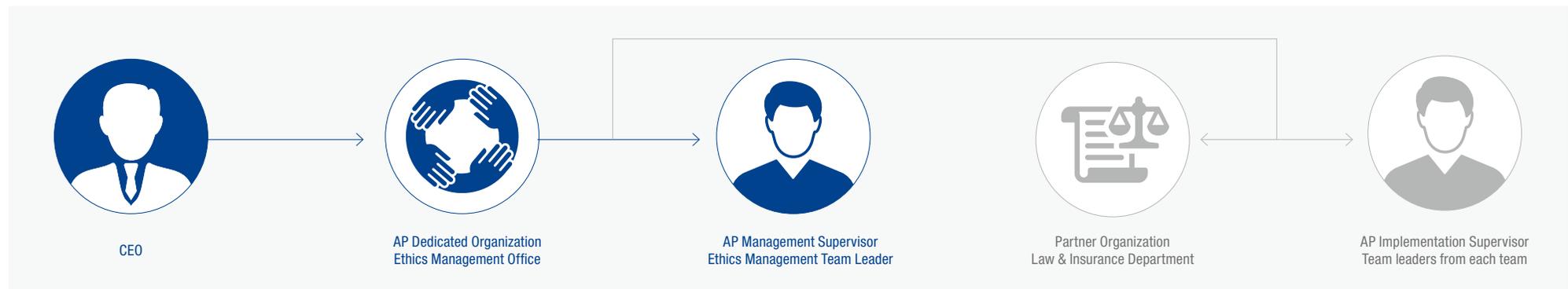
Role of Management

Under the guidance of the director of ethics management, the management team establishes priorities and implementation plans for company-wide ethics and compliance management and ensures active implementation. The board of directors is presented with issues that are expected to significantly impact the company's mid- to long-term business competitiveness, and reviews reports of major outcomes and activities. In addition, annual improvement tasks for ethics and compliance are set as KPIs (key performance indicators) and performance is managed accordingly. In 2023, the development of the corruption risk map was set as a KPI (key performance indicator) to link it with monetary reward systems such as incentives and salaries.

Role of the Dedicated Organization

Pan Ocean and its subsidiary POS SM have established dedicated teams, each overseen by the respective CEO. These dedicated teams are responsible for developing and implementing ethical management policies and activities. The ethical management activities primarily include compliance-related education, diagnosis and auditing, and anonymous reporting management. With the implementation of a company-wide monitoring system, we aim to achieve our vision of ethical management and promote a transparent management environment. In addition, the Ethics Management Office regularly evaluates performance and the improvement of ESG management social rating scores is linked to its KPIs.

Anti-Corruption Program Organizational Chart



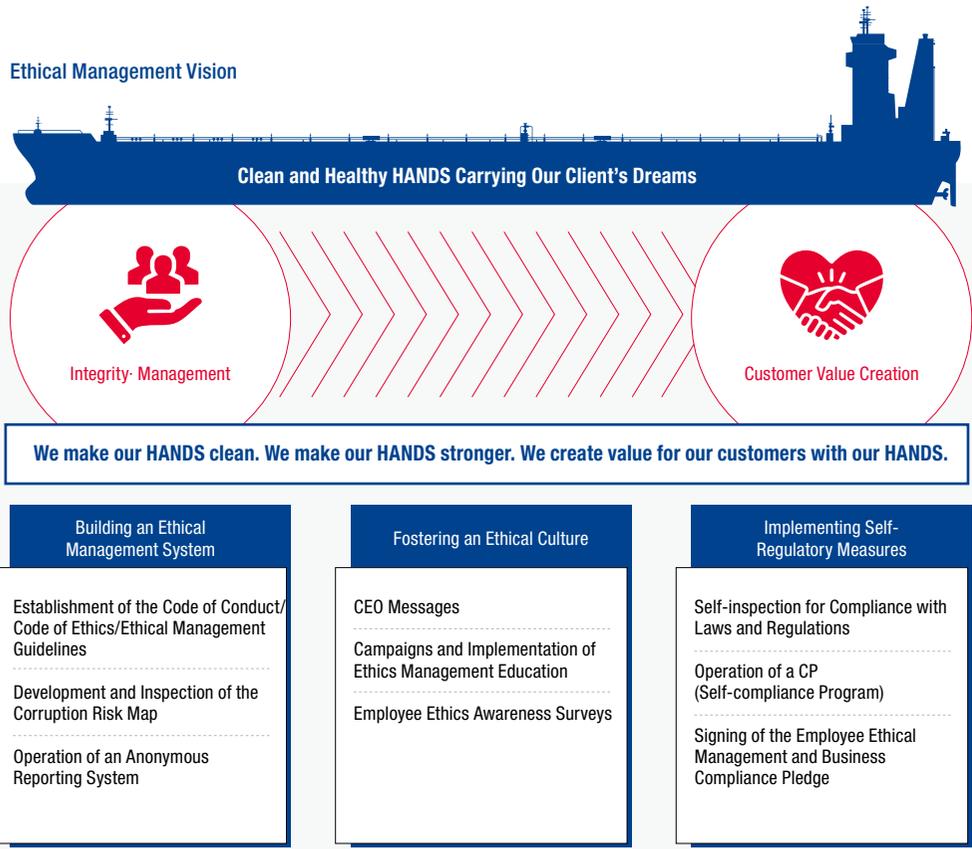
Ethics and Compliance Management

Ethics and Compliance Management Strategy

Ethical Management Framework

Pan Ocean is dedicated to fostering trust with stakeholders through the implementation of ethical management practices. We maintain a zero-tolerance approach to ethical management, and in the event of any breaches of the Ethical Management Guidelines, we take prompt and strict action in accordance with company regulations. Furthermore, ethical violations such as bribery, solicitation and internal transactions are integral factors in our employee performance evaluations. In addition, in alignment with our anti-corruption management policy, all forms of direct or indirect political donations are strictly prohibited.

Ethical Management Vision



Development of Core Ethical Values

[Code of Conduct/ Code of Ethics/ Ethical Management Guidelines Link](#)

Pan Ocean has established several foundational documents, including the Code of Conduct, the Code of Ethics, and the Ethical Management Guidelines, to cultivate an ethical culture within the organization. The Code of Conduct represents the highest standards and guiding principles for ethical management at Pan Ocean, reflecting the company's unwavering commitment to realizing its corporate vision. It lays the groundwork for ethical conduct across the organization. The Code of Ethics provides a comprehensive guide to the principles outlined in the Code of Conduct, offering practical guidance for employees on how to internalize and embody these values in their daily work. Furthermore, the Ethical Management Guidelines have been developed to assist employees in navigating ethical dilemmas that may arise in their professional activities. These principles are not only shared with our team members but also publicly disclosed on our website, demonstrating our dedication to ethical management to external stakeholders.

Pan Ocean's Code of Conduct

- 1. Ethics Regarding Customers**
 - We prioritize customer satisfaction as the foremost value in management and strive to provide the best service.
- 2. Ethics Regarding Shareholders and Investors**
 - We secure trust from shareholders and investors through transparent and responsible management.
- 3. Ethics Regarding Supplier**
 - We foster mutual growth and development through transparent and fair business practices with our suppliers.
- 4. Ethics Regarding Competitors**
 - We adhere to fair trade practices both domestically and internationally by following fair trade regulations in the industry and market.
- 5. Ethics Regarding Employees**
 - We respect individuals as human beings and provide fair opportunities based on abilities and qualifications to instill pride and a sense of fulfillment.
- 6. Ethics Regarding the Nation and Society**
 - We respect proper societal values, comply with all national and societal regulations, and our fulfill social responsibilities and obligations.

Ethics and Compliance Management

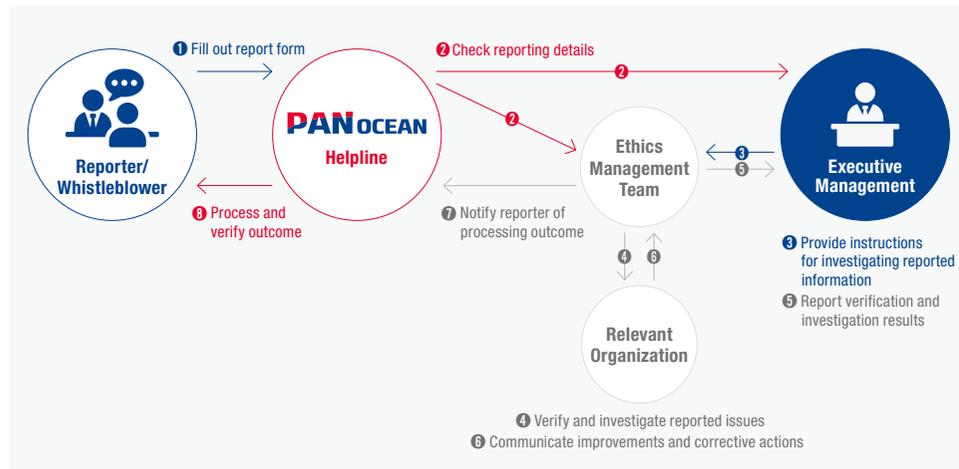
Self-inspection for Compliance with Laws and Regulations

In accordance with the Commercial Act, Pan Ocean annually reviews and updates checklist items to facilitate team-based self-compliance surveys aimed at mitigating various legal risks associated with business operations. The adequacy of the survey results is confirmed by compliance officers. These officers, selected based on legal qualifications, conduct checks to ensure adherence to compliance control standards and monitor compliance among management and employees, as well as the legality of company activities. They also engage in various compliance support activities. The findings of compliance officers are reported to the board of directors, the highest decision-making body, and are transparently disclosed in the business report.

Voluntary Compliance Checks Status

Category	Unit	2021	2022	2023
Check Targets	Target Teams	53	56	55
	Check Items	143	153	154
Check Results	Compliance Implementation Results	100	100	100

Anonymous Report Handling Process



Operation of the Reporting and Inquiry System

We have established an anonymous reporting system (Help Line) that enables all stakeholders to freely express their opinions on ethics- and compliance-related issues. Through the helpline, individuals can report and inquiry actions that contravene fundamental ethical values, such as unfair job performance, unjust gains and behaviors detrimental to a sound corporate culture. Our system is easily accessible via our website and ensures strict protection of the reporter's anonymity by being operated through an external third-party service provider.

Status of Helpline Reports and Actions Taken

(Period: Jan. 1, 2023 – Dec. 31, 2023)

	Category	No. of Cases
Types of Ethical Violations	Total	8
	Reports of Corruption	1
	Complaints (Dissatisfaction, Grievance)	4
	Unfair Trade Practices/Embezzlement	-
Actions Taken	Other Unethical Behaviors	3
	Total	6
	Severe Disciplinary Actions	4
	Minor Disciplinary Actions	2

* Including those from POS SM

Ethics and Compliance Management

Ethical Management and Legal Compliance Initiatives

Ethical Awareness Campaigns for Employees

Pan Ocean conducts annual internal campaigns to promote ethical management practices. These campaigns include activities such as year-end ethical management practices, refusing gifts during national holidays, all aimed at instilling ethical awareness among employees. Since 2022, the company has also conducted online video training sessions, utilizing content from the Anti-Corruption and Civil Rights Commission's Integrity Training Institute, at least three times a year. These sessions focus on the prevention of corruption and other unethical behaviors and target all employees across the organization to foster a positive understanding of ethical and compliance values. In addition, Pan Ocean sends out bi-weekly corruption prevention guidance emails to enhance employee understanding of anti-corruption issues and promote the stable implementation of the ongoing anti-corruption program. POS SM, our major subsidiary, also actively implements equivalent ethical management education to continually enhance employee compliance awareness efforts.

Record of Ethics and Compliance Training at Pan Ocean

Category	Unit	2021	2022	2023
No. of Trainees	persons	-	382	386
Training Hours	hours	-	312	302
Completion Rate	%	-	100	100

Record of Ethics and Compliance Training at POS SM

Category	Unit	2021	2022	2023
No. of Trainees	persons	136	141	151
Training Hours	hours	1,185	523	1,575
Completion Rate	%	100	100	100

Implementation of Pan Ocean Ethical Management Campaigns

Category	Unit	2021	2022	2023
Ethical Practices at Year-end and New Year	cases	1	1	1
Refusing Gifts on New Year	cases	1	1	1
Refusing Gifts on Chuseok	cases	1	1	1



Dissemination of a Compliance Culture

All employees of Pan Ocean pledge to Employee Ethics Management and Business Compliance. This commitment is aimed at disseminating a corporate culture that prioritizes ethical and legally compliant business practices in order to foster a sense of responsibility among all members for achieving responsible management. Pan Ocean actively conducts initiatives to foster a shared understanding of ethical values and cultivate a culture of legal compliance in its workforce. POS SM produces various materials such as ethical management practice guidelines, posters, webtoons and Q&A documents as part of its ongoing Ethical Awareness Campaign. These materials are disseminated online and prominently displayed within our workplace.

Signing of the Ethical Management and Legal Compliance Pledge

Category	Unit	2021	2022	2023
Target Employees	persons	931	1,032	1,057
Employees Who Signed	hours	927	1,029	1,051
Signing Rate	%	99.6	99.7	99.4

* Includes POS SM



Ethical Awareness Campaign Posters

Ethics and Compliance Management

Ethical and Legal Risk Management

Corruption Risk Management

AP (Anti-corruption Program)

Pan Ocean recognizes the value of maintaining ethical and transparent business practices to enhance corporate sustainability. Consequently, the company has taken proactive measures to implement its AP (anti-corruption program) with the objective of mitigating corruption risks. Regular anti-corruption risk assessments are conducted to identify potential vulnerabilities and formulate corresponding proactive prevention strategies and immediate response protocols. The goal is to establish a system capable of preventing and swiftly addressing corruption issues. In accordance with the guidelines set forth in the Anti-Corruption Compliance Program (K-CP) by the Anti-Corruption and Civil Rights Commission, and the ISO 37001 (anti-bribery management system) Guidebook, we have developed a proprietary corruption risk map. This map is in place across all business operations and provided to all personnel. In 2023, we identified 48 items across five types of corruption risks and confirmed that risk management measures are in place. We intend to continually refine these measures beyond 2024. Furthermore, as part of our ongoing assessment of the effectiveness of our corruption risk management procedures, we conducted a survey of employees. The results of the survey indicated that 92% of respondents expressed positive views of our ethical management policies, and 81% viewed our current corruption risk management practices favorably. For the three risks identified as having a high likelihood of occurrence (discrimination, harassment, and data breaches), we have planned targeted training and regular inspections as a means of addressing them.

Corruption Risk Map

Risk Type	No. of Potential Corruption Risks	No. of Risk Management Actions
Personal Gain Risk	16	16
Risk of Misconduct in Relationships with Suppliers	11	11
Risk of Embezzlement	6	6
Risk of Undermining Organizational Culture	8	8
Risk of Performance Evaluation Distortion	7	7
Total	48 cases	48 cases

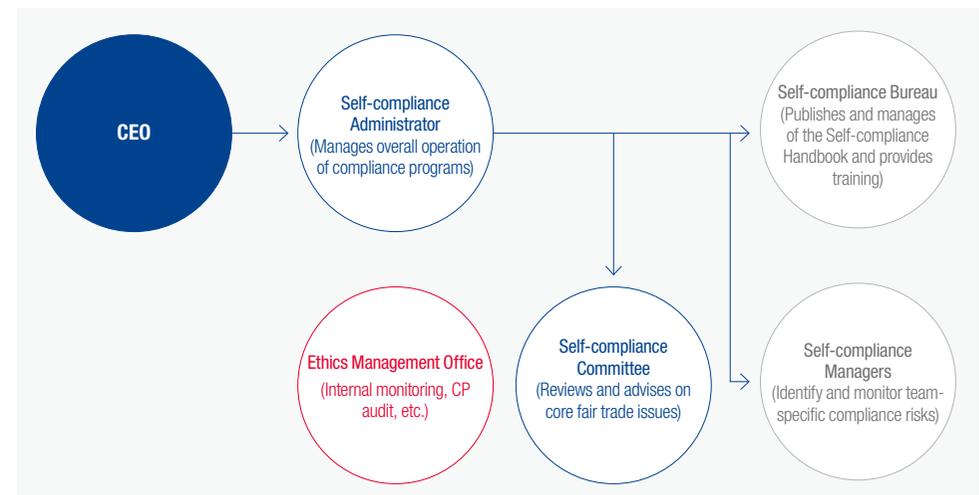
* Assessment and mitigation measures implemented for a total of 48 corruption risks across 5 categories

Fair Trade Risk Management

CP (Self-compliance Program)

We operate a self-compliance program to cultivate a culture of transparent and equitable transactions, and have set it as an internal control standard. This initiative provides employees with guidelines and standards to adhere to during their duties, thereby fostering independent compliance with fair trade regulations and creating an environment conducive to preventing financial and non-financial risks. The self-compliance administrator is responsible for taking proactive measures to prevent any violations of relevant regulations. In addition, we have distributed the Self-compliance Program Handbook to all employees to integrate the practice of self-compliance into the organization. We will ensure that the manual is consistently updated to reflect changes in laws and new decisions/rulings. Furthermore, we intend to implement a series of ongoing programs to enhance employee understanding of self-compliance, including regular refresher training conducted by self-compliance managers. The performance and plans of our self-compliance program are regularly reported to the board of directors through periodic self-compliance checks. This ensures comprehensive risk management, including pre-transaction risk assessments for new transactions.

Compliance Department Organizational Chart



Ethics and Compliance Management

Ethical and Legal Indicators and Goals

Initiatives	2023		Mid- to Long-Term Objectives	
	Performance	Plan	2025	2030
 <p>Enhancement of the Ethical Management System</p>	Development of the Corruption Risk Map: Identified 48 Corruption Risk Items	Enhancement of the Corruption Risk Map	Development of Corruption Risk Maps for Subsidiaries/Affiliates	ISO 37001 (Anti-Bribery Management System) Certification
 <p>Operating of an Anonymous Reporting System (Helpline)</p>	Action Rate 100 %	Action Rate 100 %	Action Rate 100 %	Action Rate 100 %
 <p>Increase the Signing Rate of the Compliance Pledge</p>	99.4 %	100 %	100 %	100 %
 <p>Strengthening of Self Inspection for Compliance with Laws and Regulations</p>	100 % Compliance with Inspections	100 % Compliance with Inspections	100 % Compliance with Inspections	100 % Compliance with Inspections

Integrated Risk Management

Pan Ocean is dedicated to proactively addressing potential risk factors through the comprehensive management of financial and non-financial risks to ensure operational stability. The board of directors oversees the management of such risks, which are directly linked to critical operational matters, and conducts impact assessments to analyze and diversify risks. Moving forward, we will strengthen our risk management procedures through comprehensive risk assessments and continuous risk management to prevent and promptly respond to both internal and external risks arising from the rapidly changing business environment.

Corporate Risk Management System

Risk Management Strategy

Pan Ocean is committed to anticipating market fluctuations and meticulously evaluating financial and non-financial risks in order to minimize any negative impacts. The Risk Management Committee is responsible for formulating and managing response measures to mitigate risks. It reports its activities to the board of directors semi-annually. The company categorizes its risk management areas into six main categories: account risks, financial risks, legal risks, cyber security risks and other risks. These categories are regularly reviewed to ensure that the company is adequately addressing its risks. For risks with significant impact levels, we implement and utilize advanced response processes.

Risk Management System

Risk Type	Management Activities
Market Risk	<ul style="list-style-type: none"> Conduct open tonnage position assessments and management Monitor and address fluctuations in oil prices Ensure compliance with regulations governing forward freight agreements and fuel oil hedge deals
Account Risk	<ul style="list-style-type: none"> Enhance data- and system-driven account risk management Mitigate account risks through organized account rating management and information sharing
Financial Risk	<ul style="list-style-type: none"> Regularly monitor global economic and financial market trends Effectively monitor and address receivables
Marine/Environmental Risk	<ul style="list-style-type: none"> Continuously monitor developments surrounding IMO environmental regulations and develop/implement appropriate countermeasures in response
Legal Risk	<ul style="list-style-type: none"> Share legal trends/key contractual issues and enhance the response system
Cyber Security Risk	<ul style="list-style-type: none"> Monitor cybersecurity risks and review the internal response system accordingly

Risk Management Process

Pan Ocean has expanded the scope of risk management to ensure sustainable management, and is following recommendations to enhance the board's responsibility for risk management. We have clarified the scope of risk management to include non-financial aspects, and are categorizing risks by type, designating management departments to perform risk management, and improving the risk management system by establishing corporate-wide risk management visions and objectives.



Integrated Risk Management

Risk Management Organization

Pan Ocean operates the Risk Management Committee to address various risks inherent in its business operations at the organizational level. The committee is composed of the chairperson, representatives from each department, and a secretary. Depending on the issue, the heads of relevant specialized organizations, such as division heads, department heads and team leaders, may also attend. Quarterly meetings are scheduled, with flexibility for ad-hoc sessions as needed. The committee assesses and evaluates risks across the company's operations and formulates proactive crisis response measures by developing key response strategies and specific action plans in response to identified risks.

Company-wide Risk Management Responsibility

Pan Ocean's comprehensive risk management system operates under the principle that all stakeholders, from employees to the board of directors and including key management personnel such as the CRO (Chief Risk Officer) and department heads, participate in risk management to proactively address risks across various domains. Company-wide risks are deliberated on under the supervision of the CRO within the Risk Management Committee, and risk activities identified by each business unit are communicated to the CEO through established risk reporting channels.

Supervision of Company-wide Risk Management

Effective company-wide risk management is overseen through the Risk Management Committee, ensuring clear identification of risks in each area, such as operations and management, and systematic monitoring of the execution status of response measures.

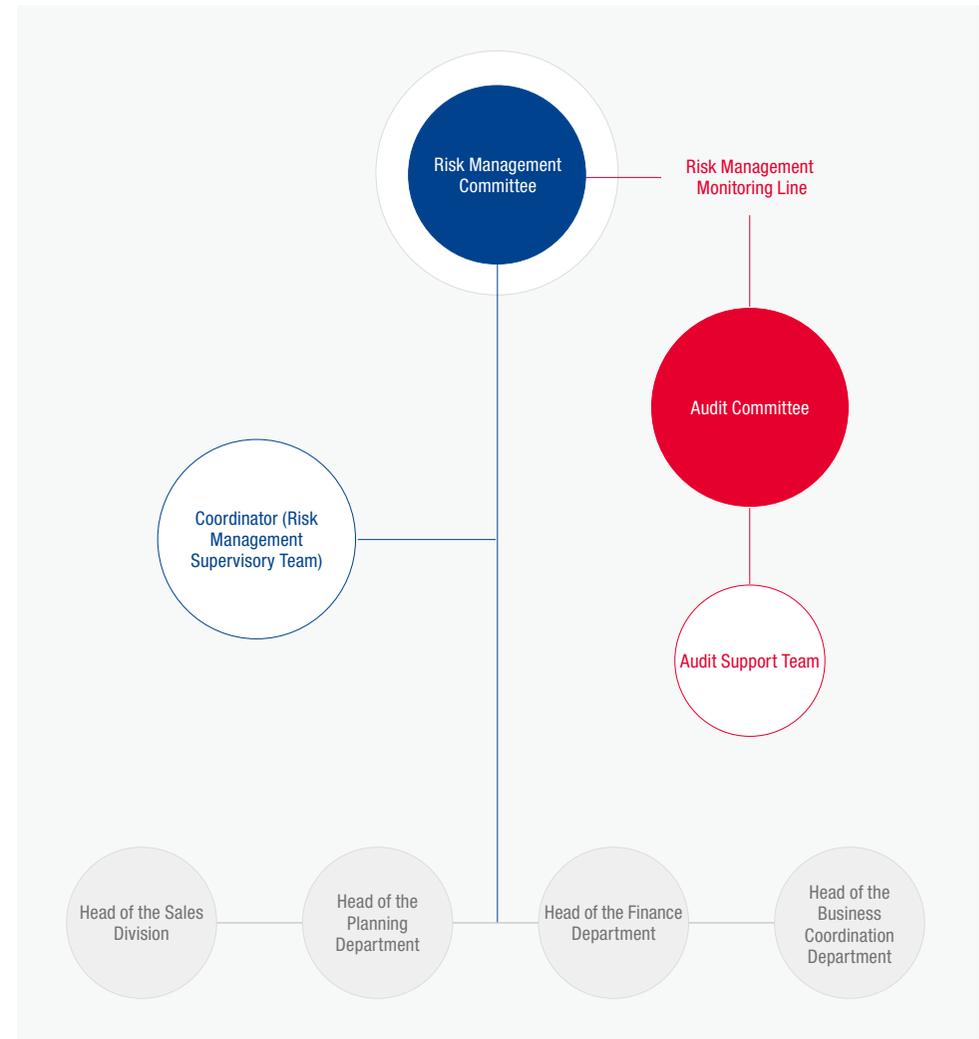
Organizational Risk Management

In addition to enterprise-wide efforts, Pan Ocean operates a segmented risk management system for each organizational unit. Identified risks undergo examination and assessment through regular risk review meetings, with a focus on proactive responses and reporting. For issues that directly impact overall business operations, the Risk Management Committee takes proactive measures.

Risk Management Monitoring Activities

Pan Ocean evaluates the efficacy of Risk Management Committee activities through monitoring conducted by the Audit Committee. Independent verification procedures have been established to ensure that risk management and compliance processes operate effectively and align with the company's overarching management strategy. In addition, members of the Audit Committee undergo education to enhance their expertise in ESG risk management, underscoring the company's commitment to environmental, social, and governance considerations.

Enterprise Risk Management Governance Structure





Integrated Risk Management

Risk Management by Type

Account Risk

Pan Ocean regularly reviews and evaluates its counterparties to monitor risks. When a critical risk is identified, immediate action is taken, such as downgrading a credit rating or terminating a transaction.

Account Credit Rating Assessment

New accounts and existing accounts with no transactions in the previous 12 months undergo credit assessments based on internal credit rating criteria. Prior to contracting, these accounts are assigned credit ratings, which serve as the basis for establishing credit limits for each account.

Category	Unit	2021	2022	2023
Accounts	No. of Companies	489	481	452

Account Credit Rating Adjustment

For accounts with transaction records in the past 12 months, regular semi-annual credit rating assessments are conducted. The process begins with an initial evaluation, followed by assessments by relevant teams and divisions, and concludes with a comprehensive assessment to determine the final credit ratings.

Category	Unit	2021	2022	2023	
Accounts	First Half	No. of Companies	940	957	976
	Second Half		907	972	897

Non-Financial Risks

Procurement Risk

We are exposed to price fluctuations in fuel oil purchase transactions due to changes in market conditions. To mitigate the impact of these fluctuations on cash flow and the fair value adjustment of related contracts for purchasing fuel oil for our operational vessels, we enter into fuel swaps/options contracts. To effectively hedge against this risk, we align bunker swap contracts with fuel oil purchase contracts.

(As of December 31, 2023, based on the Annual Report, unit: KRW million)

Category	Asset/Liability Valuation	Valuation	
Asset	Fuel swaps/options	471	477
Liability	Fuel swaps/options	916	-928

On/Offshore Risk

We encounter a diverse range of intricate risks that pose potential threats to stable business operation. In response, we have established a risk management system aimed at preventing these risks from causing disruptions and ensuring prompt recovery. To this end, POS SM has obtained ISO 22301 (business continuity management certification) certification, signifying its commitment to effective business continuity practices. The company addresses both onshore and offshore risks by leveraging its BCMS (business continuity management system) as a framework for managing and mitigating potential disruptions.

Scope of BCMS Application

Category	Coverage
Onshore	Vessel management for safe cargo transport, employee management services and personnel
Offshore	Safe vessel operations, cargo transport activities and personnel

Financial Risks

Foreign Exchange Risk

Pan Ocean primarily operates in USD (United States dollar). The following table illustrates the sensitivity (impact on net assets) of each foreign currency to a 10% fluctuation in the Korean won exchange rate. This 10% sensitivity is internally applied by senior management when reporting foreign exchange risks, as it represents a reasonable fluctuation risk in the eyes of management. The company minimizes foreign exchange exposure by aligning deposit and payment currencies in trade transactions such as exports and imports, as well as in financial transactions such as deposits and borrowings.

(As of December 31, 2023, based on the Annual Report, unit: KRW million)

Category	10% increase	10% decrease
KRW/USD	-42,435	51,866

Interest Rate Risk

As most of its borrowings are at variable interest rates, Pan Ocean is exposed to interest rate risk from changes in the benchmark interest rate of the US dollar. The impact on pre-tax profit or loss of a 0.5% change in the benchmark interest rate on floating rate borrowings is shown in the table below. We are seeking to minimize the uncertainty and net interest expense caused by interest rate fluctuations by implementing measures such as minimizing external borrowings by expanding internal fund sharing, maintaining an appropriate ratio of fixed to variable rate borrowings, monitoring domestic and international interest rate trends on a weekly/monthly basis, and establishing response strategies to mitigate the risks associated with interest rate fluctuations.

(As of December 31, 2023, based on the Annual Report, unit: KRW million)

Category	0.5%P increase	0.5%P decrease
Base rate	-9,862	9,862

Integrated Risk Management

Tax Risk Management

Tax Strategy

We regard tax risk management as a prerequisite for proactive sustainable management, and we understand its critical role in securing customer benefits, maximizing shareholder value and contributing to national finances through compliance with tax laws. In decision-making processes related to business transactions, mergers and acquisitions, corporate restructuring, international trade and new business ventures, tax risks are thoroughly reviewed based on analyses by the Tax Department and external experts.

Compliance with Overseas Tax Obligations

Pan Ocean diligently fulfills its obligations as a taxpayer. The company respects the principle of fair taxation by tax authorities and strives to comply with the tax regulations and principles established by local tax authorities in the jurisdictions in which it operates.

Potential Risk Management

Category	Details	Impact	Response
IMO (International Maritime Organization) Environmental Regulation Risk 	The IMO (International Maritime Organization) has adopted the 2023 Greenhouse Gas Reduction Strategy, which strengthens environmental regulations. According to this strategy, the shipping industry is required to achieve net-zero greenhouse gas emissions by 2050, with a minimum reduction of 20% by 2030 and 70% by 2040. In addition, regulations on the EEXI (Energy Efficiency Existing Ship Index) and CII (carbon intensity indicator) for existing ships are being enforced. Failure to transition to eco-friendly vessels may make survival in the market difficult.	The expected increase in ship scrapping and the slowdown due to strengthened IMO environmental regulations suggest a significant impact on the shipping industry. Reduced vessel speeds could lead to reduced competitiveness, resulting in various losses, including financial and reputational losses. In addition, the increased scrapping of non-compliant vessels, such as older vessels, may result in financial burdens associated with ordering environmentally friendly vessels. Pan Ocean's core business, bulk carriers, is expected to be more vulnerable to the tightened IMO regulations as it involves numerous long-term shipping contracts, making it difficult to replace vessels in a short period of time.	Pan Ocean is mitigating the risk of IMO environmental regulations by expanding its LNG shipping operations to diversify its portfolio. The introduction of environmentally friendly, highly efficient LNG bunkering vessels equipped with dual-fuel engines that can run on both ship fuel and LNG will increase safety and fuel efficiency while reducing emissions of harmful gases such as NOx and SOx. In addition, a total of five companies, including Pan Ocean and POS SM, have signed a joint research agreement for the verification of fuel and greenhouse gas reductions through autonomous navigation. This will verify the fuel-saving effects of autonomous navigation systems on actual vessels through cooperation among domestic shipbuilders, autonomous navigation specialist companies, shipping companies and classification societies.
Cybersecurity Risk 	Cybersecurity risk is one of the potential risks identified in the WEF(World Economic Forum)'s Global Risks Report. Due to technological advancements, the market for criminal networks is expanding, and cyber organizational crimes such as hacking and phishing are expected to increase due to their relatively low risk and cost. Cybercrime not only breaches cybersecurity, but also damages corporate reputation and increases risks associated with financial flows and supply chain regulations.	Pan Ocean prioritizes the security of its vessels and onboard personnel, which are its core value. Vessel navigation equipment is vulnerable to external cyber-attacks, which poses a threat to vessel safety. In addition, if the navigation system is crippled by a cyber attack, delays in transportation schedules could damage customer trust, resulting in economic losses. With the expansion of IT systems in navigation systems, the extent of damage from cyber-attacks is expected to increase, highlighting the need for proactive responses to cyber-attacks.	Pan Ocean is improving its information security level based on a stable information protection organization centered on the IT system manager. In addition to technical security measures such as firewall construction, we have also implemented administrative security measures such as security policy monitoring. We also provide information security education and have improved our targeted security education programs. We are actively responding to cybersecurity risks on board by installing firewalls on all ships, including cybersecurity plans in each ship's administrative manuals, and including the ship's information security personnel. In addition, to strengthen security incident response capabilities, we conduct regular security incident response training and document security incident response processes through POS SM.

Information Security

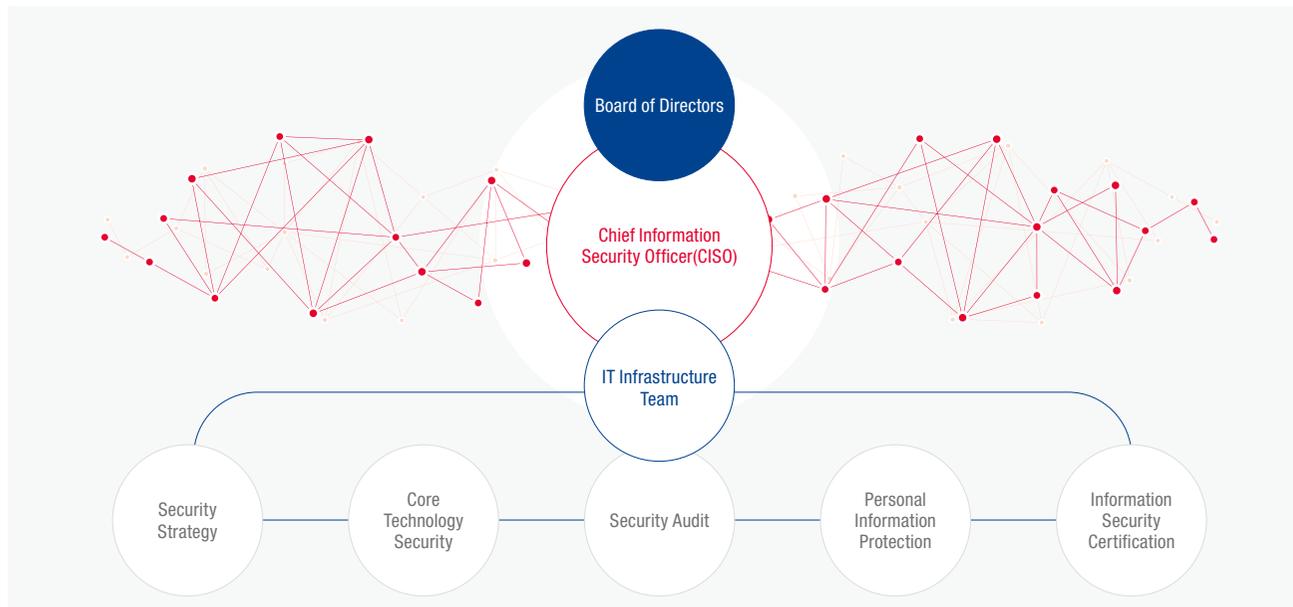
Pan Ocean has implemented safeguarding measures for its core technologies, personnel and information assets. These measures are designed to ensure compliance with relevant regulations. By conducting regular inspections and implementing continuous improvement activities, we aim to prevent, manage and minimize security risks such as information leakage and breaches.

Information Security Management System

Information Security Organization

Pan Ocean maintains a secure operational framework by having the information systems manager also serve as the chief information security officer and chief privacy officer. This arrangement enhances our capacity to protect information and manage personal data effectively. Our dedicated IT Infrastructure Team actively addresses both internal and external security threats through activities such as managing security policies, ensuring network security, implementing endpoint security measures and safeguarding personal data. We operate various awareness programs across the company to enhance information security awareness. Recently, we've proactively implemented a range of information security solutions and utilized maintenance services from specialized companies to establish a robust security framework. In addition, we've established medium- to long-term objectives related to information security, personal data protection, and trade secrets, supported by detailed implementation plans.

Information Security Management Organization



Construction of Information Security Infrastructure

Technical Security

Pan Ocean employs a variety of technical security solutions to safeguard against external threats such as hacking, malware, and ransomware, as well as to prevent internal network and system breaches. These measures include the implementation of firewalls, web firewalls, document encryption and database access control. Windows security patch updates are performed on both servers and workstations to enhance the overall security system.

Administrative Security

We systematically manage and monitor security policies and regulations. This includes the establishment and periodic revision of comprehensive guidelines to ensure continuous improvements. In addition, we conduct regular user security drills, including participation in KISA (Korea Internet & Security Agency) simulation tests, to enhance our employees' ability to respond to cybersecurity breaches and to promote a heightened sense of security awareness.

Disclosure of Information Security Status

Since 2022, Pan Ocean has publicly disclosed key updates regarding information security on the Information Security Disclosure Comprehensive Portal. As part of our efforts to enhance information security, we upgraded our web firewall and data loss prevention systems in 2023 and introduced a new integrated security monitoring system. We have also subscribed to a personal information breach indemnity insurance policy.

Investment in Information Security 2023

KRW **670** million

Ratio of Investment in the Information Security Sector to Total Investment in the IT Sector in 2023

8.4 %



Information Security

Information Security Activities

Pan Ocean conducts regular and ongoing security assessments to verify compliance with security policies and identify areas for improvement. These assessments include reviews of internal management plans, simulation exercises, and self-inspections of the Personal Information Protection Committee's unique information security measures for identification. Regular internal inspections identify security vulnerabilities, thereby increasing the objectivity and reliability of security.

Information Security Assessment

Type	Internal Security Inspection	Simulation Hacking Training	Internal Management Plan Inspection	Self-Inspection of Unique Identification Information
Target	Entire System	All Employees	Annually	Personal Information Processing Systems
Frequency	Ad Hoc	Twice or More Annually	Annually	Annually

Information Security Training

Raising cybersecurity awareness among crew members is fundamental to effectively preventing cyber threats. For this reason, Pan Ocean conducts information security training for various groups, including new employees, shore-based staff, new crew members, existing crew members, and security personnel. In 2023, training sessions were held for 387 Pan Ocean employees and 171 POS SM employees. These sessions focused on cybersecurity incident response procedures, reporting protocols, and security system updates.

Information Security Training Programs

Category	Programs	Target	No. of Trainings
Pan Ocean	Personal Data Protection Training	All Employees	Annually
	IT Environment and Security Training	New Hires	Ad Hoc
	General/Job-Specific Cybersecurity Training	IT and Security Personnel	Ad Hoc
POS SM	Regular Training	All Employees	Annually
	General/Job-Specific Cybersecurity Training	IT and Security Personnel	Annually
	IT Environment and Security Training	New Hires	Ad Hoc
	Onboard Cybersecurity Training	Former Crew Members New Crew Members	Twice per Year Ad Hoc

Vessel Security Management

Onboard Cybersecurity System

Vessels are under constant threat of external cyber-attacks targeting their operational systems. With the widespread adoption of information technologies, such as automation and autonomous vessel operating systems, the potential impact of cyber-attacks on vessels has increased significantly. To mitigate these risks, a number of measures are being implemented to strengthen the cybersecurity of our vessels. All vessels are equipped with firewalls and comprehensive cybersecurity plans are included in vessel management manuals. In addition, shipboard security officers and managers are designated to prevent security breaches.

Response to Security Breaches

Security breaches are promptly reported to the CISO (Chief Information Security Officer) and the appropriate business unit upon discovery to initiate immediate remediation. Access and time logs and other incident details are collected, stored and used to develop measures to prevent recurrence. For its operational IT system services, POS SM documents disaster preparedness, response and recovery procedures to minimize the impact of disasters, maintain critical functions and quickly resume operations. In the event of a significant outage or disaster declaration affecting IT systems, the disaster recovery team activates backup systems and initiates system recovery immediately to ensure business continuity.

Security Risk Assessment

Pan Ocean and POS SM conduct security risk assessments to identify vulnerabilities and mitigate potential cyber threats. They participate in biannual security simulation exercises organized by the KISA (Korea Internet & Security Agency), and the training outcomes are analyzed to identify areas for improvement. In 2023, a total of 769 employees from Pan Ocean and POS SM participated in simulation exercises. The results revealed a gradual improvement in employee security awareness due to ongoing cybersecurity training and internal promotional activities. However, it was noted that the non-compliance rate for new hires and oversight of external sites remains high, indicating the need for relevant security education and awareness enhancement. Consequently, both companies are enhancing targeted security education programs to improve overall security awareness among all employees and encourage voluntary adherence to security practices.

Information Security

Personal Data Protection

Personal Data Protection Management System

Personal Data Protection Officer

Pan Ocean has appointed a CPO (Chief Privacy Officer) alongside the CISO (Chief Information Security Officer) to ensure a stable personal data protection framework. Dedicated personnel are employed to handle information technology and security tasks internally. These individuals undergo specialized personal data protection training to enhance their skills and stay updated on the latest information security issues.

Personal Information Protection

As the risk of personal data breaches increases and the potential scale of damages expands, Pan Ocean is conducting the following personal data protection activities. There are plans to further expand these activities to suit the security environments of both onshore and offshore operations in the future.

- Establishing and reporting privacy protection activities and improvement plans
- Providing privacy protection training to all employees (mandatory training)
- Conducting privacy protection training courses for the CPO and relevant staff
- Participating in the unique identification information safety measure management survey
- Carrying out activities to ensure the safety of personal information
- Integrating amendments to privacy laws into systems
- Implementing a clear personal information retention policy for systems
- Taking out privacy damage liability insurance

Personal Data Protection Governance

Role	Manage Personal Information Protection	Manage Personal Data Access Requests and Processing	Supervise Video Information Processing Equipment
Responsible Department	IT Infrastructure Team		
Authorized Personnel	IT Infrastructure Team Leader / Safety Management Team Leader		
Responsible Department	Information Systems Department		

Privacy Policy

Personal Data Management Policy

In compliance with the Personal Information Protection Act, the Act on Promotion of Information and Communications Network Utilization and Information Protection, and other relevant regulations, Pan Ocean has established a personal information processing policy. Through this policy, Pan Ocean provides information on the purposes and methods of personal data usage, as well as the measures implemented to protect personal information. Any updates or revisions to the personal data handling policy are promptly communicated to data subjects through website announcements or individual notices, ensuring comprehensive disclosure of significant information related to data. In addition to comprehensive guidelines, Pan Ocean has implemented nine specific measures to safeguard personal information, including regular internal audits, personal data encryption and prevention of access record tampering, to ensure secure personal data management, and all these measures are transparently disclosed on the website.

Responses to Violations of Personal Data Rights

Pan Ocean has designated a personal data protection officer to handle consultations and address complaints and damages related to personal data processing, and their contact information is publicly disclosed on the website. In addition, in cases of personal data rights violations, we provide reporting channels for swift incident resolution to ensure prompt and effective responses.

Reporting Channels for Personal Information Protection

Privacy Call Center	Supreme Prosecutors' Office
Website: privacy.kisa.or.kr Tel: 118	Website: www.spo.go.kr Tel: 1301
Personal Information Dispute Mediation Committee	Korean National Police Agency Cyber Bureau
Website: www.kopico.go.kr Tel: 1833-6972	Website: cyberbureau.police.go.kr Tel: 182
Department for Processing of Personal Information Access Requests	
Department: IT Infrastructure Team Tel: 02-316-5610	

Chapter. 6



Appendix

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ESG DATA Economic

Consolidated Summary Statement of Financial Position

Financial Information (Consolidated)	Unit	2020	2021	2022	2023
Assets					
Current assets	KRW million	662,523	1,358,712	1,834,200	1,757,323
Non-current assets	KRW million	3,996,804	5,130,067	5,714,742	6,096,623
Total assets	KRW million	4,659,327	6,488,779	7,548,942	7,853,946
Liabilities					
Current liabilities	KRW million	604,301	1,149,410	1,226,756	1,294,029
Non-current liabilities	KRW million	1,248,374	1,742,532	1,829,582	1,846,566
Total liabilities	KRW million	1,852,675	2,891,942	3,056,338	3,140,595
Capital					
Owner's equity	KRW million	2,806,652	3,596,837	4,492,604	4,713,351
Capital	KRW million	534,570	534,570	534,570	534,570
Capital surplus	KRW million	717,132	717,132	717,132	717,132
Other capital	KRW million	1,226,301	1,493,821	1,766,202	1,823,416
Earned surplus	KRW million	328,649	851,314	1,474,700	1,638,233
Non-controlling equity	KRW million	-1,807	0	0	0
Total capital	KRW million	2,806,652	3,596,837	4,492,604	4,713,351
Total capital and liabilities	KRW million	4,659,327	6,488,779	7,548,942	7,853,946

Consolidated Summary Statement of Comprehensive Income

Financial Information (Consolidated)	Unit	2020	2021	2022	2023
Consolidated Summary Statement of Comprehensive Income					
Sales	KRW million	2,497,159	4,616,107	6,420,312	4,360,982
Cost of sales	KRW million	2,193,226	3,950,376	5,520,365	3,861,154
Gross profit	KRW million	303,933	665,731	899,947	499,828
Selling and administrative expenses	KRW million	78,721	92,785	110,329	113,974
Operating profit	KRW million	225,212	572,946	789,618	385,854
Financial earnings	KRW million	17,158	30,118	97,017	83,092
Cost of finances	KRW million	64,629	60,049	150,645	157,057
Gains or losses using equity method	KRW million	5,377	12,639	18,510	-3,479
Other non-operating gains or losses	KRW million	-91,162	-5,296	-66,533	-59,921
Net income before corporate tax	KRW million	91,956	550,358	687,967	248,489
Corporate tax	KRW million	1,234	1,053	10,886	3,448
Current net income	KRW million	90,722	549,305	677,081	245,041
Other comprehensive income	KRW million	-170,580	267,608	273,347	55,888
Total comprehensive income	KRW million	-79,858	816,913	950,428	300,929



ESG DATA **Environmental**

GHG Emissions

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Direct GHG emissions (Scope 1*)	Mobile combustion	tCO ₂ eq	2,382,970	2,757,404	2,669,080	2,678,713
	Vessels**	tCO ₂ eq	2,382,921	2,757,356	2,669,026	2,678,663
	Vehicles	tCO ₂ eq	49	48	54	50
Indirect GHG emissions (Scope 2***)	Power purchased	tCO ₂ eq	569	539	483	580
Total (Scope 1+2)		tCO ₂ eq	2,383,539	2,757,943	2,669,563	2,679,293
Other indirect GHG emissions (Scope 3)	Upstream	tCO ₂ eq	1,453,048	2,884,436	3,738,975	4,511,253
	Purchased goods and services	tCO ₂ eq	-	22,191	9,532	2,399
	Leased assets	tCO ₂ eq	1,453,048	2,232,155	2,219,848	1,977,601
	Upstream distribution	tCO ₂ eq	-	629,965	1,509,302	2,531,001
	Business travel	tCO ₂ eq	-	42	188	140
	Employee commuting	tCO ₂ eq	-	83	105	112
Sales	KRW 100 million	21,029	40,692	57,004	38,115	
GHG emissions intensity**** (per unit of sales)	tCO ₂ eq/ KRW 100 million	113.346	67.776	46.831	70.295	

(Scope 1, 2, and 3 emissions included in the calculation: CO₂, CH₄, N₂O)

* Scope 1 calculation target: Pan Ocean's fleet, corporate vehicles

*** Total fuel consumption and incinerator usage on ships. Incinerator usage data is excluded for 2020 since it was only collected and verified starting in 2021

**** Scope 2 calculation target: Electricity consumption at Pan Ocean's domestic business sites

***** (Scope 1+2 emissions) / Sales based on Pan Ocean's separate financial statements

GHG Emissions

Category	Unit	2020	2021	2022	2023	
POS SM						
Direct GHG emissions (Scope 1*)	Mobile combustion	tCO ₂ eq	35	26	22	26
	Vehicles	tCO ₂ eq	35	26	22	26
Indirect GHG emissions (Scope 2**)	Power purchased	tCO ₂ eq	117	125	128	125
Total (Scope 1+2)		tCO ₂ eq	152	151	150	151
Sales	KRW 100 million	2,016	2,339	2,656	2,589	
GHG emissions intensity** (per unit of sales)	tCO ₂ eq/ KRW 100 million	0.075	0.064	0.056	0.058	

* Includes energy consumption at domestic business sites but excludes it when calculating total energy consumption and intensity

** (Scope 1+2 energy usage) / Revenue based on POS SM's separate financial statements



ESG DATA Environmental

Energy Consumption

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Owned fleet fuel consumption (Scope 1)	TOE	758,189	884,038	848,531	857,571
HFO (B-C oil)	TOE	302,587	388,916	390,570	401,113
LFO (B-C oil)	TOE	412,382	406,961	401,750	388,919
DO (B-A oil)	TOE	43,220	54,518	53,870	51,425
LNG	TOE	-	33,643	2,341	16,114
Corporate vehicles fuel consumption (Scope 1)	TOE	17	17	19	17
Gasoline	TOE	16	16	18	15
Diesel	TOE	1	1	1	2
Electricity (Scope 2)	TOE	305	293	240	289
Chartered fleet fuel consumption (Scope 3)	TOE	463,336	711,485	707,854	630,910
HFO (B-C oil)	TOE	15,176	42,680	81,489	67,423
LFO (B-C oil)	TOE	423,059	622,398	549,357	505,436
DO (B-A oil)	TOE	25,101	46,407	77,008	58,051
Total energy consumption* (Scope 1+2)	TOE	758,511	884,348	848,790	857,877
Sales	KRW 100 million	21,029	40,692	57,004	38,115
Energy intensity (per unit of sales)**	TOE/ KRW 100 million	36.070	21.733	14.890	22.508

* Includes energy consumption from ships and domestic business sites; Scope 3 is excluded from total energy consumption and intensity

** (Scope 1+2 energy consumption) / Sales based on Pan Ocean's separate financial statements

Energy Consumption

Category	Unit	2020	2021	2022	2023
POS SM					
Corporate vehicles fuel consumption (Scope 1)	TOE	9	7	5	20
Gasoline	TOE	12	9	8	8
LPG	TOE	-	-	-	1
Electricity (Scope 2)	TOE	58	62	64	62
Total energy consumption* (Scope 1+2)	TOE	70	71	71	71
Sales	KRW 100 million	2,016	2,339	2,656	2,589
Energy intensity (per unit of sales)**	TOE/ KRW 100 million	0.035	0.031	0.027	0.028

* Includes energy consumption from ships and domestic business sites; Scope 3 is excluded from total energy consumption and intensity

** (Scope 1+2 energy consumption) / Sales based on POS SM's separate financial statements



ESG DATA Environmental

Waste Generation

Category		Unit	2020	2021	2022	2023
Pan Ocean						
Total generated waste	Total	ton	24,987	28,405	29,695	31,489
	General waste from vessels (non-hazardous)					
	Food waste	ton	325	348	350	364
	Domestic waste	ton	1,684	1,949	2,225	2,519
	Cargo residue	ton	-	-	-	-
	Other	ton	-	-	-	-
	Subtotal	ton	2,009	2,297	2,575	2,883
Designated waste from vessels (hazardous)	Waste oils	ton	20,878	23,437	25,113	26,632
	Oily Rags	ton	628	922	440	386
	Plastics	ton	1,106	1,306	1,452	1,462
	Ashes	ton	366	443	113	124
	Other	ton	-	-	-	-
	Subtotal	ton	22,978	26,108	27,118	28,604
Office waste	Head Office	ton	-	2.21	1.39	1.77
	Busan Office Sales Team	ton	0.55	0.63	0.56	0.21
	Pohang Office	ton	0.08	0.05	-	0.42
	Dangjin Office**	ton	0.25	0.13	-	-
	Gwangyang Office**	ton	-	-	-	-
	Subtotal	ton	0.88	3.02	1.96	2.40
	General waste (non-hazardous) - Office	ton	-	-	-	-
Waste recycling	Designated waste (hazardous) - Vessel*	ton	7,311	9,604	10,159	11,901
	Subtotal	ton	7,311	9,604	10,159	11,901
Total waste recycling rate		%	29.3	33.8	34.2	37.8

* Plastics and sludge from vessels

**Dangjin Office and Gwangyang Office have two or fewer employees on site, making waste management difficult; thus, it is marked as 0

Waste Generation

Category		Unit	2020	2021	2022	2023
POS SM						
Total generated waste	Total	ton	4.97	5.78	4.54	1.72
	Office waste					
	Head Office	ton	4.97	5.78	4.54	1.72
	Subtotal	ton	4.97	5.78	4.54	1.72



ESG DATA Environmental

Air Pollutant Emissions

Category	Unit	2020	2021	2022	2023
Pan Ocean					
NOx (nitrogen oxides)	kg	63,851,643	71,729,675	71,249,120	70,867,753
SOx (sulfur oxides)	kg	7,511,958	8,438,785	8,382,249	8,337,383

(Emission factor based on IMO MEPC Cir. 681, 2nd IMO GHG STUDY 2009 (MEPC59 INF.10), 4th IMO GHG STUDY 2020)

Water Withdrawal

Category	Unit	2020	2021	2022	2023
Pan Ocean*					
Head Office	m ³	7,465	6,295	5,372	8,400
Busan Office Sales Team	m ³	292	279	292	307
Gwangyang Office	m ³	-	-	39	9
Pohang Office	m ³	-	-	-	59
Total	m³	7,757	6,574	5,703	8,775
Sales	KRW 100 million	21,029	40,692	57,004	38,115
Water intensity (per unit of sales)	m ³ /KRW 100 million	0.37	0.16	0.10	0.23
POS SM**					
Head Office	m ³	2,192	2,153	2,218	2,335
Sales	KRW 100 million	2,016	2,339	2,656	2,589
Water intensity (per unit of sales)	m ³ /KRW 100 million	1.10	0.91	0.83	0.90

* 100% municipal water, no recycled water, excluding intake on ships

** 100% municipal water, no recycled water, calculated considering rental area

Green Products Purchase Record

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Green lubricants	KRW million	172	264	269	416
Green chemical	KRW million	29	36	59	93
Green products	KRW million	201	300	328	509
Total purchases	KRW million	47,112	57,197	82,894	88,940
% Green product purchases	%	0.43	0.52	0.40	0.57



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Green Equipment Investment Status

Category	Unit	2020	2021	2022	2023
Pan Ocean					
BWMS	KRW million	17,325	23,814	25,989	4,377
SOx reduction equipment	KRW million	48,518	-	-	2,468
AMP	KRW million	569	573	-	-
Vessel speed restriction device	KRW million	91	-	-	1,326
Total	KRW million	66,503	24,387	25,989	8,171

Ecological Impact

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Ballast water exchange rate	%	48	24	8	5
Ballast water treatment rate	%	52	76	92	95



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Employees Status

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Total No. of employees*	Total	person	1,061	1,135	1,146	1,161
	Onshore	person	327	352	371	365
	Male	person	246	258	271	264
	Female	person	81	94	100	101
	Offshore	person	734	783	775	796
	Male	person	725	771	759	777
	Female	person	9	12	16	19
By employment type	Onshore	person	327	352	371	365
	Regular	person	322	341	350	354
	Non-regular	person	5	11	21	11
	Offshore	person	734	783	775	796
	Regular	person	434	480	484	624
	Non-regular	person	300	303	291	172
By age	Onshore	person	327	352	371	365
	Under 30	person	16	34	48	43
	30 - 49	person	272	269	274	263
	50 or older	person	39	49	49	59
	Offshore	person	734	783	775	796
	Under 30	person	248	261	247	236
	30 - 49	person	243	267	284	310
	50 or older	person	243	255	244	250
By location	Onshore	person	327	352	371	365
	Domestic	person	323	348	366	360
	International	person	4	4	5	5
	Offshore	person	734	783	775	796
	Domestic	person	734	783	775	796
	International	person	-	-	-	-
By position**	Onshore	person	327	352	371	365
	Senior manager (male)	person	148	156	166	171
	Senior manager (female)	person	11	14	12	16
	Manager (male)	person	71	73	63	54
	Manager (female)	person	32	33	35	35
	Junior positions (male)	person	27	29	42	39
	Junior positions (female)	person	38	47	53	50
	Offshore	person	734	783	775	796
	Master/Chief engineer (male)	person	194	226	217	265
	Master/Chief engineer (female)	person	-	-	-	-
	Officers (male)	person	395	418	413	388
	Officers (female)	person	9	12	16	19
	Ratings (male)	person	136	127	129	124
	Ratings (female)	person	-	-	-	-

Category	Unit	2020	2021	2022	2023	
POS SM						
Total No. of employees	Total	person	132	150	156	174
By employment type	Regular	person	115	127	130	142
	Non-regular	person	17	23	26	32
By age	Under 30	person	16	21	17	16
	30 - 49	person	105	111	116	127
	50 or older	person	11	18	23	31
By location	Domestic	person	131	149	155	173
	International	person	1	1	1	1
By position*	Lower-level manager	person	16	17	15	18
	Male	person	11	12	11	13
	Female	person	5	5	4	5
	Middle level manager	person	56	56	59	65
	Male	person	53	52	54	58
	Female	person	3	4	5	7
	Upper-level manager	person	29	34	32	34
	Male	person	29	34	32	34
Female	person	-	-	-	-	
Others	person	31	43	50	57	

* Lower-level manager: Assistant manager level
 Mid-level manager: Manager and deputy general manager levels
 Upper-level manager: General Manager/Director level and Executives
 Others: Junior positions and PJT supervisor

* Based on the business report criteria (excluding registered executives and corporate personnel)

** Based on the revised personnel system criteria for 2023 (senior manager (formerly deputy head, head of division, head of department), manager (formerly section chief and deputy section chief), Junior positions (including administrative support positions))



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New Recruitment and Turnover

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
New recruitment	Total	person	206	235	169	101
	Onshore	person	19	39	43	13
	Male	person	16	24	29	9
	Female	person	3	15	14	4
	Offshore	person	187	196	126	88
	Male	person	185	189	123	83
Turnover*	Female	person	2	7	3	5
	Onshore					
	Total turnover rate	%	3.3	3.6	5.4	5.7
	Voluntary turnover rate	%	2.5	3.1	4.9	4.2
	Offshore					
	Total turnover rate	%	10.2	8.4	9.8	5.7
Average length of service	Voluntary turnover rate	%	8.9	6.8	8.6	2.9
	Total	year	9.2	8.8	8.9	9.6
	Onshore (male)	year	13.2	13.1	13.2	14.0
	Onshore (female)	year	12.6	11.7	11.6	12.4
	Offshore (male)	year	7.6	7.2	7.2	7.9
	Offshore (female)	year	2.3	1.8	2.3	2.5

* Total turnover rate = Total number of departures during the year / Total number of employees at the end of the year
 Voluntary turnover rate = Total number of voluntary departures during the year / Total number of employees at the end of the year
 Total number of employees at the end of the year = Includes executives and registered executives of overseas branches
 Total number of departures = Includes executives, independent director, and contract employees with expired contracts
 Voluntary departures = Excludes executives (except voluntary resignations), independent director, and contract employees with expired contracts

Category	Unit	2020	2021	2022	2023	
POS SM						
New recruitment	Total	person	36	55	39	53
	Male	person	25	37	32	49
	Female	person	11	18	7	4
Turnover*	Total turnover rate	%	12.1	24.0	19.9	20.7
	Voluntary turnover rate	%	2.3	5.3	7.7	4.6
Average length of service	Male	year	9.8	9.9	9.2	8.5
	Female	year	6.8	4.5	6.5	6.8

* The calculation method for total turnover rate and voluntary turnover rate is the same as that of the Pan Ocean headquarters
 Includes executives, project-based contract employees and part-time employees

Local Workforce at Major Business Sites

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Locally hired employees	person	150	149	167	146
Senior employees among hired personnel	person	23	19	19	20
% of senior members among locally hired employees	%	15.3	12.8	11.4	13.7

Retiree Re-employment Status

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Master	person	20	29	28	33	
Chief Engineer	person	31	38	50	45	
Ratings	Deck	person	19	18	23	30
	Steward	person	12	13	12	12
	Engine	person	18	19	25	28
Total	person	100	117	138	148	



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Comparison of New Employee Wages to Minimum Wage, by Gender

Category	Unit	2020	2021	2022	2023
Pan Ocean					
New employee, male (onshore)	KRW	3,630,500	3,747,200	3,901,200	3,927,300
New employee, female (onshore)	KRW	3,630,500	3,747,200	3,901,200	3,927,300
Minimum wage (onshore)	KRW	1,941,340	1,970,720	2,070,160	2,174,120
New employee wage as a % of minimum wage (male)	%	187	190	188	181
New employee wage as a % of minimum wage (female)	%	187	190	188	181
New employee, male (offshore)	KRW	4,151,819	4,242,113	4,506,625	4,649,700
New employee, female (offshore)	KRW	4,151,819	4,242,113	4,506,625	4,649,700
Minimum wage (offshore)	KRW	1,795,310	1,822,480	2,010,580	2,060,740
New employee wage as a % of minimum wage (male)	%	231	233	224	226
New employee wage as a % of minimum wage (female)	%	231	233	224	226

(Based on monthly salary)

Category	Unit	2020	2021	2022	2023
POS SM					
New employee, male	KRW	3,188,000	3,284,000	3,416,000	3,512,000
New employee, female	KRW	3,188,000	3,284,000	3,416,000	3,512,000
Minimum wage	KRW	1,795,310	1,822,480	1,914,440	2,010,580
New employee wage as a % of minimum wage (male)	%	178	180	178	175
New employee wage as a % of minimum wage (female)	%	178	180	178	175

(Based on monthly salary)

Education and Training

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Training hours	Total training time	hour	22,153	30,410	32,804	35,397
	Onshore	hour	13,777	17,470	19,082	18,224
	Offshore	hour	8,376	12,940	13,722	17,173
	Avg. training time per person	hours/person	21	27	29	30
Training costs	Total training cost	KRW	687,364,863	866,257,292	986,456,029	1,299,501,418
	Onshore*	KRW	283,162,863	342,157,292	423,031,029	545,196,397
	Offshore**	KRW	404,202,000	524,100,000	563,425,000	754,305,021
	Avg. training cost per person	KRW/person	647,846	763,222	860,782	1,119,295

* Total training costs + self-development (Welfare Card)

** For Korean seafarers

Category	Unit	2020	2021	2022	2023	
POS SM						
Training hours	Total training time	hour	4,783	8,364	9,537	13,457
	Avg. training time per person	hours/person	39	62	73	95
Training costs	Total training costs	KRW	36,797,345	67,609,518	63,356,729	112,141,897
	Avg. training costs per person	KRW/person	299,165	500,811	483,639	789,732

(Employees total at the end of the year; those on leaves, PJT contract workers, part-timers excluded)



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Human Rights Training

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Onshore					
No. of trainees	person	347	374	394	390
Completed	person	347	374	394	390
% completion	%	100.0	100.0	100.0	100.0
Offshore					
No. of trainees	person	734	783	775	796
Completed	person	734	783	775	796
% completion	%	100.0	100.0	100.0	100.0
POS SM					
No. of trainees	person	115	151	154	170
Completed	person	114	151	154	170
% completion	%	99.1	100.0	100.0	100.0
Workplace Disability Awareness Training					
Pan Ocean					
Onshore					
No. of trainees	person	347	374	394	390
Completed	person	347	374	394	390
% completion	%	100.0	100.0	100.0	100.0
Offshore					
No. of trainees	person	734	783	775	796
Completed	person	734	783	775	796
% completion	%	100.0	100.0	100.0	100.0
POS SM					
No. of trainees	person	115	159	168	160
Completed	person	115	159	168	160
% completion	%	100.0	100.0	100.0	100.0
Workplace Sexual Harassment Prevention Training					
Pan Ocean					
Onshore					
No. of trainees	person	Replaced by	374	393	390
Completed	person	Posting Educational Materials	374	393	390
% completion	%		100.0	100.0	100.0
Offshore					
No. of trainees	person	734	783	775	796
Completed	person	734	783	775	796
% completion	%	100.0	100.0	100.0	100.0
POS SM					
No. of trainees	person	-	142	146	175
Completed	person	-	142	146	175
% completion	%	-	100.0	100.0	100.0
Workplace Bullying Prevention Training					
Pan Ocean					
Onshore					
No. of trainees	person	Replaced by	374	393	390
Completed	person	Posting Educational Materials	374	393	390
% completion	%		100.0	100.0	100.0
Offshore					
No. of trainees	person	734	783	775	796
Completed	person	734	783	775	796
% completion	%	100.0	100.0	100.0	100.0
POS SM					
No. of trainees	person	-	142	146	175
Completed	person	-	142	146	175
% completion	%	-	100.0	100.0	100.0

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Separate Human Rights Education	Seafarers' Labor Rights and Human Rights Training*	person	-	-	-	491
	Seafarers' Mental Health Training (Offshore)	person	-	327	303	274

* Mandatory education submitted to the Port Authority as of July 20, 2023

Information Security Education

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Information Security Education	Education hours for completion	hour	347	374	393	387
	Completed	person	347	374	393	387
POS SM						
Information Security Education	Education hours for completion	hour	345	135	153	700
	Completed	person	115	135	153	175

Industrial Safety and Health Education

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Onshore						
Industrial Safety and Health Education	Training hours	hour	-	-	4,694	4,616
	No. of trainees	person	-	-	376	364
Offshore						
Industrial Safety and Health Education	Training hours	hour	9,260	17,110	19,772	20,404
	No. of trainees	person	794	1,339	2,227	1,899
POS SM						
Industrial Safety and Health Education	Training hours	hour	-	1,261	2,759	2,835
	No. of trainees	person	-	150	177	184
ISO 45001:2018 Transition Internal Auditor Course (Safety)	Training hours	hours	273	16	56	27
	No. of trainees	person	13	1	5	1
Safety Management Representative (DP) Training Course	Training hours	hour	480	-	-	-
	No. of trainees	person	30	-	-	-



ESG DATA Social

Employee Diversity

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
% of female employees	Total	%	8.5	9.3	10.1	10.3
	Onshore	%	24.8	26.7	27.0	27.7
	Offshore	%	1.2	1.5	2.1	2.4
Persons with disabilities	Total	person	4	4	32	30
	Persons with disabilities hired	person	4	4	4	4
	KD Tech Co., Ltd.*	person	-	-	28	26
	Persons with disabilities hired	%	0.4	0.3	4.3	4.4
Foreigners	person	-	-	-	-	
Veterans	person	6	6	6	6	
Board Diversity						
Gender	Male	person	4	4	3	3
	Female	person	-	-	-	1
Age	Under 30	person	-	-	-	-
	Above 30 and under 50	person	-	-	-	-
	50 or older	person	4	4	3	4
Female base salary and compensation as a % of male**	%	100.0	100.0	100.0	100.0	
POS SM						
% of female employees	Total	%	21	25	22***	19
Persons with disabilities	Total	person	-	-	-	-
	Persons with disabilities hired	%	-	-	-	-
Foreigners	person	-	-	-	-	
Veterans	person	-	-	-	-	
Gender	Male	person	104	112	122	141
	Female	person	28	38	34	33
Age	Under 30	person	16	21	17	16
	Above 30 and under 50	person	105	111	116	127
	50 or older	person	11	18	23	31
Female base salary and compensation as a % of male**	%	100.0	100.0	100.0	100.0	

* Standard workplace for people with disabilities. When reflecting the double count of people with severe disabilities, a total of 50 people are recognized (based on the Act on Employment Promotion and Vocational Rehabilitation of Persons with Disabilities)

** Male/Female base salary is the same, with no gender-based differences

*** Correction of the 2022 female ratio calculation error (23 → 22)

Parental Leave

Category	Unit	2020	2021	2022	2023
No. of employees that used parental leave					
Pan Ocean					
Onshore male	person	1	1	1	1
Onshore female	person	2	4	5	6
Offshore male	person	4	6	8	8
Offshore female	person	-	-	-	-
POS SM					
Male	person	-	1	4*	1
Female	person	2	2	2	1
No. of employees who returned from parental leave					
Pan Ocean					
Onshore male	person	-	-	1	-
Onshore female	person	3	3	2	5
Offshore male	person	3	5	6	4
Offshore female	person	-	-	-	-
POS SM					
Male	person	-	1	1	4
Female	person	-	2	2	2
% employees returning from parental leave					
Pan Ocean					
Onshore male	%	-	-	100	-
Onshore female	%	50	100	67	100
Offshore male	%	75	83	80	75
Offshore female	%	-	-	-	-
POS SM					
Male	%	-	100	100	100
Female	%	-	50	100	50
No. employees who served for 12 months or more after parental leave					
Pan Ocean					
Onshore male	person	-	-	-	1
Onshore female	person	3	3	2	2
Offshore male	person	2	2	-	3
Offshore female	person	-	-	-	-
POS SM					
Male	person	-	-	1**	-
Female	person	-	1**	-	2
% of employees serving for 12 months or more after parental leave					
Pan Ocean					
Onshore male	%	-	-	-	100
Onshore female	%	100	100	100	100
Offshore male	%	100	83	100	75
Offshore female	%	-	-	-	-
POS SM					
Male	%	-	-	-	-
Female	%	-	-	-	-

* Correction of 1 duplicate person among those on parental leave in 2022 (extension of parental leave)

** Correction due to an error in the previous year's report regarding the number of employees who returned from parental leave and remained employed for more than 12 months



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Welfare Benefits

(Based on separate financial statements in the business report)

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Total cost of welfare benefits	KRW million	37,538	44,502	51,016	51,109
Cost of welfare benefits per person	KRW million	35	39	45	44
POS SM					
Total cost of welfare benefits	KRW million	1,323	1,695	1,938	2,227
Cost of welfare benefits per person	KRW million	10	11	12	16

Labor Union Membership

(As of January each year)

Category	Unit	2020	2021	2022	2023
Pan Ocean (Onshore)					
No. of employees eligible	person	243	250	279	273
No. of union members	person	203	207	241	219
% membership	%	83.5	82.8	86.4	80.2
Pan Ocean (Offshore)					
No. of employees eligible	person	766	832	910	871
No. of union members	person	513	560	582	539
% membership	%	67	67	64	62

Employee Satisfaction

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Employee satisfaction (onshore)*	point	4.23	4.16	4.02	3.95
Employee satisfaction (offshore)**	point	64.8	68.7	70.2	71.8
POS SM					
Employee satisfaction	point	3.58	3.69	3.57	3.57

*Based on ESI (Employee Satisfaction Index) Survey results (out of 5 points)

** Offshore Employee Internal Customer Satisfaction Survey results (out of 100 points)

Work Loss Injury

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Working hours*	hour	886,824	954,624	1,006,152	989,880
Lost time incidents	case	1	-	-	-
Onshore					
LTIFR (lost time incident rate)	Lost time incidents per million hours	1.13	-	-	-
No. of fatalities	person	-	-	-	-
Offshore					
Working hours**	hour	1,840,872	1,963,764	1,943,700	1,996,368
Lost time incidents	case	11	8	9	4
LTIFR (lost time incident rate)	Lost time incidents per million hours	5.97	4.07	4.63	2.00
No. of fatalities	person	-	-	-	0
Total LTIFR (lost time injury frequency rate)	Lost time incidents per million hours	4.40	2.74	3.05	1.34
No. of marine accidents and serious accident rate	case (%)	0 (0)	1 (1.4)	0 (0)	1 (1.6)
PSC (port state control)					
Number of deficiencies	case	101	231	239	284
Number of detentions	instance	1	1	4	2

(In the case of multiple employees incurring work loss due to a single work loss injury case, it is counted as one case)

* Working hours: Number of employees at the end of the year X Monthly standard working hours (226 hours) X 12 months Employees: Based on the year-end business report

** Working hours: Number of employees at the end of the year X Monthly standard working hours (209 hours) X 12 months Employees: Based on the year-end business report (calculated based on domestic employees excluding foreigners)

Employees Subject to Regular Performance and Career Development Review

Category	Unit	2020	2021	2022	2023
Pan Ocean*	%	100	100	100	100
POS SM**	%	79	83	83	76

* Excluded: CEO/inside directors/independent directors, employees with less than 6 months of service in the year, employees hired in the past 6 months, emergency planning officer/labor union, contract workers (subject to separate evaluation)

** Excluded: PJT supervisors, part-timers



ESG DATA Social

Social Contribution

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Social contribution investment amount	KRW million	0.1	-	42	260	
Total donation amount	KRW million	1,070	1,325	214	266	
Employee fundraising amount	KRW million	-	-	1.7	2.19	
Volunteer activities	Total volunteers	person	20	-	84	484
	Total hours	hour	40	-	247	1,371
	Hours per person	hour	2.0	-	2.9	2.8
POS SM						
Total donation amount	KRW million	1.0	2.4	2.4	2.4	

Discrimination Cases and Corrective Actions

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Discrimination and harassment cases during the reporting period (onshore)*	case	0	0	0	0
Discrimination and harassment cases during the reporting period (offshore)**	case	3	5	6	5
POS SM					
Discrimination and harassment cases during the reporting period	case	0	0	0	0

(100% treatment rate for reported cases)

* Excludes cases among the reported cases concluded to be non-harassment

** Based on cases formally processed as 'discrimination and harassment' in the open reporting & grievance handling system

Supplier Status

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Operating costs*	Total number of suppliers	No. of companies	612	688	584	641
	Key suppliers	No. of companies	3	3	3	3
	General suppliers	No. of companies	609	685	581	638
Fuel costs	Total number of suppliers	No. of companies	26	20	26	26
	Key suppliers	No. of companies	7	8	8	10
	General suppliers	No. of companies	19	12	18	16
Ship expenses	Total number of suppliers	No. of companies	426	512	494	487
	Key suppliers	No. of companies	26	30	35	38
	General suppliers	No. of companies	400	482	459	449
Total number of suppliers	No. of companies	1,064	1,220	1,104	1,154	
Total No. of new suppliers	No. of companies	1	0	0	68	
Total amount purchased from suppliers	KRW million	626,797	1,045,179	1,529,604	1,103,088	

* Only major service providers related to operating expenses were listed in the 2022 and 2023 reports. However, starting with the 2024 report, all service providers related to operating expenses are included

Client Information Protection

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Complaints of client information breaches	case	0	0	0	0
No. of client information breaches	case	0	0	0	0
POS SM					
Complaints of client information breaches	case	0	0	0	0
No. of client information breaches	case	0	0	0	0



ESG DATA

GRI Index

ESRS Index

SASB Index

TCFD Index

Association Memberships and Award Achievements

GHG Verification Statement

Independent Assurance Statement

ESG DATA Governance

Total Annual Salary

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Highest earner's annual salary	KRW million	536	786	1,039	1,685
Average annual salary of all employees (excluding highest earner)	KRW million	87	100	111	106
Highest earner's annual salary rise	%	-1.1	46.6	32.2	62.2
Average annual salary rise of all employees (excluding highest earner)	%	6.1	14.9	11.0	-4.5
Total annual salary increase	%	12.1	24.4	15.1	-7.5
POS SM					
Highest earner's annual salary	KRW million	190	213	242	227
Average annual salary of all employees (excluding highest earner)	KRW million	70	79	83	82
Highest earner's annual salary rise	%	2.2	11.7	14.1	-6.4
Average annual salary rise of all employees (excluding highest earner)	%	1.8	12.5	5.3	-1.9

(Based on the withholding tax report)

Distribution of Economic Value

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Employees	KRW million	193,716	247,950	290,246	278,901
Suppliers	KRW million	66,407	93,552	148,520	162,499
Shareholders and investors	KRW million	1,234	1,053	10,886	3,448
Governments	KRW million	1,071	1,427	317	571

Board Composition

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Board	Total	person	7	7	6	7
	Inside directors	person	3	3	3	3
	Independent directors	person	4	4	3	4
Registered female executives	person	-	-	-	1	
CEO-BoD chair separation	Y/N	N	N	N	N	

Sales by Business Segment

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Bulk carriers	KRW million	1,757,973	3,569,191	4,823,826	3,114,279
Containers	KRW million	246,667	353,341	509,420	365,815
Tankers	KRW million	142,671	140,167	305,867	342,729
LNG carriers	KRW million	14,698	93,618	171,762	82,869
Agri-trading	KRW million	376,663	498,182	702,018	527,252
Others (ship management, leasing, etc.)	KRW million	202,489	234,897	266,969	259,823

Board of Directors Operations

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Attendance rate of inside directors	%	83	83	100	100
Attendance rate of independent directors	%	85	86	93	100
Total attendance rate	%	85	85	96	100
Number of board meetings held	time	12	14	12	11
Total number of board agenda items	case	44	46	52	47
Number of significant ESG matters reported to the board	time	0	0	2	2



ESG DATA Governance

Performance of Government Support Subsidy Benefits

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Tax reductions and credits	KRW million	11,964	10,847	6,520	10,881
Subsidies	KRW million	6,609	6,512	7,022	0
Investment support, R&D support, other support, etc.	KRW million	0	0	0	0
Awards	KRW million	0	0	0	0
Financial support from export credit agencies	KRW million	0	0	0	0
Royalty exemptions	KRW million	0	0	0	0
Financial incentives	KRW million	0	0	0	0
Others (guarantees)	KRW million	0	0	0	0
POS SM					
Tax reductions and credits	KRW million	21	73	0	0
Subsidies	KRW million	0	0	0	0
Investment support, R&D support, other support, etc.	KRW million	0	125	0	0
Awards	KRW million	0	0	0	0
Financial support from export credit agencies	KRW million	0	0	0	0
Royalty exemptions	KRW million	0	0	0	0
Financial incentives	KRW million	0	0	0	0
Others (guarantees)	KRW million	0	0	0	0

Ethics Violations and Actions Taken

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
No. of ethics violations	Total	case	1	-	-	1
	Unlawfulness/fraud	case	-	-	-	-
	Petition (complaint, grievance)	case	1	-	-	-
	Unfair trade/corruption	case	-	-	-	-
	Other unethical conduct	case	-	-	-	1
Status of actions taken	Total	case	1	-	-	1
	Heavy sanction	case	-	-	-	1
	Light sanction	case	1	-	-	-

(Based on onshore employees)

Category	Unit	2020	2021	2022	2023	
POS SM						
No. of ethics violations	Total	case	1	2	4	7
	Unlawfulness/fraud	case	-	-	-	1
	Petition (complaint, grievance)	case	1	2	2	4
	Unfair trade/corruption	case	-	-	-	-
	Other unethical conduct	case	-	-	2	2
Status of actions taken	Total	case	-	-	1	5
	Heavy sanction	case	-	-	-	3
	Light sanction	case	-	-	1	2

(Excluding cases of withdrawal by the reporter and false reports)



ESG DATA Governance

Ethics/Compliance Training

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Completed	person	-	-	382	386
Training hours	hour	-	-	312	302
% completion	%	-	-	100	100
POS SM					
Completed	person	109	136	141	151
Training hours	hour	576	1,185	523	1,575
% completion	%	88.6	100.0	100.0	100.0

Signing of the Ethical Management and Compliance Pledge

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Target employees	person	887	931	1,032	1,057
Employees who signed	person	882	927	1,029	1,051
Signing rate	%	99.4	99.6	99.7	99.4
POS SM					
Target employees	person	128	151	158	147
Employees who signed	person	127	151	157	145
Signing rate	%	99.2	100.0	99.4	98.6

Ethics Management Practice Campaign

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Total	case	3	3	3	3
Ethical practices at year-end and of New Year	case	1	1	1	1
Refraining from accepting gifts on New Year	case	1	1	1	1
Refraining from accepting gifts on Chuseok	case	1	1	1	1
POS SM					
Total	case	0	0	2	10
Ethical practices at year-end and of New Year	case	0	0	0	1
Refraining from accepting gifts on New Year	case	0	0	0	0
Refraining from accepting gifts on Chuseok	case	0	0	0	1
Year-round practice of ethical management	case	0	0	2	8

Voluntary Compliance Inspection

Category	Unit	2020	2021	2022	2023	
Pan Ocean						
Checking targets	Target teams	team	49	53	56	55
	Check items	case	143	143	153	154
Checking results	Compliance implementation results	%	100.0	100.0	100.0	100

Anti-corruption Legal Actions

Category	Unit	2020	2021	2022	2023
Pan Ocean					
Total monetary loss	KRW million	0	0	2,850*	0
POS SM					
Total monetary loss	KRW million	0	0	0	0

* An administrative lawsuit has been filed regarding the 2022 disposition, and efforts are being made to improve the diligence of reporting to the relevant authorities (Ministry of Oceans and Fisheries) regarding joint activities to prevent recurrence.



GRI Index Universal Standards

GRI 2: General Disclosures

Topic	Index	Details	Location	Remarks
The organization and its reporting practices	2-1	Organizational details	6-8	
	2-2	Entities included in the organization's sustainability reporting	About This Report	
	2-3	Reporting period, frequency and contact point	About This Report	
	2-4	Restatements of information	99, 101	
	2-5	External assurance	116	
Activities and workers	2-6	Activities, value chain and other business relationships	6-14	
	2-7	Employees	95	
	2-8	Workers who are not employees	95	
Governance	2-9	Governance structure and composition	69-71, 102	
	2-10	Nomination and selection of the highest governance body	69-73	
	2-11	Chair of the highest governance body	69-70, 102	
	2-12	Role of the highest governance body in overseeing the management of impacts	16, 19, 70	
	2-13	Delegation of responsibility for managing impacts	16, 19, 70	
	2-14	Role of the highest governance body in sustainability reporting	16, 19, 70, 102	
	2-15	Conflicts of interest	69, 71	
	2-16	Communication of critical concerns	16, 72, 82, 102	
	2-17	Collective knowledge of the highest governance body	71	

Topic	Index	Details	Location	Remarks
Governance	2-18	Evaluation of the performance of the highest governance body	73	
	2-19	Remuneration policies	70, 73	
	2-20	Process to determine remuneration	73	
	2-21	Annual total compensation ratio	73, 102	
	2-22	Statement on sustainable development strategy	Letter to Stakeholders	
Strategy, policies and practices	2-23	Policy commitments	33, 46, 54, 66, 76	
	2-24	Embedding policy commitments	34, 45-46, 55-57, 66, 76-79	
	2-25	Processes to remediate negative impact	21-22	
	2-26	Mechanisms for seeking advice and raising concerns	57, 77, 101, 103	
	2-27	Compliance with laws and regulations	36, 77, 104	
Governance	2-28	Membership associations	114	
	2-29	Stakeholder engagement methods	18	
	2-30	Collective agreement	62, 100	

GRI 3: Material Topics

Topic	Index	Details	Location	Remarks
Material topics	3-1	Process to determine material topics	19	
	3-2	List of material topics	19-20	
	3-3	Management of material topics	19-22	



GRI Index

Material Topics (GRI 200-400)

Climate Change Response

Topic	Index	Details	Location	Remarks
Material topics	3-3	Management of material topics	21	
Economic performance	201-2	Financial implications and other risks and opportunities due to climate change	21, 25	
	302-1	Energy consumption within the organization	32, 91	
	302-2	Energy consumption outside of the organization	-	Data not tracked
Energy	302-3	Energy intensity	32, 91	
	302-4	Reduction of energy consumption	-	Data not tracked
	302-5	Reductions in energy requirements of products and services	-	Data not tracked
	305-1	Direct (Scope 1) GHG emissions	32, 90	
	305-2	Energy indirect (Scope 2) GHG emissions	32, 90	
	305-3	Other indirect (Scope 3) GHG emissions	32, 90	
Emissions	305-4	GHG emissions intensity	32, 90	
	305-5	Reduction of GHG emissions	-	Data not tracked
	305-6	Emissions of ozone-depleting substances (ODS)	-	Data not tracked
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	93	

Health and Safety Management

Topic	Index	Details	Location	Remarks
Material topics	3-3	Management of material topics	21	
	403-1	Occupational health and safety management system	45, 47	
	403-2	Hazard identification, risk assessment, and incident investigation	46-50	
	403-3	Occupational health services	45-50	
	403-4	Worker participation, consultation, and communication on occupational health and safety	44, 48-49	
	403-5	Worker training on occupational health and safety	47-50, 98	
Occupational health and safety	403-6	Promotion of worker health	48	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	44-50	
	403-8	Workers covered by an occupational health and safety management system	45	
	403-9	Work-related injuries	51, 100	
	403-10	Work-related ill health	-	Non-disclosure due to internal reasons



GRI Index **Material Topics (GRI 200-400)**

Collaborative Management

Topic	Index	Details	Location	Remarks
Material topics	3-3	Management of material topics	22	
Supplier environmental assessment	308-1	New suppliers that were screened using environmental criteria	-	Data not tracked
	308-2	Negative environmental impacts in the supply chain and actions taken	53	
Supplier social assessment	414-1	New suppliers that were screened using social criteria	-	Data not tracked
	414-2	Negative social impacts in the supply chain and actions taken	53	

Ethics and Compliance Management

Topic	Index	Details	Location	Remarks
Material topics	3-3	Management of material topics	22	
Anti-corruption	205-1	Operations assessed for risks related to corruption	79	
	205-2	Communication and training about anti-corruption policies and procedures	75-79, 103-104	
	205-3	Confirmed incidents of corruption and actions taken	77, 80, 103-104	
Anti-competitive behavior	206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	104	Refer to the annual report (Sanctions and Current Status)



GRI Index Non Material Topics (GRI 200-400)

Topic	Index	Details	Location	Remarks
Economic performance	201-1	Direct economic value generated and distributed	18, 102	
	201-3	Defined benefit plan obligations and other retirement plans	65	
	201-4	Financial assistance received from government	103	
Market presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	97	
	202-2	Proportion of senior management hired from the local community	96	
Indirect economic impacts	203-1	Infrastructure investments and services supported	67, 100	
Tax	207-4	Country-by-country reporting	84	Country-specific Tax Information Not Disclose
Materials	301-2	Recycled input materials used	38	
Water and wastewater	303-1	Interactions with water as a shared resource	40	
	303-3	Water withdrawal	93	
Biodiversity	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	36-37,94	
	304-2	Significant impacts of activities, products, and services on biodiversity	36-37,94	
	304-3	Habitats protected or restored	36-37,94	
Waste	306-1	Waste generation and significant waste-related impacts	41-42	
	306-2	Management of significant waste-related impacts	41-42, 92	
	306-3	Waste generated	41, 92	
	306-4	Waste diverted from disposal	41, 92	

Topic	Index	Details	Location	Remarks
Employment	401-1	New employee hires and employee turnover	58-59, 65, 96	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	63-65, 99-100	
	401-3	Parental leave	64, 99	
Labor/Management Relations	402-1	Minimum notice periods regarding operational changes	-	Communication through the Labor-Management Council when management changes occur
Training and education	404-1	Average hours of training per year per employee	97	
	404-2	Programs for upgrading employee skills and transition assistance programs	59-62	
	404-3	Percentage of employees receiving regular performance and career development reviews	58, 100	
Diversity and equal opportunity	405-1	Diversity of governance bodies and employees	69, 71, 99, 102	
	405-2	Ratio of basic salary and remuneration of women to men	99	
Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	77, 101	
Local communities	413-1	Operations with local community engagement, impact assessments, and development programs	66-67, 100	
Customer privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	101	



ESRS Index

We have conducted ESRS mapping only for the issues identified as significant through the double materiality assessment.

ESRS 2. General Disclosures

Index	Disclosure Requirement	Location	Remarks
ESRS 2 BP-1	General basis for preparation of sustainability statements	About This Report	
ESRS 2 BP-2	Disclosures in relation to specific circumstances	99, 101	
ESRS 2 GOV-1	The role of the administrative, supervisory and management bodies	16, 24, 44, 52, 69-73, 75, 102	
ESRS 2 GOV-2	Information provided to and sustainability matters addressed by the undertaking's administrative, management and supervisory bodies	16, 19, 24	
ESRS 2 GOV-3	Integration of sustainability-related performance in incentive schemes	24, 44, 75	
ESRS 2 GOV-4	Statement on due diligence	16, 44-49, 52-53, 54-56	
ESRS 2 SBM-1	Strategy, business model and value chain	6-14	
ESRS 2 SBM-2	Interests and views of stakeholders	18	
ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model	21-22	
ESRS 2 IRO-1	Description of the processes to identify and assess material impacts, risks and opportunities	19	
ESRS 2 IRO-2	Disclosure requirements in ESRS covered by the undertaking's sustainability statement	109-111	

ESRS E1. Climate Change

Index	Disclosure Requirement	Location	Remarks
ESRS E1-1	Transition plan for climate change mitigation	27-28, 31, 34	
ESRS E1-2	Policies related to climate change mitigation and adaptation	29, 33-35	
ESRS E1-3	Actions and resources in relation to climate change policies	30, 37-39	
ESRS E1-4	Targets related to climate change mitigation and adaptation	31, 34	
ESRS E1-5	Energy consumption and mix	32, 91	Energy usage report by scope
ESRS E1-6	Gross Scopes 1, 2, 3 and total GHG emissions	32, 90	
ESRS E1-7	Carbon reduction in operations and supply chain, and carbon credits obtained from external projects	-	Data not tracked
	Carbon avoidance from products and services	-	Data not tracked
ESRS E1-8	Internal carbon pricing	-	Data not tracked
ESRS E1-9	Anticipated financial effects from material physical and transition risks and potential climate-related opportunities	25	



ESRS Index

ESRS S1. Own Workforce

Index	Disclosure Requirement	Location	Remarks
ESRS S1-1	Policies related to own workforce	54, 76	
ESRS S1-2	Processes for engaging with own workers and workers' representatives about impacts	45, 57, 62, 77	
ESRS S1-3	Processes to remediate negative impacts and channels for own workers to raise concerns	45, 57, 62, 77	
ESRS S1-4	Taking action on material impacts on own workforce, and approaches to mitigating material risks and pursuing material opportunities related to own workforce, and effectiveness of those actions	44-50, 55-57, 76-78	
ESRS S1-6	Characteristics of the undertaking's employees	95-96, 99	
ESRS S1-7	Characteristics of non-employee workers in the undertaking's own workforce	95-96	
ESRS S1-8	Collective bargaining coverage and social dialogue	62, 100	
ESRS S1-9	Difference in average hourly wages by gender, ratio of women's wages to men's wages	97	
	Family care leave (parental and childcare leave) eligibility, users, and retention rate post-leave	64, 99	
ESRS S1-10	Adequate wages	97	
ESRS S1-12	Persons with disabilities	99	
ESRS S1-13	The percentage of employees that participated in regular performance and career development review; such information shall be broken down by gender	100	
	Average training hours per employee and by gender	97	
ESRS S1-14	Health and safety metrics	100	
ESRS S1-15	Work-life balance metrics	63-64	
ESRS S1-16	Compensation metrics (pay gap and total compensation)	73	
ESRS S1-17	Number of risks and measures related to negative impacts on employees' labor and human rights	56	
	Number of reports, investigations, actions, and recurrence prevention plans related to employees' labor and human rights	57	



ESRS Index

ESRS S2. Workers in the Value Chain

Index	Disclosure Requirement	Location	Remarks
ESRS S2-1	Policies related to value chain workers	52-54	
ESRS S2-3	Channels for value chain workers to raise concerns	48, 57	
ESRS S2-4	Targets related to managing material negative impacts, advancing positive impacts, and managing material risks and opportunities	50	

ESRS G1. Business Conduct

Index	Disclosure Requirement	Location	Remarks
ESRS G1-1	Declaration of ethical management by the highest governance body, responsibilities, and roles in oversight and management	75	
	Requirements of the code of ethics and practice guidelines	76	
ESRS G1-2	Operation of fair-trade compliance programs, improvement activities for payment systems such as win-win payment systems	79, 104	
	ESG risk assessment and due diligence for suppliers, incorporation of assessment and due diligence results into supplier selection criteria	53	
ESRS G1-3	Activities to eradicate and prevent unethical behavior, investigation and internal reporting system	77-78	
	Activities to eradicate and prevent unfair trade, investigation and internal reporting system	77	
ESRS G1-4	Number of confirmed incidents of unethical behavior, number of cases investigated by judicial authorities, number of employees subject to disciplinary action	77, 103	
	Number of confirmed incidents unfair trade, number of cases investigated by judicial authorities, number of employees subject to disciplinary action	77, 103	



SASB Index

Marine Transportation Sustainability Accounting Standard

Topic	Code	Accounting Metric	Category	Unit	Data	Location
Greenhouse gas emissions	TR-MT-110a.1	Gross global Scope 1 emissions	Quantitative	tCO ₂ eq	2,678,713 (Scope 1 vessels + vehicles)	32, 90
	TR-MT-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Qualitative	N/A	Reported on p.24-32	24-32
	TR-MT-110a.3	(1) Total energy consumed, (2) percentage heavy fuel oil, (3) percentage renewable	Quantitative	(1) TOE (2) % (3) %	(1) 857,877 (Scope 1+2) (2) 47 (401,113 TOE) (3) No renewable energy consumption	32, 91
	TR-MT-110a.4	Average EEDI (Energy Efficiency Design Index) for new ships	Quantitative	grams of CO per ton-nautical mile	Not disclosed	-
Air quality	TR-MT-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N ₂ O), (2) SOx, and (3) particulate matter (PM10)	Quantitative	(1) metric ton (2) metric ton (3) metric ton	(1) 70,868 (2) 8,337 (3) 5,301	34, 37, 93
Ecological impacts	TR-MT-160a.1	Shipping duration in marine protected areas or areas of protected conservation status	Quantitative	number of travel days	Not disclosed	-
	TR-MT-160a.2	Percentage of fleet implementing ballast water (1) exchange and (2) treatment	Quantitative	%	(1) 5 (2) 95	94
	TR-MT-160a.3	(1) Number and (2) aggregate volume of spills and releases to the environment	Quantitative	(1) case (2) m ³	Not disclosed	-
Employee health & safety	TR-MT-320a.1	Lost time incident rate (LTIR)	Quantitative	rate	Onshore : 0 Offshore : 2.00	100
Business ethics	TR-MT-510a.1	Number of calls at ports in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Quantitative	call	14	-
	TR-MT-510a.2	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	Quantitative	KRW	0	104
Accident & safety management	TR-MT-540a.1	Number of marine casualties(1), percentage (2) classified as very serious	Quantitative	(1) case (2) % (3) person	(1) 1 (2) 1.6 (3) 0	100
	TR-MT-540a.2	Number of conditions of class or recommendations	Quantitative	cases	25	-
	TR-MT-540a.3	PSC (port state control) (1) Number of deficiencies (2) Number of detention	Quantitative	(1) case (2) instance	(1) 284 (2) 2	100

Topic	Code	Accounting Metric	Category	Unit	Data	Location
Activity index	TR-MT-000.A	Number of shipboard employees	Quantitative	number	796	95
	TR-MT-000.B	Total distance travelled by vessels	Quantitative	nautical miles (nm)	6,950,083	-
	TR-MT-000.C	Operating days	Quantitative	days	40,225	-
	TR-MT-000.D	Deadweight tonnage	Quantitative	thousand metric tons	13,349	-
	TR-MT-000.E	Number of vessels in total shipping fleet	Quantitative	number	109	6
	TR-MT-000.F	Number of vessel port calls	Quantitative	number	3,449	-
	TR-MT-000.G	Twenty-foot equivalent unit (TEU) capacity	Quantitative	TEU	8,095	-

(Based on owned vessels)



TCFD Index

Category	TCFD Recommendations	Location
Governance	a. Describe the board's oversight of climate-related risks and opportunities	24
	b. Describe management's role in assessing and managing climate-related risks and opportunities	24
Strategy	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	25
	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	25
	c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	26
Risk management	a. Describe the organization's processes for identifying and assessing climate-related risks	26, 30
	b. Describe the organization's processes for managing climate-related risks	26, 30
	c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	30, 33-34
Metrics & targets	a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	28, 31
	b. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks	28
	c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	27-28, 31-32



Association Memberships and Award Achievements

Membership

Organization Name
Seoul Chamber of Commerce and Industry
Korea Industry Associations Council
Korea Listed Companies Association
Korea Enterprises Federation
Korea Shipowners' Association
Korea International Trade Association
Yellow Sea Liner Committee
Korea Near-Sea Freight Conference
Korea AEO Association
Korea Ship Managers Association
Korea Gas Union
Society of International Gas Tanker and Terminal Operators
Korea Emergency Planning Officers Council

Achievements

Date	Award	Awarding Body
Dec. 7, 2022	Gold Award at the 2022 AEO Best Practices Sharing Competition	Korea Customs Service
Dec. 13, 2022	Good Relationship 2022 award in the Sponsorship Category at the Jongno District Member of Parliament Awards	Seoul Senior Welfare Center
Jun. 29, 2023	One Hundred Million Tonnage Shipping Award	Ministry of Oceans and Fisheries
Oct. 31, 2023	A rating from the KCGS (Korea Institute of Corporate Governance and Sustainability)	KCGS (Korea Institute of Corporate Governance and Sustainability)
Nov. 14, 2023	AA rating for AEO Certification from the Korea Customs Service	Korea Customs Service
Dec. 6, 2023	Report of the Year in the Sustainability Report Category at the 2023 Korea Management Awards	Korea Management Association Consultants Inc.
Dec. 8, 2023	ISO 45001 International Standard Certification	Korean Register of Shipping



GHG Verification Statement

GREENHOUSE GAS EMISSIONS VERIFICATION OPINION PAN OCEAN CO., LTD.



Introduction

DNV Business Assurance Korea Ltd. (“DNV”) was commissioned by Pan Ocean Co., Ltd. (“Company”) to perform third party verification for the Company’s Greenhouse Gas Inventory (“the inventory”). The Company is responsible for the preparation of the GHG emissions data on the basis set out within the ‘WRI/WBCSD GHG Protocol: A Corporate Accounting and Reporting Standard (2004)’, ‘The Corporate Value Chain (Scope 3) Accounting and Reporting Standard’ and ‘2006 IPCC Guidelines for National Greenhouse Gas Inventories’. Our responsibility in performing this work is to the management of the Company only and in accordance with terms of reference agreed with them. DNV expressly disclaims any liability or responsibility for any decisions, whether investment or otherwise, based upon this verification opinion.

Objectives and scope of verification

The purpose of this verification is to present an independent verification opinion on the company’s greenhouse gas emissions, and the scope of verification is as follows;

- Organizational Boundary: Pan Ocean Co., Ltd.’s Sites in Korea
- Operational Boundary: Scope 1 (Direct emissions), Scope 2 (Indirect emissions), Scope 3 (Other indirect emissions)
- Reporting period: 2023.01.01 ~2023.12.31

Verification Approach

The verification has been conducted in accordance with the verification principles and tasks outlined in the ‘ISO 14064-3:2019’, based upon a limited level of assurance. We planned and performed our work so as to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a verification opinion with 5% materiality level, concerning the completeness of the emission inventory as well as the reported emission figures in ton CO2 equivalent. As part of the verification process, we have reviewed as follows;

- Process to generate, aggregate and report the emissions data
- The data and information supporting the report were based on historical in nature. May include partially hypothetical and projected data and information (refer to the inventory for details)

Conclusions

Based on the process and procedures conducted, there is no evidence that the GHG statement is not materially correct and is not a fair representation of GHG data and information;

- DNV presents an ‘Unmodified’ opinion on Greenhouse Gas Emissions

(Unit: ton CO₂-eq)

2023	Direct emissions (Scope 1)		Indirect emissions(Scope 2)	Other indirect emissions (Scope 3)*	Total Emissions
	Vessel	Vehicle	Electricity		
Pan Ocean	2,678,663	50	580	4,511,253	7,190,546

※ Greenhouse gas emissions may differ by less than ± 1 tCO₂-eq due to rounding to report as an integer.

* Other indirect emissions (Scope3) include emissions of ‘Purchased goods & services, Upstream transportation and distribution, Business travel, Employee commuting and Upstream leased assets’

5 June 2024 Seoul, Korea

Jang-Sub Lee
Country Representative
DNV Business Assurance Korea



This Verification Opinion is valid as of the date of the issuance. Please note that this Opinion would be revised if any material discrepancy which may impact the Greenhouse Gas Emissions of the company is subsequently brought to our attention.

Third-party Verification Statement

To readers of Pan Ocean ESG REPORT 2024

Introduction

Korea Management Registrar (KMR) was commissioned by Pan Ocean to conduct an independent assurance of its ESG REPORT 2024 (the "Report"). The data and its presentation in the Report is the sole responsibility of the management of Pan Ocean. KMR's responsibility is to perform an assurance engagement as agreed upon in our agreement with Pan Ocean and issue an assurance statement.

Scope and Standards

Pan Ocean described its sustainability performance and activities in the Report. Our Assurance Team carried out an assurance engagement in accordance with the AA1000AS v3 and KMR's assurance standard SRV1000. We are providing a Type 1, moderate level assurance. We evaluated the adherence to the AA1000AP (2018) principles of inclusivity, materiality, responsiveness and impact, and the reliability of the information and data provided using the Global Reporting Initiative (GRI) Index provided below. The opinion expressed in the Assurance Statement has been formed at the materiality of the professional judgment of our Assurance Team. Confirmation that the Report was prepared in accordance with GRI standards 2021 was included in the scope of the assurance. We have reviewed the topic-specific disclosures of standards which were identified in the materiality assessment process.

- GRI Sustainability Reporting Standards 2021
- Universal standards
- Topic specific standards
 - GRI 201 : Economic Performance
 - GRI 205 : Anti-corruption
 - GRI 206 : Anti-competitive Behavior
 - GRI 302 : Energy
 - GRI 305 : Emissions
 - GRI 308 : Supplier Environmental Assessment
 - GRI 403 : Occupational Health and Safety
 - GRI 414 : Supplier Social Assessment

As for the reporting boundary, the engagement excludes the data and information of Pan Ocean' partners, suppliers and any third parties.

KMR's Approach

To perform an assurance engagement within an agreed scope of assessment using the standards outlined above, our Assurance Team undertook the following activities as part of the engagement:

- reviewed the overall Report;
- reviewed materiality assessment methodology and the assessment report;
- evaluated sustainability strategies, performance data management system, and processes;
- interviewed people in charge of preparing the Report;
- reviewed the reliability of the Report's performance data and conducted data sampling;
- assessed the reliability of information using independent external sources such as Financial Supervisory Service's DART and public databases.

Limitations and Recommendations

KMR's assurance engagement is based on the assumption that the data and information provided by Pan Ocean to us as part of our review are provided in good faith. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. To address this, we referred to independent external sources such as DART and National Greenhouse Gas Management System (NGMS) and public databases to challenge the quality and reliability of the information provided.

Conclusion and Opinion

Based on the document reviews and interviews, we had several discussions with Pan Ocean on the revision of the Report. We reviewed the Report's final version in order to make sure that our recommendations for improvement and revision have been reflected. Based on the work performed, it is our opinion that the Report applied the GRI Standards. Nothing comes to our attention to suggest that the Report was not prepared in accordance with the AA1000AP (2018) principles.

Inclusivity

Pan Ocean has developed and maintained different stakeholder communication channels at all levels to announce and fulfill its responsibilities to the stakeholders. Nothing comes to our attention to suggest that there is a key stakeholder group left out in the process. The organization makes efforts to properly reflect opinions and expectations into its strategies.

Materiality

Pan Ocean has a unique materiality assessment process to decide the impact of issues identified on its sustainability performance. We have not found any material topics left out in the process.

Responsiveness

Pan Ocean prioritized material issues to provide a comprehensive, balanced report of performance, responses, and future plans regarding them. We did not find anything to suggest that data and information disclosed in the Report do not give a fair representation of Pan Ocean' actions.

Impact

Pan Ocean identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible.

Competence and Independence

KMR maintains a comprehensive system of quality control including documented policies and procedures in accordance with ISO/IEC 17021-2015 - Requirements for bodies providing audit and certification of management systems. This engagement was carried out by an independent team of sustainability assurance professionals. KMR has no other contract with Pan Ocean and did not provide any services to Pan Ocean that could compromise the independence of our work.

June 2024 Seoul, Korea



CEO E. J. Hwang

PAN OCEAN

2024 ESG REPORT

PANOCEAN



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